

MINUTE ITEM

This Calendar Item No. C52 was approved as Minute Item No. 52 by the California State Lands Commission by a vote of 3 to 0 at its 9-17-01 meeting.

**CALENDAR ITEM
C52**

A 11

PRC 600

09/17/01

WP 600

S 7

W 25376

N. Smith

D. Plummer

M. Meier

**ASSIGNMENT OF PRC 600 AND
ISSUANCE OF A
GENERAL LEASE - INDUSTRIAL USE**

ASSIGNOR:

Unocal Corporation
2141 E Rosecrans Avenue
El Segundo, California 90245

ASSIGNEE/APPLICANT:

Tosco Corporation
9645 Santa Fe Springs Road
Santa Fe Springs, California 90670

AREA, LAND TYPE, AND LOCATION:

16.726 acres, more or less, of filled and unfilled sovereign lands in San Pablo Bay, town of Rodeo, Contra Costa County.

AUTHORIZED USE:

The marine terminal is a pier consisting of a tee-head ship and barge-berthing structure, a mooring-breasting dolphin, and a shore-connecting trestle-pipeline-way. The ship berthing structure is 1,250 feet long and 136 feet wide. The mooring-breasting dolphin measures 51 by 32 feet and is located 74 feet from the west end of the tee. The trestle pipeline-way that connects the terminal to shore is 1,730 feet long and 77 feet wide. A salt water intake platform is located just east of the trestle. A butane tank, located on filled land, is just west of the trestle. The applicant also proposes to dredge and remove a maximum of 90,000 cubic yards annually within the ship and mooring areas.

LEASE TERM:

Thirty (30) years, beginning September 1, 2001.

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CONSIDERATION:

\$235,000 (base rent) per year; with the State adjusting the annual base rent each year by application of the Consumer Price Index (CPI), the adjusted annual rent will never be lower than the base rent. This CPI adjustment will continue until each tenth anniversary of the lease, when a new base rent may be established.

\$0.25 per cubic yard will be charged for any dredge material used for private benefit or commercial sale purposes.

SPECIFIC LEASE PROVISIONS:

Insurance:

Liability insurance: Combined single limit coverage of \$10,000,000.

Bond:

\$2,000,000.

BACKGROUND INFORMATION:

The Commission authorized lease PRC 600 at its meeting on April 12, 1951. This lease provided for a 15-year term with two 10-year renewal periods, which permitted Unocal's use of State-owned sovereign lands in Contra Costa County for a marine terminal facility in conjunction with its refinery at Oleum, until March 31, 1986. When Unocal applied to continue its use of the marine terminal, it was determined that an Environmental Impact Report (EIR) must be completed before the Commission could approve a new long-term lease for the terminal. To provide for the continued operation of the terminal while the EIR was being prepared Unocal on several occasions was authorized extensions by the Commission for the continued use and occupancy of sovereign lands.

At its March 2, 1992, meeting, the Commission authorized acceptance of all amounts owed by Unocal for the occupation of State-owned lands for the period April 2, 1986, to September 1, 1991, at \$200,000 per annum.

The Commission certified the Final EIR prepared for consideration of a new lease for the operation of a crude oil and petroleum product marine terminal at Unocal's San Francisco Refinery, on July 6, 1995. Upon certification of the Final EIR, both parties began negotiating a 30-year lease for continued use of the marine terminal facilities.

Letters were received by staff of the Commission in February 1997 from both Unocal and Tosco indicating that Tosco was purchasing all of the operating assets of Unocal 76

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Products Company in California. The transfer of ownership occurred on April 1, 1997, and Tosco became the operator of the marine terminal. Since negotiations for a new lease had not been completed prior to the transfer, the Commission staff acknowledged the assignment without objection. Unocal was not released from liability under the expired lease and all rents were paid through March 31, 1997. Unocal's leasehold interest was in a month-to-month holdover status and Tosco only acquired only those rights that Unocal had in the property under the old lease. Commission staff anticipated that a new lease could be negotiated within several months of the acquisition by Tosco. Various circumstances caused negotiations for a new lease to be protracted. Lease negotiations were at an impasse on the issue of the annual rent, which has now been determined at an amount acceptable to the Commission Staff and Tosco.

Commission Staff therefore recommends that the assignment of lease PRC 600 to Tosco be approved effective April 1, 1997, the date Tosco became the operator of the marine terminal facilities and adjacent upland refinery. Staff also recommends that the Commission issue, a new 30-year lease to begin September 1, 2001, as negotiated by the parties.

OTHER PERTINENT INFORMATION:

1. As to the assignment of lease PRC 600, pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Title 14, California Code of Regulations, section 15061), the staff has determined that this activity is exempt from the requirements of the CEQA because the activity is not a "project" as defined by the CEQA and the State CEQA Guidelines.

Authority: Public Resources Code section 21065 and Title 14, California Code of Regulations, section 15378.

2. As to the issuance of a new lease, pursuant to the Commission's delegation of authority and the State CEQA Guidelines (Title 14, California Code of Regulations, section 15025), the staff has prepared an EIR identified as CSLC EIR No. 636, State Clearinghouse No. 91053082. Such EIR was prepared and circulated for public review pursuant to the provisions of the CEQA, and the EIR was certified by the Commission on July 6, 1995. Tosco has indicated that the scope of its existing terminal operations is within the bounds of that described and analyzed within the certified EIR; therefore, the cited document is appropriate to the Commission's consideration of the proposed Tosco lease. A Mitigation Monitoring Program has been prepared in conformance with the provisions of the CEQA (Public Resources Code section 21081.6).

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3. Findings made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, section 15091) are contained in Exhibit C, attached hereto.
4. A Statement of Overriding Considerations made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, section 15093) is contained in Exhibit D, attached hereto.
5. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code sections 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

EXHIBITS:

- A. Land Description
- B. Location Maps
- C. CEQA Findings
- D. Statement of Overriding Considerations
- E. Mitigation Monitoring Program

PERMIT STREAMLINING ACT DEADLINE:

N/A

RECOMMENDED ACTION:

IT IS RECOMMENDED THAT THE COMMISSION:

CEQA FINDINGS:

AS TO THE ASSIGNMENT OF LEASE PRC 600, FIND THAT THE ACTIVITY IS EXEMPT FROM THE REQUIREMENTS OF THE CEQA PURSUANT TO TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15061 BECAUSE THE ACTIVITY IS NOT A PROJECT AS DEFINED BY PUBLIC RESOURCES CODE SECTION 21065 AND TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15378.

CERTIFY THAT AN EIR NO. 636, STATE CLEARINGHOUSE NO. 91053082, WAS PREPARED FOR THIS PROJECT AND CERTIFIED BY THE COMMISSION ON JULY 6, 1995, PURSUANT TO THE PROVISIONS OF THE CEQA, THAT THE COMMISSION HAS

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REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN AND THAT THE EIR REFLECTS THE COMMISSION'S INDEPENDENT JUDGEMENT AND ANALYSIS.

ADOPT THE FINDINGS, MADE IN CONFORMANCE WITH TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15091, AS CONTAINED IN EXHIBIT C, ATTACHED HERETO.

DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

ADOPT THE STATEMENT OF OVERRIDING CONSIDERATIONS MADE IN CONFORMANCE WITH TITLE 14, CALIFORNIA CODE OF REGULATIONS, SECTION 15093, AS CONTAINED IN EXHIBIT D, ATTACHED HERETO.

ADOPT THE MITIGATION MONITORING PROGRAM, AS CONTAINED IN EXHIBIT E, ATTACHED HERETO.

SIGNIFICANT LANDS INVENTORY FINDING:

FIND THAT THIS ACTIVITY IS CONSISTENT WITH THE USE CLASSIFICATION DESIGNATED BY THE COMMISSION FOR THE LAND PURSUANT TO PUBLIC RESOURCES CODE SECTIONS 6370, *ET SEQ.*

AUTHORIZATION:

AUTHORIZE THE ASSIGNMENT OF LEASE NO. PRC 600 A GENERAL LEASE – INDUSTRIAL USE, OF SOVEREIGN LANDS DESCRIBED IN EXHIBIT A ATTACHED AND BY REFERENCE MADE A PART HEREOF; FROM UNOCAL CORPORATION TO TOSCO CORPORATION, EFFECTIVE APRIL 1, 1997.

AUTHORIZE ISSUANCE TO TOSCO CORPORATION OF A GENERAL LEASE - INDUSTRIAL USE, BEGINNING SEPTEMBER 1, 2001, FOR A TERM OF THIRTY (30) YEARS, FOR MARINE TERMINAL FACILITIES LOCATED ON SUBMERGED LANDS, A SALT WATER INTAKE PLATFORM AND BUTANE TANK LOCATED ON FILLED LANDS; ANNUAL DREDGING OF UP TO 90,000 CUBIC YARDS WITH SUCH ACTIVITY IS CONTINGENT UPON APPLICANT'S COMPLIANCE WITH APPLICABLE PERMITS, RECOMMENDATIONS, OR LIMITATIONS

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ISSUED BY FEDERAL, STATE AND LOCAL GOVERNMENTS; ON THE LAND DESCRIBED ON EXHIBIT A ATTACHED AND BY THIS REFERENCE MADE A PART HEREOF; ANNUAL RENT IN THE AMOUNT OF \$235,000, WITH THE STATE RESERVING THE RIGHT TO FIX A DIFFERENT RENT PERIODICALLY DURING THE LEASE TERM, AS PROVIDED IN THE LEASE; \$.25 PER CUBIC YARD WILL BE CHARGED FOR ANY DREDGED MATERIAL USED FOR PRIVATE BENEFIT OR COMMERCIAL SALE PURPOSES; LIABILITY INSURANCE FOR COMBINED SINGLE LIMIT COVERAGE OF \$10,000,000; OR AN EQUIVALENT SELF INSURANCE PROGRAM UPON APPROVAL OF COMMISSION STAFF TO SATISFY INSURANCE REQUIREMENTS; SURETY BOND IN THE AMOUNT OF \$2,000,000.

EXHIBIT "A"
LAND DESCRIPTION

Six parcels of land in the State owned bed of San Pablo Bay and Carquinez Strait, Contra Costa County, California, described as follows:

PARCEL 1 – Filled Sovereign Lands

COMMENCING at United States Harbor Line Station "U" the California Zone 3 co-ordinates of which are Y=569,518.32 and X=1,493,752.14 as shown on map of Harbor Line for Carquinez Strait established by the Secretary of War and filed in the United States Engineers Office, San Francisco, from which United States Harbor Line Station "Ole", the California Zone 3 co-ordinates of which are Y=569,549.09 and X=1,493,822.28, bears N 66° 18' 48" E, a distance of 76.59 feet, said bearing and distance being calculated from said California co-ordinates of said stations; thence N 79° 04' 41" W, 850.54 feet to a point in the northerly line of Tide Lands Survey No. 58, Location 176, said last mentioned point being the southerly terminus of that certain course described in the deed from Patrick Tormey and Mary Tormey, his wife, to Union Oil Company of California, dated November 1, 1901, and recorded in Volume 90 of Deeds, at page 552, Records of Contra Costa County, as S 35° W, 1.10 chains; said point being also the TRUE POINT OF BEGINNING of Parcel 1, thence S 09° 55' 20" W, 1254.10 feet to a point from which said Station "U" bears N 44° 22' 52" E, a distance of 1502.98 feet, and being also a point in the northerly line of Tide Land Survey No. 58, and the southwesterly terminus of that certain course, described in the deed from Patrick Tormey and Mary Tormey, his wife, to Union Oil Company of California, dated April 17, 1905, and recorded in Volume 110 of Deeds, at page 468, Records of Contra Costa County, as N 45° 37' E, 321.00 feet; thence along said northerly line of Tide Land Survey No. 58, N 46° 44' 10" E, 321.00 feet; thence N 08° 17' 10" E, 484.69 feet, said last mentioned course being the same course described in said deed dated April 17, 1905, as N 6-³/₄ ° E, 482.00 feet; thence along said northerly line of Tide Land Survey No. 58, N 09° 16' 41" W, 542.81 feet, more or less, to the true point of beginning, containing 3.68 acres, more or less.

PARCEL 2 – Wharf, Trestle, Pipe Way, Waste Water Outfall Line and Diffuser

COMMENCING at United States Harbor Line Station "U" described in Parcel 1 above; thence N 26° 53' 40" W, 344.30 feet; thence S 71° 05' 10" W, 117.42 feet to a point in the northerly line of the land described in the Deed to Union Oil Company of California recorded in Book 90, page 552 of Deeds, Contra Costa County Records, said point being also N 71° 05' 10" E, along said northerly line 254.30 feet from the westerly terminus of that certain course described in said Deed as S 69° 45' W, 5.68 chains, and being also the TRUE POINT OF BEGINNING of Parcel 2; thence along the following courses and distances: S 71° 05' 10" W, 102.48 feet and N 01° 10' 15" W, 112.27 feet to the beginning of a tangent curve concave westerly having a radius of 650.27 feet, thence

EXHIBIT "A"
LAND DESCRIPTION

northerly along said curve through a central angle of 08° 19' 15" an arc distance of 94.44 feet; thence tangent to said curve N 09° 29' 30" W, 1293.58 feet; thence along the following courses and distances: S 80° 30' 30" W, 30.00 feet; thence N 09° 29' 30" W, 208.00 feet; thence S 77° 00' 30" W, 622.01 feet; thence N 12° 59' 30" W, 51.75 feet; thence N 67° 59' 30" W, 90.95 feet; thence S 12° 59' 30" E, 6.83 feet; thence S 77° 00' 30" W, 5.50 feet; thence N 12° 59' 30" W, 6.25 feet; thence S 77° 00' 30" W, 6.50 feet; thence N 12° 59' 30" W, 0.58 feet; thence S 77° 00' 30" W, 33.50 feet; thence S 12° 59' 30" E, 6.25 feet; thence S 77° 00' 30" W, 5.50 feet; thence N 12° 59' 30" W, 38.33 feet; thence N 77° 00' 30" E, 1375.84 feet; thence S 12° 59' 30" E, 136.00 feet; thence S 77° 00' 30" W, 520.13 feet; thence S 09° 29' 30" E, 726.19 feet; thence N 80° 30' 30" E, 42.00 feet; thence S 09° 29' 30" E, 134.00 feet; thence S 80° 30' 30" W, 42.00 feet; thence S 09° 29' 30" E, 836.40 feet to the true point of beginning containing 7.403 acres, more or less.

PARCEL 3 – Ship Mooring Area

BEGINNING at the westerly terminus of that certain course described in Parcel 2 above as bearing N 77° 00' 30" E, and having a length of 1375.84 feet; thence along the westerly prolongation of said course S 77° 00' 30" W, 177.50 feet; thence along the following courses and distances: N 12° 59' 30" W, 115.00 feet; thence N 77° 00' 30" E, 886.00 feet; thence S 12° 59' 30" E, 13.00 feet; thence N 77° 00' 30" E, 747.00 feet; thence S 12° 59' 30" E, 102.00 feet to the easterly prolongation of that certain course above mentioned as bearing N 77° 00' 30" E, and having a length of 1375.84 feet; thence along said prolonged course, and said course S 77° 00' 30" W, 1455.50 feet to the point of beginning, containing 4.088 acres, more or less.

PARCEL 4 – Barge Mooring Area

BEGINNING at the northerly terminus of that certain course described in Parcel 2 above as bearing N 09° 29' 30" W, and having a length of 208.00 feet; thence along the following courses and distances: S 77° 00' 30" W, 622.01 feet; thence S 12° 59' 30" E, 50.00 feet; thence N 77° 00' 30" E, 618.95 feet; to said first above mentioned course; thence along said course N 09° 29' 30" W, 50.09 feet to the point of beginning, containing 0.712 acres, more or less.

PARCEL 5 – Barge Mooring Area

BEGINNING at the northerly terminus of that certain course described in Parcel 2 above as bearing S 09° 29' 30" E, and having a length of 726.19 feet; thence along the following courses and distances: N 77° 00' 30" E, 600.00 feet; thence S 12° 59' 30" E, 50.00 feet; thence S 77° 00' 30" W, 603.06 feet; to said first above mentioned course; thence along said course N 09° 29' 30" W, 50.09 feet to the point of beginning, containing 0.691 acres, more or less.

