APPENDIX F

PHILLIPS 66 LOS ANGELES REFINERY
PROPOSED CRUDE OIL STORAGE CAPACITY PROJECT

COMMENT LETTERS RECEIVED ON THE DRAFT ND AND RESPONSES TO COMMENTS

INTRODUCTION

This Appendix, together with other portions of the Negative Declaration, constitutes the Final Negative Declaration (ND) for the proposed Phillips 66 Crude Oil Storage Capacity Project.

The Draft ND was circulated for a 30-day public review and comment period on September 10, 2013 and ending October 9, 2013. The Draft ND is available at the South Coast Air Quality Management District (SCAQMD), 21865 Copley Drive, Diamond Bar, California 91765-4182 or by phone at (909) 396-2039. The Draft ND can also be downloaded by accessing the SCAQMD's CEQA web page at http://aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2014.

The Draft ND contained a detailed Project description, an analysis of the environmental impacts of all environmental resources included on the CEQA checklist, including cumulative impacts, and other areas of discussion as required by CEQA. The discussion of the project-related environmental impacts included a detailed analysis of air quality, hazards and hazardous materials, and noise.

The SCAQMD received three comment letters on the Draft ND during the public review period from the following commenters.

Comment Letter	Commenter
1	Department of Transportation, Dianna Watson
2	Communities For A Better Environment, Julia E. May
3	Communities For A Better Environment, Yana Garcia et al

The comment letters and the responses to the comments are provided in this appendix. The comments are bracketed and numbered. The related responses are identified with the corresponding number and are included following each comment letter. Due to the size of the Exhibits referenced and submitted with Comment Letter No. 2, the Exhibits are available online at the SCAQMD website (http://aqmd.gov/home/library/documents-support-material/lead-agency-permit-projects/permit-project-documents---year-2014) and not included in this appendix.

Comment Letter No. 1

Department of Transportation, September 17, 2013

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY Edmund G. Brown, Jr., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
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Flex your power!
Be energy efficient!

September 17, 2013

Ms. Barbara Radlein
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: IGR/CEQA No. 130922/ND
Phillips 66 Los Angeles Refinery
Carson Plant-Crude Oil Storage
Vic. LA-1, PM 9.253 to 14.891
SCH#2013091029

Dear Ms. Radlein:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the proposed Phillips 66 Los Angeles Refinery Carson Plant—Crude Oil Storage Project. The project is located at the corner of Sepulveda Boulevard and Alameda Street in the City of Carson. 1-1

The objective of the project is to increase crude oil storage by constructing a new 615,000 barrel crude oil storage tank. Two new feed and transfer pumps and one 14,000 water draw surge tank with associated pumps and pipelines would also be installed.

The Phillips 66 Los Angeles Refinery Carson Plant—Crude Oil Storage project is located approximately 5 miles from State Route 1 (SR-1). Based on the distance of the project to the State highway, Caltrans does not expect project approval to result in a direct adverse impact to the existing State transportation facility. 1-2

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects should be designed to discharge clean run-off water. Additionally, discharge of storm water run-off is not permitted onto State highway facilities. 1-3

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from the Caltrans. It is recommended that large size truck trips be limited to off-peak commute periods. In addition, a truck/traffic construction management plan may be needed for this project. 1-4

If you have any questions, you may reach Zeron Jefferson, project coordinator at (213) 897-0219 and please refer to IGR number 130922/ZJ.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Responses to Comment Letter No. 1

Department of Transportation
September 17, 2013

Response 1-1

This comment notes the name and the location of the proposed project. No further response is necessary.

Response 1-2

This comment summarizes the project objective and the general project components. This comment also concurs with the conclusions in the Draft ND that the proposed project is not expected to result in significant adverse impacts to state highways during construction or operation. No further response is necessary.

Response 1-3

This comment notes that storm water run-off is a sensitive issue for Los Angeles and Ventura counties and requests the project to be designed so that clean run-off water is discharged. This comment also points out that the discharge of storm water run-off is not permitted onto State highway facilities.

Phillips 66 operates two plants at its Los Angeles Refinery; the Carson Plant (LARC) and the Wilmington Plant (LARW). The proposed project is located at LARC and is not expected to increase the storm water run-off from LARC and no new storm drainage facilities or expansion of existing storm facilities are expected to be required. In addition, the proposed project is located within the LARC, which is not adjacent to any State highways, so no storm water run-off would occur onto State highways.

As explained in section IX. c) and d) on page 2-59 of this ND, the modifications at the LARC would occur within the existing storage tank farm area, which is currently paved and will remain paved, such that no increase in the amount of runoff is expected to occur. Further, storm water would continue to be collected in a drainage system and handled by the LARC's existing wastewater system and then either discharged to the Dominguez Channel under the conditions of the LARC's existing storm water permit or sent to an on-site wastewater treatment system. Treated storm water is currently discharged to the Los Angeles County Sanitation District sewer system in accordance with the requirements of the facility's Industrial Wastewater Discharge Permit. For these reasons, no change in storm water run-off from the site is expected. Therefore, the ND concludes that the potential adverse impacts of the proposed project on hydrology and water quality resources are expected to be less than significant.

Since the project area is greater than one-half acre, the project will also comply with the California General Construction Stormwater Permit that has been issued to the LARC (WDID 419C366800).

Response 1-4

This comment identifies the need for permits for oversized loads transported on State highways. In addition, this comment recommends large truck trips be limited to off-peak commute periods and suggests a truck/traffic construction management plan may be needed.

Phillips 66 does not expect that oversized loads will be required to implement the proposed project and does not expect to require a Caltrans permit. Phillips 66 would obtain all necessary permits from Caltrans if oversized loads are required and State highways are to be traveled. As discussed in section XVII. a) and b) on page 2-83 of the ND, the proposed project would generate a maximum of one additional delivery truck per day to deliver equipment to the site and traffic impacts would be less than significant.

The proposed project does not include any construction activities outside the LARC boundary; would not disrupt traffic flow or impact public rights-of-way as only one delivery truck (heavy-heavy duty) per day would be required. No significance traffic impacts are expected as discussed in the Draft ND (pages 2-81 through 2-84); therefore, a traffic management plan is not expected to be necessary for the proposed project.

Comment Letter No. 2
Communities for a Better Environment, Ms. Julia May, October 9, 2013

October 9, 2013
Ms. Barbara Radlein
SCAQMD
bradlein@aqmd.gov

Re: JMay Report on Phillips 66 LA Refinery Carson Plant-Crude Oil Storage Capacity Project Draft Negative Declaration (ND) – ND should be rejected, a full EIR is required

Dear Ms. Radlein,

This report provides my expert opinion regarding the Phillips 66 Los Angeles Refinery Carson Plant - Crude Oil Storage Capacity Project Negative Declaration (hereinafter the ND, or "the Project") provided on behalf of Communities for a Better Environment (CBE). I am a Senior Scientist at CBE and have provided engineering analysis on oil refinery project impacts, alternatives, and pollution prevention in California, and also outside the state as a consultant, for the last 25 years. A true and current copy of my CV is attached. I appreciate your review of these comments regarding major problems with the stated intent of Phillips 66 regarding this Project, which I found requires a full Environmental Impact Report. In summary (detailed later), I found that: 2-1

- **The direct impacts of the Project, even as narrowly described by the ND, have been underestimated and are significant**, including air impacts from new storage tank and pipeline cleaning, degassing operations, and other emissions; 2-2
- **Additionally, Phillips 66's Project description is incomplete,** failing to identify that the proposed changes to the refinery inputs to the crude unit, including expanded use of the brine stripper and added heat exchangers, which are exactly the increased desalting and temperature controls needed to enable processing of cheaper "Advantaged Crudes" which Phillips 66 has publicly announced it is bringing by rail and ship to California, including to the Los Angeles refinery. The brine stripper throughput and temperature increases also comprise an expansion beyond the refinery baseline; 2-3
- **Consequently Project impacts due to a type of debottlenecking of crude types that can be processed must also be evaluated,** including increasing risk of accidents due to corrosion associated with worsening crude quality (as determined by the U.S. Chemical Safety Board following the Chevron Richmond explosion on August 6, 2012), in addition to increased greenhouse gases and other significant impacts; 2-4
- **The Project would also enable other potential refinery expansions by providing a large increase in crude oil storage.** For example, Phillips has publicly stated its intention to add export capability to its West Coast refineries, to send product to China, India, and Brazil. Increased storage can be used in many different refinery projects. Storage tank emissions must not be piecemealed as a stand-alone project, since the tanks will be used in conjunction with many other refinery expansions. 2-5
- **This Project represents a piecemealing of a broader, publicly acknowledged Project by Phillips 66 to bring crude into California by rail and ship, and specifically to the Los Angeles refinery,** which has the potential to cause major risk increases and must be considered as a cumulative hazard. 2-6

Julia E. May, Senior Scientist, CBE, julia.e.may@gmail.com

Report of Julia E. May / CBE, on Phillips 66 LA Refinery Carson Plant
Crude Oil Storage Capacity Project Draft Negative Declaration (ND)
Comments to SCAQMD, 10/9/2013

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2-7

1. ***The redesign of desalting with new heat exchangers at the refinery front end is a necessary part of a switch to processing unconventional crude oil feedstocks, and is not an incidental modification.***

The Phillips66 Negative Declaration (ND) is misleading and incomplete in its Project Description. It is missing pieces of the picture that relate directly to the potential of the Project to enable a change in the crude types processed at the Los Angeles refinery to shale oils and tar sands crudes, causing significant environmental impacts. 2-8

First, the ND states incorrectly and in conclusory fashion that the Crude Unit heater firing rate is "considered" to be the baseline at the Refinery, and that because the Project does not include modifications to the Crude Unit throughput or heater firing rate, and does not include changes to process units downstream of the Crude Unit, the Project will not change the baseline operations of the Los Angeles refinery. The ND states:

> The current operations of the Crude Unit, including the heater firing rate at or near the permit limit, is considered to be the baseline at the Refinery and the proposed project does not include modifications to the Crude Unit throughput or heater firing rate. Therefore, current operations of the Crude Unit would not be expected to change as a result of the proposed project. Additionally, for the same reasons, the proposed project will not modify operations of process units located downstream of the Crude Unit. Therefore, the proposed project would not change the baseline operations of the refining processes or capacity at the LARC or the crude throughput of the Refinery. (1-10 to 1-11)

2-9

But the California Environmental Quality Act (CEQA) requires an analysis of actual potential environmental impacts, not a description of generalized perceptions of baseline operation. This analysis leaves out key details relating to switches in crude quality and their impacts at the refinery. Assuming, for the sake of argument, that there is no change to Crude Unit throughput or heater firing rates, this still does not preclude changes at the refinery due to the Project that cause significant environmental impacts.

To the contrary, the Project includes modifications occurring *at the input* to the Crude Unit that are key to enable the processing of heavier crude oils, and are especially key for Canadian heavy crudes, including tar sands. Processing dirtier crude oils can cause increased emissions and impacts even without substantially modifying downstream refinery operations; although the potential for such changes downstream are also discussed later in this comment. 2-10

Specifically, this project involves modifications to the desalting and heat exchanger operations associated with the Crude Unit. An industry paper, *Designing a crude unit heat exchanger network,* (2012)[1] describes the key role played by the desalter and heat exchanger "cold train," which is an *input* to the Crude Unit, and which itself is fed by the Project's new crude storage

[1] *Designing a crude unit heat exchanger network, Preheat train design for heavy Canadian crudes can be very , challenging, requiring an approach not normally required with other crudes,* Tony Barletta and Steve White, Process Consulting Services, Krish nan Chunangad Lummus, Technology Heat Transfer, Published in: Sour & Heavy 2012, www.eptq.com, "The refining, gas, and petrochemicals processing website," http://www.cbi.com/images/uploads/technical_articles/Crude-unit-heat-exchanger.pdf , Attached as Exhibit A

tanks. This paper highlights the crucial design and temperature requirements of desalting operations needed in order to process unconventional crudes:[2]

> The cold train heats the crude from the storage tanks to the desalter through seasonal changes in raw crude temperatures. For example, Canadian crude oil pipeline temperatures vary seasonally from 20-40°C, with the optimum desalter temperature varying from 120-140°C, depending on the crude blend. The amount of cold train duty that needs to be shifted to meet the wide range of desalter temperatures, while also handling the variable raw crude temperature, is very large. This is a major challenge because of the large amount of swing heat that must be moved before and after the desalter.

2-10 cont.

The paper finds that Canadian Crude oil, and tar sands oils or bitumen in particular, require adjustments to the desalter train design:

> Compared with other crudes, heavy Canadian crude processing requires more flexibility in the preheat train to adjust the desalter temperature in order to avoid asphaltene precipitation. Distillation column heat removal requirements require more flexibility because of seasonal diluents flow rates and variable crude compositions. The amount of required flexibility should be quantified as an objective of the preheat train design. (at 4)

The following ND excerpt describes water separation from incoming crude oil as merely a matter of moving the water draw from the Sour Water Stripper said to be operating "mostly" at capacity, instead to the new water draw surge tank, in order to allow treatment of the water in the Brine Stripper (a desalting operation). This involves three new heat exchangers "designed to raise the temperature of the water." This is exactly the type of change described by the paper above. The ND states:

> Crude oil received at the LARC contains small amounts of water, which are separated from the crude oil and accumulate in the bottom of the crude oil storage tanks. The accumulated water, referred to as water draw, is transferred from the crude oil storage tanks into a smaller water draw surge tank for processing prior to disposal. Currently, the water draw from all existing crude oil tanks is processed in the Sour Water Stripper, which mostly operates at maximum capacity. In order to consolidate and more efficiently manage water draw from crude oil tanks, the water draw from all existing crude oil tanks and new crude oil Tank 2640 is proposed to be routed to the new water draw surge Tank 2643. **The new 14,000 bbl water draw surge tank would allow LARC to treat the water in the Brine Stripper, which performs the same function as the Sour Water Stripper but has excess capacity.** No modifications are required to the Brine Stripper, but new equipment would be added to adjust the temperature of the water from Tank 2643 prior to entering the Brine Stripper. The new equipment would consist of three new heat exchangers **designed to raise the temperature of the water before entering the Brine Stripper,** and a steam trap to remove condensed steam after the heat exchangers. (at 1-9 to 1-10 (emphasis added).)

2-11

[2] Unconventional crudes are not strictly defined, but generally considered to include tar sands, shale oils, and deepwater crudes.

The ND discusses this as a benign matter of convenience. But in fact this is exactly the type of design change described in the paper above which specifically enables the processing of these heavier crude oils in the refinery. Furthermore, additional debrining (desalting) capacity is being added to the refinery, since the ND, as shown above, states that the Brine Stripper is not operating at capacity. The baseline is the current operation of the brine stripper, so this expanded use of debrining represents a type of debottlenecking allowing this change in crude feedstocks.

2-11 cont.

Another publication, a *Special Report: Refiners processing heavy crudes can experience crude distillation problems* (Oil and Gas Journal),[3] explores this same issue, again confirming that these key desalting and heat exchanger design modifications are needed to enable processing heavier crude feedstocks, necessitating increasing desalter temperatures as follows:

> **Processing tar sands crudes creates some unique challenges.** These crudes can have high sediment and clay contents and some blends also have high viscosity. **Desalter operations are more difficult and there is an increased likelihood of stable emulsion formation.** If desalter performance deteriorates, the corrosion rate in the atmospheric column Overhead system may increase and cause reliability problems.
>
> Crude blends with gravities <22° API require sufficient cold exchanger train preheat to achieve efficient desalting, which typically requires a desalter temperature between 270° and 300° F. **The desalter must separate the emulsion into low-salt crude and oil-free water. With a heavier crude feed, the desalter temperature can decrease by 30° to 40° F.,** if no additional surface area is added to the cold exchanger train. **The desalted crude's salt content can increase dramatically if the temperature is too low.** Many heavy crudes such as Zuata or Merey can have high salt contents depending on production field operations; therefore, good desalter performance is critical. **Poor cold exchanger train designs often cause low desalter temperatures, poor salt removal, and periodic upsets that send large quantities of brine to the atmospheric heater and column.** High chlorides to the atmospheric heater generate large quantities of hydrochloric acid (HCl). Severe fouling in the crude column's top, rapid fouling and corrosion in the atmospheric condenser system, and severe overhead line corrosion often reduce crude runs and unit reliability. (emphasis added throughout)

2-12

The Phillips 66 Project switch to processing through the Brine Stripper with additional heat exchangers to raise the temperature of the water, is again, exactly the kind of process design described by this report, and the ND has glossed over the purpose of this process change.

The ND does acknowledge at one point that the Project would provide "flexibility" in the types of crude oil the refinery may obtain. However inaccurately, the ND states in a conclusory way that the only thing that matters is the frequency of filling and emptying tanks, rather than also the modifications which allow changes in refinery feedstocks, or crude oil quality:

2-13

[3] Oil and Gas Journal, Special Report: Refiners processing heavy crudes can experience crude distillation problems, 11/18/2002, available at http://www.ogj.com/articles/print/volume-100/issue-47/special-report/special-report-refiners-processing-heavy-crudes-can-experience-crude-distillation-problems.html , attached as Exhibit B

> **The increase in permitted throughput of the two existing storage tanks would provide flexibility for LARC to be able to blend multiple types of crude oil** in order to obtain the optimal crude oil properties for refining. Therefore, the proposed project would only increase the crude oil storage capacity and the frequency of filling and emptying of the tanks at the LARC. (ND, at p. 1-3)

2-13 cont.

There are differences in the levels of contaminants and other characteristics of these unconventional crudes that cause major impacts when refined, discussed later in this report.

A third article (*Innovative Solutions for Processing Shale Oils)* which is a second from Hydrocarbon Processing, discusses problems specific to shale oil processing including Bakken shale, as highly variable oils which can lead to asphaltene destabilization when blended with heavier crudes. This results in fouling of the cold preheat train, fouling of hot preheat exchangers and furnaces, problems in transportation, storage, refinery corrosion, and crude unit shutdowns:[4]

> The refining of shale oil (also known as tight oil) extracted through fracturing from fields such as Eagle Ford, Utica and Bakken has become prevalent in many areas of the US. Although these oils are appealing as refinery feedstocks due to their availability and low cost, processing can be more difficult.

2-14

> The quality of the shale oils is highly variable. These oils can be high in solids with high melting point waxes. The light paraffinic nature of shale oils can lead to asphaltene destabilization when blended with heavier crudes. These compositional factors have resulted in cold preheat train fouling, desalter upsets, and fouling of hot preheat exchangers and furnaces. Problems in transportation and storage, finished-product quality, as well as refinery corrosion, have also been reported. Operational issues have led to cases of reduced throughput and crude unit shutdowns. The problems encountered with shale oil processing and possible prediction and control strategies will be presented.

This article also identifies increased levels of extremely hazardous hydrogen sulfide that can be present, and other problems with shale oil. The likelihood of Phillips increasing use of tar sands and Bakken crude oils, and the associated impacts, are discussed below.

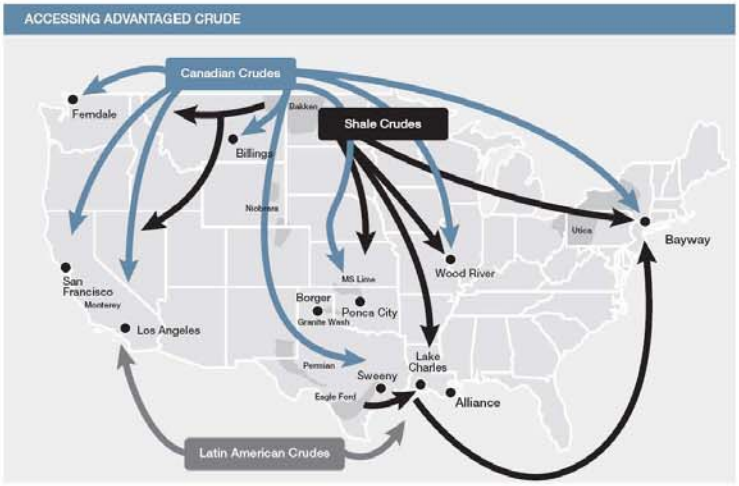
2. *Phillips has public plans to switch to an increasing percentage of these unconventional crudes, to be brought in by rail*

Phillips 66 showed in its Annual Report business plans emphasizing new use of "Advantaged Crudes," in other words, cheaper unconventional crude oils including Canadian tar sands crude, and Bakken Crude (from the Dakotas) and to bring them to West Coast refineries including the

2-15

[4] Innovative Solutions for Processing Shale Oils, Hydrocarbon Processing, 7/10/2013, http://www.hydrocarbonprocessing.com/Article/3223989/Innovative-solutions-for-processing-shale-oils.html, attached as Exhibit C

Los Angeles refinery by rail, as well as by marine vessel, as explained in the accompanying legal comments, and as shown in the report's map and statements below: [5]



2-15 cont.

For instance the annual report states:

> **In 2012, we reached an agreement with a railcar supplier to manufacture 2,000 crude oil railcars for the transport of shale crude to our East and West Coast refineries.**
>
> "Representatives from key areas of our business had been working on our crude-by-rail strategy." Said Joe Gallagher, director Commercial Truck and Rail. "We wanted to get a railcar order in quickly so we could get the cars in service and deliver cost-advantaged crude to our refineries as soon as possible."

The annual report also describes Phillips' business plan to *add export capability*, so that not only will its West Coast U.S refineries produce for the U.S. market, but they can also service China, India, and Brazil:

> Export Capability
>
> **The ability of U.S. refiners to access lower-cost crudes and natural gas provides a unique competitive advantage over many international refiners.** The United States has more than enough refining capacity to meet domestic demand and **studies show that much of the growth in demand for refined products will come from rapidly developing nations, such as China, India and Brazil,** with lower demand in the more developed regions of the world. The potential to export enables U.S. refineries to maintain high capacity utilization, resulting in lower per-unit costs and sustaining jobs at the facilities.

2-16

[5] Phillips 66, 2012 Summary Annual Report, at p. 20, available at: http://www.phillips66.com/EN/about/reports/Documents/Phillips-66-Summary-Annual-Report.pdf , attached as Exhibit D

> **Phillips 66 will continue to primarily serve domestic markets and will explore opportunities to meet growing demand overseas when opportunities exist.** At the end of 2012, we had the capability to export up to 285,000 BPD of refined products from our domestic refineries. **Several projects to further expand our export capability in our Gulf and West Coast refineries are expected to increase our total export capability to 370,000 BPD by the end of 2013.** This represents 30 percent of the clean products produced in our coastal refineries. We expect to be a key source of improving R&M margins over the next several years. (emphasis added)

2-16 cont.

Bloomberg also reported on the trend for West Coast refineries including Phillips 66 major shift toward rail shipment of cheap heavy crude oil, which it reports will drive cleaner oil out by 2014:[6]

> **The increasing volume of domestic oil making its way to the West Coast will drive light oil imports out of the region by the end of 2014,** Paul Y. Cheng, an analyst at Barclays Plc (BARC)'s investment-banking unit in New York, said.

It noted this increasing trend by rail in California, and that Phillips 66 is specifically planning rail offloading:

2-17

> **California, the world's ninth-largest economy, shipped via rail more oil than ever in February from North Dakota's Bakken formation,** while Russian imports to the region slid to 713,000 barrels from a June 2012 record of 6.53 million. . . .
>
> Tesoro, based in San Antonio, is already using rail to bring 50,000 barrels a day of Bakken to its Anacortes refinery in Washington and 5,000 barrels to the Golden Eagle plant in Northern California. Alon USA Energy Inc. (ALJ), **Phillips 66** (PSX), BP Plc (BP/) and Valero Energy Corp. (VLO) **are planning rail-offloading stations at their West Coast refineries**.

Tar sands crude developers in Canada are currently constrained by pipeline volume out of Canada (which is driving the crude by rail trend). Oil developers noted their target market of California in this press report: "Would it be beneficial to refiners to get this Canadian crude into the refineries in California and the West Coast?" said Charles Drevna, president of the American Fuel & Petrochemical Manufacturers trade group, this April. "The short answer is yes. The long answer is heck yes."[7]

2-18

CEO Greg Garland, has also been quoted on Phillips 66's webpage, as saying "We are looking at **pipe, rail, truck, barge and ship** -- just about any way we can get advantaged crude to the front end of the refineries." *See, e.g., Transcript of Dec. 13, 2012, Phillips 66 Analyst Meeting*.[8]

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[6] Bakken Boom Cutting West Coast Imports of Crude: Energy Markets, Bloomberg News, June 21, 2013, http://www.bloomberg.com/news/2013-06-21/bakken-boom-cutting-west-coast-imports-of-crude-energy-markets.html attached as Exhibit E

[7] Anchorage Daily News, April 21, 2013, http://www.adn.com/2013/04/21/2873796/pipeline-project-quietly-moving.html#storylink=cpy

[8] Available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/PSX_Investor_Transcript_12_13.pdf;

Phillips 66 defines this "advantaged crude" as including "heavy crude oil from Canada and Latin America, lighter Canadian grades, and West Texas Intermediate (WTI)." [9]

Moreover, Hydrocarbon Processing Magazine published an article stating that the oil industry no longer cares if the Keystone Pipeline gets built, because it now has other options for transporting the oil, such as those listed above.[10]

Fox Business News further reported last December that Phillips 66 Executive Vice President (VP) had specifically identified its Los Angeles refinery in these efforts:[11]

> . . . **So instead, local refiners are angling to bring in oil from places such as the Bakken fields** of North Dakota and the Eagle Ford and Permian Basin in Texas, **turning to railways** to tap into domestic production that is running at its highest in two decades. **The incentive is clear.** Bakken was priced at around $82 a barrel on Friday, while roughly similar quality ANS crude from Alaska was nearly $106, according to Reuters data. That's a steal, even accounting for the up to $15 a barrel cost of shipping the oil by rail from North Dakota to the West Coast.
>
> **Phillips 66, which runs refineries in Los Angeles and San Francisco, is "looking for everything we can find," says Tim Taylor,** executive vice president of commercial, marketing, transportation and business development. **Its West Coast plants already use rail to export refined fuels and have some capacity for unloading crude, he added.**

2-18 cont.

Notably, the VP was quoted stating that **the LA refinery already has some capacity for unloading crude by rail**. This shows that the Project identified in the ND enables Phillips 66 to immediately utilize different types of crude through changes at the refinery front end which increase desalting capacity. Because the ND is missing analysis about how this change modifies the type of crude that can be input, it is also missing a quantification of the volume of crude oil change that can be processed due to the increased capacity at the brine stripper, the added heat exchangers and the potential resulting impacts. This change needs to be analyzed in a full EIR.

Phillips 66 stated again on its website that it has a specific target for switching to advantaged crudes to reach an additional 500,000 bpd (barrels per day) from 2011 to 2017, which is an additional 28% of its entire U.S. refining capacity (of 1.8 million bpd), involving 2,000 railcars (757 barrels each, which is almost 32,000 gallons[12]), as shown in the following table from its website, entitled "**Advantaged Crude by numbers**:"[13]

2-19

Transcript of May 21, 2013, Phillips 66 Presentation at UBS Global Oil & Gas Conference, last accessed Aug 7, 2013; http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/2013%20UBS%20Oil%20and%20Gas%20Conference.pdf last accessed Aug 7, 2013.

[9] Available at: http://www.phillips66.com/EN/newsroom/feature-stories/Pages/AdvantagedCrude.aspx, last accessed Aug 7, 2013.

[10] Hydrocarbon Processing, 9/4/2013, http://www.hydrocarbonprocessing.com/Article/3251320/Blogs/US-refiners-dont-care-if-Keystone-XL-pipeline-gets-built.html

[11] December 10, 2012, http://www.foxbusiness.com/news/2012/12/17/analysis-california-refiners-dreamin-shale-oil-face-hurdles859141/

[12] 1 barrel = 42 gallons

[13] Phillips 66 website, "Advantaged Crude by the Number" January 2013, http://www.phillips66.com/EN/newsroom/feature-stories/Pages/AdvantagedCrudebytheNumbers.aspx

Global crude oil refining capacity	2.2 million BPD
U.S. crude oil refining capacity	1.8 million BPD
Average volume of advantaged crude oil processed at Phillips 66 U.S. refineries in the fourth quarter of 2012	1.1 million BPD
Targeted increase in new or increasingly advantaged crude oil processed from 2011 to 2017	500,000 BPD
Number of new crude oil rail cars to be delivered in 2013-2014	2,000
Capacity of each rail car/Total capacity of new rail car fleet	757 barrels/1.5 million barrels
Number of Jones Act Vessels under long-term charter to deliver advantaged crude oil	2
Brent crude price as of February 22, 2013	~$114/barrel
WTI price as of February 22, 2013	~$93/barrel

2-19 cont.

The trend toward crude by rail is driven by the price differential between more conventional foreign crudes, and cheaper crudes such as Canadian tar sands and Bakken. These prices do fluctuate, and a recent financial report described a slow-down of rail shipment due to the reduction in this price differential. However, the financial publication predicted that even if the price differential isn't quite as big as it had been and rail shipments may not grow as fast as they were, rail still remains attractive due to the flexibility it allows for oil refineries to switch feedstocks quickly with price changes:[14]

> **The bottom line**
>
> Looking ahead, however, I don't expect crude-by-rail shipment volumes to fall sharply, though I do suspect they probably won't grow as fast as they have over the past couple of years. **Rail still remains one of the most attractive alternatives to pipelines and, in some cases, the only viable option for shipping crude from remote oil-producing regions of the country.**
>
> When compared to pipelines, rail frequently offers greater flexibility since it allows shippers to more easily reroute oil based on price differentials, which are constantly in flux. It also offers a much speedier time to market, sometimes two or three weeks faster than pipelines. **Lastly, rail features shorter-term contracts than pipelines and lower regulatory risk -- factors prized by many customers.**

2-20

In addition to the price differential between conventional crudes and so called advantaged crude, these factors increase the incentive for oil companies to get the infrastructure in place for crude by rail now, in order to have this flexibility, and in order to take advantage of the price differentials when they become larger. Such infrastructure modifications include those identified for this Project; i.e., front end desalting and heat exchangers increases.

3. ***The switch to a higher percentage of unconventional crude oil processing includes increased crude contamination and higher energy use, causing major impacts***

2-21

[14] AOL Money and Finance, The Daily Finance, http://www.dailyfinance.com/2013/09/28/is-the-collapse-of-the-brent-wti-spread-a-threat-t/

While Phillips already processes many heavy crude oils, these differ from the unconventional crude oils that Phillips 66 has now targeted for major expansion at its refineries including the Los Angeles complex, including heavy Canadian tar sands crude and Bakken shale oil.

Although Bakken shale is generally light (meaning a relatively lower carbon content compared to heavy crude oil) and sweet (low sulfur), it is unlike conventional light sweet crude, in that there are still many problems with processing it, and it can cause severe wax buildups when transported and processed. This is discussed below in relation to another excerpt from the previously cited Hydrocarbon Processing article (*Innovative Solutions for Processing Shale Oils. . .*), and later in the section on rail transport.

The article found use of shale oils was particularly problematic when blended with heavy crudes, which is very likely to happen at the Los Angeles refinery complex, since it is designed for heavy crudes. (See below, where a variety of crudes are identified for this refinery.) This blending can cause agglomeration of large molecules onto surfaces inside refinery units which can crack and leave coke-like deposits if the surfaces are hot.[15] Coke deposits lead to poor operation and can cause shut down of units before planned maintenance periods. In addition, the article found shale oils to be highly variable in certain characteristics including for example, its solids content, and others.

2-21 cont.

Furthermore, shale oils can include high levels of extremely hazardous hydrogen sulfide (H2) gas, but when scavenging agents are used to reduce H2S presence, these can also cause corrosion and form solid deposits inside refinery processing units.

Specifically, the article states:

> Due to their paraffinic nature, mixing shale oil with asphaltenic oil leads to destabilization of the asphaltene cores. Asphaltenes are polar compounds that influence emulsion stability. Once the asphaltenes destabilize, they can agglomerate, leading to larger macro-molecules. On hot surfaces, agglomerated asphaltenes easily crack or dehydrogenate and gradually form coke-like deposits.
>
> **Several shale oil production locations have high H_2S loading.** To ensure worker safety, scavengers are often used to reduce H_2S concentrations. The scavengers are often amine-based products-—methyl triazine, for instance—that are converted into mono-ethanolamine (MEA) in the crude distillation unit (CDU). Unfortunately, these amines contribute to corrosion problems in the CDU. Once MEA forms, it rapidly reacts with chlorine to form chloride salts. These salts lose solubility in the hydrocarbon phase and become solids at the processing temperatures of the atmospheric CD towers and form deposits on the trays or overhead system. **The deposits are hygroscopic, and, once water is absorbed, the deposits become very corrosive.** These physical properties are responsible for the problems that are being experienced by refineries handling shale oils.

2-22

Unconventional crude characteristics can also include increased metal content. Of course, tar sands crude oil causes major environmental damage during its mining, as described by the World

2-23

[15] Coke is a petroleum product that is mostly the carbon leftover after making gasoline from crude oil. Coke is a fuel, and similar to coal, as an energy source that results in high GHG and criteria pollutant emissions, and significant heavy metal content.

Resources Institute, which rather mildly states the severe impacts:[16] "*The local and regional environmental impacts of heavy oil and tar sands production can include: significant water consumption, massive earth moving and ecosystem disturbance, increased criteria and other air pollution, and release of heavy metals and toxic materials.*"

Canadian tar sands are even heavier than most heavy conventional crudes (higher carbon content, requiring additional energy to process and increasing emissions) and have higher sulfur content. Contaminants must be removed during refining, which increases hazardous materials present within the refinery and can lead to dangerous corrosion within refinery operations units. These also increase energy needed for refining, resulting in higher greenhouse gas and smog-precursor emissions.

