EXHIBIT #3b

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Via Email

Planning Commission
Contra Costa County
30 Muir Road
Martinez, CA 94533

Re: Phillips 66 Propane Recovery Project Environmental Impact Report

Dear Commissioners:

On behalf of the Rodeo Citizens Association, we submit these comments on the Final Environmental Impact Report ("FEIR") for the Phillips 66 Propane Recovery Project ("Project"). As set forth below, and in the attached report of Phyllis Fox, Ph.D., PE ("Fox Report"), Exhibit A, we have concluded that the EIR suffers from numerous deficiencies that render it inadequate under the California Environmental Quality Act ("CEQA") (Pub. Res. Code § § 21000 *et seq.*) and the CEQA Guidelines (14 Cal. Code Regs. § § 15000 *et seq.*) ("CEQA Guidelines"). We respectfully request that the Commission defer consideration of the proposed Project until such time as the EIR is revised to comply with CEQA.

An EIR is "the heart of CEQA." *Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal. 3d 376, 392 ("*Laurel Heights I*"). "The purpose of an environmental impact report is to provide public agencies and the public in general with detailed information about the effect which a proposed project is likely to have on the environment; to list ways in which the significant effects of such a project might be minimized; and to indicate alternatives to such a project." Pub. Res. Code § 21061. The EIR "is an environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return. The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.' Because the EIR must be certified or rejected by public officials, it is a document of

accountability." *Laurel Heights I*, 47 Cal. 3d at 392 (citations omitted). The EIR for the proposed Project fails entirely to live up to this mandate.

We will not repeat the issues raised in our August 9, 2013 letter or the valid claims raised by Communities for a Better Environment ("CBE") in its August 9, 2013 and September 4, 2013 letters. We incorporate the CBE letters by reference into this letter. Our review of the EIR has uncovered additional inadequacies beyond those raised in the earlier letters. Specifically, the EIR fails to (1) provide a stable, accurate and detailed project description, thus undermining every aspect of the impacts analysis; (2) accurately evaluate numerous Project impacts, including air quality, greenhouse gas emissions, public health and safety, and biological and geological resources; (3) provide sufficient analysis of cumulative impacts; and (4) adopt feasible mitigation measures that were suggested by commenters to lessen the Project's air quality and other impacts.

In addition, the FEIR introduces new, significant information requiring recirculation of the EIR and fails to adequately respond to comments. For these and other reasons detailed herein, and in the attached Fox Report, the EIR is inadequate under CEQA.

I. The EIR's Project Description Is Inadequate.

In order for an environmental document to adequately evaluate the environmental ramifications of a project, it must first provide a comprehensive description of the project itself. "An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR." *San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 730, quoting *County of Inyo v. City of Los Angeles* (1977) 71 Cal. App. 3d 185, 193. As a result, courts have found that, even if an EIR is adequate in all other respects, the use of a "truncated project concept" violates CEQA and mandates the conclusion that the lead agency did not proceed in a manner required by law. *San Joaquin Raptor*, 27 Cal. App. 4th at 730.

Furthermore, "[a]n accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *Id.* (citation omitted). Thus, an inaccurate or incomplete project description renders the analysis of significant environmental impacts inherently unreliable. While extensive detail is not necessary, the law mandates that EIRs should describe proposed projects with sufficient detail and accuracy to permit informed decision-making. *See* CEQA Guidelines, §15124 (requirements of an EIR).

A. The EIR's Project Description Is So Flawed that the EIR Fails As An Informational Document.

An EIR's job is to provide good faith disclosure, sufficient information to evaluate consequences, and all relevant data compiled in a single report and to have enough technical detail included or cited to for parties to evaluate the analysis of the EIR. Finally and EIR must be based on substantial evidence to support conclusions or questions of fact. Here the EIR falls far short of these requirements.

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We, and other members of the public, asked for the technical specifications regarding the existing Refinery's operations. We explained, for example, that it is imperative to know the Refinery's crude feedstock composition to understand the nature of the Project and its environmental impacts. Rather than provide this information, the FEIR simply asserts that information relating to crude feedstock data is not relevant to the EIR's environmental analyses. FEIR at B4-23 at 3.2-124.

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The EIR never provides a credible explanation as to why data regarding crude feedstocks is irrelevant to the Project or its environmental review. Instead, the FEIR asserts, absent any evidence, that the Project does not include, does not rely on, and would not facilitate a change or modification to the crude blend currently processed at the Refinery. FEIR at B4-9 at 3.2-119. To conclude that the quality and quantity of crude at the Refinery is irrelevant to the Project's operations and environmental impacts, the EIR must provide substantial evidence. Substantial evidence consists of "fact[s], a reasonable presumption predicated on fact, or expert opinion supported by fact," not "argument, speculation, unsubstantiated opinion or narrative." Pub. Res. Code § 21080(e)(1)-(2). Because the EIR's premise is based on no data or documentation, it falls far short of this threshold.

As the Fox Report explains, the Project will result in the use of heavier and more polluting feedstocks. Specifically, the high values for propane and butane that are proposed to be recovered suggest that feedstock input would have to be modified in conjunction with the Project. Fox Report at 4, 5. The EIR, however, does not acknowledge this connection and therefore improperly fails to evaluate the environmental implications of the Project.

It is not as if the issue of a refinery's crude feedstock is unimportant. As the Fox Report makes clear, the chemical composition of raw materials that are processed by a refinery directly affect the amount and composition of the refinery's emissions.

> The amount and composition of sulfur in the crude slate, for example, ultimately determines the amount of [sulfur dioxide] that will be emitted from every fired source in the refinery and the amount of odiferous hydrogen sulfide and mercaptans that will be emitted from tanks, pumps, valves, and fittings. The composition of the crude slate establishes the CEQA baseline against which impacts must be measured. Fox Report at 13.

SMW 1

Other environmental impacts are also entirely dependent on the quality of crude oil processed at the facility. *See* Fox Report and Fox comments on the Valero Refinery Initial Study, Exhibit A. Moreover, Phillips 66 has recently provided detail about the quality of its crude oil in the environmental review for its other refinery projects.[1] Given this precedent, the County should require that Phillips 66 disclose this information in a revised EIR so that the decision-makers and the public can be fully apprised of the nature of the proposed Project and its environmental impacts.

Members of the public also requested the EIR disclose all of the changes to the Refinery and its associated facilities that would be required to produce the propane and butane that would be recovered by the Refinery. *See* Comments B2-4, B4-11, B4-36, B4-39. Yet the FEIR, like the DEIR, never discloses the composition of the Refinery fuel gas and other gas streams from which propane and butane would be recovered. The EIR is essentially a black box that does not allow the public to understand the actual nature of the Project or its environmental implications.

Finally, assuming for the sake of argument that the Project itself does not require a change in feedstocks, it is nonetheless critical to identify the existing quantity and quality of crudes currently processed at the Refinery and those that will be processed upon completion of the proposed Project. As Phillips 66 itself has announced, it intends to shift to 100% advantaged crude within the next two years. *See* Comment B4-6 at FEIR

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[1] ConocoPhillips Santa Maria Refinery Throughput Increase Project DEIR, August 2011 at 2-7, attached to Fox Report..

3.2-24.[2] As discussed below and in the Fox Report, the severity and extent of refining-related environmental impacts is directly dependent on the crude feedstock used or transported by the facility. Thus to estimate the environmental impacts from the Project, the EIR must disclose information about existing and projected crude supplies and it must rely on this information to calculate future emissions. Indeed, the FEIR admits that current "crude feedstocks used by the Refinery are part of the existing baseline for the Refinery." FEIR Response to Comments ("RTC"). B4-11 at 3.2-120. As such, the EIR must be revised to disclose the Project's baseline feedstock quality and the feedstocks Phillips 66 expects to be processing once the Project is operational. In the absence of this information, it is simply not possible to evaluate the Project's cumulative environmental impacts.

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B. The EIR Improperly Segments the Proposed Project from Other Related Actions.

CEQA requires that an EIR describe the entirety of a project, including reasonably foreseeable future actions that are part of it. CEQA Guidelines § 15378(a). While an EIR need not include speculation about future environmental consequences of a project, the "EIR must include an analysis of the environmental effects of future expansion or other action if: (1) it is a reasonably foreseeable consequence of the initial project; and (2) the future expansion or action will be significant in that it will likely change the scope or nature of the initial project or its environmental effect." *Laurel Heights I*, 47 Cal. 3d at 394-396. Under the *Laurel Heights I* standard, "the facts of each case will determine whether and to what extent an EIR must analyze future expansion or other action." *Id.* at 396. A project proponent must analyze future expansion and other such action in an EIR if there is "telling evidence" that the agency has either made decisions or formulated reasonably definite proposals as to such future activities. *Id.* at 396-397. Further, there must be discussion "in at least general terms" of the future activity, even if the project is contingent on uncertain occurrences. *Id.* at 398.

The Project as described in the EIR narrowly involves modifications to the Rodeo Refinery "to recover for sale propane and additional butane from refinery fuel gas and other process streams." DEIR at 3-2, 3-5. However, as discussed above, the EIR fails to disclose changes elsewhere that are required to produce the propane and butane that would be recovered by the facility. As summarized below and discussed extensively in

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[2] Phillips 66 defines "advantaged crude" as heavy crude from Canada and Latin America, lighter Canadian grades, and West Texas Intermediate ("WTI"). FEIR at 3.2-24.

SMW 2

the Fox Report, the existing Refinery does not produce enough butane and propane to support the Project without changes in the amount and type of feedstock. Documentation in the record, including the Bay Area Air Quality Management District ("BAAQMD") permit files, and projects proposed by Phillips 66 at its Santa Maria Facility, provide the missing links in the butane/propane supply chain at the Rodeo Refinery. *See* BAAQMD Permit Files, attached to Fox Report. While it is clear that there is more to the proposed Project than meets the eye, the EIR's description of the Project is so vague and incomplete that it simply is not possible to fully understand the nature of the modifications to the Refinery or the environmental impacts of these modifications. The most egregious omissions are discussed below.

1. Amount of Propane and Butane that Could Be Recovered from Baseline Feedstock.

The EIR does not contain the information necessary to estimate the amount of propane and butane that could be recovered from baseline feedstock such as:

- composition of the Refinery fuel gas and other gas stream from which propane and butane would be recovered, e.g., gas chromatographic analyses;
- distillation curves and composition data for the crude, semi-refined feedstock inputs from elsewhere, and other internal streams that would routed to the subject Project;
- relative amount of crude and semi-refined feedstock;
- material balance or outputs of refinery models.

The Project's high values for propane/butane recovery suggest that the feedstock input will be modified in conjunction with the Project. The EIR must disclose the calculations that support the foundational assumption that 100% of the propane/butane can be recovered from the baseline refinery fuel gas.

2. Projects at Phillips 66's Santa Maria Facility

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Phillips 66's San Francisco Refinery ("SFR") consists of two facilities linked by a 200-mile pipeline. *See* SMF Throughput Project EIR excerpts, attached to Fox Report. The Santa Maria Facility ("SMF") is located in Arroyo Grande, in San Luis Obispo County, while the Rodeo Refinery ("Refinery") is located in Rodeo. The SMF mainly processes heavy, high sulfur crude oil and sends semi-refined liquid products to the

Rodeo Refinery. The proposed Project DEIR did not even disclose the existence of this related facility.

The EIR addresses changes at just the Rodeo Refinery to increase butane and propane production, once the proper amount of the right feedstocks arrive. As discussed above, the EIR is silent on the composition and relative amounts of feedstock (heavy crude, semi-refined products from the SMF). As the Fox Report explains, the Project requires additional feedstock containing recoverable propane and butane.

SMW 3

Phillips 66 is undertaking two projects at the SMF that are intricately related to the propane/butane recovery project at the Rodeo Refinery. First, Phillips 66 recently applied to San Luis Obispo County and the San Luis Obispo Air Pollution Control District for a permit to increase the throughput production of semi-refined products at the Santa Maria Refinery ("SMF Throughput Project"). The purpose of the SMF Throughput Project is to send additional semi-refined products to the Rodeo facility. *See* SMF Throughput Project EIR, attached to Fox Report. As the Fox Report explains, this 8,675 barrels per day ("BPD") throughput increase would necessarily be included in the streams from which propane and butane would be recovered at the Rodeo Refinery. Fox Report at 5, 6. This increase would be converted into semi-refined products in the SMF's distillation units and coker to yield gas oil and naptha, which would be sent to the Rodeo Refinery, where propane and butane would be separated, contributing to the propane/butane slated for recovery by the Rodeo Project. *Id.*

Phillips 66 also recently proposed a Project that would extend a rail spur at the Santa Maria Facility to import increased amounts of crude to support the SMF Throughput Project ("SMF Rail Spur Project"). *See* SMF Rail Spur Project Application, attached to Fox Report. As the Fox Report explains, the SMF Rail Spur Project, would allow the import of cost-advantaged tar sands crudes:

> Tar sands crudes are heavier and more viscous than the feedstock currently processed at either Rodeo or Santa Maria. These crudes are thus commonly blended with 25% to 30% diluent to facilitate transporting them by rail or pipeline. The blended crude is known as a "DilBit." The diluent is typically natural gas condensate, pentanes, or naphtha. The diluent can be readily separated and recovered as propane/butane at Rodeo. Fox Report at 7.

These crudes would be processed at the Santa Maria Facility into semi-refined products and sent to Rodeo. As discussed previously, Phillips 66 has publicized its intent to get advantaged crudes to the West Coast. *See also* 2013 Barclays CEO Energy-Power Conference, attached as Exhibit B and Q1 2013 Phillips 66 Earnings Conference Call – Edited Transcript, attached as Exhibit C.

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In sum, there is plenty of "telling evidence" within and outside of the Rodeo Refinery Project EIR regarding the intimate connection between the proposed Project, the SMF Throughput Project and the Rail Spur Extension Project. These projects are intimately connected in that the Rodeo Project depends on the projects at the Santa Maria Facility and vice versa. Consequently, these are connected actions and therefore must be analyzed concurrently with the direct impacts of the proposed Project itself. CEQA Guidelines, § 15378, subd. (a) (agency must evaluate the environmental impacts of the whole of the action.

Lastly, under CEQA, even assuming, *arguendo*, that the SMF projects are not integral parts of the proposed Project, the EIR must still discuss the SMF projects. *Laurel Heights I*, 47 Cal.3d at 398 (requiring discussion "in at least general terms" of future activity in connection with a project, even if the project is contingent on uncertain occurrences). While the FEIR now adds a brief discussion of the SMF Projects, it claims, absent any evidence, that the type of crude oil processed by the SMF would have *no effect* on the Rodeo Refinery Project. FEIR at 2-4 (emphasis added).

In sum, the EIR's incomplete, unstable and vague project description undermines the validity of the document's environmental impact analyses. The document should be revised to correct these many deficiencies.

II. The EIR's Analysis of and Mitigation for the Impacts of the Proposed Project Are Inadequate.

The discussion of a proposed project's environmental impacts is at the core of an EIR. *See* CEQA Guidelines § 15126.2(a) ("[a]n EIR *shall* identify and focus on the significant environmental effects of the proposed project") (emphasis added). As explained below, the EIR's environmental impacts analysis is deficient because it fails to provide the necessary facts and analysis to allow the County and the public to make informed decisions about the Project. An EIR must effectuate the fundamental purpose of CEQA: to "inform the public and its responsible officials of the environmental consequences of their decisions before they are made." *Laurel Heights Improvement*

Ass'n v. Regents of University of California (1993) 6 Cal. 4th 1112, 1123 (1993) ("*Laurel Heights II*"). To do so, an EIR must contain facts *and* analysis, not just an agency's "bare conclusions." *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal. 3d 553, 568. Thus, a conclusion regarding the significance of an environmental impact that is not based on an analysis of the relevant facts fails to fulfill CEQA's informational goal.

Additionally, an EIR must identify feasible measures to mitigate significant environmental impacts. CEQA Guidelines § 15126.4. Under CEQA, "public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects." Pub. Res. Code § 21002.

Although the Project clearly has the potential to degrade the environment, neither the public nor decision-makers have any way of knowing the magnitude of this harm. Often, the EIR asks the wrong questions so that the Project's environmental impacts appear benign, non-existent, or even beneficial. In other instances, the document lacks the necessary detail to verify the validity of its analyses. Consequently, the EIR fails to provide decision-makers and the public with detailed, accurate information about the Project's significant environmental impacts and to analyze mitigation measures and alternatives that would reduce or avoid such impacts.

A. The EIR Fails to Adequately Analyze and Mitigate the Project's Air Quality Impacts.

1. Criteria Pollutant Emissions

The EIR's analysis of the Project's criteria pollutant impacts is riddled with errors. It relies on an inadequate study area and therefore underestimates the Project's potential to result in a substantial increase in criteria pollutant emissions. Second, it underestimates or ignores altogether emissions of criteria pollutants. The end result is that the Project will result in significant air quality impacts that the EIR does not identify or mitigate.

(a) Inadequate Study Area

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The EIR substantially underestimates the Project's increase in criteria air pollutant emissions because it relies on an artificially constrained study area. The EIR authors underestimated the emissions associated with increased locomotive engine load, for

example, because they only counted emissions released within the boundary of the BAAQMD. DEIR at 4.3-20.

By restricting the size of the study area to the boundaries of the BAAQMD, the EIR gives the impression that emissions from the locomotive engines would not pollute the air outside the Air District's boundaries. As the EIR acknowledges, trains will travel from the California and Arizona border to the Richmond Yard with empty rail cars following a Union Pacific route (659 miles), then 12 miles to the Refinery unladen, followed by return mileage of these distances under load. DEIR at 4.8-16. Rather than identify the air emissions that would be generated by trains over the entire route, the EIR used a total rail track length within the BAAQMD of only 67 miles one way. DEIR Tables 4.3-6 and 4.3-7.

SMW 4

The locomotives used to transport recovered propane and ethane from the Refinery to market are the major source of nitrous oxide ("NO_x") emissions (>70% of total) and an important contributor to reactive organic gas ("ROG") emissions (8%). DEIR Tables 4.3-6 and 4.3-7 and Fox Report at 12. Phyllis Fox recalculated the locomotive line haul emissions for NO_x and ROG using the total track length within California, but otherwise using all of the EIR's assumptions. The criteria air pollutant emissions locomotive line haul (which is only part of the total locomotive emissions) are significantly higher than disclosed in the DEIR. This increase alone is substantial, and greatly exceeds the BAAQMD daily and annual significance thresholds. Fox Report at 12, 13. This increase in emissions constitute significant impacts for which the DEIR offers no mitigation.

(i) NO_x Emissions Associated with the Shutdown of Boiler B-401

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The DEIR errs further because it lacks the evidentiary support that the Project's significant increase in NO_x emissions would be mitigated to a less than significant level. The document determines that the Project's NO_x emissions would exceed the BAAQMD daily threshold. DEIR at 4.3-20. The DEIR identifies as mitigation for these NO_x emissions 10.8 tons of NO_x reductions per year resulting from shutdown of process heater B-401. *Id.* at 4.3-20, 21. As discussed in our prior letter and in the Fox Report, the shutdown of this heater occurred in October 2011 as mitigation for marine vessel emissions in connection with the Marine Terminal Offload Limit Revision Project. DEIR at 4.3-20. The BAAQMD confirmed the DEIR's problematic approaching stating that it was unable to find any support for the claimed emission reductions. *See* Fox

Report at 11. The BAAQMD further expressed concern that "emission from Unit 240 [the shutdown process heaters] may have shifted to other existing equipment due to increased operating demand." *Id.* Further, the DEIR and the record supporting it do not contain any evidence that the emission reductions are permanent, real, and quantifiable.

SMW 5

(ii) NO_x Emissions from the Steam Power Plant

The DEIR disclosed that steam would be provided by either a new steam boiler or by the existing Steam Power Plant ("SPP"). DEIR at ES-5, 3-7, 3-20. The DEIR included NO_x emissions only for the new boiler. DEIR at Tables 4.3-6 and 4.3-7. However, since the DEIR was released, Phillips 66 elected to use the existing Steam Power Plant to generate the required steam. *See* Fox Report at 14. As the Fox Report explains, the SPP would emit four times more NO_x than disclosed in the DEIR (15.6 tons/year for the SPP compared to 3.7 ton/yr for the steam boiler). Fox Report at 19. The NO_x emissions from supplying just the steam for the hydrotreater exceed the NO_x significance threshold of 10 ton/yr and are thus a significant undisclosed air quality impact of the Project. The EIR offers no mitigation for this significant increase in NO_x emissions.

