BAY AREA AIR QUALITY MANAGEMENT DISTRICT

CEQA Initial Study

Marine Terminal Offload Limit Revision Project
Phillips 66 Refinery
Rodeo, California
BAAQMD Permit Application 22904

December 2012

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1. **Project Title:** Marine Terminal Offload Limit Revision Project, Phillips 66 San Francisco Refinery

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4. **Project Location:** Phillips 66 San Francisco Refinery, Rodeo, Contra Costa County, CA

5. **General Plan Designation:** Heavy Industry

6. **Zoning:** Heavy Industrial (H-1) onshore; Unrestricted (U) offshore

7. **Summary of Project:**

   The proposed Project would increase the amount of crude oil brought to the Rodeo Refinery's Marine Terminal by ship, and reduce the amount of crude oil that is piped into the Rodeo Refinery. Phillips 66 estimates that the number of crude oil deliveries would increase by up to 23 additional ships per year. This additional ship traffic necessitates modification of Phillips 66's existing Permit to Operate and the Major Facility Review (Title V) Permit, which was issued by Bay Area Air Quality Management District (BAAQMD) to ConocoPhillips Company (now Phillips 66) – San Francisco Refinery (BAAQMD Facility #A0016). Specifically, the proposed Project would increase the Marine Terminal (S425, S426) offloading limit contained in the permit by 20,500 barrels per day (bbl/d), from 30,682 bbl/d to 51,182 bbl/d, on a 12-month rolling average basis. Approval of this permit modification is a discretionary action by the BAAQMD, requiring CEQA review.

8. **Surrounding Land Uses and Setting:**

   North: San Pablo Bay is north of the Marine Terminal. San Pablo Bay's land use designation is Water. The zoning designation is Unrestricted.

   East: The area east of the Marine Terminal is zoned as heavy industrial, and includes the NuStar Energy Selby Terminal.

   West: San Pablo Bay is west of the Marine Terminal. San Pablo Bay's land use designation is Water. The zoning designation is Unrestricted.

   South: Immediately south of the Marine Terminal is the Phillips 66 San Francisco Refinery, which is zoned as Heavy Industrial. On the south side of the Refinery is

the Bayo Vista residential neighborhood, which comprises single-family and multi-family residential development, and which is zoned as Planned Unit District (P-1).

9. **Other public agencies whose approval is required:** None.

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LIST OF ACRONYMS

ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
bbl/d	barrels per day
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CSLC	California State Lands Commission
DAF	Dissolved Air Floatation
dBA	A-weighted decibels
District	Bay Area Air Quality Management District
EBMUD	East Bay Municipal Utility District
EIR	Environmental Impact Report
GHG	Greenhouse Gas
I-80	Interstate Highway 80
IMO	International Maritime Organization
lb	pound
LTS	Less than Significant
LTSWM	Less than Significant with Mitigation
LOS	Level of Service
MFD	Marine Facilities Division
MGD	million gallons per day
MEI	Maximally Exposed Individual
MMRP	Mitigation Monitoring and Reporting Plan
MOTEMS	Marine Oil Terminal Engineering and Maintenance Standards
ng/L	nanograms/liter

NOAA	National Oceanic and Atmospheric Administration
NOx	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
PACT	Powdered Activated Carbon Treatment
PC	Permit Condition
ppm	parts per million
Project	Marine Terminal Offload Limit Revision Project
RCRA	Resource Conservation and Recovery Act
RCRIS	Resources Conservation and Recovery Information System
SO_2	Sulfur Dioxide
TBT	tributyltin
tpd	Tons Per Day
UBC	Uniform Building Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
VTS	Vessel Traffic Service
yr	year

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

The purpose of this document is for the Bay Area Air Quality Management District (BAAQMD or District) to evaluate potential environmental impacts of the Marine Terminal Offload Limit Revision Project (Project) proposed by Phillips 66 Company (Phillips 66) San Francisco Refinery in Rodeo, California (hereinafter "Rodeo Refinery"), as required under the California Environmental Quality Act (CEQA). Phillips 66 is seeking to modify an existing Authority to Construct and Minor Modification to the Major Facility Review (Title V) Permit issued by BAAQMD to ConocoPhillips Company (now Phillips 66) – San Francisco Refinery (BAAQMD Facility #A0016). Specifically, Phillips 66 seeks to revise Permit Condition 4336, Part 7 (PC 4336-7), which limits the amount of crude and gas oil that can be delivered to the San Francisco Refinery by tanker or ship at this refinery's Marine Terminal. Phillips 66 is requesting an increase in the Marine Terminal (S425, S426) offloading limit contained in PC 4336-7 by 20,500 barrels per day (bbl/d), from 30,682 bbl/d to 51,182 bbl/d, on a 12-month rolling average basis. Approval of this permit modification is a discretionary action by the BAAQMD, requiring CEQA review.

The Rodeo Refinery processes crude oil from central California received by pipeline and from a variety of domestic and foreign crude sources delivered by ship at the Marine Terminal. The proposed increase in the Marine Terminal offloading limit would provide the facility with flexibility to process higher rates of waterborne crude and gas oil (replacing roughly equivalent volumes of pipeline crudes with waterborne crudes). As part of the proposed Project, Phillips 66 would not increase or modify currently permitted throughput or emissions limits at the Rodeo Refinery as a whole or at any downstream process units. No construction or physical modifications would be necessary at the Marine Terminal for any existing process units or storage tanks. The proposed Project would not change or otherwise affect the types of crude oil that the Rodeo Refinery can process currently; it would merely result in an expected increase in the number of ships that would offload crude oil at the facility (approximately two vessels per month). This minor increase would result in overall vessel traffic in the San Francisco Bay that is within the range of ship traffic evaluated in the certified California State Lands

Commission (CSLC) EIR that was prepared for the Marine Terminal lease in 1995 (CSLC 1995a).

The proposed Project includes the permanent shutdown of the Unit 240 process heater, B-401 (S14), which ceased operating in October 2011. The Unit 240 process heater shutdown will result in emission reductions, including 60.75 tons per year decrease in refinery nitrogen oxide (NOx) emissions and 405,000 tons per year decrease in carbon dioxide emissions, a greenhouse gas. With the permanent shutdown of the B-401 process heater, emissions from additional vessel traffic can be accommodated at the facility while reducing overall emissions to less than significant levels.

Modifications to certain Rodeo Refinery storage tank air permit limits for throughput and/or emissions have been requested of BAAQMD in application (#24266), and approved. The higher limits would accommodate tank realignment or throughput changes resulting from the requested Marine Terminal throughput increase.

The proposed Project would be associated with existing Rodeo Refinery property that is zoned as heavy industrial use by Contra Costa County. The proposed Project activities are considered a permitted use within the heavy industrial zone; however, the proposed Project would require modification of the existing Permit to Operate and the Major Facility Review (Title V) Permit, issued by BAAQMD to ConocoPhillips Company (now Phillips 66) – San Francisco Refinery.

The Phillips 66 Rodeo Refinery is a modern refining facility that currently processes a range of raw materials into clean-burning gasoline, ultra-low-sulfur diesel, and related products for California and other markets. The proposed permit limit change would be a discretionary action that is not mandated by government regulation.

CEQA requires that potential environmental impacts of proposed projects be evaluated, and that feasible methods to reduce, avoid, or eliminate identified significant adverse impacts of these projects be included as part of the project. Under CEQA, the lead agency is defined as "the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment" (Public Resources Code § 21067). BAAQMD has primary approval authority over the proposed Project, and therefore, is the appropriate lead agency pursuant to CEQA guidelines.

This document describes the proposed Project and provides supporting information for the CEQA disclosure process. The document is organized as follows:

- Section 1.0 (Site Background) describes the site location and the marine terminal's current operations and facilities, and summarizes local vessel traffic conditions;
- Section 2.0 (Proposed Permit Modifications) summarizes the various elements of the Project; and
- Section 3.0 (Environmental Checklist) addresses each of the environmental issue areas as identified in Appendix G of the CEQA Guidelines.

This CEQA Evaluation document has drawn on the Environmental Impact Reports (EIRs) certified by Contra Costa County for the Rodeo Refinery's 2007 Clean Fuels Expansion Project[1] and the 2003 Ultra Low Sulfur Diesel Project[2], as well as the EIR certified in 1995 for the CSLC for the subject Marine Terminal lease when under operation by Unocal[3]. These certified EIRs included extensive baseline studies of environmental conditions at and near the Rodeo Refinery, and descriptions of the refinery facilities and operations. Current Marine Terminal facilities and operations are essentially the same as those in the Project evaluated in the 1995 EIR. As is allowed under CEQA, this document incorporates by reference many of the baseline descriptions of the existing environment and the Rodeo Refinery facilities and operations from these previous EIRs. The EIRs also present mitigation measures developed to reduce or avoid potential environmental impacts from those projects, which were presented in the certified 1995 Mitigation Monitoring and Reporting Plan (MMRP) for the Marine Terminal project.

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[1] Contra Costa County. 2006. ConocoPhillips Rodeo Refinery, Clean Fuels Expansion Project, Environmental Impact Report, November.

[2] Contra Costa County. 2003. ConocoPhillips, Ultra Low Sulfur Diesel/Strategic Modernization Project, Environmental Impact Report, May.

[3] CSLC. 1995a. Final Environmental Impact Report for Consideration of a New Lease for the Operation of a Crude Oil and Petroleum Product Marine Terminal on State Tide and Submerged Lands at Unocal's San Francisco Refinery – Oleum, Contra Costa County, prepared by Chambers Group, February (additional information provided in Draft EIR dated March 1994).

1.2 PROJECT OBJECTIVE

The refinery processes crude oil from central California received by pipeline and from a variety of domestic and foreign crude sources delivered by ship at the Marine Terminal. The objective of the proposed Project is to increase the Marine Terminal off-loading limit to provide the facility with flexibility to process higher rates of waterborne crude and gas oil (replacing roughly equivalent volumes of pipeline crudes with waterborne crudes).

1.3 PROJECT LOCATION

The Phillips 66 Rodeo Refinery is located in unincorporated Contra Costa County, near the town of Rodeo, as shown in Figure 1. The Rodeo Refinery encompasses a total of 1,100 acres of land, consisting of the 495-acre active area of the refinery, where all its facilities and equipment are located, and another 600 acres of undeveloped areas. The refinery is considered one facility although the property is located on both sides of Interstate Highway 80 (I-80) and San Pablo Avenue. The highway and street run roughly north-south and are not the refinery's property. The property is zoned Heavy Industrial by Contra Costa County.

Land use to the east of the Marine Terminal includes a combination of industrial and open space, including the NuStar Terminal (a fuel distribution terminal), which is all zoned for heavy industrial use. San Pablo Bay is north and west of the Marine Terminal, and the Rodeo Refinery is south of the Marine Terminal. The nearest sensitive receptor is a day-care facility in the Bayo Vista residential area, near the southern property boundary of the Rodeo Refinery, south of the undeveloped buffer zone.

1.4 PROPOSED PROJECT BACKGROUND

The lead agency for a proposed project is the public agency principally responsible for carrying out or approving a project that may have a significant adverse effect upon the environment (Public Resources Code 21067). Contra Costa County was the lead agency for the EIR that was prepared in 1995, for the consideration of a new lease necessary for the operation of the Phillips 66 Marine Terminal. This EIR was certified on July 6, 1995. Contra Costa County would not have additional permit authority as a result of the BAAQMD Title V permit modifications that are

currently proposed by Phillips 66, and thus the County would not be the lead agency for CEQA processes required for this permit modification.

CEQA Guidelines Section 15152 states that "where an EIR has been prepared and certified for a program, …any lead agency for a later project pursuant to or consistent with the program…should limit the EIR or negative declaration on the later project to effects which: (1) were not examined as significant effects on the environment in the prior EIR; or (2) are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means." Therefore, this Initial Study (IS) focuses on the potential impacts of the additional ship traffic to the Marine Terminal, which would occur as a result of BAAQMD Title V permit modifications.

1.5 PROPOSED PROJECT FOOTPRINT

1.5.1 Rodeo Refinery

The Rodeo Refinery consists of refining processes and support units that produce fuels, sulfur, and petroleum coke. The Rodeo Refinery's principal activity is fuels manufacturing, wherein the facility converts crude oil and other feedstock into gasoline, jet fuel, diesel, and industrial fuels. The proposed Project elements associated with oil offloading would occur at the existing Marine Terminal at the Rodeo Refinery; the Unit 240 process heater (which would be shut down as part of the proposed Project) is located within the developed, active portion of the refinery.

The Rodeo Refinery is designed and operated to refine a variety of domestic and foreign crude oils, such as heavy crudes from Central California and Canada, as well as medium crude oils, such as Alaskan North Slope and Escalante. The crude oil is made into usable products such as gasoline, jet fuel, diesel fuel, sulfur, and petroleum coke. Electrical power, fuel gas, and steam are also created during the refining process.

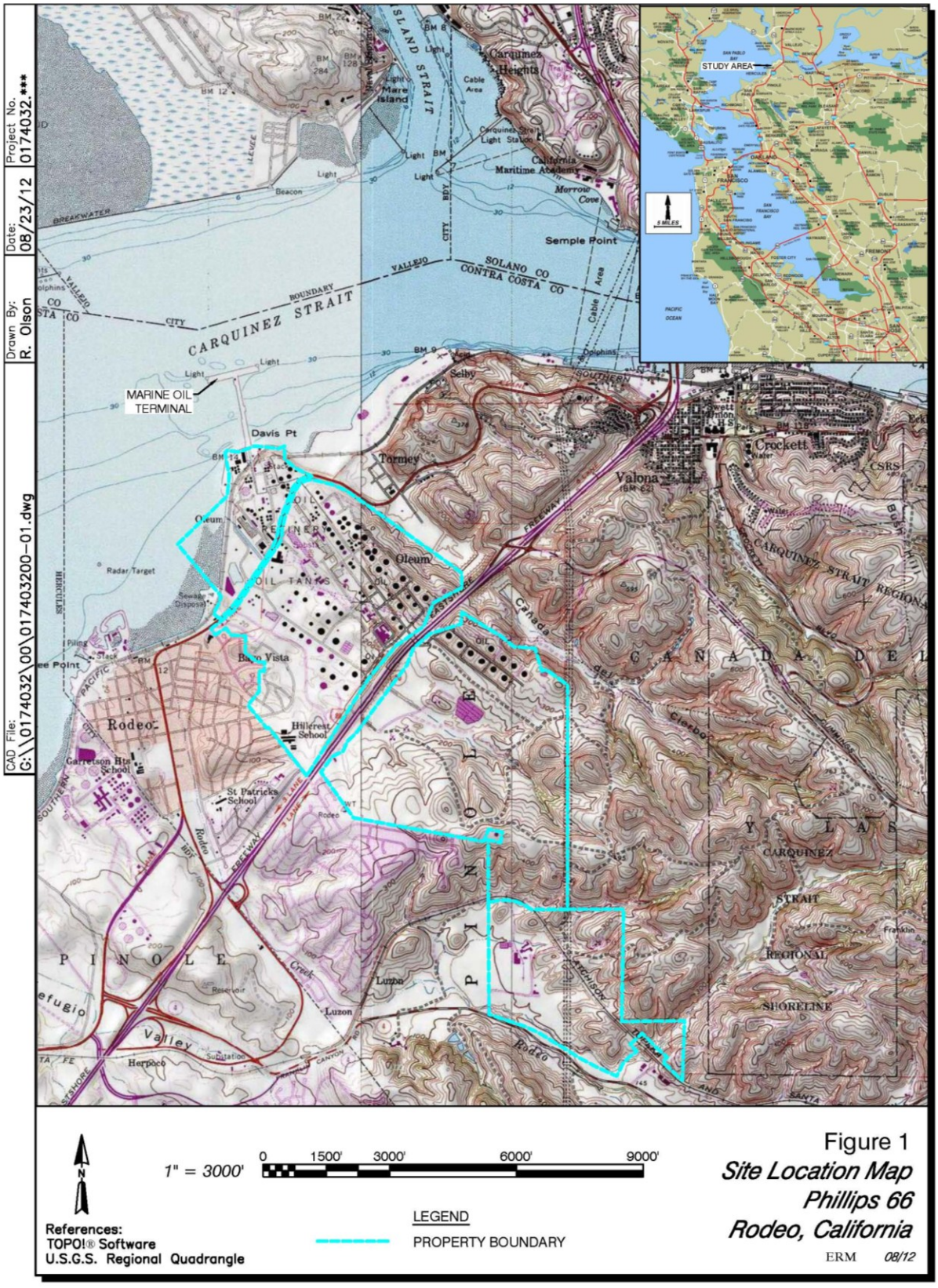

Figure 1
Site Location Map
Phillips 66
Rodeo, California
ERM 08/12

Crude oil is currently brought to the Rodeo Refinery via pipelines and marine tankers. Tankers dock at the refinery's Marine Terminal, located at the northwestern edge of the facility (see Figure 1). Crude oil is sent to distillation units to make the first separation of crude oil into its various components. Additional processing takes place in a number of refinery units, including coking, isomerization, hydrocracking, reforming, and blending units.