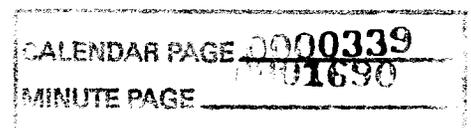
EXHIBIT "A"
LAND DESCRIPTION

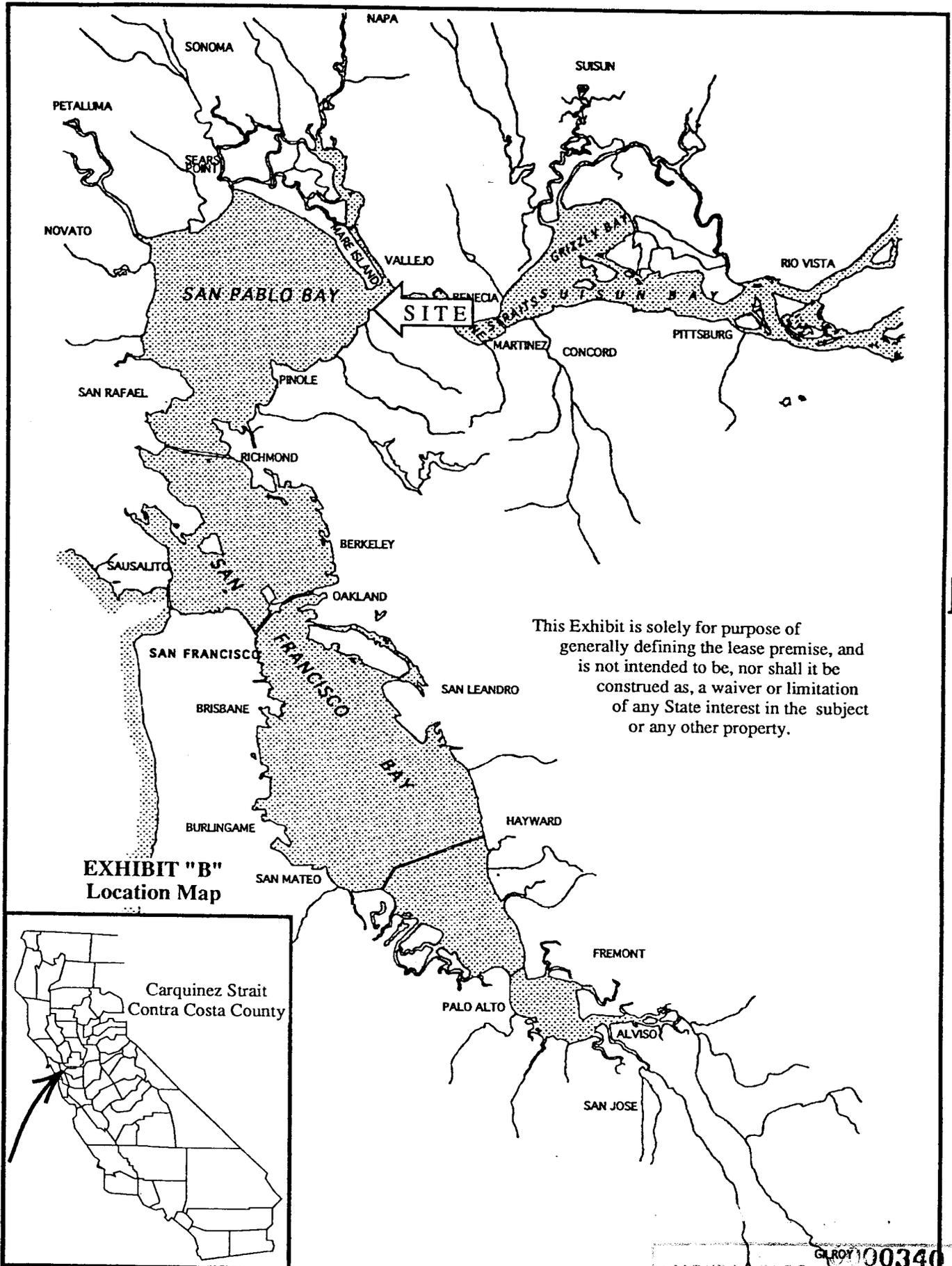
PARCEL 6 – Salt Water Intake Platform

COMMENCING at United States Harbor Line Station "U" described in Parcel 1 above; thence N 26° 53' 40" W, 344.28 feet to an angle point in the boundary line of the land owned by Tosco Refining Company and described in the Deed to Union Oil Company of California recorded in Book 90, page 552 of Deeds, Contra Costa County Records; thence along said line S 71° 05' 10" W, 81.13 feet to the TRUE POINT OF BEGINNING of Parcel 6; thence along the following courses and distances: N 36° 33' 10" E, 115.16 feet; N 8° 26' 50" W, 10.39 feet; S 81° 33' 10" W, 29.00 feet; N 8° 26' 50" W, 44.00 feet; N 81° 33' 10" E, 76.00 feet; S 8° 26' 50" E, 44.00 feet; S 81° 33' 10" W, 29.00 feet; S 8° 26' 50" E, 37.64 feet; S 36° 33' 10" W, 62.13 feet to a point on said boundary line of Tosco; thence along said line, S 71° 05' 10" E, 56.45 feet to the true point of beginning, containing 0.152 acres more or less.

TOGETHER WITH any interest of the State of California in those lands lying between the northwesterly line of the Pinole Rancho and the waterward boundary of Tideland Location No. 176 located within the properly described in the Deed to Union Oil Company of California recorded in Book 90, page 552 of Deeds, Contra Costa County Records.

END OF DESCRIPTION





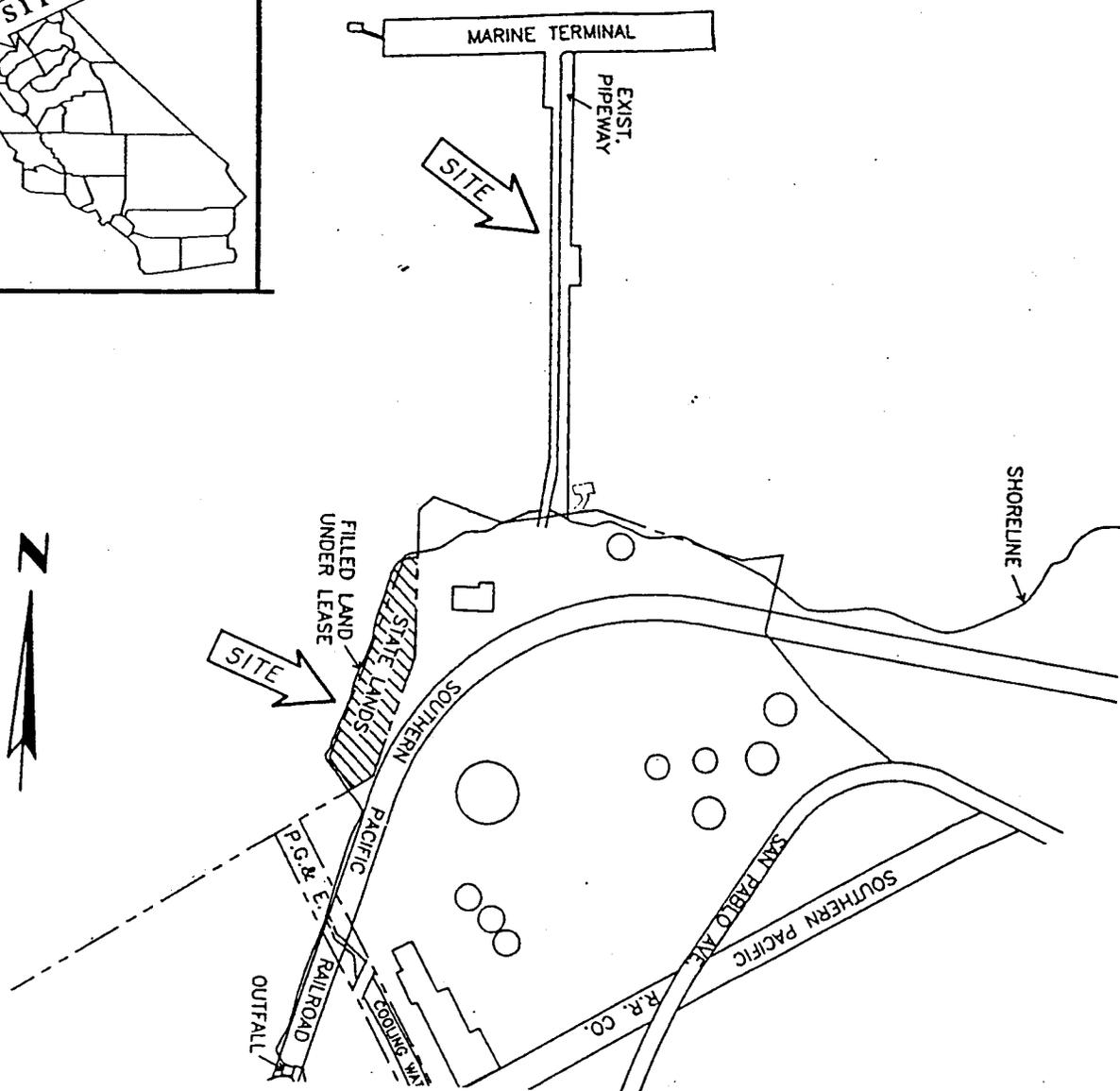
This Exhibit is solely for purpose of generally defining the lease premise, and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

EXHIBIT "B"
Location Map

Carquinez Strait
Contra Costa County

CALENDAR PAGE 00340
MINUTE PAGE 1160-95

EXHIBIT B
Location Map
Carquinez Strait
Contra Costa County



This Exhibit is solely for purpose of generally defining the lease premise, and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

EXHIBIT C

FINDINGS REGARDING THE ENVIRONMENTAL EFFECTS OF THE
CONSIDERATION OF A NEW LEASE FOR THE OPERATION
OF A CRUDE OIL AND PETROLEUM PRODUCT
MARINE TERMINAL ON STATE TIDE AND SUBMERGED LANDS
AT TOSCO'S SAN FRANCISCO REFINERY
OLEUM, CONTRA COSTA COUNTY

INTRODUCTION

The findings made by the California State Lands Commission (CSLC), pursuant to Section 15901, Title 14, California Code of Regulations, on the proposed Consideration of a New Lease for the Operation of a Crude Oil and Petroleum Product Marine Terminal on State Tide and Submerged Lands at Tosco's San Francisco Refinery located at Oleum in Contra Costa County, California, are presented below. All significant impacts of the project identified in the Final Environmental Impact Report (FEIR) are included herein and organized according to the resource affected, e.g., operational safety, marine biology, water quality, and so forth.

For each significant impact, a finding has been made as to one or more of the following as appropriate:

- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
- B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

The findings are followed by a narrative of the facts supporting them. For many of the impacts, all three findings described above have been made. Finding (B) appears because, although the CSLC is the California Environmental Quality Act (CEQA) Lead Agency, it has the jurisdiction over only a portion of the project and thus has limited power to require or enforce mitigation without such jurisdiction. Whenever Finding (B) occurs, agencies with jurisdiction have been specified. It is these agencies, within their respective spheres of influence, that would have the ultimate responsibilities to

adopt, implement, and enforce the mitigation discussed within each type of potential impact that could result from project implementation. However, under adopted California statutory legislation (AB3180, CORTESE), the CEQA Lead Agency has the responsibility to ensure that mitigation measures contained in an EIR are effectively implemented.

Whenever Finding (C) is made, the CSLC has determined that there will be, even after mitigation, an unavoidable significant level of impact due to the project, and sufficient mitigation is not practicable to reduce the impact to a level of insignificance. This impact is always specifically identified in the supporting discussions. The Statement of Overriding Considerations applies to all such unavoidable impacts, as required by Sections 15902 and 15903, Title 14, California Code of Regulations.

For identification and discussions of significant impacts within the FEIR, significance was classified according to the following definitions:

- Class I - A significant adverse impact that cannot be mitigated to a level of insignificance.
- Class II - A significant adverse impact that can be mitigated to a level of insignificance.

PROJECT BACKGROUND

The proposed granting of a lease for the continued operation of the Tosco Marine Terminal is a discretionary act that will allow Tosco to operate the Marine Terminal that has been at its present location since 1955. The leasing action itself, which is under the jurisdiction of the CSLC, results in no direct physical impact to the environment. Operation of the Marine Terminal involves continuation of routine Terminal operations that can result in impacts to the environment through daily activities that can include leaks in the wharf pipeline trestle system or accidental spills during transfer operations. These hydrocarbon releases can have some effects on marine resources. The greatest potential for significant environmental impact is from accident conditions that could result in spills at the Terminal, in the San Francisco Bay shipping lanes, and along the outer coast. The extent of potential impact will vary depending on the amount of oil released, the consistency of the volume of oil, whether the release is crude or product, the flow of the release during seasonal variations, and whether sensitive species are present. Spills within the Bay have the potential to reach all areas of the Bay and into the Strait, including shoreline facilities. Spills along the outer coast also have the potential to reach sensitive areas, including the Farallone Islands and other points along the California coast.

The mitigation measures presented herein are derived from various sources and are considered a compendium of the available measures that have been included in previous projects, have been adopted as standard by local agencies, or are seen as

new measures developed as a result of new and improving technologies and/or regulations. These measures together represent a model of operational conditions that, when applied to the operation of the Marine Terminal, will achieve a larger measure of protection for the unique environmental features of the project.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Deficiencies in Structural Integrity of Wharf

Impact: Potential deficiencies in the structural integrity of the wharf were discovered during an inspection of the Terminal. These deficiencies could cause secondary impacts that could result in hydrocarbon releases resulting in a significant (Class II) impact.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

The structural integrity of the wharf was evaluated by reviewing drawings supplied by Unocal, visiting the facility, reviewing results of pipeline inspection records, and conducting discussions with Unocal and CSLC personnel. A December, 1992, CSLC annual inspection of the Terminal discovered potential deficiencies in the structural integrity of the wharf. The pipelines on the trestle are mounted directly above the water with no barrier or containment system to prevent released product from falling directly into the water. An additional inspection was conducted in January 1997.

This potential impact can be mitigated to a level of insignificance by Tosco applying the following measures:

- Within 180 days of lease renewal, Tosco shall conduct a structural and safety system audit of the Terminal in concert with the CSLC and a third-party consultant as described in the Commission's "Marine Terminal Audit Program" document. The purpose of the audit is to:
 - identify safety system, mechanical, electrical, and fire detection and suppression deficiencies;
 - identify structural damage or weaknesses that might affect the continued fitness-for-purpose of the facility;
 - advise whether these deficiencies have been properly assessed; and
 - advise what safety improvements would be taken to correct, prevent, or minimize these potential hazards.

The audit will be conducted with teams composed of CSLC, Tosco, and consultant personnel. Upon completion of the audit, Tosco shall implement the safety improvements in accordance with a scheduled plan.

The independent structural and system safety audit of the wharf is intended to identify deficiencies in key physical components of the terminal, the failure of which could result in an accidental discharge of hydrocarbons into the environment. Once identified, these deficiencies will be independently verified and corrected according to a schedule approved by the CSLC. The correction of such deficiencies will eliminate them as potential causal factors in accidents or spills at the Terminal.

- Develop, subject to review and approval of the CSLC, and implement a preventative maintenance program that includes periodic inspection of the wharf components.

The institution of a regular maintenance program at the Terminal will enable Tosco to keep the facility at the level of proficiency established by the above mitigation measure. These actions will in turn reduce the potential for equipment failures and the potential for spills therefrom.

- To prevent or minimize damage to the wharf and vessel, Tosco shall install an Allision Avoidance System (AAS) that provides information to the vessel master regarding the approach rate to the wharf.

The use of this technology would reduce the potential for a vessel colliding with and damaging the wharf. Damage to the wharf could result in a hydrocarbon spill. This measure would reduce or eliminate an additional causal factor of potential accidents at the Terminal.

- 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 (50 bbl).

This measure would enable the CSLC to improve safety at the Terminal at any time it determines that more effective preventive technologies are available or upon a determination, because of a spill at the facility, that more stringent measures are necessary to prevent additional spills.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Release of Hydrocarbons from Trestle Pipelines

Impact: The potential release of hydrocarbons from pipelines on the trestle/wharf is considered a significant (Class II) impact.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

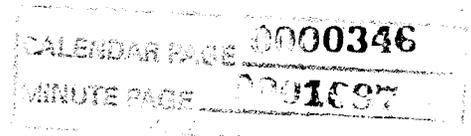
The water quality and biological resources sections of the Draft EIR present detailed discussions on the effects of the release of spilled oil in water and to biological resources. The most significant effects to water are related to water chemistry. The most toxic period for crude oil spilled into the aquatic environment is during the first few days after an oil spill occurs because, during this period, the volatile, low-molecular weight hydrocarbons are present. Oil residues that sink into the bottom sediments may persist for months or years. A product spill is expected to be more toxic, but of shorter duration. While the lighter volatile fractions from product are lost more rapidly to evaporation, toxicity tests performed by the U.S. Environmental Protection Agency (EPA) have shown that aromatic constituents are the most toxic, naphthenes and olefins are intermediate in toxicity, and straight chain paraffins are the least toxic.

This potential impact can be mitigated to a level of insignificance by Tosco applying the following measures:

- Update piping and instrumentation diagrams (P&IDs) and flow diagrams.
- Develop and implement a program to minimize the potential for pipeline leaks. In this program Tosco shall, at a minimum, do the following:
 - assess the current condition of all the pipelines using the criteria prescribed in ASME B31G - 1991 and repair or replace problem pipe;
 - improve the existing pipeline inspection and maintenance programs; and
 - install an effective leak detection system, e.g., pressure point analysis system.

These measures are designed to: 1) identify the potential existence of factors that adversely affect pipeline integrity and have historically contributed to 40% of the recorded accidental hydrocarbon releases at the Terminal; and 2) rectify such deficiencies. The last measure would enable Terminal personnel to recognize a pipeline leak sooner and subsequently shutdown operations to reduce the amount of material spilled into the marine environment.

- These spills are small, less than 50 bbl, and Tosco has the response capability to handle such containment. 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 pipeline spill greater than 2,100 gallons (50 bbl).

This measure would enable the CSLC to improve safety at the Terminal at any time it determines that more effective preventive technologies are available or upon a determination, because of a spill at the facility, that more stringent measures are necessary to prevent additional spills.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Accidental Spills Greater than 50 bbl from Hydrocarbon Transfers at Terminal

Impact: Accidental spills greater than 50 bbl, from hydrocarbon transfers at the Terminal, are considered a significant (Class I) impact.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The water quality and biological resources sections of the Draft EIR present detailed discussions on the effects of the release of spilled oil in water and to biological resources. The most significant effects to water are related to water chemistry. The most toxic period for crude oil spilled into the aquatic environment is during the first few days after an oil spill occurs because, during this period, the volatile, low-molecular weight hydrocarbons are present. Oil residues that sink into the bottom sediments may persist for months or years. A product spill is expected to be more toxic, but of shorter duration. While the lighter volatile fractions from product are lost more rapidly to evaporation, toxicity tests performed by the EPA have shown that aromatic constituents are the most toxic, naphthenes and olefins are intermediate in toxicity, and straight chain paraffins are the least toxic.