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(iii) Sulfur Dioxide Emissions

The DEIR claims that the Project would reduce sulfur dioxide ("SO_2") emissions by at least 50%, resulting in an SO_2 emission decrease of at least 180 ton/yr. DEIR at ES-2, 3-5, 4.3-19. The emission inventory in Table 4.3-7 takes credit for a reduction in SO_2 emission of 172.4 ton/yr. DEIR at Table 4.3-7. The BAAQMD Permit Application made a similar claim. However, there it claimed a reduction of 174.7 ton/yr, of which 7.61 ton/yr was proposed to offset Project SO_2 increases and the balance to be banked as Emission Reduction Credits ("ERCs"). *See* BAAQMD Permit, attached to Fox Report. Since the release of the DEIR, Phillips withdrew its banking application, casting doubt on its claim of a SO_2 reduction. *See* Exhibit P.

SMW 7

Thus, there is no support, in either the EIR or the BAAQMD permitting record, for the claimed reduction in SO_2 emissions. Emission reductions used to offset impacts must be permanent, real, and quantifiable. There is no evidence that the claimed SO_2 emission reductions meet any of these criteria. In fact, as the Fox Report explains, any claimed reductions could be a myth if the Refinery feedstock is modified to include a larger proportion of high sulfur tar sands crudes, imported through the Santa Maria Facility projects. Further, any such SO_2 reduction would be accompanied by an increase in other

criteria pollutant emissions from the Sulfur Recovery Units and from trucks used to transport the recovered sulfur product to market.

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Inasmuch as the EIR provides no support for its claimed reduction in SO_2 emissions, the Project will likely result in a significant increase in SO_2 emissions.[3] The EIR offers no mitigation for this impact.

(iv) Carbon Monoxide Emissions

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The Project would significantly increase emissions of carbon monoxide ("CO"). Carbon monoxide is emitted from all combustion sources, including locomotives, trucks and commuter auto trips, steam generation, and combustion of the recovered propane and butane at fired sources. The EIR is silent on CO emissions from the entire Project.

(v) The EIR Fails to Include Emissions from All of the Project's Components.

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The equipment required to recover propane and butane from the refinery fuel gases and to remove sulfur from the recovered products requires various inputs to operate. The EIR omits many of these sources of Project-related emissions including the hydrogen plant and the sulfur recovery unit. As the Fox Report explains, not only does the EIR fail to quantify the increase in emissions from these Project components, the document does not provide any data or other documentation needed to estimate these emissions. *See* Fox report at 18, 19.

(vi) The EIR Fails to Include the Project's Indirect Source of Emissions.

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The DEIR fails to include criteria pollutant emissions from burning propane/ butane. As discussed below in the context of the EIR's greenhouse gas ("GHG") impact analysis, the EIR incorrectly assumes that the Project's increase in emissions would be offset by removing 14,500 BPD of butane and propane from the fuel gas system and replacing it with natural gas and the shutdown of Plant 4 Hydrogen Plant and B-401

[3] The EIR is further deficient because it does not include any thresholds of significance for SO_2 emissions.

Heater. Yet, a reduction would only occur if the propane/butane are not used as fuel, which is their usual end use.

SMW 10

Phyllis Fox estimated the NO_x, particulate matter 10 ("PM_{10}"), and ROG emissions from burning recovered propane and butane and determined that they would exceed the BAAQMD's significance thresholds by a large margin. *See* Fox Report at 16. CO emissions would also greatly exceed the BAAQMD significance thresholds.

As discussed above, the DEIR ignored the Project's potential to increase CO emissions altogether. As the Fox Report explains, the combustion of propane and butane would generate 241 and 245 tons per year of CO, respectively.

2. The EIR Incorrectly Concludes the Project Would Not Conflict with the Bay Area Air Quality Plan.

SMW 11

The EIR relies on the assumption that the Project would not exceed the BAAQMD significance thresholds to conclude the Project would not conflict with or obstruct implementation of the 2010 Clean Air Plan. DEIR at 4.3-15. For the reasons discussed above, Project-related emissions would exceed the BAAQMD significance thresholds. Consequently, the EIR's conclusion that the Project will not conflict with or obstruct implementation of the Clean Air Plan cannot be sustained.

B. The EIR's Analysis of the Project's Potential to Impact Public Health Is Flawed.

The EIR fails to adequately analyze the Project's potential to expose nearby sensitive receptors to emissions of toxic air contaminants ("TACs"). The most serious omissions are discussed below.

SMW 12

First, the EIR provides no information about existing exposure to TACs in the vicinity of the Refinery, the starting point for any adequate analysis of a project's potential to impact public health. This omission violates CEQA's core requirement that an EIR include an adequate "description of the physical environmental conditions in the vicinity of the project." CEQA Guidelines § 15125(a). As the Guidelines instruct, "[k]nowledge of the regional setting is critical to the assessment of environmental impacts." *Id.* § 15125(c). Unless the EIR adequately describes the public's existing exposure to TACs, decision-makers cannot: (1) understand the scope of the existing TAC problem; (2) measure the Project's new TAC impacts against a baseline of current TAC

emissions; (3) evaluate mitigation of those impacts; or (4) intelligently decide whether the Project's approval is worth the risk.

Although the EIR does not disclose it, the area surrounding the Rodeo Refinery is already considered an "impacted community" by the BAAQMD. *See* BAAQMD CEQA Guidelines at 5-2; 5-3 and Figure 5-1, attached as Exhibit D. According to the District, "impacted communities" experience relatively high exposure to TACs in comparison to other communities. *Id.* Given the fact that the surrounding community is already disproportionally impacted by the number of industrial and refinery projects in the area, one would expect the EIR to comprehensively describe each of the sensitive receptors that could be potentially impacted by the Project. Unfortunately, this is not the case.

SMW 12

An adequate impact analysis would necessarily begin with a thorough description of existing sensitive receptors (i.e., those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). These receptor locations include residential communities, schools, daycare centers, playgrounds, and medical facilities. Yet, other than a passing reference to the Bayo Vista neighborhood, the EIR does not identify the specific location of any of these sensitive receptors.[4] Nor does it describe the existing health of nearby sensitive receptors. It is imperative that the EIR disclose this information because a Project's potential to result in significant environmental impacts varies by setting. CEQA Guidelines § 15064(b). Thus, individuals who already suffer from high rates of asthma and other respiratory disease may experience greater-than-average sensitivity to Project-generated TAC emissions.

The EIR preparers could have obtained current TAC data from either of two sources: EPA's AirData reports or the TAC predictions in the National Air Toxic Assessment Model, which are available for every U.S. census tract. http://www.epa.gov/nata2002/methods.html

The EIR's deficient analysis of the Project's health risks extends beyond its failure to describe the existing environmental setting. While the EIR includes a health risk

[4] A separate section of the EIR acknowledges that the Bayo Vista Child Development Center is located 0.5 miles from the Propane Recovery Unit and 0.2 miles from the rail spur on which propane-filled rail cars would be staged. DEIR at 4.9-1. This is the only specific sensitive receptor identified in the EIR.

assessment ("HRA") that purports to include Project-related emissions, the Project has changed in at least two fundamental ways since the HRA was prepared. First, the EIR explains that the source that would contribute the most to the modeled cancer risk at the MEIR (maximally exposed individual residence) is the proposed fuel gas-fired steam boiler. DEIR at 4.3-23 and DEIR Public Health Supplement at 25. The EIR concludes that since the cancer risk from this boiler is greater than 1 per million, the implementation of Toxic Best Available Control Technology is required by the BAAQMD Regulation 2-5-301.[5] *Id.* Yet, as discussed above, Phillips 66 modified the Project subsequent to the release of the DEIR. Phillips 66 no longer intends to use the boiler but will instead use the steam power plant to generate the required steam. As the Fox Report explains, NO_x emissions associated with the use of the steam plant would be four times greater than disclosed in the DEIR. Fox Report at 18,19. The FEIR fails to analyze the increase in TAC emissions from the use of the steam plant. Given the increase in NO_x emissions, there is a strong likelihood that the increase in TAC emissions would also be significant.

SMW 12

Second, as discussed above, there is no support in either the EIR or the BAAQMD permitting record for Phillips 66's claimed 180 ton/yr reduction in SO_2 emissions. SO_2 is known to be deleterious to human health. Exhibit D at C-12 (BAAQMD CEQA Guidelines). It can aggravate respiratory diseases and reduce lung function. *Id.* at C-15, C-16. The HRA must be revised to include accurate SO_2 emissions.

In addition, as the Fox Report explains, the feedstocks that could arrive at the Rodeo Refinery for recovery as propane and butane may include tar sands crudes blended with diluents or "DilBits." Fox Report at 13. These DilBits contain significant amounts of hazardous air pollutants ("HAPs), such as benzene, a potent carcinogen. These would be emitted at many fugitive components in the Refinery, including compressors, pumps, valves, fittings, and tanks, in greater amounts than from baseline feedstock. The revised HRA must include HAP emissions from the use of increased amounts of tar sands crudes.

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[5] Although the DEIR relies on the implementation of Toxic Best Available Control Technology to apparently conclude that the Project would not result in significant public health impacts, it never explains what this control technology consists of. DEIR at 4.3-24. Nor does the EIR require this control technology as a mitigation for the Project's impacts. Consequently, the EIR lacks the evidentiary support to conclude that the Project's public health impacts would be less than significant.

SMW 12

Finally, the EIR does not include on-site workers in the analysis of health risks. The DEIR acknowledges that for off-site worker receptors, an exposure time of 8 hours per day, 5 days per week and 49 weeks per year for 40 years was assumed. EIR Public Health Risk Supplement at 23. The EIR should also use these assumptions to assess the Project's impacts on workers at the Rodeo facility.

The HRA must be revised to include all of these Project-related emissions. If the health risk is determined to be significant, the EIR must identify feasible mitigation to eliminate or reduce these risks.

C. The EIR Fails to Adequately Analyze the Project's Odor Impacts.

A

Despite the presence of numerous substances present in in the refining processes that are known to cause odors such as hydrogen sulfide ("$H2_s$"), SO_2, and other reduced sulfur compounds, ammonia, and some organic compounds, including benzene, naphthalene, and toluene (DEIR at 4.3-16), the EIR reaches the conclusion that the Project will not cause a significant odor impact. The document reaches this conclusion based solely on the claimed 50 percent reduction in SO_2 emissions. In fact, the EIR boasts that the Project would have a *beneficial* impact on odor emissions. *Id.* (emphasis in original).

SMW 13

The occurrence and severity of odor problems depends on numerous factors, including the nature, frequency and intensity of the source, wind speed and direction, and the sensitivity of the receptor(s). Exhibit D at 7-1 – 7-5 (BAAQMD CEQA Guidelines). Other than its brief statement regarding SO_2 emissions, the EIR provides no explanation as to why the Project would not result in any odorous emissions. The public therefore has no way to verify this finding. This lack of information violates CEQA's core purpose of promoting informed decision-making. *See Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal. 4th 439, 447.

The EIR does not identify the type of odor sources that would be produced by the Project; the frequency of odor events generated by odor source(s) (e.g., operating hours, seasonal); or the distance and landscape between the odor source(s) and the sensitive receptor(s) (e.g., topography, land features). Nor does the document provide *any* information as to whether the refinery is already a source of odor complaints or whether the Refinery even monitors for odorous emissions. In addition, the EIR does not identify standards of significance against which odor impacts would be evaluated.

As mentioned above, the EIR's perfunctory "analysis" of odors addresses only one compound, SO_2. Also as discussed above, the EIR cannot rely on claimed reductions in SO_2 since there is no support in the EIR or BAAQMD permitting application for these reductions. The EIR never even mentions, let alone analyzes, whether any of the new equipment or operations would result in an increase in other odor producing chemicals, such as hydrogen sulfide, other reduced sulfur compounds, ammonia, and organic compounds, including benzene, naphthalene, and toluene.

SMW 13

The EIR should be revised to include a comprehensive assessment of odors caused by the proposed Project. The BAAQMD provides guidance for conducting this analysis. Exhibit D at 7-1-7-4 (BAAQMD CEQA Guidelines). Should the analysis determine that the Project's odor impacts are significant, the EIR must identify feasible mitigation measures. The BAAQMD identifies feasible odor mitigation measures for petroleum refineries. These include: (1) water injections to hydrocracking process; (2) vapor recovery system; (3) injection of masking odorants into process streams; (4) flare meters and controls; (5) wastewater circulation technology for aerated ponds; (6) exhaust stack and vent location with respect to receptors; (7) thermal oxidizers; (8)carbon absorption; and (9) biofiltration/bio trickling filters. *Id.*

D. The EIR Fails to Adequately Disclose and Analyze Project-related Hazards and Public Safety Risks.

SMW 14

The Project has the potential to pose a substantial risk to the safety of the surrounding community. The Project is located in close proximity to a residential area. The sensitive receptors nearest to the active area of the Refinery include a day care center, the Bayo Vista Child Development Center ("BVCDC"), which is located approximately 0.5 mile southwest of the site of the Propane Recovery Unit. The existing rail spur, which is currently used to transport butane, and on which propane-filled rail cars would be staged, is located approximately 0.2 miles from the BVCDC. DEIR at 4.9-1. The proximity of residents and school children to the Refinery calls for careful and thorough evaluation of the potential risks associated with the proposed Project. Yet the EIR fails to adequately identify or evaluate these potential hazards. Central to an evaluation of a refinery's potential for accidental releases is a description of the operator's existing record of regulatory compliance and history of releases and other incidents. Here, we can find no indication that such an evaluation has been included in the EIR.

The DEIR defers until after Project approval preparation of a "hazards and operability study" which will allegedly identify process hazards involving acutely hazardous material. DEIR at 4.9-12. Although the DEIR asserts that hazards associated with the refinery could result in substantial property damage and severe off-site injuries, the document concludes, absent any evidentiary support, that since the probability of an accident is unlikely the impact would be insignificant. *Id.* In essence, the DEIR ignores the potentially catastrophic consequences of an accident by focusing on the alleged improbability of one occurring.

Incidents such as those that occurred at Chevron's Richmond oil refinery in August 2012 confirm that refining oil is an inherently dangerous process. According to the report "Improving Public and Worker Safety at Oil Refineries" prepared by Governor Jerry Brown's Office, every week, the U.S. Department of Energy ("DOE") receives reports on process safety incidents in the U.S. refinery industry. *See* Improving Public and Worker Safety at Oil Refineries Draft Report of the Interagency Working Group on Refinery Safety Governor Jerry Brown, dated July 2013, attached as Exhibit E. The week that ended March 14, 2013 had 26 reported incidents, including unplanned flaring at the Torrance, California Exxon Mobil Refinery; an unplanned shut-down of the hydrocracking unit at Valero's Benicia, California facility; and the unexplained restart of a major electrical unit at the Chevron Refinery in Richmond, California. *Id.* News reports in the past few months tell of multiple catastrophic events that have resulted in fatalities, serious injuries, and devastating environmental effects. *See* Associated Press, *Crews Slowed by Heat in Attacking California Rail Fire*, NBC News, Aug 24, 2011; Bret Schulte, *Oil Spill Spotlights Keystone XL Issue: Is Canadian Crude Worse?*, April 4, 2013; Marianne Lavelle, *Oil Train Crash Probe Raises Five Keys Issues on Cause*, National Geographic, July 11, 2013; David Boroff, *At Least Eight Injured, Five Critically, as Explosions Rock Blue Rhino Propane Gas Plant in Florida*, New York Daily News, July 30, 2013; and Matthias Gafni, *Benicia: Three Valero Refinery Rail Cares Filled With Coke Derail*, Contra Costa Times, Nov. 5, 2013, all attached as Exhibit F.

The Phillips 66 Refinery has itself experienced numerous incidents, including the June 15, 2012 process water tank release of hydrogen sulfide and natural gas vapors and the October 22, 2010 release of heavy black smoke and excess gasses from the facility's flare due to an unplanned shutdown of the Air Liquide hydrogen plant. The EIR authors cannot refuse to study the implications of accidents and releases by cavalierly assuming such incidents will not occur.

SMW 14

As the Fox Report explains, the Project would increase the amount of hazardous materials processed at the Refinery and transported by rail in close proximity to area residents, which has the potential to pose a substantial threat to the health and safety of the residents of Rodeo. Yet, the EIR's treatment of potential increased risks to public safety is dismissive and identifies this impact as insignificant. DEIR at 4.9-14, -18, and 19.

In sum, the EIR's analysis of hazards and public safety risks is flawed because it (1) fails to describe the Refinery's regulatory history and history of violations; (2) fails to adequately analyze significant risks to the adjacent communities; and (3) fails to identify mitigation to minimize those impacts. A description of the most glaring flaws is summarized below.

1. The EIR Fails to Describe the Refinery's Regulatory History and History of Violations.

SMW 15

The DEIR discusses the health and safety regulatory framework applicable to refineries generally but fails to take the next necessary step – disclosing Phillip 66's record of legal and regulatory non-compliance. Based on our research, the facility was issued 168 Notices of Violation between December 2003 and April 2011 and has had several incident reports since 2011. *See* BAAQMD Compliance Memorandum dated May 5, 2011 and BAAQMD Incident Report Information attached as Exhibit G. As discussed below, the EIR omits so much information that it does not come close to meeting CEQA's standards as an informational document.

According to the U.S. Environmental Protection Agency ("EPA") the Refinery ranked as the 8th most toxic polluter of all California facilities with large chemical releases. Phillips 66 was ranked 12th on the Toxic 100 Air Polluters index. *See* EPA 2011 Toxics Release Inventory and the Political Economy Research Institute Toxic 100 Air Polluters attached as Exhibit H. This index, prepared by the Political Economy Research Institute, identifies the top U.S. air polluters among the world's largest corporations and ranks corporations based on the chronic human health risk from all of their U.S. polluting facilities.[6]

[6] The index relies on the U.S. EPA's Risk Screening Environmental Indicators ("RSEI"), which assesses the chronic human health risk from industrial toxic releases. The underlying data for RSEI is the EPA's Toxics Release Inventory ("TRI"), in which facilities across the U.S. report their releases of toxic chemicals. In addition to the amount

SMW 15

These compliance rankings are of extreme concern given the facility's proximity to an established residential community and the Carquinez Strait.[7] Given that this Project would implement operations to allow a highly volatile hazardous material transfer on ground subject to liquefaction, Phillips 66's regulatory compliance record is highly relevant. A revised EIR must disclose this compliance record as the baseline for determining the Project's potential threat to public safety.

2. The EIR Fails to Adequately Identify or Analyze Public Safety Impacts.

(a) Rail Transport and Storage

SMW 16

The Project proposes the movement of an additional eight liquefied petroleum gas ("LPG") rail cars per day from the Refinery to the Richmond rail yard. After assembling a longer train, the loaded LPG train cars will proceed east through heavily population communities of Richmond, Hercules, Rodeo, Crockett, Port Costa, and downtown Martinez, eventually proceeding to the California-Arizona border. This transfer of LPG will be in addition to the number of LPG rail tank cars that are currently transported from other refineries in the area.

The proposed Project will result in a 145 percent increase in the amount of butane and propane transported off-site via rail. DEIR at Table 3-2 Project Component Matrix at 3-21. Despite the substantial increase in the amount of butane and propane transported off-site via rail, the EIR concludes that the Project would not result in *any* increased safety risks to nearby residents and school children. DEIR at 4.9-14. The EIR contends that because the Refinery already transports butane by rail past these sensitive receptors, the baseline risk already exists and the Project would not introduce new risks. *Id.* and FEIR at 2-17 and 2-19. The EIR provides no evidence to support this conclusion. In fact, studies show that train length is an important factor in derailments in that a longer train is more likely to derail. *See* "Analysis of Major Derailment Causes on Heavy Haul Railways in the United States, X. Liu, et.al. attached as Exhibit I. In addition, in the

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of toxic chemicals released, RSEI also includes the degree of toxicity and population exposure.