Numerous chemicals, materials, and utilities are required to generate useful products from the crude oil. Some chemicals, such as hydrogen, are produced at the Rodeo Refinery or supplied by Air Liquide, which operates a Hydrogen Production Plant adjacent to the refinery. Other feedstock, chemicals, and materials are purchased and transported to the facility. The Rodeo Refinery generates its own steam, fuel gas, and electricity, and purchases other resources, such as natural gas and water. Pacific Gas and Electric Company supplies natural gas and electricity to the Rodeo Refinery; the East Bay Municipal Utility District (EBMUD) supplies potable water, which is used for all refinery processes except once-through sea water cooling.

1.5.2 Marine Terminal Complex

A Marine Terminal has been located at the facility since 1928; the present Marine Terminal has been operating since 1955 with minor modifications. Ocean tanker ships deliver crude oil, blending stocks, and intermediate feedstock to the Rodeo Refinery's Marine Terminal Complex. The Marine Terminal is equipped with equipment such as pumps, pipelines, heavy cargo hoses, and a thermal oxidizer for vapor recovery/control. The ship's cargo is unloaded via the pipelines and cargo hoses into various storage tanks on shore. Heavy crude and semi-refined petroleum also reach Rodeo Refinery by pipelines. Product ships leave the Marine Terminal loaded with intermediate and refined products for other coastal cities and distribution terminals. Product pipelines also distribute gasoline, diesel, and jet fuel to terminals; from these terminals, finished products are delivered by truck to service stations and other Phillips 66 customers.

Figure 2 provides a recent aerial photograph of the Phillips 66 facility, and depicts the location of the Marine Terminal.

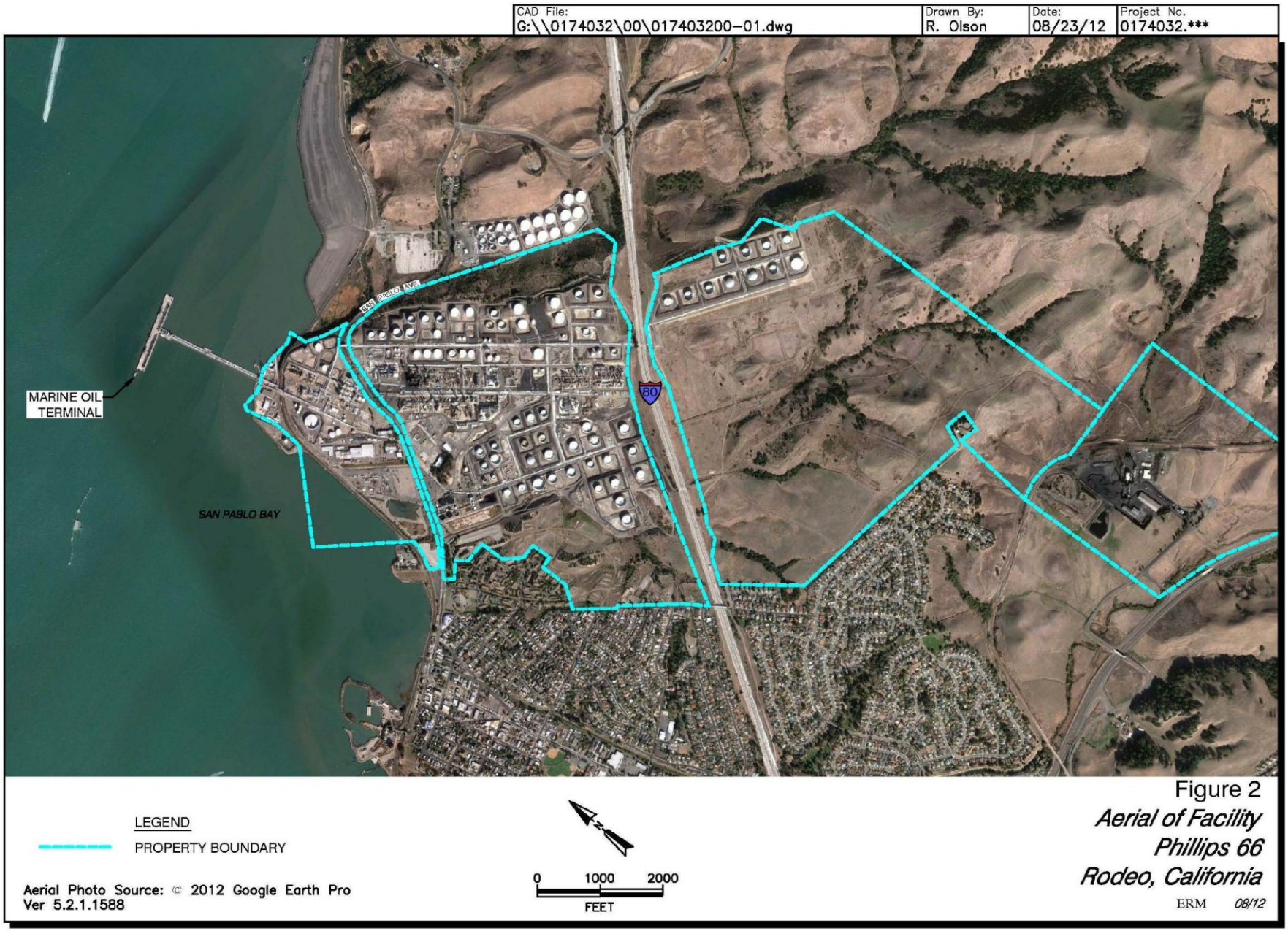
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Figure 2
Aerial of Facility
Phillips 66
Rodeo, California
ERM 08/12

1.5.2.1 *Summary of Marine Terminal Features*

The Marine Terminal is a "T-shaped" pier, constructed of precast concrete piles driven beneath the mudline to depths of 83 to 89 feet. The deck is supported between rows of piles on reinforced cast-in-place concrete cross members that support precast concrete deck panels. The finished deck elevation is approximately 17 feet above mean lower low water. The Terminal contains a ship- and barge-berthing structure, a mooring breasting dolphin[4], and a trestle/pipeway that supports a ballast water pipeline, two crude oil pipelines, and 17 petroleum product pipelines connecting to the shore. All pipelines are in accordance with Code ANSI B31.3 for pressure piping/petroleum refinery piping, and are equipped with high-pressure shutdown switches and thermal relief valves. Visual, pressure test, and safety device testing are performed on the pipelines each year, in accordance with 33 CFR 156.170(f)(1). No submerged pipelines service the Terminal. Figure 3 presents the general layout and dimensions of the Marine Terminal; further construction details are provided in the CSLC EIR.

The waterward side of the pier contains two ship-berthing areas and three manifold areas; the shore side contains three barge berths. The berthing areas have hose risers with loading hoses. The Terminal also contains:

- Drip and ballast discharge facilities for each manifold area;
- A control house at which all transfers to and from the vessels are controlled and which serves as the base of the terminal's communication system; and
- A thermal oxidizer vapor control system designed to collect, convey, and combust vapors from ship-loading operations.

In 2008, an initial audit of retrofitting of the Marine Terminal was conducted in accordance with the California Building Code, California Code of Regulations, Title 24, Part 2, Chapter 31F, Marine Oil Terminals Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS). The CSLC Marine Facilities Division (MFD) is responsible for governing

[4] A dolphin is a man-made marine structure that extends above the water level and is not connected to shore. Dolphins are usually installed to provide a fixed structure, when it is impractical to extend the shore to provide a dry access facility (e.g., when ship size, or the number of ships expected, is greater than the length of the berth/pier).

marine terminals and enforcing MOTEMS. The MOTEMS standards define criteria in the following areas:

- Audit and Inspection (both above and below the water line);
- Structural Loading;
- Seismic Analysis and Performance-Based Structural Design;
- Mooring and Berthing Analysis and Design;
- Geotechnical Hazards and Foundations;
- Structural Analysis and Design of Components;
- Fire Prevention, Detection, and Suppression;
- Piping and Pipelines; and
- Electrical and Mechanical Equipment.

This initial MOTEMS audit was conducted by the Ben C. Gerwick Company, a civil and structural consulting firm specializing in the design of marine structures. The 2008 MOTEMS audit found that the Marine Terminal did not have any issues that rendered it "unfit for purpose" (Ben C. Gerwick, 2008). Certain deficiencies identified during the 2008 audit were subsequently remedied. The only remaining MOTEMS upgrades are related to implementation of certain seismic elements and upgrades to the fire protection and suppression system. These upgrades are scheduled to be completed by September 2014. The Marine Terminal auditing process is on a three-year audit cycle; a follow-up audit conducted by the Ben C. Gerwick Company in 2011 identified no additional deficiencies. The next audit is scheduled for 2014.

Phillips 66 has implemented an inspection program in which pipelines on the wharf and over water are hydrotested on an annual basis and all pipelines on the wharf and over water are inspected on a routine basis. The inspection includes visual inspection, ultrasonic testing for wall thickness, and pipe repair/replacement. Operators visually inspect flanges and the pipeline on the wharf each shift during rounds.

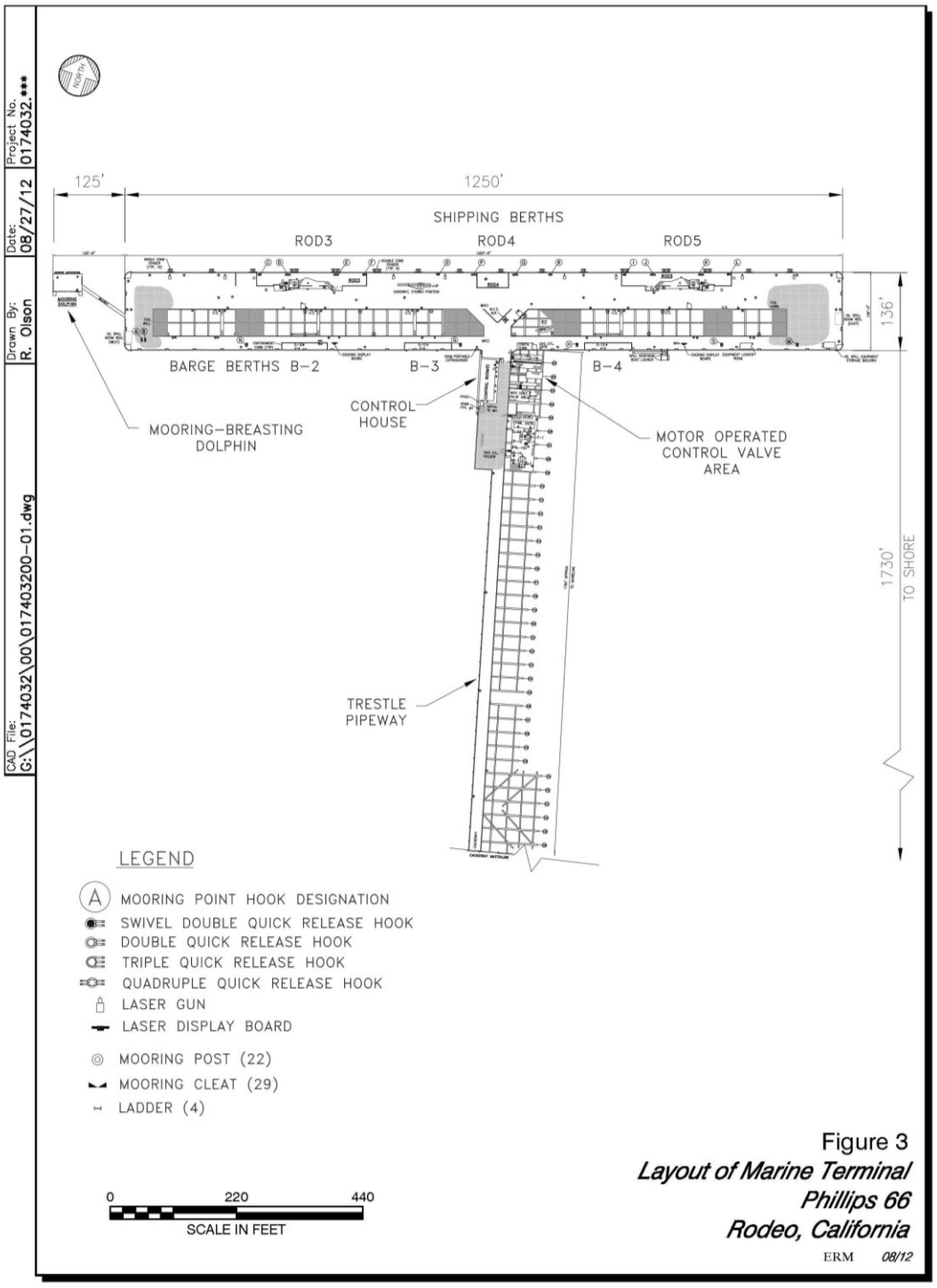

Figure 3
Layout of Marine Terminal
Phillips 66
Rodeo, California
ERM 08/12

The crude and gas oil delivered at the Marine Terminal is discharged from the vessels to the refinery storage tanks. The majority of the crude oil would be delivered to Tank 100 (S97), Tank 107 (S334), Tank 108 (S340), and Tank 109 (S439). Tank 100 is the main tank, which receives crude from the Marine Terminal. Tanks 107, 108, and 109 either receive crude transferred from Tank 100 or directly from the vessels at the Marine Terminal. Tanks 107, 108, and 109 are then used to transfer crude to Tank 155 (S110) and Tank 156 (S111). Tanks 155 and 156 are the Unit 267 (S350) and Unit 200 (S300) crude unit feed tanks, respectively. Tanks 155 and 156 receive crude from both the Marine Terminal and the pipeline to provide feed for the crude units.

Gas oil received at the Marine Terminal would normally be delivered to Tank 280 (S173) and Tank 281 (S174). In certain situations, the gas oil could be transferred to other tanks, as necessary. Maintenance was completed on Tank 280 in 2012, and the tank was converted to a fixed-roof, natural gas-blanketed tank controlled by the vapor recovery system, as required by Permit Condition 23724. Tank 281 is also a fixed-roof, natural gas-blanketed tank that is controlled by the vapor recovery system (A7). These tanks are used to feed the Unit 246 Hydrocracker (S434).

1.5.2.2 Summary of Operations Associated with Vessel Transit and Offloading

Incoming oil tankers/barges are accompanied by a licensed Bar Pilot who directs navigation through the Bay and the process of docking at the Marine Terminal. From the pilot's station, 11 nautical miles west of the Golden Gate Bridge, oil tankers transit to the Marine Terminal over an approximate 2 hour period. The speed of travel is approximately 14 knots (cruise speed), reducing to 10 knots (slow cruise). During this transit period, the tankers do not lighter (i.e., a process by which cargo is transferred to a secondary vessel to reduce draft) in the Bay. The period of time during which a given vessel is docked at the terminal is generally 24 to 36 hours.

When vessels are offloading crude oil at the terminal, Phillips 66 retains a standby vessel in "on-call" mode that would respond in the event of a spill. This vessel is required to have the capability of deploying 600 feet of boom within 30 minutes as required by CCR 2395 (e).

Phillips 66 does not provide fuel, fresh water, or provisions to vessels while they are docked at the Terminal. The vessels may receive fuel and provisions, if necessary, at "Anchorage 9" which is located near the Bay

Bridge and Treasure Island. The vessels have an evaporator and condenser on board to make their own fresh water while out at sea.

Wastewater (including sewage) must be held on board by incoming vessels while in the San Francisco Bay. When the vessel is in the open ocean, wastewater is passed through an onboard marine wastewater treatment device/system prior to being released into the ocean. The Rodeo Refinery does not typically receive any wastewater from vessels docked at the Marine Terminal. However, if necessary, the refinery has the capability to receive wastewater from the vessels and feed it to the refinery wastewater treatment plant. The wastewater treatment plant currently receives about 3.0 million gallons per day (MGD), and has the capacity to handle 7 to 8 MGD with a short term flow maximum of 10 MGD (Contra Costa County, 2006).