Tosco shall institute the following measures to reduce the probability of a spill and reduce the impacts of a spill, should one occur. However, even with implementation of these measures, the potential impact from spills during transfer operations remains significant.

- Cargo transfer will 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.

The safety of operations at the Terminal could be adversely affected if there is not effective communication between key personnel on the vessel and at the Terminal. These individuals must be able to understand one another to ensure safe routine operations and to ensure a proper notification of and response to any emergency situation. A fluency in a common language, English, will contribute to more effective communication.

- No tank vessel shall load more than 98 percent capacity in any tank, and no barge shall load more than 95 percent capacity in any tank to prevent the possibility of overfilling cargo tanks.
- To prevent or minimize the potential for operational errors, any barge handling cargo at the Terminal shall be manned by a minimum of one tankerman and one deckhand. Barges moored at the Terminal, but not handling cargo, shall be manned by at least one person who shall be either a deckhand or tankerman.

Employing two persons in the cargo handling operations of barges will contribute to an increased vigilance and a more efficient division of labor in such operations. These circumstances should, in turn, reduce the potential of human error as a causal factor in spills.

- There shall be a TPIC at the Terminal during all transfer operations. In addition, there shall be a Marine Terminal Operator located at the tank vessel berth for each vessel.

Having a TPIC dedicated to the conduct of operations between a vessel and the Terminal ensures that due diligence will be applied to safety procedures during the transfer of materials. It enhances accountability for such operations and should contribute to increased safety at the Terminal. The presence of another individual whose express responsibility is to monitor points at which possible leaks could occur during transfer operations should provide quicker response to problem situations and prevent or reduce spill amounts as operations could be shutdown and the Terminal's spill contingency plan implemented.

- All active loading arms shall be equipped with the U.S. Coast Guard (USCG) approved quick-release couplings prior to use. A product flow control system will be interlocked at the coupling so that flow automatically stops prior to disconnection, providing an anti-spill safety feature.

The use of the specified quick-release couplings will enable a vessel conducting operations at the Terminal to depart more quickly from the facility in the event of an emergency without contributing to or causing a spill. The use of the couplings should provide additional protection to the vessel and the Terminal without increasing the potential for a discharge of hydrocarbons into the marine environment.

- Dock mooring points should be equipped with strain gauges with shipboard and/or wharf control room monitors so that the moorings have tension balanced at all times.

The use of strain gauges on a vessel's moorings while it is moored at the Terminal will enable vessel and Terminal personnel to maintain the proper tension on the mooring lines. In this manner, the vessel will remain more stable and the potential for the vessel to break away from the Terminal will be reduced. A safer transfer operation between the vessel and the Terminal should result and thereby reduce the potential for a spill.

- Develop and implement a preventative maintenance program within 180 days of lease renewal that includes periodic inspection of all components related to transfer operation at the Terminal.

The independent structural and system safety audit of the wharf is intended to identify deficiencies in key physical components of the terminal, the failure of which could result in an accidental discharge of hydrocarbons into the environment. Once identified, these deficiencies will be independently verified and corrected according to a schedule approved by the CSLC. The correction of such deficiencies will eliminate them as potential causal factors in accidents or spills at the Terminal.

- Within 180 days of lease renewal, Tosco shall conduct a structural and safety system audit of the Terminal in concert with the CSLC and a third-party consultant as described in the Commission's "Marine Terminal Audit Program" document. The purpose of the audit is to:
 - identify safety system, mechanical, electrical, and fire detection and suppression deficiencies;
 - identify structural damage or weaknesses that might affect the continued fitness-for-purpose of the facility;
 - advise whether these deficiencies have been properly assessed; and
 - advise what safety improvements should be taken to correct, prevent, or minimize these potential hazards.

The audit will be conducted with teams composed of CSLC, Tosco, and consultant personnel. Upon completion of the audit, Tosco shall implement the safety improvements in accordance with a scheduled plan.

The independent structural and system safety audit of the wharf is intended to identify deficiencies in key physical components of the terminal, the failure of which could result in an accidental discharge of hydrocarbons into the

environment. Once identified, these deficiencies will be independently verified and corrected according to a schedule approved by the CSLC. The correction of such deficiencies will eliminate them as potential causal factors in accidents or spills at the Terminal.

- 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 (50 bbl).

This measure would enable the CSLC to improve safety at the Terminal at any time it determines that more effective preventive technologies are available or upon a determination, because of a spill at the facility, that more stringent measures are necessary to prevent additional spills.

- Tosco shall preboom 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 standoff of not less than 4 feet from the outboard side of the vessel. For vessel off loading 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. CSLC and Tosco shall review the effectiveness of the booming after 1 year. Based on this review, CSLC will make a determination as to the continuation of this requirement.

The Terminal is classified by the Marine Facilities Division of the California State Lands Commission as a "high current" facility. Current boom technology is not sufficiently advanced to meet the specifications for deployment and maintenance of a boom around a vessel at the Terminal. The Terminal complies with existing regulations by maintaining booms at the Terminal that are capable of deployment within the specified time requirements. However, containment of a spill could be enhanced if the vessel were pre-boomed prior to the commencement of transfer operations. This measure would enable the CSLC to require pre-booming of a vessel when it determines that effective boom designs are available.

Alternatives for use of the Marine Terminal were evaluated in the Draft EIR. Of the alternatives considered, the No Project, Replacement of Crude from Central Valley via Pipeline, and Refinery Shutdown would eliminate all potential of spills of hydrocarbons into the marine environment. Of these, the Central Valley Pipeline could result in spills to inland waterways that could be significant, but not as potentially severe as a large tanker spill. Of the other alternatives, Replacement of Crude via Pipeline from Other Marine Terminals would shift the risk associated with crude intake from Tosco to other terminals in the Bay, but would not reduce the consequences to the marine environment. The risk at other locations may be greater

because it could be assumed that Tosco tanker activity could relocate at those locations. Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and Reduced Operation would reduce some of the risk, but the potential for the impact would remain. The Consolidation Alternative was found to have little differential impact to the environment than that of the Tosco project. All of the alternatives would have varying levels of economic and social consequences associated with them.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Fires and Explosions at Terminal or Onboard Vessels

Impact: Fires and explosions at the Terminal or onboard vessels are considered to be significant (Class II) impacts.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

Fires and explosions at the Terminal involving vessels and/or the Terminal itself are possible. Vessels loading or unloading low-flash cargoes (flash points of less than 150°F) may be at risk. If the required inert gas systems are not properly working then the risk increases. Another area of potential risk is the vapor recovery system (VRS) that is designed specifically to protect against fire or explosion. The VRS can be dangerous if not operated properly due to its location on the pier near the wharf close to where transfer operations take place and because of volatile vapors. Even though Tosco has undertaken measures to ensure that the design of the VRS is safe and is operated properly, a December 1992 annual inspection of the Terminal found that the detonation arrestor (DA) near the Berth M-1 vapor connection had been removed and installed between the water seal and thermal oxidizer, resulting in a safety hazard.

Even though the risk estimate was shown in the EIR to be 7,100 years between events, a fire could generate radiant heat, and an explosion could create flying debris and blast over pressure. The hazard footprint (area at risk) from radiant heat capable of causing second-degree burns to exposed skin after 30 seconds of exposure (1,600 Btu/sq. ft./hr.) was calculated to be 300 feet around the ships. An explosion involving one of the tanks could send flying debris up to 1,500 feet from the ship.

These impacts can be mitigated by having Tosco institute measures to reduce the probability of an event and reduce the impacts should one occur. The recommended mitigation measures are presented below.

- Cargo operations will be stopped if the CSLC inspector is not satisfied that the TPIC or the VPIC is sufficiently fluent in the English language.

The safety of operations at the Terminal could be adversely affected if there is not effective communication between key personnel on the vessel and at the Terminal. These individuals must be able to understand one another to ensure safe routine operations and to ensure a proper notification of and response to any emergency situation. - A fluency in a common language, English, will contribute to more effective communication.

- Within 180 days of lease renewal, develop a set of emergency response procedures subject to review and approval by the CSLC 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 incident.

Tosco maintains its own fire/emergency response department with full-time trained personnel at the Refinery. These personnel are trained in fighting petroleum fires and fires at the Terminal. The development of the subject procedures will ensure that there is adequate fire response equipment and a plan for response in place at the Terminal.

- To prevent an event from spreading from/to the wharf/vessel: (1) all vessels, including barges, shall maintain the ability to get underway within 30 minutes; and (2) mooring points shall be equipped with quick-release devices, e.g., pelican hooks.

In addition to assessing fire response equipment, personnel and the response plan, the above mitigation measures enable vessels to quickly leave the wharf. In this way, a fire on either the wharf or a tanker will have less possibility of spreading and a greater possibility of being contained and controlled.

- 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 (50 bbl).

This measure would enable the CSLC to improve safety at the Terminal at any time it determines that more effective preventive technologies are available or upon a determination, because of a spill at the facility, that more stringent measures are necessary to prevent additional spills.

- There shall be a TPIC at the Terminal during all transfer operations. In addition, there shall be a Marine Terminal Operator located at the tank vessel berth for each vessel.

Having a TPIC dedicated to the conduct of operations between a vessel and the Terminal ensures that due diligence will be applied to safety procedures during the transfer of materials. It enhances accountability for such operations and

should contribute to increased safety at the Terminal. The presence of another individual whose express responsibility is to monitor points at which possible leaks could occur during transfer operations should provide quicker response to problem situations and prevent or reduce spill amounts as operations could be shutdown and the Terminal's spill contingency plan implemented.

- All active loading arms shall be equipped with the USCG-approved quick-release couplings prior to use. A product flow control system will be interlocked at the coupling so flow automatically stops prior to disconnection to provide an anti-spill safety system.

The use of the specified quick-release couplings will enable a vessel conducting operations at the Terminal to depart more quickly from the facility in the event of an emergency without contributing to or causing a spill. The use of the couplings should provide additional protection to the vessel and the Terminal without increasing the potential for a discharge of hydrocarbons into the marine environment.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Explosion of Butane Tank

Impact: Explosion of butane tank could cause damage to nearby neighborhoods (Class I) impact.

Finding: A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

The probability of a major incident involving a butane pressure vessel is extremely low. However, a catastrophic butane sphere rupture may produce two outcomes: a cloud of vapor and a pool of spilled liquid, from which flammable gas will evaporate. Both the vapor cloud and the evaporating gas plume may have flammable regions. If ignited, an explosion may result. If members of the public are caught within the hazard radii of any of these events during the hazard exposure window, injuries or death may result.

An unconfined vapor cloud explosion (UVCE) is probably the worst event that could occur involving the butane tank. Such an event would result in broken windows several miles away. Heavy damage could also occur to other structures in the area. UVCEs are only possible when large amounts of vapor are released and are extremely rare. It is estimated (Agbabian 1991) that the probability of an UVCE from a storage facility with several 2,500 bbl butane vessels was of the order of 10^{-7} per year. While the potential consequences of a catastrophic accident involving the butane tank are severe, and are considered to be a significant (Class I) impact, the

tank has been designed and constructed in such a manner that the potential for an accident occurring that could cause injury or death to members of the public is so remote that no mitigation measures are recommended.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Hydrocarbon Release from Tanker or Barge

- Impact: The potential release of hydrocarbons from a tanker or a barge is considered a significant (Class I) impact.
- Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

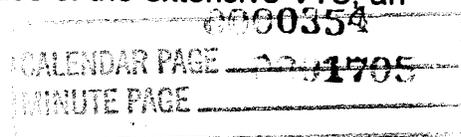
Facts Supporting the Finding

The water quality and biological resources sections of the Draft EIR present detailed discussions on the effects of the release of spilled oil in water and to biological resources. The most significant effects to water are related to water chemistry. The most toxic period for crude oil spilled into the aquatic environment is during the first few days after an oil spill occurs because, during this period, the volatile, low-molecular weight hydrocarbons are present. Oil residues that sink into the bottom sediments may persist for months or years. A product spill is expected to be more toxic, but of shorter duration. While the lighter volatile fractions from product are lost more rapidly to evaporation, toxicity tests performed by the EPA have shown that aromatic constituents are the most toxic, naphthenes and olefins are intermediate in toxicity, and straight chain paraffins are the least toxic.

This potential impact can be partially mitigated by having Tosco institute measures to reduce the probability of a spill and reduce the impacts of a spill, should one occur. However, even with implementation of these mitigation measures, the potential remains for significant (Class I) impact from vessel spills. The recommended mitigation measures are presented below.

- All tank vessels bound for the Terminal or leaving the Terminal shall use the San Francisco Vessel Traffic Service (VTS).

Accidents involving tankers and barges increase if an area becomes overly congested. A VTS has been established by the U.S. Coast Guard for San Francisco Bay, and its seaward approaches. Because of the extensive VTS, an



increase of vessel traffic in and around the Bay due to vessels calling at the Tosco Marine Terminal would most likely not cause the area to become congested. Tosco's participation in the VTS will reduce the probability of a collision and thereby, the probability and possibility of a spill.

- 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.

SB 2040 required the Office of Oil Spill Prevention and Response (OSPR) to develop a State Oil Spill Contingency Plan. In addition, each major harbor was directed to develop a Harbor Safety Plan addressing navigational safety, including tug escort for tankers. The Harbor Safety Committee of the San Francisco Bay Region issued its Draft Harbor Safety Plan in June 1992. The draft plan contains several recommendations to improve safety. One recommendation first implemented in May 1993 through the OSPR's issuance of interim regulations was the requirement that all tank vessels carrying more than 5,000 tons of oil be escorted by a tug when in areas of concern. The interim regulations expired at the end of 1994 but were subsequently made permanent.

Tug escorts will facilitate vessel maneuverability and thereby decrease the probability of a collision or grounding and any resultant spill.

- 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.
- Tosco shall ensure that tugs of best available technology design (e.g., tractor tugs) escort all tank vessels bound for or leaving the Terminal.

Tug escorts will facilitate vessel maneuverability and thereby decrease the probability of a collision or grounding and any resultant spill.

- All loaded or partly loaded vessels, U.S. and foreign, bound for or coming from destinations other than those in California shall be advised by Tosco to use the Main (Western) Traffic Lanes from/to the Precautionary Area and stay at least 50 miles offshore the California coast during transit. All tankers directly under Tosco's control shall abide by this requirement.

Accidents involving tankers and barges increase if an area becomes overly congested. A VTS has been established by the U.S. Coast Guard for San Francisco Bay and its seaward approaches. Because of the extensive VTS, an increase of vessel traffic in and around the Bay due to vessels calling at the Tosco Marine Terminal would most likely not cause the area to become

congested. Tosco's participation in the VTS, will reduce the probability of a collision and thereby, the possibility and probability of a spill.

Also, since spills more than 50 miles from the coast are not expected to impact the shoreline, the requirement to stay at least 50 miles offshore will decrease the probability of shoreline impacts should an accident occur.

- 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 (50 bbl).

This measure would enable the CSLC to improve safety at the Terminal at any time it determines that more effective preventive technologies are available or upon a determination, because of a spill at the facility, that more stringent measures are necessary to prevent additional spills.

- Tosco shall ensure that adequate under keel clearance is maintained at all times. At a minimum, Tosco shall conduct an annual bathymetric survey in the vicinity of the wharf.

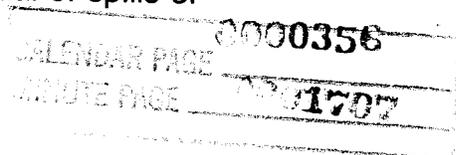
It is necessary for Tosco to insure that there is adequate under keel clearance to allow for safe operations at the Marine Terminal. Tosco will conduct an annual bathymetric survey to ensure that this clearance is maintained. As necessary, Tosco will continue to perform maintenance dredging to reestablish water depths necessary for safe approach and berthing operations. These measures will reduce the possibility of vessel groundings at or near the Terminal and summarily will decrease the probability of a spill.

- Tosco shall ensure that all vessels calling at the Terminal have an oil spill response plan that meets USCG and OSPR requirements. In addition, Tosco shall provide initial response to spills from vessels calling at the Terminal while they are at or near the Terminal.

Response to a spill from a tank vessel is the responsibility of the owner/operator. As a result of OPA 90, each vessel is required to have an oil spill response plan that identifies the worst case spill, defined as the entire contents of the vessel, and the assets that will be used to respond to the spill. WCSC, which owns the majority of tankers that call at the terminal, has developed their plans in response to OPA 90.

This requirement will ensure that oil spill response capabilities have been evaluated, and that an approved plan is in effect should a spill occur.

Alternatives for use of the Marine Terminal were evaluated in the Draft EIR. Of the alternatives considered, the No Project, Replacement of Crude from Central Valley via Pipeline, and Refinery Shutdown would eliminate all potential of spills of



hydrocarbons into the marine environment. Of these, the Central Valley Pipeline could result in spills to inland waterways that could be significant, but not as potentially severe as a large tanker spill. Of the other alternatives, Replacement of Crude via Pipeline from Other Marine Terminals would shift the risk associated with crude intake from Tosco to other terminals in the Bay, but would not reduce the consequences to the marine environment. The risk at other locations may be greater because it could be assumed that Tosco tanker activity could relocate at those locations. Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and Reduced Operation would reduce some of the risk, but the potential for the impact would remain. The Consolidation Alternative was found to have little differential impact to the environment than that of the Tosco project. All of the alternatives would have varying levels of economic and social consequences associated with them.

OPERATIONAL SAFETY/RISK OF ACCIDENTS: Cumulative Oil Spill Impact

Impact: Oil spills are considered to be a significant impact. Small spills can be mitigated and are classified as Class II impacts, while large spills cannot be completely mitigated and are therefore classified as Class I.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The water quality and biological resources sections of the Draft EIR present detailed discussions on the effects of the release of spilled oil in water and to biological resources. The most significant effects to water are related to water chemistry. The most toxic period for crude oil spilled into the aquatic environment is during the first few days after an oil spill occurs because, during this period, the volatile, low-molecular weight hydrocarbons are present. Oil residues that sink into the bottom sediments may persist for months or years. A product spill is expected to be more toxic, but of shorter duration. While the lighter volatile fractions from product are lost

more rapidly to evaporation, toxicity tests performed by the EPA have shown that aromatic constituents are the most toxic, naphthenes and olefins are intermediate in toxicity, and straight chain paraffins are the least toxic.