2-23 cont.

Earlier I cited an Oil & Gas Journal article which identified the need for additional desalting and temperature controls in order to process unconventional crude oils. This and the other articles identified many problems with processing unconventional crudes, emphasizing that it is not just *volume* of crude throughput that determines environmental impacts, but also the characteristics or *quality* of the crude oils. The Oil and Gas Journal article (*Refiners processing heavy crudes can experience crude distillation problems)* also identified a number of differences in the content of unconventional crudes (such as tar sands and others):

> Heavy crudes have much higher microcarbon residue (MCR), asphaltenes, and metals. As mandated refinery gasoline and diesel pool sulfur specifications take effect, minimizing cat feed hydrotreater (CFHT) feed contaminants becomes more important. In some cases, vanadium in the CFHT feed has increased from less than 1 ppm to 5-10 ppm with heavy Venezuelan crudes.[1] **High feed-stream contaminants can reduce run length to less than half the planned turnaround interval.** Optimizing the atmospheric column flash-zone and wash section, and the vacuum unit design can reduce CFHT feed vanadium by 30-40%. . . .
>
> Heavy crudes have higher viscosities, some have higher salt content, several have high naphthenic acid content, and they are all more difficult to distill than lighter crude blends. Some upgrader crudes also have lower thermal stability than conventional crudes and higher fouling tendencies due to the increased likelihood of asphaltene precipitation. . . .
>
> High chlorides to the atmospheric heater generate large quantities of hydrochloric acid (HCl). Severe fouling in the crude column's top, rapid fouling and corrosion in the atmospheric condenser system, and severe overhead line corrosion often reduce crude runs and unit reliability.

2-24

A few of these problems are discussed in more detail below, but a complete inventory and evaluation of differences in the crude oils to be processed at the refinery due to the Project changes needs to be evaluated for environmental impacts.

a. Increased hydrochloric acid corrosion

Hydrochloric acid corrosion discussed above causes potential reliability problems and increases accident risk. Especially since the article above found that these contaminants can reduce the run

2-25

[16] http://www.wri.org/publication/content/10339

time of units to half of planned turnaround time (which means that process problems occur long before scheduled maintenance), this can result in upsets that at the least increase emissions and require unscheduled shutdowns, and at worst, are life-threatening to workers and dangerous to neighbors' health.

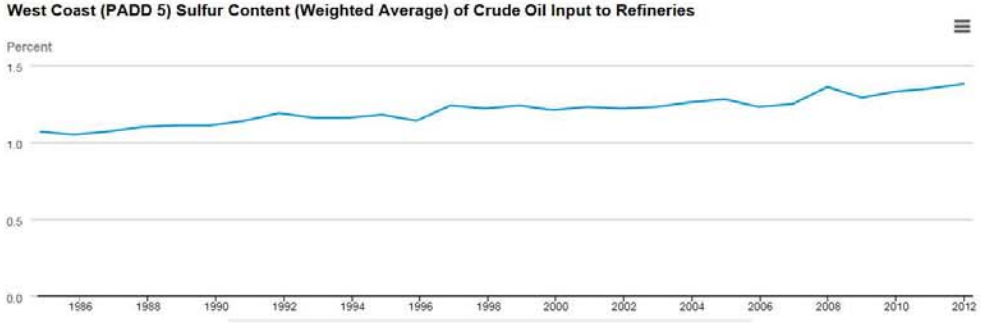
2-25 cont.

b. Increased sulfur compound corrosion

Another type of corrosion due to increased *sulfur* content in crude oil is a major increasing risk at oil refineries. Unconventional crudes, especially extremely high sulfur tar sands crude, can make this drastically worse. Increased sulfur content problem already caused a major explosion at a California refinery, indicating that we are moving to a very dangerous point in refinery operation in the state. Any increase in sulfur content in crude oil slates at California refineries should now be considered to cause a significant impact. (This problem was substantiated by the U.S. Chemical Safety Board report on the Chevron explosion; see discussion below.)

The U.S. Energy Information Administration (EIA) charted the trend in increased sulfur content, as in the chart on West Coast refinery crude oils, which were up from just over 1% to an average of about 1.4 percent in 2012: [17]

2-26



(The EIA also found this increase on a national basis.[18])

California refineries dominate the data in the chart above for the West Coast region called PADD5.[19] Only imported crude data is provided by the EIA for individual refineries, so domestic crude from California and Alaska are missing.

As bad as this trend already is, use of unconventional crude oils can make it much worse. For example, Western Canadian Select crude oil has a very high sulfur content (3.5%), far higher

[17] U.S. EIA, chart downloaded 10/8/2013, pdf of website page, available at: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mcrs1p52&f=a

[18] US EIA, "The average sulfur content of U.S. crude oil imports increased from 0.9 percent in 1985 to 1.4 percent in 2005, and the slate of imports is expected to continue "souring" in coming years. Crude oils are also becoming heavier and more corrosive . . ." http://www.eia.gov/forecasts/archive/aeo06/pdf/0383(2006).pdf

[19] California made about 67% or 2.2 million barrels per day (bpd) in 2006 out of 3.2 million PADD5 total. (EIA does not provide such data separately for California in total.) From CBE report: *The Increasing Burden of Oil Refineries and Fossil Fuels in Wilmington, California and How to Clean them Up!*, at p. 10 and endnotes, available at http://www.cbecal.org/wp-content/uploads/2012/05/wilmington_refineries_report.pdf

than the state average.[20] Although the Phillips 66 Los Angeles refinery complex already processes high sulfur crude, it is the average of the total volume that would increase due to the use of unconventional crude oils. Based on my experience and review of Phillips crude oil domestic and imported crude oil, it is doubtful that the current average is this high. 2-26 cont.

My review of U.S. EIA data including reporting on Phillips 66 crude oil quantities, sulfur content, and API gravity, for the Phillips 66 Los Angeles refinery crude oil for 2012 (imports only) shows that its crude import sulfur content varied from about 0.79% to only a couple of instances with as high as 3.34% sulfur.[21] (Phillips also uses substantial domestic crude, but unfortunately this is not required to be reported to EIA, but should be reported in a full EIR.) The imported crude was made up of roughly half high sulfur and half lower sulfur crude oils. Most of the higher sulfur crudes still had much lower sulflur content than Western Canadian. It is these imported crudes that are likely to be replaced by "advantaged" crude oils from Canadian tar sands and Bakken shale at Phillips, so there is clearly a major potential for a significant increase in sulfur content. 2-27

The ND should have identified baseline crude slates and sulfur content data at the Phillips 66 Los Angeles refinery complex, in addition to the percent sulfur of the unconventional crudes which can potentially be processed due to the Project changes discussed, and volumes of the baselines and crude changes.

In addition to the overall sulfur compound percentage in crude oil, even light sweet Bakken crude (low sulfur), can have dangerously high levels of H2S along with the crude. A report by Bakkenshale.com found:[22] 2-28

> Is the Bakken producing higher volumes of H2S? That's the question you have to ask yourself when you see pipelines implementing H2S standards for the first time.
>
> On May 8, Enbridge submitted an emergency application to the Federal Energy Regulation Commission (FERC) asking to amend its conditions of carriage to 5 ppm of H2S or less. If accepted, Enbridge would have the right to reject crude with higher levels of H2S. . . .
>
> **Enbridge acted after it found concentrations of 1,200 ppm in a crude tank at its Berthold Terminal. 20 ppm is the limit allowed by OHSA and an average of 10 ppm of exposure is all that is allowed over an 8-hour work day.**
>
> Both Plains Marketing and Murex Petroleum objected to the FERC application, but it looks as if they solved their differences when Enbridge notified FERC it wasn't planning an outright ban on crude with higher H2S concentrations. The two companies weren't against the change, but were afraid they couldn't comply in the time frame planned.

[20] Western Canadian Select (WCS) fact sheet, Cenovus Energy, http://www.cenovus.com/operations/doing-business-with-us/marketing/western-canadian-select-fact-sheet.html, attached as Exhibit F
[21] 2012 US EIA data, for Phillips 66 Los Angeles refinery, available at: http://www.eia.gov/petroleum/imports/companylevel/archive/
[22] May 30, 2013, http://bakkenshale.com/pipeline-midstream-news/bakken-producing-sour-gas-h2s-problem-in-north-dakota/ attached as Exhibit G

Thus hazardous and corrosive sulfur compounds can either be part of the crude characteristic, but also can be transported with otherwise low sulfur crude oil. The Chemical Safety Board report also identified that H2S was a particularly aggressive corrosive agent.[23] These issues must be evaluated through a full EIR to prevent severe safety risks associated with crude slate changes.

2-28 cont.

The problem of sulfur corrosion increasing accident risk was unfortunately born out at Chevron Richmond in California last August, when a major explosion barely avoided killing 19 workers, but did send 15,000 neighbors to the hospital, after a huge black plume traveling many miles through the Bay Area resulted from the crude unit explosion, which burned for many hours. The same kind of sulfur corrosion found at the Richmond refinery was identified at the Chevron El Segundo refinery in Southern California by the U.S. Chemical Safety Board report regarding the Richmond explosion. Steelworkers also testified at the U.S. Chemical Safety Board hearing on the Chevron explosion that such sulfur corrosion is a statewide problem at California oil refineries.[24] The Chemical Safety Board found the Richmond accident was caused by sulfur corrosion that Chevron had been aware of, and had repeatedly ignored, and the report showed that sulfur content had increased. The photos below show the heavy impact not only in Richmond, but across the San Francisco Bay Area due to this accident.

Please also see a full discussion of corrosion issues at oil refineries due to increased sulfur content in crude oil, and other important related issues in the attached report of Greg Karras on the Phillips 66 *Rodeo* refinery EIR,[25] where a new rail project is also in the works. This report demonstrates in further detail the impacts of sulfidation corrosion demonstrated by the US Chemical Safety Board, causing the massive explosion in August of 2012 in the Chevron Richmond refinery, pictured below. The U.S. Chemical Safety Board report is also available.[26] The significance of the air pollution impacts are evident in the photos below.

2-29

[23] *Id.* at p. 33
[24] U.S. Chemical Safety Board transcript of public hearing on Chevron Richmond, CA August 2012 explosion and fire, page 225, http://www.csb.gov/assets/1/19/0503CSB-Meeting.pdf
[25] Expert Report of Greg Karras, CBE, 4 September 2013, Regarding the Phillips 66 Company Propane Recovery Project Draft Environmental Impact Report released in June 2013 by the Contra Costa County Department of Conservation and Development, Attached as Exhibit H
[26] Interim Investigation Report, Chevron Richmond Refinery Fire, (which as adopted at the July public hearing) available at: http://www.csb.gov/assets/1/19/Chevron_Interim_Report_Final_2013-04-17.pdf Attached as Exhibit I

2-29 cont.

c. Increased heavy metal emissions

As identified in the Oil and Gas Journal report, unconventional crudes contain higher metal content. Because there were so many issues missing from the ND, it is difficult to document all the missing issues in this report, but increased toxic heavy metals should be evaluated through a full EIR. Please see the report of Dr. Phyllis Fox for a discussion of increased metals, and many other issues that directly apply here, related to the use of tar sands crude oil proposed to be brought in by rail at the Valero Benicia, California refinery.[27]

2-30

d. Increased emissions and risk of accidents from rail and other transport of unconventional crudes

The July 6, 2013 crash of a train ferrying 73 tanker-cars carrying Bakken crude oil crashed in Lac Mégantic, Quebec and ensuing explosion leveled a town, killing dozens and injuring hundreds. Energy news reported the following statements regarding risk of rail transport (*Bakken crude makeup faces scrutiny in rail car explosion*):[28]

> "Oil, even at very low pressures … still has some natural gas dissolved in it, and that gas will try to form a gaseous state every time there's a pressure drop," University of Texas, Austin, petroleum engineering professor Paul Bommer said in an interview.
>
> Loading the ill-fated crude into tank cars that rode the Montreal, Maine and Atlantic Railway Ltd. to Lac-Mégantic likely caused a small pressure drop, Bommer added, leaving room for "a fairly minor gaseous phase" to remain. "And gas, we all know, is extremely combustible."
>
> The Federal Railroad Administration warned the oil industry three weeks after the derailment that it had concerns about widespread misclassification of crude on the tracks as well as the potential for chemicals used in hydraulic fracturing to corrode rail cars used for shipping oil.

2-31

[27] Comments on the Initial Study / Mitigated Negative Declaration, Valero Benicia Crude by Rail, June 1, 2013, Dr. Phyllis Fox, attached as Exhibit J

[28] Posted 9/10/2013, by Energy Wire, Midwestern Energy News, E&E Publishing, LLC, http://www.midwestenergynews.com/2013/09/10/bakken-crude-makeup-faces-scrutiny-in-rail-car-explosion/ Attached as Exhibit K

As a result of the accident (which was close to Maine), U.S. Congressional Members Pingree and Michaud met with federal agencies to review hazardous materials transport by rail, and provided the following report:[29]

> "After the accident in Quebec, there have been a number of safety concerns raised—both specifically in response to it and others that are longstanding. While it is still too early in the investigation to determine exactly how this tragedy could have been prevented, the design flaws of DOT-111 tank cars are well documented. We appreciate the Pipeline and Hazardous Materials Safety Administration's efforts to advance a rule to update the design of these cars, but progress is frustratingly slow given the initial delay. The federal rulemaking process is a cumbersome one, but we need to avoid any further delays, especially given the exponential growth of hazardous material shipments. Whether its oil, ethanol, or some other hazardous material travelling on our nation's tracks, the American people deserve to know that these shipments are being carried in tanker cars that are designed to the highest safety standards," said Michaud and Pingree.

Obviously there is a potential for increased accidents whenever there is increased rail transport of crude oil. This should have been evaluated in a full EIR due to the Projects' design changes facilitating unconventional crude import, and Phillips' stated intent to use such transport.

2-31 cont.

Please also see the attached *Future of Crude by Rail to the West Coast Part 2,* which identifies the many ways that crude can be transported to the West Coast by rail, either directly to oil refineries, or to centralized shipping centers being proposed, or to Bakersfield or other inland areas for input into existing pipelines. This indicates that a variety of transport methods will be used including rail, ship, and pipeline to get Canadian and Bakken crudes to California and the West Coast in general.[30] A full EIR is needed to evaluate the increases of all of these transportation modes, since Phillips will not exclusively rely on any one means.

2-32

In addition to accident potential, other transportation problems have been identified due to rail, truck, pipeline, ship and even truck transport and storage of shale oils, again from the Hydrocarbon Processing Article (Innovative Solutions …) due to paraffinic (wax) buildup:

> Another challenge encountered with shale oil is the transportation infrastructure. Rapid distribution of shale oils to the refineries is necessary to maintain consistent plant throughput. Some pipelines are in use, and additional pipelines are being constructed to provide consistent supply. During the interim, barges and railcars are being used, along with a significant expansion in trucking to bring the various shale oils to the refineries. Eagle Ford production is estimated to increase by a factor of 6—from 350,000 bpd to nearly 2 MMbpd by 2017; more reliable infrastructures are needed to distribute this oil to multiple locations. Similar expansion is estimated for Bakken and other shale oil production fields.
>
> **The paraffin content of the shale oils is impacting all transportation systems. Wax deposits have been found to coat the walls of railroad tank cars, barges and trucks.**

2-33

[29] Federal Agencies to Review Hazmat Rail Rules Wednesday, July 31, 2013 Michaud, Pingree meet with Pipeline and Hazardous Materials Safety Administration, Attached as Exhibit L http://pingree.house.gov/index.php?option=com_content&task=view&id=1070&Itemid=24#sthash.m65A8kjB.dpuf

[30] RBN Energy LLC, 10/6/2013, Attached as Exhibit M, http://www.rbnenergy.com/coast-bound-train-the-future-of-crude-by-rail-to-the-west-coast-part-2

> Waxy deposits in pipelines regularly require pigging to maintain full throughput. Bakken shale oil is typically transported in railcar, although pipeline expansion projects are in progress to accommodate the long-term need. **These railcars require regular steaming and cleaning for reuse.** Similar deposits are being encountered in trucks being used for shale oil transportation. **The wax deposits also create problems in transferring the shale oils to refinery tankage. Fig. 4** shows samples of deposited wax collected from pigged pipelines[31] in shale oil service.

The article provided a photo ("waxy deposits removed from shale oil buildup"):

2-33 cont.

The article also identified multiple chemical dispersants used to mitigate these problems not only during transportation, but also within refineries where these shale oils are processed. Such chemicals must be identified in a fuel EIR in order to assess the impacts of their use. The article also found that steam cleaning is used to remove such deposits from railcars. Such activities should be identified and associated impacts evaluated.

(Such waxy building within the refinery should also be evaluated for safety risks.)

e. Increased unconventional crude processing greatly increases greenhouse gas emission

The ND discusses only two types of increased greenhouse gas emissions (GHGs) due to the project – emissions due to third-party power (electricity), and GHG emissions due to construction. The ND did not evaluate the major increase in GHG emissions due to the switch to dirtier crude feedstocks.

2-34

Regarding third party power use, the ND states that emissions will by definition all be taken care of by the state's Cap and Trade program. It finds that because this program exists, therefore there will be no increase in GHG emissions above the SCAQMD threshold. (Unfortunately, the efficacy of this program is far from demonstrated, in fact, substantial evidence of its ineffectiveness[32] is part of the regulatory record, but for now, let us leave this aside.) The ND states that no change in GHG operational emissions is expected at the LARC.[33]

[31] A "pig" is launched through a pipeline until it reaches a receiving trap, in order to clean and inspect pipeline

[32] The efficacy of California's Cap and Trade program is by no means a demonstrated fact. The Cap and Trade program and particularly its offsets provisions are highly controversial and not demonstrated to succeed in reducing greenhouse gas emissions. In fact, substantial evidence has been submitted into state regulatory proceedings showing that all pollution trading programs failed in the early years, and many never succeeded in reducing pollution even after years: 34 Colum. J. Envtl. L. 395 (July 17, 2009), Overallocation Problem in Cap-and-Trade:

> Sources regulated by the cap must reduce their GHG emissions or buy credits from others who have done so. This means that the additional power utilized at the LARC as a result of the proposed project cannot result in an increase in GHG emissions from the increased use of third-party power, compared to GHG emissions at the time of issuance of the NOP. The proposed project does not affect compliance with the requirements of AB32, **since no change in GHG emissions at LARC from operation of the proposed project are expected**. Therefore, the proposed project would not conflict with AB32, the applicable GHG reduction plan, policy, and regulations that have been adopted to implement AB32.
>
> Thus, the SCAQMD's GHG significance threshold for industrial sources would not be exceeded. Based on the preceding analysis, implementing the proposed project is not **expected** to generate significant adverse cumulative GHG air quality impacts. (emphasis added)

The ND finds only 63 metric tons/year in emissions (from purchased power), and 43 metric tons per year from "30-year Amortized Construction" are expected: 2-34 cont.

TABLE 2-6

Estimated GHG Emissions for the Proposed Project
(metric tons/year)

Source	CO_2e
Third-Party Power(1)	63
30-Year Amortized Construction	43
Total GHG w/ Construction	**106**
Significance Threshold	**10,000**
Significant?	**No**

(1) Anticipate less than 25 kW increase in purchased power from SCE.

If 30-year Amortized construction means that the GHG emissions are averaged over 30 years, more specifics should be provided on the actual peak emissions in the shorter time frame, especially relating to GHGs other than CO2 and methane that have strong short term impacts, but which are under- or un- regulated .

But beyond these problems, the main issue with the gross underestimation of GHG emissions due to the Project is related to the processing of unconventional crude oils (shale and tar sands), which have different qualities from conventional crude oil, and can require far more energy to refine. The ND states categorically that there will be no changes in downstream refinery processing, but does so without providing any evidence to demonstrate the existing baselines for the downstream units and crude oil transportation facilities (including rail, ship, and pipeline baselines). 2-35

This flies in the face of the evidence because: 1) the Project redesign is the same kind needed to allow increased processing of unconventional crude oils, 2) Phillips has stated it plans such a switch, 3) such a switch requires increased processing to remove sulfur contaminants, to crack

Moving toward Stringency, The; McAllister, Lesley K.,
http://www.columbiaenvironmentallaw.org/assets/pdfs/34.2/7._McAllister_34.2.pdf.
The European Trading program srepeatedly failed to meet its emission reduction goals.
[33] At p. 2-28

heavy hydrocarbons, and for coking operations. Under these circumstances, the ND has a major gap, in the failure to provide any evidence but conclusory statements that there will be no changes. 2-35 cont.

Furthermore, an expert report submitted relating to the Valero Benicia, California refinery rail project of this year found that refineries have a price incentive to purchase heavy, sour Canadian tar sands over Bakken light sweet crude. Canadian tar sands crude oils require greatly increased energy to process.

A CBE peer-reviewed study (Karras, CBE, Environmental Science and Technology 2010[34]) documented that crude oil density or API gravity (heaviness of crude oil) and sulfur content (which usually accompanies heavy crude) strongly predicts high energy intensity, meaning it takes a lot of energy to refine this crude oil. High energy use means high carbon dioxide emissions from this processing. This high energy intensity drove a 39% increase in greenhouse gas emissions across regions and years at oil refineries.

Although it took a rigorous study to prove it, this result makes common sense, because oil refineries must do more intensive cracking when crude oils contain a higher percentage of heavy, long-chain hydrocarbon molecules, in order to produce shorter molecules that make up gasoline and diesel liquids, and they must strip sulfur compound contamination out of this high sulfur crude, requiring high amounts of hydrogen.[35] 2-36

It is essential that a full EIR be provided that fully discloses actual refinery baselines (not just permitted levels of operation, but also actual levels of operation). In addition to crude unit baselines (including heaters), this should include hydrotreaters (which strip sulfur), cracking units (which break up long chain hydrocarbons found in heavy crude oil), coking (which processes the heaviest bottom of the barrel fraction of crude, which is a higher percentage of heavy crude oils), hydrogen unit production (needed for stripping sulfur compounds and make-up hydrogen), and outside hydrogen purchases. These will provide the evidence regarding whether the downstream baselines will increase or not.

Further, a full EIR should be prepared which identifies the refinery modifications of the last few years and planned modifications, in order to identify their relationship to this Project.

4. *The major new tank capacity enables large future refinery expansions* 2-37

[34] Greg Karras, CBE, Combustion Emissions from Refining Lower Quality Oil: What Is the Global Warming Potential?, *Environ. Sci. Technol.* **2010,** *44,* 9584–9589, http://pubs.acs.org/doi/abs/10.1021/es301915z Attached as Exhibit N

[35] Stripping sulfur compounds requires making large amounts of hydrogen. Also, "make up" hydrogen is required to be added when cracking long hydrocarbons. New hydrogen plants at oil refineries have been shown to add a million tons per year of CO2 emissions to a single refinery. In addition to vastly increasing energy needed to make gas and diesel, dirty crude oil means a great increase in processing acutely hazardous sulfur gases such as hydrogen sulfide. This can be released during accidents.

The Negative Declaration (ND) states:[36]

> **Description of Nature, Purpose, and Beneficiaries of Project:** Phillips 66 is proposing to increase crude oil storage capacity at its Los Angeles Refinery Carson Plant by installing one new 615,000 barrel crude oil storage tank with a geodesic dome, increasing the annual permit throughput limit of two existing 320,000 barrel crude oil storage tanks, and installing geodesic domes on the same two existing 320,000 barrel crude oil storage tanks.

Later, the ND finds that the reason for this major crude storage increase is to reduce the time in-port for tankers offloading large crude quantities:

> The current capacity of the existing storage tanks limits vessel delivery volumes to Panamax vessels (400,000 bbl capacity), which are the size limits of vessels that can travel through the Panama Canal. For larger vessels, such as Aframax (720,000 bbl capacity) or Suezmax (1,000,000 bbl capacity), the current capacities of the existing storage tanks require two ship calls to unload the entire volume of a larger vessel, resulting in seven to 10 days when the ship remains in the port area. When a ship larger than Panamax calls, LARC accepts delivery of the first portion of the crude oil into the existing tanks then processes the crude oil through LARC to make room in the receiving tanks to accommodate the second discharge from the larger vessel. In order to avoid the extra wait time, which increases costs and creates additional vessel hoteling emissions, LARC needs more crude oil tankage storage capacity to accommodate the larger vessels so the entire volume of crude oil can be unloaded in one ship call.

2-37 cont.

While it is true that these new tanks can enable reducing expensive port-time for large tankers, this storage capacity also massively increases one piece of the refinery's overall crude oil processing capacity at the front end. The company stated above that it plans to expand in the future into the business of *exporting* refinery products to other countries, including from its West Coast refineries. Adding this tankage provides one major piece of such a project that should not be separated from future refinery projects that enable such expansions. This major tankage increase must be evaluated as part of such future expansions. It may also be that the refinery plans to separate storage of unconventional crude oils with varying characteristics from other storage. These issues need to be evaluated in a full EIR.

5. Even emissions associated with the limited Project description were undercounted

VOC (Volatile Organic Compound) emissions from operation of the Project were calculated in the ND at 50.83 lbs/day (rather close to the threshold of 55 lb/day), and during construction were estimated at 65.3 lbs/day (not far from the SCAQMD 75 lb/day CEQA construction threshold). Only minor increases in emissions would put the Project over the CEQA significance thresholds. The following emissions sources were not assessed in the ND. Not only is there a fair argument that these have the potential to cause operation emissions to exceed the SCAQMD 55 lb/day CEQA threshold, due to the number of these missing sources, it is very likely these would cause exceedance of the threshold:

2-38

[36] at 2nd page of Notice of Intent to Adopt a Draft Negative Declaration (ND)

- Oil layer in water draw surge tank: VOC emissions from the ongoing presence, and from collection and removal of crude oil accumulation in the water draw surge tank which were not provided and should be calculated, related to identified conditions in the ND:[37]

  > "Over time, a thin layer of crude oil is expected to form in the water draw surge tank. Accumulated crude oil from the water draw surge tank would be collected and transferred back to the new crude oil storage tank."

  These may be uncontrolled emissions, and should be described and quantified.

2-38 cont.

- Tank cleaning and degassing: Storage tanks must be periodically cleaned. Emissions from tank cleaning operations for preparation for the modifications of the existing tanks, and later tank cleaning during ongoing operation of both existing and new tanks, was not identified and assessed. Because refinery crude oil storage tanks are very large, and over time crude storage results in accumulation of heavy sludge (called tank "bottoms"), this must periodically be cleaned and removed. SCAQMD Rule 1149 (Storage Tank and Pipeline Cleaning and Degassing) controls but does not eliminate these emissions from the extremely large volumes of hydrocarbon product in these tanks.[38] Tank cleaning and degassing protocols and frequency should be identified and emissions calculated.

  In addition, the Hydrocarbon Processing article (Innovative Solutions) identified storage tank waxy buildup and sludge as a specific problem with shale oil storage, with a solution to use chemicals to break up the waxes. The impacts, effects on tank operation and cleaning, and impacts of solutions such as chemicals used to break up waxes, should also be evaluated in an EIR process.[39]

2-39

- Pipeline cleaning and degassing: Pipelines are also periodically cleaned and degassed, and in this case, emissions would likely occur not only during future pipeline operation and maintenance activities, but also during the construction connection process with the new tanks. Again, Rule 1149 applies, but does not eliminate all emissions. Further, shorter runs of pipe are exempt, as described in the SCAQMD staff report, and so would not be controlled.[40] Identification of the pipeline lengths, connectors, construction activities, operation, and maintenance activities, including cleaning and degassing, and fugitive emissions from connectors should be specifically described and emissions quantified.

2-40

- Flaring of tank and pipeline gases: If flares are used to control degassing emissions for tanks and pipelines, the gas volumes, flare hydrocarbon destruction efficiency, and

2-41

[37] At p. 1-9

[38] Final Environmental Assessment: Proposed Amended Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing, April 2008, SCAQMD, Attached as Exhibit O, http://www.aqmd.gov/ceqa/documents/2008/aqmd/finalEA/FEA1149.pdf

[39] *"Due to the variation in solids loading and their paraffinic nature, processing shale oils in refinery operations offers several challenges. Problems can be found from the tank farm to the desalter, preheat exchangers and furnace, and increased corrosion in the CDU. In the refinery tank farm, entrained solids can agglomerate and rapidly settle, adding to the sludge layer in the tank bottoms. Waxes crystalize and settle or coat the tank walls, thus reducing storage capacity. Waxes will stabilize emulsions and suspend solids in the storage tanks, leading to slugs of sludge entering the CDU. Waxes will also coat the transfer piping, resulting in increased pressure drop and hydraulic restrictions."*

[40] At p. 1-13

remaining VOC emissions from flaring should be identified (as well as NOx, SOx, particulate matter, and other emissions). 2-41 cont.

- Crude diluent emissions: Additional emissions during the transport, piping, tank loading, and continued operation from volatile diluents used with expanded unconventional crude oils that Phillips has stated as its plans for the refinery have not been identified, and should be, with emissions quantified. Diluents can be very volatile and include BTEX compounds (Benzene, Toluene, Ethylbenzene, and Xylene, which are both toxic, and smog precursor VOCs).[41] In addition to the highly reactive ozone-precursor quality of such diluents, they need to be identified and evaluated as toxic air contaminants, due to carcinogencity and other health impacts. 2-42

- Rail transport emissions: In addition, potential VOC and other emissions from rail transport of the crude oil must be evaluated, since the refinery *currently* has rail capacity to unload unconventional crudes. Not only do these crudes have the potential to be unconventional, the company has specifically announced its intention to import such crude by rail, but has not discussed this within the ND. The potential for expanded rail transport for the purpose of delivering crude to the greatly expanded tanks must also be evaluated (also see section on rail transport). 2-43

- Unplanned process shutdowns: Because unconventional crude oils can reduce run-time to half that of planned turnarounds (planned maintenance schedules) as identified in the earlier-cited Oil & Gas Journal article, this means additional air emissions. Unplanned refinery shutdowns increases startup / shutdown and maintenance emissions include increased flaring emissions, potential pressure relief device venting to atmosphere, and also increase the risk of fires and explosions with many associated emissions (not only VOCs, but particulate matter, hydrogen sulfide, all the criteria pollutants, toxics including PAHs (polycyclic aromatic hydrocarbons), and many more). They also increase safety risks for workers and neighbors) 2-44

6. *Conclusion – a full EIR should be prepared*

My conclusion is that there is an abundance of evidence of significant environmental impacts due to this Project, requiring the preparation of a full EIR as discussed above. Because the ND incorrectly portrayed this Project as relatively a minor change, there were numerous environmental impacts missing. While I identified a number of these, the full range of impacts were too numerous to provide in a relatively short report. An EIR would rectify this problem by providing a full scoping and evaluation of these numerous issues. Furthermore, implications for the associated Wilmington portion of Phillips' Los Angeles operations must be fully identified. 2-45

[41] Please see the details in the comments of NRDC on the Notice of Intent to Adopt a Mitigated Negative Declaration for the Valero Crude by Rail Project, July 1, 2013, Attached as Exhibit P, which provide a detailed discussion of impacts of diluents used with Canadian Crude oil, and other important impacts related to the Valero Benicia crude by rail project in common with the Phillips 66 Los Angeles refinery complex.

List of Exhibits:

- Exhibit A Designing a crude unit heat exchanger network
- Exhibit B Oil and Gas Journal Heavy Crudes and Distillation Unit problems
- Exhibit C Innovative Solutions for Processing Shale Oils - Hydrocarbon Processing
- Exhibit D Phillips-66-Summary-Annual-Report
- Exhibit E bakken-boom-cutting west coast imports of crude - Bloomberg
- Exhibit F Western Canadian Select Fact Sheet
- Exhibit G bakken-producing H2S
- Exhibit H Karras Exp Rpt P66 Rodeo
- Exhibit I Chevron_Interim_Report_Final_2013-04-17
- Exhibit J Report by Dr. Phyllis Fox Valero Benicia Crude by Rail
- Exhibit K bakken-crude-makeup faces scrutiny in explosion
- Exhibit L Federal Agencies to Review Hazmat Rail Rules
- Exhibit M coast-bound-train-the-future-of-crude-
- Exhibit N Karras Combustion Emissions from Refining Low Quality Oil
- Exhibit O FEA1149 SCAQMD tank and pipe cleaning and degas
- Exhibit P NRDC comments NOI Mit ND Valero Crude by Rail

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Experience

1989-present

Industrial & energy use planning for pollution prevention / Science team manager / Environmental engineering consultant and regulatory analyst: Identification and quantification of industrial air pollution sources including criteria pollutants, toxics, and greenhouse gases, especially in the oil industry. Identification of pollution prevention methods and engineering solutions related to episodic and ongoing chemical releases. Also electrical power plant, long term electricity planning, and evaluation of alternative energy options. Research of best and worst industrial and energy use practices and chemical phase-out. Compiling health and environmental impacts data, analyzing air monitoring and permitting data. Evaluation of technical basis of regulatory compliance with environmental laws. Working through practical issues of regulation, negotiating with industry and government agencies to craft health-protective regulatory language. Translating inaccessible technical information into lay language educational materials. Technical assistance for communities on impacts and solutions on environmental health protection regulation, permitting, and policy. Managed four-person science department for statewide environmental organization. Hired by regulatory agency as technical advisor to community members to identify feasible air pollution controls not previously adopted. Consultant to various environmental organizations outside California on environmental permitting issues.