The primary treatment portion of the wastewater treatment plant includes API Separator and Dissolved Air Floatation (DAF) units. The sediment from the API and float from the DAFs is stored in a tank and thermally treated during the quench cycle of the Coke Drums using an oily sludge coking process. The wastewater then passes through a secondary treatment process at the Powdered Activated Carbon Treatment (PACT) Plant, followed by tertiary treatment through sand filters. The material removed by these filters is returned to the equalization tanks and eventually removed, de-watered, and sent out as Resource Conservation and Recovery Act (RCRA) Hazardous Waste. Finally chlorine/bleach solution is added to the waste stream to comply with the coliform discharge requirements of the facility National Pollutant Discharge Elimination System (NPDES) permit before being discharged.

Because the oil tankers are loaded with crude oil when they transit to and dock at the Marine Terminal, there is generally no need for the use of ballast water during that period, and crude oil transport to the Marine Terminal does not involve the release of ballast water into the Bay. Phillips 66 has not accepted ballast water for over 10 years. When the crude oil has been offloaded at the Marine Terminal, a carrier may take on ballast water as needed.

Similarly, the Rodeo Refinery does not typically receive solid waste from vessels docked at the Marine Terminal. On occasion, minor amounts of solid waste may be received, but the amount is negligible relative to the amount generated by other refinery activities.

1.5.2.3 *Vessel Traffic Related to the Marine Terminal*

Over the 6-year period from 2006 through 2011, annual inbound and outbound ship traffic at the Marine Terminal, including those that are not carrying crude oil, ranged from 44 ships (in 2010) to 79 ships (in 2008). The number of inbound and outbound vessels is roughly equivalent, which translates to a typical annual number of incoming ships, in the range of 22 to 40 ships, over the 6-year period. An average of approximately 24 ocean tanker ships per year deliver crude oil to the Marine Terminal (2006 to 2011 average); the highest annual number of ocean tanker ships that delivered crude oil during that period was 36 ships (2008). Under the proposed Project, the number of crude oil deliveries would increase by up to 23 additional ships per year; thus the anticipated maximum number of ships delivering crude would be 59 ships under the proposed Project[5].

The current and proposed future vessel traffic combined is within the range evaluated in the CSLC EIR—up to 139 tanker and 86 barge trips per year (CSLC 1995). As discussed in Section 4.2.3.2 of the CSLC EIR, vessel traffic was projected to be at this level over a 20-year projection period, and was incorporated in the analysis of Future Conditions conducted as part of the ship accident risk assessment.

The Phillips 66 Rodeo Refinery is one of many operations in the San Francisco Bay area that are associated with vessel traffic. As presented on the U.S. Army Corps of Engineers Navigation Data Center website[6], accessed on 23 August 2012, more than 12,500 vessels entered San Pablo Bay/Mare Island Strait in 2010, which was the last full year for which records are available. These vessel counts are summarized in Table 1.5-1, below:

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[5] This value represents the total of (a) recent annual maximum number of incoming ships delivering crude (36 ships) plus (b) the incremental projected increase (23 ships) under the proposed Project. As a Permit Condition, BAAQMD intends to limit the annual (rolling-basis) number of incoming ships delivering crude to 59 ships.

[6] http://www.ndc.iwr.usace.army.mil/wcsc/webpub10/webpubpart-4.htm

Table 1.5-1. 2010 Vessel Count, San Pablo Bay/Mare Island Strait

Vessel Type	Approximate Number - 2010 (Upbound)	Approximate Number - 2010 (Downbound)
Self-Propelled Dry Cargo	10,508	10,519
Self-Propelled Tanker	357	364
Self-Propelled Tow or Tug Boat	991	977
Non-Self Propelled Dry Cargo	405	399
Non-Self Propelled Tanker Liquid Barge	279	270
Total Number of Vessels	**12,540**	**12,529**

Source: U.S. Army Corps of Engineers 2012b.

The 2010 combined inbound and outbound total of 25,069 cargo vessels per year through San Pablo Bay is lower than the vessel traffic that was forecast for San Pablo Bay for 1995 in the EIR (28,087 vessels per year; Table 3.1-5 of the 1994 Draft EIR), including dry cargo, tanker, dry cargo tow, and tanker tow vessels.

The amount of ship traffic in the broader San Francisco Bay is considerably greater than those indicated in Table 1.5-1. Excluding San Francisco harbor, 35,118 vessels called at terminals in the Bay Area in 2010 (inbound only, including Redwood City harbor, Oakland harbor, Richmond harbor, San Pablo Bay/Mare Island Strait, and the Carquinez Strait). Inbound vessel traffic reported for 2010 for these terminals is summarized in Table 1.5-2 below:

Table 1.5-2. 2010 Inbound Vessel Count by Bay Location

Location	Self-Propelled Vessels (incoming, 2010)			Non-Self-Propelled Vessels (incoming, 2010)		Total Number of Vessels (incoming, 2010)
	Dry Cargo	Tanker	Tow and Tug	Dry Cargo	Tanker	
Redwood City Harbor	20	0	72	21	0	113
Oakland Harbor	10,974	13	1,548	141	594	13,270
Richmond Harbor	65	393	4,374	107	1,061	6,000
San Pablo Bay and Mare Island Strait	10,508	357	991	405	279	12,540
Carquinez Strait	1,362	329	1,061	165	278	3,195
Total	**22,929**	**1,092**	**8,046**	**839**	**2,212**	**35,118**

Source: U.S. Army Corps of Engineers 2012a.

The 2010 vessel count data are comparable to those of other recent years and are considered generally representative of the baseline conditions for the proposed Project. Compared to the above tallies, the vessel traffic associated with the proposed Project (up to 23 additional vessel trips per year) represents a minor portion of overall traffic.

Vessel traffic within the San Francisco Bay is highly regulated. The U.S. Coast Guard Vessel Traffic Service (VTS) facilitates the safe and efficient transit of vessels within the San Francisco Bay. Specifically, the VTS monitors vessel movements, informs mariners of other vessels and potential hazards, recommends courses of action when called for, and directs outcomes to prevent incidents. Vessels of the types that carry crude oil are required to participate in the VTS. In May 1995, federal regulations went into effect establishing regulated navigation areas within the San Francisco Bay, in which traffic flow patterns are organized and vessel speeds are limited. Also, as noted in Section 1.5.2.2, incoming oil tankers/barges must be accompanied by a licensed Bar Pilot familiar with local conditions, who directs navigation through the Bay and the process of docking at the Marine Terminal.

2.0 DESCRIPTION OF PROPOSED PERMIT REVISION

The proposed permit revision would: (1) eliminate permitted emissions associated with the U240 B-401 process heater (which ceased operation in October 2011 and would be permanently shut down under this permit modification), and (2) increase the offloading limit on crude and gas oil imports at the Marine Terminal by 20,500 bbl/d. Phillips 66 is not requesting any increases or modifications to currently permitted throughput or emissions limits at the Rodeo Refinery as a whole or at any downstream process units; the increase in crude oil that is shipped in via marine vessels would be balanced by a decrease in crude oil that is piped to the Rodeo Refinery.

The increase in crude and gas oil limit would allow up to 23 additional marine vessel trips a year to the Marine Terminal (approximately 2 ships per month). Consistent with current practice, the vessels would be accompanied by tugboats during the approach to and from the Marine Terminal. The current and proposed future vessel traffic combined (59 ships delivering crude oil) is within the range evaluated in the CSLC EIR (up to 139 tanker and 86 barge trips per year). As discussed in the EIR (Section 4.2.3.2 of the 1994 draft document), vessel traffic was projected to be at this level over a 20-year projection period, and was evaluated in the EIR and incorporated in the analysis of Future Conditions conducted as part of the ship accident risk assessment.

All process units that would receive crude or gas oil delivered via the Marine Terminal currently have throughput limits in the Title V Permit. The proposed increase to the offloading limit at the Marine Terminal will not require any increase in existing throughput limits at any downstream process unit.

This permit application requests changes to crude and gas oil throughput limits only for the Marine Terminal and four associated storage tanks. No changes are requested for any other emission source at the Rodeo Refinery, and no other refinery sources are "modified" in connection with this application.

Crude oil is a mixture of hydrocarbons that, by definition, is variable. No two crude oils are exactly the same, and even those that come from the same region or field can and will vary. The Rodeo Refinery has historically processed a variety of crudes, arriving via pipeline or the

Marine Terminal, which meets the design requirements of the processing units. The Rodeo Refinery does not have any limits or restrictions on the characteristics of the crude oil processed at the refinery (i.e., the "process stream") other than the Unit 267 sulfur limit, and all emissions would remain within permitted levels. The crude processing Unit 267 has a sulfur limit in the crude processed at that unit of 1.5 weight percent. This limit would remain in the permit and would not be affected by the permit application. Although a larger proportion of the crudes may be waterborne as a result of the proposed Project, the variety of crudes processed shall continue to meet the limitation and design criteria of the equipment currently present at the Rodeo Refinery. The current processing ability of these units would not be modified by this permit application, as no physical facilities or permit changes for these units are being made.

3.0 ENVIRONMENTAL IMPACT DETERMINATION

On the basis of this initial evaluation:

☒	I find the proposed Project COULD NOT have a significant effect on the environment. Therefore, an environmental impact report (EIR) is not required, and a NEGATIVE DECLARATION is sufficient to comply with CEQA.
☐	I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the Project. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find the proposed Project MAY have a significant impact on the environment, but at least one "potentially significant impact" or "potentially significant unless mitigated" impact (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that, although the proposed Project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (1) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures from the EIR that are imposed upon the proposed Project.

This section contains an Initial Study Checklist based on Appendix G of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387).

Environmental impacts stemming from the proposed Project would be associated with: (1) the decrease in emissions associated with the Unit 240 process heater shut-down (a beneficial impact), and (2) the incremental increase in ship traffic that would result from the proposed Project. The proposed ship offloading activities involve the same activities that are currently being conducted at the Phillips 66 Rodeo Refinery's Marine Terminal, which were thoroughly analyzed in the CSLC EIR (CSLC 1995). The only change would be the increase in ship traffic above recent ship calls, but still well within the anticipated vessel traffic levels analyzed in the EIR (up to 139 tanker and 86 barge trips per year) (CSLC 1995a). As presented in Section 1.5.2.3, the projected vessel traffic increase represents a minor portion of the vessel traffic in the Marine Terminal vicinity.

As summarized below for each topic area the small increase in vessel traffic associated with the permit modification would not appreciably increase the potential severity of the environmental impacts associated with the ongoing Marine Terminal operations.

3.1 AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion:

a. Less than Significant Impact

The scenic routes designated by Contra Costa County (2005) in the proposed Project vicinity include the following:

- Cummings Skyway, located approximately 1 mile east of the Marine Terminal. The scenic route designation starts at the Lincoln Avenue and Cummings Skyway intersection, and ends where Cummings Skyway crosses State Route 4/John Muir Parkway to the east.

- Lincoln Highway is designated as a scenic route. The designation begins at Lincoln Avenue and First Street in the western portion of Rodeo, and ends where Lincoln Avenue crosses I-80 in Crockett.

Crockett Boulevard intersects Cummings Highway, and the scenic route designation starts in the town of Crockett, approximately 2 miles east of the Marine Terminal, and ends where the route intersects Cummings Skyway. The scenic highways in the Proposed Project vicinity include the following:

- The segment of State Route 4 from Hercules to the intersection with Railroad Avenue is proposed for State designation as a scenic

highway. State Route 4 is located approximately one mile southeast of the Rodeo Refinery.

The views protected from these scenic routes include San Pablo Bay and undeveloped hillsides. Ship traffic currently goes through the San Pablo Bay, and the ship traffic that would result from modifications to the BAAQMD Title V permit is consistent with the current uses of San Pablo Bay. The incremental increase in ship traffic through San Pablo Bay would be a less than significant impact to aesthetic resources because it is consistent with current uses; ships are a part of the fabric of the regional viewshed.

b. No Impact

The proposed Project would result in the transit of up to 23 additional crude oil ships to the Rodeo Refinery's Marine Terminal per year (approximately 2 ships per month). The Rodeo Refinery is located in unincorporated Contra Costa County, on the east side of the San Pablo Bay, near I-80 and San Pablo Avenue. I-80 is not designated as a state scenic highway in the Rodeo area, and the proposed Project would not damage any scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

c. No Impact

The Rodeo Refinery site is currently heavily industrialized; the proposed Project would not involve any construction, demolition, or other alterations to change this appearance.

d. Less Than Significant Impact

The additional crude oil ships that would offload at the Marine Terminal under the proposed Project modifications could transit to the Marine Terminal and berth there at night, and could introduce light sources on a slightly more frequent basis. However, given the limited number of ships involved (estimated by Phillips 66 to represent approximately two ships per month) and the limited duration of offload operations (estimated by Phillips 66 to be approximately 24 to 36 hours per delivery), the additional lighting impacts would be less than significant.

3.2 AGRICULTURE RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

Discussion:

a. No Impact

The site activities under the BAAQMD Title V permit would be the same as the current uses of the site. The proposed Project would not result in the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use. In fact, the Marine Terminal is predominantly located over water, and its location has been dedicated to refinery use for many decades.

b. No Impact

The Rodeo Refinery is in an area zoned by Contra Costa County as heavy industrial and not agricultural. The Rodeo Refinery is not part of a Williamson Act Trust and the proposed Project would not result in any changes to an existing Williamson Act contract.

c. No Impact

No farmland would be converted to non-farmland as a result of the proposed Project.

3.3 AIR QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☒	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

The Rodeo Refinery's Marine Terminal is located within the San Francisco Bay Area Air Basin (Basin) where regional air pollutant emissions from stationary sources are overseen by the BAAQMD. Any air quality impacts from the proposed project, which include both stationary and mobile sources, would be considered significant if the BAAQMD CEQA significance thresholds were exceeded. The most recent policy establishing these significance thresholds adopted by the District is entitled "*BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts from Projects and Plans*", which was adopted in December 1999. (BAAQMD, 1999) The 1999 CEQA Guidelines set Thresholds of Significance for criteria pollutants based on the applicable NSR significance levels and Thresholds of Significance for air toxics based on the District's Toxic Risk Management Policy, the forerunner of the current Toxics New Source Review program in Regulation 2, Rule 5.

Note that the District's Board of Directors adopted an update to its 1999 Thresholds of Significance in June 2010. The Alameda County Superior Court subsequently issued an order directing the District to set aside those Thresholds of Significance because the District did not conduct a CEQA environmental analysis in connection with their adoption. The Air District has appealed the Alameda County Superior Court's decision, and the appeal is currently pending, but the Superior Court's order remains in place at this time. Accordingly, this

Initial Study does not rely on, consider, incorporate, endorse, or recommend the June 2010 Thresholds of Significance.

Following are the Thresholds of Significance in the 1999 CEQA Guidelines.

1. **Local Carbon Monoxide Concentrations.** Localized carbon monoxide concentrations should be estimated for projects in which: 1) vehicle emissions of CO would exceed 550 lb./day; 2) project traffic would impact intersections or roadway links operating at Level of Service (LOS) D, E or F or would cause LOS to decline to D, E or F, or 3) project traffic would increase traffic volumes on nearby roadways by 10% or more. A project contributing to CO concentrations exceeding the State Ambient Air Quality Standard of 9 parts per million (ppm) averaged over 8 hours and 20 ppm for 1 hour would be considered to have a significant impact.

2. **Total Emissions.** Total emissions from project operations should be compared to the thresholds provided in Table 3.3-1, below. Total operational emissions evaluated under this threshold should include all emissions from motor vehicle use associated with the project. A project that generates criteria air pollutant emissions in excess of the annual *or* daily thresholds in Table 3.3-1 would be considered to have a significant air quality impact.

Table 3.3-1. Thresholds of Significance for Project Operations

Pollutant	ton/yr	lb/day	kgm/day
ROG (i.e., POC)	15	80	36
NOx	15	80	36
PM_{10}	15	80	36

3. **Odors.** This project is not considered to be an important source of odors.

4. **Toxic Air Contaminants.** Any project with the potential to expose sensitive receptors (including residential areas) or the general public to substantial levels of toxic air contaminants would be deemed to have a significant impact. This applies to receptors locating near existing sources of toxic air contaminants, as well as sources of toxic air contaminants locating near existing receptors. Proposed development projects that have the potential to expose the public to toxic air contaminants in excess of the following

thresholds would be considered to have a significant air quality impact. These thresholds are based on the District's Risk Management Policy:

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million.
- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index greater than 1 for the MEI.

5. **Accidental Releases/Acutely Hazardous Air Emissions.** The Project does not involve acutely hazardous air pollutants.

6. **Cumulative Impacts:** Any proposed project that would individually have a significant air quality impact (see Thresholds of Significance for Impacts from Project Operations, above) would also be considered to have a significant cumulative air quality impact.

