MINUTE ITEM
This Calendar Item No. C47 was approved as Minute Item No. 47 by the California State Lands Commission by a vote of 3 to 0 at its 8-8-05 meeting.

CALENDAR ITEM
C47

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PRC 4769

08/08/05
WP 4769.1
N. Smith
D. Plummer
M. Meier
V. Van Way

ISSUANCE OF A GENERAL LEASE - INDUSTRIAL USE AND TERMINATION OF PRC 8160 AND PRC 8205

APPLICANT:

Shore Terminals LLC
2801 Waterfront Road
Martinez, California 94553

AREA, LAND TYPE, AND LOCATION:

14.04 acres, more or less, of sovereign lands in Suisun Bay and Pacheco Slough, city of Martinez, Contra Costa County.

AUTHORIZED USE:

An existing marine terminal consisting of a 40x100 foot concrete wharf connected to land by a 1,700 foot long trestle supporting an 11 foot wide roadway and pipe rack. This lease includes annual dredging of up to 6,000 cubic yards per year and an existing 12-inch petroleum pipeline across Pacheco Slough and along Waterfront Road.

LEASE TERM:

Twenty years, beginning January 1, 2005

CONSIDERATION:

$235,800 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 the tenth anniversary of the lease, when a new base rent may be established.

SPECIFIC LEASE PROVISIONS:

Insurance:

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

Bond:

$2,000,000.

BACKGROUND INFORMATION:

The California State Lands Commission (Commission) authorized issuance of lease PRC 4769 to Wickland Oil Company (Wickland) at it's meeting on May 31, 1973, and subsequently assigned the lease to Shore Terminal LLC (Shore) in September 1998. This lease provided for a 25-year term with two 10-year renewal periods, which permitted the use of State-owned sovereign lands in Contra Costa County for a marine terminal facility in conjunction with storage facilities on the upland for crude oil and petroleum products. When Shore applied to continue its use of the marine terminal, they also requested a new long term lease. Commission staff determined that an Environmental Impact Report (EIR) must be completed before the Commission could consider a new long-term lease for the terminal.

Shore Terminals LLC is a wholly owned subsidiary of Kaneb Pipeline Partners, L.P. Kaneb Pipeline Partners, L.P. unconditionally guarantees the full performance by Shore Terminals LLC of its obligations under the lease, and staff has determined that Kaneb has the financial ability to carry out the terms of the lease.

Lease PRC 8160 for dredging at the marine terminal and PRC 8205 for the 12-inch petroleum pipeline along Waterfront Road will be terminated because the new lease proposed for approval by this calendar item incorporates provisions for dredging and for the 12-inch line.

ENVIRONMENTAL PROCESS:

1. The Notice of Preparation (NOP) for an EIR was circulated April 5, 2001, to 92 public agencies and interested parties, and two Public Scoping Hearings were held in the city of Martinez on April 19, 2001, at which no member of the public provided comments. Staff received two sets of comments on the NOP, from the Bay Conservation and Development Commission (BCDC), and the California Sportfishing Protection Alliance. The Draft EIR was circulated for a 45-day public review and comment period on May 21, 2004, and staff conducted two public hearings on June 23, 2004, in the city of Martinez, at which no speakers provided comments. Staff received two sets of comments on the Draft EIR, from BCDC and the applicant, and the Final EIR was released on April 7, 2005.

2. CEQA Findings, made in conformance with the State CEQA Guidelines (Title 14, California Code of Regulations, section 15091) are contained in Exhibit C, attached hereto.

3. A Mitigation Monitoring Program has been prepared in conformance with the provisions of the CEQA (Public Resources Code section 21081.6) and is contained in Exhibit D 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 E, attached hereto.

5. The Final Environmental Impact Report (FEIR) identified the following significant impacts that, with the application of all feasible mitigation measures, cannot be reduced to less than significant:

6. All documents and material that constitute the record of proceedings upon which staff's recommendation is based are on file in the Sacramento Office of the commission located at 100 Howe Avenue, Suite 100 South.