As discussed in the EIR, a great number of state, federal, and international regulations govern marine terminals and the transportation of hydrocarbons by vessel. The most effective measure that can be instituted to increase the safety of marine terminals and associated vessel traffic is the strict observance and enforcement of these regulations.

Vessel traffic in the Bay Area should continue to be monitored and if situations arise where safety may be jeopardized, then the VTS should be improved to alleviate these situations. This could involve measures such as adding additional radar coverage in the Bay Area. In addition, the practice of keeping tankers carrying crude oil 50 miles offshore should be continued where feasible.

CSLC should continue to review operations of marine terminals and institute measures to increase safety on a case-by-case basis based on an analysis of the facility.

Through these measures, the risk of accidents can be reduced, and small spills (Class II) can be rapidly cleaned up. The consequences of large spills, however, have the potential to remain as significant impacts after the application of all feasible mitigation.

WATER QUALITY: Oil or Product Spill at Tosco Marine Terminal

Impact: A major oil spill from the continued operation of the Tosco Marine Terminal would result in significant (Class I or II) impacts to water quality.

- Finding:**
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

A significant impact to marine water quality will result from changes in water chemistry from an accidental spill of crude oil or oil products in either the San Francisco Bay Estuary or outer coastal waters. The severity of the impact will depend on: (1) the size of the spill, (2) the composition of the oil, (3) the characteristics of the spill (instantaneous vs. prolonged discharge, surface vs. subsurface spill, and so forth), (4) the environmental conditions and the effect of these conditions on spill properties due to weathering, and (5) the effectiveness of cleanup operations. In the event of an oil spill, the initial impacts will be to the water quality of surface waters and the water column followed by potential impacts to sedimentary and shoreline environments. Following an oil spill, hydrocarbon fractions will be partitioned into different regimes, and each fraction will have a potential impact on water quality.

The duration of potential impacts to water quality is variable. The most toxic period for crude oil spilled into the aquatic environment is the first few days after an oil spill occurs because, during this period, the volatile, low-molecular weight hydrocarbons are still present. After a few days, a larger portion of the spilled oil and some of the more toxic oil components will have evaporated or been reduced by other weathering processes. Oil residues that sink into bottom sediments may persist for months to years.

A product spill would be expected to be more toxic, but of shorter duration than a crude oil spill. The products are made up of more volatile components than crude oil. These lighter volatile fractions are lost more rapidly to evaporation than the higher molecular weight fractions in crude oil. Toxicity tests performed on oil by the EPA have shown that aromatic constituents are the most toxic, naphthenes and olefins are intermediate in toxicity, and straight chain paraffins are the least toxic.

Tosco shall apply the following mitigation measures to help reduce oil or other pollutant spill impacts. According to the analysis in the Operational Safety/Risk of Accidents Section, only a spill of 50 gallons or less could be contained and cleaned up effectively.

1. The most effective way to mitigate for the significant water quality impacts of a major oil spill is to prevent such a spill from occurring. Section 4.2.5.1 of the EIR details a series of procedures to increase the safety of operations associated with the Tosco Marine Terminal. These include measures to: (1) ensure the structural integrity of the wharf, (2) decrease the chances of release of hydrocarbons into Bay waters from pipelines on the trestle/wharf, (3) prevent or reduce potential spills from hydrocarbon transfers at the Terminal, (4) reduce the potential for explosions at the Terminal or onboard vessels, and (5) prevent or reduce the potential release of hydrocarbons from a tanker or barge. These measures would significantly reduce the chances of a major spill and its significant impact on water quality. However, even with all feasible prevention

and safety measures in place, there is still a finite chance of a major oil spill that could have significant impacts on water quality.

Additional mitigation measures presented in Section 4.2.5.1 to reduce these significant impacts are that all operations at the Terminal and by tankers are conducted in a safe manner, all equipment is operating properly, all repairs are conducted promptly to reduce the chances that a spill would occur, and that an effective containment and cleanup program be maintained to minimize the impacts if a spill does occur. Tosco's Oil Spill Contingency and Response Plan is analyzed in Section 4.2 therein. That analysis identified several conditions at the Terminal that need to be corrected to reduce the chances of accidents.

2. If a spill did occur, impacts to water quality could be minimized by rapid containment and cleanup. Tosco's Oil Spill Contingency and Response Plan identifies that it is possible in some situations for dispersants to be used. Dispersants would only be used with approval from the USCG and the CDFG. It should be recognized that dispersants, although they may be warranted in some cases, would have a significant adverse impact on water quality. Almost all studies have shown dispersant oil mixtures to be more toxic to marine animals than oil alone (McKay 1982; Snow 1982).

If a major oil spill occurred, appropriate contaminant and cleanup procedures could reduce impacts to water quality, but impacts would be expected to remain significant for any spill larger than 50 bbl.

Alternatives to use of the Marine Terminal were evaluated in the Draft EIR. Of the alternatives considered, the No Project, Replacement of Crude from Central Valley via Pipeline, and Refinery Shutdown would eliminate all potential spills of hydrocarbons into the marine environment. Of these, the Central Valley Pipeline could result in spills to inland waterways that could be significant, but not as potentially severe as a large tanker spill. Of the other alternatives, Replacement of Crude via pipeline from other Marine Terminals would shift the risk associated with crude intake from Tosco to other terminals in the Bay, but would not reduce the consequences to the marine environment. The risk at other locations may be greater because it could be assumed that Tosco tanker activity could relocate at those locations. Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and Reduced Operation would reduce some of the risk, but the potential for the impact would remain. The Consolidation Alternative was found to have little differential impact on the environment than that of the Tosco project.

WATER QUALITY: Input of Tributyltin (TBT)

Impact: Any input of TBT into the waters of San Pablo Bay would be a significant (Class II) impact to water quality because of the toxicity of this substance.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

There is the potential that organotins, used in antifouling paints, could leach from the hulls of tankers servicing the Tosco Marine Terminal. Organotins are highly toxic to aquatic organisms. A concentration of 6 nanograms/liter of TBT is considered the upper limit for protection of marine life. In the past, organotins were commonly used in bottom paints of vessels as an antifouling ingredient. Recent recognition of the toxicity of these compounds has led to restrictions on their use. Any use of TBT as an antifouling agent on tankers could have a significant adverse impact on water quality because of its toxicity.

Tankers servicing the Tosco Marine Terminal would qualify for the use of TBT antifouling paint, but TBT antifouling paints are not used on tankers under charter to Tosco.

WATER QUALITY: Cumulative Degradation of Water Quality

Impact: Water quality criteria for several pollutants are exceeded in the San Francisco Bay Estuary resulting in significant (Class I and II) impacts.

- Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
- B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (SFRWQCB).
- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The water quality of the San Francisco Bay Estuary has been degraded by inputs of pollutants from a variety of sources. Major sources of contaminants include municipal wastewater and industrial discharges and a variety of nonpoint sources, such as urban and agricultural runoff, riverine inputs, dredging and dredge material disposal,

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marine vessel inputs, and inputs from air pollutants, spills, and accidents. Many contaminants in the water column, sediments, and biota in the estuary either exceed water quality objectives in the San Francisco Bay Basin Plan or are at levels known to have harmful effects on aquatic organisms. The water quality of San Francisco Bay has suffered significant cumulative adverse impacts (Class I and II) from pollutant inputs. Copper, lead, zinc, nickel, cadmium, and selenium exceed water quality standards in the vicinity of the Marine Terminal. The Tosco Marine Terminal is a minor source of these contaminants compared to other sources. However, because these criteria exceed water quality standards, even the small contribution in these contaminants contributed by Tosco Marine Terminal operations is a significant (Class I) impact. A major oil spill from Tosco Marine Terminal operations would also have a cumulative significant impact on water quality.

Regulations of point source discharges have led to significant improvements in the quality of municipal wastewater and industrial discharges. Thus, even though the volume of these discharges has increased, the contaminant loads have actually decreased. The largest source of contaminants to the San Francisco Bay estuary is urban and nonurban runoff.

The control of nonpoint source pollution has become a priority with the State Water Resources Control Board and other State agencies, as well as with the federal EPA and the National Oceanic and Atmospheric Administration (NOAA). In July 2000, the EPA and NOAA approved the State's *Plan for California's Nonpoint Source Pollution Control Program* (State Water Resources Control Board and California Coastal Commission, 2000). Volume II of this Plan identifies more than 60 management measures for the control or prevention of nonpoint pollution affecting State waters from sources such as agriculture, forestry, urban areas, marinas and recreational boating, and hydromodification of rivers and shorelines. The implementation of these management measures and associated management practices should be used to reduce nonpoint source pollution. With the exception of forestry, most of these measures will be relevant to controlling contaminant input to the San Francisco Bay. Improved control of nonpoint source pollution may improve Bay water quality.

Mitigation measures specified under the Operational Safety/Risk of Accidents Section that improve the handling of materials and reduce the number of small leaks and spills will help reduce Tosco's contribution to pollutant loading in San Pablo Bay. Tosco should also be prohibited from discharging ship wastewater into the San Francisco Bay Estuary.

Mitigation for the significant impacts of dredging on water quality within the estuary would be land or offshore disposal of dredged materials. Mitigations to reduce pollutant loads in urban runoff would reduce the pollutant load in Bay sediments and the cumulative impact of dredging.

No feasible alternatives exist to lessen the project's potential cumulative impacts to water quality. Any of the alternatives discussed in the EIR would basically shift the risk

to other Bay locations, resulting in an equal, if not greater, potential for significant impacts.

BIOLOGICAL RESOURCES: Introduction of Exotic Organisms in Ballast Water

Impact: Introduction of exotic organisms in ballast water.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

Ballast water, which is taken on at another port, may contain species that do not naturally occur in the San Francisco Bay ecosystem. Introduction of exotic organisms has had a devastating effect on the estuary ecosystem. For example, the Asian clam (*Potamocorbula amurensis*), thought to have been introduced in ballast water, has all but displaced the benthic community. The Asian clam has negatively impacted the plankton supply by intensive feeding on phytoplankton. Most product unloading and taking on of ballast by Tosco ships occurs at west coast ports. Therefore, it is not likely that release of ballast in San Francisco Bay would introduce an organism that does not already occur in the Bay. However, it is possible that invasive species that have not yet been introduced to San Francisco Bay could occur at one of these other ports. If an exotic species were introduced that could flourish in the Bay, impacts to existing estuarine communities could be significant.

To mitigate the potentially significant impact of introduction of exotic species, all ballast water, including segregated ballast water, from tankers whose origin is other than the West Coast of the United States shall be unloaded to the Tosco wastewater handling facility. No tankers servicing the Tosco Terminal should discharge ballast water to the Bay.

This mitigation would reduce to insignificant, the potential for introducing invasive, non-indigenous organisms to the San Francisco Bay Estuary ecosystem, since no ballast water would enter the regional environment.

BIOLOGICAL RESOURCES: Impacts of Maintenance Dredging on Young Winter and Spring Run Chinook Salmon

Impact: Young winter and spring run Chinook salmon could be harmed by turbidity or entrained by the dredge during maintenance dredging at the Tosco Marine Terminal.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

Chinook salmon are found in the immediate vicinity of the Tosco Marine Terminal. The winter run has been listed as Federal Threatened and State Endangered. The spring run is a State Species of Special Concern. Adult Chinook salmon would be expected to avoid the immediate vicinity of the dredging activity, but young salmon in the immediate vicinity of the dredge could be harmed by the resulting turbidity or entrained by the dredge. Impacts would be expected to occur only in the immediate vicinity of the dredging activity. However, because young Chinook salmon are known to occur in the immediate vicinity of the Terminal and because the winter and spring runs are so reduced, the impacts of maintenance dredging on the Chinook salmon are determined to be potentially significant.

Impacts of dredging on Chinook salmon could be reduced to insignificant by incorporating the following mitigation measure. Tosco shall conduct dredging within specific time constraints as imposed by regulatory agencies having jurisdiction regarding this matter.

The mitigation would cause the dredging to occur when neither Chinook salmon nor winter and spring runs are present at or in the vicinity of the Terminal.

BIOLOGICAL RESOURCES: Effects of Major Oil Spill on Biological Resources

Impact: Significant impacts on biological resources could result from a major oil spill.

- Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
- B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

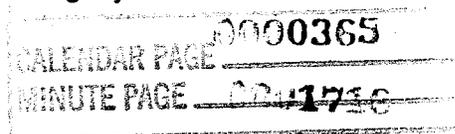
Significant impacts to biological resources could occur from a spill either within the San Francisco Bay Estuary or from tankers along the outer coast. Biological impacts of oil spills include lethal and sublethal effects and indirect effects resulting from either habitat alteration and destruction or contamination of a population's food supply. Directly lethal effects may be chemical (such as poisoning by contact or ingestion) or physical (such as coating or smothering with oil). A second level of interaction, sublethal effects, are those that do not kill an individual, but render it less able to compete with individuals of the same and other species.

Furthermore, because a major oil spill would have the potential to impact many components of the ecosystem, more complex secondary effects would be expected in addition to the primary effects of oiling. Although secondary effects are more difficult to document and have been difficult to predict, the disruption of community structure by a major oil spill could cause ecosystem changes that would last for many years. These ecosystem level effects can be complex and even contradictory, but changes in community structure have been observed for most oil spills.

An oil spill of 1,000 bbl or greater has the potential to have significant adverse impacts on biological resources (Class I). A spill between 50 and 1,000 bbl would also probably have significant biological impacts (Class I). A spill between 1 and 50 bbl would also have the potential for significant impacts, but could be contained and/or cleaned up before such impacts occurred (Class II).

Several levels of mitigation exist for significant impacts on biological resources from a Tosco spill. These levels of mitigation are: (1) prevention, (2) containment, (3) avoidance of sensitive resources, (4) cleanup and rehabilitation of oiled areas, and (5) restoration and/or compensation for damaged resources and habitat. The residual impact will increase along the continuum from (1) prevention to (5) restoration or compensation. Prevention of spills would prevent all oil spill impacts to biological resources. Containment and/or avoidance of sensitive areas might reduce impacts to adverse but nonsignificant if the spill did not occur in the immediate vicinity of sensitive resources. If spills cannot be contained and/or sensitive areas cannot be avoided, the residual impact would certainly be significant (Class I), and cleanup, rehabilitation, restoration, and compensation could at best be hoped to reduce those significant impacts. Each level of mitigation is considered below.

1. **Prevention of Oil Spills** - Prevention of spills is the most effective level of mitigation and the only one that will prevent all biological impacts. Detailed measures to prevent spills are presented in Section 4.2.5.1 of the EIR. With strict adherence to these measures, the chances for some types of spills will be reduced to nonsignificant. However, even with the mitigation measures, it is determined that some types of spills such as spills during hydrocarbon



transfers at the Terminal and potential release of hydrocarbons from a tanker or barge will remain significant (Class I).

2. **Containment of Oil and Procedures to Reduce Damage of a Contained Spill-** Tosco's equipment and capabilities for containment of oil to the immediate vicinity of the spill are discussed in Section 4.2.3.3. The Tosco Terminal and Tosco tankers have the equipment required by regulations for containment and cleanup. This equipment is probably sufficient to contain a small spill. If oil is contained in the immediate area of the spill, widespread biological damage can be avoided and, in most cases, sensitive shoreline resources, including tidal marshes, intertidal mudflats, intertidal rocks, seabird roosting and breeding areas, and marine mammal haul-out areas can be avoided. If the spill were to occur from a tanker on the outer coast, it is possible that, by containing oil around the tanker in offshore waters, biological impacts could be reduced to insignificance. However, even with containment, it is anticipated that within San Francisco Bay Estuary, there is still the potential for significant damage. Sensitive resources in the immediate vicinity of the Terminal include Dungeness crab, chinook salmon, white sturgeon, and striped bass. Even if a spill at the Terminal were immediately contained, oil might contact these resources. Because these organisms are found either in the water column or close to the bottom, the amount of damage would depend on the amount of oil that sinks. It may be that, if oil can be contained and rapidly cleaned, little will sink and significant impacts will be avoided. For this reason, oil should be removed from the water as soon as possible, and sinkants should not be used.

If a spill occurs along tanker routes and the oil is contained, the amount of damage would depend on where on the route the spill occurs. If the spill occurs near the double-crested cormorant colonies on the Richmond-San Rafael Bridge, there would be immediate danger to the birds that forage in the waters of the Bay near their colony. Attempts should be made to scare birds from the area of the spill. This action would be appropriate during the nonbreeding season, but during the breeding season, it might frighten the birds on their nests and interfere with breeding activities. During the breeding season, a gentler method of scaring birds, such as shouting and arm waving, should be used. The decision on methods to be used to flush birds from the oil spill area should be made by CDFG and USFWS biologists. If a spill occurs near the cormorant colony, experts in bird rehabilitation should immediately be brought to the site to rescue and begin immediate care of any oiled birds.

3. **Avoidance** - In the event of a spill larger than 1,000 bbl, containment would not be likely. In that case, the most important mitigation measure is to prevent the oil from reaching sensitive biological resources. The San Francisco Bay/Delta Area Contingency Plan (OSPR, USCG-1/5/00) does provide specific recommendations for the protection of significant biological areas.