Discussion:

a. Less Than Significant Impact

The project emission increases are primarily from increased vessel activity. The California Air Resources Board (ARB) has established a *Goods Movement Action Plan* and an *Emission Reduction Plan for Ports and Goods Movement* that address vessel emissions and provide the framework for current and proposed regulations for emission reductions from ships (see Appendix B). These plans identify measures that are implemented by a combination of regulations and voluntary programs and emphasize measures for ports and infrastructure projects. Those measures that pertain to ships and harbor craft at marine terminals are implemented through existing and proposed ARB and federal regulations. Voluntary measures included in these plans are applicable to high marine traffic areas such as ports. Several measures target individual ports within the state.

As such, California ports have developed their own clean air programs and action plans. Since these air quality plans pertain specifically to port facilities, they do not apply to the activities at the Phillips 66 marine terminal.

While BAAQMD implements a Clean Air Plan for attainment and maintenance of the state and federal ozone standards, this plan does not address ship activities. The BAAQMD's 2010 Clean Air Plan shows that NOx emissions from ships will increase from 52 tpd in 2012 to 67 tpd in 2020. Since the Phillips 66 terminal manages compliance with regulations applicable to its shipping operations (as listed in Appendix B), including the crude shipments that are part of the project, these operations are maintained in accordance with these air quality plans.

b & c. Less Than Significant Impact

The proposed Project would comply with all applicable federal, state and BAAQMD air quality rules and regulations designed to reduce emissions as listed in Appendix B. In addition, Phillips 66 has prepared and submitted air quality permit applications to BAAQMD for a Change in Conditions in the District permit and a Minor Revision of the Facility's Title V permit. These permit applications provide refined emission estimates for the proposed Project (Application #22904, amended, for the marine vessels and Application #24256 for the storage tanks).

The project would increase the allowable volume of crude oil transferred across the marine terminal from ships, which would allow for additional crude ships visiting the terminal. Post-project emissions on a monthly or annual basis could increase as there would be additional days that ships would be present at the terminal. However, the project includes emission reductions that have been achieved at the Rodeo Refinery by the shutdown of the B-401 furnace and provide overall emissions that reduce the project's net emissions per BAAQMD new source review requirements.

Table 3.3-2, below, provides a summary of the maximum potential annual emissions from vessels and equipment associated with the proposed project and the reduction in emissions from the shutdown of the B-401 furnace. The detailed emission calculations are included in Appendix C

Table 3.3-2. Maximum Potential Project Pollutant Emissions

Source	Estimated Net Emissions (tons/yr) [1]					
	NOx	**SO_2**	**PM_{10}**	**POC**	**CO**	**CO_2**
Marine Vessels	33.16	7.62	1.11	1.10	2.71	2,324
Storage Tanks	0	0	0	1.79	0	0
U240 B-401 Shutdown[2]	-33.16	-0.78	-1.11	-2.89	-0.41	-2,324
Project Emissions	**0**	**6.84**	**0**	**0**	**2.12**	**0**
CEQA thresholds of Significance[3]	**15**	__	**15**	**15**	__	__[4]

[1] Emissions are consistent with BAAQMD permit applications #22904 and #24256, (as amended). Based on 23 ship calls/year, 20.5 million bpd increase in crude shipments and ship size of 70,000 DWT (325,000 bbl/ship). Values represent the highest emissions, on a per pollutant basis, of all ships with steam boilers versus all ships with auxiliary engines only.

[2]Only the actual U240 B-401 shutdown emissions required to reduce project emissions to zero are shown.

[3]This Initial Study does not rely on, consider, incorporate, endorse, or recommend the June 2010 Thresholds of Significance.

Table 3.3-3, below, provides a summary of the maximum potential annual emissions from vessels and equipment associated with the proposed project and the reduction in emissions from the shutdown of the B-401 furnace after implementation of the 0.1% standard on January 1, 2014. The detailed emission calculations are included in Appendix C

Table 3.3-3. Maximum Potential Project Pollutant Emissions after Use of 0.1% Sulfur Fuel in 2014

Source	Estimated Net Emissions (tons/yr) [1]					
	NOx	**SO_2**	**PM_{10}**	**POC**	**CO**	**CO_2**
Marine Vessels[2]	33.16	1.28	0.64	1.10	2.71	2,324
Storage Tanks	0	0	0	1.79	0	0
U240 B-401 Shutdown[3]	-33.16	-0.78	-0.64	-2.89	-0.41	-2,324
Project Emissions	**0**	**0.5**	**0**	**0**	**2.12**	**0**
CEQA thresholds of Significance[4]	**15**	—	**15**	**15**	—	—[4]

[1] Emissions are consistent with BAAQMD permit applications #22904 and #24256, (as amended). Based on 23 ship calls/year, 20.5 million bpd increase in crude shipments and ship size of 70,000 DWT (325,000 bbl/ship). Values represent the highest emissions, on a per pollutant basis, of all ships with steam boilers versus all ships with auxiliary engines only.

[2]Assuming mandatory reduction in fuel sulfur content that is required per CARB's ocean-going vessel clean fuel regulations (see Appendix B) which require the use of low sulfur (0.1% S) marine distillate fuels in diesel engines and boilers on oil tankers effective January 1, 2014

[3]Only the actual U240 B-401 shutdown emissions required to reduce project emissions to zero are shown.

[4]This Initial Study does not rely on, consider, incorporate, endorse, or recommend the June 2010 Thresholds of Significance.

Estimated emissions from marine vessels delivering crude and/or gas oil, and tugboat assistance, are included in Appendix C. The emission factors used and methodology were based on "*Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories - Final Report*", US EPA, 2009. The emission estimates are based on 23 marine vessel trips per year, which would correspond to an increase of 20,500 bbl/day above the current permitted limit.

Regarding emissions from ships, it is important to note that the estimates above consider a mandatory reduction in fuel sulfur content that is required per CARB's ocean-going vessel clean fuel regulations (see Appendix B) which require the use of low sulfur (0.1% S) marine distillate fuels in diesel engines and boilers on oil tankers effective January 1, 2014. This is a reduction from currently allowed levels of 1.0% S in marine gas oil and 0.5% S in marine diesel oil, and will be phased in for the ships

calling at the Phillips 66 marine terminal over the next year. So, current baseline emission rates of SO_2, and PM_{10} (two pollutants affected by the fuel sulfur specifications) from an individual tanker will be reduced over the next year as the facility transitions to use of cleaner marine fuels. Thus, the net marine vessel emission levels shown in Table 3.3-2 may not be fully achieved in the first year of the implementation of this project.

During the 2013 transition period, worst-case emissions of SO_2 and PM_{10} could be considered at the level associated with marine vessels still using fuels containing 1.0%S. Thus, SO_2 emissions from marine vessels would amount to a maximum of 12.8 tons per year and PM_{10} emissions would amount to a maximum of 1.27 tons per year. Net emissions of PM_{10} from the project would still be zero because emissions from the B-401 furnace shutdown (8.4 tons per year) are greater than 1.27 tons per year. Since local guidelines do not set a significance threshold for SO_2, a comparison to the federal threshold of 40 tons per year (significant increase threshold for NSR/PSD permitting) can be made. The maximum SO_2 emissions in 2013 would be below the 40 tons per year threshold. Therefore, the proposed emissions would still be below significance thresholds during the first year, and maintained thereafter at even lower levels, as shown in Table 3.3-2.

The shutdown of the B-401 furnace provides sufficient criteria pollutant emission reductions to reduce all emissions below the CEQA thresholds of significance. In fact, for NOx, PM10, POC, and CO_2 emissions the reductions from the B-401 furnace emissions are more than sufficient to reduce overall project emissions of these pollutants to zero. The total amount of emission reductions available from the shutdown of the B-401 furnace is shown below in Table 3.3-4.

Table 3.3-4. Emissions Reductions Associated with B-401 Furnace Shutdown

Source	Estimated Net Emissions (tons/yr)					
	NOx	**SO_2**	**PM_{10}**	**POC**	**CO**	**CO_2**
U240 B-401 Shutdown[1]	51.9	0.780	8.3	6.0	0.41	131,029

[1] Emission reductions shown here represent a three year average of operation during the time period of 3/1/09 through 2/28/12, consistent with BAAQMD's engineering evaluation of Permit application #22904. NOx emission reductions are not "RACT-adjusted".

In order to evaluate daily net emissions from the project, the timing and duration of the source activities was considered. The ship emissions would be spread out over 23 events (calls) per year, each of which will last approximately 37 hours. The ships operate in various modes. At the pilot station, the ships are in movement, which is called "cruise" mode. In the Bay, they slow down and are in "slow cruise" mode. At the dock, they spend some time maneuvering. During the cruise, slow cruise, and maneuvering modes, they are accompanied by tugboats. When the ships are in place at the dock, the tug boats leave and the main ship engines are turned off. During the 30 hours that the ship unloads the cargo, the ship uses auxiliary engines instead of the main engines. This mode is called "hoteling." Ships use the auxiliary engine or sometimes an onboard boiler for pumping the crude oil onshore. Emissions for ships are detailed in Appendix C. Regarding maximum daily emissions, the worst-case daily emissions occur when a ship arrives, is docked and unloads crude oil using its auxiliary engine.

The crude storage tanks would have breathing losses every day and working losses in the days that liquids are added or taken from the tanks. Daily tank emissions were not considered as part of the maximum daily emission profile for hydrocarbons. The tank calculations, included in Appendix C, show that the increase in tank emissions is due to withdrawal losses, which are assumed to take place on different days than the days on which the tanks are filled and the maximum emissions occur.

The emission reductions from the B-401 furnace shutdown would be assumed to occur at a consistent level, over 330 days per year (the B-401 furnace was shut down for an average of 35 days over the past year). Table 3.3-5 compares the maximum daily emissions from the ships to the more consistent emission reductions from the B-401 furnace shutdown.

Table 3.3-5 Estimated Daily Project Pollutant Emissions

Source	Estimated Net Emissions (lb/day)					
	NOx	SO_2	PM_{10}	POC	CO	CO_2
Pre-Project Daily Ship Emissions[1]	1480	37	47	48	120	62,859
Post-Project Daily Ship Emissions[1]	1480	37	47	48	120	62,859
Project Impact on Maximum Daily Ship Emissions	0	0	0	0	0	0
U240 B-401 Shutdown[2]	-303[3]	-5	-49	-36	-2	-794,115

[1]Both pre- and post-project emission estimates are based upon the presence of one ship at the marine terminal.
[2]Basis of 330 operating days per year
[3]Based on actual, not RACT-adjusted emissions.

The emissions calculated above characterize daily conditions that are experienced on days when ships are present at the marine terminal, which is a condition of the existing marine terminal operations. It is important to recognize that the project would not cause an increase in daily (and shorter-term hourly) maximum emissions from ships, since both pre- and post-project situations would involve emissions from a single ship at the marine terminal. On these days, the project's emissions would be consistent with pre-project emissions, thus there is no increase in daily emission impacts above existing emission levels.

Thus, emissions from ship activities are a part of the current background emission concentrations measured in the vicinity of the Rodeo Refinery and the air basin. Existing ship traffic is representative of the impact that these ships would have on a daily basis to the ambient conditions as compared to air quality standards. Since there is no increase in emissions on a daily basis and annual emissions are reduced by the B-401 shutdown, the project is not expected to cause an increase in ambient emission concentrations or violate air quality standards.

d. Less Than Significant Impact

Tables 3.3-2 and 3.3-3 include estimates of diesel particulate matter (PM_{10}) from the additional ships, and POC from storage tanks that includes constituents considered toxic air contaminants. A Health Risk Screening Analysis was performed by BAAQMD as part of the CEQA review. (Ship emissions are not subject to BAAQMD Regulation 2, Rule 5, New Source Review for Toxic Air Contaminants.) Note that the reduction in

combustion emissions from the shutdown of the B-401 furnace, and resulting reduction of toxic air contaminants, was not included in the health risk screening analysis. The estimated health risks for this Project are a cancer risk of 7.2 in a million to the maximally exposed resident and a cancer risk of 1.5 in a million to the maximally exposed worker. The non-cancer Hazard Quotient is 0.003 for the maximally exposed resident and 0.001 for the maximally exposed worker. These values are below the Health Risk Screening criteria of significance (10 in one million cancer risk, and Hazard Quotient of 1.0) as defined in BAAQMD's guidelines, and are based upon 1.1 tons per year of diesel particulate emissions from the increased marine vessel activity. As shown in Table 3.3-3, diesel particulate (or PM_{10}) emissions are expected to decrease to 0.64 tons per year due to the upcoming use of low sulfur marine diesel fuel, thus the predicted cancer risk is expected to proportionally lower than the results of the Health Risk Screening analysis. The Health Risk Screening Analysis is attached in Appendix D. According to the BAAQMD 1999 CEQA Guidelines, this risk is considered to be less than significant.

Sensitive receptors are defined as facilities where sensitive receptor population groups (e.g., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. These correspond to land uses that include residences, schools, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The closest sensitive receptors include a preschool facility, the St. Patrick's Elementary School, and the Rodeo Hills Elementary School, all in the Bayo Vista residential area of Rodeo, approximately 1.5 miles south of the Marine Terminal. The estimated cancer risk from the ship diesel particulate emission at this location is 1.3 in a million.

e. Less Than Significant Impact

Additional crude oil would be off-loaded from ships under the modified Permit. However, these materials are all currently being handled on site in appreciable quantities. The nature and level of odorous emissions due to this proposed Project would not change significantly from that of current Rodeo Refinery operations. Therefore, impacts from odors are anticipated to be less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion:

The 1995 CSLC EIR analyzed the potential impacts to biological resources that could result from the construction and operation of the Unocal (now Phillips 66) Marine Terminal. Excluding potential impacts in the unlikely event of an oil spill, the 1995 EIR determined that impacts to biological resources from Marine Terminal operations would generally be less than

significant; in certain cases, mitigation measures were established to reduce impacts to less than significant. Table 3.4—1, below, summarizes these impacts.

Table 3.4-1. Biological Impacts from the Marine Terminal Project, Analyzed in the 1995 CSLC EIR

Biological Community	Potential Impacts Resulting from the Project	Significance of the Impact
Plankton	(1) Impacts from maintenance dredging	LTS
	(2) Impacts from invasive species from ballast water	LTSWM
	(3) Impacts from pollutants	LTS
Benthic (special-interest benthic species include Dungeness crab, and grass shrimp)	(1) Disturbance from ship turbulence	LTS
	(2) Impacts from maintenance dredging	LTS
	(3) Impacts from exotic species introduced from ballast water	LTS
Fishes	(1) Noise and disturbance from routine operations at the Marine Terminal	LTS
	(2) Turbidity from maintenance dredging	LTS
	(3) Impacts of pollutants from operations at the Marine Terminal	LTS
Marshes and Diked Wetlands (primarily salt marsh, brackish marsh, freshwater marsh, and diked wetlands)	(1) Impacts of Marine Terminal operations on marshes	LTS
Avifauna	(1) Disturbance from Marine Terminal operations	LTS
	(2) Discharges and small chronic leaks and spills	LTS
	(3) Impacts of tanker traffic	LTS
Marine Mammals (within SF Bay estuary, marine mammals primarily include harbor seals, California sea lions, and harbor porpoises)	(1) Impact of vessel collision with non-listed marine mammals	LTS
	(2) Impacts of disturbance of Marine Terminal operations on harbor seals and California sea lions	LTS

Biological Community	Potential Impacts Resulting from the Project	Significance of the Impact
Rare/Threatened/ Endangered Species	(1) Impacts of turbidity from maintenance dredging on special-status fish species	LTSWM
	(2) Impacts of noise and operations from Marine Terminal on nearby roosting brown pelicans	LTS
	(3) Impacts of Marine Terminal operations on California Species of Concern bird species, including double-crested cormorant, long-billed curlew, fulvous whistling duck, Barrow's goldeneye, black swift, several species of raptors, and several species of passerines	LTS
	(4) Impact of potential tanker collision with whales	LTS

Notes:
LTS = Less than Significant
LTSWM = Less than Significant with Mitigation

a. Less Than Significant Impact

Impacts to Terrestrial Species

No onshore facilities at the Rodeo Refinery would be constructed, removed, or otherwise altered for the proposed Project; thus, the proposed Project would have no impacts on terrestrial species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or U.S. Fish and Wildlife Service (USFWS) (hereafter referred to as "special-status species").

