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DEPARTMENT OF FISH AND WILDLIFE ***CHARLTON H. BONHAM, Director***
Office of Spill Prevention and Response
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January 23, 2014

Mr. Murry Wilson
San Luis Obispo County Department of Planning and Building
976 Osos St., Rm. 200
San Luis Obispo, CA 93408-2040

Re: Phillips 66 Company Rail Spur Extension Project Draft Environmental Impact Report, SCH# 2013071028; California Department of Fish and Wildlife, Office of Spill Prevention and Response Comments.

Dear Mr. Wilson:

Thank you for the opportunity to review the public Draft Environmental Impact Report (DEIR) for the Phillips 66 Company Rail Spur Extension Project located in the southwestern unincorporated area of San Luis Obispo County, dated November 2013. The document addresses the environmental impacts that may be associated with the 7,000-foot eastward extension of an existing rail spur off of the Union Pacific rail mainline, a crude oil railcar unloading facility, and associated above-ground pipelines. Trains would deliver crude oil to the Santa Maria Refinery (SMR) for processing. The DEIR also includes a programmatic assessment of various coastal access options through the SMR site that we are not commenting on.

Currently, the SMR mainly processes heavy, high-sulfur crude oil. Semi-refined liquid products from the SMR are sent by pipeline to the Rodeo Refinery for upgrading into finished petroleum products. Products leaving the SMR are: (1) semi-refined petroleum by pipeline; (2) solid petroleum coke by rail or haul truck; and (3) solid recovered sulfur by haul truck.

This DEIR follows the recently approved Phillips 66 Throughput Increase Project (approved by the County Board of Supervisors in March 2013) which will allow Phillips 66 to increase the throughput capacity at the SMR by 10% to a maximum of 48,950 barrels per day. This previously approved project will potentially cause changes at the SMR, including: an increased volume of crude oil delivered to and shipped via pipeline from the Santa Maria Pump Station to the SMR; an increased volume of products leaving the SMR for the Rodeo Refinery via pipeline; an increased volume of green coke and sulfur production; and an increase in shipments leaving the facility by either truck or railcar. Per the October 2012 final EIR for the Throughput Increase Project, it stated it is not known where the additional crude oil would come from that would allow the Refinery to operate at a higher throughput level. While the potential for pipeline spills was evaluated in the Throughput Increase Project EIR, and practices related to pipeline maintenance, smart-pigging, recent smart-pig results and oversight were examined, no significant risks were

identified. However, a pin hole leak from pipelines that cannot be detected by smart-pigging was not addressed even though the October 2012 final EIR for the Throughput Increase Project noted impacts to water quality would be significant if spill volume increased substantially along the pipeline route due to the Project.

This current Rail Spur Extension Project will include a modification to the existing rail spur currently on the southwest side of the SMR. The project would include an eastward extension of the existing rail spur as well as a railcar unloading facility. Trains would deliver crude oil to the SMR for processing. The unloaded material would be transferred from the new unloading facility to existing crude-oil storage tanks via a new on-site above-ground pipeline.

The Rail Spur Project will involve unloading of up to five unit trains per week (or a combined total of five unit and manifest trains), with an annual maximum number of trains expected to be approximately 250. Trains will arrive from different oilfields and/or crude oil loading points depending on market availability. The tracks and unloading facilities would be designed to accommodate trains of approximately 80 tank cars and associated locomotives in unit trains or manifest train configurations. These trains would deliver crude oil to the facility for processing. In a unit train configuration, each train would consist of three locomotives, two buffer cars, and 80 railcars carrying 23,500 gallons each or 73 railcars carrying 30,000 gallons each depending on the car size, for a total of approximately 1,880,000 gallons (44,762 barrels [bbls]) or 2,190,000 gallons (52,142 bbls) of crude oil. The unloaded material would be transferred to the existing storage tanks via a new pipeline that would be constructed across the existing coke storage area and along an existing internal refinery road. The project will occur entirely within the existing Phillips 66 boundary.

Per the Introduction, page 1-4 and Project Description, page 2-21 it states the refinery feedstock would be sourced from oilfields throughout North America based on market economics and other factors. It states the most likely sources would be the Bakken field in North Dakota or Canada.