- Oil Spills
  - Shore's terminal response capability for containment of leaks or spills greater than 50 barrels (bbls) is not adequate to contain and recover all the spill, and could result in significant, adverse and/ or residual impacts to water quality or biological resources, commercial and sport fisheries, recreation, land or natural resource uses, and/ or visual aesthetics;

  - Accidental spills or leaks of crude oil or oil product originating from a vessel at Shore terminal or in transit in S.F. Bay or the outer coast could significantly impair and/or present significant residual impacts to water quality, biological resources, and have the potential to spread through the Carquinez Strait and into Suisun and San Pablo Bays; and

  - Oil spills that beach along sensitive lands or heavily-used areas, including recreational areas, could limit or preclude such uses, depending on the various characteristics of a spill and its residual effects.

- Water Quality
  - Pollution from use of metal-based or highly toxic marine anti-fouling paints on vessels associated with Shore terminal may significantly, adversely impact water quality; and

  - Ballast water discharge containing harmful invasive organisms/ introduction of non-indigenous species near the project area, the S.F. Bay and outer coast, could significantly, adversely impair several beneficial uses, including fishing, estuarine habitat, preservation of rare and endangered species, recreation, fish spawning, wildlife habitat, and other biota, especially plankton, benthos, fishes, and birds.

- Fisheries
  - Contamination from an oil or product spill presents high risk of adverse effects to S.F. Bay shrimp, herring, commercial and sport fisheries. Depending on spill location, size and water and weather conditions, areas upstream of the confluence of the Sacramento and San Joaquin rivers may also suffer harm. In addition, Bay marinas, launch ramps and fishing access points may be threatened, contaminated or closed; and

  - Dredging activities during periods when juveniles are migrating through the area could contribute to significant loss of juvenile Dungeness crabs and young Chinook salmon.

- Aesthetics
  - Visual impacts of a spill originating from Shore terminal could, depending on the level of physical impact and cleanup ability, potentially persist for a long period of time, resulting in negative public impression of the view shed and significant adverse aesthetic impacts.

OTHER PERTINENT INFORMATION:

1. Applicant owns the uplands adjoining the lease premises.

2. Staff recommends that the Commission accept the back rent for the period from June 1, 1998, to December 31, 2004, in the amount of $522,255.

3. 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 Environmental Impact Report (EIR) identified as CSLC EIR No. 706, State Clearinghouse No. 2001042022. Such EIR was prepared and circulated for public review pursuant to the provisions of the CEQA.

EXHIBITS:

A. Land Description
B. Site Map
C. CEQA Findings
D. Mitigation Monitor Program
E. Statement of Overriding Considerations

PERMIT STREAMLINING ACT DEADLINE:

12/21/05

RECOMMENDED ACTION:

IT IS RECOMMENDED THAT THE COMMISSION:

CEQA FINDING:

1. CERTIFY THAT AN EIR NO. 706, STATE CLEARINGHOUSE NO. 2001042022, WAS PREPARED FOR THIS PROJECT PURSUANT TO THE PROVISIONS OF THE CEQA, THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN, AND THAT THE EIR REFLECTS THE COMMISSION'S INDEPENDENT JUDGMENT AND ANALYSIS.

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

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

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

AUTHORIZATION:

1. AUTHORIZE ACCEPTANCE OF BACK RENT IN THE AMOUNT OF $522,255 FOR THE PERIOD JUNE 1, 1998, THROUGH DECEMBER 31, 2004.

2. AUTHORIZE ISSUANCE TO SHORE TERMINALS LLC OF A GENERAL LEASE-INDUSTRIAL USE, BEGINNING JANUARY 1, 2005, FOR A TERM OF TWENTY YEARS, FOR MARINE TERMINAL FACILITIES, 12-INCH PIPELINE AND ANNUAL DREDGING OF UP TO 6,000 CUBIC YARDS WITH SUCH ACTIVITY BEING CONTINGENT UPON APPLICANT'S COMPLIANCE WITH APPLICABLE PERMITS, RECOMMENDATIONS, OR LIMITATIONS 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 $235,800, WITH THE STATE RESERVING THE RIGHT TO FIX A DIFFERENT RENT PERIODICALLY DURING THE LEASE TERM, AS PROVIDED IN THE LEASE; NO LESS THAN $.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"