Impacts to Marine Species

The 1994 CSLC EIR identified the following five special-status fish species as having the potential to occur in San Pablo Bay offshore of the Marine Terminal:

- Delta smelt (*Hypomesus transpacificus*),
- Chinook salmon winter and spring run (*Oncorhynchus tshawytscha*),
- Coho salmon (*Oncorhynchus kisutch*),
- Tidewater goby (*Eucyclogobius newberryi*), and
- Sacramento splittail (*Pogonichthys macrolepidorus*).

Two additional special-status fish species could occur in the San Pablo Bay, which were not listed at the time of the 1995 CSLC EIR: the federally threatened green sturgeon (*Acipenser medirostris*), and the Central California coast and Central Valley steelhead (*Oncorhyncus mykiss*).

The 1995 CSLC EIR also identified several marine mammals that could occur in San Pablo Bay, offshore of the Marine Terminal, including harbor seals (*Phoca vitulina*), California sea lions (*Zalophus californianus*), and harbor porpoises (*Phocoena phocoena*). These species are not federal- or state-listed as threatened or endangered, but they are all protected under the Marine Mammal Protection Act of 1972

Invasive Species. Modifications to the BAAQMD Title V permit could result in up to 23 additional ships calling at the Rodeo Refinery Marine Terminal each year (approximately 2 ships per month). These ships could carry invasive species into the San Francisco Bay, if 1) the species were in ballast water released into the Bay, or 2) the species were attached to, or associated with, wetted portions of a vessel or its appurtenances, including, but not limited to, sea chests, propellers, anchors, and associated chains (collectively called vessel biofouling). These introduced invasive species could impair estuarine habitat, fish migration, preservation of endangered species or otherwise special-status species, fish spawning, and wildlife habitat.

Ships calling at the Marine Terminal are required to comply with the California Marine Invasive Species Act (Public Resources Code §§ 71200–21271), which requires practices to reduce the introduction of species from ballast water and from biofouling on the vessel's wetted surface areas. As noted in Section 1.5.2.2, vessels carrying crude oil to the Marine Terminal do not generally need to carry or discharge ballast water within the Bay because they are loaded with cargo. Given the small increase in marine vessels under the proposed Project (approximately 2 vessels per month) and the mandatory compliance with the above regulations, the proposed increase in vessel traffic would not be likely to appreciably increase the potential for introduction of invasive species from the vessels' hulls, particularly in light of the large amount of ship traffic within the Bay (see Section 1.5.2.3).

Phillips 66 has been active in the support and development of the ballast water regulations for California. In practice, Phillips 66 has been proactive in asking the appropriate ships' staff, prior to arrival, if they are in compliance with ballast water regulations. In cooperation with CSLC, the Rodeo Refinery's Marine Terminal started providing ballast water

exchange information several years prior to it being a regulatory requirement to better help understand ballast water management as it relates to management of invasive species.

The following mitigation measure was adopted by the State Lands Commission as part of the 1995 EIR certification process for their issuance of the Marine Terminal lease to reduce the potential of introducing invasive species from ballast water (CSLC 1995a). This measure would also be implemented under the proposed Project and would serve to reduce potential impacts that additional ship traffic might have on biological resources.

Adopted Mitigation Measure from 1995 CSLC MMRP for the Terminal:

> In order to prevent the introduction of invasive organisms to the San Francisco estuary ecosystem, all ballast water including segregated ballast water from tankers whose origin is other than the west coast of North America shall be unloaded to the [Phillips 66] wastewater handling facility. No tankers servicing the [Phillips 66] Terminal shall discharge ballast water to the Bay.

Note that this mitigation measure does not require that all ballast water be offloaded to the Rodeo Refinery's wastewater treatment facility. It does, however, prohibit vessels calling on the Marine Terminal from discharging ballast water to the Bay. Instead, any ballast water discharged must be offloaded to the refinery's wastewater treatment facility.

As noted in Section 1.5.2.2, the Rodeo Refinery does not typically receive any ballast or wastewater from vessels docked at the Marine Terminal. The facility has not accepted ballast water in more than 10 years. However, the refinery has the capability to receive wastewater from the vessels and feed it to the Refinery's wastewater treatment plant. In the unlikely event that ballast water were accepted, there are several stages in the wastewater treatment process (refer to Section 1.5.2.2 for a description of that process) during which invasive species would be removed or killed[7], which would make it highly unlikely that invasive species within it could be discharged to the Bay.

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[7] Invasive species in ballast water would likely settle out of suspension while the ballast water is held in storage tanks prior to being fed into the wastewater treatment system. Failing that, they would likely be removed during the primary treatment phase (API separator and DAF units); sediment/float from that stage is

Based on this, and assuming continued implementation of the above mitigation measure, the potential adverse effects of introduced invasive species that could result from the proposed Project's additional ship traffic is less than significant.

Antifouling Paints. In the past, tankers and other vessels, including those calling to the Rodeo Refinery's Marine Terminal, used antifouling paints with trace metals and organotins on their hulls, in order to slow the growth of organisms that attach to the hull and that can affect a vessel's performance and durability. Of the substances that could leach from the hulls of tankers servicing the Rodeo Refinery's Marine Terminal into the ocean and San Pablo Bay, the possible release of organotins, in particular tributyltin (TBT), has been the greatest concern because of the high toxicity of these compounds to aquatic organisms. As discussed in Section 3.9(f), as a result of International Maritime Organization regulations banning the use of TBT and TBT inspections conducted by Phillips 66, no ships with TBT antifouling paints would come to the Marine Terminal. Thus, there would be no impact of TBT on biological resources.

Oil Spills. The additional ship traffic to the Marine Terminal, with ships carrying crude oil, would slightly increase the potential for an oil spill in the San Francisco Bay. As discussed in Section 3.8(b) and Appendix A, a number of state and federal regulatory requirements, and safe industry practices routinely employed by the facility would substantially reduce the potential for an oil spill. No significant oil spills have occurred at the subject Terminal in the past ten years, while under operation by ConocoPhillips. Nevertheless, if an oil spill were to occur, it could have adverse impacts to special-status marine species, particularly seabirds, marine mammals, and fish species that swim near the sea surface or in the shallows of the Bay-Delta. The most recent large petroleum spill in the San Francisco Bay was the *Cosco Busan* spill in November 2007. The material spilled was the cargo vessel's fuel, not crude oil or other products from a tanker visiting any of the Bay Area's five refineries. Potential impacts to subtidal benthic habitats resulting from a crude oil spill would also be deleterious. The 1995 CSLC EIR certification process for the Marine Terminal lease adopted several mitigation measures to reduce the potential of impacts from oil spills (CSLC 1995a and b), including

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thermally treated, which would destroy any invasive species within it. If invasive species were to pass through this first treatment phase, they would likely be filtered out during the secondary treatment (PACT) or tertiary treatment (sand filters). Finally, the chlorine bleach solution added at the end of the treatment process would likely kill any remaining species in the waste stream.

measures to prevent oil spills, contain oil/reduce damage of a contained spill, prevent the oil from reaching sensitive biological resources, and cleanup and rehabilitate oiled areas, with compensation and/or restoration as a last resort in the event of damage (see Appendix A).

Given the minor increase in ship traffic that would be expected under the proposed Project (an average of two ships per month); existing local, state, and federal regulations in place to minimize the potential for oil spills and reduce oil spill impacts; the Phillips 66 Emergency Response Plan and lease conditions in place (see Appendix A for details); and the following measures adopted in the 1995 EIR for the Marine Terminal, which would be implemented in the event of an oil spill, the potential for spill-related impacts would not increase significantly under the proposed Project and the impact is considered less than significant.

Adopted Mitigation Measures from 1995 CSLC MMRP for the Terminal:

Rapid containment of a spill at the Terminal may avoid impacts to sensitive resources resulting from sinking oil either in the water column or close to the bottom. For this reason, oil should be removed from the water as soon as possible, and sinkants should not be used. [Phillips 66] shall provide initial response to spills from vessels calling at the Terminal, while they are at or near the Terminal.
If the spill from the Terminal or a tanker reaches the double-crested cormorant colonies near the Richmond-San Rafael Bridge, there would be immediate danger to the birds that forage in the waters of the Bay near their colony. These colonies shall receive high priority for protection from oiling using booms and curtains from about April to June when nesting occurs. Attempts should be made to scare birds from the area of the spill. [The MMRP includes an expanded discussion of methods for scaring birds.]
Areas that shall have the highest priority for protection in the event of a [Phillips 66] spill are the tidal marshes of San Pablo Bay and Carquinez Strait. Sensitive tidal marshes along the northern shore of San Pablo Bay are at less risk from a [Phillips 66] spill, but because they are within the same bay as the Terminal still require protection. [The MMRP identifies these specific tidal marsh areas and required protection techniques.] Eelgrass beds should have the highest priority for protection, after the protection of major salt marshes. [The MMRP identifies important eelgrass beds in the Terminal vicinity and applicable protection techniques.]

In many oil spills, cleanup has done at least as much damage as the spill itself. Extreme sensitivity shall be used in any sensitive areas. In many cases, oiled areas are best left alone to recover naturally. The decision to clean up a damaged area will be made with input from CDFG and USFWS biologists. Access route(s) for cleanup personnel shall be established and marked and shall attempt to avoid as much as possible the most sensitive areas. Destructive cleanup methods will be a last resort. Eelgrass beds shall not be cleaned in most cases but be allowed to cleanse naturally. Procedures shall be made specific for the rehabilitation of oiled birds.
All cleanup methods are to be approved by the CDFG and USFWS prior to implementation. [This MMRP measure references destructive cleanup techniques in the Unocal Oil Spill Contingency/Response Plan and specifies the use of less destructive measures.]
If damage occurs [due to an oil spill], the last resort is restoration and compensation. Documentation of damage is critical to this effort. To ensure that the loss of resources is documented as soon as possible after a large spill, the sampling methods and sampling design shall be determined beforehand, and the plan shall include provisions for getting resources onsite as soon as possible so that post-spill studies can begin immediately.

b. No Impact

Under the proposed Project, no facilities would be constructed, demolished, or otherwise modified on shore, and no riparian habitat or other sensitive habitat would be impacted.

c. No Impact

No wetlands would be impacted by the implementation of the proposed Project.

d. Less Than Significant Impact

Onshore facilities at the Rodeo Refinery would not change as a result of the proposed Project, so there would be no impact on any potentially present wildlife movement corridors onshore.

Fish and other marine life reside and migrate through San Pablo Bay, which would be traversed by ships related to the proposed Project. Many ships currently travel through the San Pablo Bay, including ships and barges that call at the Phillips 66 Marine Terminal (132 vessels reported for 2011). The additional ship traffic associated with the proposed Project would travel along the same routes currently used by ships transiting to the Marine Terminal. Some studies have shown ship noise to adversely affect fish behavior, while other studies have shown only slight avoidance behavior by fishes in response to ship noise (CSLC 1995a). However because ship noise represents only a temporary disturbance, and the increase in ship traffic resulting from the proposed Project (i.e., approximately two vessels per month) would be relatively small compared to the background noise of ship traffic that currently occurs in San Francisco Bay and along the transit routes, noise and disturbance to fish from ship traffic to the Marine Terminal would be less than significant.

Ship traffic could also impact whale movement corridors. According to the 1995 EIR, some observations have been made of bowhead whales changing direction in response to approaching ships, and other whales may also actively avoid ships, thereby altering their movement corridor. However due to the small number of whales that enter the SF Bay estuary, and the low number of ships that would be introduced to the SF Bay estuary as a result of this Project compared to the existing ship traffic that already occurs here, impacts to whale movement corridors would be less than significant.

e. No Impact

The proposed Project would not involve any new onshore activities, and as such, would not result in any clearing of vegetation or removal of any trees. Therefore, the proposed Project would not conflict with any Contra Costa County ordinances to protect native oaks, or other local or state policies that protect vegetation.

f. No Impact

The Rodeo Refinery is not part of a Habitat Conservation Plan area; thus, the proposed Project would not conflict with any such plans.

3.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historic resource as defined in § 15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☐	☐	☒
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Discussion:

a – b. No Impact

Site activities under the proposed Project would be consistent with the current uses of the site. The proposed Project would have no impact on historical resources or archaeological resources, as defined in Section 15064.5 of the Guidelines for Implementation of the California Environmental Quality Act (California Code of Regulations, Title 14, Division 6, Chapter 3). The Marine Terminal has been a developed part of the Rodeo Refinery for decades. There are no historic structures or archaeological resources known to occur at the Rodeo Refinery, and no ground-disturbance or alteration of existing structures would occur as a result of the proposed Project. Therefore, the proposed Project activities would not affect onshore cultural resources. Furthermore, the additional ship traffic associated with the proposed Project would travel along the same routes currently used by ships transiting to and from the Marine Terminal, and would not have any new impacts to submerged resources, if any, in the proposed Project area.

c. No Impact

No paleontological resources or unique geologic features are known to exist at the Rodeo Refinery. Regardless, an increase in ship traffic to the Marine Terminal would not impact onshore paleontological resources or geological features. Furthermore, the additional ship traffic associated

with the proposed Project would travel along the same routes currently used by ships transiting to and from the Marine Terminal, and would not have any new impacts to submerged resources, if any, in the proposed Project area.

d. No Impact

The proposed Project site has been developed as a refinery for many decades and there are no records of human remains being encountered during past construction activities (Contra Costa County, 2006). The proposed Project does not involve ground disturbance that could impact human remains potentially buried at the Rodeo Refinery.

3.6 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: • Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? • Strong seismic ground shaking? • Seismic–related ground failure, including liquefaction? • Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (UBC) (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion:

a. No Impact

Site activities under the proposed Project would be consistent with the current uses of the site. The proposed Project is located in the San Francisco Bay Area, an area of known seismic activity (seismic Zone 4). The most significant potential geologic hazard at the proposed Project site

is estimated to be seismic shaking from future earthquakes generated by active or potentially active faults in the region. The Rodeo Refinery is not within a designated Alquist-Priolo Earthquake Fault Zone, nor are there any faults at the site that are considered active by the California Division of Mines and Geology. Mitigation measures were adopted as part of the 1995 CSLC EIR process to reduce the potential for significant impacts due to seismic motion at the Marine Terminal, and are incorporated into the terms of the lease. Continued terminal operations associated with the proposed Project would also be required to comply with these Lease terms. The additional ship traffic resulting from the proposed Project would not expose people or structures to any substantial adverse effects, including the risk of loss, injury, or death involving the rupture of an earthquake fault, seismic ground-shaking, or seismic-related ground failure.

In fact, earthquake-related chemical releases are more likely associated with pipelines than ship-borne offloads, which could be readily terminated in the event of an earthquake. By reducing the volume of crude oil transported to the facility via pipelines, the proposed Project may represent a reduction in potential oils spills and associated impacts due to pipeline ruptures from earthquakes.

b. No Impact

The proposed Project would not involve ground disturbance. Therefore, there would be no impact on soil erosion or topsoil loss.

c. No Impact

The proposed Project would not require construction activities on or off shore, and Project-related activities (i.e., an increase in ship traffic to the Marine Terminal) would not result in landslides, lateral spreading, subsistence, or collapse.

d. No Impact

The proposed Project would not require construction activities on or off shore, and Project-related activities would not be located on expansive soil. Therefore, the Project would not result in substantial risks to life or property associated with construction on expansive soil.

e. No Impact

The Project would not involve use of septic tanks or alternative wastewater systems that would release directly to soils.

3.7 GREENHOUSE GAS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

a. Less Than Significant

Greenhouse gas emissions associated with the project would include combustion emissions (CO_2) from increased vessel activity as well as reduced combustion emissions from the recent shutdown of the U240 B-401 heater. As shown Table 3.3-2 (Section 3.3), there are no net projected greenhouse gas emission increases from the proposed Project since the reduction in combustion emissions from shutting down the heater is greater than the increase from marine vessel activity. Calculations are described in Section 3.3 and included in Appendix C.

b. Less Than Significant

The proposed project would not conflict with any plan or policy adopted for the purpose of reducing greenhouse gas (GHG) emissions. There are no net GHG emission increases from the Project.

3.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	**Potentially Significant Impact**	**Less Than Significant With Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion:

a. Less Than Significant Impact

Activities under the proposed Project would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal. The primary change would involve an increase in the marine traffic transporting crude oil into the Rodeo Refinery, and an associated decrease in the crude oil that would come to the Rodeo Refinery via pipeline. The proposed Project would not require increases or modifications to currently permitted throughput or emissions limits at the refinery as a whole or at any downstream process units. The proposed Project would not change or otherwise affect the types of crude oil that the Rodeo Refinery can process currently.