[7] The Carquinez Strait is part of the tidal estuary of the Sacramento and the San Joaquin Rivers as they drain into the San Francisco Bay. http://en.wikipedia.org/wiki/Carquinez_Strait

event of a derailment of rail tanks of propane, the additional flammable/explosive material being transported would result in a greater amount of material released and would impact a larger area compared to existing conditions.

Moreover, the EIR relies on the assumption that such accidents are so rare that there is virtually no real risk to the adjacent communities. The EIR's methodology for evaluation of public safety risks inappropriately assumes that public safety risks from accidents at the Refinery are only considered significant if the accidents result in both moderate or high severity injuries/damage and occur once a decade or more. DEIR at, 4.9-16. For example, the EIR discloses that the Project would cause an increase in the transport of aqueous ammonia, but determined any impacts would be less than significant because the likelihood of a release during transport is "improbable." DEIR at 4.9-19.

SMW 16 Yet, releases of aqueous ammonia are not unprecedented. In fact, Chevron's El Segundo facility experienced a release of this compound in 1998. *See* U.S. Department of Labor Occupational Safety & Health Administration, attached as Exhibit J. While Chevron also never expected such a release, and would likely have considered such an event improbable, accidents at petroleum facilities occur all too frequently. *See* Improving Public and Worker Safety at Oil Refineries Draft Report of the Interagency Working Group on Refinery Safety Governor Jerry Brown dated July 2013, attached as Exhibit E.

Of course, for adjacent residents and workers, *any* accidents resulting in impacts beyond the facility's fence-line may have devastating effects. Yet the EIR fails to define what constitutes a "minor injury" and a "serious" injury. Given the close proximity of sensitive receptors to the Refinery and to the tracks used to and for rail transport, what the EIR preparers might consider a "minor injury" could be serious. Emissions from accidental releases may cause adverse effects in healthy individuals and exacerbate conditions in people with chronic illnesses.

Finally, the EIR's evaluation of potential accident scenarios is vague and fails to describe the resulting impacts to nearby residents. For example, the EIR indicates that three of the accident scenarios evaluated would result in moderate to severe injuries, fatalities and property damage. DEIR at 4.9-20 and 21. However, the EIR fails to indicate the extent of area that would be effected by the accidents and fails to describe the resulting impacts to the community. How far would the impacts extend? How many people would be injured? How many fatalities would be expected? What sort of property damage would Rodeo residents experience? An EIR must also provide "information about how adverse the adverse impact will be." *Santiago County Water District v. County of Orange* (1981) 118 Cal. App. 818, 831. Without this information,

SMW 16 it is impossible for County decision makers and the public to evaluate the extent and severity of the Project's impacts relevant to public safety.

(b) Accidents and Releases from the Facility

Pressurized propane storage poses an extremely high-magnitude impact hazard and is exacerbated by site-specific factors (*i.e.*, seismically active area susceptible to liquefaction) that increase the likelihood and potential magnitude of impacts. The EIR acknowledges that although this occurs very rarely, the potential exists for a catastrophic failure of an LPG storage vessel such as a "boiling liquid expanding vapor explosion" or BLEVE. DEIR at 49-2, 4.9-18, 4.9-19 through 4.9-22, 6-5. The potential impacts of such an incident could be catastrophic. The EIR again concludes that the likelihood of such incidents is so rare that the impact is less than significant and therefore does not warrant mitigation. SMW 17

Commenters have identified potential mitigation measures to eliminate the catastrophic risk resulting from the rupture of an LPG storage tank. The FEIR dismisses as "infeasible" cooling the LPG storage tanks instead of pressurizing because of the added costs for electricity and the need to construct a new flare. DEIR at 6-5. While the EIR implies that the cost of implementing cooled LPG storage tanks would exceed the cost of pressurized tanks, it provides no evidence supporting this assertion. Moreover, cost alone is not a legitimate basis for rejecting an alternative from EIR consideration. CEQA Guidelines § 15126.6(f)(1).

(c) The EIR Defers Analysis of Potentially Significant Impacts Involving the Release of Hazardous Materials.

The EIR lacks sufficient information to enable the public and decision-makers to make an informed judgment regarding the Project's potentially significant impacts related to the release of hazardous materials. Here too, the EIR relies on conclusory statements that are specifically prohibited under CEQA. *See Berkeley Keep Jets Over the Bay Com. v. Board of Port Cmrs.* (2001) 91 Cal. App. 4th 1344, 1371 (striking down an EIR "for failing to support its many conclusory statements by scientific or objective data"); *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal. App. 4th 645, 659 ("[D]ecision makers and general public should not be forced to . . . ferret out the fundamental baseline assumptions that are being used for purposes of the environmental analysis."). SMW 18

Perhaps most egregious, the EIR identifies the need for a detailed hazards and operability study of the Project-related changes. DEIR at 4.9-12. Yet, rather than conduct this detailed study now, as required by CEQA, the EIR promises to complete the study after Project approval. *Id.* ["Upon completion of the Project, the Hazardous Materials Business Plan that provides input to the RMP would be updated and the RMP scenarios reviewed for potential change as a result of the Project."]. In the absence of this study, the public and decision-makers are left in the dark as to the severity and extent of the Project's hazards.

SMW 18

Similarly, although the EIR acknowledges the presence and likely disturbance of contaminated soil in the Project area (DEIR at 4.9-10), it ignores potentially significant impacts related to disturbance of these soils. The EIR concludes, absent any analysis, that the Project would not result in impacts because contaminated soils would be handled in accordance with regulatory requirements. DEIR at 4.9-15. The EIR assumes that simply because the Project is proposed to conform to existing regulations, it will not have a significant environmental impact. This is not the standard under CEQA. Under well-established case law, compliance with existing policies and regulations does not excuse the agency from describing Project activities or from analyzing resulting impacts. See *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal. App. 4th 1099,1108-09 (environmental effect may be significant despite compliance with such requirements). Therefore, the EIR provides no evidentiary support for the conclusion that the Project's impacts related to hazardous materials would be less than significant.

In another example, the EIR acknowledges that the Project would "tend to interfere with roads, access, and egress within the refinery especially during construction." DEIR at 4.9-15. The EIR even states that "the Project would have to be integrated into refinery operations and its Emergency Response Plan." *Id.* However, instead of analyzing the impacts on site access, operations, and emergency response, the EIR concludes that the unspecified "integration" of the Project would result in no impacts. *Id.* Here too, the EIR lacks any evidentiary support that there would be no impact relating to emergency response. Obstructing, or in any way interfering with, evacuation routes near an operating oil refinery is an extreme cause for concern. As the EIR acknowledges, the Rodeo-Hercules Fire Protection District has closed Fire Station 75 in Rodeo indefinitely due to budget cuts. DEIR Comments from Richard Ryan, Rodeo-Hercules Fire Protection District to Lashun Cross, Contra Costa County, dated August 8, 2013, FEIR at 3.1-26. Thus, the Project's interference with evacuation procedures combined with reduced emergency services in the community could result in

devastating impacts following an accident at the refinery. A revised EIR must clearly disclose the Refinery's emergency response and evacuation plans. These evacuation plans must take into account nearby residents and workers, not just the Refinery's employees.

Finally, the EIR completely ignores impacts to worker safety. Other than a description of the regulatory setting related to worker safety (DEIR at 4.9-5) the EIR provides no analysis of the Project's risks to on-site workers. The Project will increase the amount of hazardous materials handled at the facility and will require a site safety plan to protect workers and the public from exposure to potential hazards at the site. DEIR at 4.9-6. Analysis of these risks and preparation of the site safety plan must be performed as part of the environmental process and not deferred until after project approval.

SMW 18

Because the EIR relies on plans that are not yet approved, and because it fails to provide enforceable measures and performance standards, there is no assurance the Project's impacts related to hazards would not be significant and that they would be mitigated at all. *See Sacramento Old City Ass'n v. City Council* (1991) 229 Cal. App. 3d 1011. A revised EIR must identify all feasible mitigation measures and analyze alternatives that would substantially lessen the significant impacts of the Project.

E. The EIR Fails to Adequately Analyze the Project's Impacts Related to Geologic Hazards.

The EIR's impact analysis lacks the detail that CEQA requires. As discussed below, the EIR includes only cursory conclusions that the potential for impacts exist, but lacks the necessary analysis of those impacts. Specifically, the Project would locate an LPG loading rack, rail cars containing propane, and two new rail spurs on soils that are highly susceptible to liquefaction in the event of an earthquake. DEIR at 4.7-8. Despite this site limitation, the EIR defers preparation of a site-specific geotechnical report and relies on an incomplete investigation of the geotechnical conditions at the Project site. The EIR then concludes, absent any evidentiary support, that related impacts would be less than significant. This approach is impermissible under CEQA.

SMW 19

First, the EIR relies in part on a preliminary geotechnical investigation performed in 2002 for previous improvements at the Refinery site. DEIR at 4.7-3. However, the EIR admits that potential liquefaction hazards were not specifically analyzed during this

preliminary geotechnical investigation. *Id.* at 4.7-7. Thus, the 2002 geotechnical study fails to address the conditions at the Project site and cannot be relied upon to support the current impact analysis.

Second, the EIR relies on a Geologic Peer Review for the Project performed by Darwin Myers Associates. *See* letter from D. Myers to Lashun Cross, dated July 13, 2012 (Appendix G to November 19, 2013 County Planning Commission Staff Report) and attached as Exhibit K. This letter makes clear that extensive geotechnical documentation still needs to be prepared in order to evaluate geologic hazards on the site. *Id.* Myers states that he was not even provided with a geotechnical report, grading or foundation plans, geotechnical data on foundation conditions, the approach to site grading, drainage, or foundation design. *Id.* at 5. He goes on to state that based on his previous experience with projects on the Phillips 66 Refinery site, there is a potentially significant risk of hazards from expansive soils, undocumented fill that is inadequate for the support of planned improvements, compressible soils, and liquefaction. *Id.* The Myers letter recommends, among other things, that a site-specific preliminary geotechnical report be prepared *prior to deeming the application complete*. *Id.* Myers specifies that the geotechnical report should provide criteria to guide planning for the proposed Project improvements. *Id.* Myers confirms that this geotechnical analysis is needed for purposes of CEQA. *Id.* at 6.

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Instead of performing the recommended analysis, the EIR ignores the Myers letter and defers the necessary analysis of impacts until after project approval. DEIR at 4.7-15 and FEIR at 2-11 and 2-12. Notwithstanding this incomplete investigation, the EIR concludes that Project-related risks associated with liquefaction and seismic hazards would be less than significant. DEIR at 4.7-15 through 4.7-17 and FEIR at 2-14. However, without a full investigation, the EIR has no basis to conclude that Project components proposed on the western shore of the site will not be constructed on unstable soils and will not result in significant impacts. Having failed to analyze the impacts, the EIR fails to identify feasible mitigation measures to minimize impacts resulting from the Project site's location.

An analysis of the Project's potential to locate development on unstable soils must necessarily begin with a detailed investigation of the existing conditions on the Project site. The EIR must be revised to include a comprehensive analysis of these site constraints and to identify appropriate mitigation measures. Without a full investigation, the EIR has no basis to conclude that the proposed construction of Project components in

SMW 19 an area susceptible to liquefaction would not result in impacts. Site constraints, such as underlying soil properties, must be identified prior to Project approval.

F. The EIR Fails to Adequately Analyze and Mitigate Significant Impacts to Public Services and Facilities.

The EIR dismisses the Project's potential to increase demand for fire protection services based on the assertion that the Refinery provides internal fire protection and emergency services on the Project site. Despite the fact that an accident at the Project site, such as an explosion of one of the propane or butane storage tanks, would impact nearby residents, the EIR completely ignores the need for emergency response services to protect the adjacent community.

Although the EIR discloses that recent budget cuts have necessitated cuts in emergency services (at 3.1-27) and the Rodeo-Hercules Fire Protection District Fire Station 75 in Rodeo is closed indefinitely, the EIR never evaluates the implications of the lack of adequate emergency services. The Rodeo-Hercules Fire District confirmed, in its letter to the County, that existing services are not adequate to provide the additional services required to respond to emergency situations potentially resulting from the proposed Project. FEIR at 3.1-26. Similarly, the city of Martinez has experienced closure of one of its fire stations due to County budget cuts. *See* fire station closure report attached as Exhibit L.

SMW 20

Firefighters at the closed fire stations in Rodeo and Martinez would have become first responders to a volatile hazardous materials rail accident should those stations have remained open. Ensuring the safety of the community is not just some bureaucratic hurdle to be jumped over. The County has a duty to ensure that it has the ability to provide sufficient emergency response in the event of an accident or release. As it stands, the EIR does not come close to ensuring that such provisions are in place.

The EIR also fails to analyze the Project's potential to impact public facilities and personnel in the event of a chemical release, fire, or explosion. As noted by the Rodeo Sanitary District Manager, the proposed Project facilities are located in close proximity – within 3,000 feet – of the District's treatment plant and operations building. *See* DEIR Comments from Steven Beall, Rodeo Sanitary District to Lashun Cross, Contra Costa County, dated August 15, 2013, FEIR at 3.1-44. The District's facilities, along with personnel at those facilities, would be at risk in the event of an accident. Yet, the EIR never analyzes the potential implications of an accident affecting the treatment plant. The

SMW 20

loss of sewage treatment capabilities would be devastating to the community as well as the environment.[8] Rather than performing the required analysis, the FEIR dismisses the comment and refers the reader to the analysis in the DEIR, which fails altogether to address the impacts in question. *Id.*

These elevated risks, and feasible mitigation, must be evaluated in a revised EIR.

G. The EIR Fails to Adequately Disclose or Analyze the Project's Greenhouse Gas Emissions.

The EIR concludes that the Project would result in a net decrease in GHG emissions and would therefore have a *beneficial impact* with regard to climate change. DEIR at 4.8-17 and Table 4.8-3 (emphasis added). This conclusion is belied by common sense and evidence in the record. The most egregious deficiencies in the EIR's estimation of the Project's contribution to GHG emissions are identified below.

SMW 21

First, the EIR's calculations are severely flawed because they assume emission increases from the new boiler, additional natural gas combustion, and other miscellaneous sources would be offset by removing 14,500 BPD of butane and propane from the fuel gas system and replacing them with natural gas and the shutdown of Plant 4 Hydrogen Plant and B-401 Heater. As the Fox Report explains, however, a reduction would only occur if the propane/butane are not used as fuel, which is their usual end use. The EIR fails to disclose the use of the removed butane and propane. Butane and propane, for example, are fuels, often called liquefied petroleum gas or LPG. They are also feedstocks to various chemical processes. Either use would result in GHG emissions.

Some, perhaps all, of the recovered butane and propane will likely be sold for use as fuel. The resulting emissions are indirect emissions from the Project and must be included in the Project GHG emission inventory. Had the EIR included the use of propane/butane in its calculation of GHG emissions, it would have identified an increase of 433,266 metric tons per year ("MT/yr ") of GHG from the Project. Fox Report at 11. Regardless of where the propane and butane are actually used, the environmental consequences of their use are the same and must be considered.

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[8] The District's treatment plant serves approximately 8,000 residents, and businesses in Western Contra Costa County.

Second, the DEIR estimated GHG emissions assuming 4,200 BPD of propane and 3,800 BPD of butane. Butane generates about 6% more GHG than propane per gallon burned. In correspondence with the BAAQMD, Phillips 66 has requested a lump-sum limit of 14,500 BPD (6/28/13 RTC Letter, p. 5, Response to Comment #6), which would allow them to produce 100% butane, increasing GHG emissions compared to those estimated in the DEIR.

Third, the GHG emission calculation additionally assumes a net reduction of 234,000 MT/yr from the shutdown of the Plant 4 Hydrogen Plant and B-401 Heater. DEIR at Table 4.8-3. However, as discussed above, neither the EIR or any of the supporting documentation provides any support for the claimed reductions from these shutdown units. This is consistent with comments filed by BAAQMD on the DEIR. They were unable to find any support for the DEIR's claimed GHG reductions from decommissioning a process heater and hydrogen plant. The BAAQMD further expressed concern that "emission from Unit 240 [the shutdown process heaters] may have shifted to other existing equipment due to increased operating demand." Increased heat demand, for example, would result from recovering butane and propane for the Project and to upgrading additional semi-refined materials from the Santa Maria Facility.

SMW
2-1

Regardless, the emission reductions already occurred since the units were shutdown in 2011 as part of the Marine Wharf Project. The EIR may not take credit for reductions that are not part of the Project. Since these emission reductions have already occurred, they are part of the existing baseline and cannot be relied upon to claim a reduction in emissions from the Project.

Fourth, the Project requires the installation of a hydrotreater. The DEIR claims that the amount of hydrogen present in the existing gas streams is adequate to supply the increased hydrogen demand for this unit. DEIR at 3-25. The BAAQMD questioned this assumption and asked Phillips to accept a permit condition stating no hydrogen would be used at the new hydrotreater. Phillips declined and admitted that ". . . there are short periods when hydrogen from a hydrogen plant will need to be supplied." *See* Fox Report referencing a 4/30/13 Phillips Response Letter, p. 3, Response to Comment #4 Hydrogen plants include a furnace and vents that are significant sources of criteria pollutant and GHG emissions. Fox Report at 23. Despite this fact, the DEIR does not disclose the amount of additional hydrogen that will be required nor the resulting emissions.

SMW 21

According to the Fox Report, if the GHG reductions from both the Plant 4 Hydrogen Plant and B-401 Heater Shutdown are removed from the GHG inventory in DEIR Table 4.8-3 and the increase in emissions from burning the propane and butane are added, the net increase in GHG emissions based on DEIR Table 4.8-3 would be 1.3 million MT/yr (+325,978+234,000 + 759,244 = 1,319,222 MT/yr). These emissions exceed the CEQA significance threshold by a vast amount and are highly significant. The EIR offers no mitigation for these impacts.

H. The EIR's Analysis of Impacts and Mitigation of Significant Impacts to Biological Resources Is Flawed.

As detailed below the EIR underestimates Project-related impacts to biological resources as a result of a series of errors, including the failure to: (1) describe accurately the environmental setting; (2) analyze and mitigate for impacts to sensitive species and habitats; and (3) adequately evaluate cumulative impacts. The EIR's treatment of biological impacts does not meet CEQA's well-established legal standard for impacts analysis. Given that analysis and mitigation of such impacts are at the heart of CEQA, the EIR will not comply with the Act until these serious deficiencies are remedied.

1. The EIR Contains an Inadequate Description of the Project Area's Existing Biological Resources.

SMW 22

The EIR fails to accurately portray the site's underlying environmental conditions and therefore undercuts the legitimacy of the environmental impact analysis. The Project site and vicinity contain several types of wetlands, including northern coastal salt marsh, coastal brackish marsh, and coastal and valley freshwater marsh, all of which are considered sensitive habitat by the California Department of Fish and Wildlife. DEIR at 4.4-4. A number of sensitive and listed species depend on these habitats, including the salt marsh harvest mouse (federally endangered), California clapper rail (federally endangered), and black rail (State threatened). *Id.* at 4.4-27 and Table 4.4-1. The Project site drains into San Pablo Bay. The estuarine habitat of San Francisco Bay, of which San Pablo Bay is a continuous part, supports diverse marine biota. *Id.* at 4.4-6. San Pablo Bay supports over 40 species of fish, including several federally threatened species. *Id.* at 4.4-18.

Notwithstanding the rich array of biological resources on and adjacent to the Project site, the EIR relies on insufficient biological surveys. With few exceptions, surveys for sensitive plant and animal species are outdated (conducted in 1994) or entirely

absent. DEIR at 4.4-2 and 4.4-3. Rather than conduct up-to-date surveys, the EIR states that consultant biologists "examined" the proposed Project area in 2003 and 2006 by reviewing high resolution photos of the site. *Id.* at Appendix B. The EIR also attaches a species list for the Project area provided by the U.S. Fish and Wildlife Service ("USFWS"). *Id.* While aerial photos can indicate types of habitat available on and adjacent to a site, they are incapable of determining the presence or absence of species. Nor can a USFWS list of species serve as a substitute for a project-specific analysis. Indeed, the agency's list of species clearly indicates that surveys should be performed for the species and habitats associated with the project area. DEIR at Appendix B, page B-11["We recommend that your *surveys* include any proposed and candidate species on your list." (emphasis added).