Description of Lands Covered by Lease No. PRC 4769.1

Real property situated in Contra Costa County State of California described as follows:

Parcel One:

A parcel of tide and submerged land lying within Suisun Bay, near the city of Martinez, being more particularly described as follows:

COMMENCING at a 2" X 2" hub numbered 29, as shown on that Record of Survey recorded January 26, 1954 in Book 16 of Licensed Land Surveyors' Maps at page 14, Contra Costa County Records; thence South 79° 09' East along the northern line of Swamp and Overflow Survey No. 424, 83.16 feet to the TRUE POINT OF BEGINNING, said point also being on the line common to Sections 8 and 9, Township 2 North, Range 2 West, Mount Diablo Base Line and Meridian; thence North 00° 51' 00" East along said section line 2789.00 feet; thence leaving said section line North 71° 51' 00" East, 35.00 feet; thence North 10° 00' 00" West, 27.21 feet; thence North 33° 10' 09" West, 1490.20 feet; thence South 62° 47' 18" West, 259.56 feet; thence South 79° 58' 49" West 235.64 feet; thence North 27° 12' 42" West, 180.00 feet; thence North 62° 47' 18" East, 995.00 feet; thence South 27° 12' 42" East, 180.00 feet; thence South 45° 55' 59" West, 240.21 feet; thence South 62° 47' 18" West, 226.89 feet; thence South 33° 10' 09" East, 601.81 feet; thence North 56° 49' 51" East, 40.00 feet; thence South 33° 10' 09" East, 85.00 feet; thence South 56° 49' 51" West, 40.00 feet; thence South 33° 10' 09" East, 840.00 feet; thence North 71° 51' 00" East, 4.53 feet; thence South 00° 51' 00" West, 2841.06 feet to the northern line of said Swamp and Overflow Survey No. 424; thence North 79° 09' 00" West along the northern line of said Survey No. 424, 101.54 feet to the TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM any validly patented interest in that land covered by Tideland Survey No. 207 patented to J.M. Keith pursuant to that certain Tideland Patent recorded November 22, 1901 in Book 4 of Patents, page 402, Contra Costa County Official Records.

Parcel Two:

A parcel of tide and submerged land lying in the bed of Pacheco Creek (also know as Walnut Creek), approximately 2 miles northeast of the City of Martinez, Contra Costa County, State of California, being more particularly described as follows:

COMMENCING at State Lands Monument "AVON" having CCS 27, Zone 3 coordinates of X=1,545,386.26, Y=561,570.34; thence North 18° 39' 30" West, 231.00 feet; thence South 71° 20' 30" West, 239.53 feet to the ordinary high water mark of the east bank of Pacheco Slough and being the TRUE POINT OF BEGINNING; said ordinary high water mark being described in Boundary Line Agreement No. 7 between Tidewater Associated Oil Company and the State Lands Commission as recorded on March 15, 1951, in Volume 1732, page 35, Official Records of Contra Costa County; thence along said boundary line North 59° 02' 55" West, 65.65 feet; thence leaving said boundary line South 71° 20' 30" West, 141.64 feet to the ordinary high water mark of the west bank of the Pacheco Slough; said ordinary high water mark described in Boundary Line Agreement No. 8 between the United Towing Company and the State Lands Commission as recorded on March 15, 1951, in Volume 1732, page 37, Official Records of Contra Costa County; thence along said boundary line South 64° 08' 41" East, 71.32 feet; thence leaving said boundary line North 71° 20' 30" East, 133.33 feet to the TRUE POINT OF BEGINNING.