- **Evaluation of air emission and other impacts from proposed permits for individual U.S. fossil fuel industry expansions including refineries, oil drilling, pipelines, and coal gasification:** Evaluation of oil industry emissions and solutions regarding permitting of feedstock switches to Canadian tar sands crude oil at ConocoPhilips Wood River, BP Whiting, Detroit Marathon, and proposed new MHA Nation, North Dakota, refineries, as well as dozens of refinery expansions in Northern and Southern California. Evaluation of oil drilling operations, air impacts, public safety hazards, earthquake and subsidence hazards, public nuisance hazards and solutions in residential neighborhood in Southern California. Evaluation of pipeline transport impacts of crude oil, hydrogen, and other oil industry feedstocks in California and the Midwest. Evaluation of coal gasification plant air emissions. (1990s to present)
- **Development of model California oil industry criteria pollutant regulation, proposed greenhouse gas regulation and alternatives analysis:** Developed multiple proposals ultimately adopted for addition to ozone attainment plans in Northern and Southern California of model oil refinery regulations for flares, pressure relief devices, tanks, leakless fugitives standards, petroleum product marine loading, and others. Technical working group member in State of California regulation of greenhouse gas and co-pollutants (smog precursors and toxics). Developed recommendations for regulation of oil industry greenhouse emissions, sources, alternatives, and reporting; the State found these recommendations feasible and recommended regulation. (1990s to present)

- **Evaluation of emissions and phaseout opportunities for smaller industrial sources including metal finishing, foam manufacturing, wood finishing, electronics, consumer products, etc**.: Evaluation of air emissions and unnecessary use of ozone depletors, carcinogens, and reproductive toxins, direct negotiation with individual companies to identify specific chemical elimination options in lieu of penalties for environmental violations. For example, metal degreasing was replaced with benign alternatives (soap and water) or grease use eliminated, by talking through use with manufacturers. Phaseout of chemicals was over a million pounds of various substances from many sources. (1990s)

Education

1981 **B.S. Engineering**, University of Michigan, Ann Arbor

Engineering principles, mathematics, thermodynamics, physics, materials science, chemistry, electronic circuit design, solid-state physics, and others; majored in electrical engineering.

Positions

2004- present **Independent Environmental Consultant (2004 - ongoing) and Senior Scientist, Communities for Better Environment (2006 – present)** -- Industrial pollution quantification, short and long term energy use evaluation, analysis of impacts and solutions to environmental problems including trends in oil industry crude feedstocks, electricity system planning, associated equipment changes, emissions of criteria pollutants, toxic emissions, and greenhouse gases. Technical consultant in community campaigns on industrial regulation and pollution prevention. Geographic areas include Southern & Northern California; multiple U.S. states.

2001-2003 **Statewide CBE Lead Scientist, CBE,** Oakland, CA

Responsible for accuracy and value of technical evaluations within community and environmental law enforcement campaigns, also led statewide technical staffing. Analysis and recommendations on adding regulation to Bay Area Ozone Attainment Plan (flares, pressure relief devices, wastewater ponds, storage tanks, and others) ultimately adopted. Identified underestimations in power plant expansion air emissions in communities with high asthma rates; identified alternatives options including conservation, non-fossil fuel energy, and transmission availability to prevent need for fossil fuel expansion, before California Energy Commission. Evaluated Environmental Impact Reports and Title V permits of refineries and chemical plants; identified potential community impacts and solutions. Frequently a primary negotiator during successful talks with industrial facilities and government agencies regarding environmental violations, identifying technical pieces for Good Neighbor Agreements and for bringing facilities into environmental compliance.

1990-2001 **Clean Air Program Director, Northern California Region, CBE**

Analysis of oil refinery, power plant, cement kiln, smelter, dry cleaner, consumer product, lawn mower, mobile source, and other air pollution sources, neighbor and worker health impacts, with pollution prevention policy development. Successfully advocated for national models of oil refinery regulation. Evaluated and documented root causes of industrial chemical accidents as part of community campaigns for industrial safety. Technical assistance to community members negotiating Good Neighbor Agreements with

refineries. Successful advocacy for adoption of policies eliminating ozone depletors in favor of benign alternatives.

1987-1990 **Research Associate, CBE**

Led successful campaign working closely with maritime workers and refinery neighbors for adoption of strict oil refinery marine loading vapor recovery regulation, which became statewide and national model. Member of technical working group at BAAQMD evaluating emissions, controls, safety, and costs. Also analyzed school pesticide use and won policy for integrated pest management on school grounds.

1986 **Assistant Editor of appropriate technology publication, Rain Magazine**, Portland, OR -- Publication on innovative environmental success models around the U.S. and the world. Compiled, co-edited, wrote, and provided production for non-profit publication.

1981-1985 **Integrated Circuits Design Engineer, National Semiconductor Corp., Santa Clara, CA** - Electronics engineering design team member for analog-to-digital automotive engine controls for reducing air emissions. Troubleshooting hardware and evaluating fault-analysis software efficacy.

A few special activities

2002-2003 **Roundtable on Bay Area Ozone Attainment Progress** - Invited member of problem-solving group of decision makers including BAAQMD board members, City Council members, industry CEOs and trade group directors, California Air Resources Board (CARB) and US EPA officials, and others, for reviewing progress and proposing action to control San Francisco Bay Area regional smog.

1995-2003 **Negotiator for Optical Sensing Air Pollution Monitoring Equipment on oil refinery fenceline** - CBE signatory to enforceable Good Neighbor Agreement with Rodeo, California oil refinery, providing technical analysis for community negotiators, resulting in permanent installation of a state-of-the art air pollution monitoring system on the refinery fenceline, using optical sensing to continuously measure air pollution and broadcast data to a community computer screen. Reviewed manufacturer specifications, developed Land Use Permit language, and worked with refinery and manufacturer for better Quality Assurance/Quality Control. Worked with US EPA, Contra Costa County, and community groups evaluating the system and publishing a report.

1998-2002 **Program Administrator for Bucket Brigade air pollution monitoring**. Coordinated community groups of Contra Costa County Bucket Brigade project (funded by US EPA) who carried out training events in several communities surrounding major Bay Area refineries and chemical plants. The Bucket Brigade used low-tech air pollution monitors community members can build and operate, based on a standard air pollution sampling tedlar bags analyzed at certified laboratories. Provided community information on laboratory results, administered complex federal grant including quality assurance plan.

1997 **Installation of Photovoltaic Panels,** Solar Energy International, Colorado. Completed practical training on solar energy system design and installation for general electrical energy uses including water pumping, house cooling, etc, and applying energy conservation principles.

1993 **Chemistry of Hazardous Materials**, U.C. Berkeley Extension, for environmental professionals

Responses to Comment Letter No. 2
Communities for a Better Environment,
Ms. Julia E. May,
October 9, 2013

Response 2-1

This comment summarizes the commenter's expertise and credentials. This comment also broadly alleges that the project description is inadequate and that an Environmental Impact Report (EIR) should have been prepared for the proposed project.

The SCAQMD disagrees that an EIR is required for the proposed project. The sole purpose of the project is to provide sufficient storage capacity to offload a larger crude oil tanker in one visit to the marine terminal, and to treat the water draw from the associated crude oil storage tanks. More detailed responses regarding the commenter's claims of significant impacts that would warrant the preparation of an EIR are addressed separately, in these responses below.

Response 2-2

This comment claims that the air impacts from the new storage tank, pipeline cleaning degassing operations, and other emissions have been underestimated and are significant. This comment is a general summary of other more detailed comments on the same topic raised later in this letter (see Responses 2-39 through 2-44 to Comments 2-39 through 2-44, respectively). The commenter has based her opinion on incorrect facts and assumptions. The emissions from this project have been properly analyzed and detailed explanations supporting the decision to prepare a ND, as demonstrated by the emissions calculations, can be found in Responses 2-39 through 2-44.

Response 2-3

This commenter claims that the project description is incomplete because it does not identify changes that will occur to the refinery inputs to the Crude Unit. The comment claims that the proposed expanded use of the Brine Stripper and additional heat exchangers are for the purpose of increased desalting and temperature controls to enable processing of "advantage crudes" and that these products will be delivered by rail and ship. This comment alleges that the expanded use of the Brine Stripper and use of additional heat exchangers represent an increase above the LARC's crude oil refining baseline. This comment is a general summary of other more detailed comments on the same topic raised later in this letter (see Comments 2-8 through 2-20).

The commenter's conclusions are based on two fundamental misunderstandings of the project. First, the commenter incorrectly opines that the purpose of the project is to bring different and more crudes to the Refinery, thus changing Refinery operations. Second, the commenter erroneously concludes that the additional heat being added to the water treatment system can be used in crude oil processing systems to process crude oils. Neither of these opinions is accurate nor based on the facts of the proposed project. The SCAQMD believes that the commenter's opinion results from a misunderstanding on how the refining process works at this Refinery and the use of incorrect assumptions. Responses 2-8 through 2-11 will clarify any misunderstanding

of what constitutes the proposed project and, perhaps more importantly, explain what it is not. As stated in Response 2-1, the sole purpose of the Project is to allow the Refinery to offload a crude oil tanker in one visit to the marine terminal. When it arrives, the crude oil has a certain amount of water in it. This water separates from the oil and settles at the bottom of the storage tank. The crude oil floats on top of the water. This water must occasionally be removed, or "drawn" from the bottom of the tank so that an excessive amount of water does not accumulate in the crude oil storage tank.

The water from the crude tank and from other processes in the LARC can be treated in one of two systems to remove excess hydrocarbons and other impurities, the Sour Water Stripper or the Brine Stripper. Neither the Sour Water Stripper nor the Brine Stripper can be used to treat crude oil. As discussed in Section 1.5 of the Draft ND on page 1-8, the existing Sour Water Stripper currently receives water draw from the existing crude tanks. The Sour Water Stripper and the Brine Stripper perform the same function, but the Sour Water Stripper operates at a slightly higher temperature (by approximately 20 to 30 degrees F) than the Brine Stripper. To more efficiently manage wastewater, the water draw from the crude oil tanks will be routed to the Brine Stripper. The additional heat exchangers at the Brine Stripper will be used to heat water that is drained from the existing and new crude oil tanks. Since the Brine Stripper is not connected to any crude oil processing equipment, the additional heat cannot be used for the processing of crude oils. Additional detailed explanations regarding the purpose of the Brine Stripper and additional heat exchangers can be found in Responses 2-9 through 2-11. Therefore, the proposed project does not impact the types or amounts of crude oils that can be processed at the refinery as discussed in Responses 2-11 through 2-20.

Response 2-4

This comment requests an evaluation of the potential for an increased risk of accidents due to corrosion associated with worsening crude oil quality, greenhouse gases (GHGs), and other significant impacts to address “a type of debottlenecking of crude types that can be processed.” This comment is a general summary of other more detailed comments on the same topic raised later in this letter (see Comments 2-8, 2-10, 2-23, 2-29, and 2-34) and again is based on a misunderstanding of the proposed project and the refining process at this Refinery. As explained in Responses 2-8 and 2-10, the proposed project will not change the types or amounts of crude oil that are already being processed at the LARC, otherwise debottleneck any refinery units or remove current limitations on the types of crude oil than can be processed. As discussed in Section VIII. a) and b) on pages 2-48 through 2-49 and h) on pages 2-52 through 2-54 of the ND, the proposed project has no impact on the type of crude oil that is processed through the Refinery, and therefore, will not increase the hazard impacts associated with the operations at LARC. With no change in crude oil types associated with the proposed project, there is no foreseeable increase in risk of accidents related to the proposed project, as explained in Response 2-29.

As explained in section III. g) and h) on pages 2-27 and 2-28 of the Draft ND and Responses 2-23 and 2-34, GHG emissions increases associated with the proposed project are from construction and the 25 kilowatts per hour increase in electricity during operation. The GHG emissions associated with implementing the proposed project have been correctly calculated to

be 106 metric tons per year, which is well below the SCAQMD significance threshold of 10,000 metric tons per year. See, Draft Negative Declaration at pp 2-26 through 2-28, Table 2-6 and Appendix A. Therefore, the GHG emissions increases are not significant.

Response 2-5

The commenter incorrectly concludes that increasing crude oil storage capacity would allow other potential refinery expansions because increased storage can be used in many different refinery projects. This comment also claims that Phillips 66 publicly stated its intent to add export capability to its west coast refineries and that implies the proposed project will impact export capabilities at the LARC. Lastly, this comment requests that the proposed project and the corresponding emissions should not be piecemealed because the affected crude oil storage tanks will be used as part of other refinery expansions. Note that this comment is a general summary of other more detailed comments on the same topic raised later in this letter (see Comments 2-15, 2-16, and 2-17 and the corresponding responses).

This project does not contemplate any refinery expansion, now or in the foreseeable future. The basis for this project is that crude oil tankers are getting larger and the Refinery needs the capacity to offload a ship in one visit. The generalized corporate statement from Phillips 66 expressing the desire to expand export capabilities at its west coast refineries is neither specific to a particular project at LAR, nor is the statement tied in any way to this project. This tank application only requests additional tank capacity for the storage of crude oil, not finished refinery products. The SCAQMD permit limits the substance that may be stored in the new tank to crude oil only. The permit dictates that no finished products may be stored in the new or modified crude oil storage tanks. Expansion of refinery operations would require changes to processing units in the refinery proper and such changes would require changes to existing permits. For example, the capacity of the Refinery to process crude oil is limited by the size of the crude distillation column and the heat produced by the Crude Unit heater. The crude distillation column is the first place in the refining process where crude oil is separated into its various components for further processing. In order to process more crude oil, the Refinery would need to enlarge the crude distillation column and increase the fired rating of the Crude Unit heater, both of which require applications to the SCAQMD to modify the permit. No such permit applications are before the agency, thus there is no evidence of refinery expansion. Increasing crude oil storage does not increase the crude oil processing rate or the rate of production of finished products (for export or domestic use). Thus, the conclusions reached by the commenter are unsubstantiated opinion based on speculation, and an erroneous interpretation of the project scope. As noted in CEQA Guidelines §15064 (f)(5), "[a]rgument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence."

See also Response 2-9 for a discussion that relates to why the proposed project does not include an expansion of any other refinery units (i.e., increase crude throughput processed by the LARC).

Response 2-6

This comment claims that the proposed project is part of a broader, publicly acknowledged "project" to bring crude oil into California by rail and ship to be delivered to the LARC and these actions have the potential to cause major risk increases and must be considered as a cumulative hazard. Note that this comment is a general summary of other more detailed comments on the same topic raised later in this letter (see Comments 2-8, 2-14 through 2-29, and 2-31 through 2-33). The opinions of the commenter are incorrect for several reasons. Further explanation can be found in the responses that follow.

First, as explained above, the purpose of the proposed project is to provide sufficient crude oil storage capacity to allow a crude oil tanker to offload in one visit to the port. The need for the proposed project is to address the fact that crude oil tankers, and ships in general, are getting larger. This is occurring regardless of the source of the crude oil, or the amount of crude oil that is processed. See Responses 2-5 and 2-8 for additional information. Additionally, the corporate statement indicating the desire to bring "advantaged crudes" to California refineries lacks sufficient specificity to be considered a "project" under CEQA. The statement does not indicate any need to modify operations or Refinery equipment to bring in these crude oils, as the commenter concludes. The term "advantaged crude" does not refer to a particular type of crude oil as the commenter opines. "Advantaged crude" simply means any economically advantaged crude oil capable of being run at the refineries. These crude oils can come from anywhere in the world, depending on crude oil prices. See Response 2-15 for additional information. Also, even if the Refinery brought in more of the crude oils indicated by the commenter without the changing the overall volume of crude oil processed, (1) the shipment of such crude oils is independent of this proposed project, and (2) the Refinery is constrained in the type of crude oils it can run at the Refinery. Because of these constraints, the Refinery blends crude oils to meet the physical limitations of the Refinery. In order to run the crude oils mentioned by the commenter without blending, modifications would have to be made to the Refinery which would require permit changes and additional approvals. As explained in Responses 2-5, 2-8, and 2-15 through 2-20, the proposed project does not include any equipment or operational modifications necessary to process more or change the proportion of different types of crude oil. In addition, the proposed project would not bring in additional crude oils by rail or ship. Furthermore, the Refinery is already processing these particular types of crude oils within its blends, therefore, none of the impacts indicated by the commenter would occur. In other words, the proposed project does not affect the overall throughput of crude oil processed at the Refinery, the origination of crude oil arriving at the Refinery, or the quality of the crude oil refined at the Refinery. It simply addresses the fact that an increasing amount of crude oil is being delivered in large tankers. It is less costly to offload crude oil from the tankers in one visit and also lowers air quality emissions by reducing hoteling time. Finally, the Comments 2-21 through 2-29 regarding hazards associated with refinery operations are addressed in Responses 2-21 through 2-29. The proposed project would not result in a change in refinery operations so no new refinery hazards would be expected.

As explained in section VIII. a) and b) of the Draft ND, “[P]etroleum products are currently delivered to both the Wilmington and Carson Plants via pipelines from marine terminals and other facilities in the area as well as via trucks and rail cars. Following project completion,

petroleum products would continue to be delivered to both the Wilmington and Carson Plants via pipelines from marine terminals and other facilities in the area as well as via trucks and rail cars. The proposed project would not increase the amount of product produced at the Refinery or refined product transported to/from the Refinery via pipeline, ships, trucks or railcar. Because the proposed project does not increase the crude oil throughput in the Crude Unit, there will be no modification to the refining process or equipment. Any such changes would require permit modifications (see Response 2-5). Ship deliveries of crude oil are expected to occur in the same size vessels (e.g., Panamax, Aframax, and Suezmax) after implementation of the proposed project as the vessels used currently, so no increase in ship traffic is expected but the ships will spend less time maneuvering as a result of improved offloading efficiency from the proposed project (i.e., the elimination of the need for anchorage while waiting for storage space to free up in order to finish offloading). For these reasons, the proposed project would not result in an increase in transportation hazards. Thus, because there will be no significant increase in transportation, the impacts, including hazards and cumulative impacts, are expected to be less than significant. See Responses 2-31 through 2-33 for additional information on transportation hazards. Any potential future expansion is not a reasonably foreseeable consequence of this proposed project.

Response 2-7

This comment is for information and organization purposes of the specific comments only and no response.

Response 2-8

The SCAQMD disagrees that the project description in the ND is misleading. The commenter has made many unsupported assumptions of what might occur at the Refinery, none of which is an element of or a reasonably foreseeable consequence of the proposed project. As stated in the Introduction of the Draft ND (pages 1-1 through 1-3), Phillips 66 is proposing to build one large crude oil storage tank and increase the throughput on two existing tanks at the LARC so that large marine vessels can offload more crude oil during a single ship call. Larger ships currently deliver and are expected to continue to deliver crude oil to the Refinery. However, without enough storage capacity at the Refinery, the ships are required to partially offload the cargo, go out to anchor, and sit in the harbor until enough crude oil has been processed by the Refinery to make sufficient storage capacity available in the storage tanks to enable the remaining cargo to be offloaded. This process ties up the ship, is costly, and causes unnecessary excess emissions from the ship. It is well established that the shipping industry is building larger ships, including crude oil tankers, to reduce the cost of transporting goods. See the Port of Long Beach website explaining what the Port has done to prepare for the larger tankers (http://www.polb.com/news/displaynews.asp?NewsID =1127&TargetID=42). See also, PetroStrategies, Inc. website on Oil Transportation "The larger ships are used because they reduce the cost to transport a barrel of crude oil." (http://www.petrostrategies.org/ Learning_Center/oil_transportation.htm)

The Refinery tankage was built before the advent of these "mega" tankers and, therefore the tanks are too small to unload one of these large tankers in one visit. Currently, for any ships with

a capacity larger than 400,000 bbl (e.g., Aframax at 720,000 bbl capacity and Suezmax at 1,000,000 bbl capacity), offloading crude oil requires two ship calls to unload the entire volume, as explained above. The proposed new storage tank and the proposed increase in permitted throughput (e.g., number of times per month the tank is filled) on the two existing tanks would be used for storing crude oil delivered by ship, and are necessary to accommodate crude oil deliveries from the largest marine vessels that call at Berth 121 at the Port of Long Beach (e.g., one Suezmax at 1,000,000 bbl capacity).

The proposed increased tankage for crude oil delivered by ship will not cause the LARC to refine an increased volume of crude oil because the limitation on how much crude oil can be processed lies within the refining equipment itself. This means that even if the storage tank capacity were doubled, the Refinery could not process more crude than it currently is processing. The bottleneck lies within the Crude Unit, the first major processing unit to which the crude oil is sent from the storage tanks. The LARC has achieved maximum throughput on the Crude Unit and has achieved maximum firing on the heaters under existing conditions. As explained in Response 2-5, in order to process additional crude oil, the LARC would have to replace the existing crude distillation column with a larger column and the firing rate of the Crude Unit heater would need to be increased. There is no increase in refining process equipment operation as a result of the proposed project as evidenced by the fact that no SCAQMD permits for refining crude oil will be modified as part of the proposed project. The objective of the proposed project is to provide more tank capacity to enable the offloading of larger crude-cargo-volume ships (e.g., Suezmax and Aframax) during one ship call, rather than: 1) off-loading part of the ship; 2) sending the ship to anchorage (generating auxiliary emissions) until enough crude oil is processed at the LARC to make room for the remainder of the ship's cargo; and, 3) returning the ship from anchorage to offload the remainder of the cargo. The proposed project will reduce the cost associated with ship demurrage (i.e., additional hours spent waiting to unload the remaining cargo) and decrease ship emissions.

Specifically, section 1.5 of the Draft ND describes the proposed project as follow:

> "The Refinery is proposing to increase the crude oil storage capacity at the LARC and throughput (i.e., frequency of filling and emptying) of two existing tanks. The proposed project consists of the following activities that will occur within the LARC near the western boundary (see Figure 1-3 and Figure 1-4):
>
> - One new, 615,000 bbl nominal capacity (500,000 bbl working capacity) crude oil storage tank (Tank 2640) with a geodesic dome would be installed.
> - The permitted throughput limit of two 320,000 bbl nominal capacity existing external floating roof crude oil storage tanks, Tanks 510 and 511, would be increased from 4.562 million bbl per year to 18 million bbl per year for each tank and geodesic dome would be installed on each tank to control fugitive emissions.
> - Two new 2,100 gallons per minute (gpm) crude oil feed/transfer pumps would be installed to transfer crude oil into and out of the new tank (Tank 2640). One new, 14,000 bbl nominal capacity (10,000 bbl working capacity) water draw surge tank (Tank 2643), including geodesic dome, pumps, and pipelines would be installed.

- Three new heat exchangers and one steam trap to assist in water treatment would be installed.
- Tie-ins to the manifold of the Pier "T" crude oil delivery pipeline from Berth 121 would be installed.
- One new electrical power substation would be installed."

There is nothing included in the proposed project that relates to the modification of equipment necessary to process more crude oil in the Crude Unit or elsewhere in the LARC, as alleged in the comment. This point is explained on page 1-1 of the Draft ND as follows:

> "No changes to refining processes are included in the proposed project and the current refining processes are limited by permit conditions that would not be modified as part of the proposed project. Therefore, the baseline crude throughput rate and output of the LARC would not change as a result of implementing the proposed project."

The commenter incorrectly assumes that the Refinery will be processing different crude oils and that the new heat exchangers for water treatment will be used as a new source of energy to process heavier crude oils. The Refinery currently processes crude oil blends that consist of a variety of crude oils including the North American crude oils mentioned by the commenter. While the individual crude oils purchased by the Refinery continually change with market availability and demand, the crude oil blend that is processed through the Crude Unit must stay consistent to meet the processing constraints of the Refinery operations. The commenter's opinions do not take into account the processing of a crude oil blend, and thus do not reflect the operations at the Refinery. (See Valero Crude by Rail Draft EIR, Appendix K, June 2014, available at http://www.ci.benicia.ca.us/vertical/Sites/%7B3436CBED-6A58-4FEF-BFDF-5F9331215932% 7D/uploads/Appendix_K_McGovern_Report.pdf that explains how the Benicia Refinery must process a blended crude due to the Refinery's processing constraints.) As explained on page 2-18 of the Draft ND, the same constraints on American Petroleum Institute (API) gravity, sulfur content, and the Total Acid Number or TAN exist at the LARC. Therefore, the commenter's opinion that significant environmental impact will result from the processing of shale oils and tar sands crude oils will not occur at the Phillips 66 Refinery. Also, the new heat exchangers will be used to heat wastewater prior to processing in the Brine Stripper. As stated on pages 1-8 and 1-9 of the Negative Declaration, the Brine Stripper is a wastewater treatment unit; it is not a unit that processes crude oil (see Response 2-10 and Figure F-2). For these reasons, the commenter's conclusions are based on unsubstantiated opinions not related to the facts of this project and do not amount to substantial evidence of a significant impact (see Response 2-9). Lastly, the commenter has not provided any evidence or facts that would contradict this description of the processing configuration.

Response 2-9

This comment quotes and disagrees with the discussion in the Draft ND that explains the baseline firing rate and throughput to the Crude Unit will not change as a result of the proposed project. This comment also claims that even if there is no change to the Crude Unit throughput

or heater firing rates, there could still be changes at the LARC as part of the proposed project that could cause significant environmental impacts.

The opinion of the commenter that the baseline for the proposed project was based on "generalized perceptions" is incorrect. The baseline conditions for the proposed project were based on historical actual refinery operations, and the Draft ND properly analyzed all potential environmental impacts as required by CEQA. In particular, page 2-18 of the Draft ND discussed actual baseline conditions:

> "Crude oil processing is constrained by many factors including equipment design capacity, permit conditions, such as firing rates for combustion sources, and maintenance schedules of various operating units within the LARC. The processing rates are not influenced by storage capacity. The refining process rates fluctuate and have achieved maximum capacity periodically in the past and are expected periodically in the future. However, no changes are being proposed for the operating refining units that would affect the maximum capacity of the refining units including combustion sources."

The LARC has achieved maximum throughput on the Crude Unit and has achieved maximum firing on the heaters under existing (baseline) conditions at the refinery. The proposed storage project will not cause any changes to Refinery processing and therefore, the Refinery will not exceed these achieved maximum conditions, or increase the frequency of achieving maximum conditions.

With regard to "changes at the Refinery due to the project," the Draft ND (see pages 1-9 and 1-10) explains that the proposed project will not result in a change in operations in the crude oil processing portions of the LARC as follows:

> "While on-site storage capacity and tank throughputs (i.e., frequency of filling and emptying the tanks) would increase as a result of implementing the proposed project, the baseline refining capacity of the LARC will not change as explained below. The refining capacity of the LARC is constrained by a number of factors including equipment design parameters, market demand, equipment maintenance schedules, equipment permit limit conditions, and crude oil characteristics (e.g., sulfur content, acidity, specific gravity, etc.). The Refinery (both Carson and Wilmington Plants combined) has a refining capacity of 139,000 bbl per day (CEC, 2013). The refining capacity is based on the overall design of the refining processes within the Refinery. The heat required to first separate crude oil into various intermediate products, which are later refined further, dictates the amount of crude oil that can be processed overall by the Refinery. Specifically, the Crude Unit, the first step in the refining process, receives the crude oil directly from storage (e.g. from both the existing and proposed storage tanks), has firing rate limits on the heater. The Crude Unit operations fluctuate based on conditions of other process units within the Refinery, market demand, and crude oil characteristics. The Crude Unit heater routinely operates at various firing rates and normally operates at or near the permit limit. The current operations of the Crude Unit, including the heater firing rate at or near the permit limit, is considered to be the baseline at the Refinery and the proposed project does not include modifications to the Crude Unit throughput or

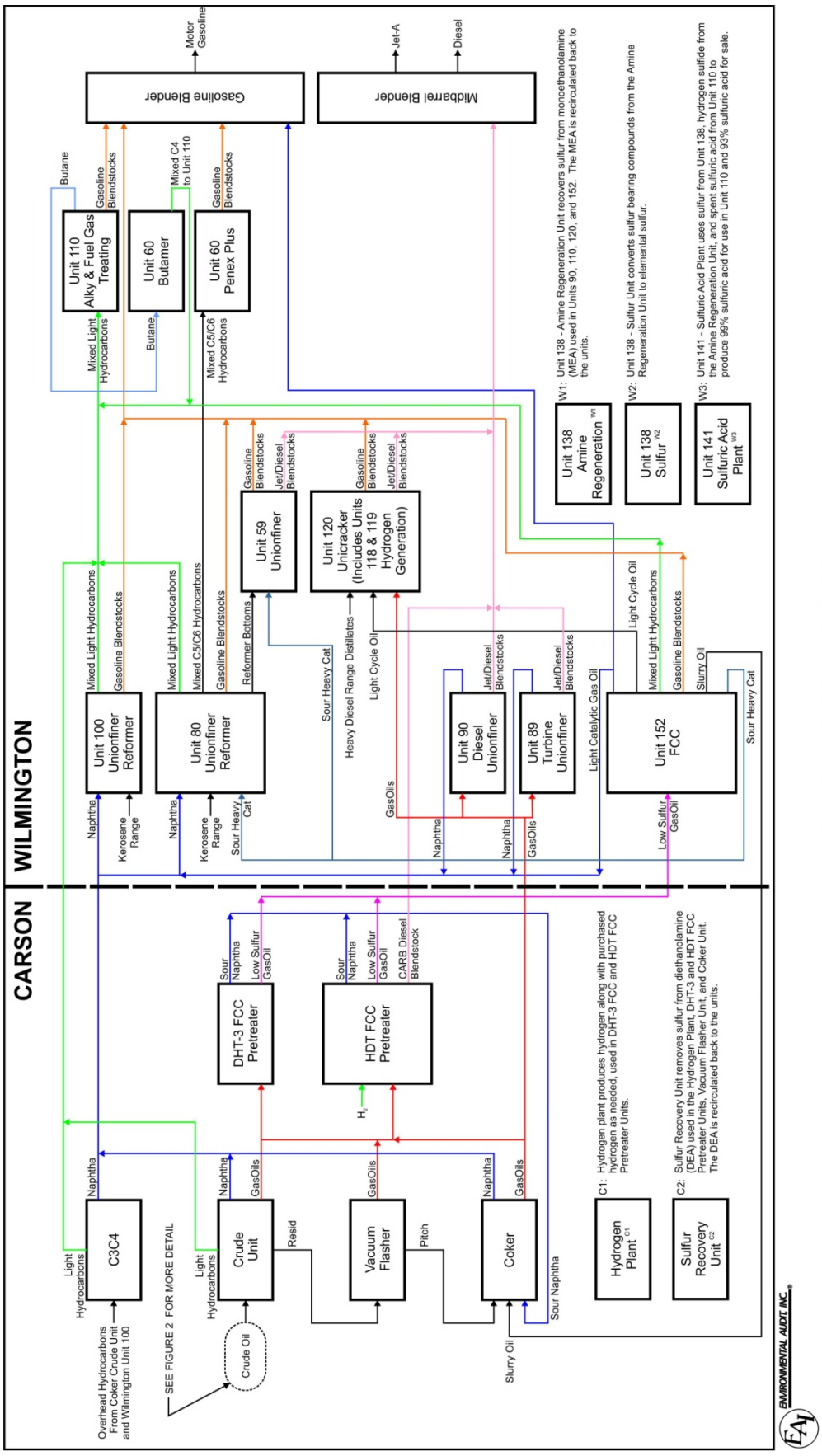
> heater firing rate. Therefore, current operations of the Crude Unit would not be expected to change as a result of the proposed project. Additionally, for the same reasons, the proposed project will not modify operations of process units located downstream of the Crude Unit. Therefore, the proposed project would not change the baseline operations of the refining processes or capacity at the LARC or the crude throughput of the Refinery."

Historically, crude oils from California, Alaska and other domestic sources have been heavy, high-sulfur crude oil. The Phillips 66 Los Angeles Refinery was designed to process crude oils that are heavy and high in sulfur. Impurities such as sulfur are common components in crude oil and can vary depending on the type of crude oil processed. As the petroleum fractions travel through the refinery processing units, these impurities can have a detrimental effect on equipment, catalysts, and the quality of the finished product. The hydrotreating employed by the Refinery does an effective job in removing many of the contaminants, especially sulfur, from many of the streams (Leffler, 1984[1]). As noted in the Draft ND, the types of crude oil delivered to LARC are dependent on a number of factors including cost and market demand. The proposed project is not dictating a change in crude oil delivery or causing a need to change crude oil types being delivered, or being proposed to allow for a change in crude oil quality. The Project simply allows the crude oil tankers to be offloaded in one visit to the marine terminal, irrespective of where the crude oil was sourced.

The types of equipment and equipment features that currently allow the refinery to process high sulfur, heavy crude oils include: 1) hydrotreating units, which remove sulfur from feedstocks; 2) hydrogen plants, which provide hydrogen to react with sulfur in the hydrotreating units and convert sulfur to hydrogen sulfide (H_2S); 3) sulfur recovery units, which convert H_2S to molten sulfur, which is then sold as a product; and, 4) appropriate metallurgy within the units to handle potentially corrosive materials. The features are currently operating in place and the proposed project will not change the operation of these units.