SMW 22

Relying on surveys that are decades old is unacceptable in that site and adjacent area conditions could be substantially altered. Instead of updating the site surveys, the EIR asserts, without any evidence, that the site conditions have not substantially changed since 1994. DEIR at 4.4-2. Yet, the DEIR itself provides evidence of changed conditions when it states that the importance and sensitivity of wetlands has increased as a result of widespread filling and destruction to enable urban development, and that since 1994, the status of several species with the potential to occur in the project vicinity has changed. DEIR at 4.4-18 and 4.4-8. Additionally, agency-required protocols for surveys are likely to have changed since 1994.

The EIR's perfunctory description of the sensitive species and habitats present in the Project area results in an incomplete description of the sensitive environmental setting of the Project. According to settled case precedent, this failure to describe the Project setting violates CEQA. *See San Joaquin Raptor*, 27 Cal. App. 4th at 724-25 (environmental document violates CEQA where it fails to completely describe wetlands on site and nearby wildlife preserve). The revised EIR must include an update of biological conditions on the site and in adjacent areas that provide habitat, including aquatic habitat in the coastal waters adjacent to the site. This information must be provided for each species that can potentially occur in the vicinity of the Project. Without it, the document cannot evaluate the Project's impacts on wildlife.

2. The EIR Fails to Adequately Analyze the Project's Impacts on Biological Resources.

SMW 23

Despite the EIR's acknowledgement that several Project components located near the shorelines are proximal to sensitive habitats (e.g., wetlands and estuarine open water

habitats), the EIR fails to analyze impacts to sensitive species that it acknowledges may be present in these habitat areas. DEIR at 4.4-4 and 4.4-25. First, although the salt marsh harvest mouse, California clapper rail, and black rail occur in the Project area (EIR at 4.4-27 and Table 4.4-1), the EIR dismisses impacts to these species, suggesting that sensitive habitats are already subject to disturbances from existing Refinery operations. *Id.* at 4.4-25. This approach violates CEQA. The fact that sensitive biological resources already suffer from disturbance and pollution does not mean that impacts would not be significant. To the contrary, if sensitive species are using habitats in a stressed ecosystem, even incremental additional stressors could cause further harm. Therefore, it is critical that the EIR describe existing conditions in sensitive habitats areas and evaluate the extent and severity of any direct and indirect impacts resulting from the Project.

SMW 23

Second, the Project does not analyze impacts to sensitive fish species from the Project's operations. The Project site falls within the San Francisco Bay Hydrologic Basin. DEIR 4.10-1. The Basin is designated as critical habitat for Steelhead and Chinook salmon. 50 CFR 226.211 Critical Habitat for Seven Evolutionarily Significant Units of Salmon in California, § 226.211 (a) and (b). Project components located near the shorelines are proximal to the estuarine open water habitat that border the Refinery. DEIR at 4.4-25. The EIR acknowledges that this habitat is home to several threatened fish species, including several salmonids (identified in Table 4.4-1) that may be present along the Refinery shoreline on a seasonal or year-round basis. *Id.* at 4.4-27 and 4.4-28.

The Project's once-through discharge would increase by 8,500 gallons per minute. DEIR at 4.4-27. The DEIR acknowledges that if Refinery discharge water is too hot, salmonids could be adversely impacted. *Id.* and Table 4.4-1. The EIR then concludes that, because Refinery discharges will not exceed maximum temperatures allowed under the Refineries National Pollutant Discharge Elimination System ("NPDES") permit, impacts to surrounding resources would be less than significant. DEIR at 4.4-28. However, the EIR never actually analyzes the impact of this increased discharge; instead it relies on compliance with existing regulations to ensure that Project operations won't harm fish. Under CEQA, a lead agency cannot rely on compliance with existing statutory and regulatory obligations to conclude that a project will not result in impacts. *Protect the Historic Amador Waterways*, 116 Cal. App. 4th at 1108-09 (environmental effect may be significant despite compliance with such requirements). The EIR cannot simply assume that other agencies' standards suffice to ensure a Project's impacts would be less than significant. The EIR must actually conduct an analysis of the impacts.

Moreover, the EIR itself provides evidence that discharged waters from the Refinery may impact threatened fisheries. The document explains that discharges from the Refinery average 80 degrees Fahrenheit, with allowed maximum temperatures of 105 degrees Fahrenheit. DEIR at 4.4-27. However, the EIR fails to analyze whether discharges at these temperatures would harm salmonids that occupy adjacent habitat. Salmonids are cold water fish and the growth rate of their young are largely influenced by water temperature. *See* Chinook Salmon Life History, University of California, Agriculture and Natural Resources California Fish Website, available at http://calfish.ucdavis.edu/species/?uid=20&ds=241; and generally Moyle, P.B. 2002, *Inland Fishes of California* Revised Ed. at 251- 271 attached as Exhibit M. Apart from optimal temperatures for rearing young, few fish can survive temperatures above 24 degrees Celsius/75 degrees Fahrenheit for even short periods of time. Moyle, P.B at 255.

SMW 23

CEQA mandates a finding of significance for any impact that "restrict[s] the range of an endangered, rare or threatened species." Guidelines § 15065(a)(1). In *Vineyard Area Citizens for Responsible Growth, Inc., v. City of Rancho Cordova,* the Supreme Court applied this requirement, making clear that any impacts to federally designated critical habitat are *per se* significant. 40 Cal. 4th 412, 425, 449 (2007) (EIR invalidated for failure to consider significant any reduction in water flow in designated critical habitat area for the Central Valley steelhead trout). The reasoning is manifest: the federal agency charged with the protection of a listed species has the requisite expertise to determine the habitat areas that, if impacted, would "restrict the range" of the listed species, and that determination must be respected by state and local agencies under CEQA. Guidelines § 15065(a)(1); *see also* 16 U.S.C. § 1532(5)(A)(i) (defining critical habitat as the areas "on which are found those physical or biological features essential to the conservation of the species").

3. The EIR Fails to Analyze Cumulative Impacts to Biological Resources.

The San Francisco Bay Hydrologic Basin's deep-water channels, tidelands, and marshlands provide a wide variety of habitats that have become increasingly vital to the survival of several plant and animal species. The basin sustains rich communities of crabs, clams, fish, birds, and other aquatic life and serves as important wintering sites for migrating waterfowl. DEIR at 4.10-2. The San Francisco Bay ecological system survives in the face of myriad threats and stresses from previous development in the area,

and additional, incremental adverse impacts from habitat loss and other environmental impacts may very well push it to collapse.

The EIR acknowledges that certain resources in the area are diminished due to environmental stressors. For example, with regard to northern coastal salt marsh, the EIR acknowledges that "the listed status of these species is reflective of the greatly diminished extent of this habitat type in the San Francisco Bay area and elsewhere." DEIR at 4.4-5. Despite this fact, the EIR fails to disclose the extent and quality of biological resources that historically occurred in the Project area, or the amount of resources already lost in the region. Yet, the EIR fails to evaluate the cumulative impacts of this Project and other projects on this habitat and the listed species that use it. It does not provide any quantification or discussion of the combined impact of this Project and nearby projects on biological resources. Instead, it wrongly assumes compliance with existing legal requirements suffices to mitigate cumulative impacts. DEIR at 4.4-27 and 4.4-28.

SMW 23

The dismissive approach of the EIR towards the cumulative contribution of the Project stands to condemn the remaining biological resources in this area to the proverbial "death by a thousand cuts." An EIR must include objective measurements of a cumulative impact when such data are available (or can be produced by further study) and are necessary to ensure disclosure of the impact. *See Kings County Farm Bureau*, 221 Cal. App. 3d at 729.

Finally, other refining-related projects (discussed below) will result in additional shipping traffic through the San Francisco and San Pablo Bays that will impact water quality and aquatic habitat. Yet, the EIR fails to identify, let alone analyze the cumulative increase in copper loading and other increased pollutants that will degrade water quality and aquatic and riparian habitats in the region. The revised EIR must analyze these cumulative impacts, along with the impacts to water quality resulting from discharge of coolant waters for the proposed project, and identify mitigation measures and/or Project alternatives for any impacts that are determined to be significant.

III. The EIR Fails to Adequately Analyze the Project's Cumulative Environmental Impacts From Other Refining-Related Projects.

An EIR must discuss a Project's significant cumulative impacts. CEQA Guidelines § 15130(a). A legally adequate cumulative impacts analysis views a

particular project over time and in conjunction with other related past, present, and reasonably foreseeable future projects whose impacts might compound or interrelate with those of the project at hand. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time." CEQA Guidelines § 15355(b).

A project has a significant cumulative effect if it has an impact that is individually limited but "cumulatively considerable." *Id.* §§ 15065(a)(3), 15130(a). "Cumulatively considerable" is defined as meaning 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.* § 15065(a)(3). Cumulative impacts analysis is necessary because "environmental damage often occurs incrementally from a variety of small sources [that] appear insignificant when considered individually, but assume threatening dimensions when considered collectively with other sources with which they interact." *Communities for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 114. Here, the EIR's analysis of cumulative impacts is incomplete, cursory and superficial.

SMW 24

Initially, the analysis does not comply with CEQA's requirement that agencies first determine whether cumulative impacts to a resource are significant, and then to determine whether a project's impacts are cumulatively considerable (*i.e.*, significant when considered in conjunction with other past, present and reasonably foreseeable projects). CEQA Guidelines § 15064(h)(1). The EIR skipped the first step and focused only on the second. This error caused the document to underestimate the significance of the Project's cumulative impacts because it focused on the significance of the Project's impacts on their own as opposed to considering them in the context of the cumulative problem. It is wholly inappropriate to end a cumulative analysis on account of a determination that a project's individual contribution would be less than significant. Rather, this should constitute the beginning of the analysis.

Second, the EIR's scope is limited largely to direct, immediate impacts within the immediate Project vicinity. For example, the analysis of cumulative air quality impacts is limited to the jurisdictional area of the BAAQMD despite the fact that Project-related rail traffic would generate emissions, at a minimum, throughout California.

Third, the list of reasonably foreseeable future projects considered in the EIR is under inclusive, especially in light of the potential geographic scope of certain potentially significant impacts. One of the EIR's most egregious deficiencies is the document's

failure to disclose that several California refiners are considering developing "Crude By Rail" projects that could bring in tar sands-based dilbit crudes to each of the Bay Area refineries. *See* Valero's Crude by Rail Project in Benicia Could Open the Floodgates to Tar Sands in California, NRDC, attached as Exhibit N. Each of the Bay Area's refineries have either recently permitted projects or have pending permits that will facilitate transporting and refining tar sands crude. These refinery projects, including at least three projects proposed by Phillips 66 (Santa Maria Facility Throughput Extension Project, Santa Maria Facility Rail Spur Extension Project, and the Ferndale Washington Crude Unloading Facility Project), as well as several others including the Valero Crude by Rail Project, the Tesoro Project, and the WesPac Pittsburg Energy Infrastructure Project will result in the delivery of tar sands diluted with other chemicals to the Bay Area. *See* map of other refinery projects in the area, attached as Exhibit O.

SMW 24

Although the Rodeo Refinery EIR mentions certain of these other projects, and purports to analyze the cumulative environmental impacts from the projects it identifies, it does not come close to disclosing the staggering environmental impacts on the Bay Area. In fact, the Rodeo EIR, like the other projects' environmental documents go to great lengths to not disclose the actual nature of the projects in an attempt to mask what will be severe environmental impacts. As the Natural Resources Defense Council makes clear in reference to the Valero project,

> They have gone to great lengths to make this project look benign, claiming that the refinery doesn't need any modifications, saying the new crude will be a lot like the old crude, and that the rail project as designed wouldn't be suitable to carry tar sands anyway.
>
> Well, that may be partially true technically, but it's completely misleading. Valero applied for a permit to make major adjustments to the refinery in 2002 - for the past 11 years, they have made modifications, including increasing coking capacity and building a new hydrogen plant that will allow it to process much dirtier crude oil. As for their claim that they cannot move tar sands by rail without specially heated railcars and offloading equipment– that's true, but by adding chemicals to dilute tar sands bitumen, they create dilbit, which flows like regular oil and can be transported in regular rail tanker cars. *Id.*

SMW 24

Not only does the Rodeo EIR not analyze the cumulative environmental effects of each of the petroleum-related projects (again, the document incorrectly asserts that because the Project's environmental impacts would be less than significant, the cumulative effects would also be less than significant), it omits several projects from the cumulative analysis altogether.

SMW 25

As discussed above, the Phillips 66 Santa Maria Facility ("SMF") and the Rodeo Refinery, are linked by a 200-mile pipeline. These facilities constitute the San Francisco Refinery ("SMR"). The SMR mainly processes heavy, high-sulfur crude oil. Semi-refined liquid products from the SMF are sent by pipeline to the Rodeo Refinery for upgrading into finished petroleum products. In August 2011, the San Luis Obispo County Air Pollution and Control District ("SLOAPCD") and San Luis Obispo County Department of Planning and Building circulated an EIR for a project to increase throughput at the SMF. Within the last year, Phillips 66 applied to the SLOAPCD to modify the existing rail spur currently on the southwest side of the SMR. The purpose of this Project is to allow SMR "to access a full range of competitively priced crude oil." Fox Report at 10.

As the Fox Report makes clear, the SMF Projects will increase the volume of products leaving the SMF for the Rodeo Refinery via pipeline including semi-refined crude oil or a combination of semi-refined crude oil and previously refined gas/oil petroleum. Despite the clear relationship between the SMF Projects and the Rodeo Refinery Project, the Rodeo Refinery EIR does not evaluate the Project's cumulative impacts. These include a cumulatively considerable increase in criteria and toxic air contaminant air emissions and greenhouse gas emissions.

SMW 26

In addition, because the SMF throughput project, coupled with SMF Rail Project will enable tar sand crudes to be sent to and processed by the Rodeo refinery, the refining of increased volumes of tar sands crude will result in cumulative environmental impacts that have not been analyzed in the Rodeo Refinery EIR. As the Fox Report explains, the chemical composition of the crude raw materials that are processed by a refinery directly affect the amount and composition of emissions from a refinery. The amount and composition of sulfur in the crude slate, for example, ultimately determines the amount of SO_2 that will be emitted from every fired source in the refinery and the amount of odiferous hydrogen sulfide and mercaptans that will be emitted from tanks, pumps, valves, and fittings. Fox Report at 12.

SMW 26

Fox goes on to explain that DilBits contain significant amounts of hazardous air pollutants, such as benzene, a potent carcinogen. These pollutants too would be emitted at many fugitive components in the Refinery, including compressors, pumps, valves, fittings, and tanks, in greater amounts than from baseline feedstock. *Id.* At 13. These increased emissions would result in significant public health and air quality impacts not addressed in the DEIR nor the FEIR. These include significant increases in volatile organic compounds ("VOCs") emissions not otherwise included in the emission estimates; hazardous air pollutants, including benzene, which could cause significant health impacts; and highly odiferous sulfur compounds that would individually and cumulatively cause malodors, degrade ambient air quality, increase the incidence of accidental releases, and adversely affect the health of workers and residents around the Refinery. Further, the high acid levels in these crudes and their semi-refined products would accelerate corrosion of refinery components, contributing to equipment failure and increased accidental releases. *Id.* The U.S. Geological Survey ("USGS"), confirms the Fox Report's findings. It explains that "natural bitumen," the source of all Canadian tar sands-derived oils, contains 102 times more copper, 21 times more vanadium, 11 times more sulfur, six times more nitrogen, 11 times more nickel, and 5 times more lead than conventional heavy crude oil, such as those currently refined from Ecuador, Columbia, and Brazil.[9]

Canadian tar sands crude is also considered to be the dirtiest, most carbon-intensive fuels on the plant. NASA climatologist Jim Hansen explains in the Scientific American, attached as Exhibit O. Canadian tar sands represent a significant tonnage of carbon:

> With todays technology there are roughly 170 billion barrels of oil to be recovered in the tar sands, and an additional 1.63 trillion barrels of worth underground if every last bit of bitumen could be separated from sand. "The amount of CO2 locked up in Alberta tar sands is enormous," notes mechanical engineer John Abraham of the University of Saint Thomas in Minnesota, another signer of the Keystone protest letter from scientists. "If we burn all the tar sand oil, the temperature rise, just from burning that tar sand, will be half of what we've

[9] R.F. Meyer, E.D. Attanasi, and P.A. Freeman, Heavy Oil and Natural Bitumen Resources in Geological Basins of the World, U.S. Geological Survey Open-File Report 2007-1084, 2007, p. 14, Table 1, Available at http://pubs.usgs.gov/of/2007/1084/OF2007-1084v1.pdf.

already seen"—an estimated additional nearly 0.4 degree Celsius from Alberta alone.

SMW 26

Notwithstanding the clear evidence documenting the effect that petroleum-refining has on GHG emissions, and enormous increase that would result from the transport, processing and refining of tar sands crudes, the Rodeo Refinery EIR concludes that there would be no cumulative increase in GHG emissions. DEIR at 5-11. The EIR lacks the evidentiary support for this conclusion.

Furthermore, it is important to acknowledge that climate change is the classic example of a cumulative effects problem; emissions from numerous sources combine to create the most pressing environmental and societal problem of our time. *Kings County Farm* ("Perhaps the best example [of a cumulative impact] is air pollution, where thousands of relatively small sources of pollution cause serious a serious environmental health problem."). As one appellate court recently held, "the greater the existing environmental problems are, the lower the threshold for treating a project's contribution to cumulative impacts as significant." *Communities for Better Env't v. Cal. Res. Agency* (2002) 103 Cal. App. 4th 98, 120.

Finally, the Refinery EIR omits two other projects from consideration in its analysis of cumulative environmental impacts:

SMW 27

A. Phillips 66 Ferndale, Washington Crude Unloading Facility Project

Phillips 66 was recently issued a permit to construct a new crude rail unloading facility at its Ferndale Refinery in Washington. *See* documentation, attached to Fox Report. According to the Fox Report, this Project will directly facilitate barging tar sands crude to the Rodeo Marine Terminal.

SMW 28

B. WesPac Pittsburg Energy Infrastructure Project

WesPac Energy–Pittsburg LLC (WesPac) proposes to modernize and reactivate the existing oil storage and transfer facilities located at the NRG Energy, Inc.(NRG, formerly GenOn Delta, LLC) Pittsburg Generating Station. The proposed WesPac Energy–Pittsburg Terminal (Terminal) would be designed to receive crude oil and partially refined crude oil from trains, marine vessels, and pipelines, store oil in existing or new

storage tanks, and then transfer oil to nearby refineries, including Phillip 66's Rodeo Refinery. WesPac RDEIR at 2.0-1

The Terminal Project consists of the modernization and reactivation of the following components at the NRG facility: (1) marine terminal; (2) onshore storage terminal, including both East and South Tank Farms; and (3) the existing San Pablo Bay Pipeline. In addition, the project consists of the construction and operation of new facilities, including: (1) Rail Transload Facility; (2) Rail Pipeline; (3) KLM Pipeline connection; and (4) new ancillary facilities, including an office and control building, warehouse, electrical substation, and others as described below. *Id.* at 2.0-4.

SMW 20

For the delivery of crude oil and partially refined crude oil by train, a new Rail Transload Operations Facility would be constructed on a 9.8-acre vacant rail yard, to be leased from BNSF Railway Company. All products handled at the facility would be transported by rail, ship, barge, or pipeline; no products would be transported by truck as part of the proposed project. *Id.* at 2.0-1. The Terminal would operate with an average throughput of 242,000 barrels (BBLs)1 of crude oil or partially refined crude oil per day, and would have a maximum capacity throughput of 375,000 BBLs per day. *Id.* at 2.0-2. The total annual throughput for the entire Terminal would be approximately 88,300,000 BBLs of crude oil and/or partially refined crude oil per year. *Id.*

As mentioned above, Conoco Phillips is one of the refineries that may receive crude oil and/or deliver-crude oil to the Terminal. *Id.* Therefore, this project should have been included in the cumulative impact analysis both because the physical construction and operation of this facility will contribute to cumulative environmental impacts and because it will facilitate greater amounts of crude delivery to and from the Rodeo Refinery.