Based on the analysis in the biological resources section of the EIR, the highest priority areas for protection from a Tosco spill have been identified. These priorities were selected based on the sensitivities of the resource and their level of risk from a Tosco spill. It should not be implied that these are the only resources that could be impacted by a Tosco spill or that these are the only resources Tosco should be responsible for protecting. However, because these particular areas were identified in the EIR as at highest risk of Tosco spills, specific protection measures for these resources are identified from protection measures recommended in the Bay/Delta Contingency Plan. Tosco should take responsibility for being prepared to implement those protection measures.

- Marshes at River Mouths. The most vulnerable areas and those that should have the highest priority for protection in the event of a Tosco spill are the tidal marshes of San Pablo Bay and the Strait. Tidal marshes themselves are one of the most endangered habitats in the United States. These areas contain endangered species, including California clapper rails (Federal/State Endangered) and California black rails (State Threatened/Federal Candidate). Tidal marshes have been found to be extremely vulnerable to oil and, once oil has contaminated marsh sediments, it remains there for many years. Spills at the Tosco Terminal and from Tosco tankers have the greatest probability of contacting salt marsh habitat in Southampton Bay in the Strait near Benicia Point and marshes east of Point San Pablo. Tidal marshes along the northern shore of San Pablo Bay are less at risk from a Tosco spill. Because of the extreme sensitivity of these areas, however, and because they are within the same bay as the Terminal, protection measures for these areas are also discussed.
 - Southampton Bay near Benicia - Use a diversion boom at the southern end of Southampton Bay between pilings and Dillon Point. A diversion boom should also be used from the Benicia waterfront to the city wharf.
 - San Pablo Creek - Use a diversion boom at the creek mouth.
 - Corte Madera Marshes - Due to the large mudflats near Corte Madera and other scattered salt marshes and mudflats, strategy will primarily focus on protection of creek outlets and salt flats. A diversion boom should be deployed at the mouths of these creeks. The salt marshes at the Corte Madera Ecological Reserve are close to roads and will be more feasible for protection than the mudflats that, although they have a large biodiversity, will flush out due to tidal action. If a pollutant is entering from a southern or northern point into the Bay, then a diversion boom can be set out. If coming from the north, then a diversion boom off Point San Pedro should be used to push the oil into the current and take it through the Raccoon Strait and out to sea for natural dissipation and landfall cleanup. If the pollutant comes from the south, then a diversion boom cannot be used because it will push the oil into the current and take it into San Pedro Bay.

- Napa Marshes - Use a diversion boom to prevent oil from reaching the shore.
 - Sonoma Creek/Napa Slough - The confluence of Sonoma Creek and Napa Slough is just before the mouth into San Pablo Bay. Any pollutant coming into the mouth must be stopped immediately before it spreads into the numerous passages and channels that feed into Sonoma Creek and Napa Slough. Both the creek and the slough should be spanned by an exclusion boom. If this is not permitted by heavy outflow, a diversion boom should be set up to collect the pollutant at the Highway 37 bridge.
 - Gallinas Creek - Charts do not properly reflect the mouth of the Gallinas Creek. The creek is drained through the main channel and smaller channels use the salt marshes. The first priority is to deploy an exclusion boom around the channels that drain the creek. A diversion boom should also be placed across the main channel of Gallinas Creek. The salt marsh extending from Rat Rock to the southern boundary of Hamilton Field can be protected by a diversion boom, hay bales, or a combination of both. If a pollutant enters from a south to northeast direction, a diversion boom can be set up extending from Rat Rock to China Camp.
 - Eelgrass Beds - After the protection of major salt marshes, eelgrass beds should have the highest priority for protection. Eelgrass beds are used for foraging by the California east tern (Federal/State Endangered). Eelgrass beds are also important to juvenile fishes. Marine grasses have been found to be extremely sensitive to oil in previous spills. Important eelgrass beds are located near Point Richmond and near Alameda. These areas should be protected with booms and curtains. If placed from shore, personnel should not tramp over the eelgrass or drag equipment over it. In general, dispersants and sinkants should not be used in the vicinity of the eelgrass beds.
 - Double-crested cormorant colonies near the eastern ends of the Richmond-San Rafael Bridge and the San Francisco-Oakland Bridge - These colonies should receive high priority for protection from oiling from about April to June when nesting occurs using booms and curtains. Again, attempts should be made to flush birds from the oiled waters, but extremely disturbing devices such as canons should not be used during the nesting season. Expert bird rehabilitators should be onsite to rescue oiled birds.
4. **Cleanup and Rehabilitation of Oiled Areas** - In many oil spills, cleanup has done at least as much damage as the spill itself. Extreme sensitivity should be used in any sensitive areas. For example, attempts to approach an alcid colony off the outer coast risks scaring the birds off the rocks and causing them to dive into the oiled areas. In many cases, oiled areas are best left alone to recover naturally. If cleanup is deemed appropriate, a decision that should be

made with input from CDFG and USFWS biologists, an access route for cleanup personnel should be established and marked. This route should attempt to avoid the most sensitive areas as much as possible. The Tosco Oil Spill Contingency/Response Plan recognizes the sensitivity of oiled areas to cleanup and provides a matrix of cleanup techniques for different shoreline sensitivities and oil types. This matrix allows for some fairly destructive measures, such as sand blasting. All cleanup attempts should be done under the supervision of CDFG and USFWS biologists. Destructive cleanup methods should be a last resort. Eelgrass beds should not be cleaned in most cases, but be allowed to cleanse naturally. Procedures should be developed specifically for the rehabilitation of oiled birds. The Tosco plan includes a discussion of rehabilitation of oiled birds, but needs to be more specific of exact methods, procedures, and training.

5. **Compensation and/or Restoration** - If damage occurs, 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 should be determined beforehand, and the plan should include provisions for getting resources onsite as soon as possible so that post-spill studies can begin immediately.

Alternatives to the use of the Marine Terminal were evaluated in the EIR. Of the alternatives considered, the No Project, Replacement of Crude from Central Valley via Pipeline, and Refinery Shutdown would eliminate all potential spills of hydrocarbons into the marine environment. Of these, the Central Valley Pipeline could result in spills to inland waterways that could be significant, but not as potentially severe as a large tanker spill. Of the other alternatives, Replacement of Crude via pipeline from other marine terminals would shift the risk associated with crude intake from Tosco to other terminals in the Bay, but would not reduce the consequences to the marine environment. The risk at other locations may be greater because it could be assumed that Tosco tanker activity could relocate at those locations. Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and Reduced Operation would reduce some of the risk, but the potential for the impact would remain. The Consolidation Alternative was found to have little differential impact on the environment than that of the Tosco project.

BIOLOGICAL RESOURCES: Cumulative Effects of Oil Spill on the Environment

Impact: The risk of oil spill(s) from the combined action of all tankering and all terminals in the Bay has the potential to result in significant cumulative impacts to biological resources from the degradation of water quality.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The biological resources of San Francisco Bay Estuary have been subjected to cumulative impacts from a variety of sources. Plankton populations have been subjected to cumulative impacts from decreases in freshwater outflow from the Delta, introduction of exotic species, and degradation of water quality from inputs of contaminants. Cumulative impacts on the benthos occur from routine dredging operations that disturb sediments and input contaminants into the sediment. Dredging may act in a cumulative manner with other disturbances to favor low diversity and opportunistic species. The fish populations have been altered by the cumulative impacts of overfishing, loss of habitat, introduction of exotic species, decreased Delta outflows, and increases in contaminants. Marshes have been lost and/or severely degraded by diking, filling, flood control, and the indirect impacts of development. Cumulative projects influence the distribution, patterns, and abundance of seabirds, shorebirds, and waterfowl. Discharges from marine terminals and other industrial facilities may affect local water quality, ultimately contributing to deterioration in habitat and contamination of fish and invertebrate food resources consumed by the birds. The possibility exists for injury or death of harbor seals, harbor porpoises, and other marine mammals due to collisions with vessels. Several rare, threatened, and endangered species exist in the San Pablo/San Francisco Bay area and are endangered because of the above activities. Cumulative tankering and terminal activity produce a greater threat to oil spillage than the risk of the Tosco Terminal alone, and all activities combined have the potential to impact more resources.

Significant actions to decrease cumulative loadings of pollutants to the San Francisco Bay Estuary can be achieved through implementation of management measures and associated management practices to control nonpoint source pollution as specified in the State's *Plan for California's Nonpoint Source Pollution Control Program* (State Water Resources Control Board and California Coastal Commission, 2000).

The largest source of contaminants to the San Francisco Bay estuary is urban and nonurban runoff. Implementation of management measures and practices to control nonpoint source pollution could significantly improve water quality in San Francisco Bay.

The federal and state regulations, such as those through OSPR, as well as the efforts of Clean Bay and other cooperatives, provide effective measures to mitigate the cumulative risk of oil spills. Future cumulative mitigations for oil spills should focus on developing more specific measures, such as onsite booms, to rapidly protect the most sensitive biological areas such as river mouths.

No feasible alternatives exist in addition to the measures described above to address cumulative impacts to water quality and lessen impacts to biological resources.

COMMERCIAL AND SPORT FISHERIES: Conflicts between Tosco Vessels and Herring Fishing Activity

Impact: Conflicts between Tosco vessels and herring fishing activities would cause significant (Class II) impacts.

- Finding: A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
- B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (CDFG).

Facts Supporting the Finding

Herring fishing and shipping, in particular, can conflict with each other because of the fishing methods and location of fishing grounds near docks and piers and in shipping channels. In all, herring fishing occupies nearly 21 square miles of the Bay. This figure compares to nearly 43 square miles of spawning habitat. Fishing migrates around the habitat area, depending on spawning behavior throughout the year. In Fish Block 488, shipping corridors used by Tosco tankers and barges pass through current herring fishing areas around Angel Island, off Alcatraz, and along portions of the Tiburon shore. At any one time, a tanker would take up nearly 25 percent of the fishing area. Fishing in Block 489 should not be disturbed by Tosco vessels. In the future, impacts may vary depending on spawning locations.

The potential for conflict between fishing and Tosco vessels will be reduced to an insignificant level by implementing the following mitigation-measure:

- To reduce operational conflicts between Tosco vessels and herring fishing activities, Tosco would conform its vessel activities to agreements developed between CDFG, herring harvesters, and other interested parties.

Annually, as part of the review of herring regulations under the CEQA, the CDFG adopts measures to minimize conflicts between transmitting vessels and herring fishing activities. This process allows yearly adjustments to be made between the affected parties.

COMMERCIAL AND SPORT FISHERIES: Oil Spill Impacts to Fisheries

Impact: Significant (Class I) impacts to fisheries would result from contact with oil from a spill. Shoreline fishing areas at highest risk of oil spill contamination are:

- Western Suisun Bay*
- Honker Bay*
- Sacramento River Mouth
- Mare Island Strait (Napa River)*
- Carquinez Strait
- Eastern San Pablo Bay
- Central San Francisco Bay from Richmond to Alameda*
- Tiburon
- Yerba Buena Island*
- Angel Island

The areas with an asterisk (*) are listed as priority response areas by the USCG (San Francisco Bay/Delta Area Contingency Plan-1/5/00). Detailed response strategies, including those for equipment, personnel, and protection, are provided in Annex E -- Area Assessments of the Plan. Unfortunately, the Plan inadequately discusses Bay fisheries; however, protection strategies discussed below should adequately protect fisheries at the asterisked sites and at other areas on the list.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities

for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

Fisheries may be impacted by oil spills in a variety of ways, including the following:

- physical presence of oil on water,
- fishing restrictions imposed by public agencies to ensure that no tainted seafood reaches market,
- harbor closures to keep oil in or out,
- spatial conflicts with cleanup operations,
- long- and short-term biological effects on fish and habitat,
- changes in seafood markets due to public fears of eating contaminated seafood,
- fishermen avoiding areas for fear of contaminating gear and catching tainted fish,
- fishing area closures forcing fishermen to other areas, thus crowding those areas and reducing overall catches, and
- public reluctance to return to an area for recreational fishing after a spill.

Commercial and recreational fishing areas, kelp beds, and aquaculture sites can be impacted by a spill. If oil reaches the mouths of bays and harbors, generally related aquaculture sites would be affected, related marinas would be closed, and any fishing activities from those ports and marinas would cease. For kelp beds and shoreside access areas, harvesting activities would cease as well. A significant impact to fisheries will likely result from an accidental spill of crude oil or crude oil product in either San Francisco Bay or within outer coast waters.

For those fishing areas listed above and other areas that would be contacted by oil spills, Tosco should apply the following mitigation measures to minimize the areas precluded to fishing during a spill and subsequent cleanup and help offset the monetary loss to harvesters and businesses dependent on harvesting activities:

- Immediate cleanup procedures as discussed in the Operation Safety/Risk Section and protection of sensitive resources as discussed in the Biological Resources Section, including: (1) booming of sensitive sloughs, creeks, and streams; (2) ensuring response resources reach the spill sight in order to

contain the spill and/or limit its spread; and (3) providing timely response in other areas to limit damage from spreading oil;

- Financial compensation in accordance with Article 80.5, Chapter G of the California Oil Spill Prevention and Response Act;
- Contribute to public or private organizations for habitat enhancement to reclaim or restore fisheries habitat;
- Contribute to public or private organizations for education/promotion to lure the public to safe and clean fishing areas closed due to spills and reassure seafood consumers that fish from the spill area are safe to eat;
- Contribute to public agencies to pay for seafood inspection programs to ensure that no tainted fish reach markets; and
- Contribute to public or private organizations to evaluate the effectiveness of the measures listed above (results of the assessment would be available to public decision-makers to ensure refinement, if necessary, of mitigation measures).

The above contributions would be determined by level of impact and cooperation with the various organizations and agencies.

Residual impacts are considered unavoidable and not mitigated by measures that can be implemented by Tosco. The oil spill mitigation measures would help directly address fiscal impacts to harvesters and related businesses. However, some harvesting interests may not be compensated, and opportunities and seafood would be lost while harvesting areas are inaccessible.

Alternatives for use of the Marine Terminal were evaluated in the Draft EIR. Of the alternatives considered, the No Project, Replacement of Crude from Central Valley via Pipeline, and Refinery Shutdown would eliminate all potential of spills of hydrocarbons into the marine environment. Of the other alternatives, Replacement of Crude via Pipeline from Other Marine Terminals would shift the risk associated with impacts to fisheries from Tosco to other terminals in the Bay, but may not reduce the consequences to the marine environment. Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and Reduced Operation would reduce some of the risk, but the potential for some impact would remain. The risk at other locations may be greater because it could be assumed that Tosco tanker activity could relocate at those locations. The Consolidation Alternative was found to have little differential impact on the environment than that of the Tosco project.

COMMERCIAL AND SPORT FISHERIES: Cumulative Impacts to Fisheries

Impact: Cumulative impacts from oil tankering, refineries, and other industrial and agricultural sources in the Bay Area have the potential to pollute the water and cause significant (Class I) impacts to fisheries.

- Finding:**
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

A significant impact to fisheries will likely result from an accidental spill of crude oil or crude oil product in either San Francisco Bay or within outer coast waters. Future development of the Bay is expected to continue to degrade the condition of valuable habitat and further reduce fish populations. In addition, other activities, including continued increases in the human population and expansion/development of undeveloped and agricultural lands, will result in additional impacts, aside from the risk from oil spills, that will further reduce or degrade habitat and directly affect many species of fish.

Compliance by Tosco with the listed mitigation measures in the Operation Risk/Safety Section and the following measures will help reduce some, but not all cumulative impacts to levels of insignificance:

- Abide by agency criteria, policies, and protocols for dredging and disposal of dredged materials developed pursuant to the LTMS or other management and planning strategies that help ensure environmentally sound dredging and dredge spoils disposal or reuse; and
- Contribute to mitigation and restoration programs designed to restore and enhance Bay fisheries. The level of Tosco's contribution would be commensurate with its contribution to impacts, when compared to other impacts on the Bay. Implementation of this measure would take place once Tosco's contribution is determined by the Estuary Project or studies are

conducted pursuant to the CCMP. To facilitate implementation, every 3 to 5 years the CSLC should: (1) evaluate Tosco's operations and compliance with the lease terms, and (2) assess effectiveness of mitigation measures.

Such evaluations would identify improvements that should be made to mitigation measures or lease terms. Such review could also identify Tosco's level of responsibility to mitigate its contribution(s) to cumulative impacts.

AIR QUALITY: Future Emission Levels may Exceed Thresholds

Impact: Future emissions, with the exception of CO, would exceed daily significance thresholds (Class II).

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (BAAQMD).

Facts Supporting the Finding

Terminal operations are not expected to remain static, and future operations over a 20-year projection could increase substantially. Assumptions were made that a 60-percent increase in crude import and a 30-percent increase in product export by tanker would occur in 20 years. The remaining 30-percent product export would be by truck and/or rail. Because of data on future operational regulations as well as the best available control technology applicable at the time, accurate representation of emissions was not possible. Thus, current emission factors and thresholds were used for the analysis. Based on the increased operations levels, future operational emissions, with the exception of CO, were found to exceed the daily significance thresholds.

Future emissions are considered as potentially significant impacts because it is difficult to factor in potential reductions in emissions due to the use of future best available control technology, reductions in vehicle emissions due to the use of continually stricter vehicle emission standards, and any offsets that may be necessary.

Mitigation effectiveness depends on the use of the best available control technology available. The level of increased future operations anticipated in the EIR would require additional permitting through the BAAQMD, which would set limitations on

allowable emissions levels. Offsets may also be required. Through the use of improving technology, retrofit of existing with improved equipment, and BAAQMD requirements, the impact could be reduced to a level of insignificance prior to the advent of such increased operations.

VEHICULAR AND RAIL TRANSPORTATION: Future Trucking of Product

Impact: Based on assumed future conditions, trucking product onto I-80 will result in a Class II impact.

- Finding:**
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (BAAQMD).