Phillips 66 operates two plants at its Los Angeles Refinery; the LARC and the LARW. The type of existing equipment that Phillips 66 operates at its Los Angeles Refinery allows it to already process heavy, high sulfur crude oils including the following: two hydrotreating units at LARC and four hydrotreating units at LARW; one hydrogen plant at LARC and two hydrogen plants at LARW; two sulfur recovery units at LARC and two sulfur recovery units at LARW; and a sulfuric acid plant at LARW. In addition to hydrotreating, the LARC also has a coker unit, which provides severe thermal cracking that allows the production of additional light ends (methane, propane, butanes) as well as gasoline, naphtha, gas oil, and naphtha range materials to be produced from heavy crude oils. As explained in the Draft ND, none of the above-mentioned equipment or process flow is being modified or impacted by the proposed project. Figure F-1 provides a simplified block flow diagram of the major refinery units.

[1] Leffler, William L., Petroleum Refining for the Nontechnical Person, Second Edition, Chapter XV, 1984, PennWell Publishing Co.: Tulsa, Oklahoma



SIMPLIFIED REFINERY FLOW DIAGRAM

Figure F-1
ORIGINAL IN COLOR

Project No. 2778
N:\2778\Figure F-1 Refinery Flow Diagram (rev4).cdr

The LARC is constrained in the type of crude oils it can process by the design of the facility. Because crude oil shipments originate from all over the world, each delivery of crude oil will have varying properties, such as API gravity[2], sulfur content, density, etc., and the type of crude oil that will be purchased for delivery in the future is speculative and cannot be predicted. In order for crude oil to be processed in the LARC, the properties of each crude oil type need to be analyzed so that the various crude oils can be blended to meet overall specifications that are within the range of what can be processed by the equipment. For instance, if the crude oil to be purchased by the LARC has a sulfur content higher than what can be processed by the equipment, LARC must blend it with a crude oil that has a lower sulfur content, so that the sulfur content of the overall blend falls within the proper specifications. The blend of crude oil that is processed at the LARC contains sulfur between the narrow range of one to three percent based on the processing constraints of the Refinery equipment. In the event that there is no low sulfur crude oil available on-site or for purchase to blend with the higher sulfur content crude oil, the LARC will not purchase the high sulfur content crude oil because it cannot be processed without blending. This process of purchasing and blending crude oils has been in practice at LARC for many years and will not change as a result of the proposed project. For these reasons, the proposed project will not change the types of crude oil processed by the LARC and will not require any modifications to any crude oil refining equipment at the LARC.

As also explained in Response 2-10, the proposed project will increase the total crude oil stored on-site on a daily basis but makes no changes to the Crude Unit or its heaters so that there will be no increase in the amount of crude oil that can be refined in a given day, i.e., the proposed project will not increase the crude throughput capacity of the Refinery. The LARC's existing SCAQMD permit has operating conditions specific to the heaters associated with all refinery units. Because the proposed project will not impact the existing heater duty or require that heaters operate above existing levels, the proposed project will not change the operational emissions associated with the Crude Unit or the heaters. (Note: The heaters referred to in this response are not the same equipment as, nor associated with the proposed new wastewater heat exchangers. Heat exchangers are not fired, combustion equipment and have no associated emissions.)

The only increase in emissions associated with the proposed project is the increase in storage tank and fugitive component emissions including the flanged connections for the new heat exchangers, which were evaluated in the Draft ND (see ND pages 2-18 through 2-25 and Appendix A). In the event the LARC chooses to propose a refinery expansion, at a minimum, SCAQMD permit applications would be required along with a CEQA document analyzing the potential adverse impacts. Therefore, contrary to the commenter's opinion, no significant impacts are expected to occur as a result of implementing the proposed project.

[2] The American Petroleum Institute gravity, or API gravity, is a measure of how heavy or light petroleum liquid is compared to water.

Response 2-10

This comment claims that the proposed project includes modifications at the input to the Crude Unit and that these modifications are for the processing of heavier crude oils, especially Canadian heavy crude oils and tar sands. The commenter includes an industry paper, "Designing a crude unit heat exchanger network," (provided by the commenter as Exhibit A), as evidence to support the commenter's opinion that the Desalter will be altered to process heavy crude oils.

As previously explained, the commenter has misunderstood the Project as well as the actual purpose of the heat exchangers, and has confused the Brine Stripper with a Desalter. The Brine Stripper treats water and a Desalter treats oil. The industry paper focuses on a Desalter. The proposed project involves the Brine Stripper. Thus, the focus of the industry paper is inapplicable to this project. The heat exchangers that are proposed for the project are not "associated with" the Crude Unit. The heat exchangers associated with the proposed project will be incorporated into the Rule 1173 monitoring program as part of the fugitive components associated with Tank 2643. The heat exchangers associated with the Crude Unit that support the Desalters are included in the fugitive components for Process 1, System 1, Device 832 on the LARC Title V permit. These are two completely different processes and systems. The proposed new heat exchangers will not and cannot be used to heat crude oil from the storage tanks but will be used to heat wastewater from the storage tanks prior to treatment in an existing process that separates H_2S and any residual hydrocarbons from the wastewater. See the Project Description in the draft Negative Declaration at pages 1-8 and 1-9.

As noted in Response 2-9, the Refinery is currently designed and permitted to refine low sulfur, light crude oils to high sulfur, heavy crude oils and currently refines a variety of types of crude oil, including crude oils from the Canadian tar sands region, as well as other portions of the world. Table F-1 lists the percentage of crude oil processed at the Phillips 66 Los Angeles Refinery by country of origin from 2002 to 2013. Over that timeframe, about 9.5 percent of the crude oil processed at the LARC originated in Canada, which varied in both sulfur content (0.01 percent to 4.02 percent) and weight from light (38.7 API gravity) to heavy (18.8 API gravity). The types of crude oil processed at the LARC have varied in the past (see Table F-1) and will continue to vary in the future. However, the proposed project will not alter the types of crude oil that can be refined at the LARC (see Response 2-9). The variety of crude oil types, origins, etc. will continue regardless of the proposed project. The commenter's statement that the project will result in the refining of "dirtier" crude oil is not based on any factual information and the definition of "dirtier" crude oil is not provided.

The comment suggesting that the project includes modifications to the input of the Crude Unit is incorrect and does not accurately reflect the operations at the Phillips 66 LARC Refinery. The comment also incorrectly indicates that the "project involves modifications to the desalting and heat exchanger operations associated with the Crude Unit," as explained below.

TABLE F-1

Phillips 66 Los Angeles Refinery
Crude Oil by Country of Origin (2002 – 2013)
(Percentage)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Overall %
Angola	0.0	0.0	0.0	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Argentina	0.0	0.0	0.0	0.8	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Australia	1.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0	0.2
Canada	5.4	6.3	3.3	2.4	0.7	5.7	10.7	18.3	12.6	12.9	17.6	21.0	9.5
China	0.0	0.0	0.0	0.0	0.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Colombia	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.1
Ecuador	1.0	3.1	10.8	14.5	18.8	9.4	2.9	8.0	15.6	21.6	14.3	19.4	11.6
Iraq	6.0	15.5	12.8	12.6	23.5	34.4	28.1	13.8	10.8	7.5	15.5	11.6	16.1
Kuwait	6.0	4.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Mexico	10.3	9.9	9.4	13.4	9.6	2.9	0.0	0.0	0.0	0.0	0.0	0.0	4.8
Nigeria	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	2.8	0.0	0.0	0.0	0.3
Oman	0.0	0.0	0.0	0.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Peru	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Russia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.3
Saudi Arabia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.5	0.1
United States	70.0	59.6	63.7	50.8	45.9	43.4	49.7	57.6	52.5	44.2	52.4	47.4	53.1
Venezuela	0.0	0.7	0.0	1.6	0.0	2.1	5.0	2.4	5.7	9.1	0.0	0.0	2.1

Source: U.S. Energy Information Administration archive at: http://www.eia.gov/petroleum/imports/companylevel/archive (accessed 3-31-14)

The existing configuration of the crude oil storage tanks, Desalter Unit, and Crude Unit are depicted in Figure F-2. This figure also shows the two wastewater treatment units: the Sour Water Stripper and the Brine Stripper. Crude oil stored in tanks is routed to the Desalter Unit for removal of salts and water prior to being fed to the Crude Unit. Some of the water present in crude oil is separated by gravity in storage tanks, and forms a water layer below the crude oil in the tank (since water is heavier than oil). This water layer is periodically removed from the storage tank and is termed the "water draw". Currently, the water draw from existing storage tanks is routed via the sour water tank to the Sour Water Stripper. The sour water tank currently stores sour water[3] recovered from units throughout the refinery. The Sour Water Stripper removes sulfur and hydrocarbon vapors from the wastewater.

The Desalter uses partially treated water from the Sour Water Stripper as wash water to remove salts such as calcium chloride, magnesium chloride, and sodium chloride from the crude oil feed.

[3] Sour water is generated in any unit where hydrogen sulfide may be in an overhead stream and where condensation may occur. In most cases, the sour water is collected in knockout pots and is pumped to the sour water tank. At LARC, the only streams that would not have the potential to generate sour water would be those that are dry (water free) and have been hydrotreated to remove sulfur.

The crude oil then leaves the Desalter and is processed in the Crude Unit. The salts-containing wash water leaving the Desalter is termed "brine" and is routed to the Brine Stripper for wastewater processing. Both the Brine Stripper and the Sour Water Stripper treat wastewater by removing sulfur and hydrocarbon vapors. In summary, the Desalter treats crude oil and removes salts; the Brine stripper treats wastewater and removes sulfur and hydrocarbon.

The proposed configuration, as well as new equipment, is depicted in Figure F-3. In this diagram the new crude oil storage tank is shown, as well as the new water draw surge tank. The water draw stream from both the existing crude oil storage tanks and the proposed new crude oil storage tank is proposed to be routed to the Brine Stripper. New heat exchangers are also proposed, to ensure that the water draw stream is at the proper feed temperature for Brine Stripper operation as discussed in Response 2-3. Note that the heat exchangers are being added between the water draw surge tank and the Brine Stripper parallel to the wastewater from the Desalter, and thus the heat is not used to heat the crude oil, nor used in the processing of the crude oil.

The wastewater discharged from the Brine Stripper is generally of low quality and not suitable for reuse in the refinery. The water draw from the crude oil storage tanks is of similarly low quality, due to its high solids and salts content. Consolidating the low-quality wastewater streams at the Brine Stripper will result in improved quality of wastewater discharged from the Sour Water Stripper and fed to the Desalter[4]. This change in water draw routing will not have any impact on the operation of either the Sour Water Stripper or the Brine Stripper. Each of these units will continue to operate within limits established in the facility permit, and consistent with existing operations. Although the water fed to the Desalter will be cleaner, there will be no impact on production of crude.

Further, the reference to the industry paper (provided by the commenter as Exhibit A) is not germane to the proposed project because the paper focuses on heat exchangers for crude oil upstream of a Desalter, and no changes to crude oil heat exchangers or the operation of the Desalter are part of the proposed project (see Figure F-3). The industry paper discusses the heating of stored crude oil before it is fed to a desalter and ultimately to a crude unit. The proposed project will not make any changes to: (1) the existing heaters associated with Crude Unit operations; (2) any heat exchangers that would heat crude oil; or (3) the Desalter. Therefore, the concerns raised in the article do not apply to the proposed project. The proposed project will install three new heat exchangers for the purpose of heating **wastewater** from the water draw surge tank before it is fed to the Brine Stripper so the water can be at the proper temperature for processing in the Brine Stripper, a wastewater pre-treatment unit upstream of the main LARC wastewater treatment system. The proposed project will not alter the Desalter or Crude Unit in any manner. As discussed above, the new heat exchangers will be included in the fugitive components associated with Tank 2643, which is a separate permitted process than the Desalter and Crude Units and associated fugitive components. The new fugitive components will be incorporated into the Rule 1173 monitoring program, which is audited by the SCAQMD.

[4] Higher quality water fed to the Desalter results in more efficient removal of salts from crude oil, reducing the amount of wash water fed and thus of brine water generated. The Desalter is one of the primary sources of wastewater in the refinery.

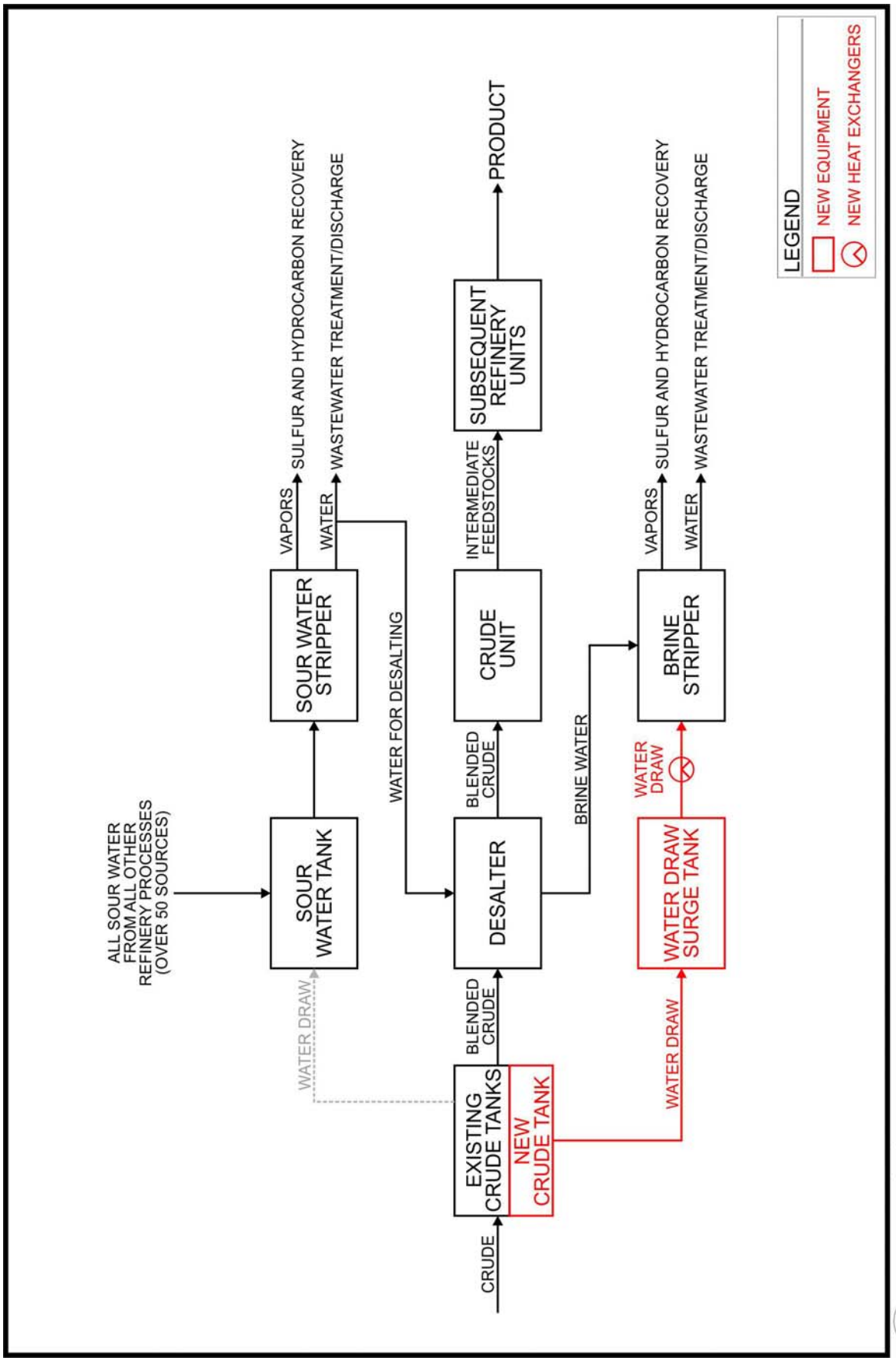
Environmental Audit, Inc.

SIMPLIFIED EXISTING CRUDE AND WATER DRAW FLOW DIAGRAM
Phillips 66 Los Angeles Refinery
Carson Plant

Figure F-2

Project No. 2778

N:\2778\Figure F-2, Existing Flow Diagram.cdr



Environmental Audit, Inc.

SIMPLIFIED PROPOSED CRUDE AND WATER DRAW FLOW DIAGRAM
Phillips 66 Los Angeles Refinery
Carson Plant

Figure F-3

Project No. 2778

N:\2778\Figure F-3, Proposed Flow Diagram.cdr

Response 2-11

This comment claims that the proposed increase above the baseline feed rate to the Brine Stripper will increase desalting capacity and represents debottlenecking that would allow a change in crude oil feedstock. This comment incorrectly characterizes the Brine Stripper as a Desalter. As previously explained in Response 2-10, the Brine Stripper is a wastewater treatment unit that removes hydrocarbons from Desalter brine/wastewater. The industry paper (provided by the commenter as Exhibit A) is concerned with heat exchangers modifying the temperature of crude oil, and not heat exchangers designed to raise the temperature of wastewater.

The assertion that the Brine Stripper is used for desalting operations and the increase in water to the Brine Stripper means that debrining ("desalting") capacity is being added to the LARC is entirely incorrect. The commenter has confused the purpose and function of the Desalter and the Brine Stripper, which has nothing to do with salt removal. The Brine Stripper is so named because it strips the brine of sulfur and hydrocarbons; it does not strip salts. The Desalter removes salts from crude oil before being processed in the Crude Unit. (Note that brine water is produced by the Desalter and sent to the Brine Stripper). Figures F-2 and F-3 have been provided to clarify understanding of the process. The Brine Stripper (and Sour Water Stripper) remove hydrocarbons from wastewater and do not have any desalting capabilities. The processing of water from the storage tanks proposed to be routed to the Brine Stripper for treatment is water that currently is treated in the Sour Water Stripper from existing storage tanks. There will be no increase in wastewater from the proposed project because the amount of crude oil processed does not change and the corresponding water draw would not change. The tank water draw from existing crude oil tanks and the proposed new storage tank is merely being redirected to a different wastewater treatment unit, for more efficient treatment of the LARC's wastewater. The new storage tank does not create additional water draw because the same amount of crude oil is still being processed at the Refinery.

As previously explained in Responses 2-9 and 2-10, the Brine Stripper currently receives water from the Desalter and the proposed project would reroute water draw from storage tanks into the Brine Stripper. These operations, as shown in Figure F-3, are on a separate process stream than the Crude Unit and subsequent refinery units. The purpose of the Brine Stripper is to remove any residual crude oil from the wastewater prior to discharge and does not "desalt" as implied in this comment. As also discussed in Response 2-10, the reference to the industry paper (provided by the commenter as Exhibit A) is not relevant to the proposed project, as the existing Desalter and crude oil heat exchangers associated with the Crude Unit are not a part of the proposed project, are separate equipment from the proposed project, and will not be altered by the proposed project.

The proposed project would not have any effect on the types and/or quantities of crude oil feedstocks that can be received or processed at LARC. LARC currently processes and has been able to process a wide variety of crude oils with its current operating configuration and existing permits. By carefully blending together crude oils with different properties (e.g., sulfur content, API gravity, etc.), the LARC creates a blended feedstock with consistent properties that are within the range of the LARC's processing capability. For example, a crude oil with sulfur content higher

than the feedstock specification would be blended with a lower-sulfur crude oil to result in a blended feedstock that meets LARC specifications. The Refinery processes are designed to operate continuously for 24 hours per day, seven days per week. Blending the crude oil to meet LARC's specifications minimizes the amount of adjustments to refinery operations necessary to process the crude oil safely, efficiently, and within the regulatory permit limitations.

Further, contrary to the commenter's speculation that the project will cause LARC to begin processing "advantaged crudes,"[5] LARC has been processing crude oil originating from the Canadian tar sands regions, from the Bakken formation in North Dakota, as well as numerous other places in the United States and around the world for many years. The Draft ND does not address the various sources of crude oil currently processed by the LARC because: 1) the proposed project will not change, enlarge, or otherwise impact the types and/or quantities of crude oil that LARC will refine; and, 2) the purpose of the proposed project will be achieved irrespective of the type of crude oil offloaded by ship and the selection of the various crude oil feedstocks later blended for refining. Thus, with or without the proposed project, the LARC would still be able to process the variety of blended crude oils that are currently received and processed as allowed by current permits and facility design. There is no change in LARC's crude refining existing setting so no change in refinery permits is being proposed.

The commenter's concern with the processing of heavier crude oils as a result of the proposed project is incorrect and unsubstantiated. The Brine Stripper throughput increase is necessary to ease the current operation of the Sour Water Stripper and the new heat exchangers are required to heat the water draw from the crude oil storage tanks prior to wastewater treatment (as described in Response 2-10). Both actions are independent of the crude oil type refined.

Response 2-12

This comment cites another technical paper, "Special Report: Refiners processing heavy crude oils can experience crude distillation problems," provided by the commenter as Exhibit B, as evidence that the changes to the Desalter and heat exchangers are needed to process heavier crude oil feedstocks. This comment claims that the proposed changes to the Brine Stripper and additional heat exchangers is exactly the kind of process design described in commenter's Exhibit B and the Draft ND has "glossed over" this process change.

As previously explained in Responses 2-9 and 2-11, the commenter's opinion is fundamentally flawed because the commenter has mistaken the equipment involved in the project with the equipment addressed in the technical paper. The new heat exchangers are not associated with processing heavier crude oil feedstocks but are part of a separate water treatment process stream (see Figure F-3 and Response 2-10). The Phillips 66 Refinery is already designed to refine high sulfur, heavy crude oils and currently refines a variety of types of crude oil, including but not limited to crude oils from the Canadian tar sands region and the Bakken formation in North

[5] The petroleum industry refers to "advantaged crudes" as lower cost crude oils without specifying the type or physical characteristics of the crude oils, whereas the commenter implies that "advantaged crudes" are specifically tar sands and shale oils (e.g., Canadian and Bakken crude oils).

Dakota. The proposed project will not alter the types of crude oil that can be refined at the Refinery, or in any way impact the quantity of any one type of crude oil refined.

Also as previously explained in Response 2-11, the proposed project will not result in any changes to the Desalter or Crude Units. Because the new heat exchangers will be utilized to heat the water from the water draw surge tanks prior to entering the Brine Stripper, the refining problems associated with heavy crude oils as described in the commenter's Exhibit B are not germane to the proposed project. Additionally, the LARC currently operates by blending to a range that is consistent with the refining configuration (see Response 2-8 for the discussion regarding blending). Because the crude oil is blended to meet the LARC's specifications, the issues with crude distillation explained in the "Special Report" referred to by the commenter are not experienced at the LARC and the proposed project will not change the blend or specifications.

Response 2-13

The comment opines that the increase in throughput of the two existing storage tanks would allow for additional types of crude oil ("unconventional crudes") to be received at the LARC. Again, as explained in Response 2-10, there are already a variety of crude oil types being delivered to the LARC from around the world (see Table F-1), the purchase of which are dictated by factors such as cost, market demand, availability, need, etc., and are not affected by the proposed project.

The flexibility provided by the proposed project pertains to having more room to store multiple types of crude oil already being delivered to the LARC at any given time, not receiving new types of crude oils as implied by the comment.

Currently, there are four existing storage tanks that receive crude oil from ships. The proposed project would increase the throughput of two of those tanks (510 and 511). Phillips 66 stores crude oil by properties prior to blending in the refining process. This typically means that each delivery of crude oil is stored in its own storage tank (i.e., different types of crude are not blended within a storage tank). LARC is already blending multiple types of crude oil. The "flexibility of the LARC to blend multiple types of crude" refers to the facilities ability to continue blending the multiple types of crude oil that can be stored at the site, without having to wait for storage availability. The storing of these various crude oils does not change the blending, or processing of crude oil at LARC. LARC would still be able to process the same blend of crude oils, with varying properties, as processed currently and allowed by current permits and facility design.

Lastly, the comment regarding the different levels of contaminants and other characteristics of crude oils are addressed in subsequent Response 2-43, which explains the assumptions and results of the toxic air contaminant emission calculations and related health risk assessment results.

Response 2-14

This comment describes an article "Innovative Solutions for Processing Shale Oils" (provided by the commenter as Exhibit C) which covers the topic of the difficulties in refining shale oils such as Bakken shale and others. This comment highlights a point in the article that describes problems such as increased amounts of hydrogen sulfide and other characteristics that make refining shale oil problematic.

As previously explained in Responses 2-9, 2-10, and 2-11, the proposed project would not change the types and/or quantities of crude oil feedstock that have been and will continue to be refined at the LARC. As explained in Response 2-11, Bakken shale is one of the crude oil feedstocks blended with other crude oils for refining at the LARC. Bakken crude oil is a light, sweet crude oil (i.e., sulfur content less than 0.5 percent and greater than 37 API gravity)), which is within the range of crude oils currently processed at the LARC (sulfur content ranging from 0.01 percent to 4.6 percent and 12.8 to 47.5 API gravity). The chemical properties of all types of crude oil feedstocks including Bakken shale, such as sulfur content and API gravity, are taken into consideration so that the overall blended crude oil meets the required specification for processing at the LARC. The problems identified in the article and referenced in this comment have not been experienced at LARC due to good engineering practices and design.

The sulfur in crude oil is bound in organic compounds like mercaptans, xanthanes and thiols with very little H_2S. The sulfur compounds are converted to hydrocarbons and H_2S in the hydrotreating process. The LARC currently has hydrotreating facilities that are designed to process heavy, sour crude oils. At the LARC, the majority of the H_2S is recovered and converted to elemental sulfur in the Sulfur Recovery Plant and is sold as a product. The sulfur remaining in the refining stream is removed at the LARW to meet federal and state product specifications. Sulfur at the LARW is converted on-site to sulfuric acid for use by the LARW or sold as product. The proposed project does not modify the hydrotreating facilities or sulfur recovery facilities. Furthermore, no SCAQMD permit applications have been submitted for modifications to the hydrotreating facilities and sulfur recovery facilities at the LARC. Additionally, no modifications are proposed at the LARW. Thus, the concerns raised in the article are not applicable to the proposed project.

Response 2-15

This comment refers to Phillips 66's statement in its 2012 Summary Annual Report (provided by the commenter as Exhibit D) of plans to increase rail and ship deliveries to their West coast refineries, including the Los Angeles Refinery, of "unconventional" or "advantaged" crude oil. It is important to understand that "unconventional" as used in the report means that the oil was obtained by newer, and thus, unconventional, methodologies for drilling for the oil, not that the crude oil itself is "unconventional." Additionally, as explained previously, "advantaged" means that the crude oil is economically advantaged, or more cost effective, and capable of being run at the Refinery. Not all crude oils that are inexpensive can be utilized at the Refinery. The crude oil purchased by the Refinery must be able to be blended with other crude oils that are also purchased, in order to meet the Refinery's particular specifications to operate equipment. See Responses 2-8 and 2-11 for additional explanation. Currently, Canadian tar sands crude oil and Bakken crude oil meet these definitions, but the annual report also notes that Alaskan North

Slope crude oil may become one of these "advantaged crudes." This comment also cites an excerpt from Exhibit D that Phillips 66 has an agreement to manufacture 2,000 crude oil railcars to transport "advantaged" crude oils to their refineries throughout the United States. As previously explained in Response 2-8, the project description only proposes to increase crude oil storage capacity to enable the Refinery to offload crude oil tankers in one delivery. The proposed project does not include crude oil shipment by rail, change in current crude oil types, nor change in refinery operations, so there is no nexus between the annual report and the proposed project. To provide assurance that the new storage tank 2640 and the two modified storage tanks (510 and 511) subject to the proposed project will not store crude oil from other delivery methods, such as railcar, a permit condition will be imposed that will require the use of the storage tanks to only receive and store crude oil from marine vessels. In addition, the permit condition will require records to be maintained to demonstrate compliance. Contrary to what is stated in the commenter's Exhibit D, the proposed project does not propose to increase ship deliveries to the Los Angeles Refinery as the number of ships calling at Berth 121 is not expected to increase. Instead the proposed project is designed, in part, to minimize the amount of time a ship remains at the berth for offloading crude oil. See Responses 2-8 and 2-9 regarding the proposed project description. In other words, the LARC is not increasing tankage to process different or more crude oils, rather the primary objective of the proposed project is the need for more tank capacity to enable the LARC to offload larger crude-cargo-volume ships during one ship call, rather than multiple ship calls. The proposed project does not include any modifications to the existing rail unloading system or the existing marine terminal.

While Phillips 66's overall corporate-level strategy may be to increase the use of domestic crude oils due to current favorable economics, the proposed project does not include any modifications to existing LARC equipment and/or operations that allow LARC to process crude oil different from the existing setting, either in type or quantity. See also Response 2-9 for a discussion that relates to why the proposed project does not include expansion of any other refinery units (i.e., increase crude throughput processed by the LARC).

Response 2-16

This comment cites Phillips 66's annual report (commenter's Exhibit D that makes generalized forecasting statements) to conclude that the proposed project will increase the Refinery's export capability of refined products, and more specifically, that the tanks involved in this project will be utilized to enhance export capability. This conclusion is incorrect, for several reasons. First, this annual report does not contain sufficient detail to determine that any particular Refinery will need any particular modification to accomplish this increase. And, as previously explained in Response 2-8, the primary objective of the proposed project is the need for more storage tank capacity to enable the offloading of larger crude-cargo-volume ships (e.g., Suezmax and Aframax) during one ship call, rather than: 1) off-loading part of the ship; 2) sending the ship to anchorage until enough crude oil is processed at the LARC to make room for the remainder of the ship's cargo; and, 3) returning the ship from anchorage to offload the remainder of the cargo. Because the proposed project does not include any modifications to the existing marine terminal and, as explained below, the storage tanks that are the focus of this project could not be used to store the end product intended for export, no increase to export capability of the Refinery would occur. Permit changes would be required to allow the tanks to hold refined products for export.

The SCAQMD Permit to Operate limits the contents of the proposed new crude oil storage tank to the storage of crude oil only. The SCAQMD Permit to Operate would not allow the storage of refined products, e.g., gasoline or diesel in the proposed new storage tank. Crude oil is imported to the Refinery but no crude oil is exported to foreign countries from the Refinery. Approval of applications for SCAQMD permit modifications would be required prior to the repurposing of the proposed crude oil storage tanks for the storage of any refined products, including refined products that could be exported. To date, no application to modify the permits has been submitted to the SCAQMD, and Phillips 66 does not have any plans to submit permit applications for that purpose. Therefore, the proposed project does not include an increase of exports from the Refinery.

Response 2-17

This comment cites an article (provided by the commenter as Exhibit E) that discusses increased shipments of domestic crude oil by rail and claims that the Phillips 66 is increasing the amount of crude oil delivered by rail and "is planning rail offloading stations at their West Coast refineries." Commenter's Exhibit E is a general report on West Coast refining and is not specific to this proposed project and Refinery location. Contrary to the implications raised in the comment, the proposed project does not include any modifications to increase the amount of crude oil that can be offloaded by rail. Thus, the proposed project would have no effect on the Refinery's existing ability to receive crude oil by rail or on the amount of crude oil received. Further, as explained in Response 2-15, to provide assurance that the new storage tank 2640 and the two modified storage tanks (510 and 511) subject to the proposed project will not store crude oil from other delivery methods, such as railcar, a permit condition will be imposed that will require the use of the storage tanks to only receive and store crude oil from marine vessels. In addition, the permit condition will require records to be maintained to demonstrate compliance.

Response 2-18

This comment cites an article that was referenced as a footnote but the full text of the article was not attached by the commenter as an exhibit. For ease of identification, the article is referred to herein as Exhibit Q. Exhibit Q is an article that explains a Canadian pipeline project that would bring tar sand crude oils from the eastern portion of Canada to the west coast. This comment refers to a quote within the article about how refiners in California and along the west coast may find it beneficial to receive Canadian tar sands crude oil. However, there is no direct nexus between these generalized observations and the proposed project to reduce ship call time by providing increased storage capacity.

This comment also quotes from an edited transcript of a Phillips 66 annual analyst meeting which explains that Phillips 66 is looking at various transportation methods (e.g., rail, pipeline, ships, barges, and trucks) to get advantaged crude oils to their refineries. It is important to remember that the Refinery currently utilizes all of these methods of transport to obtain the crude oil for processing at the Refinery. Note that this referenced document was included as a footnote but the full text of the transcript was not attached by the commenter as an exhibit. For ease of identification, the transcript is referred to herein as Exhibit R.

This comment further quotes a news story that was accessed from Phillips 66's website on August 7, 2013 which purportedly explains that the term "advantaged crude" means heavy crude oil from Canada,"lighter Canadian grades and West Texas Intermediate (WTI)." Note that this quote was referenced as a footnote but the full text of the news story was not attached by the commenter as an exhibit. Using the web address provided in the footnote, SCAQMD staff was unable to access the news story for verification.

This comment cites another article that claims the oil industry has other options for transporting crude oil from Canada such that it no longer cares if the Keystone Pipeline gets built. This article was referenced as a footnote but the full text was not attached by the commenter as an exhibit. For ease of identification, the article is referred to herein as Exhibit S.

This comment continues by citing a news report about Phillips 66's intentions to bring in crude oil from North Dakota and Texas via rail to their Los Angeles and San Francisco refineries because they already use rail to export refined fuels and have capacity for unloading crude oil by rail. This news report was referenced as a footnote but the full text was not attached by the commenter as an exhibit. For ease of identification, the news report is referred to herein as Exhibit T.

Lastly, this comment relies on the citations in the aforementioned exhibits and anecdotes to conclude that the proposed project would enable the refinery to utilize/process different types of crude oil because the proposed project would increase desalting capacity. The comment also claims that the ND does not contain an analysis of environmental impacts regarding the change in type and quantity of crude oils to be processed in the future due to an increased capacity of the Brine Stripper and the added heat exchangers. The comment also claims that these changes need to be analyzed in an EIR.