The increase in marine vessel traffic would not pose a significant hazard to the public or environment because that increase relative to the overall traffic in the San Francisco Bay (i.e., more than 35,000 ships per year based on 2010 counts, as noted in Section 1.5.2.3) would be small (only 23 additional ships per year). Furthermore, as discussed in Section 1.5.2.3, vessel traffic in the San Francisco bay is highly regulated, with established transit lanes and speed limits, which reduces the potential for collisions during which hazardous materials could be released. Therefore, this impact would be less than significant.

b. Less Than Significant Impact

Activities under the proposed Project would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal. Relevant upset conditions associated with the Marine Terminal would be oil spills and fires/explosions. Regulatory requirements and other mitigation measures designed to reduce the potential of oil spills and fires/explosions from occurring are presented in Appendix A. As also discussed in Appendix A, continuous adherence by Phillips 66 to those measures and requirements appears to have been successful, in that no significant oil spills have occurred recently at the Terminal.

The increase in marine vessel traffic would not significantly increase the risk of oil spills because of: (1) the small incremental increase in vessel traffic relative to overall traffic in the San Francisco Bay; (2) local, state, and federal regulations that are in place, which are designed to reduce the potential for oil spills; and (3) operational practices employed by Phillips 66 above and beyond the regulatory requirements, several of which are

requirements under the current Lease conditions. Applicable regulations and Phillips 66 measures to avoid or reduce the potential for, or to minimize oil spills are described in Appendix A.

The proposed Project would not significantly increase the risk of fire and explosion because: (1) the Project would only result in a small increase in marine vessel traffic; (2) there are several regulatory requirements in place that are designed to reduce the potential for fires or explosions at marine terminals; and (3) Phillips 66 has several operational practices in place, several of which are requirements under the current Lease conditions, that would further reduce fire risk (see Appendix A for details on fire reduction measures at the Rodeo Refinery). In addition, any fires or flying debris from a fire at the Marine Terminal would not be expected to cause a hazard to the public outside of the facility, because there are no public facilities or public access within 1,500 feet of the Marine Terminal, and the short response times from the Rodeo Refinery fire suppression unit to the Marine Terminal would minimize the potential severity of the fire. Considering the standard industry measures already implemented at the Rodeo Refinery to reduce the risk of fire, and the small increase in ship traffic and Marine Terminal use resulting from the proposed Project, this impact is considered less than significant.

c. No Impact

Activities under the proposed Project would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal. Under the proposed Project, the amount of ship traffic carrying crude oil, which is not acutely hazardous, would increase slightly. The nearest school is the Little World Montessori Academy, which is over 1 mile south of the Marine Terminal. Therefore, there would be no impact from the handling of hazardous materials within one quarter mile of an existing school.

d. Less Than Significant Impact

The Rodeo Refinery is on the Government Code § 65962.5 Resources Conservation and Recovery Information System (RCRIS) database. The Rodeo Refinery is listed due to its potential to generate large quantities of hazardous waste. However, the changes in crude oil transport to the facility as a result of the Title V permit modifications under the proposed Project would not increase the amount of hazardous material stored at the Rodeo Refinery, nor would the proposed Project significantly increase the potential hazards to the public or the environment due to hazardous waste.

Wastes generated are stored and disposed of properly according to state and federal rules and regulations. Hazardous wastes are manifested and shipped to an approved permitted facility. With management of its hazardous materials and wastes conducted in compliance with applicable laws and regulations, the Phillips 66 Rodeo Refinery's inclusion on the RCRIS database does not indicate that a significant hazard to the public or the environment would be created under the proposed Project.

e., f. No Impact

The proposed Project site is not located within an airport land use plan, nor is it within 2 miles of a public or private airport. The proposed Project would not result in an airport- or aircraft-related safety hazard for people within the proposed Project area and, therefore, would have no impact.

g. No Impact

Activities under the modified Permit would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal and which are currently addressed by the Rodeo Refinery Emergency Response Plan. As such, the proposed Project would not interfere with implementation of the Emergency Response Plan. Also, the Rodeo Refinery's procedures for the Management of Change would minimize the likelihood of introducing new hazards to plant operations. Therefore, there would be no impact.

h. No Impact

To minimize potential fires, the Rodeo Refinery has its own fire protection unit and measures, including full-time, on-site personnel that are trained in fighting petroleum fires and fires at the Marine Terminal, and buffers between process areas and fence lines. The Rodeo Refinery is also served by the Rodeo-Hercules Fire Department. The probability of a wildland fire would not increase under the proposed Project, which involves activities at the Marine Terminal, located over water.

3.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Discussion:

a. Less Than Significant Impact

While docked at the Marine Terminal, ships currently do not release their wastewater to the San Pablo Bay. The Rodeo Refinery does not typically receive any ballast or wastewater from vessels docked at the Marine Terminal. However, the Rodeo Refinery has the capability to receive wastewater from vessels and feed it into its wastewater treatment plant. The Rodeo Refinery wastewater treatment process is summarized in Section 1.5.2.2.

The wastewater treatment plant currently receives about 3.0 MGD, and has the capacity to handle 7 to 8 MGD with a short term flow maximum of 10 MGD (Contra Costa County, 2006). Wastewater discharges associated with the proposed Project would not result in wastewater quantities that exceed the wastewater treatment plant's 7 to 8 MGD capacity. Therefore, this impact is considered less than significant.

Wastewater discharges and storm water runoff from Rodeo Refinery to San Pablo Bay are regulated by the facility's NPDES permit, under the San Francisco RWQCB. This RWQCB NPDES Order addresses the discharge of process wastewater from the Rodeo Refinery's wastewater treatment plant, once-through non-contact saltwater, and storm water discharges. The current NPDES permit (effective July 2011 through June 2016) includes numeric and toxicity characteristic (acute and chronic) limitations on effluent constituents, which is tested during routine water quality monitoring on outflows from three outfalls (E-002, E-003, and E-004) into San Pablo Bay. Because activities under the proposed Project would be the same activities that are currently ongoing at the facility, pollutant concentrations in the water that is treated at the Rodeo Refinery and then released into the San Pablo Bay would be similar to existing conditions, and the changes in wastewater associated with the proposed Project would result in a less than significant impact.

b. No Impact

EBMUD supplies water to the Rodeo Refinery and the refinery does not depend upon groundwater supply, nor would the proposed Project involve or impact groundwater. There are no groundwater basins within 10 miles of the Rodeo Refinery. Therefore, no impact on groundwater resources would occur as a result of the proposed Project.

c. – e. No Impact

The proposed Project would not involve grading activities or changes in topography at the Rodeo Refinery. There would be no changes in storm water runoff or drainage patterns. Therefore, there would be no impact to drainage patterns or storm water drainage systems as result of the proposed Project.

f. Less Than Significant Impact

Antifouling Paints. In the past, tankers and other vessels, including those calling to the Rodeo Refinery's Marine Terminal, used antifouling paints with trace metals and organotins on their hulls, in order to slow the growth of organisms that attach to the hull and that can affect a vessel's performance and durability. Of the substances that could leach from the hulls of tankers servicing the Rodeo Refinery's Marine Terminal into the ocean and San Pablo Bay, the possible release of organotins has been the greatest concern because of the high toxicity of these compounds to aquatic organisms. Specifically, the organotin tributyltin (TBT) has been shown to cause shell deformation in oysters; sex changes (imposex) in whelks; and immune response, neurotoxic effects, and genetic effects in other marine species.[8] A concentration of 6 nanograms/liter (ng/L) of TBT is considered the upper limit for protection of marine life.

The following mitigation measure was adopted in the 1995 EIR for the Rodeo Refinery's Marine Terminal (CSLC 1995a) to reduce potential TBT impacts, before the International Maritime Organization (IMO) ban was entered into force in 2008. This 1995 EIR mitigation measure would ensure that additional ships calling at the Marine Terminal under the proposed Project would not have TBT antifouling paints, which could be released into the marine environment and harm marine life.

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8 International Maritime Organization. 2002. Focus on IMO – Anti-fouling systems.

Adopted Mitigation Measure from 1995 CSLC MMRP for the Terminal:

> The use of TBT on all [Phillips 66] tankers and other tankers that regularly service the Terminal shall be prohibited. Prohibition on the use of TBT will prevent any inputs of this substance into the water from operations at the [Phillips 66] Terminal.

Since the 1995 EIR was certified, recognition of organotin toxicity (particularly TBT compounds) has led to limits, and then later bans, of their use. In October 2001 the IMO[9] adopted a new International Convention on the Control of Harmful Anti-fouling Systems on Ships, which prohibits the use of harmful organotins in anti-fouling paints used on ships, and establishes a mechanism to prevent the potential future use of other harmful substances in anti-fouling systems. This treaty was ratified by the required quorum of countries, and entered into force on September 17, 2008.

Due to regulations like the above-described IMO ban on the use of TBT in antifouling paints, the vessels that Phillips 66 charters are scrutinized from date of construction to be within "class" standards (Lloyds of London, American Bureau of Shipping). Each vessel is inspected annually by "Flag State" inspectors (U.S. Coast Guard), and 3rd party inspectors perform thorough onboard inspections of vessels and all records of compliance with the International Maritime Organization. The vessels' documents are reviewed as part of the Phillip 66 Marine Assurance program. When the vessel finally arrives at the Rodeo Marine Terminal, Phillips 66 uses Marine Advisors to go on board to inspect for compliance with industry standards and terminal requirements.

As a result of the IMO regulations and the above inspections, no ships with TBT antifouling paints would come to the Marine Terminal. With current international regulations in place that ban the use of TBT in antifouling paints, the various inspections that ships calling at the Marine Terminal would undergo, and adherence to the EIR measure above, there would be no impact of TBT on water quality associated with the proposed Project.

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9 The International Maritime Organization is the United Nations Agency concerned with the safety and security of shipping and the prevention of marine pollution by ships.

Chemical Release. As previously discussed in Section 3.8 Hazards and Hazardous Materials and Appendix A, the additional ship traffic due to the proposed Project would slightly increase the potential for a chemical release (such as an oil spill) either at the Rodeo Refinery's Marine Terminal or during transit. An oil spill or fire/explosion would adversely affect the water quality in San Pablo Bay. As noted in Section 1.5.2.3, vessel traffic in the San Francisco bay is highly regulated, including established traffic lanes and speed limits, which serves to reduce the potential for vessel collisions and associated chemical releases. In addition, several agencies have instituted requirements to reduce the potential for upset conditions at marine terminals. Furthermore, under the terms of the Lease, Phillips 66 is required to implement specific requirements to reduce the potential and severity of such releases. Among these, Phillips 66 operates under an approved Emergency Response Plan (Phillips 66 2011) to reduce any potential impacts of an oil spill. As discussed in Section 3.8, the small incremental increase in marine vessel traffic associated with the proposed Project would not appreciably increase the potential of a chemical release and severity of the environmental impacts associated with the ongoing Marine Terminal operations, and therefore this would be a less than significant impact.

Chemical dispersants[10] that are put in the water in response to oil spills have the potential to cause adverse effects to water quality. However, the following mitigation measure which was adopted as part of the 1995 EIR process for the Marine Terminal (CSLC 1995a), would reduce this potential impact to a less than significant level.

Adopted Mitigation Measure from 1995 CSLC MMRP for the Terminal:

In the event of a spill, dispersants should be used in some situations per [Phillip 66's Emergency Response Plan], and only with an approval from the USCG and CDFG.

[10] A chemical dispersant is an agent which reduces the surface tension of the oil and water and allows them to mix more readily. In the presence of sufficient mixing energy supplied by waves, wind, or man-made turbulence, the oil can remain suspended in the water column resisting resurfacing and recoalescing. Dispersants may be effective where environmental or logistical considerations do not allow the deployment of cleanup equipment and personnel, and may reduce the overall level of effort and manpower requirement and personnel necessary for responding to major spills.

g., h. No Impact

The proposed Project would not involve placing housing or structures within a 100-year floodplain.

i. Less Than Significant Impact

Activities under the proposed Project would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal, but would result in an increase in marine vessel traffic at the Rodeo Refinery's Marine Terminal. Given the short period of time that those vessels would be berthed at the terminal (24 to 36 hours) and the small increase in number of ships (approximately two additional ships per month), the change in operations under the proposed Project would result in a less than significant impact due to flooding, including flooding that results from the failure of a levee or dam.

j. Less Than Significant Impact

Activities under the modified Permit would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal, but would result in an increase in marine vessel traffic. Given the short period of time that those vessels would be berthed at the terminal (24 to 36 hours) and the small increase in number of ships (approximately two additional ships per month), the change in operations under the proposed Project would result in a less than significant impact due to inundation from a seiche, tsunami, or mudflow, should such an event occur.

3.10 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Discussion:

a. No Impact

The Rodeo Refinery has been located at the current site for many decades. Activities under the proposed Project would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal, but would result in an increase in marine vessel traffic. Given the nature of the proposed Project, it would have no impact on dividing communities of Rodeo or other nearby residential areas.

b. No Impact

Applicable land use plans in the proposed Project area include the 2005 Contra Costa County General Plan, and the San Francisco Bay Conservation and Development Commission's (BCDC's) San Francisco Bay Plan (Bay Plan). The Bay Plan was completed and adopted by the BCDC in 1968, and has been updated periodically through 2011. It is a comprehensive plan for the maintenance and protection of the San Francisco Bay and development of its shoreline, pursuant to the requirements of the McAteer-Petris Act. The Bay Plan includes policies on the use of the Bay, ranging from ports and public access, water quality, water-related industry, transportation, appearance, design, and scenic views, other uses of the Bay and shoreline, and navigational safety and oil spill prevention.

Activities under the proposed Project would be the same activities that are currently being conducted at the Phillips 66 Marine Terminal, which do not conflict with the Contra Costa County General Plan or the Bay Plan. The additional ship traffic that the Marine Terminal would receive as a result of this proposed Project would similarly not result in any conflicts with the General Plan or the Bay Plan.

In addition to the above plans, the Regional Water Quality Control Board's (RWQCB) San Francisco Region Basin Plan (Basin Plan) has jurisdiction over any wastewater discharge from the Rodeo Refinery. The RWQCB documents approaches to implementing state and federal policies in the context of actual water quality conditions, regulates wastewater and pollutant discharges into the San Pablo Bay through NPDES permits, and implements monitoring programs of pollutant effects. Water quality objectives are achieved primarily through establishing and enforcing Waste Discharge Requirements for each wastewater discharger, including the Phillips 66 Rodeo Refinery.

The Rodeo Refinery currently complies with its existing NPDES permit, and thus is in compliance with the RWQCB waste discharge requirements and the Rules and Regulations of the RWQCB. The proposed Project would result in approximately 23 additional ships per year to the Marine Terminal, and these ships are not expected to discharge wastewater to the Rodeo Refinery or into the San Pablo Bay. Therefore, the proposed Project would not result in any conflicts with the Basin Plan's discharge requirements.

c. No Impact

As set forth in the analysis of Biological Resources, the Rodeo Refinery is not part of a Habitat Conservation Plan or a Natural Community Plan, and the additional ship traffic to the Marine Terminal as a result of the proposed Project would not conflict with any such plans.

3.11 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion:

a. No Impact

The throughput of the Rodeo Refinery and associated use of mineral resources would be unchanged under the proposed Project. Therefore, the proposed Project would not result in any loss of availability of natural gas or any other mineral resources of value to the region and residents of the state.

b. No Impact

As noted in item (a) above, there would be no net change in the use of mineral resources under the proposed Project. Therefore, the proposed Project would not result in the loss of availability of a locally important mineral resource recovery site.

3.12 NOISE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to, or generation of, excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion:

a., c., and d. Less Than Significant Impact

The Rodeo Refinery's Marine Terminal currently receives approximately 44 to 79 ships per year; approximately 24 of the ships carry crude oil. The existing ship traffic to the Marine Terminal produces only a nominal amount of ambient noise, primarily resulting from ship engine noise and noise from the ships' blowers. This noise is not known to exceed local noise standards. Other noise sources at the Rodeo Refinery include existing refinery operations, vehicular traffic on Interstate 80, and rail traffic on the Southern Pacific Railway tracks.

The Rodeo Refinery is in a highly industrialized area, and no noise-sensitive receptors immediately adjoin the developed part of the facility. The nearest residential community is the Bayo Vista residential community, more than one mile southeast of the Rodeo Refinery's Marine Terminal. Ambient noise monitoring and impact analyses summarized in the 2006 EIR (Contra Costa County 2006) included measurements of noise levels at two locations in the Bayo Vista residential community, of 61 dBA (A-weighted decibels) CNEL[11] and 65 dBA CNEL. For multi-family residential land uses such as the Bayo Vista, the Contra Costa County General Plan's normally acceptable noise level is in the range of 50 to 65 dBA DNL (day/night average sound level), and the conditionally acceptable range is 60 to 70 dBA DNL (Contra Costa County 2005). Therefore, the current noise levels are within the conditionally acceptable range of for multi-family residential uses in Contra Costa County.