Parcel Three:

A parcel of submerged land lying in the bed of Suisun Bay, near the city of Martinez, being more particularly described as follows:

COMMENCING at the most westerly corner of the above described parcel one, thence South 62° 07' 14" West, 74.38 feet to the TRUE POINT OF BEGINNING; thence North 27° 01' 01" West, 165.00 feet to a line parallel with and 150 feet Southeast of the Bullshead Channel Centerline; thence along said parallel line North 62° 58' 59" East, 1187.50 feet; thence leaving said parallel line South 27° 01' 01" East, 160.00 feet; thence South 25° 44' 31" West, 210.00 feet; thence South 62° 54' 38" West, 896.06 feet; thence North 72° 15' 29" West, 175.00 feet to the TRUE POINT OF BEGINNING.

Parcel Four:

All that sovereign land lying in Parcels "F" and "H" of AD 238, recorded March 14, 1996 in Document Number 96 46533 of Contra Costa County Recorders Office, and more particularly described as follows:

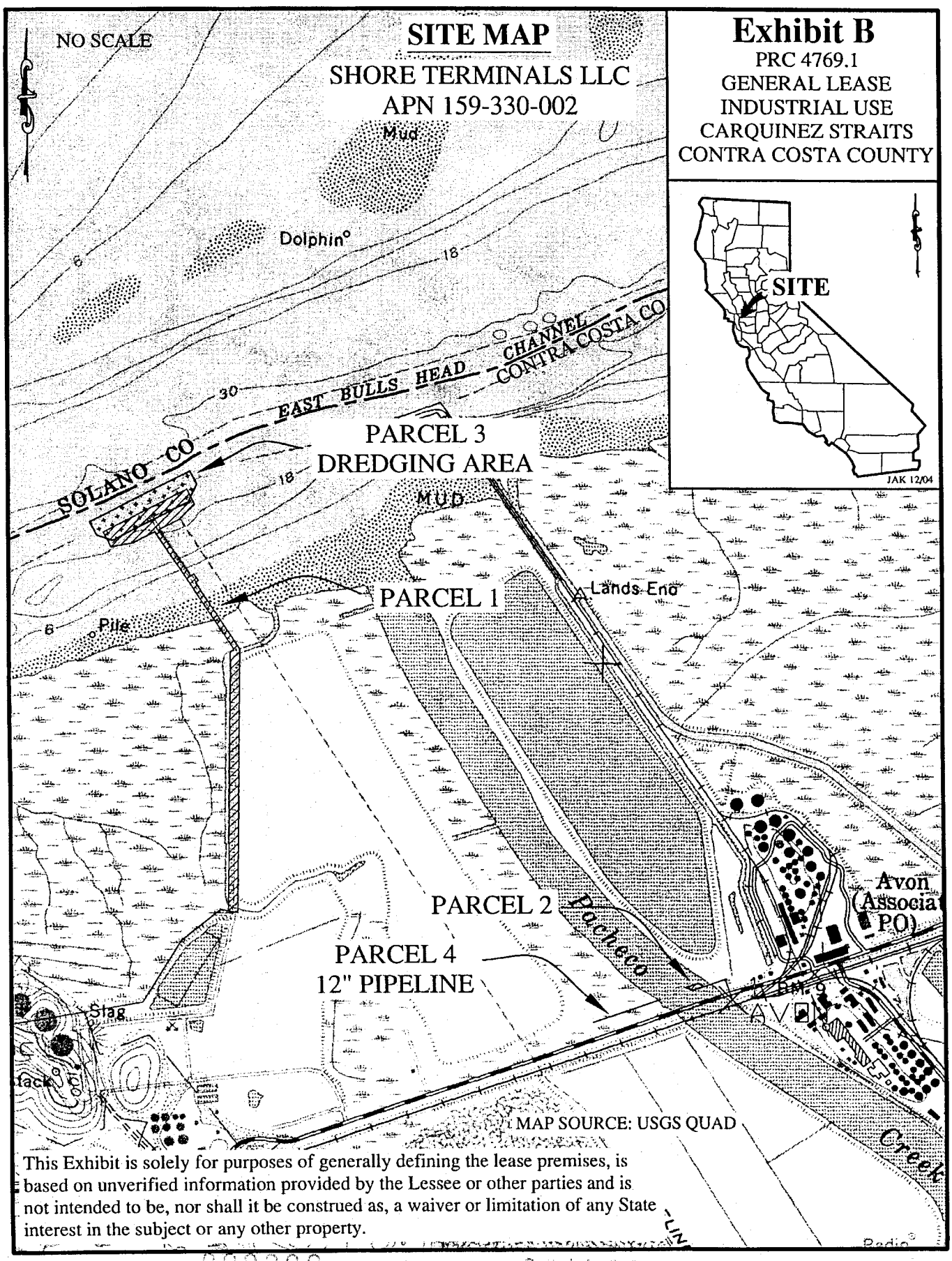
A strip of land eight (8) feet wide, the centerline of which is an existing 12 inch diameter petroleum pipeline, said existing pipeline lying parallel with and 46 feet northerly of the south lines of said Parcels "F" and "H".