Facts Supporting the Finding

Assumptions for future Terminal operations and for traffic conditions in the project area were made based on a 20-year projection. On a worst-case basis, it is assumed that no roadway improvements would be made to either I-80 or SR-4, and that a 10-percent growth rate in traffic volumes would occur over the 20-year period. Some future improvements are proposed in the area, including the Cummings Skyway Extension, which would convert an existing two-lane road into an expressway just north of Davis Point, and a six-lane Richmond Parkway is proposed to tie into I-80 about 6 miles south of Davis Point. However, the proposed years of implementation and funding sources were not known during preparation of the EIR.

The assumption was also made that 60 percent more crude would be delivered through the Terminal. Half of this resulting product would be shipped out by tanker, leaving the remaining half to be transported by truck and/or rail. Based on a worst-case scenario, where all of this product would be transported by truck, 13,891 additional truck trips would be generated on a yearly basis or 38 trucks on a daily basis above current levels. Because most of these trucks would ultimately use I-80 and some would use SR-4, both of which presently operate at a level of service LOS F (LOS is the volume-to-capacity ratio), a significant impact would result.

Any future conditions that would result in trucking product require permits from the BAAQMD, which would evaluate any potential impacts and mitigations. Specifically, because the San Francisco Refinery has more than 100 employees, the facility is regulated by the BAAQMD Regulation 13 - Transportation Control Measures. The

BAAQMD would set specific mitigation for trucking under this regulation, and any transportation control regulations promulgated under either the upcoming Federal Implementation Plan (FIP) or the State Implementation Plan (SIP).

The mitigation measures that would be set under these regulations could reduce the impact to a level of insignificance.

VEHICULAR AND RAIL TRANSPORTATION: Cumulative Impacts of Traffic Congestion

Impact: Class I and II cumulative impacts could result at congestion points on I-80, San Pablo Avenue, SR-4, and other streets.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environment effect as identified in the Final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (BAAQMD).
 - C. Specific economic, social, and/or other considerations make the mitigation measures or project alternatives identified in the Final EIR infeasible.

Facts Supporting the Finding

Cumulative traffic impacts result from the high numbers of vehicles on I-80 and SR-4, particularly during peak hour traffic. While the local streets in the area, including San Pablo Avenue, and Parker and Willow Avenues, are at LOS A, and do not result in significant impacts from the addition of other project traffic, backups and congestion occur where these streets provide access to the highways. Any additional peak hour traffic generated by other projects or by area growth will only add to an already impacted situation.

All future project operators should apply the types of mitigations presented below for cumulative congestion impacts. These mitigations are derived from the anticipated forthcoming transportation control regulations to be promulgated under either the upcoming FIP or the SIP.

- Develop a trip reduction plan to achieve 1.5 persons per vehicle for both construction and permanent employees;



- Coordinate scheduling of materials haul trips during offpeak hours;
- Provide a local shuttle for residential use;
- Provide bicycle storage areas and onsite locker facilities;
- Provide peripheral park-n-ride lots;
- Provide preferential parking to high-occupancy vehicles and shuttle services;
- Charge parking lot fees to low-occupancy vehicles;
- Promote Transportation Management Associations (TMAs); and
- Work with the city/developers/citizens in the region to implement Transportation Demand Management (TDM) goals.

Through the inclusion of these measures, additional volumes will be kept to modest or reduced levels, reducing many of the impacts to a level of insignificance. However, some congestion points will remain significant. There are no other feasible alternatives available for reducing these congestion points to insignificance.

EARTH RESOURCES AND STRUCTURE STABILITY: Potential for Oil Spills from Seismic Damage to Terminal

Impact: There is the potential of oil spillage from the Terminal infrastructure from a major seismic event (Class II).

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

The site and its structures are susceptible to the effects of strong earthquakes. There is a 28-percent chance that a Richter magnitude earthquake, 7.0 or greater, will occur on the northern segment of the Hayward Fault within the next 30 years. In a major seismic event, Marine Terminal pipelines, valvings, support bracings, and so forth, could fail, resulting in the potential release of crude oil, product, or hazardous materials.

A routine inspection program of the pipelines, valvings, and supporting bracings should be conducted. The inspection program should consider the condition of these elements with respect to seismic integrity. Seismic retrofit, where needed,

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incorporating design for expected large earthquakes, should be performed to reduce any impacts to a level of insignificance.

The initial inspection of the pipelines, valvings, and supporting bracings can be performed within the context of the structural and safety system audit required under "Operational Safety/Risk Of Accidents: Deficiencies in Structural Integrity of Wharf".

The independent structural and system safety audit of the wharf is intended to identify deficiencies in key physical components of the terminal, the failure of which could result in an accidental discharge of hydrocarbons into the environment. Once identified, these deficiencies will be independently verified and corrected according to a schedule approved by the CSLC. The correction of such deficiencies will eliminate them as potential causal factors in accidents or spills at the Terminal.

EARTH RESOURCES AND STRUCTURE STABILITY: Potential for Onshore Damage Caused by Secondary Effects of Seismic Ground Motion

Impact: The secondary effects of seismic ground motion have the potential to result in significant (Class II) impacts.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

Secondary effects of seismic ground motion have the potential to result in damage to or degradation of project components. These effects include liquefaction, differential settlement, racking, and tilting.

The area beneath the butane sphere is comprised of fill material with a high water table similar to those conditions of the Marina District of San Francisco which experienced extensive damage from the 1989 Loma Prieta earthquake. Whether damage from liquefaction could occur to the butane facility depends on the adequacy of pile foundation support. Unocal was not able to provide such information during EIR preparation.

The settlement of structures founded on weak soils, particularly Bay mud and artificial fill materials, is exacerbated by seismic shaking. The shoreline acreage at the Refinery has the potential for such settlement with potential damage to the butane sphere containment berm, paved areas, the rail spur, and the riprap-lined shore.

Seismic ground shaking has the potential to cause lateral spreading by Bay mud in the vicinity of the riprap lining the margins of the shoreline acreage that could result in damage to the riprap wall, depending on the force of the shaking and strength of the

Bay mud. While the mud has been surcharged by fill for decades, thus reducing the potential for spreading, spreading could still occur. There is some potential for damage to the butane sphere as a result of seismically induced lateral spreading if the pile foundations are not adequately supported in firm materials beneath the Bay mud.

The riprap lining the shoreline acreage is susceptible to lurching. Some raveling of material could occur during an earthquake, reducing the effective erosion protection of the barrier.

The application of the following mitigation measures should reduce any impacts to a level of insignificance:

- Within the shoreline acreage, densification of loose foundation materials, surcharging of areas prone to liquefaction, special grouting techniques, and local lowering of the water table in areas subject to liquefaction may be necessary. Flexible piping and connections on the wharf are recommended, where not already in place.

A routine inspection program of the pipelines, valvings and supporting bracings shall be conducted. The inspection program will consider the condition of these elements with respect to seismic integrity. Seismic retrofit incorporating design for expected large earthquakes at any weakened or deteriorating areas, shall be performed to reduce any impacts to a level of insignificance. The replacement with flexible piping and connections on the wharf will reduce the possibility of a rupture during a seismic event which could result in a spill. See also prior finding.

- Soil stability analyses shall be required to determine the condition of subsurface materials in the vicinity of the butane sphere. Future borings should be drilled, as necessary, to supply pertinent soil data. The removal of deleterious soils in specific areas, as a result of stability analyses, should be conducted, as necessary. The potential for some damage to the shoreline portions of the site will be reduced to a level of insignificance.

There is some potential for damage to the butane sphere as a result of seismically induced lateral spreading if the pile foundations are not adequately supported in firm materials beneath the Bay mud. The above soil analyses and subsequent remedial actions will reduce this potential, thereby reducing the possibility of secondary effects of seismic ground motion which could contribute to a rupture of the butane sphere.

- Surveys of the shoreline portions of the site should be performed after seismic events to determine whether settlement has occurred. If it is determined that settlement has occurred, it will be necessary to bring the affected area(s) back

up to grade by placing additional fill material. Along the shore, additional riprap may be required. Impacts would be reduced to insignificance.

- Periodic inspection of the riprap lining of the shoreline is recommended to track any lateral spreading and lurching. Some damage to the shoreline portions of the site from the effects of seismically induced lateral spreading and/or lurching would require repair through reinforcement. The impact would be reduced to insignificance.

Because fill areas within the project area are generally confined behind manmade barriers and embankments, the potential for lateral spreading and lurching are low. The periodic inspection will reveal damage to the riprap lining and repair and reinforcement would ensue. The potential for damage to the butane sphere as a result of seismically induced lateral spreading would be reduced and the integrity of containment areas would be maintained, thereby reducing the possibility or severity of spills.

EARTH RESOURCES AND STRUCTURE STABILITY: Potential Deficiencies in Structural Integrity of Wharf

Impact: Recent inspection of the Terminal has discovered potential deficiencies in the structural integrity of the wharf. Both the wharf and the butane tank could be susceptible to significant structural (Class II) impacts.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

Facts Supporting the Finding

The structural integrity of the wharf was evaluated by reviewing drawings supplied by Tosco, visiting the facility, reviewing results of pipeline inspection records, and conducting discussions with Tosco and CSLC personnel. A December, 1992, CSLC annual inspection of the Terminal discovered potential deficiencies in the structural integrity of the wharf. An additional inspection was conducted in January 1997.

Records on specific subsurface conditions immediately beneath the butane sphere were not available. Data were interpolated from two borings drilled 300 to 400 feet away to make a preliminary evaluation of the subsurface conditions. Without absolute confirmation of the depth of the cast-in-place reinforcing concrete pilings, a significant impact was assumed.

This potential impact can be mitigated to a level of nonsignificance by the following measures:

- Within 180 days of lease renewal, Tosco shall conduct a structural and safety system audit of the Terminal in concert with the CSLC and a third-party consultant as described in the Commission's "Marine Terminal Audit Program" document. The purpose of the audit is to:
 - identify safety system, mechanical, electrical, and fire detection and suppression deficiencies;
 - identify structural damage or weaknesses that might affect the continued fitness-for-purpose of the facility;
 - advise whether these deficiencies have been properly assessed; and
 - advise what safety improvements should be taken to correct, prevent, or minimize these potential hazards.

The audit will be conducted with teams composed of CSLC, Tosco, and consultant personnel. Upon completion of the audit, Tosco shall implement the safety improvements in accordance with a scheduled plan.

The independent structural and system safety audit of the wharf is intended to identify deficiencies in key physical components of the terminal, the failure of which could result in an accidental discharge of hydrocarbons into the environment. Once identified, these deficiencies will be independently verified and corrected according to a schedule approved by the CSLC. The correction of such deficiencies will eliminate them as potential causal factors in accidents or spills at the Terminal.

- To prevent or minimize damage to the wharf and vessel, Tosco shall install an Allision Avoidance System (AAS) that provides information to the vessel master regarding the approach rate to the wharf.

The use of this technology would reduce the potential for a vessel colliding with and damaging the wharf. Damage to the wharf or the vessel could result in a hydrocarbon spill. This measure would reduce or eliminate an additional causal factor of potential accidents at the Terminal.

- 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.

The independent structural and system safety audit of the wharf is intended to identify deficiencies in key physical components of the terminal, the failure of which could result in an accidental discharge of hydrocarbons into the environment. Once identified, these deficiencies will be independently verified

and corrected according to a schedule approved by the CSLC. The correction of such deficiencies will eliminate them as potential causal factors in accidents or spills at the Terminal.

- In the future, if larger displacement vessel(s) are intended to be moored at the facility, an evaluation shall be made by a California registered civil engineer or structural engineer as to whether the loads imposed by the vessel(s) can be adequately and safely carried by the structures. This evaluation should be made in accordance with U.S. Army Corps of Engineer's design criteria or with U.S. Navy's NAVFAC DM-25 and DM-26 criteria. Any potential impacts would be reduced to nonsignificant.

Given the long-term nature of the proposed lease, if mooring of larger displacement vessels is a future consideration, there could be a potential for structural impacts related to the dolphin and/or wharf from wind and current loads transferred from the vessel into the wharf, mooring tension loads on deck restraints and berthing loads. The above mitigation measure would evaluate whether changes are necessary to insure that the wharf is capable of accommodating larger vessels. Any necessary changes to the wharf structure identified during this evaluation would be required before larger displacement vessels would be allowed to use the wharf. This will reduce the possibility of accidents or spills at the Terminal.

- In the future, if different material, besides butane, shall be stored in the spherical tank, then an evaluation shall be made by a California registered civil engineer or structural engineer as to whether the loads imposed can be adequately and safely carried by the structure under both static and dynamic loading conditions. The CSLC shall have the opportunity to review such reports. Compliance with this measure will reduce any potential impact to insignificance.

The conduct of this analysis will reduce the possibility of a later potential spill which could result from a structural failure caused by inadequate engineering design.

EARTH RESOURCES AND STRUCTURE STABILITY: Cumulative Impact of Seismic Event

Impact: Cumulatively, significant (Class I) impacts from seismic events could occur in facilities constructed on fill in the San Francisco Bay Area.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The marine and industrial facilities located along the shoreline of the San Francisco Bay are susceptible to potential damage resulting from a strong earthquake on active faults in the region. The Port of Oakland experienced severe liquefaction damage to fill areas in the 1989 Loma Prieta earthquake; refineries reported stretched anchor bolts on vertical vessels and extensive tank damage where such structures were located on soft-soil sites. The primary and secondary effects of strong ground shaking may cause significant levels of damage to container terminals constructed on fill, including toppled cranes, ruptured pipelines, and failed storage tanks at refineries. Wharves constructed on vertical and batter piles into bedrock and designed to withstand large lateral forces experienced no such damage.

Compliance with the following measures will help reduce some but not all cumulative impacts to levels of insignificance:

- Inspecting existing facilities at marine and industrial facilities, and seismic retrofitting, where needed, are recommended. See previous mitigation and findings herein. All new structures should incorporate design for maximum credible earthquakes on faults within the region.

The potential for seismic damage to structures at shoreline marine and industrial facilities within the cumulative environment remain, regardless of precautionary steps taken. This mitigation measure will address the prevention or lessening of damage to a marine terminal from seismic events. These actions are designed to reduce the possibility of ruptured pipelines and failed storage tanks which result in spills.

- Inspections conducted to ensure seismic preparedness and proper design for maximum credible earthquake should be sufficient for tsunamis, as well. Facilities located near the Golden Gate are most likely to be impacted by tsunamis and should develop and have plans ready for evacuation in the event of a tsunami.

The potential for seismic damage to structures at shoreline marine and industrial facilities within the cumulative environment remain, regardless of precautionary steps taken. No feasible alternatives exist to provide additional mitigation for this impact.

AESTHETICS: Oil Spill Impacts to Surface Waters and Shoreline Landforms

Impact: Oil spills have the potential to result in significant (Class I and II) visual impacts upon surface waters and shoreline landforms.

- Finding:**
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

Visually, oiling conditions could range from light oiling, which appears as a surface sheen, to heavy oiling, including lumping of floating tar. The presence of oil on the water would change the color and, in heavier oiling, the textural appearance of the water surface. The presence of oil on shoreline surfaces or nearshore marsh surfaces could result in these surfaces being covered with a brownish to almost blackish slick to a gooey covering. Duration of the impact has the potential to last for long periods of time, depending on the level of physical impact and cleanup ability. In events where light oiling would disperse rapidly, significant (Class II) impacts can generally be expected. In events where medium to heavy oiling is encountered over a wide-spread area and where cleanup efforts and residual effects of oiling may be observed for periods in excess of 3 months, significant (Class I) impacts can generally be expected. The physical effort involved in cleanup itself, including the equipment that would be used, would contribute to the visual impact.

Also, the sensitivity of an area to viewers can tend to change. The more the public becomes aware of a spill situation, generally, the more negative the reaction. Sensitivity becomes high, and changes if viewer expectations turn negative. Thus, unless a spill is contained by immediate booming and cleanup, the public's visual perception of even a relatively small spill of 500 bbl could be that a significant visual impact has resulted from the incident.

Mitigation measures for oil spill impacts include those measures provided for contingency planning and response in the Operational Safety/Risk Section and biological resources. These measures would provide for minimizing oil spills and

maximizing cleanup efforts, resulting in less impact to the visual environment. Even with such mitigation, the visual effects of a spill would remain significant (Class I or II) until natural dissipation occurs. Depending on the severity of a spill, any areas still impacted after 3 months would be considered as Class I impacts.

When planning for oil spill response equipment and locational needs, consideration should be given to the visual effects of the storage and placement of this equipment. Where equipment may be stored in areas of visual sensitivity, such as near ecological areas, storage sheds should be designed to blend in with any other structures, and should be painted compatible colors or screened with vegetation also compatible with the surrounding vegetation in the area. This would reduce any visual incompatibility or intrusion the storage structure may have. Visual impacts would be reduced to a level of nonsignificance with the use of this measure.

Alternatives for use of the Marine Terminal were evaluated in the EIR. Of the alternatives considered, the No Project, Replacement of Crude from Central Valley via Pipeline, and Refinery Shutdown would eliminate all potential of spills and thus eliminate visual impacts from the Tosco Terminal. Of these, the Central Valley Pipeline could result in visual impacts from spills to inland waterways that could be significant, but not as potentially severe as a large tanker spill. Of the other alternatives, Replacement of Crude via Pipeline from Other Marine Terminals would eliminate Tosco's responsibility by shifting the risk associated with crude intake from Tosco to other terminals in the Bay, but would not reduce the consequences to the marine environment. The risk at other locations may be greater because it could be assumed that Tosco tanker activity could relocate at those locations. Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and Reduced Operation would reduce some of the risk, but the potential for the visual impact would remain. The Consolidation Alternative was found to have little differential impact on the environment than that of the Tosco project.

AESTHETICS: Cumulative Oil Spill Impacts to Surface Waters and Shoreline Landforms

Impact: Oil spills have the potential to result in significant (Class I and II) visual impacts.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).



- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

Visually, oiling conditions could range from light oiling, which appears as a surface sheen, to heavy oiling, including lumping of floating tar. The presence of oil on the water would change the color and, in heavier oiling the textural appearance of the water surface. The presence of oil on shoreline surfaces or nearshore marsh surfaces could result in these surfaces being covered with a brownish to almost blackish slick to a gooey covering. The duration of the impact has the potential to last for long periods of time, depending on the level of physical impact and cleanup ability. In events where light oiling would disperse rapidly, significant (Class II) impacts can generally be expected. In events where medium to heavy oiling is encountered over a wide-spread area and where cleanup efforts and residual effects of oiling may be observed for periods in excess of 3 months, significant (Class I) impacts can generally be expected. The physical effort involved in cleanup itself, including the equipment that would be used, would contribute to the visual impact.

Also, the sensitivity of an area to viewers can tend to change. The more the public becomes aware of a spill situation, generally the more negative the reaction. Sensitivity becomes high and changes if viewer expectations turn negative. Thus, unless a spill is contained by immediate booming and cleanup, the public's visual perception of even a relatively small spill of 500 bbl could be that a significant visual impact has resulted from the incident.

No effective cumulative mitigation is available after a spill occurs. Cleanup efforts help reduce the length of time the residual effects would have on the visual environment. Visual impacts would remain significant (Class I or II) until natural dispersion occurs over time. Mitigation planning includes contingency planning and review of all marine terminals and tankering the Bay for spill potential. Such efforts are presently underway by response contingency planning agencies. No feasible alternatives are available to mitigate the visual effects of the cumulative impact.

LAND USE/RECREATION: Oil Spill Impacts to Land Use/Recreation Resources

Impact: Oil spills would result in significant (Class I and II) impacts to shoreline land uses and shoreline and water-related recreational uses.

Finding: A Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.

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- B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR).
- C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The presence of oil on shoreline surfaces or nearshore marsh surfaces could result in these surfaces being covered with a brownish to almost blackish slick to a gooey covering. Oil spill modeling showed that shorelines at risk include the project site, the Strait, northern sections of San Pablo Bay, including the San Pablo National Wildlife Refuge, and the southern shoreline around Wilson Point at Pinole. Recreational facilities that could be impacted include the Martinez and Point Benicia Fishing Piers, Point Pinole Regional Shoreline, Point San Pablo Yacht Harbor, Crockett Marine Service, and others. Because this modeling is representational, it does not preclude the fact that other areas may also be contacted by oil given the right wind and current conditions. The duration of the impact has the potential to last for long periods of time, depending on the level of physical impact and cleanup ability. In events where light oiling would disperse rapidly, significant (Class II) impacts can generally be expected. In events where medium to heavy oiling is encountered over a wide-spread area and where cleanup efforts and residual effects of oiling may be observed for periods in excess of 3 months, significant (Class I) impacts can generally be expected.

Mitigation measures for oil spill impacts to land and recreational uses include those measures for Tosco's contingency planning and spill response, as presented in the Operational Safety/Risk Section, and measures to prevent impacts to biological resources. These measures would provide for minimizing oil spills and maximizing cleanup activities to reduce impacts to shoreline uses, recreational uses, and the scenic environment. However, even with such mitigation, the potential of a spill occurring would remain. Therefore, the residual impacts would remain significant for those resources still affected by oil 3 months after the spill event. There are no other feasible alternatives for this impact.

LAND USE/RECREATION: Bay Trail Access

Impact: The Refinery and Terminal preempt the use of the shoreline for recreational uses. Without access through the Refinery along San Pablo Avenue, a significant (Class II) impact with planned recreational policies

would result because a planned trail system from Rodeo to Crockett could not be completed.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (County of Contra Costa).

Facts Supporting the Finding

The County and the East Bay Regional Park District (EBRPD) are studying the feasibility for a trail connecting Lons Tree Point Regional Park in Rodeo and the Strait Regional Shoreline east of Crockett. A multi-use concept accommodating pedestrian, hiking, bicycling, and equestrian uses where feasible has been examined. The preferred alignment would route the bicycling trail along San Pablo Avenue through the Tosco Refinery.

This trail is part of a large plan, the Bay Trail Plan that proposes development of a regional 400-mile hiking and bicycling trail around the perimeter of San Francisco Bay and San Pablo Bays. In 1987, Senate Bill 100, known as Ring Around the Bay, became law and directed the Association of Bay Area Governments to adopt a plan and implementation program, currently known as the Bay Trail Plan.

The Refinery and Terminal preempt the use of the shoreline for recreational uses. Without access through the Refinery along San Pablo Avenue, a significant (Class II) impact with planned recreational policies would result.

Tosco shall work with the CSLC, the EBRPD, and the County to develop a feasible plan for a proposed recreational trail system from Rodeo to Crockett. This plan may involve the provision of access around the Refinery, through dedication of an easement or right-of-way. With implementation of this agreed-upon plan, the impact can be reduced to a level of insignificance.

LAND USE/RECREATION: Cumulative Oil Spill Impacts to Land Use/Recreation Resources

Impact: Significant (Class I and II) impacts would result to land use and recreational activities from oil spills.

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- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (OSPR, County of Contra Costa).
 - C. Specific economic, legal, social, technological or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Facts Supporting the Finding

The presence of the oil on shoreline surfaces or nearshore marsh surfaces could result in these surfaces being covered with a brownish to almost blackish slick to a gooey covering. Twenty-six marine terminals are located throughout the Bay area, including several existing oil terminals. Of these, the Tosco Terminal, Wickland Oil Terminal, Pacific Refining Company Wharf, and Mare Island Naval Shipyard are in San Pablo Bay. The existing pattern of land uses throughout San Pablo and San Francisco Bay reflect the presence of these industrial uses. All have the potential for accidental spills into the Bay that can impact the shoreline.

The duration of the impact has the potential to last for long periods of time, depending on the level of physical impact and cleanup ability. In events where light oiling would disperse rapidly, significant (Class II) impacts can generally be expected. In events where medium to heavy oiling is encountered over a wide-spread area and where cleanup efforts and residual effects of oiling may be observed for periods in excess of 3 months, significant (Class I) impacts can generally be expected.

Mitigation planning for cumulative impacts includes oil spill contingency planning and review of all marine terminal and tankering procedures for all Bay Area facilities to assess the potential for spills to occur. Response contingency planning is presently underway by Bay Area agencies.

Planning for shoreline uses should include development of appropriate land use plans that locate industrial land uses away from sensitive and protected open space, such as marshlands and regional shorelines. Planning would reduce some land use impacts to a level of insignificance; however, those resources still affected by oil after a period of 3 months would remain significant. No feasible alternatives exist to mitigate against this potential impact.

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CULTURAL RESOURCES: Cumulative Uses in the Area

Impact: There is the potential for significant (Class I and II) impacts to the area's cultural resources caused by cumulative uses in the area.

- Finding:
- A. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environment effect as identified in the final EIR.
 - B. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency (State Historic Presentation Office, BCDC County of Contra Costa).

Facts Supporting Finding

No impacts would result to cultural resources from continued operation of the Marine Terminal. However, there is the potential for significant (Class I and II) impacts to the area's cultural resources from cumulative projects and future development in the greater area. Each project would require investigation into the extent of resources and impacts for that specific project. Tosco should not contribute to any major disturbances of prehistoric or historic resources within the cumulative environment.

Mitigation associated with cumulative projects should be developed on a project-specific basis that may include having an archaeologist present during excavation actions. If resources are uncovered, appropriate mitigation would be applied. This would mitigate the potential impact to a level of insignificance.

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EXHIBIT D

STATEMENT OF OVERRIDING CONSIDERATIONS

The CSLC adopts this Statement of Overriding Considerations with respect to the impacts identified in the final EIR that cannot be reduced, with mitigation, to a level of insignificance or are nonmitigable, specifically those associated with oil spills. This includes accidental spills greater than 50 bbl from hydrocarbon transfers at the Terminal, hydrocarbon releases from tankers or barges in route to the Terminal, and their effects on water quality, biological resources, fisheries, visual resources, and land use/recreational resources.

The CSLC hereby finds that the provision of a lease to Tosco to continue its Marine Terminal operations will have numerous benefits to the State of California (State) and the region served by the Terminal and refinery.

The Tosco San Francisco Refinery has been at its Rodeo location since 1896. A Marine Terminal has been located at the site since approximately 1928. The present Terminal has been operating since 1955. The Refinery manufactures fuels and lubricants and receives crude oil via both tankers and pipeline. The facility processes about 73,200 bbls/day of crude oil but has the capacity to process 100,000 bbls/day. Products are transported offsite via a combination of tankers and pipelines, with some minor product transported by rail and truck. The Refinery spans over 1,000 acres, employs more than 470 people (annual payroll-\$41,000,000), 100 contractor employees (annual payroll-\$15,000,000), and operates 24 hours per day. In calendar year 2000, Tosco paid \$6,100,000 in property taxes.

The demand for oil and oil products can experience great fluctuations which could affect the number and type of terminal operations in the future. The shipment of crude oil and products are influenced by a wide variety of worldwide, national, and regional factors, including the economy and the availability, characteristics, and price of various crude sources. The following information is based on available California Energy Commission (CEC) projections and data:

- The demand for petroleum products will increase by 1.1 percent per year for the next 20 years (CEC, 1991). The Refinery's principal products are gasoline, jet fuel and diesel (100% California 'CARB' gasoline and diesel). Gasoline production is 10% of the amount produced by Bay Area refineries and 4% of that produced statewide.
- Sources of San Joaquin heavy crude and other domestic crude, including Alaskan crude, will be reduced as fields continue to be depleted. The Bay Area will rely more on tankering of crude from foreign sources. In 2000, the sources of California's crude oil were Alaskan-24.8%, California production-49.6%, and foreign sources-25.7%. Foreign sources have increased

dramatically each year in 1997 (12%), 1998 (16%), and 1999 (22.1%)
Source: California Energy Commission, Fuels Office, PIIRA Submittals. The FEIR estimated that the Marine Terminal would increase its crude oil tanker deliveries by 60% in the 20 year period beginning with 1994/95.

- During the period 1985 - 1995, ten (10) refineries, representing 20% of the state's refining capacity, were closed down. The Tosco Refinery represents 10% of the existing refinery capacity in the Bay Area and 4% of the existing statewide capacity. The three Tosco refineries identified below account for 13% of California's refinery capacity. Source: California Energy Commission Fuels Office Staff, U.S. Department of Energy, Energy Information Administration. Petroleum Supply Annual, 1998.

If the lease for the Marine Terminal were not granted and there were no crude replacement, the production of the refinery would be reduced by the percentage of crude currently brought in by tanker. Without Alaskan crude, the lube portion of the Refinery would shut down. Approximately 7 out of 30 refinery process units that produce lubricating oils and waxes would shut down and the fuels producing process units would also operate at reduced levels. These actions could result in the loss of approximately 25% of Refinery personnel.

The loss of the Marine Terminal would also affect the northwest United States as approximately 45% of the Refinery's product output is transported there by tanker. No pipelines presently exist for such purpose.

If, due to the loss of the Marine Terminal, it became uneconomical to operate the Refinery, extensive direct and indirect consequences could result for the region and the state. In addition to the loss of jobs and local tax revenue, Tosco's additional refineries (Wilmington and Santa Maria) would be affected as all facilities are interdependent on one another for immediate feed stocks. Further, gas oil and gasoline stocks are transferred between Los Angeles and San Francisco by tanker. The loss of Tosco's gasoline production could result in regional shortages and higher prices for available gasoline.

The CSLC further finds that all mitigation measures identified in the final EIR have been imposed to avoid or lessen impacts to the maximum extent possible and, furthermore, finds that the No Project Alternative with its consequential alternatives (Replacement of Crude from Central Valley via Pipeline Alternative, Refinery Shutdown Alternative, Replacement of Crude via Pipeline from Other Marine Terminals Alternative, and Alternatives for Product Export via Pipeline to Other Marine Terminals, Truck and Rail Product Transport, and the Reduced Operation Alternative) and the Consolidation Alternative are infeasible because they (1) only partially offset significant environmental impacts; (2) transfer environmental impacts to other locations, some with potentially greater risk to the environment; (3) do not provide beneficial impact; (4) do not meet the objectives of the project; or (5) have social and economic consequences locally and regionally.

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ALTERNATIVE 0001745

Based on the above discussion, the CSLC finds that the benefits of the proposed project outweigh the unavoidable adverse environmental effects and considers such effects acceptable.