The additional vessels that would call on the Marine Terminal under the proposed Project are of the same types that currently call on the facility, and noise levels would be comparable to current conditions. Given the small increase in vessel traffic under the proposed Project, the short duration of vessel presence at the Terminal, and the large distance (more than 1 mile) that the Marine Terminal is from the nearest Bayo Vista residential community, the proposed Project would not be expected to significantly impact noise levels in the nearby residential community, and noise levels would remain within the conditionally acceptable range for residential uses according to the Contra Costa County General Plan. The additional crude oil-bearing ships at the Rodeo Refinery's Marine Terminal would provide a small, periodic increase in noise levels that would be consistent with the periodic ship traffic noise levels that the Marine Terminal currently receives. Therefore, the proposed Project would have less than significant impacts on noise levels.

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[11] CNEL is the Community Noise Equivalent Level. It takes the day/night average sound level, the energy average of the A-weighted sound levels occurring during a 24-hour period that accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises, and an additional 5-dBA "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m.

b. No Impact

The proposed Project would not involve any construction, ground disturbance, or other source of substantial ground-borne noise or vibration.

e., f. No Impact

The proposed Project site is not located within an airport land use plan, nor is it within 2 miles of a public or private airport; thus, there would be no impact.

3.13 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a. No Impact

The proposed Project would not involve construction at the Rodeo Refinery or in the vicinity, and would be of a nature that would not result in the development of new housing or infrastructure to support population growth. No increase in labor would be needed to address the anticipated increase in crude oil ships to the Marine Terminal. Therefore, the proposed Project would not induce substantial population growth.

b. No Impact

The proposed Project would not involve alteration or destruction of existing housing and would be of a nature that would not result in displacement of housing or necessitate the construction of replacement housing.

c. No Impact

The proposed Project would not involve alteration or destruction of existing housing, and would be of a nature that would not result in the displacement of any people.

3.14 PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services: • Fire protection? • Police protection? • Schools? • Parks? • Other public facilities?	☐	☐	☐	☒

Discussion:

a. No Impact

The proposed Project would not trigger a significantly greater need for public services than current operations require. The Rodeo Refinery has its own fire protection unit, which would provide initial response if a fire were to occur on site. Additional fire protection would not be necessary given the small increase in ship traffic to the Marine Terminal. Police service is provided by the Contra Costa County Sheriff's Department, and there would be no increase in police protection necessary as a result in the small increase in ship traffic to the Marine Terminal. Unloading of the additional ships that would come to the Marine Terminal as a result of the proposed Project would not necessitate an increase to the current work force. Therefore, there would be no population change resulting from the Title V permit modifications under the proposed Project, and there would be no change in school or recreation facility demand. Thus, the proposed Project would have no impact on fire protection, police protection, school, or park services.

The increase in vessel traffic associated with the proposed Project would trigger a greater use of Coast Guard and Bar Pilot services than under current conditions. However, as discussed in Section 1.5.2.3, the increase

in vessel traffic under the proposed Project is minor compared to the large amount of vessel traffic within the San Francisco bay, and can be accommodated by the existing Coast guard and Bar Pilot programs.

3.15 RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a., b. No Impact

The Marine Terminal currently receives up to 79 ships per year, and the proposed Project would result in the additional calling of up to 23 ships per year. These ships would be at the Marine Terminal for a short time period (i.e., generally 24 to 36 hours). The proposed Project would not increase the local population or increase the use of nearby parks or recreational facilities, or require construction of such facilities. Therefore, the proposed Project would not result in deterioration of nearby parks or result in additional demand for recreational facilities that might have adverse physical effects on the environment.

As provided in the CEQA guidance, the issues associated with this resource area are focused on land based recreation. It is possible that increasing the number of vessels in transit to the Marine Terminal could increase interference with sport or recreational fishing vessels. However, as previously noted, vessel transit within San Francisco bay is highly regulated, with established traffic patterns. Traffic lanes are known to vessels that transit the Bay, and it is expected that recreational vessels would not be actively recreating within those lanes during periods when other vessels occupy those lanes. Furthermore, given the short duration of the vessel transits to the Terminal (2 hours from the Pilot's station) and the small increase in vessels (approximately 2 per month) relative to overall vessel traffic in the area, the impacts would be less than significant in this regard.

3.16 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	☒
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Discussion:

As provided in the CEQA guidance, the issues associated with this resource area are focused on land-based traffic/transportation. As presented in Section 1.5.2.3, the projected vessel traffic increase represents a minor portion of the vessel traffic in the Marine Terminal vicinity. As also discussed in Section 1.5.2.3, vessel traffic in the San Francisco bay is highly regulated, with established transit lanes and speed limits, which reduces the potential for collisions or impediments to transit patterns of other seafaring vessels. Therefore, impacts to offshore traffic/transportation from the proposed Project would be less than significant.

a., b. No Impact

The proposed Project would not involve construction, so there would be no construction-related transportation impacts. Furthermore, the additional ship traffic associated with the proposed Project would not appreciably affect the number of employees or trigger a significant increase in vehicle traffic. Therefore, the proposed Project would not increase traffic volumes and congestion such that level of service at roads or intersections would be adversely affected.

c. No Impact

The proposed Project would not involve air traffic or construction that could impact air traffic. Therefore, the proposed Project would not result in a safety risk associated with air traffic.

d. – g. No Impact

The Project would not involve construction, so there would be no construction-related transportation impacts. Furthermore, the additional ship traffic associated with the proposed Project would not appreciably affect the number of employees or trigger a significant increase in vehicle traffic or adversely affect parking capacity. No roadway construction or modification of access to the Rodeo Refinery would occur; thus, there would be no change in roadway hazards. The proposed Project would have no impact on emergency access to the Rodeo Refinery, and would not conflict with policies, plans, or programs supporting alternative transportation.

3.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statues and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a and b. Less Than Significant Impact

While docked at the Marine Terminal, ships do not release their wastewater to the San Pablo Bay. As noted in Sections 1.5.2.2 and 3.9(a), vessels transporting oil to the marine Terminal do not typically need to discharge ballast water when transiting the Bay, and the Rodeo Refinery does not typically receive any ballast or wastewater from vessels docked at the Marine Terminal. Phillips 66 has not accepted ballast water for over 10 years. However, the Rodeo Refinery does have the capability to receive

wastewater from vessels docking at the Marine Terminal and feed it into the process water influent to its wastewater treatment plant. The Rodeo Refinery wastewater treatment process is summarized in Section 1.5.2.2.

As noted in Section 1.5.2.2, the Rodeo Refinery wastewater treatment plant currently receives about 3.0 MGD, and has the capacity to handle 7 to 8 MGD with a short term flow maximum of 10 MGD. A given ship's wastewater discharge would be well within this capacity. The increase of up to 23 additional ships per year docked at the Rodeo Refinery Marine Terminal may result in a small increase in wastewater that is treated at the Rodeo Refinery's wastewater treatment plant. This small increase in wastewater would be similar in nature to the wastewater that the treatment plant currently receives, would be within the design capacity of the water treatment system (see Section 3.9(a)), and would be permitted under the Rodeo Refinery's NPDES permit. Therefore, the proposed Project would not result in changes that would be out of compliance with the Rodeo Refinery's NPDES permit.

In addition, the potential wastewater from additional ships that would dock at the Marine Terminal under the proposed Project would not be of such a quantity that the plant's capacity would be exceeded or expansion of the existing wastewater plant would be required. Therefore, this impact is less than significant.

c. No Impact

The proposed Project would not involve construction or other activities that could trigger requirements for new storm drain facilities or expansion of existing storm water facilities.

d. Less Than Significant Impact

Vessels rarely require fresh water when docked at the Rodeo Refinery Marine Terminal. Thus, fresh water consumption from EBMUD would not increase significantly as a result of the minor increase in ship traffic to the Marine Terminal that would occur under the proposed Project. Therefore, no modifications to the EBMUD water distribution system would be required, and this impact would be less than significant.

e. No Impact

The wastewater treatment plant at the Rodeo Refinery has adequate capacity to treat the current levels of wastewater discharges. As

previously discussed, no additional capacity would be required and no changes to the existing wastewater treatment system would be needed as a result of the proposed Project.

f. Less Than Significant Impact

Activities under the modified Permit would be the same as those that are currently being conducted at the Phillips 66 Marine Terminal. Currently, vessels at the Marine Terminal do not normally generate any solid waste that is received by the Rodeo Refinery. On occasion, there is solid waste received, but the amount is negligible relative to the amount generated by other refinery activities. Any additional solid waste that would be generated as a result of the increased vessel traffic to the Marine Terminal under the proposed Project would also be small, given the limited number of crew on the ships, the limited incremental increase in the number of ships, and the limited duration of docking at the Marine Terminal (i.e., generally 24 to 36 hours). Therefore, the increase, if any, from the proposed Project in the amount of solid waste sent to landfills would have a less than significant impact.

g. No Impact

Activities under the modified Permit would be the same as those that are currently being conducted at the Phillips 66 Marine Terminal. The Rodeo Refinery is currently complying with federal, state, and county requirements related to the management of solid waste. It is not expected that the increased ship traffic that would result from the proposed Project would affect the Rodeo Refinery's ability to maintain compliance with these requirements.

3.18 MANDATORY FINDINGS OF SIGNIFICANCE

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion:

a. Less Than Significant Impact

Site activities under the proposed Project would be consistent with the current uses of the site. The main difference would be the increase in vessel traffic to the Marine Terminal. However, this increase is relatively small (up to 23 additional vessels per year, approximately 2 additional vessels per month), and is minor relative to the overall traffic in the San Francisco Bay (i.e., more than 35,000 ships per year based on 2010 counts, as noted in Section 1.5.2.3).

As discussed in Section 3.4 and 3.5, potential impacts to biological resources from the proposed Project would be less than significant, and the proposed Project would pose no potential impacts to cultural resources.

b. Less Than Significant Impact

Site activities under the proposed Project would be consistent with the current uses of the site. Impacts to baseline conditions would be associated with the increase in vessel traffic to the Marine Terminal, and could include impacts to air quality/greenhouse gas emissions, offshore traffic, and a slight increase in the potential for oil spills. Given the relatively small increase in vessel traffic associated with the proposed Project compared to other vessel traffic in the San Pablo bay area, these environmental impacts would be negligible cumulatively.

c. Less Than Significant Impact

As presented in the individual resource sections, impacts to the applicable resources from the proposed Project would not be significant. Therefore, there is no substantial potential for adverse effects on human beings, either directly or indirectly.

5.0 REFERENCES

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Appendix A
Hazard Evaluation

This Appendix discusses the potential hazards associated with Terminal operations, specifically, the potential for chemical releases associated with oil spills or fires/explosions, and the existing local, state, and federal procedures/regulatory requirements in place to avoid or reduce the impacts of such releases.

OIL SPILLS

In prior EIRs associated with marine terminals in the Bay Area, including the EIR for the Rodeo Refinery (CSLC 1995a), the risk of oil spills associated with those projects triggered findings of significant and unavoidable environmental impacts related to oil spills, despite the relatively low likelihood of their occurrence. These findings were based on the fact that no agency can completely eliminate the risk of an inadvertent oil spill that could happen despite regulatory agency's best efforts. The incremental increase in vessel traffic associated with the proposed Project would not significantly increase the risk of oil spills and/or the severity of oil spill impacts on the environment for the following reasons:

1) There would be only a small incremental increase in vessel traffic relative to overall traffic in the San Francisco Bay,
2) The U.S. Coast Guard (USCG) and other agencies have several regulatory requirements in place that are designed to reduce the potential for oil spills (discussed below) and
3) Phillips 66 has operational practices in place that are above and beyond the regulatory requirements, several of which are requirements under the current Lease conditions (discussed below).

The CSLC EIR (CSLC 1995a), which was the last EIR prepared for the Marine Terminal, assessed the risk of an oil spill associated with Terminal operations. Specifically, that assessment included the following modeling performed by the Center for Environmental and Water Resources Engineering of the University of California at Davis, California and Ecological Modeling, Inc. (Portland, Oregon):

- Spill trajectory modeling of high, medium, and light oil volumes during three seasons, performed to assess the areas likely to be impacted if a spill were to occur;
- Receptor mode modeling to predict the potential for contact of an oil spill to 20 selected sensitive receptor locations; and

- Spill scenario modeling for 12 oil spill scenarios representing the types of spills that could occur at various locations at and near the Terminal, ranging from 500 bbl of product to 100,000 bbl of crude oil (two seasonal variations each).

As reported in the CSLC EIR, based on then-published data, it was estimated that over the 40-year life (lease term), there would be a 78 percent probability that a spill greater than 238 bbl would occur ($2.7x10^{-4}$ per port call, or a mean time of 27 years between spills) and a 20 percent probability of a spill greater than 1,000 bbl ($3.8x10^{-5}$ per port call, or a mean time of 187 years between spills). The EIR prepared for the Shore Marine Terminal (CSLC 2012) also found that the probability of a spill associated with marine vessel traffic in the Bay would be low (fewer than three spills per 100,000 vessel calls).

Recent Regulations Related to Prevention and Mitigation of Oil Spills

Since the CSLC EIR was adopted, a number of regulations have been put in place to reduce the potential for oil spills and the potential impacts of any oil spills that may occur. Some of the more significant regulations are as listed chronologically below:

- In 1994, the USCG implemented a revised vessel-boarding program designed to identify and remove substandard ships from United States waters.
- The USCG issued regulations establishing a timeline for precluding single-hull vessels from operating in the navigable waters or the Exclusive Economic Zone of the United States after 1 January 2010, and double-bottom or double-sided vessels by 1 January 2015. Under these regulations, only vessels equipped with a double hull, or with an approved double-containment system, are allowed to operate after those deadlines. These regulations were developed in response to studies demonstrating that the use of double-hull vessels decreases the probability of releases when tank vessels are involved in accidents.
- The CDFG's Office of Spill Prevention and Response (OSPR) was created to establish and implement regulations and guidelines for spill prevention, response planning, and response capability. Regulations establishing requirements for OSPR-approved oil spill response plans for tank vessels, barges, and marine facilities were issued in November 1993 (last updated in October 2002). These regulations are similar to, but more comprehensive than, the federal regulations. Under these

regulations, marine facilities and vessels must be able to demonstrate that they have the necessary response capability on hand or under contract to respond to specified spill sizes, including a worst-case spill. In addition, the regulations require that a risk and hazard analysis be conducted on each facility in accordance with procedures identified by the American Institute of Chemical Engineers.

- In accordance with SB 2040, the Harbor Safety Committee of the San Francisco Bay Region issued its Harbor Safety Plan in 1992 (annual updates since issued). The plan contains several recommendations to improve safety, including a requirement that all tank vessels carrying more than 5,000 tons of oil have a standby tug or a tug escort when transiting through certain areas. For example, tug escorts are required while tankers are transiting from the mouth of the Bay to the Marine Terminal. In addition, Harbor Safety Plan was recently updated to include expanded criteria (added to an already robust set of criteria) for visibility when transiting bridges.
- Effective in 1996, the International Maritime Organization (IMO) adopted provisions entitled "Special Measures to Enhance Maritime Safety" as an amendment to the International Convention for Safety of Life at Sea. These provisions specify operational testing during port state examinations, to ensure that United States and international vessel masters and crews are familiar with essential shipboard safety procedures. These port state examinations are conducted by the USCG as part of its vessel inspection program.
- The USCG established a Traffic Separation Scheme off the entrance to the Bay, with designated one-way inbound and outbound traffic lanes that defined separation zones, a precautionary area, and a pilot boat cruising area. Within the Bay, the USCG has established seven Regulated Navigation Areas, within which traffic flow patterns and navigation rules are defined to reduce vessel congestion in areas with limited maneuvering room. The USCG monitors vessel traffic at the Vessel Traffic Service at Yerba Buena Island.
- The San Francisco Oil Spill Contingency Plan was created by the USCG, as mandated by the federal Oil Pollution Act of 1990 (USCG 2011). The 2011 revision of the San Francisco Area Contingency Plan (ACP) became effective 1 January 2012. This ACP was created by the San Francisco Area Committee in response to the National Planning and Response System. It is one of several ACPs that were created around the country that, when are implemented in conjunction with the National Contingency Plan, should be adequate to remove a worst-

case discharge of oil or a hazardous substance, and to mitigate or prevent a substantial threat of such a discharge from a vessel, offshore facility, or onshore facility operating in or near the geographic area. The San Francisco Area Committee and other Area Committees are also responsible for working with state and local officials to pre-plan for joint response efforts, including appropriate procedures for mechanical recovery; dispersal; shoreline cleanup; protection of sensitive environmental areas; and protection, rescue, and rehabilitation of fisheries and wildlife.