The sidelines of side strip shall be extended or shortened so as to terminate at the northeasterly line of Parcel "F" and the southwesterly line of Parcel "H".

END OF DESCRIPTION

Parcel One revised by the California State Lands Commission Boundary Unit December 15, 2004.
Parcel Two prepared by the California State Lands Commission Boundary Unit, 1998.
Parcels Three and Four prepared by the California State Lands Commission Boundary Unit July 19, 2004.

The above described Parcel Three was based on "Hydrographic Survey of Shore Terminals Martinez, CA. Pier". Surveyed 03-06-2004. Prepared by Connexsys Eng. Inc. Richmond, CA. The survey is on file with the California State Lands Commission.



This Exhibit is solely for purposes of generally defining the lease premises, is based on unverified information provided by the Lessee or other parties 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 – SHORE TERMINALS
STATEMENT OF FINDINGS

FINDINGS

These findings on the Shore Terminals LLC Martinez Marine Terminal Project (proposed Project) proposed by Shore Terminals LLC ("the Applicant") are made by the California State Lands Commission (CSLC), pursuant to the *Guidelines* for the California Environmental Quality Act (the CEQA) (California Code of Regulations, Title 14, section 15091). All significant adverse impacts of the project in California identified in the Final Environmental Impact Report (Final EIR) are included herein and organized according to the resource affected.
The CEQA Findings are numbered in accordance with the impact and mitigation numbers identified in the Mitigation Monitoring Program table of the Final EIR (see Section 8.0 of the Draft EIR, with revisions in Section 4.0 of the Final EIR). The CEQA Finding numbers are not numbered sequentially because some of the impacts were less than significant before mitigation (Class III) or a beneficial impact (Class IV).

For discussion of impacts, significance is classified according to the following definitions:

- **Class I** (significant adverse impact that remains significant after mitigation);
- **Class II** (significant adverse impact that can be eliminated or reduced below an issue's significance criteria);
- **Class III** (adverse impact that does not meet or exceed an issue's significance criteria); or
- **Class IV** (beneficial impact).

Class III and Class IV impacts require neither mitigation nor findings.

For each significant impact (i.e., Class I or II) 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 environmental 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.

A discussion of the facts supporting them follows the findings.

Whenever Finding (b) occurs, the agencies with jurisdiction have been specified. These agencies, within their respective spheres of influence, have the ultimate responsibility to adopt, implement, and enforce the mitigation discussed within each type of impact that could result from project implementation. However, under the CEQA (Public Resources Code section 21081.6), the CSLC, as the CEQA Lead Agency, has the responsibility to ensure that the mitigation measures contained are effectively implemented. Other specified State, local, regional, and Federal public agencies include, but are not necessarily limited to the following:

California Department of Fish and Game (CDFG);

California Coastal Commission (CCC);

California Regional Water Quality Control Board (RWQCB);

National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries);

U.S. Army Corps of Engineers (Corps);

U.S. Coast Guard (USCG);

U.S. Fish and Wildlife Service (USFWS);

Bay Area Air Quality Management District (BAAQMD); and

Other local districts or jurisdictions.