While the citations from the various exhibits and anecdotes provided present a general outlook on the oil industry's sources of future crude oil and the transportation options as well as some business goals of Phillips 66, the commenter incorrectly alleges that these generalized intentions of the oil industry and expressed desires by the CEO of Phillips 66 are somehow applicable to the proposed project when there is no evidence to that effect. Further, SCAQMD staff believes that there is a misunderstanding of what constitutes the proposed project and, perhaps more importantly, what it is not. The proposed project does not involve any increase in the Refinery's overall crude oil processing or output. Also, see Response 2-8 for a discussion on the proposed project description.

Regarding the comment alleging that the proposed expanded use of the Brine Stripper and additional heat exchangers are for the purpose of increasing desalting and controlling temperature as part of processing "advantaged crudes" and that these products will be delivered by rail, see Responses 2-8, 2-9, 2-10, 2-11, and 2-12.

Lastly, the citations provided do not contain any evidence to support the conclusion that the Draft ND prepared for the proposed project is inadequate or inaccurate. Further, the citations do not identify any new significant impacts that were not analyzed as part of the proposed project.

Thus, contrary to the comment, the SCAQMD disagrees that an EIR would be required for the proposed project.

Response 2-19

This comment refers to Phillips 66's website "Advantaged Crude by the Numbers" which consists of a table summarizing Phillip 66's statistics pertaining to processing advantaged crude oil company-wide (e.g., the proposed targeted increase in processing advantaged crude oil of 500,000 bpd and an additional 2,000 rail cars to be added to the rail car fleet, etc.) Note that this referenced document was included as a footnote but the printout of the webpage was not attached by the commenter as an exhibit. For ease of identification, the website is referred to herein as Exhibit U.

As noted in Response 2-18, company projections do not establish a nexus to the proposed project. The commenter compares the statistics in the table and states that an increase in 500,000 bpd at Phillips 66 would represent a 28 percent increase from Phillips 66's overall refining capacity of 1.8 million bpd company-wide. While the statistics in the table provided do not identify or include decreases in other types of crude oils to be processed at Phillips 66 refineries throughout the U.S., page 8 of the commenter's Exhibit D states the following:

> *"We have a substantial team focused on sourcing and securing more advantaged crudes for our refineries and we expect over the next several years to replace 500,000 barrels per day of higher-cost crudes with increasingly advantaged crudes."*

Thus, contrary to the comment, because Phillips 66 intends to replace more expensive crude oils with advantaged crude oils (i.e., lower cost crude oils), there would be no overall increase in the amount of Phillips 66's U.S. crude oil being refined. As explained previously in Responses 2-8 and 2-15 through 2-20, refinery modifications would be required to increase the amount of crude oil processed at the Phillips 66 Los Angeles Refinery and the proposed project does not include any permit modifications that would allow the increase in crude throughput at the Refinery. In addition, the various types of crude oils already purchased and refined is dictated by a number of factors such as cost and market demand that will not change regardless of the proposed project.

Response 2-20

This comment cites an article that outlines the financial benefits refiners may consider to transport crude oil by rail and that these incentives will motivate oil companies to make infrastructure improvements such as front end desalting and heat exchanger increases to be able to process advantaged crude oils delivered by rail. This comment claims that the proposed project is making these types of infrastructure improvements to accommodate an increase in crude-by-rail deliveries. Note that this referenced article was included as a footnote but the printout of the article was not attached by the commenter as an exhibit. For ease of identification, the article is referred to herein as Exhibit V.

While Phillips 66's overall national company strategy may be to increase the amount of advantaged crude oil transported by rail, as explained in Responses 2-8, 2-9, 2-10, and 2-15, the

proposed project to increase storage capacity of deliveries shipped to the Refinery would not affect the ability, nor would it have any effect on the types and/or quantities of crude oil feedstocks delivered by rail that are currently refined at the LARC. Following the implementation of the proposed project, or with no project, the LARC would still be able to receive and process the same blend of crude oils that are processed currently and allowed by current permits and facility design. Furthermore, there are no permit applications or other information that would suggest that the project is greater in scope than what has been presented in the Draft ND. Phillips 66 has not presented SCAQMD staff with any plans of future projects for expansion specific to the LARC.

The commenter implies that processing "advantaged crudes" would cause a change in the LARC's crude refining baseline. As explained in Responses 2-9 and 2-10, this comment is incorrect because the Brine Stripper is not utilized to process oil and the new heat exchangers will be used to heat water, not crude oil. As discussed in Response 2-10, the new heat exchangers will be associated with the new Tank 2643 (Title V Permit, Process 10) not the Crude Unit (Title V Permit, Process 1, System 1). Regarding the comment about the infrastructure improvements to the Brine Stripper and heat exchangers for the proposed project and how it is not the same as characterized by the comment, see Response 2-10 and Figure F-3.

Response 2-21

This comment claims that switching to refining more unconventional crude oil such as heavy Canadian tar sands and Bakken shale crude oils will result in increased crude oil contamination, higher energy use, and major impacts. The comment acknowledges that Phillips 66 currently processes heavy crude oils but claims these crude oils are different from the crude oil from Canadian tar sands and Bakken shale and that LARC is planning to expand processing to accommodate these unconventional crude oils. This comment also provides a general description of the characteristics of and problems with refining shale oils as previously referenced in the commenter's Exhibit C. The comment claims that the LARC is designed to process heavy crude oil and that the blending of shale oil with crude oil at the LARC is likely to occur and will be problematic because of the potential development of coke deposits on refining equipment that could cause unplanned shutdowns.

As explained in Response 2-10 and Table F-1, LARC already receives and processes Canadian and Bakken crude oils, so any challenges related to refining heavy crude oils are part of the existing setting. The variety of crude oil types being delivered to LARC will continue regardless of the proposed project. The comment also ignores the fact that the crude oils processed at the Refinery are blended before they are processed in order to meet the unique specifications of the Refinery. While the article discusses issues that in general may occur with the blending of shale oils with heavy crude oils, the commenter fails to provide any evidence that the LARC may experience any of these issues as a result of the proposed project. As discussed above, this project will not have an effect on the types of crude oils that are processed at the LARC. Response 2-10 also discusses the ability, the types, and/or quantities of crude oil feedstocks that can be processed at the LARC.

As noted by the commenter, Bakken crude oil tends to be light (a relatively lower carbon-content compared to heavy crude oil and sweet (low sulfur)). LARC has been refining Bakken crude oil

since November 2012 without the problems identified in this comment, such as severe wax buildups, and agglomeration of large molecules onto surfaces in refinery units because the LARC is designed to handle a variety of crude oils as explained in Response 2-8, 2-9, 2-10, and 2-14. The LARC currently blends crude oil in-line between the crude oil storage tanks and the Desalter, which is the first step in the refining process. Lastly, the LARC currently operates a Coker Unit, which specifically removes coke early in the refining process so that coke buildup does not impact any downstream refinery units (see Figure F-1).

Response 2-22

This comment cites the commenter's Exhibit C by describing shale oils as having high levels of H_2S, but if "scavenging agents" are used to reduce H_2S, corrosion can occur and solids can form inside refinery processing units. However, Comment 2-21 describes Bakken shale as light and sweet (i.e., low sulfur content), so the comment is unclear as to why and how high levels of sulfur could be present in order to generate high levels of H_2S.

Further, because LARC was designed to process heavy, high sulfur crude oils, the refining equipment was crafted with the appropriate metallurgy to handle the potential corrosiveness of high sulfur crude oils (e.g., hydrotreating units and sulfur recovery units).

Lastly, the LARC has processed Bakken shale without experiencing the problems raised in this comment, such as severe wax buildup, and the agglomeration of large molecules onto surfaces in refinery units. The LARC operates a Coker Unit specifically to produce coke from the heavy materials removed in the early refining stages, so that coke formation does not impact downstream refinery units. As previously explained in Response 2-10, the potential problems with refining shale oils as cited from the commenter's Exhibit C are not specific to the operations at the LARC and are not relevant to the proposed project. The concerns raised in Comment 2-22 are unrelated to the proposed project because there is no proposal to modify the types of crude oils that can be processed at the Refinery.

Response 2-23

This comment describes unconventional crude oil, in general, as having an increased metal content. This comment also quotes from a publication on the World Resources Institute's website about the environmental impacts of heavy oil and tar sands production. (Note that this quote was referenced as a footnote but the full text of the publication was not attached by the commenter as an exhibit. Using the web address provided in the footnote, SCAQMD staff was unable to access the publication for verification.) Lastly, this comment describes the properties of Canadian tar sands crude oil as being heavy and containing a high amounts of sulfur and other contaminants that when refined: 1) can increase the amount of hazardous materials present at the refinery; 2) can cause corrosion; and, 3) can increase the energy needed for refining and in turn generate more GHGs and smog-precursors. However, this comment does not contain any evidence of impacts that will occur at the LARC as a result of the proposed project.

As discussed in Response 2-10, LARC is already receiving, blending, and processing Canadian tar sands crude oil and will continue to do so regardless of the proposed project. Phillips 66 has

been refining Canadian tar sands crude oil since December 2001. The mining and production of Canadian tar sands that occurs in Canada is a very different process that is beyond the scope of the proposed project and the LARC's capabilities. As such, issues pertaining to the mining of Canadian tar sands (e.g., water consumption, earth moving, ecosystem disturbance, etc.) are not germane to the proposed project. They could be relevant if in fact the project increased their use, but the proposed project does not. The proposed project would not result in an increase in crude throughput or result in additional drilling of crude oil in Canada or at any location in the world, or increase the quantity of crude oil purchased from Canada. Even if a crude oil contains metals, most metals are removed from the crude oil in the desalting process and are managed in the refinery wastewater treatment process. Little or no impact to air quality or hazardous characteristics of wastewater treatment activities are expected and no measurable effect has been observed in the wastewater treatment process.

Canadian tar sand crude oil is within the range of crude oils currently received and blended at the LARC. Therefore, refining Canadian tar sand crude oils does not create additional hazardous waste, increase the generation of GHG emissions, or increase demand for energy.

As discussed in Response 2-9, in order for crude oil to be processed in the LARC, the crude oil type needs to be considered so that the various crude oils can be blended to meet overall specifications that are within the acceptable range for the existing equipment design. The process of purchasing and blending crude oils has been in practice at LARC for many years and is not expected to change as a result of the proposed project. The proposed project will not change the types of crude oil processed by the LARC and will not require any modifications to any existing crude oil refining equipment at the LARC. Thus, there will be no change in GHG or other emissions specifically from crude oil refining equipment at the LARC associated with the proposed project.

Response 2-24

This comment cites the commenter's Exhibit B by identifying the need for additional desalting and temperature controls in order to process unconventional crude oils. This comment points out that it is not only the volume of crude oil processed but the characteristics or quality of the crude oil that determines environmental impacts. This comment continues to cite the commenter's Exhibit B by describing the potential properties of some heavy crude oils (e.g., higher microcarbon residue, asphaltenes, metals, viscosities, salt, chlorides) and that these contaminants can cause equipment deterioration due to fouling and corrosion requiring a turnaround to occur much sooner than the planned schedule. The comment concludes by requesting the CEQA document to contain a complete inventory and evaluation of the differences in the crude oils to be processed and their environmental impacts as a result of implementing the proposed project.

While SCAQMD staff does not necessarily dispute the issues raised relative to the properties and consequences such as corrosion and deterioration of equipment due to refining heavy crude oils, the issues raised are not germane to the proposed project because, as explained previously in Responses 2-9 and 2-10, no changes to the various crude oil types received, crude oil blending processes, or refining processes are proposed. In other words, increasing the size of the crude oil

storage tank is not related to the origination point of the crude oil itself. Further, a request for additional analysis does not provide evidence of a significant impact on the environment. *See*, e.g. *Parker Shattuck Neighbors v. Berkeley City Council (CityCentric Investments, LLC)*, 222 Cal App. 4th 768 (2013). For this reason, the ND does not need to be revised to include a crude oil inventory or an analysis of impacts for refining various crude oils.

Response 2-25

This comment states that, in general, an increase of hydrochloric acid (HCl) corrosion will cause potential reliability problems and increases the accident risk due to upset from problems occurring prior to scheduled maintenance, and asks for additional analysis of the different crude oils that will be used as a result of the proposed project. As explained in Response 2-24, the issues and potential problems that may be associated with refining heavy crude oils, such as the potential for HCl corrosion, are not germane to the proposed project because there will be no change in the types of crude oils received, blended, and refined by the LARC.

Response 2-26

This comment states that, in general, increased corrosion from high sulfur content in crude oil is an increasing risk at refineries. This comment cites a report (presented by the commenter as Exhibit I) on the Chevron Richmond refinery fire as evidence that corrosion is a significant impact. This comment provides a chart that demonstrates a long-term trend in increased sulfur content in West Coast refinery crude oils and attributes the data to California refineries. This comment cites the commenter's Exhibit F by stating that the use of unconventional crude oil such as Western Canadian Select crude oil at 3.5 percent sulfur will make the trend worse, since its sulfur content is higher than the average for California. Lastly, this comment acknowledges that the LARC already refines high sulfur crude oil but expresses a doubt that the average sulfur content at the LARC is a high as the Western Canadian Select sulfur contents. [Note: Exhibit I does not characterize the Chevron fire as an explosion as the commenter has described the incident.]

As discussed in Response 2-10, LARC is already receiving, blending, and processing Canadian tar sands and will continue to do so regardless of the proposed project. LARC has been successful in processing various types of crude oil and meeting the required sulfur limit requirements without an increased risk of upset. In addition, as explained in Responses 2-9 and 2-10, the proposed project increases storage capacity to reduce ship call times spent in the port and does not change the various crude oil types received, blended, and processed.

As explained in Responses 2-24 and 2-25, the issues and potential problems that may be associated with refining heavy crude oils such as the potential for sulfur corrosion are not germane to the proposed project because there will be no change in the types of crude oils refined by the LARC, and the Refinery metallurgy was designed to process the crude oil blends that are utilized at the Refinery. Therefore, these comments and opinions do not constitute evidence that the proposed project will have a significant impact on the environment.

Response 2-27

This comment analyzes the sulfur content data from the EIA of Phillips 66's crude oil imports during 2012 and acknowledges that the sulfur content ranged from 0.79 percent to 3.34 percent. The comment claims that Phillips 66 also refines substantial amounts of domestic crude oil but this data is not required to be reported to the United States Energy Information Administration (EIA). This comment claims that the domestic crude oil refined by Phillips 66 should be reported in a full EIR. This comment claims that the crude oil currently imported by Phillips 66 will be replaced with advantaged crude oils with higher sulfur contents from Canadian tar sands and Bakken shale and that this change will create a significant increase in sulfur. This comment claims that the ND should have identified both the baseline and proposed changes to crude oil types, volumes, and sulfur content.

While SCAQMD staff does not dispute that crude oils have varying chemical properties and characteristics, including sulfur content, the commenter makes an unsubstantiated assumption that the proposed project will cause the type of crude oil delivered to the LARC to change, when in actuality, the proposed project would not affect the ability, nor would it have any effect on the types of crude oil feedstocks that can and will be received at the LARC. Following the implementation of the proposed project, or with no project, the LARC would continue to receive various types of crude oil from all over the world and blend these crude oils into a mixture that is compatible with the current SCAQMD permits and facility design. The LARC is and has been able to process a wide variety of crude oils with its current operating configuration and existing permits through in-line blending of the crude oils to obtain a blended feedstock with consistent properties.

The commenter speculates that the project will cause the LARC to begin processing higher sulfur crude oils such as Canadian crude oils. Actually, the LARC has been processing Canadian crude oils, including those originating from the Canadian tar sands regions, for more than ten years (as discussed in detail in Response 2-10). The Draft ND does not include a baseline or future changes in crude oil type refined by the LARC because the proposed project will not change, enlarge, or otherwise impact the types and/or quantities of crude oil that LARC currently and will continue to refine. Because the LARC was designed to process heavy, high sulfur crude oils, it was designed with the appropriate metallurgy to handle the potential corrosiveness of such crude oils. Thus, with no changes proposed to the types of crude oil to be delivered in the future, changes in crude oil types are not part of the project and, therefore, it is not necessary to identify all of the types of crude oils currently refined, whether domestic or imported, by the LARC in a ND or EIR.

With regard to the EIA data referenced in this comment, more detailed EIA data applicable to the Phillips 66 Los Angeles Refinery is provided in Response 2-10. As explained in Response 2-10 and shown in Table F-1, the Refinery has processed over 20 percent Canadian crude oils in its crude oil blends in a year. The comment also seeks the release of confidential, trade secret information (i.e., data on the domestic crude oil processed at the Refinery[6]) that is protected by

[6] See Valero Crude by Rail Draft EIR, Appendix K, June 2014, available at http://www.ci.benicia.ca.us/vertical/Sites/%7B3436CBED-6A58-4FEF-BFDF-5F9331215932%7D/uploads/Appendix_K_McGovern_Report.pdf that explains some of the types of data that are considered trade secret.

Section 21160 of the Public Resources Code. Additionally, this comment merely requests additional analysis of crude oils processed at the Refinery, without delineating any impact related to the proposed project. Thus, as held by the court in *Parker Shattuck v. Berkeley City Council,* (2013) 222 Cal. App. 4th 768, such a request for additional analysis does not constitute substantial evidence of a significant impact on the environment.

Response 2-28

This comment refers to an article provided in the commenter's Exhibit G that discusses the possibility that Bakken crude oil produces higher volumes of H_2S, even though Bakken crude oil has a low sulfur content. This comment also refers to the commenter's Exhibit I, which states that H_2S is an aggressive corrosive agent. Lastly, this comment requests that the issues pertaining to the safety risks associated with changing the type of crude oil to be delivered to the LARC (e.g., H_2S content and corrosivity) should be evaluated in an EIR.

The reference cited by the commenter is not specific to the operations at LARC and contains no facts specific or nexus to the scope or impacts of the proposed project. The comment ~~just~~ raises a question as to the nature of crude oil at an unrelated facility and provides no facts that link the Enbridge facility mentioned in the commenter's Exhibit G to the LARC. As previously explained in Responses 2-8, 2-9, and 2-10, the proposed project would not affect the ability to receive, nor would it have any effect on the types and/or quantities of crude oil feedstocks that can be received by and processed at the LARC. The existing equipment is designed to transport a range of crude oils processed at the LARC, including high sulfur crude oils that are currently received and will continue to be received in the future. Additionally, the comment merely requests additional analysis of crude oils processed at the Refinery without delineating any project-related impact. Thus, as held by the court in *Parker Shattuck v. Berkeley City Council,* (2013) 222 Cal. App. 4th 768, such a request for additional analysis does not constitute substantial evidence of a significant impact on the environment.

Lastly, as explained in Response 2-9, Phillips 66 currently operates two sulfur recovery units at LARC, two sulfur recovery units at LARW and a sulfuric acid plant at LARW. All these units are designed to remove sulfur from crude oils and refined products and safely treat H_2S generated in various refinery units. Since the proposed project would not result in an increase in sulfur in the crude oils blended and processed at the Refinery, the proposed project would also not result in an increase in H_2S generated and treated at the Refinery. Since the comment fails to identify new impacts that may be significant to the proposed project, an EIR is not required.

Response 2-29

This comment cites the commenter's Exhibit I regarding the Chevron Richmond refinery fire as evidence that corrosion from increased sulfur content in crude oil can cause a significant impact. The comment provides photos depicting smoke from the fire at Chevron and depicts the fire incorrectly as an explosion. This comment also refers to a report that discusses the corrosion issues associated with sulfur from a propane project as evaluated in an EIR prepared for the Phillips 66 Rodeo Refinery in San Francisco (presented by the commenter as Exhibit H). This comment also claims that a new rail project is being proposed at the Phillips 66 Rodeo Refinery.

[Note: Exhibit I does not characterize the Chevron fire as an explosion as the commenter has described the incident.]

The comments raised in the commenter's Exhibit H are similar to the comments raised in reference to the commenter's Exhibit I, the cause of the Chevron fire, and the issues regarding sulfidic corrosivity and these issues were previously raised in Comment 2-26 and addressed in Response 2-26. In response to the comment that a new rail project is being proposed at the Phillips 66 Rodeo Refinery, since the proposed project evaluated in the Draft ND is for the LARC, the new rail project in San Francisco is not relevant to the proposed project at the LARC.

In summary, the references cited by the commenter, including the fire at the Chevron Refinery, are not specific to the operations at LARC and contain no facts or nexus specific to the scope or impacts of the proposed project. As previously explained in Responses 2-8, 2-9, and 2-10, the proposed project would not affect the ability to receive, nor would it have any effect on the types and/or quantities of crude oil feedstocks that can be received by and processed at the LARC. The existing equipment is designed to transport a range of crude oils processed at the LARC, including high sulfur crude oils that are currently received and will continue to be in the future. Hazards associated with crude oil storage were addressed in Section VIII h) of the Draft ND on pages 2-52 and 2-53 and were determined to be less than significant.

Response 2-30

This comment refers to the commenter's Exhibit B relative to heavy metal content such as vanadium in unconventional crude oils. This comment claims that there are many issues missing from the Draft ND, but the increased toxic heavy metals should be evaluated in an EIR. This comment also refers to a report that contains comments submitted relative to a Mitigated ND prepared for a project at the Valero refinery in Benicia (presented by the commenter as Exhibit J).

The commenter's Exhibit B cites generalized properties of some crude oils and the commenter's Exhibit J contains comments specific to the Valero Benicia project. These references cited are not specific to the operations at the LARC and contain no facts or nexus specific to the scope or impacts of the proposed project, which is to increase throughput at two existing crude oil storage tanks and install one crude oil storage tank, one water draw surge tank, and three heat exchangers to heat the water draw for treatment in the Brine Stripper that will not affect characteristics of the crude oil processed at the LARC. With regard to the comment than an EIR should be prepared to evaluate an increase in toxic heavy metals, the commenter failed to provide any evidence to support the claim that the proposed project will increase toxic heavy metals. As discussed in Responses 2-8, 2-9 and 2-10, the LARC already receives, blends, and refines various crude oil with varying chemical properties and characteristics that will not change regardless of the proposed project. In summary, the references cited by the commenter are not specific to the operations at LARC and contain no facts applicable to the scope or impacts of the proposed project, and do not constitute evidence that this particular project will have a significant impact on the environment.

Response 2-31

This comment cites an explosion of rail tank cars carrying Bakken crude oil in Canada (presented by the commenter as Exhibit K). This comment also cites a report that evaluates the regulations for hazardous materials that are transported by rail (presented by the commenter as Exhibit L). This comment claims the proposed project intends to process unconventional crude oil and this crude oil will be delivered by rail such that an EIR should evaluate the potential for increased accidents due to the increased transportation of crude oil by rail.

The issues raised are not germane to the proposed project because, as explained previously in Responses 2-9 and 2-10, the project does not propose changes to the various crude oil received or to the blending and refining processes so no new or additional hazards will result due to the proposed project. Also, the proposed project will facilitate the offloading of crude oil delivered by marine vessels, not rail.

Because rail transportation hazards are unrelated to the proposed project, the issues raised in the comment do not identify any new significant impacts that would require evaluation in an EIR or cause a revision to the ND.

Response 2-32

This comment refers to a report (presented by the commenter as Exhibit M) that identifies various refineries and other shipping centers located on the west coast that currently have or will build new rail unloading facilities to receive or increase crude oil deliveries by rail. This comment claims that the commenter's Exhibit M indicates that rail, ship, and pipeline will be used to get Canadian and Bakken crude oils to California and the west coast. Lastly, this comment claims that an EIR should be prepared to evaluate the increases of the transportation modes since Phillips 66 will not exclusively rely on any one mode to obtain crude oil.

While SCAQMD staff does not necessarily dispute the projects identified in commenter's Exhibit M that are completed or in progress, the Refinery currently utilizes rail, ship, barge and pipeline to transport crude oil to the LARC. The proposed project does not contain any proposed modifications to the rail or any other process that could result in changes to the crude oil blending and refining processes so no new or additional hazards will result due to the proposed project. Thus, the transportation issues as described in the commenter's Exhibit M that may be associated with transporting crude oil by rail are existing and not affected by the proposed project. As explained in Response 2-8, the purpose of the proposed project is to more efficiently unload larger ships delivering crude oil to the LARC. Additionally, as explained in Response 2-15, Phillips 66 will not use the storage tanks that are the subject of the proposed project to store any crude oil received by rail. To provide assurance that the new storage tank 2640 and the two modified storage tanks (510 and 511) subject to the proposed project will not store crude oil from other delivery methods, such as railcar, a permit condition will be imposed that will require the use of the storage tanks to only receive and store crude oil from marine vessels. In addition, the permit condition will require records to be maintained to demonstrate compliance.

With regard to the comment that an EIR should be prepared to evaluate the alleged increases in crude oil transportation activities, the commenter failed to provide any evidence to support the claim that the proposed project will increase deliveries of crude oil to the LARC as part of the proposed project. In summary, the reference cited by the commenter is not specific to the operations at LARC and contains no facts applicable to the scope or impacts of the proposed project. Therefore, the comments related to transportation hazards are unrelated to the proposed project. Lastly, the issues raised in this comment do not identify any new significant impacts that would require evaluation in an EIR or cause a revision to the ND.

Response 2-33

This comment cites the commenter's Exhibit C regarding wax buildup as being another contributor to transportation problems when moving shale oil via rail, truck, pipeline, and ship and that more reliable infrastructures are needed for distributing this type of oil. This comment emphasizes that railcars require regular steam cleaning but that the wax deposits also create problems when transferring shale oil to storage tanks. This comment provides a photo of the waxy deposits and requests an evaluation of the safety risks from the buildup that occurs within the LARC due to shale oil. This comment mentions that multiple chemical dispersants are used for treating the waxy deposits that may form. Lastly this comment requests that the impacts from steam cleaning and the use of chemical dispersants, their applications and corresponding impacts should be addressed in an EIR.

The LARC has been blending Bakken crude oil since November 2012 and has not experienced waxy buildup that required unscheduled or additional maintenance. The proposed project does not contain any modifications to the types of crude oil to be received, stored, and processed at the LARC. Further, the proposed project would neither change the methods of delivering crude oil to the LARC nor change the frequency of such deliveries, whether by pipeline, truck, rail or ship. Thus, the issues raised in this comment relative to addressing waxy buildup during transportation and refining are not germane to the proposed project. Further, the Refinery routinely inspects and maintains all portions of refining activities. For example, existing pipelines at LARC are generally designed to accommodate passage of instrumented inspection devices (referred to as "smart pigs") or subject to nondestructive inspection techniques. "Smart pigs" are internal instrumented inspection tools used for acquiring pipeline data as well as conducting pipeline cleaning.

Lastly, the issues raised in this comment do not identify any new significant impacts that would require evaluation in an EIR or cause a revision to the ND.

Response 2-34

This comment acknowledges that the GHG analysis in the Draft ND addresses GHGs to be generated from increased electricity use and due to combustion emissions during construction. This comment claims that the Draft ND did not take into account additional GHG emissions from the LARC's switch to dirtier crude oil feedstock. This comment disagrees with the conclusion that no significant increase in GHG emissions will occur because GHG emissions due to electricity will be offset by California's cap and trade program. This comment requests more

specific information to be provided that pertains to the actual peak GHG emissions during construction over a shorter time frame, instead of being amortized over 30 years.

As discussed in Response 2-9 and 2-10, the proposed project will not affect the feedstock at the LARC as the various crude oil types are currently and will continue to be received, blended, and refined regardless of the proposed project. Thus, the commenter makes an incorrect claim that the proposed project will "switch to dirtier crude feedstocks." Therefore, with no change in feedstocks, only GHG emissions associated with the increased electrical demand are associated with operation of the proposed project and correctly included in the Draft ND.

The commenter's doubts about the effectiveness of the cap and trade program are based on an outdated article which was written in 2009, prior to the implementation of the cap and trade program. However, the cap and trade program is now being implemented with almost two years of auctions. Further, because power plants are an essential part of the cap and trade program and are thus required to: a) offset all of their emissions; and, b) reduce their GHG emissions over time, there will be no statewide increases in GHG even if there is an increase in power used by the proposed project. GHGs are a pollutant that does not have localized impacts. For these reasons, no change in operational GHG emissions is expected from the proposed project.

Regarding the methodology for calculating GHG emissions and determining significance, on December 8, 2008, the SCAQMD adopted a policy resolution approving a GHG significance threshold of 10,000 metric tons per year (MT/yr) for SCAQMD's lead agency projects applicable to stationary sources (such as this project), rules/regulations, and plans (SCAQMD, 2008)[7]. The project emissions to be included in the GHG analysis are direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. With regard to how to calculate GHG emissions from construction, the approved policy resolution specifies construction GHG emissions need to be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the 10,000 MT/yr annual threshold, per the methodology outlined in SCAQMD Interim CEQA GHG Significance Threshold Guidance Document (SCAQMD, 2008). For this reason, the GHG emissions calculations for construction emissions do not and cannot contemplate a shorter time frame or a peak as suggested in the comment.

The details pertaining to the GHG emission calculations are summarized in the ND pages 2-27 through 2-28, including Table 2-6. In addition, the detailed GHG emission calculations, including all applicable assumptions, are provided in Appendix A of the ND (see pages A-1 through A-16). GHG emission estimates include estimates of carbon dioxide, methane, and nitrous oxide, as required by the above SCAQMD guidance.

The commenter states that unregulated GHGs were omitted from analysis and requests that further analysis be conducted, but provides no evidence as to what chemicals the commenter believes are not analyzed. Only GHGs effected by the proposed project were analyzed in the draft Negative Declaration, i.e.. carbon dioxide, methane and nitrous oxide. No other GHGs are

[7] SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008 (http://www.aqmd.gov/hb/2008/December/081231a.htm).

associated with the proposed project. Additionally, the comment requests additional analysis of the unnamed GHGs, without delineating any project-related impact. Thus, as held by the court in *Parker Shattuck v. Berkeley City Council,* (2013) 222 Cal. App. 4th 768, such a request for additional analysis does not constitute substantial evidence of a significant impact on the environment. Therefore, no further response is necessary.

Response 2-35

This comment claims that the GHG emissions are "grossly" underestimated because unconventional crude oils such as shale and tar sands will be processed at the LARC as a result of the proposed project. This comment claims that the ND states that there will be no changes in downstream refinery processing without providing the existing baselines for the downstream units or the baseline amounts of crude oil transported to the LARC via rail, ship, and pipeline. This comment claims that the proposed changes to the LARC are: 1) the same type of changes that would be needed to allow the increased processing of unconventional crude oils; 2) changes that would be consistent with Phillips 66's stated plans; and, 3) changes to crude oil feeds that require increased processing to remove sulfur, to crack heavy hydrocarbons, and for coking operations. This comment claims that the ND fails to provide any evidence and instead provides conclusory statements that there will be no changes.

With regard to the comment alleging that GHG emissions will increase because the LARC will start processing unconventional crude oils, Responses 2-8, 2-9, and 2-10 explain why the proposed project will not change the various types of crude oils currently being refined at the LARC. SCAQMD staff believes the GHG calculations as presented in the ND accurately depict the effects of the proposed project. With regard to how these GHG emissions were calculated, see Response 2-34, as well as pages 2-27 and 2-28, and Appendix A of the ND.

With regard to the comment that the ND does not provide the current crude oil baseline data to support the claim that crude oil processing will not change for downstream units, Response 2-10 contains the crude oil purchase baseline data from 2002 to 2013 as proof that the refinery already receives and refines blends of crude oil that originate from Bakken shale and Canadian tar sands, as well as many other types of crude oil from various sources. The proposed project will not have any impact on the types of crude oils processed at the Refinery because the type of crude oil processed is and will continue to be determined by availability of crude oil on the market. The Refinery currently processes crude oil blends that consist of a variety of crude oils including the North American crude oils mentioned by the commenter. While the individual crude oils purchased by the Refinery continually change with market availability and demand, the crude oil blend that is processed through the Crude Unit must stay consistent to meet the processing constraints of the Refinery operations. The commenter's opinions do not take into account the processing of a crude oil blend, and thus do not reflect the operations at the Refinery.

With regard to the claims that the proposed changes to the LARC are: 1) the same type of changes that would be needed to allow the increased processing of unconventional crude oils; 2) changes that would be consistent with Phillips 66's stated plans; and, 3) changes to crude oil feeds that require increased processing to remove sulfur, to crack heavy hydrocarbons, and for coking operations, see Responses 2-8, 2-10, 2-18 and 2-26 through 2-29.

Lastly, in response to the claims that the ND fails to provide any evidence and instead provides conclusory statements that there will be no changes downstream, all of the evidence regarding the proposed project and associated emission calculations support the preparation of a ND as no significant impacts were identified. The commenter's opinions about the proposed project are based on a misunderstanding of the proposed project combined with speculation extrapolated from various articles, reports, websites, and other references. If the proposed project included the commenter's claim of changes to downstream processing, Phillips 66 would be required to submit SCAQMD applications to change the heater firing rate of the Crude Unit, for example, and this project does not contemplate any such modifications.