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
OPERATIONAL SAFETY/RISK OF ACCIDENTS			
Unocal 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.	Within 180 days of lease renewal, Unocal shall conduct a structural and safety system audit of the Terminal in concert with the SLC and a third-party consultant as described in the Commission's "Marine Terminal Audit Program" document. The audit will be conducted with teams composed of SLC, Unocal, and consultant personnel. Upon completion of the audit, Unocal shall implement the safety improvements in accordance with a scheduled plan.	_____ Signature _____ Date	
Unocal 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 YRS and one bent closer to shore.	The preventative maintenance program shall be developed, subject to review and approval of the SLC, with implementation to begin within 180 days of lease renewal. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.	_____ Signature _____ Date	
Develop and implement a preventative maintenance program that includes periodic inspection of all components related to transfer operation at the Terminal.	This program shall be developed, subject to review and approval of the SLC, with implementation to begin within 180 days of lease renewal. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.	_____ Signature _____ Date	
To prevent or minimize damage to the wharf and vessel, Unocal shall install an Allision Avoidance System (AAS) that provides information to the vessel master regarding the approach rate to the wharf.	Within 365 days of lease renewal, Unocal shall have the AAS in place and in operation. Documentation and certification of the system shall be provided to SLC.	_____ Signature _____ Date	
The lease for the facility shall contain a clause that would allow the SLC to add or modify mitigation measures in the event of improved safety technologies or a spill greater than 2,100 gallons (50 bbl).	The SLC shall be responsible for preparation and incorporation of this clause within the lease agreement and for its enforcement upon the occurrence of a spill event.	_____ Signature _____ Date	
Unocal shall update and keep current all P&IDs and flow diagrams.	A current set of P&IDs is required by OSPR. Updating and keeping all diagrams current shall be the responsibility of Unocal as required by OSPR and the SLC.	_____ Signature _____ Date	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
<p>Unocal shall, within 365 days of lease renewal, develop, with SLC approval, and subsequently implement a program to minimize the potential for pipeline leaks.</p>	<p>Unocal shall conduct this program, which shall, at a minimum: (1) assess the current condition of all the pipelines using the criteria prescribed in ASME B31G - 1991 and repair or replace problem pipe, (2) improve the existing pipeline inspection and maintenance programs, and (3) install a leak detection system (e.g., pressure point analysis) where determined to be effective and feasible. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>Signature _____ Date _____</p>	
<p>Cargo transfer shall be stopped if the SLC inspector is not satisfied that the VPIC or TPIC is sufficiently fluent in the English language.</p>	<p>SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures. Cargo transfer shall be resumed when either the fluency of the VPIC or TPIC is verified, or by substitution with another VPIC or TPIC or if interpreters are on board.</p>	<p>Signature _____ Date _____</p>	
<p>No tank vessel shall load more than 98 percent capacity in any tank, and no barge shall load more than 95 percent capacity in any tank to prevent the possibility of overfilling cargo tanks.</p>	<p>Unocal shall obtain necessary calculations from the VPIC, and have records of filling capacities available to SLC inspectors. If overfilling is observed, Unocal shall resolve any problem areas resulting from this requirement.</p>	<p>Signature _____ Date _____</p>	
<p>To prevent or minimize the potential for operational errors, any barge handling cargo at the Terminal shall 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.</p>	<p>Unocal shall be responsible for contracting with barge companies that will man their barges in accordance with this mitigation measure. Any noncompliance with this measure shall be noted to Unocal. Unocal shall work with the SLC to resolve any problem areas resulting from this requirement.</p>	<p>Signature _____ Date _____</p>	
<p>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.</p>	<p>The SLC shall have responsibility for periodic inspection of operations. Any noncompliance with this measure shall be noted to Unocal. Unocal shall work with the SLC to resolve any problem areas resulting from this requirement.</p>	<p>Signature _____ Date _____</p>	
<p>All loading arms shall be equipped with the USCG-approved quick-release couplings. A product flow control system shall be interlocked at the coupling so that flow automatically stops prior to disconnection, providing an anti-spill safety feature.</p>	<p>Prior to use of loading arms, Unocal shall have USCG approved quick-release couplings and the flow control system installed and in operation. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>Signature _____ Date _____</p>	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
<p>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) rugs shall not be tied to barges during transfer operations because of potential fire hazard.</p>	<p>Unocal shall be responsible for assuring that vessels at its facility are able to get underway in the required timeframe. Quick-release devices are required to be installed as per this mitigation measure. Unocal's operations manual shall specify mooring procedures. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>Signature _____ Date _____</p>	
<p>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.</p>	<p>Unocal shall, within 180 days of lease renewal, have strain gauges installed and in operation. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>Signature _____ Date _____</p>	
<p>Where effective, Unocal shall preboom 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 standoff 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.</p>	<p>Unocal shall have responsibility for implementation. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>Signature _____ Date _____</p>	
<p>To physically prevent simultaneous vapor connections to tank ships at both berths, either reinstall a detonation arrester (DA) 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.</p>	<p>Unocal shall, within 180 days of lease renewal, have complied with this measure. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>Signature _____ Date _____</p>	
<p>Unocal 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 incident.</p>	<p>Within 180 days of lease renewal, Unocal shall develop such procedures subject to review and approval by the fire authority having jurisdiction. Unocal shall have responsibility to implement such procedures and report any events using such procedures to the SLC.</p>	<p>Signature _____ Date _____</p>	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
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.	Unocal shall be responsible for assuring that the proper tug(s) are in place during mooring and unmooring. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.	_____ Signature _____ Date	
Unocal shall ensure that tugs of best available technology design (e.g., tractor tugs) escort all tank vessels bound for or leaving the Terminal.	Unocal shall be responsible for assuring that the proper tugs are in place for vessel escort. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.	_____ Signature _____ Date	
All loaded or partly loaded vessels under Unocal'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.	Unocal shall have responsibility for assuring that all vessels under the control of Unocal comply with this measure and shall advise other vessels of this requirement. SLC will be the liaison between the Vessel Traffic Service (VTS) and Unocal for compliance with this requirement.	_____ Signature _____ Date	
All tank vessels bound for the Terminal or leaving the Terminal shall use the San Francisco Vessel Traffic Service.	Unocal shall have responsibility for assuring that all vessels under their control comply with this measure and shall advise other vessels of this requirement.	_____ Signature _____ Date	
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.	Unocal shall have responsibility for assuring that all vessels under their control comply with this measure and shall advise other vessels of this requirement.	_____ Signature _____ Date	
Unocal shall ensure that adequate underkeel clearance is maintained at all times. At a minimum, Unocal shall conduct an annual bathymetric survey in the vicinity of the wharf.	Unocal shall have responsibility for assuring that an annual survey is performed and that adequate clearance is maintained. A copy of the bathymetric survey shall be forwarded to the SLC. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.	_____ Signature _____ Date	
Unocal shall ensure that all vessels calling at the Terminal have an oil spill response plan that meets USCG and OSPR requirements. In addition, Unocal shall provide initial response to spills from vessels calling at the Terminal while they are at or near the Terminal.	Unocal shall have responsibility for assuring that all vessels have the required response plan. Periodic inspection of such plans may be required by the OSPR inspectors. Unocal shall also be responsible for initial response efforts. OSPR inspectors shall be responsible for compliance with this requirement.	_____ Signature _____ Date	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
WATER QUALITY			
<p>In the event of a spill, dispersants should be used in some situations per Unocal's Oil Spill Contingency and Response Plan, and only with approval from the USCG and the CDFG.</p>	<p>During or immediately following a spill event, Unocal shall be responsible for determining whether dispersants may be necessary and obtaining approval for use of dispersants from the USCG and the CDFG. The OSPR should be notified of any use of or potential use of dispersants.</p>	<p>_____ Signature _____ Date</p>	
<p>The use of TBT on all Unocal 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 Unocal Terminal.</p>	<p>Unocal shall be responsible for assuring that all Unocal tankers and other tankers that regularly service the Terminal be in compliance with the measure. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>_____ Signature _____ Date</p>	
BIOLOGICAL RESOURCES			
<p>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 Unocal wastewater handling facility. No tankers servicing the Unocal Terminal shall discharge ballast water to the Bay.</p>	<p>Unocal shall be responsible for assuring that all tankers that service the Terminal be in compliance with International Maritime Organization (IMO) requirements. SLC inspectors shall be responsible for assuring Unocal's adherence to the mitigation measures.</p>	<p>_____ Signature _____ Date</p>	
<p>To avoid entrainment of young winter and spring run Chinook salmon by the dredge, dredging will be limited to specific time restraints as imposed by regulatory agencies having jurisdiction regarding this matter.</p>	<p>Unocal shall coordinate with the permitting agencies (the SLC, the Corps, the BCDC, and the RWQCB) to obtain permits that will allow for this activity in the required timeframe. Any potential problems related to noncompliance with this requirement shall be reported to the SLC immediately.</p>	<p>_____ Signature _____ Date</p>	
<p>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. Unocal shall provide initial response to spills from vessels calling at the Terminal while they are at or near the Terminal.</p>	<p>Unocal shall be responsible for initial response efforts and shall avoid use of sinkants. OSPR (CDFG) inspectors shall be responsible for compliance with this requirement.</p>	<p>_____ Signature _____ Date</p>	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
<p>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 Unocal Oil Spill Contingency/Response Plan (Unocal 1993) recommends the use of a propane cannon to scare birds. This method should be used only during the nonbreeding season. During the breeding season, a gentler method of scaring birds such as shouting and arm waving should be used.</p>	<p>Decision on methods to be used to flush birds from the oil spill area should be made by CDFG and USFWS biologists. If a spill occurs near the cormorant colony, experts in bird rehabilitation should immediately be brought to the site to rescue and begin immediate care of any oiled birds.</p>	<p>_____ Signature</p> <p>_____ Date</p>	
<p>Areas that shall have the highest priority for protection in the event of a Unocal 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 Unocal spill, but because they are within the same bay as the Terminal still require protection.</p> <p><u>Southampton Bay near Benecia</u> - A diversion boom shall be used at the southern end of Southampton Bay between pilings and Dillon Point. A diversion boom shall also be used from the Benecia waterfront to the city wharf.</p> <p><u>San Pablo Creek</u> - A diversion boom shall be used at the creek mouth.</p>	<p>Because the above particular areas were identified in the EIR as at highest risk of Unocal spills, specific protection measures for these resources are identified from protection measures recommended in the Bay/Delta Contingency Plan. Unocal shall have responsibility for being prepared to implement these protection measures for spills. SLC inspectors shall be responsible for observing the effectiveness of booming during oil spill drills.</p>	<p>_____ Signature</p> <p>_____ Date</p>	<p>CDFG OSPR shall have final approval of the Unocal Oil Spill Contingency Response Plan. OSPR regulations require that marine facilities and vessels be able to demonstrate that they have the necessary response capability on hand or under contract to specified spill sizes. In the event of an offshore spill, the USCG would be the Lead Agency in charge of federal response to an oil spill.</p>

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
<p>Corte Madera Marshes - Due to the large mudflats near Corte Madera and other scattered salt marshes and mudflats, strategy will primarily focus toward protection of creek outlets and salt flats. A diversion boom shall be deployed at the mouths of these creeks. The salt marshes at the Corte Madera Ecological Reserve are close to roads and will be more feasible for protection than the mudflats that, although they have a large biodiversity, will flush out due to tidal action. If the pollutant comes from a southern or northern point into the Bay, then a diversion boom shall be set out. If coming from the north, then a diversion boom off Point San Pedro shall be used to push the oil into the current and take it through the Raccoon Strait and out to sea for natural dissipation and landfill cleanup. If the pollutant comes from the south, then a diversion boom cannot be used because it will push the oil into the current and take it into San Pedro Bay.</p> <p>Napa Marshes - A diversion boom shall be used to prevent oil from reaching the shore.</p>			
<p>Sonoma Creek/Napa Slough - The confluence of Sonoma Creek and Napa Slough is just before the mouth into San Pablo Bay. Any pollutant coming into the mouth must be stopped immediately before it spreads into the numerous passages and channels that feed into Sonoma Creek and Napa Slough. Both the creek and the slough shall be spanned by an exclusion boom. If this is not permitted by heavy outflow, a diversion boom shall be set up to collect the pollutant at the Highway 37 bridge.</p> <p>Gallinas Creek - Because the creek is drained through the main channel and smaller channels use the salt marshes, the first priority shall be to deploy an exclusion boom around the channels that drain the creek. A diversion boom shall also be placed across the main channel of Gallinas Creek. The salt marsh extending from Rat Rock to the southern boundary of Hamilton Field shall be protected by a diversion boom, hay bales, or a combination of both. If a pollutant enters from a south to northeast direction, a diversion boom shall be set up extending from Rat Rock of China Camp.</p>			

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
<p>Eelgrass beds should have the highest priority for protection, after the protection of major salt marshes. Important eelgrass beds are located near Point Richmond and near Alameda. These areas shall be protected with booms and curtains. If placed from shore, personnel should not tramp over the eelgrass or drag equipment over it. In general, dispersants and sinkants should not be used in the vicinity of the eelgrass beds.</p>	<p>Unocal shall have the primary responsibility to ensure that eelgrass beds receive protection in the event of an oil spill. OSPR shall be responsible for compliance with this requirement.</p>	<p>_____ Signature _____ Date</p>	<p>In the event of an offshore spill, the USCG would be the Lead Agency in charge of federal response to an oil spill.</p>
<p>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 shall 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 shall 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.</p>	<p>The cleanup decision shall be made with input from CDFG and USFWS biologists. All cleanup attempts shall be conducted under the supervision of CDFG and USFWS biologists.</p>	<p>_____ Signature _____ Date</p>	
<p>The Unocal Oil Spill Contingency/Response Plan, while recognizing the sensitivity of oiled areas to various cleanup techniques for different shoreline sensitivities, allows for fairly destructive measures such as sand blasting. All cleanup methods shall be approved by the CDFG and USFWS prior to implementation. The Plan should be revised to reflect less destructive measures. Plan revision is also needed regarding discussion of exact methods, procedures, and training for the rehabilitation of oiled birds.</p>	<p>The decision on methods to be used for cleanup shall be made with input from CDFG and USFWS biologists. All cleanup attempts shall be conducted under the supervision of CDFG and USFWS biologists. Plan revision shall be conducted through coordination with CDFG and USFWS, and/or through the use of specialized consultants. Documentation such as the Bay/Delta Area Contingency Plan (OSPR, USDG 1993) shall be consulted.</p>	<p>_____ Signature _____ Date</p>	
<p>If damage occurs, 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.</p>	<p>Unocal shall work with SLC, CDFG, and USFWS biologists to design a post-spill sampling program, the results of which would be compared to available environmental baseline information, and produce a plan to place biologists onsite immediately following a spill.</p>	<p>_____ Signature _____ Date</p>	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
COMMERCIAL AND SPORT FISHERIES			
<p>To reduce operational conflicts between Unocal vessels and herring fishing activities, Unocal shall conform its vessel activities to agreements developed between CDFG, herring harvesters, and other interested parties.</p>	<p>Annually, as part of the CEQA review of herring regulations, CDFG develops mitigation to minimize conflicts between transiting vessels and herring activities. Unocal shall meet with the CDFG on an annual basis to update agreements. A copy of each updated agreement shall be forwarded to the SLC.</p>	<p>Signature _____ Date _____</p>	
<p>For those fishing areas listed (western Suisun Bay, Honker Bay, Sacramento River Mouth, Mare Island Strait [Napa River], Carquinez Strait, eastern San Pablo Bay, Central San Francisco Bay from Richmond to Alameda, Tiburon, Yerba Buena Island, Angel Island) and other areas that would be contacted by oil spills, Unocal shall (1) provide financial compensation in accordance with Article 80.5, Chapter 6 of the California Oil Spill Prevention and Response Act, (2) contribute to public or private organizations for habitat enhancement to reclaim or restore fisheries habitat, (3) contribute to public or private organizations for education/promotion to lure the public to safe and clean fishing areas closed due to spills and reassure seafood consumers that fish from the spill area are safe to eat, (4) contribute to public agencies to pay for seafood inspection programs to ensure that no tainted fish reach markets, and (5) contribute to public or private organizations to evaluate the effectiveness of the measures listed above (results of the assessment would be available to public decision-makers to ensure refinement, if necessary, of mitigation measures).</p>	<p>Financial contribution and restoration of the fisheries habitat shall be determined by the extent of Unocal's responsibility for the spill and its cooperation with each of the various organizations and agencies.</p>	<p>Signature _____ Date _____</p>	
<p>Unocal shall contribute to mitigation and restoration programs designed to restore and enhance Bay fisheries. This will help alleviate cumulative impacts from tankering activities and other Bay pollution sources.</p>	<p>The level of Unocal's contribution will be commensurate with its contribution to impacts, when compared to other impacts on the Bay. Implementation of this measure would take place once Unocal's contribution is determined by the Estuary Project or studies conducted pursuant to the CCMP. To facilitate implementation, periodic (every 3 to 5 years) evaluation of Unocal's operations and compliance with lease terms and mitigation measures shall be conducted by the SLC.</p>	<p>Signature _____ Date _____</p>	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
AIR QUALITY			
Mitigation of future emissions due to an increased level of operation, with the exception of CO, which will not exceed daily significance thresholds, shall rely on the use of the best available control technology available at the time.	Any mitigation relating to future increased operations would require additional permitting through the BAAQMD, which will set limitations on allowable emissions levels. Implementation may require the use of improving technology, retrofit of existing equipment with improved equipment, and other BAAQMD requirements.	_____ Signature _____ Date	
VEHICULAR AND RAIL TRANSPORTATION			
Mitigation is required if future Terminal throughput results in the need for trucking of product onto I-80. Any future conditions that would result in new fuels product trucking and requiring construction of a loading rack, that Unocal does not presently have, would require compliance with BAAQMD regulatory requirements.	BAAQMD would evaluate potential impacts and mitigations. Any mitigation measures relating to future conditions involving new fuels product trucking from the Refinery should be tied directly to BAAQMD regulatory requirements. In the event that the trucking of product would be required, construction of a loading rack for product transfer would necessitate permits from the BAAQMD, including compliance with its Regulation 13 - Transportation Control Measures.	_____ Signature _____ Date	
EARTH RESOURCES AND STRUCTURE STABILITY			
A routine inspection program of the pipelines, valvings, and supporting bracings in the wharf shall be conducted. The inspection program should consider the condition of these elements with respect to seismic integrity. Seismic retrofit, where needed, incorporating design for expected large earthquakes should be performed to reduce any impacts to a level of nonsignificance.	Within 180 days of lease renewal, Unocal shall conduct a structural and safety system audit of the Terminal in concert with the SLC and a third-party consultant as described in the Commission's "Marine Terminal Audit Program" document. The audit will be conducted with teams composed of SLC, Unocal, and consultant personnel. Upon completion of the audit, Unocal shall implement the safety improvements in accordance with a scheduled plan.	_____ Signature _____ Date	
Within the shoreline acreage, densification of loose foundation materials, surcharging of areas prone to liquefaction, special grouting techniques, and local lowering of the water table in areas subject to liquefaction may be necessary. Flexible piping and connections on the wharf shall be installed, where not already in place.	Within 365 days of lease renewal, the report shall be completed. A California registered geologist shall be retained by Unocal to assess foundation areas and areas of potential liquefaction and make appropriate recommendations. Results shall be submitted both to Unocal and SLC for review and implementation. Periodic review of the shoreline acreage shall be conducted.	_____ Signature _____ Date	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
<p>Soil stability analyses shall be required to determine the condition of subsurface materials in the vicinity of the butane sphere. Future borings should be conducted, as necessary, to supply pertinent soil data. Removal of deleterious soils in specific areas, as a result of stability analyses, should be conducted, as necessary.</p>	<p>Within 365 days of lease renewal, the report shall be completed. A California registered geologist shall be retained by Unocal to perform soil stability analysis at the butane sphere and make appropriate recommendations. Results shall be submitted both to Unocal and SLC for review and implementation.</p>	<p>_____ Signature _____ Date</p>	
<p>Surveys of the shoreline portions of the site shall be performed after seismic events to determine whether settlement has occurred. If it is determined that settlement has occurred, it will be necessary to bring the affected area(s) back up to grade by placing additional fill material.</p>	<p>During the term of the lease, a California registered geologist shall be retained by Unocal to review of the stability of shoreline portions of the site following major seismic activity and make appropriate recommendations. Within 90 days of an event, a report shall be submitted both to Unocal and SLC for review and implementation.</p>	<p>_____ Signature _____ Date</p>	
<p>Periodic inspection of the riprap lining of the shoreline shall be conducted to track any lateral spreading and lurching. Some damage to the shoreline portions of the site from the effects of seismically induced lateral spreading and/or lurching could require repair through reinforcement.</p>	<p>Within 365 days after lease renewal, the report shall be completed. A California registered geologist shall be retained by Unocal to perform inspection of the riprap lining of the shoreline portions of the site and make appropriate recommendations. This inspection shall occur every 2 years and after major seismic activity. Results shall be submitted both to Unocal and SLC for review and implementation.</p>	<p>_____ Signature _____ Date</p>	
<p>In the future, larger displacement vessel(s) are intended to be moored at the facility, then proper evaluations of such proposed vessel loadings shall be performed.</p>	<p>An evaluation shall be made by a California registered civil engineer or structural engineer prior to initiating use of larger vessels, as to whether the loads imposed by the vessel(s) can be adequately and safely carried by the structures. This evaluation should be made in accordance with U.S. Army Corps of Engineer's design criteria or with U.S. Navy's NAVFAC DM-25 and DM-26 criteria.</p>	<p>_____ Signature _____ Date</p>	
<p>In the future, if different material, besides butane, shall be stored in the spherical tank, then proper evaluations of structural integrity shall be performed.</p>	<p>An evaluation shall be made by a California registered civil engineer or structural engineer prior to a change in material, as to whether the loads imposed can be adequately and safely carried by the structure under both static and dynamic loading conditions. The SLC shall have the opportunity to review such reports.</p>	<p>_____ Signature _____ Date</p>	

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EXHIBIT "E"
MITIGATION MONITORING & REPORTING PLAN

Mitigation Measures	Implementation and/or Monitoring Criteria	SLC Verification and Compliance	Remarks
AESTHETICS			
When oil spill response equipment may be stored in areas of visual sensitivity, such as near ecological areas, storage sheds should be designed to blend in with any other structures and should be painted with compatible colors or screened with vegetation that is also compatible with the surrounding vegetation in the area.	Storage sheds, buffering, or landscaping concepts shall be subject to review by the applicable County or local agency and the SLC prior to their construction.	_____ Signature _____ Date	
LAND USE/RECREATION			
Unocal shall work with the SLC, the EBRPD, and the County in the development of a feasible plan for a proposed recreational trail system from Rodeo to Crockett. This plan may involve the provision by Unocal of access around the Refinery.	The SLC shall participate in or track the status of discussions on the planning of the trail system. Unocal shall be responsible for exercising due diligence in the provision of alternate public access and shall forward summaries of any discussions with the EBRPD and the County which do not include the SLC.	_____ Signature _____ Date	

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