Below are California Department of Fish and Wildlife, Office of Spill Prevention and Response (CDFW-OSPR) comments on the subject document. Our review focused on the Introduction, Project Description, Biological Resources, Water Resources, Hazards and Hazardous Materials, and Alternatives Analysis sections of the report.

1) It is noted that this EIR does not address potential impacts of train movements/accidents along the rail road mainline, but instead primarily address potential impacts within the SMR project area. We agree with the statement in the Water Resources section 4.13, that in the event of an oil spill along the mainline tracks it would likely take some time for emergency response teams to mobilize adequate spill response equipment such that oil spills along the mainline tracks could be significant and unavoidable (Class I), depending upon the location of the spill. Regarding spills within the SMR project area, per the Project Description section, 2.3.10, the Water Resources section 4.13, and the Hazards and Hazardous Materials section 4.7.4 it states drain boxes would feed below- CFW-1

grade 16-inch-diameter drain lines routed to three parallel 20,000 gallon rectangular storage tanks (approximately 60,000 gallons total volume) located in a vault for containment. The system would be sized to contain the contents of one rail car as well as foam and water that would be released from the fire suppression system.

Further consideration should be given to accidents involving more than one rail car at the same time as far as capacity of the spill containment systems at the SMR. The U.S. Department of Transportation is considering new regulations requiring the use of stronger rail cars to transport crude oil due to recent train derailments and explosions of multiple rail cars transporting Bakken field oil which is believed to be more flammable than the more conventional oils California produces or imports (see comment #6 below for more detail). CFW-1

2) Per the Project Description section, 2.3.10, page 2-17, Spill Containment and Response Facilities, it states any new feedstock coming to the refinery will undergo a complete Management of Chan ge (MOC) analysis to ensure that all hazards, as well as the refinery's systems are safe and operable. MOC covers all changes that involve specific chemicals at or above threshold limits as defined in California Code of Regulation, Section 5189, Appendix A or flammable liquids or gasses as defined by California Code of Regulations, Section 5194(c) including new construction, modifications, changes in chemicals or materials, changes in feedstock, and changes in concentrations, temperatures, pressures, or flow rates outside of established Safe Process Limits. CFW-2

It is unclear if Bakken field oil would trigger a MOC analysis. Bakken field oil is believed to be more flammable than the more conventional oils California produces or imports.

3) Per the Project Description Throughput Capacity Effect section, page 2-29, it states this Rail Spur Project would not affect the amount (throughput volume) of material processed at the refinery.

Reference should be made to the recently approved Phillips 66 Throughput Increase Project (approved by the County Board of Supervisors in March 2013) which will allow Phillips 66 to increase the throughput at the SMR by 10% to a maximum of 48,950 barrels per day, which was evaluated in a separate EIR. CFW-3

4) Per the Water Resources section 4.13, Mitigation Measure WR-1b states, "Prior to the County's issuance of a Notice to Proceed, the existing Santa Maria Refinery Spill Prevention Control and Countermeasure Plan (SPCCP) shall be amended to reflect operation of the rail car unloading facility and associated oil pipeline. The plan shall outline response actions in the event of a spill, including a spill response trailer, equipment, and personnel training. The plan shall outline steps that would be taken, including identification and elimination of the spill, containment of the spill, notification of the designated emergency response coordinators, and initiation of clean-up measures, using either onsite equipment and/or outside emergency response contractors. Spill notification shall include both verbal notification and written notification to the U.S. EPA, State of California, County of San Luis Obispo, and local law enforcement, fire, and ambulance. The plan shall be completed prior to operation of the unloading facility. Spill cleanup shall CFW-4

be completed under the oversight of the lead regulatory agency, with respect to oil spills, as identified in the Santa Maria Refinery Spill Prevention Control and Countermeasure Plan (SPCCP)."