Response 2-36

This comment refers again to the commenter's Exhibit J regarding the Valero refinery in Benicia and claims that refineries have a "price incentive to purchase heavy, sour Canadian tar sands over Bakken light sweet crude" and that tar sands require more energy to process. This comment also cites a report (presented by the commenter as Exhibit N) that claims heavier and high sulfur crude oils require more energy to process, which in turn means more GHG emissions will be generated. This comment refers to the practice of using hydrogen to remove sulfur as part of the cracking/oil refining process. This comment requests that additional analysis be conducted in the form of an EIR and it should fully disclose the refinery's baselines (e.g., actual levels of operation) and not just permitted levels for the following equipment because these baselines will provide evidence as to whether the following downstream baselines will change: 1) Crude Unit, including heaters; 2) hydrotreaters; 3) cracking unit; 4) coking unit; 5) hydrogen unit production; and, 6) outside hydrogen purchases. Lastly, this comment claims that the EIR should also identify refinery modifications that have occurred previously and future planned modifications.

The issues raised are not germane to the proposed project because, as explained previously in Responses 2-9 and 2-10, no changes are proposed to the current crude oil being received, the resulting quality of the blended crude oil, or refining processes so no new or additional GHGs will result from the proposed project. For these same reasons, the commenter has not provided any evidence that supports the preparation of an EIR for the proposed project because no significant impacts were identified for the proposed project. Further, the Draft ND does not need to be revised to include a baseline of the Crude Unit and heaters, hydrotreaters, cracking unit, coking unit, hydrogen unit production, and outside hydrogen purchases because no direct or indirect changes to these units are proposed. Further, previous modifications at the LARC have no bearing on this current project as any past changes at the LARC have long been implemented and are considered part of the baseline. Similarly, the proposed future modifications at the refinery (i.e., the proposed project) have already been disclosed in the Draft ND. Therefore, the commenter's suggested changes to the ND are not necessary and are not required.

Regarding GHG emissions, as stated in the Draft ND (page 2-28):

> "The Refinery is subject to GHG emission reductions pursuant to AB32, the state-wide GHG reduction plan. In December 2010, CARB adopted regulations establishing a cap and trade program for the largest sources of GHG emissions in the state that altogether

> are responsible for about 85 percent of California's GHGs. Among these are fossil-fuel fired power plants, including both plants that generate power within California's borders, and those located outside of California that generate power imported to the state. GHG emissions from this universe of sources were capped for 2013 at a level approximately two percent below the emissions level forecast for 2012, and the cap will steadily decrease at a rate of two to three percent annually from now to 2020. Sources regulated by the cap must reduce their GHG emissions or buy credits from others who have done so. This means that the additional power utilized at the LARC as a result of the proposed project cannot result in an increase in GHG emissions from the increased use of third-party power, compared to GHG emissions at the time of issuance of the NOP. The proposed project does not affect compliance with the requirements of AB32, since no change in GHG emissions at LARC from operation of the proposed project are expected. Therefore, the proposed project would not conflict with AB32, the applicable GHG reduction plan, policy, and regulations that have been adopted to implement AB32.
>
> Thus, the SCAQMD's GHG significance threshold for industrial sources would not be exceeded. Based on the preceding analysis, implementing the proposed project is not expected to generate significant adverse cumulative GHG air quality impacts."

As analyzed in the Draft Negative Declaration (page 2-37), the electricity increase associated with the proposed project of 0.025 MW is a negligible portion of the electricity generated by SCE. Thus, the corresponding GHG emissions are also negligible. SCE and Phillips 66 Refinery are also subject to the AB32 cap and trade program such that SCE and the Refinery has been required to report annual GHG emissions and has an emissions cap that declines every year. Sources regulated by the cap must reduce their GHG emissions or buy credits to offset GHG emissions from others who have done so. Therefore, the overall operations at the Refinery would not result in a significant increase in GHG emissions.

Response 2-37

This comment quotes the project description in the ND and the reasoning behind the proposed project and acknowledges that the new and modified tanks can enable a reduction in expensive port wait times for large tankers. This comment claims that the proposed increase in storage capacity will allow the refinery to enable a future refinery expansion by increasing its processing capacity. The comment claims that because Phillips 66 has stated its plans per the commenter's Exhibit D to expand its business into exporting refinery products to other countries from the West Coast refineries, then the increased storage capacity that would occur as a result of the proposed project is really part of a future refinery project to expand operations at the LARC. This comment claims that future expansions of the LARC should be evaluated as part of this proposed project in an EIR. Lastly this comment claims that Phillips 66 has plans to separate the storage of unconventional crude oils with varying characteristics from other storage.

The proposed project allows for increased storage capacity of crude oil and not refined products that would be exported. The SCAQMD permit to construct/operate defines the tank product as "crude." If the facility was to use these tanks in the future for some other product, it would require a permit modification which would be subject to CEQA. Phillips 66 has not presented

SCAQMD staff with any plans to modify the storage tanks in this manner. This comment repeats issues previously raised (e.g., increased crude oil storage means increased refining capacity and Phillips 66's stated plans to expand its business) in Comments 2-8, 2-9, 2-10, and 2-15. For a discussion that explains the proposed project and relates why the proposed project does not include expansion of any other refinery units (e.g., increase crude throughput processed by the LARC), see Responses to 2-8, 2-9, 2-10 and 2-15.

With regard to the claim that future expansions of the LARC should be evaluated in an EIR as part of the proposed project, the commenter is incorrect to suggest that the ND for the proposed project evaluate a hypothetical future project or projects as part of the proposed project. There are no permit applications or other information that would suggest that the project is greater in scope than what has been presented in the ND. Phillips 66 has not presented SCAQMD staff with any plans of future projects for expansion specific to the LARC. The commenter is relying on a statement made in Phillips 66's 2012 Summary Annual Report to speculate that LARC is contemplating refinery expansions as a direct consequence of increasing crude oil storage capability even though there is nothing in the proposed project to support such a claim. The commenter does not present any fair argument supported by substantial evidence that the proposed project will specifically cause or allow the LARC to expand. Further, the commenter has only alleged that a future project or projects will occur, without providing any specificity or citations that identify the LARC as part of a future project that was not considered in the ND.

When determining the significance of the environmental effects caused by a project, CEQA Guidelines §15064 (d) states that the lead agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes which may be caused by the project. CEQA Guidelines §15064 (d)(3) goes on to explain that an indirect physical change is to be considered only if that change is a reasonably foreseeable impact which may be caused by the project and a change which is speculative or unlikely to occur is not reasonably foreseeable. For these reasons, SCAQMD staff does not believe that the commenter has provided any evidence to support the claim about future projects at the LARC and thus, the future project or projects alleged by the commenter are speculative and would not qualify as reasonably foreseeable requiring evaluation in an EIR.

Lastly, regarding the comment claiming that Phillips 66 *may* have plans to separate the storage of unconventional crude oils with varying characteristics from other storage, it is unclear what the commenter is suggesting. The various crude oils that are delivered to the LARC are generally stored separately. The crude oils are blended in line as they are fed to the Crude Unit. This will not change as a result of the proposed project. The commenter does not indicate that this will have any environmental impacts, therefore, no further response is required.

Response 2-38

This comment claims that the VOC emissions calculated for construction and operation are close to their applicable significance thresholds, and because the VOC emissions from the oil layer in the water draw surge tank were not calculated and were not included in the Draft ND, these emissions, when accounted for, will cause a significant increase in VOC emissions.

Contrary to the comment, all emissions from the proposed project have been included in the Draft ND and the VOC emissions calculated are in fact below the air quality significance thresholds for construction and operation. Construction emissions are discussed in the Draft ND on pages 2-13 through 2-17 and detailed emission calculations are included in Appendix A. Similarly, operational emissions are discussed in the Draft ND on pages 2-18 through 2-26 and detailed emission calculations are included in Appendices A and B. In particular, the emission calculations specific to the oil layer in the water draw surge tank (new Water Tank 2643) were accounted for by assuming that the entire water draw surge tank contained crude oil. The emission calculations for the water draw surge tank were calculated to be 4.27 pounds of VOC per day during operation and assumed the entire tank contained crude oil, which is a conservative assumption that overestimated actual emissions (see Draft ND Table 2-4 and Appendix A). For this reason, the Draft ND did not underestimate VOC emissions from the water draw surge tank. In fact, because the Draft ND used worst-case assumptions to provide a conservative estimate of the VOC emissions, they likely overestimate the actual VOC emissions that will occur. Therefore, the commenter's opinion that the emissions from the project have been underestimated is incorrect.

Response 2-39

This comment claims that the VOC emissions from tank cleaning and degassing in preparation for the new tank and modification of existing tanks were not identified and calculated in the Draft ND. This comment claims that effects on operation and cleaning of storage tanks specific to removing waxy buildup occurring from storing shale oil should be evaluated in an EIR.

The proposed installation of a geodesic dome on each existing crude oil storage tank is the only physical modification to these tanks. This modification does not cause increased cleaning emissions because the dome is installed above the existing floating roof at the wall height of the storage tanks. Therefore, cleaning of the tanks prior to installing a geodesic dome is not required. Further, the future cleaning schedule of the existing storage tanks would not be affected by installing the geodesic domes. Installing geodesic domes reduce VOC emissions from the operation of the tanks, but do not change the operation of the tanks, so tank cleaning schedules would not be affected. Therefore, no additional emissions from the cleaning of the existing storage tanks would occur due to the proposed project.

Cleaning activities are regulated under SCAQMD Rule 1149 – Storage Tank and Pipeline Cleaning and Degassing, which regulates the degassing of tanks by requiring vapor control equipment during the degassing process to minimize VOC emissions. While all storage tanks require periodic cleaning, some cleaning techniques can be accomplished without actually opening up the tanks, which essentially eliminates most of the VOC emissions that would occur during cleaning. The proposed project will add one new storage tank and this tank will also be expected to have a cleaning schedule similar to the existing storage tanks affected by the proposed project (i.e., the Refinery currently cleans its existing storage tanks approximately once every 20 years per the recommendation of API 653). Nonetheless, the cleaning schedule would not be expected to increase VOC emissions on a daily basis because only one tank at a time is usually taken out of service for tank cleaning. Further, the proposed project will not increase peak daily emissions because tank cleaning activities associated with the proposed new storage

tank will not overlap with the tank cleaning schedule associated with existing storage tanks because no two storage tanks would be cleaned at the same time as tank cleaning is very infrequent (i.e., approximately once every 20 years). Further, VOC emissions are minimized by compliance with SCAQMD Rule 1149 (e.g., emissions must be controlled by liquid balancing, negative pressure displacement, refrigerated condenser or any other control method to capture VOC emissions during degassing and tank cleaning). Finally, while operational emissions associated with the new tank have been estimated to be 29 lb/day of VOC emissions, during degassing and cleaning of the new tank, the operational emissions (i.e., 29 lbs/day) would not be emitted. VOC emissions from tank cleaning and associated degassing are less than during operation. The emissions from tank cleaning occur at a consistent rate regardless of the size of the tank, (i.e., a larger tank may take more time to clean but would not change the peak daily emissions). For example, in October 2014, Crude Tank 513 (identical to 510 and 511, see Figure 1-4) was degassed and cleaned generating a peak daily VOC emissions rate of 1.5 lbs/day, which is less than the operational emissions. Therefore, there will be a reduction in the peak daily emissions and no significant VOC emissions are expected due to tank cleaning activities.

Shale oil crude oils such as Bakken crude oil tends to be light (a relatively lower carbon-content compared to heavy crude oil) and sweet (low sulfur), but according to the commenter, it can cause a waxy buildup. As explained in Response 2-21, the LARC has been receiving, storing, and refining Bakken crude oil since November 2012. As explained in Response 2-33, the LARC has not experienced waxy buildup that required unscheduled or additional maintenance. The LARC has received and processed various types of crude oils for decades and, with or without the proposed project, will continue to receive various types of crude oils. The proposed project will not cause any change in the type of crude oil received.

Thus, there has been no increase in the need for tank cleaning activities associated with wax buildup in the existing crude oil storage tanks and no increased need in chemicals to break up waxes. Lastly, the issues raised in this comment do not identify any new significant impacts that would require evaluation in an EIR or cause a revision to the ND.

Response 2-40

This comment claims that the CEQA document should specifically identify, describe, and quantify fugitive emissions from pipeline cleaning and degassing activities, including pipeline lengths, connectors, construction activities, operation, and maintenance activities.

The existing pipelines at LARC are generally designed to accommodate passage of instrumented inspection devices (referred to as “smart pigs”) or subject to nondestructive inspection techniques. “Smart pigs" are internal instrumented inspection tools used for acquiring pipeline data as well as conducting pipeline cleaning. The pipelines at LARC do not generate emissions associated with maintenance, cleaning, and/or inspection activities because they are flushed with non-volatile materials such as water or aqueous-based cleaners prior to the use of smart pigs. Pipeline inspections typically occur every five years. The proposed project would install a tie-in to existing crude oil piping at the LARC to connect the new storage tank to the pipeline from the marine terminal. No modifications to the marine terminal or the pipeline from the marine terminal to the LARC are proposed. The manifold is used to direct the flow of crude oil to the

existing storage tanks and the tie-in will facilitate crude oil transfers to the proposed new storage tank. No change in inspection or maintenance schedules would be required and the additional tie-in will be incorporated into the routine inspection and maintenance of the existing manifold. Therefore, the proposed project would not result in an increase in VOC emissions associated with pipeline inspection or cleaning.

Lastly, with regard to the comment that the ND identify and quantify sources of fugitive emissions from components such as valves, flanges, and pumps, the fugitive emissions associated with these components have already been included in the Draft ND (see Draft ND, Table 2-4 and Appendix A, page A-17).

Response 2-41

This comment claims that if flares are used to control degassing emissions from tanks and pipelines, then the Draft ND should identify the gas volumes, flare hydrocarbon destruction efficiency, and VOC, NOx, SOx, particulate matter and other emissions.

Because flares are not used to control tank or pipeline degassing gas volumes, flare hydrocarbon destruction efficiency, and emissions associated with flaring activities, are not germane to the proposed project and therefore, are not addressed in the Draft ND. In addition, regarding tank and pipeline degassing emissions, see also Responses 2-39 and 2-40.

Response 2-42

This comment claims that Phillips 66's intention to expand the use of unconventional crude means that there will be additional emissions from the use of diluents during transport, piping, tank loading, and continued operation. The comment cites the commenter's Exhibit P as evidence that diluents, when blended with unconventional crude oils, add toxics such as benzene, toluene, ethylbenzene, and xylene to the crude oil. The comment also claims that because the diluents are highly reactive ozone precursors, they need to be identified and evaluated as toxic air contaminants in the Draft ND.

The issue raised about expanding the use of unconventional crude oils is not germane to the proposed project because, as explained previously in Responses 2-8, 2-9 and 2-10, no changes to the crude oil received, crude blending processes, or crude refining processes are proposed. With regard to the comment that the toxics present in unconventional crude oils need to analyzed as part of the proposed project, the various crude oil types are already being received and will continue to be received. In addition, the Draft ND evaluated the potential toxic air contaminant emissions associated with the proposed new crude oil storage tanks (see Draft ND pages 2-22 through 2-25 and Appendix B). As stated in the Draft ND on page 2-23:

> "The emission estimates of TACs for the proposed new crude oil storage tank, water draw surge tank, and storage tank modifications are based on U.S. EPA TANKS 4.0.9d with a hybrid liquid speciation of crude oils at the Refinery. The hybrid liquid speciation was created by selecting the maximum TAC present in each speciation of crude oil at the LARC and combining them into one speciation. This combination assures that the

> speciation is conservative when estimating TAC emissions from any type of crude oil. All tank emission rates are based on annualized emission rates from the TANKS model. Fugitive emissions are based on the Method 2 of the *SCAQMD Guide for Fugitive Emissions Calculations* (SCAQMD, 2003) with the hybrid speciation. The calculated emissions are presented in Appendix B."

Therefore, the TAC emissions associated with the proposed project included all of the highest individual TAC concentrations measured from any of the facility's crude oil analyses so that a worst-case estimate of TAC emissions was evaluated in the Draft ND (see Draft ND page 2-23). The individual crude oil speciations used in the emission estimates were based on actual laboratory analyses such that the presence of any diluents used prior to the transport, piping, tank loading, and continued processing of the crude oil were included in the analysis. It should be noted that no additional diluents are added to the crude oil once it arrives at the LARC. Therefore, the Draft ND evaluated a worst-case estimate of TACs which included the potential presence of diluents and determined that both the carcinogenic and non-carcinogenic risks associated with the proposed project would be less than significant. The cancer risk at the Maximum Exposed Individual Resident and the Maximum Exposed Individual Worker was determined to be 0.1 cancer cases in one million at both locations, which is substantially less than the significance threshold of 10 cancer cases in one million.

The noncancer risk estimates were also determined to be less than significant. The maximum acute hazard index was determined to be 0.0015, and the maximum chronic hazard index was determined to be 0.0005, both of which are substantially less than the significance threshold of 1.0. Therefore, the impacts of the proposed project from TAC emissions were determined to be less than significant (see Draft ND pages 2-22 through 2-25 and Appendix B).

Response 2-43

This comment claims that because the LARC currently has rail capacity to unload unconventional crude oil and because Phillips 66 has publicly announced that it intends to import unconventional crude oil by rail, the emissions from the transportation of crude oil by rail must be addressed and analyzed in the Draft ND as part of the proposed project. This comment also claims that the Draft ND should address the potential for expanded rail deliveries of crude oil to be stored in the new storage tank or the two modified storage tanks.

As mentioned in Responses 2-15, 2-16, and 2-17, the proposed project analyzed in the Draft ND does not include modifications that would increase the number of deliveries of crude oil via rail car, ship, truck, barge or pipeline, nor is it a foreseeable consequence of this project. This project will allow the offloading of a crude oil tanker in one visit, regardless of the type of crude oil it carries. There has been no evidence presented to suggest that the use of larger tank vessels by shipping companies will dictate where crude oil will come from. The use of larger crude oil tankers, as explained in Response 2-8, is the result of shipping companies' desire to reduce the costs in transporting cargo. This use of larger ships requires the facilities to offload the larger ships. Therefore, emissions from the rail transport of crude oil are not associated with the proposed project and, as such, have not been included in the Draft ND. Any future increase in deliveries of unconventional crude oil by rail is not a reasonably foreseeable consequence of the

proposed project. To provide assurance that the new storage tank 2640 and the two modified storage tanks (510 and 511) subject to the proposed project will not store crude oil from other delivery methods, such as railcar, a permit condition will be imposed that will require the use of the storage tanks to only receive and store crude oil from marine vessels. In addition, the permit condition will require records to be maintained to demonstrate compliance.

Response 2-44

This comment cites the commenter's Exhibit B and claims that refining unconventional crude oils can cause planned turnarounds or maintenance to occur earlier than usual and additional air emissions would be generated. This comment also claims that the processing of unconventional crude oils can cause unplanned refinery shutdowns, which in turn can increase emissions of VOCs, PM, H_2S, other criteria pollutants, toxics such as polycyclic aromatic hydrocarbons due to startup/shutdown, maintenance, flaring, and venting to pressure relief devices, as well as increased risk of fires and explosions causing safety risks for workers and neighbors.

The issues raised are not germane to the proposed project because, as explained previously in Responses 2-9 and 2-10, no changes to the crude oil being received, crude oil blending processes, or crude refining processes are proposed so no additional hazards would result from the proposed project. Since the proposed project will not have an effect on the crude blend specifications, the impacts noted in the commenter's exhibit attributed to processing a heavier crude oil than the Refinery is designed to handle, including increased unplanned shutdowns, will not occur as a result of the proposed project. Planned shutdowns and maintenance activities will continue regardless of the proposed project. For this reason, the ND does not need to be revised to address shortened turnarounds, unplanned refinery shutdowns and the associated emissions of such events.

Response 2-45

This comment claims that because the project is incorrectly portrayed as a relatively minor change and because numerous environmental impacts are missing from the analysis, there is evidence of significant environmental impacts that would require the proposed project to be evaluated in an EIR. This comment claims that the preparation of an EIR for the proposed project would remedy the problem by providing a full scoping and evaluation of the named and unnamed impacts. Lastly, this comment states that the "implications" of the project for the Wilmington portion of the Phillips 66 refinery "must be fully identified."

As explained in the individual responses to the issues raised throughout this letter, the SCAQMD staff disagrees with the commenter's unsubstantiated opinion that the proposed project may cause significant adverse impacts that would require preparation of an EIR. This opinion is based on erroneous assumptions regarding the scope of the proposed project, a misunderstanding of the refining process and generalized references regarding potential impacts of various crude oil types that the commenter attempts to attribute to the proposed project. As summarized below, the commenter does not present any fair argument supported by substantial evidence that the proposed project will specifically cause or allow the LARC to expand.

- As discussed in Response 2-9 and 2-10, LARC currently receives, blends and refines crude oils from various places around the world (see Table F-1). The proposed project will not change the various types of crude oil received (including "unconventional crudes") already received, blended and refined at LARC.

- The proposed project will not increase the amount of crude oil being refined or products produced from refining activities.

- As discussed in Responses 2-9 and 2-10, the modifications to the Brine Stripper will assist the refinery in treating sour water, but will not increase the amount of crude oil that can be processed at LARC (see Figure F-3).

- The proposed project does not include any modifications to rail loading racks and would not allow LARC to transport more crude oil via rail.

Further, the comments that comprise this letter reflect a core misunderstanding of what constitutes the proposed project and, perhaps more importantly, what it is not. Based on the exhibits presented in the letter, the commenter failed to provide evidence that proves the proposed project description misrepresents the project and that the ND underestimates and/or ignores impacts. Public Resources Code §21082.2 (c) and CEQA Guidelines §15064 (f)(5) state, "[a]rgument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence." Because the proposed project was prepared utilizing accurate information, facts and appropriate assumptions instead of relying on speculation and unsubstantiated opinion, the proposed project did not result in significant adverse environmental impacts. Therefore, an EIR was not warranted or required for the proposed project.

Lastly, no modifications to the LARW are included in the proposed project. The addition of a crude oil storage tank at LARC to improve efficiency of receiving crude oil by ship has no impact on the operations at the LARW.

COMMUNITIES FOR A BETTER ENVIRONMENT

October 9, 2013

VIA ELECTRONIC MAIL
South Coast Air Quality Management District
Attn: Ms. Barbara Radlein
21865 Copley Drive
Diamond Bar, CA 91765
bradlein@aqmd.gov

Re: Communities for a Better Environment's Comments Opposing SCAQMDs Adoption of the Phillips 66 Carson Plant – Crude Oil Storage Capacity Project Negative Declaration

Dear Ms. Radlein,

Communities for a Better Environment (CBE) submits these comments in opposition to the South Coast Air Quality Management District (AQMD)'s stated intent to adopt a Negative Declaration (ND) for the Phillips 66 Los Angeles Refinery Carson Plant – Crude Oil Storage Capacity Project (Project) – SCH: TBD. As described in more detail below, the Project poses adverse environmental impacts and an environmental impact report ("EIR") is therefore required.

An EIR must be prepared for any project that *may* have a substantial impact on the environment. *See*, Pub.Res.Code, §§ 21100, subd. (a), 21151, 21080, subd. (d), 21082.2, subd. (d). AQMD's proposed conclusion that the impacts of this Project as it is described in the ND and initial study may not reach applicable thresholds of significance, therefore, will not require analysis in an EIR is incorrect. Moreover, as a result of an inadequate project description contained in the ND, AQMD has failed to identify and adequately address additional potential environmental impacts that are undoubtedly significant and require a full EIR analysis. 3-1

As a non-profit environmental health and justice organization that works closely with community members in the South East Los Angeles region, and particularly with community members residing in Wilmington, CBE is especially concerned that AQMD may be unable to fully address the wide range of potentially significant impacts that this project may have on the environment and community residents. CBE, therefore, offers these comments in conjunction with the technical Comment letter of Julia May, and the additional reports and comments attached as exhibits to her Comment, referenced herein. 3-2

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I. LEGAL STANDARD

CEQA's overarching purpose and crucial mandate is to ensure public participation in environmental decision making. *See Berkeley Keep Jets Over the Bay Comm. v. Bd. of Port Comm'rs* (2001) 91 Cal.App.4th 1344, 1355. In order to satisfy this purpose, it is critical that the agencies charged with implementing CEQA's provisions make a good-faith, full disclosure of all information relevant to the range of potential impacts of a given proposed project. *Id.* (holding that the failure to include relevant information in effect precludes informed decision making and public participation).

An Environmental Impact Report (EIR) must be prepared under CEQA whenever substantial evidence in the record supports a "fair argument that a proposed project will have a significant effect on the environment" *City of Redlands v. County of San Bernardino* (2002) 96 Cal.App.4th 398, 405 (citations omitted); CEQA Guidelines §15384. Indeed, an agency reviewing the full range of potential impacts of a proposed project "must consider and resolve ***every*** fair argument that can be made about the possible significant environmental effects of [the] project." *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109. Where a "fair argument" based on substantial evidence exists, an agency's decision to adopt a negative declaration is fully inappropriate, and constitutes an abuse of discretion in failing to proceed in a manner required by law. *City of Redlands v. County of San Bernardino*, *supra*, at 406, 405. 3-3

Finally, when in question, CEQA's provisions must be interpreted to "afford the fullest possible protection to the environment within the reasonable scope of the statutory language." *Friends of Mammoth v. Bd. of Supervisors*, (1972) 8 Cal.3d 247, 259; *Laurel Heights Improvement Ass'n. v. Regents of University of California* (1988) 47 Cal.3d 376, 390. Thus, the "fair argument standard" provides a "low threshold," favoring environmental review through an EIR over the sparse analysis accompanied by issuing a negative declaration or notice of exemption from CEQA. *Citizens Action to Serve All Students v. Thornley* (1990) 222 Cal.App.3d 748, 754.

II. ARGUMENT

A. AQMD's Finding That The Proposed Project Will Not Have A Significant Effect On The Environment Is Erroneous, And Contradicts Substantial Evidence

The purpose of an initial study is to determine whether a project's potential impacts are significant, and thus, whether an EIR is necessary. Pub. Resources Code §21064. In contrast to the full analysis required in an EIR, a negative declaration only briefly explains why a project will not have a significant impact on the environment. *Id.*; *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th, 322, 330. The agency charged with preparing the initial study must, therefore, take seriously the terminal effect that a negative declaration has on the environmental review process, and must rise above a mere "token observance" of CEQA's regulatory requirements, in order to preserve the statute's critical purpose. *City of Redlands v. County of San Bernardino*, 96 Cal.App.4th, 409 (quoting *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 305). An initial study will only be deemed proper where there is no substantial evidence that the 3-4

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project may have a significant effect on the environment. Pub. Resources Code §21064 (c), (d); *Mejia v. City of Los Angeles*, 130 Cal.App.4th, at 330; see also, *Sierra Club v. County of Sonoma* (1992) 6 Cal.App.4th 1307, 1318. 3-4 cont.

Here, the initial study is inadequate because it fails to provide sufficient evidence or analysis of the potential environmental effects of the proposed project as described. For several issues, the ND improperly constrains its analysis by glossing over significant components of the proposed project. Moreover, the analysis contained in the initial study is severely hindered by the agency's failure to include an adequate project description, which, once revealed, drastically tips the weight of the evidence in favor of a full EIR analysis and review. 3-5

i. **The ND Underestimates The Potential Impacts Of The Project, As Described**

The project description contained in the initial study accompanying the ND states that Phillips 66 will increase its crude oil storage capacity by installing one new 615,000 bbl capacity crude oil storage tank, and by increasing the current capacity of two, additional storage tanks from 4.52 million bbl per year to 18 million bbl per year. Initial Study, Chapter 1, pp. 7-8. The project will also add a 14 bbl water-draw surge tank with two new 2100 gallon per minute crude feed transfer pumps and pipelines; three new heat exchangers to assist in the treatment provided by the water draw surge tank; an electrical power sub-station; and tie-ins for crude pipe delivery – all of which are described in the initial study as somewhat minor additions to the current operations at the Carson refinery (LARC) – for the benign purpose of increasing crude storage capacity. Initial Study, Chapter 1, p. 8. 3-6

Despite the ND and initial study project description, however, the project components described have broad implications, and significant potential impacts that demand a comprehensive analysis in a full EIR. *City of Redlands v. San Bernardino County*, 96 Cal.App.4th, 406 (requiring an EIR where the proponents of a proposed project and the oversight agency described the project components as "benign" when in truth, they revealed far broader consequences). Here, such broader consequences similarly exist: substantial evidence highlights the project's commitments to process heavier crude.

a. *The ND contains clear evidence of the project's commitments to process heavier crude based on technical specifications and process changes.*

The project description contained in the initial study states that no modifications are required for the LARC's brine stripper, which processes water-draw from the refinery's crude storage tanks for desalination purposes, and currently operates at less than maximum capacity. Initial Study, Chapter 1, at pp 9-10; May Technical Comments, 3-4. According to the current project description, the project only will change current desalination processes by re-routing the excess water from the project's new, increased capacity tanks to the brine stripper, as opposed to the sour water stripper to which it is currently routed, and which engages in the same process as the brine stripper but has no excess capacity in which to handle the increased volume from the tanks. *Id.* The initial study's project description goes on to state that although no modifications 3-7

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will be needed, new equipment including the three additional heat exchangers – key components of the project – will be used in the brining process. *Id.* Although the initial study fails to address the issue, the use of those new heat exchangers is critical to this project as currently described, and to the LARC and the Los Angeles Wilmington Refinery (LARW) operations overall.

3-7 cont.

Julia May's technical comments compare the process described in the initial study, and other technical studies in the industry describing changes in refinery operations necessary to process heavier crude oils, and especially tar sands crude. May Technical Comments, 2-3. That comparison reveals the following: "Compared with other crudes, heavy Canadian crude processing requires more flexibility in the preheat train to adjust the desalter temperature in order to avoid asphaltene precipitation." May Technical Comments, 3.[1] Distillation column heat removal processes, also specifically require more flexibility because of seasonal diluents and variable crude compositions contained in those crudes. *Id.* Thus "the amount of required flexibility" to process heavier crudes "should be quantified as an objective of the preheat train design," as heavy Canadian crudes, including tar sands, require adjustments to the desalter train design; an operations adjustment that is clearly implicated by this project, and is described in the initial study. *Id.*

3-8

The three new heat exchangers, key components of the project, will be specifically "designed to raise the temperature of the water before entering the Brine Stripper." *Id.* Thus, the project, as described in the initial study, employs precisely the type of operations shift that is required to process heavier crude oils, including western Canadian tar sands. Based on the information contained in the initial study, including the fact that the crude unit receives its crude directly from the storage tanks, and will specifically receive crude from the increased storage capacity tanks, the above change in the brining or de-salination process has direct implications on the operations of the entire Los Angles Refinery.

3-9

By failing to identify these modifications designed to allow processing of heavier crudes, the project description contained in the initial study is misleading. While on the one hand it describes the project as having no impact on crude unit operations, and therefore implying no change to its baseline operations, it describes, on the other hand, process changes that clearly demonstrate an intended shift in the types of crudes that will not only be stored, but processed and refined in the crude unit. In omitting any statements regarding these implied changes in crude quality being process, the ND obscures key potential, significant impacts of what they describe as a simple project to increase the LARC's storage capacity.

3-10

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[1] *See also, Designing a crude unit heat exchanger network, Preheat train design for heavy Canadian crudes can be very challenging, requiring an approach not normally required with other crudes*, Tony Barletta and Steve White, Process Consulting Services, Krish nan Chunangad Lummus, Technology Heat Transfer, Published in: Sour & Heavy 2012, www.eptq.com, "The refining, gas, and petrochemicals processing website," http://www.cbi.com/images/uploads/technical_articles/Crude-unit-heat-exchanger.pdf , Attached as Exhibit to Julia May's accompanying Technical Comments.

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ii. **The Proposed Project Description is Inadequate**

"An accurate and complete project description is necessary for an intelligent evaluation of the potential environmental impacts of the agency's action." *City of Redlands v. San Bernardino*, *supra*, Cal.App.4th, at 406. "Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal ... and weigh other alternatives in the balance." *Id.* While certainly required in the EIR process, this analysis must also take place before deciding not to prepare an EIR, and particularly in relation to very basic requirement of a full project description. 3-11

The Project ND here improperly segments the proposed "crude oil storage capacity" project from other critical project components, as well as from the parallel development of Phillips 66's single larger project to switch crude quality in all of its California refineries. Because this Project is integrally related to other Phillips 66 project proposals, it must be analyzed in the context of those proposals, and as a part of refinery operations throughout the state.

a. ***The Project description improperly piecemeals this Project from its additional, integral components and from Phillips 66's larger single project to change its crude source.***

Agencies are prohibited from piecemealing, improperly segmenting, and subdividing single projects into smaller projects, wherein the overall, significant environmental effects are obscured. *Orinda Ass'n v. Board of Supervisors* (1986) 182 Cal.App.3d 1145, at 1171 (citing *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188, 195-196). Here, neither Phillips 66, nor AQMD have identified, much less described or assessed the relationship between this project and Phillips 66's parallel state-wide projects at its various refineries, currently undergoing similar permitting processes. As a result, the joint impacts of these parallel, piecemealed projects cannot be analyzed as required under CEQA. *See*, *Orinda Ass'n v. Board of Supervisors*, 182 Cal.App.3d, at 1171(piecemealing improperly obscures the environmental effects to be analyzed under CEQA). 3-12

For example, Contra Costa County is currently reviewing comments, including CBE's comments s submitted in response to the County's Draft EIR (DEIR) for Phillips 66's Proposed Propane Recovery Project at its Rodeo refinery, SCH No. 2012072046.[2] That project entails increasing the Rodeo refinery's capacity to process higher-density, and higher sulfur-content crudes, to allow the refinery to recover and sell butane and propane in the form of Liquefied Petroleum Gas (LPG). [3] The DEIR for that project describes the project as involving relatively straight forward equipment and process changes to enable the Rodeo refinery to process, treat, recover, store and ship for further processing and sale, between 3,000 and 4,000 bbl per day of both propane and butane in LPG form. Karras Tech Comments in re Phillips 66 Propane 3-13

[2] *See* Karras Technical Comments in re Phillips 66 (Rodeo) Propane Recovery Project State Clearing House #2012072046, attached as Exhibit H to May Technical Comments.
[3] *See* Karras Technical Comments in re Phillips 66 (Rodeo) Propane Recovery Project, Exhibit H to May Technical Comments, ¶3.