The EIR must be revised to take into account each of the cumulative projects that has the potential to result in cumulatively considerable environmental impacts. Furthermore, the EIR must identify feasible mitigation measures capable of reducing these environmental impacts.

IV. The EIR Should be Recirculated

CEQA requires recirculation of an EIR when significant new information is added to the document after notice and opportunity for public review was provided. Pub. Res. Code § 21092.1; CEQA Guidelines § 15088.5. "Significant new information" includes: (1) information showing a new, substantial environmental impact resulting either from the

project or from a mitigation measure; (2) information showing a substantial increase in the severity of an environmental impact not mitigated to a level of insignificance; (3) information showing a feasible alternative or mitigation measure that clearly would lessen the environmental impacts of a project and the project proponent declines to adopt the mitigation measure; or (4) instances where the draft EIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft EIR was essentially meaningless. *Laurel Heights II*, 6 Cal.4th 1112, 1130.

The EIR must be recirculated for public comment. As explained throughout this letter, evidence exists in the record presenting significant, new information showing new, substantial environmental impacts or substantial increases in the severity of significant environmental impacts. Below is a non-inclusive list summarizing certain of the EIR issues that trigger recirculation:

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- The EIR underestimates the increase in NO_x and ROG emissions from the Project's locomotive line haul emissions. Had the EIR correctly calculated these emissions, it would have concluded that the increase greatly exceeds the BAAQMD daily and annual significance thresholds. Fox Report at 12, 13. This increase in emissions constitute significant impacts for which the DEIR offers no mitigation.

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- The increase in NO_x emissions resulting from the use of the existing Steam Power Plant. would emit four times more NO_x than disclosed in the DEIR (15.6 tons/year for the SPP compared to 3.7 ton/yr for the steam boiler. The NO_x emissions from supplying just the steam for the hydrotreater exceed the NO_x significance threshold of 10 tons per year and are thus a significant undisclosed air quality impact of the Project. The EIR offers no mitigation for this significant increase in NO_x emissions.

In other instances, the DEIR was so fundamentally and basically inadequate and conclusory in nature that public comment on the draft EIR was essentially meaningless :

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- The EIR authors refuse to provide any supporting documentation regarding quantity or quality of crude oil that will be processed at the Refinery despite the public statements by Phillips 66 that it intends to import heavy crudes to its west coast refineries.

SMW 32

- The EIR's claim that the two projects proposed at the Phillips 66 Santa Maria Facility (SMF) – and the type of crude processed by the SMF would have *no effect* on the Rodeo Refinery Project. FEIR at 2-4 (emphasis added).

SMW 33

- The EIR claims that the Project would reduce SO_2 emissions by at least 50 percent resulting in an SO_2 emission decrease of at least 180 tons per year. There is no support, in either the EIR or the BAAQMD permitting record, for the claimed reduction in SO_2 emissions.

SMW 34

- The EIR omits several important petroleum-refining projects from consideration in its analysis of cumulative environmental impacts, and concludes absent evidentiary support that the project would not result in a cumulatively considerable increase in air quality, greeenhouse gas emissions and public health and safety impacts.

V. Conclusion

The EIR remains woefully inadequate under CEQA. The County must substantially revise and recirculate the document in order to correct its numerous defects. In addition, because the FEIR discloses significant new information regarding the Project's impacts to air quality, public health and safety, and climate change, the document must be recirculated so that the public can comment on the new information.

We appreciate the opportunity to submit our initial comments on the DEIR and will submit our comprehensive comments as soon as practicable.

Very truly yours,

SHUTE, MIHALY & WEINBERGER LLP

Laurel L. Impett

LAUREL L. IMPETT, AICP, Urban Planner
CARMEN BORG, AICP, Urban Planner
ELLISON FOLK

cc: (all without exhibits)
Senator Barbara Boxer
Jared Blumenfeld, Regional Administrator, EPA Region IX
Lashun Cross, Principal Planner, Contra Costa County
Roger Lin, Communities For a Better Environment
Diane Bailey, Natural Resources Defense Council
Janet Pygeorge, Rodeo Citizens Association
Jane Callaghan, Rodeo Citizens Association

List of Exhibits

Exhibit: A Phyllis Fox, Ph, D., PE, Comments on Environmental Impact Report for the Phillips 66 Propane Recovery Project, Nov. 15, 2013.

Exhibit: B Greg Garland, Chairman and CEO, Phillips 2013 Barclays Energy-Power Conference, Sept. 12, 2013

Exhibit: C Edited Transcript Thomson Reuters Streetevents, Quarter 1 2013 Phillips 66 Earnings Conference Call 3:00 P.M. GMT, May 01, 2013

Exhibit: D Bay Area Air Quality Management District, California Environmental Quality Act Guidelines

Exhibit: E Governor Jerry Brown, Improving Public Worker Safety at Oil Refineries, Draft Report of the Interagency Working Group on Refinery Safety, Jul. 2013.

Exhibit: F Associated Press, *Crews slowed by Heat in attacking Calif. rail fire*, NBC News, Aug 24, 2011, http://www.nbcnews.com/id/44259169/ns/us_news-life/t/crews-slowed-heat-attacking-calif-rail-fire/; and Bret Schulte, *Oil Spill Spotlights Keystone XL Issue: Is Canadian Crude Worse?*, Apr. 4, 2013, http://news.nationalgeographic.com/news/energy/2013/04/130405-arkansas-oil-spill-is-canadian-crude-worse/; and Marianne Lavelle, *Oil Train Crash Probe Raises Five Keys Issues on Cause*, National Geographic, Jul. 11, 2013, http://news.nationalgeographic.com/news/energy/2013/07/130711-oil-train-crash-five-key-issues/; and David Boroff, *At least eight injured, five*

critically, as explosions rock Blue Rhino propane gas plant in Florida, New York Daily News, Jul. 30, 2013, and http://www.nydailynews.com/news/national/15-missing-florida-explosions-article-1.1412355; and Matthias Gafni, *Benicia: Three Valero refinery rail cares filled with coke derail*, Contra Costa Times, Nov. 5, 2013, http://www.contracostatimes.com/news/ci_24458813/valero-refinery-rail-car-derails-benicia.

Exhibit: G Bay Area Air Quality Management District, Compliance Memorandum, May 5, 2011 and Bay Area Air Management District Incident Report Information, Oct. 22, 2010 and Jun. 15, 2013.

Exhibit: H Environmental Protection Agency, Toxics Release Inventory California Report, 2011; and Political Economy Research Institute, Toxic 100 Air Polluters Index, Aug. 2013.

Exhibit: I Analysis of Major Derailment Causes on Heavy Haul Railways in the United States, X. Liu, et.al.

Exhibit: J United States Department of Occupational Safety & Health Administration, Accident Inspection, Aug. 8, 1998 – Jan. 28, 1999.

Exhibit: K Letter from D. Myers to Lashun Cross, Principle Planner, Contra Costa County, dated July 13, 2012 (Appendix G to November 19, 2013 County Planning Commission Staff Report)

Exhibit: L Contra Costa County Fire Protection District, Fire Station Closures, News and Events http://www.cccfpd.org/newsandevents.php

Exhibit: M Chinook Salmon Life History, University of California, Agriculture and Natural Resources California Fish Website, available at http://calfish.ucdavis.edu/species/?uid=20&ds=241; and generally Moyle, P.B. 2002, *Inland Fishes of California* Revised Ed. at 251- 271

Exhibit: N Diane Bailey, *Valero's Crude by Rail Project in Benicia Could Open the Floodgates to Tar Sands in California*, National Resource Defense Council Staff Blog, Jul, 02, 2013 http://switchboard.nrdc.org/blogs/dbailey/valeros_crude_by_rail_project.html

Exhibit: O Cumulative Projects Map, retrieved on Nov, 15 2013 from https://maps.google.com/.

Exhibit: P David Biello, *How Much will Tar Sands Oil Add to Global Warming?*, Scientific American, Jan. 23, 2013,

Exhibit: Q Phillips 66, Banking Application Cancellation, Aug, 06, 2013.

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Comments

on

Environmental Impact Report

for the

Phillips 66 Propane Recovery Project

Rodeo, California

Prepared
for
Shute, Mihaly & Weinberger LLP on behalf of
Rodeo Citizens Association

November 15, 2013

Prepared by
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I. INTRODUCTION

The Phillips 66 San Francisco Refinery, located at Rodeo (Refinery), is proposing to recover an additional 4,200 barrels per day (BPD) of propane and 3,800 BPD of butane from the refinery fuel gas (RFG) (collectively known as "liquefied natural gas" or LNG) to export for sale (Project). I was asked by Shute, Mihaly & Weinberger to review the Draft Environmental Impact Report (DEIR)[1] for this Project, related files of the Bay Area Air Quality Management District (BAAQMD), and select responses to comments in the Final Environmental Impact Report (FEIR).[2] Based on this review, I was asked to evaluate the accuracy of the DEIR/FEIR Project Description and their analysis of the Project's air quality impacts.

My evaluation, presented below, indicates the Project would result in significant unmitigated air quality and public health impacts. The DEIR and FEIR significantly underestimate the amount of criteria pollutants and greenhouse gas emissions that would be emitted by the Project. Emissions of nitrogen oxides (NOx) and reactive organic gases (ROG) will exceed both daily and annual CEQA significance thresholds. These emissions plus certain hazardous air pollutants (HAPs) emissions that were not disclosed in the DEIR will cause significant unmitigated air quality and public health impacts.

F1 The DEIR's Project description is incomplete. First, it fails to disclose the baseline crude slate, which determines the CEQA baseline emissions from all processing units within the Refinery. Second, it fails to disclose other directly related projects at the Phillips 66 Santa Maria Facility, which is linked by pipeline to the Rodeo Refinery. These directly related projects result in significant cumulative impacts that were not evaluated. Third, it fails to disclose related changes at the Rodeo Refinery itself, including a significant drop in refinery fuel gas heat content, which requires physical modifications to 19 process heaters. Finally, the Project description omits all of the key chemical composition data required to assess impacts and vet the DEIR's no significant impact conclusions.

My resume is included in Attachment 1 to these comments. I have over 40 years of experience in the field of environmental engineering, including air emissions and air pollution control; greenhouse gas emission inventory and control; air quality management; water quality and water supply investigations; hazardous waste investigations; environmental permitting; nuisance investigations (odor, noise); environmental impact reports, including CEQA/NEPA documentation; risk assessments; and litigation support.

I have M.S. and Ph.D. degrees in environmental engineering from the University of California at Berkeley with minors in Hydrology and Mathematics. I am a licensed professional engineer (chemical, environmental) in five states, including California; a

[1] Contra Costa County Department of Conservation and Development, Phillips 66 Propane Recovery Project, Draft Environmental Impact Report, June 2013 (DEIR).

[2] Contra Costa County Department of Conservation and Development, Phillips 66 Propane Recovery Project, Final Environmental Impact Report, November 2013 (FEIR).

Board Certified Environmental Engineer, certified in Air Pollution Control by the American Academy of Environmental Engineers; and a Qualified Environmental Professional, certified by the Institute of Professional Environmental Practice.

I have prepared comments, responses to comments and sections of EIRs for both proponents and opponents of projects on air quality, water supply, water quality, hazardous waste, public health, risk assessment, worker health and safety, odor, risk of upset, noise, land use and other areas for well over 100 CEQA documents. This work includes EIRs, Negative Declarations (NDs), and Mitigated Negative Declarations (MNDs) for all California refineries as well as various other permitting actions for tar sands refinery upgrades in Indiana, Louisiana, Michigan, Ohio, South Dakota, Utah, and Texas and LNG facilities in Texas, Louisiana, and New York. I was a consultant to a former owner of the subject Refinery on CEQA and other environmental issues for over a decade and am thus very familiar with both the Rodeo Refinery and the Santa Maria Facility.

My work has been cited in two published CEQA opinions: (1) *Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners* (2001) 91 Cal.App.4th 1344 and *Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310.

II. THE PROJECT IS PIECEMEALED

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The DEIR only evaluated a portion of the Project. The Project as described in the DEIR narrowly involves modifications to the Rodeo Refinery "to recover for sale propane and additional butane from refinery fuel gas and other process streams." DEIR, pp. 3-2, 3-5. However, the DEIR fails to disclose changes elsewhere that are required to produce all of the propane and butane that would be recovered.

The components of the Project evaluated in the DEIR include an LPG Recovery Unit, Fuel Gas Hydrotreating, Propane Storage, Railcar Loading Modification, and certain ancillary facilities. DEIR, Table 3-1 & Sec. 3.4. I reviewed the BAAQMD file for this Project and other currently pending and related projects. Based on this review, in my opinion, sufficient propane and butane could not be recovered from the current crude slate to support the Project's propane/butane production goals. Changes in the amount and type of feedstock would be required to achieve the propane and butane recovery goals.

The Refinery currently recovers up to 9,000 BPD of butane in the summer for sale.[3] DEIR, p. 3-17. The Project would increase butane recovery by 3,800 BPD and also recover 4,200 BPD of propane. The total butane and propane recovery after the Project has been implemented would be limited by permit conditions to a maximum daily of 14,500 BPD and 5,292,550 barrels per 12 consecutive months. 6/28/13 Response

[3] Butane sold as LPG has the disadvantage of a fairly high boiling point and thus is not desirable as a fuel during the winter when stored outdoors in areas that have temperatures below freezing.

Letter,[4] p. 5, Response to Comment #5. It is unclear whether this is 14,500 BPD in addition to the existing 9,000 BPD or a total of 14,500 BPD, including current baseline butane recovery.[5] The DEIR, for example, clearly states that the Project would recover 3,800 BPD of "additional butane." DEIR, p. 3-23. This should have been clarified in the FEIR, but was not. Regardless, this is a large amount butane and propane for a refinery that processes very heavy crudes configured as shown in DEIR Figure 3-4 . Thus, other modifications, not disclosed in the DEIR, are required to fully implement this Project.

The average feedstock to the Refinery over the period 2007 to 2011 was 116,800 BPD and ranged from 110,000 BPD to 128,000 BPD, or nearly up to its reported capacity of 130,000 BPD. DEIR Project Description,[6] Table 1. Thus, the proposed butane plus propane recovery Project would convert about 12% of the baseline feedstock to butane and propane, assuming a total of 14,500 BPD. If one assumes the Project would recover 14,500 BPD additional, plus the existing 9,000 BPD, 20% of the feedstock would be converted. Further, about 16% of the product output of the Refinery, estimated as 89,400 BPD over the period 2007 to 2011 (DEIR Project Description, Table 4), would be propane and butane.

F2

These high percentages are not consistent with my experience, particularly for the mainly heavy crudes and semi-refined products from heavy crudes processed at this Refinery, which have much lower amounts of these low-boiling products.[7] The DEIR and other documents I consulted contain no information that would allow me to directly estimate the amount of propane and butane that could be recovered from baseline feedstock such as:

- composition of the Refinery fuel gas and other gas stream from which propane and butane would be recovered, e.g., gas chromatographic analyses;
- distillation curves and composition data for the crude, semi-refined feedstock inputs from elsewhere, and other internal streams that would routed to the subject Project;
- relative amount of crude and semi-refined feedstock;
- material balance or outputs of refinery models.

These high values for propane/butane recovery suggest that the feedstock input will be modified in conjunction with the Project. Yet the DEIR lacks the data or

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[4] Letter from Don Bristol, Phillips, to Brian Lusher, BAAQMD, Re: Response to Incomplete Letter 5/21/13 Application #25199, June 28, 2013 (6/28/13 Response Letter). (References are identified in footnotes and provided on the attached DVD.)

[5] The 4/30/13 Response Letter, p. 4, Response to Comment #6 states "The throughput [14,500 BPD] includes butane that is currently being recovered as well as the butane and propane that will be recovered as part of this project."

[6] Phillips 66, Rodeo Propane Recovery Project Description, August 2012.

[7] Oil Transportation Information at http://www.oil-transport.info/crudedata/crudeoildata/crudeoildata.html

calculations that support the foundational assumption that 100% of the propane/butane can be recovered from the baseline refinery fuel gas.

The FEIR asserts that "the actual amount of propane and butane currently available for recovery (determined using measured flow data and lab analysis of propane and butane content) is approximately 4,200 bpd of propane and 9,300 bpd of butane." FEIR, p. 3.2-130. However, none of this data is in the record. We do not know, for example, if the amount "currently available" is the amount being processed in the CEQA baseline, or the amount that will be available for processing in the future, after the Project is implemented, based on other changes at other related Phillips 66 facilities, such as at Phillips 66's Santa Maria Facility or Ferndale Refinery.

F2

A crude throughput expansion project, for example, was recently approved at the Phillips 66 Santa Maria Facility, which is linked by pipeline to the Rodeo Refinery. This project is further discussed below. In summary, the DEIR for the Santa Maria Facility (referred to as SMF DEIR/FEIR in these Comments) clearly states that partially refined products from this increase in crude will be sent to the Rodeo Refinery for further processing. As explained below, these partially refined products are feedstocks to the Propane/Butane Recovery Project. The Santa Maria crude throughput increase project is not operational yet. Thus, there is solid evidence that there will be increases in the input to the Propane/Butane Project from related projects elsewhere in the Phillips 66 system that are not part of the instant CEQA baseline. Thus, the amount "currently available" likely includes future increases in production that have not been disclosed in the Propane/Butane Project DEIR or FEIR. Thus, cumulative impacts of these two projects should have been evaluated and the increase in emissions from processing the increase in semi-refined products from Santa Maria at Rodeo should have been included in the emission calculations.

As the cited flow data and lab analysis are asserted to establish the Project baseline and is part of the Project description (i.e., it determined the design basis of the Project), it must be provided for public review. This is particularly critical here as the claimed recovery of propane and butane from the baseline feedstock is very high for the type and amount of crude that the FEIR asserts is currently refined and the existing Refinery configuration. As noted above, other projects currently proposed by Phillips 66 could increase the recoverable propane and butane, making up the deficit.

F3

The San Francisco Refinery (SFR) consists of two facilities linked by a 200-mile pipeline. The Santa Maria Facility (SMF) is located in Arroyo Grande, in San Luis Obispo County, while the Rodeo Refinery (referred to as "the Refinery" in these Comments) is located in Rodeo in the San Francisco Bay Area. The SMF mainly processes heavy, high sulfur crude oil and sends semi-refined liquid products, e.g., gas oil, to the Rodeo Refinery. SMF DEIR,[8] pp. ES-2, 1-1 and Table 2-3. The Refinery DEIR does not disclose the existence of this related facility but it is acknowledged in the FEIR. FEIR, Master Response 2.2.

[8] Marine Research Specialists, Phillips 66 Santa Maria Refinery Throughput Increase Project, Final Environmental Impact Report, October 2012 (SMF FEIR), Available at: http://slocleanair.org/phillips66feir.

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F3

The subject DEIR addresses changes at just the Rodeo Refinery to increase butane and propane production, once the proper amount of the right feedstocks arrive. As discussed above, the DEIR is silent on the composition and relative amounts of feedstock (heavy crude, semi-refined products received from SMF) and the FEIR adds no additional information. Additional feedstock containing recoverable propane and butane is required.

Additional feedstock could be produced by proposed modifications at the Santa Maria Facility to increase its production of semi-refined feedstock (gas oil and naphtha), to send to the Rodeo Refinery. Phillips 66 proposed to increase the production of semi-refined products at the Santa Maria Refinery specifically to send to the Rodeo Refinery. SMF DEIR, p. ES-4. This throughput increase would necessarily be included in the streams from which propane and butane would be recovered, as explained below. Another related Phillips 66 project (rail spur extension required to import increased amounts of crude to support the throughput expansion) at the Santa Maria Facility is currently undergoing CEQA review. The SMF Rail Spur DEIR is expected to be released soon. My commentary here is based on the Rail Spur Land Use Application. SMF Rail Spur Land Use Ap.[9] These two projects provide the missing links in the butane/propane supply chain at the Rodeo Refinery.