It is unclear regarding notifications, who specifically will be notified for the State of California. California Office of Emergency Services should be notified who will then notify other state, federal, and local agencies. It is also unclear who would be considered the lead regulatory agencies with respect to oil spills. Since the refinery is within the Coastal Zone the U.S. Coast Guard would likely be the lead federal agency and California Department of Fish and Wildlife would likely be the lead state agency with respect to oil spill response. CFW-4

5) Additionally, per the Water Resources section 4.13, under Residual Impacts, it states, "Implementing mitigation measures WR-1a and WR-1b, along with the design features of the rail spur and unloading racks, potential oil spill impacts within the SMR site would reduce spill- related impacts to surface and groundwater quality to less than significant with mitigation (Class II)." And in the Hazards and Hazardous Materials section 4.7 it summarizes the characteristics of crude oil and risk assessment methodology. It states spill volumes from rail cars were assumed to include the complete rail car inventory, as well as multiple rail car releases for train derailment scenarios. It also states spill volumes from a pipeline system rupture are based on the pipeline diameter and the terrain profile, which would limit the amount of oil that could drain out of the pipeline. In addition, it states the pumping rate also affects the size of a release since oil pumped into the pipeline would contribute to the release size until the pumps are shut down. Spills that would be contained by berms and drainage system valves and, for areas outside of berms, would be directed to the drainage basins (tertiary containment).

It should be noted that containment berms have been known to fail as occurred in 1999 when petroleum coke from the refinery was released into Little Osos Flaco Creek. It is also unclear if Sections 4.13 and 4.7 evaluated the chemical properties of Bakken crude as far as how a spill of Bakken crude will behave when spilled as compared to the currently processed crude oil that is from the local formation. A 2013 report from Environment Canada summarized early research simulating diluted bitumen products spilled at sea and noted that if there was a marine oil spill of Bakken crude, high-energy wave action mixed sediments with the diluted bitumen, would likely cause the mixture to sink or be dispersed as floating tarballs, which could reduce efficiency of current oil spill response technologies to contain and recover the oil. This Environment Canada report notes, "The potential range of behaviour, fate and treatment options for a possible marine spill of diluted bitumen products is not well understood. While some information on the physical properties and chemical compositions are available from scientific literature and industry sources, there is little information on the spill behaviour, fate, impacts and remediation options for diluted bitumen spills. The behaviour of dilbit in the marine environment, and its potential for alteration by evaporation, solar exposure, or mixing with water and sediment, are largely unknown. The conditions in which diluted bitumen products may float or sink in marine conditions have been the subject of much debate. In CFW-5

addition, the effectiveness of spill treating agents including dispersants and other treatments is not known."

A spill of dilbit occurred in 2010 from an Enbridge pipeline into the Talmadge Creek and Kalamazoo River, near Marshall, Michigan. An estimated 843 000 gallons were released into the creek and river. As of May 2013, the United States Environmental Protection Agency (EPA) estimated that 180 000 ± 100 000 gallons of oil remained in the river as submerged oil.

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While the Environment Canada report assesses marine oil spills of diluted bitumen, many of the same issues apply to inland spills to creeks/rivers. Many properties of the diluted bitumen products were found to change with increasing evaporation. Density, pour point, flash point and viscosity all increased with increasing evaporation. Oil spill response and best available technologies to respond to spills of Bakken crude oil should be further evaluated in the final EIR. Information on the chemical compositions and physical properties of Bakken oil products is essential in order to determine their fate and behavior if spilled in the environment.

6. The Hazards and Hazardous Materials section 4.7 did reference the July 2013 crude oil incident in Lac-Mégantic, Canada, when an uncontrolled crude oil unit train derailed and exploded and released approximately 1.5 million gallons of crude oil. The DEIR states, "While non- pressurized tank cars typically do not pose a significant explosion hazard, several of the DOT-111 tank cars that did not fail as a result of the derailment, subsequently failed due to overheating and over-pressurization caused by the spilled crude oil pool fire." Section 4.7 also referenced the AAR-North American Tank Car Committee, independent of a federal mandate, implemented nearly all of the recommendations made to PHMSA in its design standards for new crude oil and ethanol tank cars ordered after October 2011.