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Recovery Project, 3. What the DEIR for that project failed to include was any analysis of the technical specifications described in the DEIR, in so far as they indicate Phillips 66's intent to lock the refinery into an overall change in crude feed quality to meet that project's LPG production objectives.[4] A technical assessment of the processes required to recover such gasses, however, clearly reveals the need to employ coking practices in order to crack propane and butane from crude residua or bitumen, and thereby meet the project's storage and shipment goals.[5] Thus, the Propane Recovery Project directly implicates the use of denser, higher sulfur crudes, necessary to recover LPG for Phillips 66's intended shipment and sales.[6]

3-13 cont.

Similarly, with regard to this Project, the technical specifications described in the ND demonstrate Phillips 66's specific intent to change its refinery operations in order to process different crude slates, implying an overall change in crude source. As explained above, these process changes are specifically designed to both store and process heavier, denser crude types, although such information is wholly absent from the initial study's project and impacts descriptions. Additional, publicly available information including Phillip 66's corporate strategy and market realities provides even more evidence of Phillip's 66's long term plans linking both the Rodeo refinery project proposal just described, and the current Project to increase storage capacity at LARC. Notwithstanding such additional evidence, however, the information above, including the project's stated technical specifications, implicates both immediate and long-term effects that compel the need for a full EIR analysis, to at least identify and also mitigate potential impacts where necessary. *City of Santee v. County of San Diego* (1989) 214 Cal. App. 3d 1438, 1455.

3-14

Phillips 66's single, larger project:

The ND explains that the crude unit operations at the Los Angeles Refinery only fluctuate based on conditions of "*other* processes units within the Refinery, market demand, and crude oil characteristics;" aspects of the refinery operations that the ND assumes will not shift. *Id.* (emphasis added). Like the Propane Recovery Project proposed in Rodeo, however, the crude storage capacity project here plays a crucial role in Phillips 66's industry-wide effort to shift its crude supply throughout all of its refineries. According to the ND's brief project description itself, the increase in crude oil throughput enabled by the project, is for the principal purpose of providing LARC "flexibility" in order to "blend multiple types of crude oil;" meaning, heavier, denser and higher API index crude types. Initial Study at Chapter 1, p. 3; May Technical Comments, 4.

3-15

A review of publicly available market-related information further illustrates Phillips 66 plans, not only for its San Francisco refinery operations, including both its Rodeo and Santa Maria refinery locations, but for all of its California refineries to process denser, heavier crudes, which often contain significantly higher sulfur content than the lighter, more common crude

3-16

[4] *See* Karras Technical Comments in re Phillips 66 (Rodeo) Propane Recovery Project, Exhibit H to May Technical Comments, ¶7.
[5] *Id.*
[6] *Id.*

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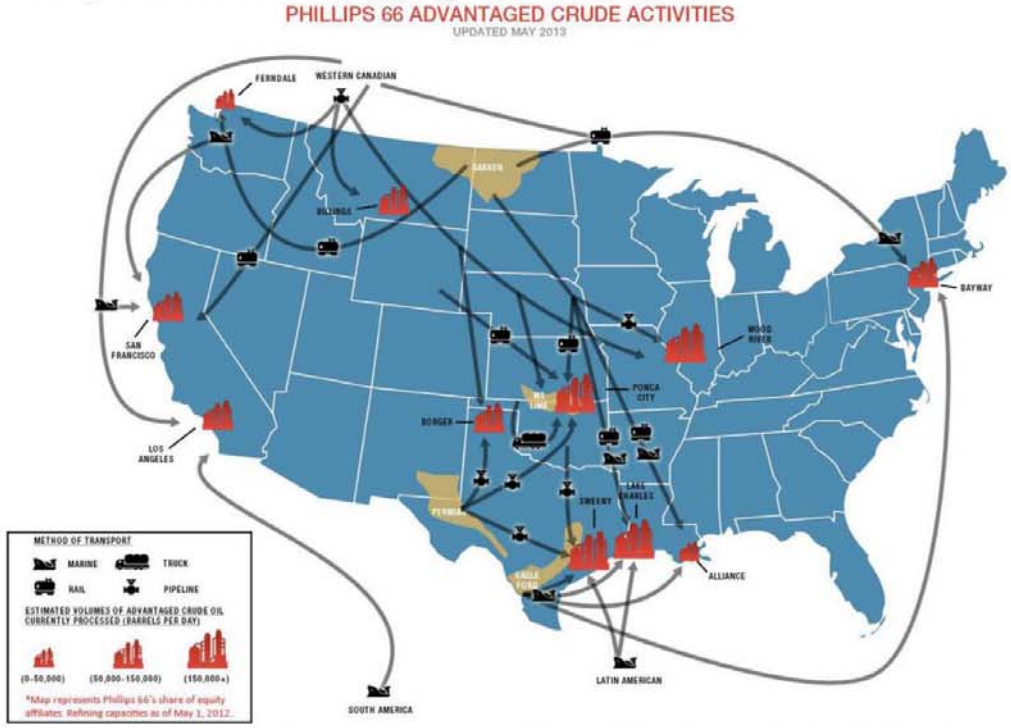
types. *See, Phillips 66 Delivers on Advantaged Crude Strategy.*[7] Phillips 66's has in fact publicly announced its industry-wide strategy of shifting its refinery capacity and operations to refine "advantaged crude," which it defines as "heavy crude oil from Canada and Latin America, lighter Canadian grades, and West Texas Intermediate (WTI)." *Id.* A map available on the Phillips 66 website (shown below) also specifically highlights this strategy, of transporting Western Canadian crude oil to a number of California Refineries, including Phillips 66's refineries in Rodeo, Santa Maria and Los Angeles by marine vessel and rail. *Phillips 66 Advantaged Crude Activities: Updated May 2013.*[8]



Phillips 66 map indicating plans to transport Western Canadian crude oil to both its San Francisco and Los Angeles Refineries. *Phillips 66 Advantaged Crude Activities: Updated May 2013*, last accessed October 7, 2013, available at: http://www.phillips66.com/EN/Advantaged%20Crude/index.htm.

3-16 cont.

Of the advantaged crude sources shown on the map, both Western Canadian and South American crudes are shown as being transported to the LARC by ship. *Id.* Moreover, Phillips 66's CEO has articulated a target of shifting to 100% advantaged crude within two years. *See, e.g.*,

3-17

[7] Available at: http://www.phillips66.com/EN/newsroom/feature-stories/Pages/AdvantagedCrude.aspx, last accessed Aug 7, 2013.
[8] Available at: http://www.phillips66.com/EN/Advantaged%20Crude/index.htm, last accessed Aug 7, 2013.

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Transcript of May 1, 2013 Phillips 66 First-Quarter Earning Conference Call, pp. 19-20.[9] Additional comments establishing this crude-switch strategy have also been made over the past year by Phillips 66 officials, including CEO Greg Garland, who has been quoted on Phillips 66's webpage, as saying "We are looking at pipe, rail, truck, barge and ship -- just about any way we can get advantaged crude to the front end of the refineries." *See, Id.* Moreover, at the UBS Global Oil & Gas Conference, Greg Maxwell, Executive Vice President of Finance and CFO of Phillips 66, stated:

> "[A]s you probably know, we're with regard to our LA and San Francisco refineries, we're fairly heavy. We can run some lights in San Francisco. As far as working towards getting advantaged crudes into that, we're looking at options to take down via pipeline -- I mean via rail cars, and then also going over to the waterfront and barging down into [the other] refineries."
>
> *Id.*

3-17 cont.

Public statements made to investors reveal even more information relating to Phillips 66's strategy to bring Canadian crude to its California refineries, and to increase export capabilities at those refineries. As Mr. Garland stated:

> "California is a challenging operating environment from a regulatory standpoint, we do not see that changing over the midterm. And so ***our opportunity to improve performance in California is really around getting advantage crudes to the front end of the California refineries, it's rail, it's ship, it's working on optimization of the cost structure and the export capabilities of those refineries.*** And we'll improve them to the extent that we can."[10]

Thus, while likely crude sources are foreseeable in most refinery related projects due to technical limitations in refinery operations, Phillips 66's overarching single large project to shift its crude to "advantaged crude" in all of its California refineries changes the likelihood of a crude source and crude quality change here, to a near certainty. This means that the LARC and potentially the LARW by implication, will receive, store, process and ship high-sulfur crude for the next few decades, and the current storage capacity increase, is an increase that is integral to the larger single project to shift all of Phillips 66's crude.[11]

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[9] Available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/PSX_Investor_Transcript_12_13.pdf; *Transcript of May 21, 2013, Phillips 66 Presentation at UBS Global Oil & Gas Conference*, last accessed Aug 7, 2013; http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/2013%20UBS%20Oil%20and%20Gas%20Conference.pdf last accessed Aug 7, 2013.

[10] *Transcript of Dec. 13, 2012, Phillips 66 Analyst Meeting*, last accessed Aug 7, 2013, available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/PSX_Investor_Transcript_12_13.pdf (emphasis added).

[11] *See*, May Technical Comments, 6-10; *see also*, Phillips 66 "advantaged crude" corporate information cited above, available at: http://www.phillips66.com/EN/newsroom/feature-stories/Pages/AdvantagedCrude.aspx, last accessed Aug 7, 2013.

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While it is true that a proposal, which is related to, but has independent utility of, and is not necessary for another project to proceed, need not be included as part of the project description and may be reviewed in its own EIR as a separate project, that is not the case with this proposed Project. *See*, *Communities for a Better Env't v. City of Richmond* (2010) 184 Cal.App.4th 70, 108. It has become apparent that Phillips 66's single larger project to shift its crude source and quality is comprised of numerous essential and improperly piecemealed smaller projects, including the Propane Recovery project proposed in Contra Costa County, and the Project to increase storage capacity proposed here. The process changes demonstrated by the Project specifications stated in the ND, effectuate a necessary debottlenecking of California refinery operations in order to process heavier forms of crude.[12] Thus, the utility of this Project is integrally related to the Rodeo project, Phillips 66's general refinery operations in the state, and especially, to the development of Phillips 66's single larger project to switch its crude source by importing, processing, and storing "advantaged crude" "at the front end of its California refineries."[13] A thorough review of the full range of potential impacts of this piecemealed project **must** be informed by the implications and potential impacts of the larger project to increase capacity to process and store heavier crudes at refineries state-wide, in order to ensure that AQMD is able to meet its CEQA obligations. *See*, *Id.*; *see also*, *City of Santee v. Cnty. of San Diego* (1989) 214 Cal. App. 3d 1438, 1447. Indeed, a failure to require an EIR for this Project would run counter to well-established law prohibiting public agencies from piecemealing, improperly segmenting and subdividing a single project into smaller projects, wherein the overall significant environmental effects are obscured. *Orinda Ass'n v. Board of Supervisors* (1986) 182 CA3d, at 1171 (citing *Topanga Beach Renters Assn. v. Department of General Services* (1976) 58 Cal.App.3d 188, 195-196). 3-18

B. The Project's Potential Significant Environmental Impacts Require Analysis In a Full EIR

By failing to address crude content information, the ND ignores the Project's true environmental impacts. In addition to being reasonably foreseeable, the future expansion into dirty crude is environmentally significant. The switch in crude quality has direct impacts on risks of industrial hazards, air quality, and both direct as well as cumulative impacts on climate change. These impacts must be analyzed and either avoided or reduced, in a full EIR analysis. *Natural Resources Defense Council, Inc. v. City of Los Angeles*, 103 Cal. App. 4th 268, 271 (EIR's are critical to assess environmental impacts, as they are intended to "furnish both the road map and the environmental price tag for a project"). 3-19

[12] May, Technical Comments, 4-5.

[13] *See* Phillips 66 Investor Presentation and Transcript of December 13, 2013 Analyst meeting, supra, available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/PSX_Investor_Transcript_12_13.pdf; *Transcript of May 21, 2013, Phillips 66 Presentation at UBS Global Oil & Gas Conference*, last accessed Aug 7, 2013; http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/2013%20UBS%20Oil%20and%20Gas%20Conference.pdf last accessed Aug 7, 2013; http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/PSX_Investor_Transcript_12_13.pdf last accessed on August 7, 2013.

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As is further described below, and in the accompanying technical comments and supporting documents, there is a breadth of scientific data pointing to substantial risks including, *inter alia*, increases in GHG and other emissions, potential increases in flaring, increased risks of full refinery breakdowns and explosions as a result of corrosion caused by higher sulfur content, heavier crudes that are not indentified or analyzed in AQMD's initial study for this project. Moreover, the ND fails to properly analyze and underestimates the potentially significant impacts of the project, as-is, and notwithstanding the foreseeable switch in crude quality. Thus, there is ample evidence to support at least a fair argument that an EIR is required for this Project.

3-19 cont.

i. The Environmental Setting and Baseline in the ND are Incomplete and Inadequate

The description of the baseline and environmental setting is incomplete. The ND considers the "current operations of the Crude Unit, including the heater firing rate at or near the permit limit" to be "the baseline at the Refinery. . . ." Noting that the project does not affect the overall *volume* of crude throughput, the ND further states that "the proposed project will not modify operations of process units located downstream of the Crude Unit. Therefore, the proposed project would not change the baseline operations of the refining processes or capacity at the LARC or the crude throughput of the Refinery."[14] This description is incorrect. The applicable baseline is not the overall volume of crude processed, but the overall average quality of crude by volume. This project will funnel "multiple types of crude oil"—including "advantaged crude"—into the Crude Unit.[15] Because this project allows the LARC to "blend multiple types of crude oil," because it is highly foreseeable that the LARC will use this project to process "advantaged crude," and because processing "advantaged crude" is more energy intensive and produces more impacts than processing other crudes, the baseline must be the current crude *quality* average by volume rather than merely the overall volume regardless of the crude quality.[16] Only a baseline that evaluates the *current* quality of crude against by volume, against the quality of crude enabled by the Project, will allow for a complete evaluation of the project's impacts.

3-20

Moreover, without an accurate baseline against which to measure the project's impacts, the ND cannot fully analyze the potential conflict of the project with other laws and regulations, nor can it fully ascertain what permits the project will require. For instance, the ND states that "the proposed project would not conflict with AB32, the applicable GHG reduction plan, policy, and regulations that have been adopted to implement AB32."[17] Yet, there is more than a fair argument that this project will, in fact, result in significant greenhouse gas ("GHG") impacts, given the (im)proper baseline. It is premature to state the project will not conflict with AB32 without a full analysis of the impacts, using the proper baseline.

3-21

[14] ND, pp. 1-9 – 1-10.
[15] ND, pp. 1-2, 1-9
[16] May Technical Comments, at 20 (citing to Karras "Combustion and Emissions from Refining Lower Quality Oil" to state that high API gravity such as that of heavy crudes, including tar sands crudes necessitates high energy intensity which leads to high levels of CO2 emissions and can lead to an above 30% increase in overall GHG emissions).
[17] ND, p. 2-28.

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Adopting an ND for this Project would be wholly improper and would constitute an abuse of discretion in light of the potential for conflicts with existing state, regional and local policies to reduce GHGs and to curb other forms of emissions, which have not been analyzed. 3-21 cont.

ii. The ND Underestimates Potentially Significant Direct and Cumulative Air Quality Impacts of the Project.

a. The ND Underestimates the GHG Impacts of the Project.

The ND's failure to properly identify the potential for significant greenhouse gas ("GHG") emissions stems from its failure to adequately describe the project to incorporate crude quality. Oil refining emits more GHGs than any other industry in California.[18] While the ND states that "the operation of the new tanks, as noted earlier, generates potential fugitive VOC emissions and no GHG emissions,"[19] in fact, as discussed above and clearly demonstrated in the attached Julia May comments, this project is not an isolated tank construction project, but is precisely intended to enable the refinery to process a variety of crude oils, including heavier, dirtier crudes. The operation of the project will therefore cause potentially significant increased GHG emissions both indirectly from the increased energy intensity required to process lower quality crude oils, and directly from the refining process itself.[20] 3-22

Further, GHG emissions will result from other aspects of the project's operations. For instance, increasing the tank capacity will allow the refinery to reach its goal of increasing its exports of processed oil, which will require increased ship, rail, and truck traffic from the refinery, which in turn, will increase GHG emissions.[21] In addition, the ND contains a curtailed analysis of the "fugitive" VOC emissions from the operation of the project will contribute to the formation of tropospheric ozone, itself a powerful GHG.[22] To the extent that the project includes (as it must) the refining of lower quality crude oils, the emissions of VOCs and NOx will only increase this effect. 3-23

Evaluating the potentially significant increase in GHG emissions from this project is even more crucial when considered in light of the fact that refineries across California, including in the Wilmington-Carson area, which houses five refineries and has the highest concentration of refineries in California, are increasingly processing heavier, more contaminated crude.[23] The 3-24

[18] Mandatory GHG Reporting Data. Emissions reported for calendar years 2009, 2010, 2011. California Air Resources Board, available at: http://www.arb.ca.gov/cc/reporting/ghg-rep/reported_data/ghg-reports.htm#registering_specified.

[19] ND, p. 2-28.

[20] *See* Karras, Greg, "Combustion Emissions from Refining Lower Quality Oil: What is the Global Warming Potential," *Environ. Sci. Technol.* 44, 9584-9589 (2010), for an analysis of the significant increases in GHG emissions caused by refining dirtier, heavier crudes from increased energy intensity needed to refine these oils and from direct emissions from the refining process.

[21] *See* May Technical Comments, at 8.

[22] This is in addition to the fact that the region is out of attainment for the Clean Air Act 8-hour ozone standard, and failed to meet its Clean Air Act 1-hour ozone attainment deadline in 2010.

[23] For California's refineries' trend to processing dirtier crude, *see e.g.* Declaration of Greg Karras, Re: Phillips 66 Company Propane Recovery Project Draft Environmental Impact Report released in June 2013 by the Contra Costa

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ND states that the significance threshold of 10,000MT/yr CO2eq is the threshold required for a project to be considered cumulatively considerable for GHG emissions, because GHG emissions "contribute to global climate change."[24] Though GHG emissions do contribute to global climate change, the scale of a "cumulative impact" is not global, and does not necessarily render the threshold a "cumulative" one. Rather, given the major potential climate change impacts of refineries—including those in the Wilmington-Carson area—switching to processing to lower quality crude, the potential GHG emissions from this project—including its enabling ConocoPhillips to process heavier, dirtier crude—must be evaluated together with these other projects.[25]

3-24 cont.

As a result, the use of the threshold in this instance makes little sense. The lead agency must find "that a project may have a significant effect on the environment" when "[t]he project has possible environmental effects that are individually limited but cumulatively considerable." CEQA Guidelines § 15065(a). "Cumulatively considerable" means "that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." *Id.* If substantial evidence supports a fair argument that a project may result in significant impacts, despite compliance with a threshold, an EIR must be prepared. *Mejia v. City of Los Angeles* (2005) 130 Cal.App.4th 322, 341-2. Indeed, "the agency must consider and resolve every fair argument that can be made about the possible significant environmental effects of a project, irrespective of whether an established threshold of significance has been met with respect to any given effect." *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1109 (see also *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal.App.4th 98, 114, holding that a threshold of significance cannot be applied in a way that would "foreclose[] the consideration of other substantial evidence showing there may be a significant effect"). In light of the fact that this project occurs in an area densely populated with other refineries with current and probable future projects enabling them to switch to lower quality crude, the AQMD's stated "cumulatively considerable" threshold of significance is not only inapplicable, but also masks the fact that there is "substantial evidence in light of the whole record" that the project's climate change effects will be cumulatively considerable. *Id.*

3-25

There is substantial evidence that the project will result in significant direct, indirect, and cumulative GHG impacts. The AQMD must conduct a full EIR in order to analyze the true extent of the project's GHG emissions and impacts.

b. The ND Improperly Analyzes Criteria Pollutant Emissions

County Department of Conservation and Development, p. 34. *See also* May, Julia, *The Increasing Burden of Oil Refineries and Fossil Fuels in Wilmington, California* (April 2009), pp. 10-13, available at: http://www.cbecal.org/wp-content/uploads/2012/05/wilmington_refineries_report.pdf. The refineries in the Wilmington-Carson area include two Conoco-Phillips refineries, Tesoro, Valero, and BP. It could also include Paramount Refinery in Paramount, CA.

[24] ND, p. 2-26, 2-27.

[25] Declining crude quality drove a 39% increase in CO2 emissions across U.S. refining regions and years (1999-2008). West Coast refineries ran the lowest quality crude and emitted the most CO2 per barrel refined in this period. Karras, "Combustion Emissions from Refining Lower Quality Oil," *ibid.*

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The air quality analysis of traditional criteria pollutants is rife with errors that render the ND incapable of fully informing the public. Moreover, commenters provide more than a fair argument that a project of this magnitude requires preparation of an EIR.

Importantly, the ND underestimates the VOC emissions from operation of the project. Julia May's technical comments identify several portions of the curtailed analysis, including the following, (1)Oil layer in water draw surge tank, (2) Tank cleaning and degassing: Storage tanks must be periodically cleaned, (3) Pipeline cleaning and degassing, (4) Flaring of tank and pipeline gases, and (5) Rail and truck transport emissions, (5) Unplanned process shutdowns.[26] These and other oversights severely constrain the air quality analysis. 3-26

c. The ND fails to examine potentially significant impacts from refining heavier crude oils

As articulated in the GHG analysis above, the ND completely fails to examine the operational impacts associated with modifications proposed for this project that will allow the refineries to refine heavier crude.[27] This flaw is equally important in assessing criteria pollutant emissions, particularly given the facility's location in one of the most polluted air sheds in the nation and in one of the most polluted parts of that air shed. This flaw must be cured in the EIR produced for this project. 3-27

d. The ND improperly analyzes the impact of this project on Sensitive Receptors.

The ND articulates four rationales for concluding that the project would not have a significant impact on sensitive receptors. These rationales fail to provide sufficient justification that sensitive populations will be protected.

The ND argues that sensitive population exposure is not substantial because the LARC is located in a primarily industrial area.[28] This misses the point of the analysis of sensitive populations. First, the analysis concedes that there is sensitive receptor within a 1/3 mile of the facility. Whether this area was zoned industrial, residential or commercial, the ND cannot ignore adjacent residents to mask its impacts. Further, the ND seems to argue that since the LARC is "existing," this somehow allows it to increase pollutant loads. Whether it is existing or not, this project will increase emissions through construction and operation in the surrounding community. So, the fact that it is existing is irrelevant to an analysis whether the project will expose sensitive populations to substantial pollution increases. 3-28

The fourth rationale is particularly egregious by the fact it is devoid of logic and unsupported by evidence in the ND.[29] The ND articulates the fourth rationale as "the operational emission increases of fugitive VOC emissions associated with the proposed installation of the new crude oil storage tank, water draw surge tank, two existing storage tank modifications, and 3-29

[26] Julia May Technical Comments, at 19-20.
[27] *See generally*, Julia May Technical Report.
[28] ND, 2-25.
[29] The ND mislabels the fourth rationale as "(3)," so commenters refer to the second "(3)" as the fourth rationale.

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associated piping are expected to be offset in compliance with SCAQMD Rule 1303." ND at 2-25. The offset structure relied upon in ND to ensure that fugitive emissions do not impact sensitive populations does not in fact do what the ND claims it does. In fact, as the map of zone restrictions attached to SCAQMD Rule 1303 allows offsets to be obtained in a wide geographic area of the South Coast Air Basin. For example, under SCAQMD Rule 1303, fugitive VOC emissions from Carson, located in zone 1, could be offset from sources as far away as Burbank or Catalina.

The ND provides no evidence that the actual offset will occur in the sensitive populations actually burdened by the "crude oil storage tank, water draw surge tank, two existing storage tank modifications, and associated piping." In fact, there are no assurances that this project will not unduly impact sensitive populations by offsetting emissions increases elsewhere. Moreover, the analysis fails to demonstrate how increases in rail and truck shipments will not impact sensitive populations in the communities around the facility in Carson and Wilmington. At a minimum, this failure entails a fair argument that a more substantial analysis must occur of the impact of project emissions on sensitive populations.

3-29 cont.

e. ***The ND Underestimates the Potentially Significant Direct and Cumulative Traffic Impacts of the Project.***

The traffic analysis is deeply flawed for several reasons. First, the traffic analysis concedes that a significant impact results when"[w]aterborne, rail car, or air traffic is substantially altered."[30] While the ND focuses on the alterations to waterborne ship traffic, it wholly ignores any potential increases to rail car traffic that could result from this project. In fact, the ND concedes "[f]ollowing project completion, petroleum products would continue to be delivered to both the Wilmington and Carson Plants via pipelines from marine terminals and other facilities in the area as well as via trucks and rail cars."[31] The ND fails to examine potential shifts that could occur in increases in shipments via rail and truck. The ND identifies no bottlenecks that would constrain increases in shipments by rail or truck. Thus, at a minimum, rail and truck traffic may be "substantially altered," or in other words, create a significant impact. This error further provides evidence of the insufficiency of the air quality analysis which fails to analyze increased pollution from rail and truck shipments.

3-30

ii. **The ND Ignores Potentially Significant Impacts Of The Project's Increased Risk of Hazards**

The unconventional characteristics of "advantaged crude" include, *inter alia*, a higher level of metal content and higher acidity content in the crude itself. As further detailed in the attached technical comments by Julia May and the attached technical comments by Greg Karras submitted in re Phillips 66's Rodeo Refinery Propane Recovery Project DEIR, these characteristics present an incredibly significant increase in the risk of serious accidents and hazards associated with routine refinery operations.

3-31

[30] ND, 2-82.
[31] ND, 2-48.

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For example, heavy crudes have much higher microcarbon residue (MCR), asphaltenes, and metals, which can generate large quantities of hydrochloric acid (HCl). May Technical Comments, 12. HCl in turn has a high likelihood of increasing corrosion within refinery unit operations, which can result in upsets that at the very least increase emissions, but can also lead to unscheduled shutdowns, and at worst, can present life-threatening risks to workers and dangerous conditions to neighbors' health.

3-31 cont.

Another type of corrosion due to the increased *sulfur* content in crude oil presents major risks of potential hazards, including fires, explosions and complete refinery shutdowns. May Technical Comments, 13. In fact, increased sulfur content in crudes processed at California refineries has already caused a major explosion at the Chevron refinery in Richmond; a problem that has been substantiated by the U.S. Chemical Safety Board report on the August 6, 2012 Chevron Richmond Refinery fire, approved by the Board in July 2013.[32] In its report, the U.S. Chemical Safety Board's in found that the Richmond accident was caused by sulfur corrosion that Chevron had been aware of, and had repeatedly ignored, while sulfur content increased in the crude being processed.[33] The report and other studies conducted since then, further found that under high heat and pressure, higher sulfur content crudes present an additional, proven high risk of increasing the frequency and magnitude of resultant incidents.[34]

3-32

Because the evidence outlined above provides clear indications that this project will, without a doubt, involve a significant change to the quality of crude held in the "increased storage capacity" tanks, an assessment of the increased risk of potentially devastating hazards is critical to include in an adequate analysis of the project's potential environmental impacts, and their relative significance of those impacts in relation to applicable thresholds. Some factors that must be included in such an analysis include the proximity to other hazardous operations, the refinery's staffing plans and a complete seizmac/liquefaction analysis of the site, as such site-specific factors can exacerbate the relative increase in risk, and the potential magnitude of impacts.[35]

3-33

III. CONCLUSION

The evidence outlined above points to the existence of at least a fair argument that this Project may have significant environmental impacts. *See California Building Industry Association v. BAAQMD* (2013) 218 Cal. App.4th 1171, 1182-1183 (holding that an EIR is required "whenever it can be *fairly argued* on the basis of substantial evidence that the project may have significant environmental impact," regardless of whether other substantial evidence supports the opposite conclusion"). Because AQMD cannot address the full range of these impacts in an ND, it must require an EIR to meet its minimum obligations under CEQA, and to provide substantial evidence to support its environmental conclusions. *Laurel Heights*, *supra*, 47

3-34

[32] U.S. Chemical Safety Board transcript of public hearing on Chevron Richmond, CA August 2012 explosion and fire, page 225, available at: http://www.csb.gov/assets/1/19/0503CSB-Meeting.pdf
[33] *Id.*
[34] *See generally,* Karras Technical Comments to Phillips 66 (Rodeo) Propane Recovery Project, Exhibit H to May Technical Comments.
[35] *Id.*

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Cal.3d, at 392. Moreover, because CEQA provides critical public participation and decision-making processes, it also "advances a policy of requiring [agencies] to evaluate the environmental effects of a project *at the earliest possible stage* in the planning process;" making an ND for this Project wholly inappropriate in light of the evidence available. *City of Redlands v. San Bernardino County*, *supra*, 96 Cal.App.4th 398, 410 (emphasis added). 3-34 cont.

For the aforementioned reasons, AQMD should reject the proposed ND for this Project and require a full EIR review of the Project's potential impacts, mitigation measures and alternatives.

Sincerely,

/s/

Yana Garcia
Maya Golden-Krasner
Roger Lin
Communities for Better Environment

/s/

Adrian Martinez
Earth Justice

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Responses to Comment Letter No. 3

Communities For A Better Environment, Ms. Yana Garcia et al
October 9, 2013

Response 3-1

This comment explains that Comment Letter No. 3 is submitted on behalf of Communities for a Better Environment (CBE) in opposition to the proposed project. This comment claims that the proposed project poses adverse environmental impacts and that an EIR should be required for a project that may have a substantial impact on the environment. This comment claims that the project description in the ND is inadequate and this inadequacy has caused a failure in the identification and analysis of significant environmental impacts that would require a full EIR analysis.

The SCAQMD understands that these comments have been prepared by CBE. As discussed in detail in responses to Comment Letter No. 2 which was also submitted on behalf of CBE and which contains similar concerns (see Comment 2-1, for example), the SCAQMD disagrees that an EIR is required for the proposed project. The SCAQMD, as lead agency for the proposed project, upon reviewing the environmental effects of the proposed project and in light of the comments received, determined that no substantial evidence has been presented that the proposed project may have one or more significant effects. Therefore, with no substantial evidence that the proposed project may have one or more significant effects, in accordance with CEQA Guidelines §15064 (f)(3), the SCAQMD determined the preparation of a ND is the correct course of action. More detailed responses regarding the commenter's claims of significant impacts that would warrant the preparation of an EIR are addressed separately, later in this letter.

Response 3-2

This comment expresses concern that the SCAQMD may not be able to fully address the wide range of potentially significant impacts that this project may have on the environment and the surrounding community's residents. This comment explains that the comments submitted in this letter are in conjunction with the comments previously raised in Comment Letter No. 2.

The SCAQMD understands that these comments have been submitted in conjunction with Comment Letter No. 2 (and its exhibits) and responses to this letter have been prepared and can be found in Responses 2-1 through 2-45.

The comment does not specify why the SCAQMD would be unable to analyze the environmental impacts that this project may have on the environment and the surrounding community's residents. The SCAQMD's mission statement is based on the belief that all residents have a right to live and work in an environment of clean air and is committed to undertaking all necessary steps to protect public health from air pollution, with sensitivity to the impacts of its actions on the community and businesses. To accomplish this mission, the SCAQMD staff is comprised of hundreds of professionals with expertise and extensive analytical experience in

various highly-skilled fields, including but not limited to chemical engineering, mechanical engineering, petroleum engineering, and chemistry, who are amply capable of conducting complex analyses of air quality and other environmental impact topics for environmental analysis of permit and rule projects as well as interpreting and implementing various local, state, and federal environmental regulations to effectively and efficiently attain and maintain air quality standards. The SCAQMD has conducted the appropriate analyses required to conclude that the proposed project has no significant impacts and an EIR is not required.

Response 3-3

This comment states that the purpose of CEQA is to ensure public participation in environmental decision making and that lead agencies are required to make a good faith, full disclosure of all information regarding the potential impacts of a proposed project and that the failure to include relevant information precludes informed decision making and public participation. The comment continues by explaining the "fair argument" standard that requires an EIR to be prepared if a fair argument can be made that there is substantial evidence that the project will have a significant effect on the environment. In addition, this comment claims that CEQA must be interpreted to afford the fullest protection to the environment and that the "fair argument" standard is a low threshold which favors environmental review through an EIR over a ND. This comment provides citations of case law to support this comment.

The ND provides a detailed project description and analyses of the 17 environmental resource areas pursuant to the CEQA Guidelines and environmental checklist. The ND was distributed for a 30-day public review and comment period. Thus, the proposed project has been meeting the CEQA mandates and requirements for public participation and provided in good faith all the information relevant to a range of impacts.

SCAQMD staff is well aware of the purpose of CEQA, the fair argument standard and the corresponding case law citations that elaborate how the fair argument standard has been interpreted by the various courts. It is important to understand, however, that in order to apply the fair argument standard, evidence based on facts must be presented to support any allegation that a proposed project may cause a significant effect on the environment. Unsubstantiated opinion and speculation do not qualify as evidence. See e.g. *Porterville Citizens for Responsible Hillside Development v. City of Porterville* (2007) 157 Cal.App.4th 885.