F3

The Santa Maria throughput increase project would increase ". . .the volume of products leaving the SMF for the Rodeo Refinery via pipeline." SMF DEIR, pp. ES-4, 2-25. The products are not specifically identified in this statement, but are noted elsewhere as gas oil and naphtha. SMF FEIR, pp. 2-11, 2-17. These semi-refined products would contain a significant amount of butane and propane[10] and would be further processed at the Rodeo Refinery to generate additional butane and propane, as explained further below. DEIR, Figs. 3-4 and 3-6.

The SMF DEIR for the throughput increase project included a clarifying statement as to the products that would be sent to Rodeo, which was deleted in the FEIR: "an increased volume of products leaving the SMF for the Rodeo Refinery via pipeline (including semi-refined crude oil or a combination of semi-refined crude oil and previously refined gas/oil petroleum)." SMF DEIR,[11] p. 2-25. This omission is material as it indicates that more than semi-refined products from the SMR would be sent to the Rodeo Refinery. This omission suggests crudes could also be sent to the Rodeo Refinery. This clue, coupled with the rail spur extension project suggests that tar sands crudes, some of which are semi-refined, could additionally be sent to the Rodeo Refinery via rail import at Santa Maria. This issue is discussed below.

The SMF FEIR indicates the throughput of the Santa Maria Facility would increase from the permit level of 44,500 BPD (SMF FEIR, p. ES-4) by 10% to a

[9] Phillips 66 Company, Land Use Application, Santa Maria Refinery Rail Project, June 2013.

[10] See, e.g., MSDS for naphtha, available at: http://www.collectioncare.org/MSDS/naphthamsds.pdf.

[11] Marine Research Specialists, ConocoPhillips Santa Maria Refinery Throughput Increase Project, Public Draft Environmental Impact Report, August 2011.

maximum of 48,950 BPD or by 4,450 BPD. SMF FEIR, p. 1-1. However, the permit level is not the baseline for CEQA. The actual throughput for the last three years of available data is 40,275 BPD. Thus, the SMF throughput increase project would increase the throughput of the SMF by 8,675 BPD. This increase would be converted into semi-refined products in the SMF's distillation units and coker to yield gas oil and naptha, which would be sent to the Rodeo Refinery, where propane and butane would be separated, contributing to the propane/butane slated for recovery by the Rodeo Project.

This link is clearly shown in the Rodeo Refinery block flow diagrams in the subject Rodeo Refinery DEIR. The block flow diagram for the existing Rodeo Refinery, DEIR Figure 3-4, shows "SMGO" entering the Refinery at the U-240 Prefractionator unit (Prefrac unit). DEIR, p. 3-12 ("Heavy gas oil (HGO) streams from Unit 200 and HGO purchased from outside of the Refinery are fractionated in the Unit 240 prefractionator."). SMGO is Santa Maria Gas Oil. This DEIR figure is reproduced here as Figure 1 for ease of reference. The U-240 Prefrac unit separates Santa Maria gas oil and other gas oils into lighter hydrocarbon fractions that are currently blended into the Refinery Fuel Gas, shown in Figure 3-5 (see lower left hand corner, blue arrow labeled U-240/244/248 S-RFG being routed to U-240 Fuel Gas Treating), but which will be further processed into propane and butane in new units added to the Rodeo Refinery as part of the Project.

F3

Figure 1
Overall Existing Refinery Block Flow Diagram

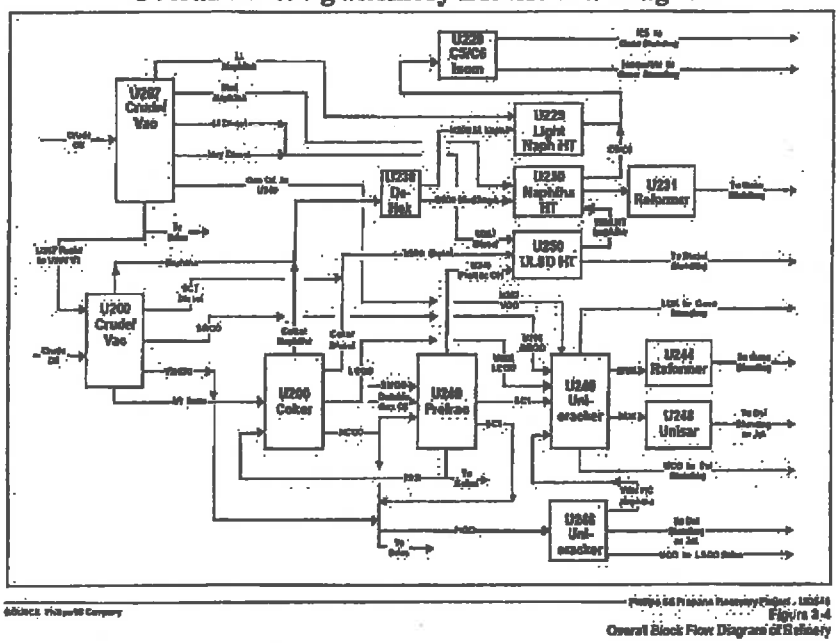

Figure 3-4
Overall Block Flow Diagram of Refinery

Under the Project, the output from the Prefrac unit is sent to the proposed "RFG Propane Recovery Unit" instead of the Refinery Fuel Gas system. This unit is the heart of the subject Project and is immediately adjacent to the Unit 240 Prefrac unit. DEIR, Table

3-2. Propane and butane are recovered in this unit. This new propane/butane extraction unit is shown in DEIR Figure 3-6, which is reproduced here as Figure 2 for ease of reference.

Figure 2
Proposed Refinery Fuel Gas System Block Flow Diagram

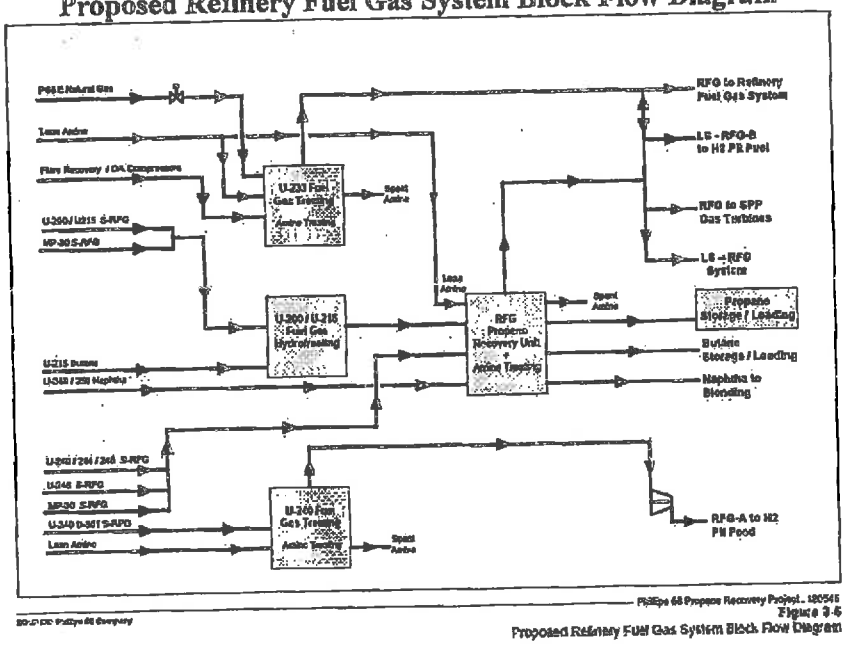

Figure 3-6
Proposed Refinery Fuel Gas System Block Flow Diagram

The RFG Propane Recovery Unit is the big yellow box in the middle of Figure 2. Blue arrows in the lower left hand corner of Figure 2 identify the inputs to this unit, which are various refinery streams. These streams include "U-240/244/248 S-RFG." This designation means that Refinery Fuel Gas (RFG) from Unit U-240 is sent to the RFG Propane Recovery Unit. (This stream was formerly sent to the U-240 Fuel Gas Treating Unit. DEIR, Fig. 3-5.) As Santa Maria Gas Oil (SMGO) is one of the inputs to Unit U-240, changes at the Santa Maria Facility would be transmitted directly to the Project via the U-240 Prefrac Unit.

This establishes a direct link between this Project and modifications at the Santa Maria Facility. This is the "nexus" to the larger project with the potential to change crude oil feedstocks.

The increase in throughput at the Santa Maria Facility would increase the amount of SMGO processed at Rodeo into propane and butane. The new rail spur at the Santa Maria Facility would enable tar sands crudes to be imported to and processed at Santa Maria and/or shipped directly to Rodeo. As discussed below, tar sands crudes imported by rail are blended with a diluent that is rich in butane and propane. Thus, both projects proposed for the Santa Maria Facility will have a direct impact on the amount of propane and butane available for recovery at Rodeo, making up any deficit based on the Rodeo baseline crude slate. The baseline crude slate and feedstocks to the propane/butane

recovery Project are not disclosed so this link and its impact on emissions would never be discovered and thus not mitigated.

F3

Thus, there is both a direct pipeline link between the two facilities, an explicit statement that the SMF throughput project was developed to send more semi-refined product to the Rodeo Refinery, and a direct process link between those products and the input to the propane/butane recovery Project disclosed on the process flow diagrams for the Project. These three factors establish a nexus between the propane/butane Project and modifications at the Santa Maria Facility. Thus, these two projects are integrally related and should have been evaluated as a single project.

Additional propane/butane-rich feedstock could be obtained by importing certain classes of cost-advantaged tar sands crudes. These tar sands and other cost-advantaged crudes are cost advantaged because they are stranded, with no pipeline access and thus must be delivered by rail.[12] However, refineries are not equipped to take delivery of large amounts of crude by rail, which requires large unit trains that require significant infrastructure improvements.

F4

Tar sands crudes are heavier and more viscous than the feedstock currently processed at either Rodeo or Santa Maria. These crudes are thus commonly blended with 25% to 30% diluent to facilitate transporting them by rail or pipeline. The blended crude is known as a "DilBit." The diluent is typically natural gas condensate, pentanes, or naphtha.[13] The diluent can be readily separated and recovered as propane/butane at Rodeo.

Cost-advantaged crude sells at a discount relative to crude oils tied to the global benchmark, North Sea Brent crude. Many of these cost-advantaged crudes are rich in fractions that would increase the yield of butane and propane[14] at the Rodeo Refinery. Based on analyses by one of Phillips' competitors, Western Canadian Select (WCS) was identified as one of the most cost-advantaged crude for direct rail import to California.[15]

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[12] Small amounts of Canadian tar sands crudes are currently arriving on the west coast by ship. However, the pipeline capacity to transport the tar sands crude to the west coast and the rail capacity to transport it to the west coast for subsequent water delivery is currently very limited. However, projects are underway to alleviate these bottlenecks, including a Phillips 66 project at its Ferndale facility in Washington. The Ferndale project would allow direct import of tar sands crude at the Rodeo Marine Terminal.

[13] Gary R. Brierley, Visnja A. Gembicki, and Tim M. Cowan, Changing Refinery Configurations for Heavy and Synthetic Crude Processing, Available at: https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId=%7BA07DE342-E9B1-402A-83F7-36B18DC3DD05%7D&documentTitle=5639138.

[14] See, for example, Pat Swafford, Evaluating Canadian Crudes in US Gulf Coast Refineries, Crude Oil Quality Association Meeting, February 11, 2010, Available at: http://www.coqa-inc.org/20100211_Swafford_Crude_Evaluations.pdf.

[15] Valero, UBS Global Oil and Gas Conference, May 21-22, 2013, p. 10, Available at: http://www.valero.com/InvestorRelations/Pages/EventsPresentations.aspx. provided as Appendix D to TGG Comments.

Western Canadian Select is a tar sands DilBit that contains 2% butane and 4.3% pentane.[16]

Cost-advantaged crudes could reach Rodeo by rail starting at the Phillips 66 Ferndale Marine Terminal and then barged down the Pacific coast to the Phillips 66 Rodeo Marine Terminal; by rail to Santa Maria and then by pipeline to Rodeo; or by rail or barge to the nearby Pittsburg terminal.[17] However, the Phillips 66 refineries are not equipped to accept large volumes of crude by rail. Thus, Phillips 66 is currently permitting projects to achieve both of these goals.[18]

An expansion of the Phillips 66 Marine Terminal at Rodeo was recently permitted to allow an increase of crude oil imported by ship by 20,500 BBP, from 30,682 BPD at present to 51,182 BPD.[19] Phillips 66 was recently issued a permit to construct a new crude rail unloading facility at its Ferndale Refinery in Washington to increase rail shipments of cheap Canadian tar sands crudes. This rail terminal would allow it to import tar sands crude by rail and barge them down the Pacific coast to Rodeo.[20] [21]

F4

The Phillips 66 rail spur extension project at the Santa Maria Facility would allow the import of a "full range of competitively priced crude oil." Rail Spur Land Use Ap., Appx. A, pdf 18. Phillips has admitted that these "competitively priced crude oils" include Canadian tar sands crudes. These crudes would be processed at the Santa Maria Facility, which sends its semi-refined products to Rodeo. The SMF is permitted to process up to 49,950 BPD of crude. SMF FEIR, p. 1-1. The rail spur project would allow the import of 37,000 BPD of "competitively priced crude oils", or 74% of its

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[16] Crude Monitor, Western Canadian Select, Available at: http://www.crudemonitor.ca/crude.php?acr=WCS.

[17] Phillips 66 Delivers on Advantaged Crude Strategy, Available at: http://www.phillips66.com/EN/newsroom/feature-stories/Pages/AdvantagedCrude.aspx.

[18] Phillips 66 Delivers on Advantaged Crude Strategy, Available at: http://www.phillips66.com/EN/newsroom/feature-stories/Pages/AdvantagedCrude.aspx.

[19] Bay Area Air Quality Management District, CEQA Initial Study, Marine Terminal Offload Limit Revision Project, Phillips 66 Refinery, Rodeo, California, BAAQMD Permit Applications 22904, December 2012.

[20] Northwest Clean Air Agency, Order of Approval to Construct (OAC) 1152, Crude Unloading Facility, Phillips 66 Ferndale Refinery, June 7, 2013. See also: Thomson Reuters: "Phillips 66 Seeks Permit for Facility to Receive Crude by Rail", April 3, 2013, Available at: http://www.4-traders.com/PHILLIPS-66-10447684/news/Phillips-66-seeks-permit-for-facility-to-receive-crude-by-rail-16604359/.

[21] In addition, crude oil will either be received by or delivered to a new facility located in Pittsburg, California. The proposed WesPac Energy–Pittsburg Terminal (Terminal) would be designed to receive crude oil and partially refined crude oil from trains, marine vessels, and pipelines, store oil in existing or new storage tanks, and then transfer oil to nearby refineries, including Rodeo. WesPac RDEIR, p. 2.0-1. All products handled at the facility would be transported by rail, ship, barge, or pipeline. Id. The Terminal would operate with an average throughput of 242,000 barrels (BBLs)1 of crude oil or partially refined crude oil per day, and would have a maximum capacity throughput of 375,000 BBLs per day. Id., p. 2.0-2. The total annual throughput for the entire Terminal would be approximately 88,300,000 BBLs of crude oil and/or partially refined crude oil per year. *Id.*

F4

throughput. Rail Project IS,[22] pp. 15, 22. This means that one of the feedstocks for the propane/butane recovery Project would be significantly modified by the Santa Maria rail spur project to include tar sands crude, which would include propane/butane rich DilBits.

While the DEIR did not acknowledge the relationship between the subject Project and the rail spur extension project, the FEIR does mention the existence of the rail spur extension project at Santa Maria, but claims, with no support, that the crudes imported would be only from "domestic sources available in the marketplace." FEIR, p. 2-4. This contradicts the rail spur project description, which describes the project as allowing the import of a "full range of competitively priced crude oil," not just "domestic" sources. I am not aware of anything in the record for the Santa Maria rail spur extension project that would limit imported crude to just "domestic" sources. This contradicts not only the record in that case, but also public statements to the contrary by Phillips 66. Further, the FEIR does not evaluate the rail spur's environmental impacts at Rodeo, which are potentially significant, as discussed below and in Attachment 2 (my comments on Valero).

F5

In a September 2013 presentation, Greg Garland, Chairman and CEO of Phillips 66, stated Phillips 66 plans to import "cost advantaged" crude from Canada to its refineries in California as illustrated in Figure 3. Garland stated: "Our real challenge that we have or opportunity that we have is to get advantaged crudes to the East Coast and West Coast. So we're working that in terms of moving Canadian crudes down into California or building rail facilities. We're looking at rail to barge to ship, down to the West Coast refineries...."[23]

In a May 2013 presentation, Phillips EVP Tim Taylor stated in response to a question on bringing heavy Canadian crude oil into California that "Today, we are doing some barge movements down the coast into California on heavy Canadian. You can look in the Northwest to do that. So that's an option that we're going to continue to use and we're looking at expanding that opportunity with some of the logistics things we're putting in place. We're also continuing to move crude by rail in smaller amounts into California and looking at projects really to increase that as well."[24]

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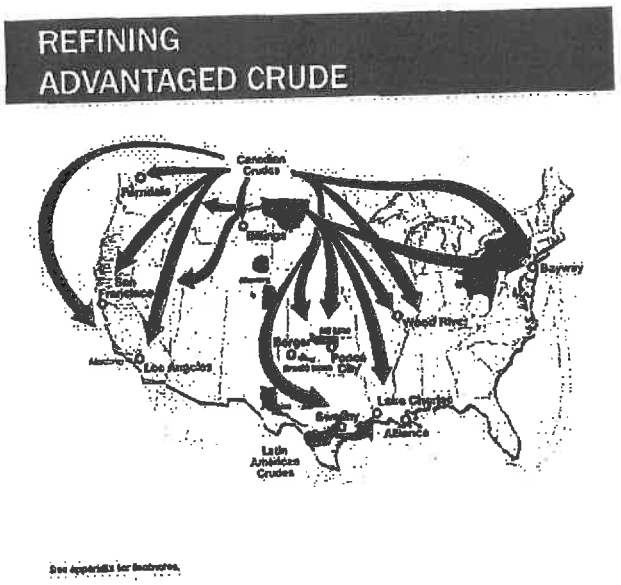
[22] Arcadis, Applicant's Reference CEQA IS, Santa Maria Refinery Rail Project, June 2013 (Rail Project IS").

[23] September 12, 2013 Transcript, pdf 7: Available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/Barclays_091213_Final.pdf

[24] May 1, 2013 Transcript, pdf 13, Available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/PSX-Transcript-2013-05-01.pdf

Figure 3[25]



III. THE PROJECT DESCRIPTION IS INCOMPLETE

The information included in the DEIR is not adequate to identify and assess all of the impacts of the Project. There are two major classés of omissions.

First, the DEIR did not disclose that the Project would occur at a refinery that is linked by pipeline to a separate facility, the Santa Maria Facility, that will supply part of the feedstock proposed to be recovered as propane/butane. The FEIR acknowledges this link in response to comments. FEIR, Master Response 2.2, However, the FEIR continues to ignore the environmental impacts resulting from the link between modifications currently under way or proposed at the Santa Maria Facility and this Project. The link is established above in Comment II.

F6

The failure to disclose this link, via Santa Maria gas oil which is converted into propane and butane at Rodeo by the Project, is a serious omission. The changes proposed and underway at the Santa Maria Facility will increase both the amount and composition of the feedstocks recovered as propane and butane at the Rodeo Refinery. These changes in feedstock amount and composition would result in significant air quality and public health impacts at Rodeo.

F7

The FEIR asserts that "a company's purchase of raw materials is a business activity and not a CEQA project or action that would require a discretionary permit or approval by the County." FEIR, p. 3.2-118. This is incorrect. The chemical composition of the raw materials that are processed by a refinery directly affect the amount and

[25] Greg Garlands, Phillips 66, Barclays Conference, pdf 24, Available at: http://www.phillips66.com/EN/investor/presentations_ccalls/Documents/barclays2013_finalv2.pdf.

composition of emissions from that refinery. The amount and composition of sulfur in the crude slate, for example, ultimately determines the amount of SO2 that will be emitted from every fired source in the refinery and the amount of odiferous hydrogen sulfide and mercaptans that will be emitted from tanks, pumps, valves, and fittings. The composition of the crude slate establishes the CEQA baseline against which impacts must be measured.