Whenever Finding (c) is made, the CSLC has determined that sufficient mitigation is not practicable to reduce the impact to a less than significant level and, even after implementation of all feasible mitigation measures, there will or could be an unavoidable significant adverse impact due to the Project. The Statement of Overriding Considerations applies to all such unavoidable impacts as required by the CEQA *Guidelines* sections 15092 and 15093.

CEQA FINDING NO. OS-3

CONTAINMENT OF SPILLS GREATER THAN 50 BARRELS FROM TRANSFER OPERATIONS AT TERMINAL

Impact: **OS-3: Shore's response capability for containment of spills during transfer operations would be adverse and significant for spills greater than 50 bbls, and range from spills that can be contained during first response efforts with rapid cleanup (Class II), to those**

complex spills that result in a significant impact (Class I) with residual effects after mitigation.

Class: I and II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

The Shore terminal meets all federal and state requirements for response capabilities. In most cases, Shore's response capability is considered adequate to contain a spill of up to 50 bbls and prevent it from spreading over a wide area, thus either preventing or mitigating significant impacts (Class II). However, the terminal will not be able to contain and recover all the oil from a release of greater than 50 bbls and even with implementation of mitigation measures, impacts may remain significant (Class I).

Mitigation Measures for OS-3: The following shall be completed by Shore Terminals within 12 months of lease implementation, unless otherwise specified.

OS-3a: Provide quick release devices that would allow a vessel to leave the wharf as quickly as possible in the event of an emergency (fire or accident that could lead to a spill), that could impact the wharf or the vessel.

OS-3b: Install tension monitoring devices on the wharf that would avoid excess strain on mooring lines and avoid damage that could result in spills.

OS-3c: Install Allision Avoidance System (AAS) at the terminal to prevent damage to the pier and/or vessel during docking operations. Prior to implementing this measure, Shore shall consult with the San Francisco Bay Bar Pilots, the USCG, and the staff of the CSLC and provide information that would allow the CSLC to determine, on the basis of such consultations and information regarding the nature, extent and adequacy of the existing berthing system, the most appropriate application and timing of an AAS at the Shore Terminal.

OS-3d: Develop a comprehensive preventative maintenance program for the wharf, that includes periodic inspection of all components related to transfer operations. The program shall be subject to review and approval by the CSLC.

The wharf is located in a high velocity current area in the Carquinez Strait. The wharf currently has no mechanisms that would allow the quick release of mooring lines in the event of an emergency. In the event of a fire, oil spill, earthquake, or tsumami, quick release of the mooring lines would allow the vessel to quickly leave the wharf which could help prevent damage to the wharf and vessel. The quick release hooks have options for mooring line release including electrically at the hook with a push button and/or all lines can be released from the control room.

Tension monitoring enables loading to continue in marginal weather conditions, high velocity current conditions or other conditions where the limits of strain on the mooring lines could result in movement of the vessel resulting in damage to the wharf and/or vessel. Monitoring would provide the knowledge that the design limits of the mooring are not being exceeded. This permits cost effective use of both the mooring and tankers.

At present, the docking system relies on the pilot's judgement to determine the vessel's approach speed and angle. An Allision Avoidance System would help to prevent damage to the wharf and vessel by monitoring the speed, approach angle, and distance from the dock of the approaching vessel and providing warning if the monitored parameters fall outside preset limits indicating an allision could occur.

The comprehensive preventative maintenance program would ensure that all maintenance and inspection of all transfer operation components are routinely conducted. This program will provide assurance that damaged or aging components are identified and repaired or replaced, which aid in avoiding spill/leaks.