Response 3-4

This comment states that the conclusion of no significant adverse impacts for the proposed project is erroneous and contradicts substantial evidence. This comment states that the purpose of an initial study is to determine whether the potential impacts of the project are significant and whether the preparation of an EIR is necessary. This comment states that because a ND only briefly explains why a project will not have a significant effect on the environment, a lead agency must preserve the purpose of CEQA. This comment states that an initial study is proper when there is no substantial evidence that the project may have a significant effect on the environment. This comment provides multiple citations of case law to support this comment.

Comments 2-1, 2-18, 2-27, 2-28, 2-30, 2-31, 2-32, 2-33, 2-36, 2-37, 2-39, and 2-45 raised various issues arguing that certain information was not included in the ND. This allegedly missing information was characterized in Comment Letter No. 2 as substantial evidence that would reveal significant adverse environmental impacts causing an EIR to be prepared. As explained in Responses 2-1, 2-18, 2-27, 2-28, 2-30, 2-31, 2-32, 2-33, 2-36, 2-37, 2-39, and 2-45, all of the information provided in Comment Letter No. 2 was evaluated by SCAQMD staff and was determined to be an amalgam of misplaced, unsubstantiated opinion based on a core misunderstanding of the proposed project and the refining process in general. As such, the claims in this comment and the previous comments alleging that an EIR should have been prepared to address the issues raised have been shown as not applicable to the proposed project. Further, since the issues raised were determined to be inapplicable to the proposed project, the commenter failed to identify new impacts that would cause a re-evaluation and recirculation of the ND or a change in the type of document prepared for the proposed project. Thus, since no significant impacts were identified for the proposed project, a ND is the appropriate CEQA document.

In addition, the commenter seems to imply that the only way to satisfy CEQA's purposes and goals is to prepare an EIR because the preparation of any other type of CEQA document, in this case, a ND, is merely making a "token observance" of CEQA's requirements. However, CEQA Guidelines §§15070 to 15075 contain the criteria, requirements and procedures for the preparation of a ND for projects whose analysis determined potential impacts to be less than significant, such as the proposed project. Further, the SCAQMD believes that the ND prepared for the proposed project, which includes an Initial Study (environmental checklist) provides a robust analysis supported by substantial evidence that adequately informs both decision makers and the public as to potential impacts and environmental consequences from the proposed project before a permit decision is made. Lastly, the Draft ND was released for a 30-day public review and comment period from September 10, 2013 through October 9, 2013, thus complying with the requirements in accordance with CEQA Guidelines §15073 to provide a review opportunity for the public, responsible agencies, trustee agencies, and other public agencies with jurisdiction over resources affected by the proposed project.

The ND was prepared in accordance with CEQA Guidelines §15070 and Public Resources Code (PRC) §21080. PRC §21080 (c) states the following:

> "If a lead agency determines that a proposed project, not otherwise exempt from this division, would not have a significant effect on the environment, the lead agency shall adopt a negative declaration to that effect. The negative declaration shall be prepared for the proposed project in either of the following circumstances:
>
> (1) There is no substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment.
>
> (2) An initial study identifies potentially significant effects on the environment, but (A) revisions in the project plans or proposals made by, or agreed to by, the applicant before the proposed negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no

> significant effect on the environment would occur, and (B) there is no substantial evidence, in light of the whole record before the lead agency, that the project, as revised, may have a significant effect on the environment."

The Initial Study, within the ND (see Chapter 2), analyzed the environmental impacts associated with the proposed project and concluded, based on substantial evidence that the environmental impacts (including air quality, hazards, as well as cumulative impacts) are not significant. An EIR is required only if there is substantial evidence in the record that the project may have a potentially significant environmental impact (CEQA Guidelines §15070 and PRC §21080). Substantial evidence, defined in CEQA Guidelines §15384, means "facts, reasonable assumptions predicated on facts, and expert opinion support by facts." It does not include "argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly erroneous or inaccurate" (CEQA Guidelines §15384 (a)). A lead agency has some discretion to determine whether particular evidence is substantial and to assess the credibility of evidence. This comment and the aforementioned comments from Comment Letter No. 2 do not point to or provide such substantial evidence. In fact, this comment makes no specific claims of new impacts that were not contemplated during the analysis of this project. A project that does not have potentially significant adverse impacts shall be analyzed in a negative declaration. Since no "substantial evidence" was provided that demonstrated potentially significant adverse environmental impacts that may result from the proposed project, the preparation of an EIR is not required.

Response 3-5

This comment claims that the Initial Study contained in the ND is inadequate because it does not contain sufficient evidence or analysis of the potential environmental effects of the proposed project. This comment claims that because the analysis in the ND glosses over significant components of the proposed project, the project description is inadequate. Lastly, this comment claims that when an accurate project description is revealed, the evidence will support the preparation of an EIR for the proposed project.

The analysis in the ND was not glossed over as suggested by the commenter. Instead, the ND was carefully prepared in accordance with the project description information provided in the applications for a permit revision submitted by Phillips 66 and evaluated by SCAQMD Staff in accordance with the procedures in CEQA Guidelines §15070 et al. The information provided in the applications are signed and certified by a responsible official as true and accurate and reviewed by SCAQMD engineering and CEQA staff, and other staff for accuracy and evaluation of all potential direct and indirect impacts from the proposed project. An Initial Study was prepared for the proposed project and is included in Chapter 2 of the Draft ND. The Initial Study consists of an environmental checklist which evaluated 17 environmental topic areas included on the Initial Study checklist including aesthetics, agriculture and forestry resources, air quality and GHG emissions, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid and hazardous waste, transportation and traffic, and mandatory findings of significance. The Initial Study analyzed all of the reasonably foreseeable environmental impacts associated with the proposed project and

concluded, based on substantial evidence that the environmental impacts from the proposed project, including cumulative impacts, would not be significant. The ND did not identify any substantial evidence from which a fair argument could be made that the project would cause any significant adverse impacts. The comment letter failed to provide any such substantial evidence.

Contrary to commenters' implication that an analysis in an EIR would be more robust than an analysis in a ND, when the impacts are demonstrated to be less than significant, the analysis and conclusions in either document would be the same. For effects not found to be significant per CEQA Guidelines §15128, an EIR shall "contain a statement briefly indicating the reasons for determining that various effects on the environment of a project are not significant and consequently were not discussed in detail in the EIR." *See also*; *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1109. "Once the agency has determined that a particular effect will not be significant, however, the EIR need not address that effect in detail."

See also Response 2-8 regarding the adequacy of the project description.

Response 3-6

This comment cites the key elements of the project description and claims that the proposed changes are characterized as minor changes for the benign purpose of increasing crude oil storage capacity. This comment claims that the project description is inaccurate because the components to be affected by the proposed project have broad implications for the refinery's intent to process heavier crude oils and this point, while not disclosed in the ND, could cause significant adverse environmental impacts that would require a comprehensive analysis in a full EIR.

SCAQMD staff does not deny that the project components have potential impacts or implications, however, those impacts were thoroughly analyzed in the Draft ND and determined to be not significant. Response 2-8, as well as Responses 2-9 and 2-10, contain detailed explanations regarding the proposed project and the purpose of the various equipment changes described in the project description. SCAQMD staff respectfully disagrees with the commenter's opinion that the project is committed "to process heavier crude" and there is no evidence, let alone substantial evidence, to support these assumptions. As a result, the potential significant impacts from these "broad implications" are speculation. The referenced responses will show that the allegations in this comment are incorrect and unsubstantiated.

The cited reference to the *City of Redlands v San Bernardino County*, 96 Cal. App. 4th 406 case law does not support their contention that the ND must look at the supposed "broader implications" of the project as the comment provides no factual evidence that explains why offloading a ship in one visit instead of two visits implies that the project's true intent is for the LARC to be able to process heavier crude oils. In *Redlands*, the county failed to look at direct implications the project will have on the environment, and summarily dismissed the possibility of any impacts without analysis. For the proposed project, the SCAQMD has fully analyzed all impacts, direct and indirect, that are germane to the project. The commenter seeks to improperly go beyond the scope of the project by including unrelated impacts and speculating on what may

occur in the future at the Refinery. The commenter has misunderstood the nature and objectives of the proposed project as increasing crude oil storage capacity does not mean that there will be an increase in the amount of crude oil refined at the LARC. In order to increase the amount of crude oil refined at the LARC, applications would be required to modify the existing SCAQMD permits. However, no applications have been received by the SCAQMD that request such a change to the LARC, thus, the proposed project does not include any permit modifications that would allow the increase in crude oil throughput at the Refinery. Nor are any such changes contemplated. Nor does the project cause any change in the types of crude oil received and processed.

Response 3-7

This comment claims that the technical specifications and process changes described in project description, in particular, the changes to the Brine Stripper, the Sour Water Stripper, and the new heat exchangers, are evidence of the project's commitments to process heavier crude oils.

This comment raises the same issues that are previously addressed in Responses 2-8, 2-9, and 2-10.

Response 3-8

This comment claims that adjustments to the desalter train are needed to process heavier crude oil, such as tar sand crude oils, and implies that these changes are an objective of the proposed project.

This project does not involve any modifications to the Desalter. The commenter is confusing the Brine Stripper, which treats wastewater, with a Desalter, which treats crude oil. This comment raises the same issues that were previously addressed in Responses 2-8, 2-9, 2-10, 2-11, and 2-12.

Response 3-9

This comment claims the new heat exchangers are the type of modifications that are required to process heavier crude oils, including Canadian tar sands and that the change in the brining or de-salination process has direct implications on the operations of the entire Refinery. The heat exchangers involved in this proposed project relate to the water treatment system, not the crude oil processing system.

This comment raises the same issues that are previously addressed in Responses 2-3, 2-8, 2-9, 2-10, and 2-11.

Response 3-10

This comment claims that the initial study is misleading as it fails to identify the modifications designed to allow processing of heavier crude oils and obscures potential significant impacts associated with the increase in storage capacity.

The commenter is confusing the Brine Stripper, which treats wastewater, with a Desalter, which treats crude oil. This comment raises the same issues that were previously addressed in Responses 2-9 and 2-10.

Response 3-11

This comment claims that the project description in the initial study is inadequate because the proposed project is related to projects at other Phillips 66 refineries.

This comment raises the same issues that were previously addressed in Responses 2-8, and 3-6.

Response 3-12

This comment claims that the initial study did not describe or assess the relationship between the proposed project and projects at other Phillips 66 refineries in California. As explained further in Response 3-14, the commenter attempts to improperly expand the project to encompass the operations of independently operating refineries located hundreds of miles away. There is no connection between the Phillips 66 San Francisco Refinery, which is comprised of two separate facilities commonly referred to as the Rodeo Refinery and the Santa Maria Refinery, and LARC. There are no pipelines or other physical connections between the San Francisco Refinery and LARC. Any other projects that may be conducted at the San Francisco Refinery are not the result of nor are they caused by the LARC tank project, and likewise, the tank project is not causally linked to any San Francisco Refinery (including the Santa Maria Refinery) project. Therefore, as further discussed in Responses 3-13 through 3-15, no piecemealing of projects has occurred between LARC and the Rodeo or Santa Maria Refinery.

This comment also raises the same issues that are previously addressed in Responses 2-8, and 3-6.

Response 3-13

This comment claims that a proposed Propane Recovery Project at the Phillips 66 Rodeo Refinery suggests the refinery will use denser, higher sulfur crude oils and provides comments on the Phillips 66 Draft EIR for the Proposed Propane Recovery Project at its Rodeo Refinery.

The project at the Rodeo Refinery in Northern California, located over 350 miles from the LARC, is unrelated to the proposed project, as discussed further in Responses 2-29 and 3-14. The Rodeo Refinery operates separately and distinctly from the LARC. The operations are not connected, do not overlap or relate to one another in any way. Therefore, this comment is not germane to the proposed project because it does not address any concern or issue specifically related to the adequacy of the ND, so no response is required.

In response to the comment that a new rail project is being proposed at the Phillips 66 Rodeo Refinery, since the proposed project evaluated in the Draft ND is for the LARC, the new rail project in Rodeo in Northern California is not relevant to the proposed project at the LARC.

Also, note that the commenter has misrepresented the project at the Phillips 66 Rodeo Refinery indicating that the project "entails increasing the Rodeo Refinery's capacity to process higher-density, and higher sulfur-content crudes." Rather, the Rodeo Refinery project would recover butane and propane from refinery fuel gas to sell as a commodity instead of the current refinery activity of burning butane and propane as a fuel at the refinery. See the Phillips 66 Propane Recovery Project, Recirculated Draft EIR, (SCH No. 2012072046) available at http://www.ca-contracostacounty2.civicplus.com/DocumentCenter/View/26612.

Response 3-14

This comment claims that technical specifications described in the ND demonstrate the intent to change the Phillips 66 refinery operations to process different crude oil slates, implying a change in the sources of crude oil. In addition, this comment claims that it is Phillips 66's goal to link the Rodeo Refinery Propane Recovery Project and the current storage tank project at LARC.

This comment raises the same issues that are previously addressed in Responses 2-8 through 2-20, 3-6, and 3-13.

Additionally, the commenter attempts to improperly expand the project to encompass the operations of two independently operating refineries located hundreds of miles away by pointing to a very generalized corporate-statement that the refining operations will continue to do what the refineries have always done in optimizing sources of crude oil. There is no connection between the Phillips 66 San Francisco Refinery, which is comprised of two separate facilities commonly referred to as the Rodeo Refinery and the Santa Maria Refinery, and LARC. There are no pipelines or other physical connections between the San Francisco Refinery and LARC. Any of the projects the commenter has listed, as well as any other projects that may be conducted at the San Francisco Refinery are not the result of nor are they caused by the LARC tank project, and likewise, the tank project is not causally linked to any San Francisco Refinery project. These two refineries operate independently, have independent utility, and are fully functional independent of the other refinery and any projects conducted at the separate facilities. The only connection between the facilities is that they are owned by the same corporation. Further, the commenter does not offer any facts to supports its claim that these facilities or their projects are operationally related. Thus, the commenter's conclusion amounts to unsubstantiated opinion and does not constitute substantial evidence of a significant impact.

Response 3-15

This comment claims that the proposed project "plays a crucial role in Phillips 66's industry-wide effort to shift its crude supply throughout all of its refineries" and will provide LARC flexibility to blend multiple types of crude oil.

This comment raises the same issues previously addressed in Responses 2-8 through 2-13, and 3-14. The proposed project will not have an impact on the type or amount of crude oil processed at the Refinery. The Refinery currently blends the crude oils received at the Refinery to meet the

processing specifications and equipment limitations of the LARC. These specifications and limitations will not change as a result of the proposed project.

Response 3-16

This comment summarizes information from a Phillips 66 website outlining the company's plans to use "advantaged crudes" which the commenter claims includes heavy crude oil from Canada and Latin America, lighter Canadian grades and West Texas intermediate crude oil.

This comment raises the same issues previously addressed in Responses 2-8, 2-9, 2-13, 2-15 through 2-20, and 3-14.

Response 3-17

This comment continues to summarize information claiming that it is the goal of Phillips 66 to shift to 100 percent "advantaged crude" within two years. The commenters claim that there is a single large project to shift crude oil to "advantage crude" in all of its California refineries and the proposed storage tank project is integral to the larger project.

This comment raises the same issues previously addressed in Response 2-15 through 2-20. The commenter incorrectly assumes that "advantaged crude" means a high sulfur crude oil. As used by Phillips 66, advantaged crude means any economic crude that is capable of being processed at the refinery. In order to process the crude oil at the Refinery, the design of the LARC requires the sulfur content of the crude blend to remain between one and three percent. Some advantaged crudes may be higher in sulfur and some may be lower. Contrary to the commenter's assumptions, the Refinery is not proposing any changes to the refining process that would enable it to process higher sulfur crude oils without blending to meet the Refinery's specifications. Further, this project will not have any impact on the types of crude processed at the Refinery. The proposed project merely allows large marine vessels to offload in one visit rather than two, but does not change the type of crude carried by those marine vessels or received by the Refinery. The commenter has not provided a nexus between increased storage capacity and processing 100 percent "advantaged crude" oils. The LARC currently receives crude oils from varying locations through the world as demonstrated in Table F-1.

Response 3-18

This comment continues to claim that Phillips 66's larger project to shift its crude oil source and quality is comprised of numerous improperly piecemealed small projects, including the Rodeo Refinery Propane Recovery project and the proposed storage tank project at LARC.

This comment raises the same issues previously addressed in Responses 2-9, 2-10, and 2-15 through 2-20. Storing crude oil is always a refinery function. The commenter fails to provide a nexus between storing more crude oil to a goal of processing more "advantaged crude" oil. No link is identified indicating that the proposed project is part of a larger project.

Response 3-19

This comment provides a summary of other comments raised in the comment letter, re-stating that the ND has ignored the true environmental impacts of the proposed project; the switch in crude oil quality has direct impacts on hazards (including flaring refinery breakdowns, and explosions), air quality, and climate change that must be analyzed in an EIR.

As discussed earlier, there is no change in crude oil quality as a result of the proposed project. This comment raises the same issues previously addressed in Responses 2-8, 2-10, 2-28 through 2-35, and 2-38 through 2-44.

Response 3-20

This comment claims that the environmental baseline and setting are incomplete as the applicable baseline is the overall average quality of crude oil by volume and the proposed project would increase the use of "advantaged crudes."

The commenter incorrectly assumes that increasing crude oil storage capacity will result in a change in the quality of the crude oil blend that is processed at the Refinery. This assumption is not based on any project specific facts and is incorrect. The project allows the LARC to offload a ship in a single call. It does not change the type or amount of crude that is run at the LARC. This comment raises the same issues previously addressed in Responses 2-8, 2-9, 2-21, and 2-24.

Response 3-21

This comment claims that there is a fair argument that the project will result in significant GHG emissions when an appropriate baseline is used and claims the project could conflict with existing state, regional, and local policies to reduce GHG emissions.

This comment raises the same issues previously addressed in Responses 2-8, 2-9, 2-34, 2-35, and 2-36.

Response 3-22

The comment claims that the project will result in potentially significant GHG emissions indirectly from the increased energy intensity required to process lower quality crude oils and directly from the refining process itself.

This comment raises the same issues previously addressed in Responses 2-8, 2-34, 2-35, and 2-36.

Response 3-23

This comment claims that the project will result in increased GHG emissions associated with refinery operations including the transportation of crude oil and fugitive VOC emissions. The

comment appears to claim that the refining of lower quality crude oils will increase VOC and NOx emissions.

This comment raises the same issues previously addressed in Responses 2-8, 2-16, 2-23, 2-34, 2-35, and 2-36. The commenter implies VOCs and tropospheric ozone are related to GHGs and were omitted from the GHG analysis, but provides no evidence as to the nexus between VOCs and GHGs, and no evidence that the analysis of GHG impacts was inadequate. Therefore, no further response is necessary.

Response 3-24

This comment asserts that the potential GHG emissions from the proposed project, including enabling Phillips 66 to process dirtier crude oils, must be evaluated with other projects in the Wilmington-Carson area. The comment further asserts that the GHG cumulative impact is not global and does not necessarily render the significance threshold of 10,000 MT/yr CO_2eq a "cumulative" one.

This comment raises issues previously addressed in Responses 2-8, 2-9, 2-10, 2-23, 2-34, 2-35, and 2-36.

In addition, as discussed in the Draft ND on page 2-27, on December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where the SCAQMD is the lead agency (SCAQMD, 2008). This interim threshold is set at 10,000 metric tons of CO_2 equivalent emissions per year. The approved policy stated that projects with incremental increases below this threshold will not be cumulatively considerable. The total GHG emissions associated with the proposed project were determined to be 106 metric tons per year, which is well below the threshold of 10,000 metric tons per year. Therefore, the GHG emissions were determined to be less than significant and not cumulatively considerable.

CEQA Guidelines §15022(a) states that a public agency shall adopt objectives, criteria, and specific procedures consistent with CEQA and these [State] Guidelines for administering its responsibilities under CEQA. CEQA Guidelines §15022(d) states further, "In adopting procedures to implement CEQA, a public agency may adopt the State CEQA Guidelines through incorporation by reference. The agency may then adopt only those specific procedures or provisions described in subsection [15022] (a) which are necessary to tailor the general provisions of the guidelines to the specific operations of the agency." The SCAQMD previously adopted the state guidelines and has since adopted specific provisions such as regional and localized air quality significance thresholds. The SCAQMD adopted GHG significance thresholds consistent with the CEQA Guidelines §15022 provision to tailor a public agency's implementing guidelines by adopting criteria relative to the specific operations of the SCAQMD.

Specifically with regard to thresholds of significance, CEQA Guidelines §15064.7(a) states, "Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects." Subsection (b) of the same section states further, "Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution,

rule or regulation, and developed through a public review process and be supported by substantial evidence." SCAQMD's staff recommended GHG significance threshold has undergone a public review process as part of stakeholder working group meetings that are open to the public. The GHG significance thresholds were approved by the SCAQMD Governing Board for projects where the AQMD is the lead agency. While the commenter criticizes the significance threshold established by the SCAQMD for GHGs, the commenter's opinion does not provide any evidence that supports the use of an alternative threshold, nor provide evidence of a significant impact.

The SCAQMD has properly evaluated the cumulative impacts associated with the proposed project including the proposed project's GHG emissions (see pages 2-21 to 2-22 of the ND). The SCAQMD guidance on addressing cumulative impacts for air quality is as follows. "As Lead Agency, the AQMD uses the same significance thresholds for project specific and cumulative impacts for all environmental topics analyzed in an Environmental Assessment or EIR." "Projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. This is the reason project-specific and cumulative significance thresholds are the same. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant." [8] This approach is summarized in the *Cumulative Impact Analysis Requirements Pursuant to CEQA*, from the SCAQMD Cumulative Impacts Working Group 2003 White Paper that summarizes the SCAQMD approach to the preparation of cumulative air quality analysis.

This approach was upheld by the Court in *Citizens for Responsible Equitable Environmental Development v City of Chula Vista* (2011) 197 CA 4th 327, 334. The Court determined that where it can be found that a project did not exceed the South Coast Air Quality Management District's established air quality significance thresholds, the City of Chula Vista properly concluded that the project would not cause a significant environmental effect, nor result in cumulatively considerable increase in these pollutants. The court found this determination to be consistent with CEQA Guidelines §15064.7, stating, "The lead agency may rely on a threshold of significance standard to determine whether a project will cause a significant environmental effect." The court found that, "Although the project will contribute additional air pollutants to an existing nonattainment area, these increases are below the significance criteria…" "Thus, we conclude that no fair argument exists that the Project will cause a significant unavoidable cumulative contribution to an air quality impact." As in *Chula Vista*, here the District has demonstrated, when using accurate and appropriate assumptions, that the project will not exceed the established SCAQMD significance thresholds. See also, *Rialto Citizens for Responsible Growth v City of Rialto* (2012) 208 CA4th 899. Here again the court upheld the South Coast Air Quality Management District's approach to utilizing the established air quality significance thresholds to determine whether the impacts of a project would be cumulatively considerable. Thus, it may be concluded that the project will not cause a significant unavoidable cumulative contribution to an air quality or GHG impact.

[8] *See*, SCAQMD Cumulative Impacts Working Group *White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution*, August 2003, Appendix D, *Cumulative Impact Analysis Requirements Pursuant to CEQA*, at D-3. Available at: http://www.aqmd.gov/hb/2003/030929a.html. Accessed: August, 2013.

CEQA Guidelines §15064(h)(1) requires that a "lead agency consider whether the cumulative impact is significant and whether the effects of the project are cumulatively considerable." As summarized in the Draft ND (see page 2-86), "For the environmental topics checked as areas potentially affected by the proposed project (e.g., aesthetics, air quality and GHG emissions, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste, and transportation and traffic), the analysis indicated that project impacts would be less than significant because they would not exceed any project-specific significant thresholds. Based on these conclusions, incremental effects of the proposed project would be minor and, therefore not considered to be cumulatively considerable as defined by CEQA Guidelines §15064(h)(1). Since impacts from the proposed project are not considered to be cumulatively considerable, the proposed project has no potential for generating significant adverse cumulative impacts." (see page 2-86 of the Draft ND). As stated above, projects that exceed the project-specific significance thresholds are considered by the SCAQMD to be cumulatively considerable. Projects that do not exceed the project-specific significance thresholds are not considered to be cumulatively considerable. The analysis in the Draft ND found no significant impacts. Therefore, the analysis in the Draft ND regarding cumulative impacts (see pages 2-86) properly concluded that no significant adverse cumulative impacts would be expected due to the proposed project. The commenter has not provided any evidence to the contrary.

Finally, the commenters' opinion that the scale of a cumulative GHG impact is not global is not supported by fact. GHGs are a pollutant that do not have localized impacts.

Response 3-25

This comment asserts that the use of the GHG significance threshold makes little sense because the project is located in an area densely populated with other refineries with current and probably future projects enabling them to switch to lower quality crude oil and further claims that the threshold masks the fact that the project's climate change effects will be cumulatively considerable.

This comment raises the same issues previously addressed in Responses 2-34, 2-35, and 3-24. No significant increase in GHG emissions will occur because GHG emissions due to electricity will be offset by California's cap and trade program. The cap and trade program is now being implemented in California. Further, because power plants are an essential part of the cap and trade program and are thus required to: a) offset all of their emissions or buy offsets from others that over controlled; and, b) reduce their GHG emissions over time, there will be no statewide increases in GHG even if there is an increase in power used by the proposed project. For these reasons, no change in operational GHG emissions is expected from the proposed project.

The commenter opines that the use of the GHG significance criteria established by the SCAQMD makes little sense. As explained in Response 3-24, the courts have upheld the SCAQMD's significance criteria. The commenter has suggested an alternate significance threshold by which to measure the impacts of this project. Rather the commenter bases the inadequacy of the analysis provided in the ND on conjecture that there will be future phases of this project. The commenter has not provided any concrete evidence that there are additional

elements to the project. The commenter has not provided any proof that there are plans to modify the LARC in a manner that contradicts the project description. There are no additional elements to the proposed project beyond what was analyzed in the ND. As stated in Public Resources Code (PRC §21082.2(c)) and in CEQA Guidelines §15064(f)(5), "Argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly inaccurate or erroneous, or evidence that is not credible, shall not constitute substantial evidence." Thus, the cases that commenter cites as justification that an agency "must consider and resolve every fair argument that can be made about the possible significant environmental effect of a project" are not applicable here. In *Mejia v. City of Los Angeles* (2005) 130 Cal. App. 4th 322, the court found that there were additional elements to a project that were not analyzed. Additionally, the commenter's speculation regarding additional project elements has not provided substantial evidence of a significant effect. Therefore, the *Protect the Historic Amador Water Ways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099, 1109 and *Communities for a Better Environment v. California Resources Agency* (2002) 103 Cal. App. 4th 98,114 cases cited by commenter also are inapplicable. The commenter has not demonstrated that the SCAQMD has applied the significance threshold in a way "that would foreclose the consideration of other substantial evidence tending to show the environmental effect to which the threshold relates might be significant," nor has the commenter provided any information that would amount to any such substantial evidence or indicates that the agency has not considered any substantial evidence due to the application of its significance threshold. (*Protect the Historic Amador Water Ways v. Amador Water Agency*). Further, the commenter has not provided any support for abandoning the duly adopted significance threshold, nor provided any emissions calculations or other concrete evidence that demonstrate that the emissions calculated by the SCAQMD were underestimated or otherwise incorrect. The commenter simply concludes without providing supporting evidence that the ND did not correctly assess the impacts of the project. The SCAQMD has examined the entirety of the project and believes that the GHG emissions from the project have been calculated correctly and the amount of GHG emissions would not create a significant impact.

Response 3-26

The comment claims that the criteria pollutant air quality analysis has errors and underestimates the VOC emissions from portions of the project, including the oil layer on the water draw surge tank; tank cleaning and degassing; pipeline cleaning and degassing; flaring of tank and pipeline gases; rail and truck transport emissions; and unplanned process shutdowns.

This comment raises the same issues previously addressed in Responses 2-38, 2-39, 2-40, 2-41, 2-43, and 2-44.

Substantial evidence, defined in CEQA Guidelines §15384, means "facts, reasonable assumptions predicated on facts, and expert opinion support by facts." It does not include "argument, speculation, unsubstantiated opinion or narrative, or evidence that is clearly erroneous or inaccurate" (CEQA Guidelines §15384 (a)). A lead agency has some discretion to determine whether particular evidence is substantial and to assess the credibility of evidence. The comment does not point to or provide such substantial evidence.

Response 3-27

The comment claims that the Draft ND fails to examine the operational impacts that will allow the refinery to process heavier crude oils.

This comment raises the same issues previously addressed in Responses 2-8 and 2-9 with regards to the incorrect assumption that the proposed project will allow LARC to refine heavier crude oils.

Response 3-28

This comment claims that the Draft ND argues that the sensitive population exposure is not substantial because LARC is located in an industrial area, which is irrelevant as to whether the project might expose sensitive populations to air pollution increases. This comment raises the same issues previously addressed in Response 2-42.

The SCAQMD properly conducted a health risk assessment and used it as the basis for the determination that the project would not have a significant impact on sensitive receptors (see Draft ND on pages 2-22 through 2-25 and Appendix B). The LARC is located within an industrial area as stated by the commenter, and residents are generally not located within industrial areas. The SCAQMD, however, evaluated a worst-case estimate of TACs associated with the proposed project and determined that both the carcinogenic and non-carcinogenic risks at locations surrounding the LARC, including industrial, residential, and sensitive receptors, would be less than significant. See Response 2-42 for a more detailed discussion of the TAC emissions and the associated health risks.

Response 3-29

The comment claims that VOC emission offsets for the proposed Project could be offset from sources in Burbank or Catalina and that local sensitive populations could be impacted. The comment further claims that the ND fails to demonstrate how increases in rail and truck shipments will not impact sensitive populations in Carson and Wilmington.

The commenters' opinions regarding the analysis of traffic impacts are unsubstantiated. First, the total VOC emissions associated with the proposed project are less than significant prior to offsets as shown in the Draft ND (see Draft ND Table 2-4 and Appendix A). Second, as evaluated in the Draft ND (see Draft ND pages 2-19 through 2-20), the proposed project will result in a decrease in ship emissions in the Port of Los Angeles which is adjacent to the Wilmington/Carson area. The primary purpose of the proposed project is the Company's need for more tank capacity to enable the LARC to offload larger crude-cargo-volume ships (*e.g.*, Suezmax and Aframax) during one ship call, rather than: 1) off-loading part of the ship; 2) sending the ship to anchorage until enough crude oil is processed at the LARC to make room for the remainder of the ship's cargo; and, 3) returning the ship from anchorage to offload the remainder of the cargo. Offloading the cargo during one ship call would eliminate the ship emissions from anchorage and the additional maneuvering to and from the berth associated with the second ship visit. See Table 2-5 of the Draft ND for the estimated emission reductions.

The commenter correctly summarizes SCAQMD Rule 1303 which allows offsets for fugitive VOC emissions to be obtained from the geographic area of the South Coast Air Basin. VOC emissions are regulated as a criteria pollutant since, combined with NOx emissions, VOCs are a precursor to the formation of ozone which is not a localized pollutant, but a regional pollutant. Consistent with *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 141, the proposed project is designed to comply with laws and regulations. The SCAQMD's current regulations require emission offsets. These offsets are designed to keep a project from generating an emissions increase. Therefore, the proposed project including the offset requirements are less than significant and no mitigation is necessary. Moreover, the proposed project's VOC emissions are less than significant even without considering offsets.

Response 3-30

The comment claims that the Draft ND focuses on changes to waterborne ship traffic but ignores the potential shift in increases in shipments via rail and truck.

This comment raises the same issues previously addressed in Responses 2-8, 2-15 through 2-20, and 2-43.

Response 3-31

The comment claims that the Draft ND ignores the potential increase in hazards associated with the used of "advantaged crudes" and references a report prepared for the Phillips 66 Rodeo Refinery Propane Recovery Project Draft EIR. The comment further claims that the use of heavy crude oils could result in increased corrosion which could lead to increased emissions, unscheduled shutdowns, and increased risks to workers and neighbors health.

This comment raises the same issues previously addressed in Responses 2-29, 2-30, and 2-42.

The reference to the Greg Karras comments on the northern California refinery cited by the commenter is not specific to the operations at LARC and contains no facts specific to the scope or impacts of the proposed project; therefore, no response is required.

Response 3-32

This comment claims that the increased sulfur content in crude oil presents a major risk of potential hazards and has already caused a major explosion at a refinery in Richmond, California.

This comment raises the same issues previously addressed in Responses 2-25, 2-26, 2-27, 2-28, and 2-29.

Response 3-33

This comment claims that the project will involve a significant change to the quality of crude oil held in the new storage tanks which could result in increased hazards at the refinery. The

comment further claims that other factors that are important to the risks include proximity to other hazardous operations, staffing plans, and seismic/liquefaction analysis.

This comment raises the same issues previously addressed in Responses 2-8, 2-9, 2-21 and 2-24.

Response 3-34

The comment summarizes the points outlined in the comment letter and claims that the lead agency must prepare an EIR to meet its obligations under CEQA and provides court cases to support its claim.

This comment raises the same issues previously addressed in all the Responses from comment letters 2 and 3.