In particular, the feedstocks that could arrive at the Rodeo Refinery for recovery as propane and butane may include tar sands crudes blended with diluents or "DilBits." These DilBits contain significant amounts of hazardous air pollutants, such as benzene, a potent carcinogen. These would be emitted at many fugitive components in the Refinery, including compressors, pumps, valves, fittings, and tanks, in greater amounts than from baseline feedstock.

F7

These increased emissions would result in significant public health and air quality impacts not addressed in the DEIR nor the FEIR. These include significant increases in volatile organic compounds (VOCs) emissions not otherwise included in the emission estimates; hazardous air pollutants, including benzene, which could cause significant health impacts; and highly odiferous sulfur compounds that would individually and cumulatively cause malodors, degrade ambient air quality, increase the incidence of accidental releases, and adversely affect the health of workers and residents around the Refinery. Further, the high acid levels in these crudes and their semi-refined products would accelerate corrosion of refinery components, contributing to equipment failure and increased accidental releases.

Second, the DEIR failed to disclose that the Project would reduce the heat content of the refinery fuel gas from 1340 Btu/scf (British thermal unit per Standard Cubic Feet) (BAAQMD Permit Ap., p. 10) to 1050 MMBtu (one million Btu) (5/13/13 BAAQMD Notes). This is a 30% drop in the heat content of the fuel for all refinery fuel gas-fired sources within the Rodeo Refinery. Notes in the BAAQMD's files indicates that this will require replacing the burners in at least 19 process heaters. 5/13/13 BAAQMD Notes.

F8

The DEIR did not disclose this dramatic decline in fuel gas heat content or the related changes in equipment that would be required to burn the altered refinery fuel gas. The FEIR concedes a decline in heat content in response to comments but fails to disclose the magnitude of the decline. However, the FEIR asserts with no analysis that "removal of propane and butane from the system and replacing it with natural gas would not affect the performance of combustion devices at the Refinery." FEIR, p. 3.2-130. The affected combustion units and burner configurations were not identified and baseline emissions were not disclosed. Thus, there is no basis for this claim.

The FEIR argues that the types of changes that would be made to heaters are considered by the BAAQMD to be an "alteration" rather than a "modification" as there would be no emission increase. FEIR, p. 3.2-130. However, the BAAQMD definition of "alteration" is irrelevant for purposes of CEQA. The EIR must identify the change in emissions from the affected combustion units and burner configurations.

A large drop in fuel heat content can affect the combustion efficiency of all combustion sources, including heaters, boilers, and turbines. A related concern is a concomitant drop in flame temperature. The Project basically involves replacing propane and butane that are currently part of the Refinery Fuel Gas (RFG) with natural gas. Propane and butane burn with a hotter flame than natural gas.[26] These two effects, a large drop in heat content and a lower flame temperature, would result in an increase in the emission of products of incomplete combustion, including hazardous air pollutants, carbon monoxide, and reactive organic gases from all fuel gas fired combustion sources. None of these pollutants are routinely monitored, e.g., with continuous emission monitoring systems, and some are not monitored at all (HAPs). Thus, the increases would not even be detected until after the fact. The DEIR and FEIR did not disclose the flame temperature issue. Further, only 19 process heaters would receive upgraded burners. The FEIR is silent on the impacts that would result from the lower heat content fuel and lower resulting flame temperature at other combustion sources that will not be upgraded.

F8

The DEIR should be revised to include a complete description of the Project and an analysis of all of the environmental effects of these changes.

IV. PROJECT EMISSIONS ARE UNDERESTIMATED AND SIGNIFICANT

The DEIR underestimated the increase in greenhouse gas (GHG) emissions and criteria pollutant emissions (NOx, ROG, PM2.5/PM10) that would result from the Project. If the EIR had accurately estimated the Project's emissions, it would have determined that the Project will result in significant unmitigated air quality impacts from emissions of GHGs, NOx, and ROG. The DEIR also failed to estimate the increase in carbon monoxide emissions that would result from the Project.

IV.A. Greenhouse Gas Emissions (GHG) Are Underestimated

The DEIR estimated that the Project would decrease GHG emissions by 325,978 metric tons per year (MT/yr). DEIR, Table 4.8-3. The increases in GHG emissions from a new boiler (67,133 MT/yr), additional natural gas combustion (592,761 MT/yr), and other miscellaneous sources (7,372 MT/yr) are assumed to be offset by removing 14,500 BPD of butane and propane from the fuel gas system and replacing it with natural gas, which emits less GHG (-759,244 MT/yr) and the shutdown of Plant 4 Hydrogen Plant and B-401 Process Heater (-234,000 MT/yr). These reductions are not supported and are incorrect. When the errors discussed below are corrected, GHG emissions exceed the significance threshold of 10,000 MT/yr for stationary sources and 1,100 MT/yr for other types of projects (DEIR, p. 4.8-13). Thus, they are a significant unmitigated impact of the Project.

F9

[26] Flame Temperatures of Some Common Gases, Available at; http://www.engineeringtoolbox.com/flame-temperatures-gases-d_422.html.

1. Reduction: Removing Butane and Propane from Fuel Gas

The Project would remove 14,500 BPD of butane and propane from the refinery fuel gas system and replace it with natural gas. As propane and butane generate more GHG emissions when burned than natural gas, this results in a net decrease in GHG emissions at the Refinery of 166,483 MT/yr (592,761 -759,244 = -166,483 MT/yr). DEIR, Table 4.8-3.

However, a reduction would only occur if the propane/butane are not used as fuel, which is their usual end use. The DEIR fails to disclose the use of the removed butane and propane. This undisclosed use could result in indirect impacts that were not considered in the DEIR. Butane and propane, for example, are fuels, often called liquefied petroleum gas or LPG. They are also feedstocks to various chemical processes. Either use would result in GHG emissions.

F9

First, some, perhaps all, of the recovered butane and propane could be sold within California for use as fuel, where CEQA clearly applies to 100% of the resulting GHG emissions. If sold as fuel to customers in California, the resulting emissions are indirect emissions from the Project and must be included in the Project GHG emission inventory. Correspondence in the BAAQMD file indicates that ". . . some past (and current) butane deliveries have included local industrial customers within Contra Costa and Alameda counties." 4/30/13 Phillips Response Letter,[27] p. 10, Response to Comment #15. Thus, absent a condition of certification prohibiting the sale of propane and butane for any use in California that would generate GHG, 100% of the GHG emissions from burning propane and butane, the most likely end use, must be included in the EIR's GHG impact analysis. This one modification results in an increase in GHG emissions of 433,266 MT/yr from the Project.[28] This is a significant unmitigated impact of the Project.

Second, even assuming 100% of the propane and butane were burned or otherwise used outside of California in a manner that generated GHG, these emissions would still result in significant adverse impacts on California as GHG is a global pollutant, widely acknowledged to affect climate change worldwide, regardless of release point. The GHG emissions released in neighboring states, for example, would contribute to sea level rise along the California coast; loss in California's snow pack, leading to floods and droughts; and more high ozone days in California. DEIR, pp. 4.8-1/2.

Under this view, the Project is exporting its significant GHG impact to neighboring states, where it continues to impact global climate and thus California. Therefore, regardless of where the propane and butane are actually used, the environmental consequences of its use are the same and must be considered.

[27] Letter from Don Bristol, Phillips 66, to Brian Lusher, BAAQMD, Re: Response to Incomplete Letter 3/1/13, April 30, 2013 (4/30/13 Phillips Response Letter).

[28] Revised GHG emissions based on DEIR Table 4.8-3: -325,978 + 759,244 = 433,266 MT/yr.

F9

Thus, the DEIR implicitly assumes that the propane and butane removed from the refinery fuel gas will not be used in a manner that generates GHG and ignores the impacts of this use.

2. Relative Proportions of Propane and Butane

F10

The GHG emissions were estimated assuming the production of 4,200 BPD of propane and 3,800 BPD of butane. Butane generates about 6% more GHG than propane per gallon burned. FEIR GHG Supplement, Nov. 2012, p. 4. In correspondence with the BAAQMD, Phillips has requested a lump-sum limit of 14,500 BPD (6/28/13 Phillips Response Letter, p. 5, Response to Comment #6), which would allow them to produce 100% butane, increasing GHG emissions compared to those estimated in the DEIR.

3. Reduction: Hydrogen Plant and Heater Shutdown

F11

The GHG emission calculation additionally assumes a net reduction of 234,000 MT/yr from the shutdown of the Plant 4 Hydrogen Plant and the Unit 240 Process Heater B-401. DEIR, p. 4.3-13 and Table 4.8-3. The DEIR asserts that the GHG reduction corresponds to the 3-year average baseline GHG emissions from these units and cited ERM 2013. DEIR, p. 4.8-12. However, the DEIR references indicate that ERM 2013 is the BAAQMD Authority to Construct Application. DEIR, p. 9-8. I reviewed this document. It does not contain any support for the claimed reductions from shutting down these units. I was unable to find any support for these reductions in any of the documents that I reviewed and thus was unable to confirm whether they were correctly calculated. Regardless, the subject units were reportedly shutdown in 2011, which is part of the CEQA baseline. Thus, these reductions cannot be claimed as mitigation for Project increases.

My inability to find any support for these GHG emissions is consistent with comments filed by BAAQMD staff on the DEIR. They were also unable to find any support for the claimed GHG reductions from decommissioning a process heater and hydrogen plant. The BAAQMD further expressed concern that "emission from Unit 240 [the shutdown process heaters] may have shifted to other existing equipment due to increased operating demand." Increased heat demand, for example, would result from recovering butane and propane for the Project and upgrading additional semi-refined materials from the Santa Maria Facility. Further, the DEIR and the record supporting it do not contain any evidence that the emission reductions are permanent, real, and quantifiable.[29]

The FEIR responded to the BAAQMD's comments, asserting that the "GHG-related offsets that would be associated with the B-401 process heater are presented in the DEIR for informational purposes only and are not required to reduce the GHG emissions impact to a less-than-significant level." FEIR, p. 3.1-24. However, this is true only when considered in isolation, without acknowledging the increase in GHG emissions from burning the propane and butane removed from the refinery fuel gas. Further, this FEIR

[29] Letter from Jean Roggenkamp, BAAQMD, to Lashun Cross, CCC Dept. of Conservation and Development, Re: Phillips 66 Company Propane Recovery Project DEIR, August 6, 2013.

response also fails to provide any support for the GHG reductions from these shutdown unit.

F11

If the GHG reductions from both the Plant 4 Hydrogen Plant and B-401 Process Heater Shutdown are removed from the GHG inventory in DEIR Table 4.8-3 and the increase in emissions from burning the propane and butane are added, the net increase in GHG emissions based on DEIR Table 4.8-3 would be 1.3 million MT/yr (-325,978+234,000 + 759,244 = 1,319,222 MT/yr). These emissions exceed the CEQA significance threshold by a vast amount and are highly significant.

IV.B. Criteria Pollutant Emissions Are Underestimated

The DEIR estimated daily and annual Project operational emissions for nitrogen oxides (NOx), sulfur dioxide (SO2), particulate matter (PM10 and PM2.5), and reactive organic gases (ROG). DEIR, Tables 4.3-6 and 4.3-7. The resulting emissions were compared to the BAAQMD's daily and annual CEQA significance thresholds for NOx, PM10, PM2.5, and ROG. No significance threshold was proposed for SO2 and carbon monoxide (CO) was omitted from DEIR's analyses completely.

The emissions that were estimated in the DEIR and remain unchanged in the FEIR are underestimated for two reasons, discussed below. When the errors in the emission calculations are corrected, the resulting increases in daily and annual NOx and ROG emissions exceed both the daily and annual CEQA significance thresholds. These are significant air quality impacts that were not identified or mitigated in the DEIR or FEIR.

1. Relies on Invalid NOx Emission Reductions

F12

The DEIR's daily and annual NOx emission analysis relies on NOx emission reductions from shutting down Process Heater B-401. DEIR, Tables 4.3-6 and 4.3-7. These reductions occurred in 2011, during the CEQA baseline. Therefore, they are part of the baseline and not available to offset Project NOx increases. The increase in the DEIR's estimate of both daily (99.2 lb/day >54 lb/day) and annual NOx emissions (13.9 ton/yr > 10 ton/yr) exceed CEQA significance thresholds without these Process Heater B-401 reductions and are thus significant unmitigated impacts of the Project.

2. Excludes Locomotive Emissions Outside of the BAAQMD

F13

Notwithstanding the use of invalid NOx offsets, the increase in NOx emissions are even higher than disclosed in the DEIR. The locomotives used to transport recovered propane and butane from the Refinery to market are the major source of NOx emissions (>70% of total Project emissions) and an important contributor to ROG emissions (8%). DEIR, Tables 4.3-6 and 4.3-7. These emissions were underestimated by only counting emissions released within the boundary of the BAAQMD, rather than the entire distance the locomotives will travel within California. DEIR, p. 4.3-20. CEQA covers at least all emissions released within the State and in some cases, emissions released outside of the State that impact in-State values.

The total rail track length within the BAAQMD used to calculate locomotive emissions in DEIR Tables 4.3-6 and 4.3-7 was 67 miles one way (AQS Attach. 1,[30] pdf 15) based on 50% of the trains using the Union Pacific route and 50% using the BNSF route. The total track length to the California-Arizona border used to calculate GHG emissions is 659 miles one way, based on the same 50/50 assumption. DEIR, p. 4.8-16 and AQS Attach. 1, pdf 15.

F13

I revised the locomotive linehaul emissions for NOx and ROG using the total track length within California, but otherwise using all of the DEIR's assumptions. The results of my calculations are shown in Table 1. The criteria pollutant emissions from locomotive linehaul (which is only part of the total locomotive emissions) are significantly higher than disclosed in the DEIR, as shown in Table 1. This increase alone is sufficient to tip NOx emissions over the BAAQMD daily and annual significance thresholds, even assuming the invalid boiler NOx emission offsets.

Table 1
Revised Locomotive Linehaul Emissions

	DEIR[31] (lb/day)	Rev.[32] (lb/day)	Sig. Criteria (lb/day)	DEIR[31] (ton/yr)	Rev.[32] (ton/yr)	Sig. Criteria (ton/yr)
NOx	76.03	**580**	54	9.84	72	10
ROG	3.63	27	54	0.47	3.5	10

Note: **bold** indicates a revised locomotive linehaul emission rate that exceed the significance threshold all by itself, without considering increases from any other sources.

These revised emissions combined with all other claimed emission increases and decreases as reported in the DEIR, Tables 4.3-6 and 4.3-7, exceed the BAAQMD significance thresholds for both daily and annual NOx and ROG emissions, as explained below.

The net increase in daily NOx emissions, including the revised locomotive linehaul emissions of 580 lb/day and the invalid NOx offsets, is 541 lb/day.[33] These emissions exceed the NOx daily significance threshold of 54 lb/day by a factor of ten. DEIR, Table 4.3-6.

Similarly, the net increase in annual NOx emissions, including the revised locomotive linehaul emissions of 72 ton/yr and the invalid NOx offsets, is 66 ton/yr.[34]

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[30] Phillips 66, Rodeo Propane Recovery Project, Air Quality Supplement, Attachment 1, Criteria Pollutant and GHG Emissions, November 2012 (AQS Attach. 1).

[31] AQS Attach. 1, pdf 1.

[32] From AQS Attach. 1, pdf 19 (lb/day) and pdf 20 (ton/yr): Linehaul emissions within California = small line haul from Richmond terminal to refinery + large linehaul from California border to Richmond terminal. For NOx in lbs/day: 18.97 + 57.06(659/67) = **580.2 lb/day** or **72.7 ton/yr**. For ROG: 0.97 +2.65(659/67) = **27.1 lb/day** or **3.47 ton/yr.**

[33] Total revised daily NOx emissions : 20.4 + (79.0-76.03) + 580 - 62.3 = **541.1 lb/day.**

[34] Total revised annual NOx emissions : 3.7 + (10.2-9.84) + 72.7 - 10.8 = **65.96 ton/yr.**

F13 1 This exceeds the NOx annual significance threshold by a factor of six. DEIR, Table 4.3-6.

F14 The DEIR indicates the shutdown of Process Heater B-401 reduced daily NOx emissions by 244 lb/day (DEIR, Table 4.3-4). The DEIR also indicates the shutdown of Process Heater B-401 reduced annual NOx emissions by 44 ton/yr. DEIR, Table 4.3-4. However, even assuming 100% of these shutdown emissions were available for the Project, they would not be adequate to offset the daily increases in linehaul NOx emissions as calculated in Table 1. Regardless, 100% of Process Heater B-401 NOx reductions are not available as some of them (33.16 ton/yr) were used to offset NOx emission increases of the Marine Terminal Offload Limit Project. Marine Terminal IS, Table 3.3-2.

The DEIR suggests by omission that more NOx offsets are available than were relied on in Tables 4.3-6 and 4.3-7 by presenting the full boiler shutdown amount without disclosing that most had already been used. The FEIR clarifies that the balance of the NOx reductions from the Process Heater B-401 shutdown, not relied on in Tables 4.3-6 and 4.3-7, were used to offset increases associated with the Marine Terminal Project. FEIR, pp. 3.1-24/25. They are not available to offset the additional increase in NOx emissions resulting from the increase in locomotive linehaul emissions as calculated in Table 1, assuming the full transit distance within California. Thus, the revised increase in daily and annual NOx emissions are a significant unmitigated air quality impact when the correct travel distance of locomotives is used to estimate emissions.

The increase in daily ROG emissions from all Project sources, including the revised locomotive linehaul emissions, is 70.4 lb/day,[35] which exceeds the ROG daily significance threshold of 54 lb/day by 30%. Similarly, the increase in annual ROG emissions from all Project sources, including the revised locomotive linehaul emissions is 11.4 ton/yr,[36] which exceeds the ROG annual significance threshold of 10 ton/yr. Thus, daily and annual ROG emissions from the Project are significant unmitigated air quality impacts that were not disclosed in the DEIR when the correct travel distance of locomotives is used to estimate emissions.

Finally, even if emissions were based only on the track length within the BAAQMD, rather than the entire State, the Project would still exceed the NOx daily significance threshold if the actual UP track length going south out of the District (90 miles) was used in the calculations, rather than the average of the UP and BNSF track lengths (67 miles). The distance to the eastern boundary of the District is 44 miles and to the southern boundary, 90 miles. The 67 miles used in the DEIR's linehaul emission calculations is the average of these two (90+44/2 = 67). 6/28/13 Phillips Response Letter, p. 12, Response to Comment #15. However, nothing in the EIR would prevent 100% of the trains from using the UP track going south out of the District. The daily

[35] Total revised daily ROG emissions : 18.1 + 25.1 + (3.8-3.63) + 27 = 70.4 lb/day.

[36] Total revised annual ROG emissions : 3.3 + 4.6 + (0.5-0.47) + 3.5 = 11.4 ton/yr.

F14 NOx emission increase, assuming the UP track length of 90 miles within the District would be 57 lb/day, which exceeds the CEQA significance threshold of 54 lb/day.[37]

3. Underestimates Steam Boiler Emissions

F15 The DEIR emission estimates assumed a new 140 MMBtu/hr boiler would be required to supply steam for the Project. The net emission calculations in Comment IV.B.2 that correct the linehaul underestimate assume this new boiler. However, during BAAQMD permitting, Phillips 66 removed the new 140 MMBtu/hr boiler and revised the emissions to assume steam demand would be met by using surplus low pressure steam, improving efficiency of existing steam consumers, and by increasing high pressure steam production at the Steam Power Plant. This resulted in a reduction in emissions from supplying steam, compared to emissions claimed in the DEIR. 4/30/13 Phillips Response Letter, p. 4, Response to Comment #7.