Terminal Lease Conditions Relative to Prevention/Mitigation of Oil Spills

In addition to the above-mentioned regulations, mitigation measures were included in the certified CSLC EIR and finalized in the 1995 Mitigation Monitoring and Reporting Plan, to reduce the potential for oil spills at the Marine Terminal. These measures are incorporated into the terms of the CSLC lease. Additional ship traffic associated with the Permit modification would be required to comply with these measures.

Adopted Mitigation Measures from 1995 CSLC MMRP for the Terminal:

[Phillips 66] shall conduct a structural and safety audit of the Terminal in order to: (1) identify safety system mechanical, electrical, and fire detection and suppression deficiencies; (2) identify structural damage or weaknesses that might affect the continued fitness-for-purpose of the facility; (3) advise whether these deficiencies have been properly assessed; and (4) advise what safety improvements would be taken to correct, prevent, or minimize these potential hazards.
[Phillips 66] shall develop and implement a preventative maintenance program that includes periodic inspection of the wharf components. The approach structure and wharf should undergo a thorough structural inspection in order to evaluate the remaining life of the structures, identify members that need immediate replacement or repair, and develop a preventative maintenance program. Repair should be made to the wharf under the VRS and one bent closer to shore.
Develop and implement a preventative maintenance program that includes periodic inspection of all components related to transfer operation at the Terminal.
To prevent or minimize damage to the wharf and vessel, [Phillips 66] shall install an Allison Avoidance System (AAS) that provides information to the vessel master regarding the approach rate to the wharf.

The lease for the facility shall contain a clause that would allow the CSLC to add or modify mitigation measures in the event of improved safety technologies or a spill greater than 2,100 gallons (55 bbl).
[Phillips 66] shall update and keep current all P&IDs and flow diagrams.
[Phillips 66] shall, within 365 days of lease renewal, develop, with CSLC approval, and subsequently implement a program to minimize the potential for pipeline leaks.
Cargo transfer shall be stopped if the CSLC inspector is not satisfied that the Vessel Person-in-Charge (VPIC) or Terminal Person-in-Charge (TPIC) is sufficiently fluent in the English language.
To prevent or minimize the potential for operational errors, any barge handling cargo at the Terminal must be manned by a minimum of one tankerman and one deckhand. Barges that are moored at the Terminal, but are not handling cargo, shall be manned by at least one person, who shall be either a deckhand or tankerman.
There shall be a TPIC at the Terminal during all transfer operations. In addition, there shall be one person assigned to watch the manifolds, hoses and loading arms for each tanker and barge conducting an oil transfer at the Terminal.
To prevent an oil spill event or fire from spreading from/to the wharf/vessel, (1) all vessels, including barges, shall maintain the ability to get underway within 30 minutes, (2) mooring points shall be equipped with quick-release devices (e.g., pelican hooks), and (3) tugs shall not be tied to barges during transfer operations because of potential fire hazard.
Dock mooring points shall be equipped with strain gauges with shipboard and/or wharf control room monitors, so that the moorings have appropriate tension at all times.
Where effective, [Phillips 66] shall pre-boom all transfers of persistent oil using booms that are effective in currents expected at the Terminal. For vessel loading operations, the boom shall enclose the water surface surrounding the vessel to provide containment for the entire vessel at the waterline and portions of the dock where the oil may spill into the water. The boom shall be deployed so that it provides a stand-off of not less than 4 feet from the outboard side of the vessel. For vessel offloading operations, the boom shall be deployed to provide containment for the vessel's entire inboard length at the waterline and portions of the dock where oil may spill into the water. [*Note: Pre-booming was determined to be infeasible. During the transfer of persistent oil at the Marine Facility Phillips 66 arranges for a vessel to be present in the vicinity, standing by, ready to deploy boom. This vessel can deploy 600 feet of boom located on the dock in thirty minutes as required by CCR 2395 (e). In the event the Phillips 66 standby boat is unavailable, a third party contractor that can deploy said amount of boom is used in its place.*

In a typical deployment, the first 1,000 feet of boom could be on the way out and in position in one hour. The need for timing the deployment of the second 1,000 feet of boom would depend upon the tide and current conditions at the time of the spill, but if needed it could be in position within an additional forty minutes after the first boom was deployed.]
All tank vessels bound for the Terminal or leaving the Terminal shall use the San Francisco Vessel Traffic Service.
All vessels calling at the Terminal shall adhere to the recommended guidelines for safe movement of vessels found in the San Francisco, San Pablo, and Suisun Bay's Harbor Safety Plan.
A tug or combination of tugs with bollard pull in pounds equal to or greater than the tank vessel's deadweight tonnage shall be present during vessel mooring and unmooring.
[Phillips 66] shall ensure that tugs of best available technology design (e.g., tractor tugs) escort all tank vessels bound for or leaving the Terminal.
All loaded or partly loaded vessels under [Phillips 66's] direct control and bound for or coming from destinations other than those in California shall utilize the Main (Western) Traffic Lanes to or from the precautionary area and comply with all Coast Guard requirements and recommendations and all current industry practices regarding navigation and traffic patterns. When possible, all other loaded or partly loaded vessels bound for or coming from destinations other than those in California shall be informed in advance that they should follow these same directions.
[Phillips 66] shall ensure that adequate underkeel clearance is maintained at all times. At a minimum, [Phillips 66] shall conduct an annual bathymetric survey in the vicinity of the wharf.
[Phillips 66] shall ensure that all vessels calling at the Terminal have an oil spill response plan that meets USCG and OSPR requirements. In addition, [Phillips 66] shall provide initial response to spills from vessels calling at the Terminal while they are at or near the Terminal.

These measures would further reduce the potential for significant impacts resulting from oil spills associated with the incremental increase in terminal-related vessel traffic under the proposed Project.

Specific Phillips 66 Terminal Plans and Procedures Related to Oil Spills

Emergency Response Plan. Spill response plans are required under state and federal regulations for marine terminals and all vessels calling at marine terminals. Initial response capability is required to be available at the marine terminal, supplemented by an outside Oil Spill Removal Organization (OSRO) with capability to handle larger spill events.

The Phillips 66 Rodeo Refinery currently operates under an Emergency Response Plan (ERP) updated August, 2011. The Emergency Response Plan implements Phillips 66 policy and satisfies emergency preparedness and response requirements covered by the following regulations:

- Cal-OSHA (8 CCR 3220) Emergency Action Plan requirements (Federal OSHA 29 CFR 1910.38).

- Cal-OSHA (8 CCR 5192) Hazardous Waste Operations and Emergency Response (Hazwoper) requirements for an Emergency Response Plan (Federal OSHA 29 CFR 1910.120).

- Cal-OSHA (8 CCR 5189) Process Safety Management requirements for an Emergency Response Plan (Federal OSHA 29 CFR 1910.119).

- Cal-EPA (19 CCR Section 2760.9) California Accidental Release Prevention Program (CalARP) requirements for an Emergency Response Plan [Federal Risk Management Program (RMP) 40 CFR 68.95].

- Contra Costa County Industrial Safety Ordinance 98-48 (12)(a) requirements for an Emergency Response Plan.

- Cal-OSHA (8 CCR 3221) Fire Prevention Plan requirements (Federal OSHA 29 CFR 1910.38).

- Cal-OSHA (8 CCR 3411) Private Fire Brigade requirements (Federal OSHA 29 CFR 1910.156).

- Cal-OSHA (8CCR 6184) Employee Alarm Systems (Federal OSHA 1910.165)

- EPA- Oil Pollution Act of 1990 (Federal EPA OPA-90 requirements under 40 CFR 112)

- USCG- OPA-90 (Federal USCG OPA-90 requirements under 33 CFR 154.1035)

- California Department of Fish and Game, Office of Spill Prevention and Response (OSPR) (State requirements under OSPR, CCR Title 14, Division, Subdivision 4, Chapter 2, Subchapter 3, Section 817.02)

This ERP is consistent with the National Response Team's Integrated Contingency Plan Guidance ("One-Plan"), as referenced by CalARP and the Contra Costa County Industrial Safety Ordinance 98-48.

The SFR – Integrated Contingency Plan satisfies the regulatory requirements of the U.S. Coast Guard and U.S. Environmental Protection Agency (EPA) under the Oil Pollution Act of 1990 (OPA 90), and the California Department of Fish and Game (DFG), Office of Spill Prevention and Response (OSPR), requirements under OSPRA, CCR Title 14, Division 1, Subdivision 4, Chapter 2, Subchapter 3, Section 817.02 and certain regulations as required by Contra Costa County.

Under that plan, a vessel stands by at the Terminal whenever crude oil or a persistent product is being transferred. This standby vessel[12] has the capability to deploy 600 feet of boom within 30 minutes.

As documented in the Emergency Response Plan for the Phillips 66 Marine Terminal, the terminal has 4,500 feet of an oil-retention boom, stored in 2,000- and 2,500-foot reels at the western and eastern ends of the Terminal, respectively, which could be deployed within 30 minutes in accordance with current state regulations.

In addition, Phillips 66 is a member of and has access to resources of the Marine Spill Response Corporation, an independent non-profit, national spill response company dedicated to providing rapid response to oil spills. Other actions voluntarily undertaken by Phillips 66 to further reduce the risk of oil spills include:

- The Phillips 66 Global Marine Risk Group reviews a vessel's history and condition prior to using it to transport hydrocarbons in association with facility operations. In addition, Phillips 66 uses the reports generated regarding vessel performance and condition when

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12 Standby Vessel – Phillips 66 has a standby vessel that is "on-call" in case there is a spill, which must be able to deploy a certain amount of boom within 30 minutes. The vessel is called out only if there is a spill, otherwise it sits idle without the engine running. Normally the vessel is tied to the dock at the Marine Terminal. On the rare occasions when the regular standby vessel is out for maintenance, Phillips 66 contracts with a third party responder, who provides a standby vessel that is capable of deploying a boom within 30 minutes.

the vessel calls at the Rodeo Refinery Marine Terminal, when considering its use for future shipments. These reports are prepared by Marine Advisors, independent contractors to Phillips 66. Phillips 66 (as well as almost all oil companies) uses the inspection approach known as SIRE (Site Inspection Report Programme), established by the Oil Companies International Marine Forum. This standardized inspection program provides in-depth information, including information from Port State Control inspections, for review to determine if a vessel meets an acceptable standard of risk.

- Phillips 66 participates in the Tug Escort subcommittee of the Harbor Safety Committee, and monitors the tugs/tug companies available for tug escorting.
- Phillips 66 is an active stakeholder in other safety forums such as the Area Maritime Security Committee (member), and Harbor Safety Meetings (regular attendee and former member of Harbor Safety Committee).
- NOAA has implemented a program (Physical Oceanographic Real-Time System, or PORTS®) that provides real-time oceanographic data and other navigation products to promote safe and efficient navigation within U.S. waters. Phillips 66 promoted the upgrades to PORTS over the last few years and sponsored the placement of a PORTS weather station at the Phillips 66 Rodeo Marine Terminal. This is maintained by NOAA and available to all via internet http://co-ops.nos.noaa.gov/station_info.shtml?stn=9415141 Davis Point, San Pablo Bay, CA.
- Phillips 66 is actively engaged in San Francisco Area waterways safety, and participates and contributes to USCG waterways management PAWSA (Ports and Waterways Safety Assessment) http://www.navcen.uscg.gov/pdf/pawsa/workshopReports/PAWSA%20workshop%20report%20SF%20August%202008.pdf
- Phillips 66 requires Marine Advisor attendance on crude oil ships. Phillips contracts with Master Mariners that have several years of senior level ship-board management experience and have knowledge of BAAQMD, SCAQMD, OSPR, and State Land's regulations in addition to Federal requirements. All of Phillips 66's Marine Advisors have a minimum of 20 years' experience and hold U.S. Coast Guard licenses. These individuals interact with vessel's Masters, Pilots, USCG, OSPR, State Lands, Agents, Customs, Immigration, Marine Terminals, schedulers and communicate

findings to P66 Marine Terminal Advisors to ensure the highest level of compliance. The primary responsibility of the Marine Advisor is to aid in the prevention of pollution and unsafe conditions. The PCR is assigned in an advisory capacity to the vessel Master and terminal to heighten awareness and enhance the standard of care during cargo operations. The TPIC is in charge of terminal and the VPIC is in charge of vessel operations, however the PCR will make suggestions and recommendations to both the Vessel and the Terminal as the need arises. The PCR's responsibility is to pay special attention to monitoring the critical times of cargo, ballasting, crude oil washing, bunkering operations, mooring arrangements, and tending of moorings. They will also facilitate ship/terminal communications and turnaround as appropriate. They are an extra set of eyes and have a direct communications link to the Marine Risk group 24 hours a day.

History of Oil Spills at the Marine Terminal

Adherence by Phillips 66 to the measures and requirements summarized above appears to have been successful, in that no significant oil spills have occurred recently at the Terminal. Based on a review of the California Emergency Management Agency online oil spill records[13] dating back to 2002, no recent oil releases related to marine vessels at the Marine terminal have occurred at the Rodeo Refinery while under operation by Phillips 66 or its predecessor-in-interest at the refinery, ConocoPhillips Company.

As summarized above, a number of state and federal regulatory requirements have been instituted since the CSLC EIR certification, to reduce the potential for oil spills associated with marine terminals.

FIRE AND EXPLOSIONS

Fires and explosions at the Marine Terminal involving ships or the vessel itself are possible, and would release hazardous materials into the environment. There are several procedures/requirements currently in place that would minimize the potential for fires and explosions:

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[13] http://www.calema.ca.gov/HazardousMaterials/Pages/Historical-HazMat-Spill-Notifications.aspx

a) Vessels loading or unloading low flash cargoes (i.e., cargoes with a flash point of less than 150 degrees Fahrenheit [°F]) are required to have properly operating inert gas systems (IGS). An IGS generates inert gas, which is injected into the cargo tanks to displace the oxygen to a level (below 10 percent) that will not support ignition. The Vessel Person-in-Charge (VPIC) is required to verify that the tanks are inerted and that the IGS is working properly before transfer operations can commence. Products with flash points greater than 150°F do not generate enough vapors to support ignition unless the product is heated to a temperature above 150°F.

b) The Vapor Collection System at the Marine Terminal captures flammable vapors and thus, reduces the risk of a fire or explosion at a tanker or barge during the loading process. In addition, the Vapor Collection System has several protection measures in place to prevent the spread of a large fire, including a detonation arrester at the Berth M-2 vapor pipeline to prevent flame fronts from passing from the Marine Terminal to the ship; a water seal pot and detonation arrester in the line to prevent flames from spreading from the thermal oxidizer equipment to the vapor pipeline; and flame arresters installed in each burner stage pipeline of the thermal oxidizer.

c) Tankers are required by 46 CFR Part 34 to have sophisticated firefighting systems, which include fire pumps, piping, hydrants, and foam systems. Tank barges are only required to have portable fire extinguishers, though some are equipped with built-in systems. The tank vessel crews are trained to use firefighting equipment, and the onboard firefighting equipment is sufficient to extinguish most fires.

In addition to the above, the following measures were required as mitigation in the certified EIR for the Marine Terminal (CSLC 1995a) and the MMRP (CSLC 1995b), and are incorporated into the terms of the Lease. Additional ship traffic associated with this Project would be required to comply with these Lease terms:

Adopted Mitigation Measures from 1995 CSLC MMRP for the Terminal:

To physically prevent simultaneous vapor connections to tank ships at both berths, either re-install a detonation arrester in the cargo vapor pipeline at Berth M-1, or cut out a section of Berth M-1 cargo vapor pipeline immediately upstream of the condensate boot and install a blind flange with gasket on the condensate boot at the M-1 vapor pipeline connection point and a blind flange on the cargo vapor arm end.

[Phillips 66] shall develop a set of emergency response procedures to follow in the event of a tank vessel fire, and describe the roles of the fire departments in responding to such fires. The procedures shall also identify other response assets (e.g., fire response contractors, source of foam) that can be obtained in the event of a major accident.
To prevent an oil spill event or fire from spreading from/to the wharf/vessel, (1) all vessels, including barges, shall maintain the ability to get underway within 30 minutes; (2) mooring points shall be equipped with quick-release devices (e.g., pelican hooks); and (3) tugs shall not be tied to barges during transfer operations because of potential fire hazard.