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However, the DEIR did not mention that the U.S. Department of Transportation is considering new regulations requiring the use of stronger rail cars to transport crude oil because of recent train derailments and explosions, including the one in Canada mentioned above and one in Alabama in November 2013 and one in North Dakota in December 2013, all of which involved DOT-111 rail tank cars, widely thought to be weak and susceptible to puncture in a derailment (EnergyWire, July, 2013). As noted in a recent Sacramento Bee article (January 10, 2014), especially worrisome is oil being transported from North Dakota's Bakken region, which federal officials have come to believe is more flammable than the more conventional oils California produces or imports. And most of the railroad tank cars that carry it to California and other states have proved vulnerable to ruptures or punctures in a derailment.

7) Additionally, in the Hazards and Hazardous Materials section 4.7 it describes different oil spill release scenarios, but pin hole leaks in pipelines that are normally not detected with smart pigging technology was not discussed; but should be evaluated.

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8) Additionally, in the Hazards and Hazardous Materials section 4.7.1.5 Existing Refinery Operations, it states, “Crude oil and solid sulfur are not acutely hazardous materials. Coke is not a hazardous material.” And it states, “Risk levels would be minimal due to the properties of crude oil and impacts would be associated primarily with environmental issues.” And it also states, “Crude oil is not an acutely hazardous material.”

Regarding the sentence found in multiple places that reads “Risk levels would be minimal due to the properties of crude oil and impacts would be associated primarily with environmental issues” we request be changed to “Risk levels *to human health* would be minimal due to the properties of crude oil and impacts would be associated primarily with environmental issues.”

It should also be clarified that while crude oil and petroleum coke are not acutely hazardous materials they can impact habitat and wildlife. Petroleum coke contains low levels of polynuclear aromatic hydrocarbons some of which are known carcinogens. Additionally, during oil spills, observed wildlife mortalities are often due to physical effects (e.g., smothering and coating) as well as chemical toxicity of the spilled crude oil. Regarding crude oil, data from field studies support the assumption that crude oil spills can have detrimental effects on freshwater ecosystems. Mortality of birds, fish and invertebrates, as well as changes in community composition have been observed following crude oil spills to lakes and river systems. However, little TPH dose-response information is available to develop TPH based toxicity benchmarks and quantitative post-spill monitoring is needed to further establish robust exposure-effects profiles. Review of acute toxicity data from laboratory studies indicates that lethal water concentrations for TPH are in the low parts per million range for invertebrate and fish species. However, little information is available on the chronic effects of crude oil via aqueous or sediment exposures. This type of information should be included in both the Hazards and Hazardous Materials section and the Biological Resources section. CFW-8

9) Hazards and Hazardous Materials Section 4.7.2.2 lists applicable California Laws and Regulations.

Additional laws and regulations for consideration include:

> Fish & Game Code, § 5650(a). Water pollution: It is unlawful to deposit in, permit to pass into, or place where it can pass into the “Waters of the State” any(1) petroleum, acid, coal or oil tar, lampblack, aniline, asphalt, bitumen, or residuary product of petroleum, or carbonaceous material or substance, (2) refuse, liquid or solid, from any refinery, gas house, tannery, distillery, chemical works, mill, or factory of any kind, (3) sawdust, shavings, slabs, or edgings, (4) Any factory refuse, lime, or slag, (5) Cocculus indicus, (6) substance or material deleterious to fish, plant life, mammals, or bird life. CFW-9
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> California Code of Regulations, title 14, Division 1, Subdivision 4. Marine oil spill response: CDFW Office of Spill Prevention and Response (OSPR) has jurisdiction over actions that may result in the release of oil into the marine environment.

10) Mitigation Measure BIO-7 states, "Prior to issuance of grading and construction permits, the existing Santa Maria Refinery Spill Prevention, Control and Countermeasure Plan (SPCCP) shall be amended and submitted for review and approval to the County Planning and Building Department. The Plan shall address protection of sensitive biological resources and revegetation of any areas disturbed during an oil spill or cleanup activities." Similar language is noted in Mitigation Measure WR-1b, Water Resources section. CFW-10

Please also include that the SPCCP will also be submitted for review and approval to the CDFW-OSPR for review.

Thank you for the opportunity to review and comment on this DEIR. Please contact me at (805) 594-6165 if you have any questions regarding these comments.

Sincerely,

Melissa Boggs

Melissa Boggs,
Senior Environmental Scientist