However, these changes disclosed in the BAAQMD permitting file are small, compared to increases from other Project components in the DEIR, and thus do not materially affect any of the conclusions in Comment IV.B.2. Further, as discussed below in Comment IV.C.3, the NOx emissions from supplying steam at the Steam Power Plant are actually significantly higher than claimed in the Phillips permitting application (15.6 ton/yr compared to only 3.7 ton/yr assumed in the DEIR). See Comment IV.C.3. These revised emissions alone are sufficient by themselves to exceed the BAAQMD NOx annual significance threshold.

IV.C. Other Emissions from The Project Are Omitted

The DEIR estimated emissions from new equipment that would be added by the Project plus certain associated mobile source emissions, including a new boiler, tanks and piping, locomotives, and truck and commuter trips. The locomotive emissions are discussed in Comment IV.B.2. DEIR, Tables 4.3-6 & 4.3-7, p. 4.3-21.

F16 The equipment required to recover propane and butane from the refinery fuel gases and to remove sulfur from the recovered products requires various inputs to operate. This results in increases in emissions above the CEQA baseline that were not included in the DEIR's analysis. These include: (1) use of the recovered propane and butane elsewhere in California; (2) electricity; (3) hydrogen; (4) emissions from increased sulfur removal; and (4) certain increases in emissions from generating steam at the existing Steam Plant to support the Project. Each omitted emission source is discussed below.

The BAAQMD files indicate that Phillips conceded there would be an increase in the throughput of the Air Liquide Hydrogen Plant and an increase in the Sulfur Recovery

[37] From AQS Attach. 1, pdf 19 (lb/day): Linehaul emissions within California = small line haul from Richmond terminal to refinery + large linehaul from boundary of BAAQMD to Richmond terminal. Linehaul emissions for NOx in lbs/day: 18.97 + 57.06(90/67) = **95.6 lb/day.** The net increase = 20.4 + (79.0-76.03) + 95.6 - 62.3 = or **56.7 lb/day** > 54 lb/day.

F16

Units, but in both cases, less than the permitted levels.[38] However, for purposes of CEQA compliance, the permitted levels are not material, but rather the increase relative to a historic baseline. These emissions were not included in the Project totals.

1. Propane/Butane Combustion In California

The DEIR failed to include criteria pollutant emissions from burning or otherwise using the recovered propane/butane anywhere. The recovered propane/butane is being produced to meet commercial-grade standards with less than 5 ppm hydrogen sulfide (H_2S). 6/28/13 Phillips Response Letter, p. 2. Commercial-grade propane is used as a fuel.[39] Thus, it is reasonably foreseeable that the produced propane/butane would be used as fuel, increasing criteria pollutant and GHG emissions.

F17

The BAAQMD permitting file further discloses that Phillips currently sells butane from the Rodeo Refinery in California. 4/30/13 Phillips Response Letter. Thus, emissions from the use of propane/butane as a fuel within California are a reasonably foreseeable impact caused by the Project and must be evaluated. 14 Cal Code Regs. §§15064(d)(3) and 15358(a)(2).

There is nothing in the DEIR or FEIR that would prohibit Phillips from selling 100% of the recovered propane/butane for new uses as a fuel anywhere, including within California. Thus, unless the County imposes a condition requiring that 100% of the propane/butane is sold outside of the jurisdiction of CEQA or for non-combustion, non-emitting uses, the FEIR must include criteria pollutant emissions from its use and mitigate the resulting impacts, which are significant as demonstrated below.

I estimated the criteria pollutant emissions from combusting 100% of the Project's propane/butane in boilers within California. The results of my calculations are summarized in Table 2.

[38] Phillips 66 Propane Recovery Project Issues, BAAQMD Notes; Letter from Don Bristol, Phillips 66, to Brian Lusher, BAAQMD, Re: Response to Incomplete Letter 3/1/13, April 30, 2013, pp. 3 (Response to Comment #4) and 6 (Response to Comment #8).

[39] See, e.g., Tesoro Safety Data Sheet, Propane - Commercial Grade, Available at: http://www.tsocorp.com/stellent/groups/corpcomm/documents/tsocorp_documents/msdspropane.pdf.

Table 2
Emissions from Combusting Propane/Butane Within California

	Emission Factor	Emissions	
	(lb/10^3 gal)	(lb/day)	(ton/yr)
PROPANE			
Total PM	0.7	123	22.5
NOx	13	2,293	418.5
CO	7.5	1,323	241.4
ROG	0.8	141	25.8
BUTANE			
Total PM	0.8	128	23.3
NOx	15	2,394	436.9
CO	8.4	1,341	244.7
ROG	0.9	144	26.2

Emission factors from AP-42, Table 1.5-1.
Propane: 4,200 BPD; Butane: 3,800 BPD
ROG = TOC - CH_4.

F17

These emissions are compared with significance thresholds established in the DEIR for evaluating the operational air quality impacts of the Project (DEIR, p. 4.3-14) in Table 3. This comparison shows that the emissions from burning recovered propane and butane exceed significance thresholds for NOx, PM10, and ROG by a large margin and thus must either be mitigated or the EIR must prohibit the sale of recovered propane/butane within California for fuel. The emissions of CO are also large and significant, but the DEIR failed to establish a significance threshold for this pollutant.

Table 3
Comparison of Emissions from Combusting Propane/Butane Within California With Significance Criteria

	TOTAL EMISSIONS		SIGNIFICANCE CRITERIA	
	(lb/day)	(ton/yr)	(lb/day)	(ton/yr)
Total PM	251	45.8	82	15
N02	4,687	855.4	54	10
CO	2,664	486.1		
ROG	285	52.0	54	10

Assumes 100% of PM from combustion is PM10
DEIR, p. 4.314

2. Increase In Hydrogen

The hydrotreater that will be installed as part of the Project requires hydrogen to react with sulfur and convert it into forms that can be removed. The DEIR claims that the amount of hydrogen present in the existing gas streams is adequate to supply the increased hydrogen. DEIR, p. 3-25.

F18

The BAAQMD questioned this assumption and asked Phillips to accept a permit condition stating no hydrogen would be used at the new hydrotreater. Phillips declined and admitted that ". . . there are short periods when hydrogen from a hydrogen plant will need to be supplied. These periods would typically be during startup of the hydrotreater catalyst system." 4/30/13 Phillips Response Letter, p. 3, Response to Comment #4. Phillips has not quantified the amount of additional hydrogen that will be required nor the resulting emissions. Hydrogen plants include a furnace and vents that are significant sources of criteria pollutant and GHG emissions, including specifically, the hydrogen plant that would supply this Project.[40] The EIR must quantify all of the emissions that would be generated as a result of the Project.

3. Increase in Steam

The DEIR disclosed that steam would be provided by either a new 140 MMBtu/hr steam boiler or by the existing Steam Power Plant (SPP). DEIR, pp. ES-5, 3-7, 3-20. The DEIR included emissions only for the new 140 MMBtu/hr boiler. DEIR, Tables 4.3-6 and 4.3-7. Since the DEIR was released, Phillips has elected to use the existing SPP to generate the required steam. The NOx emissions from the existing SPP are higher than those disclosed in the DEIR, as explained below.

F19

Correspondence in the BAAQMD file indicates steam demand will be met by using surplus low pressure steam currently vented, improving steam generation efficiency, and by increasing high pressure steam production at the SPP. The increase in high pressure steam would be provided by increasing the firing rate of natural gas in the duct burners by 45 MMBtu/hr. It is unclear whether additional fuel would also have to be fired in the associated gas turbines.

The emissions included in the BAAQMD permit files (which vary from the emissions identified in the DEIR) are based only on increasing the firing rate of natural gas in the duct burners by 45 MMBtu/hr, and assume very low (and unsupported) emission factors. The emission factor used for NOx, for example, is 0.017 lb/MMBtu (4.5 ppm @ 15% O_2). 4/30/13 Phillips Response Letter, pp. 5-6, Response to Comment #7.

Based on my experience permitting many similar projects with duct burners, they typically emit much more NOx than assumed in the 4/30/13 Phillips calculations (4/30/13 Phillips Response Letter, pp. 5-6). Duct burner emissions are low only if they are located in a heat recovery steam generator equipped with modern selective catalytic

[40] Air Liquide, Hydrogen Plant Project, Application for Authority to Construct and Major Facility Review Permit, Rodeo, California, October 2005.

reduction to control NOx. No such arrangement is described in the DEIR (Sec. 3.3.2.9) or the original 1985 BAAQMD engineering evaluation.[41] The subject gas turbines/duct burners are permitted to emit 83 lb/hr when firing 1048 MMBtu/hr for all turbine/duct burners combined.[42] This corresponds to a NOx emission factor of 0.079 lb/MMBtu (83/1048 = 0.079). This NOx emission factor is nearly five times higher than the one used in Phillips' duct burner NOx emission calculations.

F19

Using this revised emission factor to estimate NOx emissions from increased steam demand yields 15.6 ton/yr NOx (0.079 x 45 x 8760/2000 = 15.6) or four times more than disclosed in the DEIR (3.7 ton/yr) for the new 140 MMBtu/hr boiler. The originally proposed new boiler evaluated in the DEIR should be more efficient and emit less NOx, etc. than the old SPP due to use of modern technology and current Best Available Control Technology (BACT) controls such as selective catalytic reduction (SCR). The NOx emissions from supplying just the steam for the hydrotreater exceed the NOx significance threshold of 10 ton/yr and are thus a significant undisclosed air quality impact of the Project.

4. Increase In Sulfur Removal

F20

The Project will increase the throughput of the existing Sulfur Recovery Units (SRU) by about 135 ton/yr of sulfur. DEIR, Fig. 3-6; 5/13/13 BAAQMD Notes, p. 2; 6/28/13 Phillips Response Letter, pp. 6-8, Response to Comment #8. The Refinery uses the Claus process to convert acid gas to liquid sulfur, which is sold. This involves combusting acid gas, which would increase NOx, CO, VOC and other emissions. The resulting elemental sulfur is sold, which involves truck emissions. Thus, the increase in throughput of the SRU would be accompanied by increases in combustion emissions from the Claus unit and the trucks used to transport the recovered sulfur product to market. The resulting increase in emissions was not disclosed in the DEIR or FEIR. The information in the files I reviewed is not adequate to estimate these emissions. It did not include, for example, the increase in acid gases that would be processed by the Claus unit, the criteria pollutant emission factors for the Claus furnace, or the number of additional truck trips that would be required to transport the sulfur to market.

5. Increase In Electricity Generation

F21

The Project will require 1.28 MW electricity or 10,900 MW-hour of electricity DEIR, pp. 3-23, 3-28. The generation of this electricity at off-site facilities will increase criteria pollutant and GHG emissions that were not included in the DEIR. The information in the files I reviewed did not include any emission factors in pounds of pollutant per megawatt hour, which are required to estimate these emissions.

6. Emissions from Changes in Feedstock Quality

[41] BAAQMD, Engineering Evaluation, Union Oil Company, Gas Turbine Cogeneration Facility, November 8, 1985.

[42] Phillips 66 LPG Recovery Project, Permit Limit Summary, BAAQMD, Condition ID 18629.

The currently proposed rail spur project at the Santa Maria Facility would allow the import of DilBits. These are rich in the propane/butane fractions required to supply the subject Project at the Rodeo Refinery. If said DilBits were routed directly to the Rodeo Refinery or if they were processed at Santa Maria to generate semi-refined products for Rodeo, which are feed for the propane/butane Project, this would result in public health impacts that were not disclosed in the DEIR.

DilBits contain large amounts of light material that distill below 149 C and are thus very volatile. This material can be emitted to the atmosphere from storage tanks and equipment leaks of fugitive components (pumps, compressors, valves, fittings) in much larger amounts than other heavy crudes and their byproducts that are currently processed at the Rodeo Refinery.

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The diluent is a low molecular weight organic material with a high vapor pressure that contains not only propane and butane that would be recovered by the Project, but also high levels of other VOCs, sulfur compounds, and hazardous air pollutants (HAPs). These would be emitted during unloading and would be present in emissions from tanks and fugitive components. The DEIR did not disclose the potential presence of diluent and made no attempt to estimate these diluent-derived emissions.

The composition of some typical diluents/condensates used in DilBits is reported on the website, www.crudemonitor.ca.[43] The DEIR does not identify the specific diluents that would be used by the Project or even that diluents would be present. The CrudeMonitor information indicates that diluent contains very high concentrations (based on 5-year averages, v/v basis of the hazardous air pollutants benzene (7,200 ppm to 9,800 ppm); toluene (10,300 ppm to 25,300 ppm); ethyl benzene (900 ppm to 2,900 ppm); and xylenes (4,600 ppm to 23,900 ppm).

The sum of these four compounds is known as "BTEX" or benzene-toluene-ethylbenzene-xylene. The BTEX in diluent ranges from 27,000 ppm to 60,900 ppm. The BTEX in DilBits, blended from these materials, ranges from 8,000 ppm to 12,300 ppm.[44] Similarly, the BTEX in synthetic crude oils (SCOs), which also could be imported via the

[43] Condensate Blend (CRW) - http://www.crudemonitor.ca/condensate.php?acr=CRW; Fort Saskatchewan Condensate (CFT) - http://www.crudemonitor.ca/condensate.php?acr=CFT; Peace Condensate (CPR) - http://www.crudemonitor.ca/condensate.php?acr=CPR; Pembina Condensate (CPM) - http://www.crudemonitor.ca/condensate.php?acr=CPM; Rangeland Condensate (CRL) - http://www.crudemonitor.ca/condensate.php?acr=CRL; Southern Lights Diluent (SLD) - http://www.crudemonitor.ca/condensate.php?acr=SLD.

[44] DilBits: Access Western Blend (AWB) -http://www.crudemonitor.ca/crude.php?acr=AWB; Borealis Heavy Blend (BHB) -http://www.crudemonitor.ca/crude.php?acr=BHB; Christina Dilbit Blend (CDB) - http://www.crudemonitor.ca/crude.php?acr=CDB; Cold Lake (CL) - http://www.crudemonitor.ca/crude.php?acr=CL; Peace River Heavy (PH) - http://www.crudemonitor.ca/crude.php?acr=PH; Seal Heavy (SH) - http://www.crudemonitor.ca/crude.php?acr=SH; Statoil Cheecham Blend (SCB) - http://www.crudemonitor.ca/crude.php?acr=SCB; Wabasca Heavy (WH) - http://www.crudemonitor.ca/crude.php?acr=WH; Western Canadian Select (WCS) - http://www.crudemonitor.ca/crude.php?acr=WCS; Albian Heavy Synthetic (AHS) (DilSynBit) - http://www.crudemonitor.ca/crude.php?acr=AHS.

Santa Maria rail spur project or the Ferndale Rail Terminal and barged to Rodeo, ranges from 6,100 ppm to 14,100 ppm.[45] These are very high concentrations that were not considered in the DEIR or FEIR. These levels are high enough to result in significant worker and public health impacts.

F22 The CrudeMonitor information also indicates that these diluents contain elevated concentrations of volatile mercaptans (9.9 to 103.5 ppm), which are highly odiferous and toxic compounds that could result in significant odor and nuisance impacts. Mercaptans can be detected at concentrations substantially lower than will be present in emissions from the tanks and fugitive emission, including pumps, valves, flanges, and connectors.[46] In fact, mercaptans are added to natural gas in very tiny amounts so that the gas can be smelled to facilitate detecting leaks.

Thus, recovering propane and butane from semi-refined products generated from these tar sands crudes or from directly refining these crudes would emit VOCs, HAPs, and malodorous sulfur compounds, not found in comparable levels in conventional crudes currently handled at the Refinery. There are no restrictions on the feedstock composition nor any requirements to monitor emissions for these HAPs from tanks and leaking equipment where DilBit-blended and other light crude fraction would be handled.

7. CO Emissions Were Not Estimated

T F23 The Project would significantly increase emissions of carbon monoxide (CO), a criteria pollutant. Carbon monoxide is emitted from all combustion sources, including locomotives, trucks and commuter auto trips, steam generation, and combustion of the recovered propane and butane at fired sources. The DEIR is silent on CO emissions from the entire Project.

IV.D. Decrease in SO_2 Emissions Is Not Supported

T F24 The DEIR claims that the Project would reduce SO2 emissions by at least 50%, resulting in an SO2 emission decrease of at least 180 ton/yr. DEIR, pp. ES-2, 3-5, 4.3-19. The emission inventory in Table 4.3-7 takes credit for a reduction in SO2 emission of 172.4 ton/yr. DEIR, Table 4.3-7. The BAAQMD Permit Application made a similar claim. However, there it claimed a reduction of 174.7 ton/yr, of which 7.61 ton/yr was proposed to offset Project SO2 increases and the balance would be banked as Emission

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[45] SCOs: CNRL Light Sweet Synthetic (CNS) -http://www.crudemonitor.ca/crude.php?acr=CNS; Husky Synthetic Blend (HSB) -http://www.crudemonitor.ca/crude.php?acr=HSB; Long Lake Light Synthetic (PSC) -http://www.crudemonitor.ca/crude.php?acr=PSC; Premium Albian Synthetic (PAS) - http://www.crudemonitor.ca/crude.php?acr=PAS; Shell Synthetic Light (SSX) - http://www.crudemonitor.ca/crude.php?acr=SSX; Suncor Synthetic A (OSA) - http://www.crudemonitor.ca/crude.php?acr=OSA; Syncrude Synthetic (SYN) - http://www.crudemonitor.ca/crude.php?acr=SYN.

[46] American Industrial Hygiene Association, Odor Thresholds for Chemicals with Established Occupational Health Standards, 1989; American Petroleum Institute, Manual on Disposal of Refinery Wastes, Volume on Atmospheric Emissions, Chapter 16 - Odors, May 1976, Table 16-1.

Reduction Credits. BAAQMD Permit Ap., p. 17. However, Phillips subsequently withdrew its banking application, casting doubt on its claim of a SO2 reduction.

F24 Thus, there is no support, in either the DEIR record or the BAAQMD permitting record, for the claimed reduction in SO2 emissions. Emission reductions used to offset emission increases must be permanent, real, and quantifiable. There is no evidence that the claimed SO2 emission reductions meet any of these criteria. In fact, claimed reductions could be a myth if the Refinery feedstock is modified to include a larger proportion of higher sulfur tar sands crudes than currently refined. Such crudes could reach the Refinery via the related Santa Maria rail spur project or the Ferndale rail terminal by barge down the Pacific coast.

V. CUMULATIVE AIR QUALITY IMPACT ANALYSIS IS INADEQUATE

The DEIR included only the Marine Terminal project, the temporary boiler, and an SO2 transfer proposal in the list of cumulative projects. DEIR, Sec. 5.4.3.3. However, the DEIR and FEIR fail to disclose the cumulative impacts that would result from other currently proposed projects that would affect the amount and composition of feedstock refined at Rodeo, compared to CEQA baseline feedstock. Changes in baseline feedstock as explained in these comment, i.e., tar sands crudes such as DilBits, and increased amounts of semi-refined materials from the Santa Maria Facility, would increase emissions of all criteria pollutants and hazardous air pollutants at most all emission sources in the Refinery.

F25 First, as discussed in Comment II, two projects are proposed at the Santa Maria Facility that would directly impact Rodeo. These would send increased amounts of gas oil and naphtha to Rodeo for processing, increasing emissions from many refining units compared to the CEQA baseline. A rail spur is also proposed for Santa Maria that would allow the import of tar sands crudes. These tar sands crudes would change the chemical composition of Rodeo feedstocks, as described in Comment IV.C.6 and Attachment 2. These feedstocks, for example, would increase emissions of hazardous air pollutants from tanks, compressors, pumps, valves and flanges throughout the Refinery. They would also increase NOx and SO2 emissions from fired sources throughout the Refinery, relative to the CEQA baseline.

Second, as also discussed in Comment II, Phillip 66's Ferndale Refinery is permitted to construct a rail terminal, which will facilitate barging tar sands crude to the Rodeo Marine Terminal. The Rodeo Marine Terminal was recently permitted to import increased amounts of crude. This would also change the chemical composition of Rodeo feedstocks, as described in Comment IV.C.6 and Attachment 2, compared to the CEQA baseline feedstock.

These directly related projects will cumulatively increase air emissions above the CEQA baseline. They must all be evaluated together in a revised DEIR to determine cumulative air quality impacts.