The above measures would lower the probability of an oil spill by allowing for quick release of mooring lines (OS-3a), monitoring of tension of the mooring lines (OS-3b), allision avoidance (OS-3c), and ensuring through maintenance and inspection that damaged or aging wharf components are in proper operating condition (OS-3d). These measures help to reduce the potential for spills and their associated impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant.

CEQA FINDING NO. OS-4

CONTAINMENT OF SPILLS DURING NON-TRANSFER OPERATIONS AT TERMINAL

Impact: **OS-4: Spills from the terminal during non-transfer periods would be associated with pipelines and are considered a significant (Class II) impact if spills are less than 50 bbls, or significant (Class I) impacts for spills greater than 50 bbls.**

Class: I and II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

The only potential source for a spill during period of no transfers would be associated with the pipelines. Spills from the terminal during non-transfer periods are considered a significant (Class II) impact if spills are less than 50 bbls, or significant (Class I) impacts for spills greater than 50 bbls.

When transfers are not occurring, the standby boom deployment boat is not present. The regulations do not require the deployment of boom within 30 minutes during non-transfer times as the probability of a release is much less. The response to a non-transfer release would be similar as described above, except that it could take up to 2 hours to bring a response vessel to the site to begin deploying boom because the standby boom deployment boat may not be present. After that, the total amount of response equipment that could be brought to the scene would be the same as when a tank vessel is transferring oil. Shore and their response contractors have adequate response capability to prevent a small spill of less than 50 bbls from spreading over a wide areas and causing significant impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant.

Mitigation Measures for OS-4:

OS-4: Implement measure OS-3d.

Implementation of a comprehensive preventative maintenance program would ensure through proper maintenance and inspection that damaged or aging wharf components are in proper operating condition (OS-3d). These measures help to reduce spills and their associated impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant.

Additional mitigation for pipeline integrity due to seismic forces are included as mitigation measures GEO-11a (requirement for a pipeline analysis) and GEO-11b (pipelines must meet MOTEMS for pipeline integrity).

CEQA FINDING NO. OS-5

WHARF OPERATIONS MANUAL UPDATE OF RESPONSIBLE PERSONS AND RESPONSE CONTRACTORS

Impact: **OS-5: Shore Terminals Wharf Operations Manual requires minor revisions to become current, and is a significant (Class II) impact.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Shore Terminals maintains an Oil Spill Response Plan (Shore Terminals LLC 2001) that strictly addresses response to spills and was updated in July 2003 with USCG approval dated November 2003. The Plan references the OSPR Area Contingency Plan for specific procedures for protecting sensitive resources. The Plan is complete and up-to-date.

Shore Terminals also maintains a Wharf Operations Manual (Shore Terminals LLC 1998) which was last approved by the CSLC in 1999. The Wharf Operations Manual addresses wharf operations, including responses to emergency situations such as spills and fires. The Manual requires minor revisions to bring it current, including updating names of responsible persons at the terminal and the names of the response contractors. This is important information for terminal operations staff in the event of an emergency.

Mitigation Measure for OS-5:

OS-5: Shore Terminals shall update and bring the Wharf Operations Manual current. Revise the manual by providing current names of responsible persons at the terminal and the names of the current response contractors. Submit the Manual to the CSLC for review and approval within 6 months of lease implementation.

Time is a critical factor in mobilizing for and responding to either an oil spill or fire. Updating the manual will ensure that terminal personnel have the most current information available to contact appropriate parties to respond to these emergency situations by being onsite more quickly.

CEQA FINDING NO. OS-6

WHARF OPERATIONS MANUAL UPDATE FOR FIRES AND EXPLOSIONS RESPONSE CAPABILITY

Impact: **OS-6: Public areas are beyond the hazard footprint boundary, thus fires and explosions would not cause a public safety risk. However, the Wharf's Operations Manual does not address fire emergency procedures and the Wharf does not meet detection/suppression system requirements. A significant adverse (Class II) impact has been identified.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

The wharf is equipped with fire extinguishing equipment that can be activated in the event of a fire. Four permanently mounted fire monitors are installed on the wharf. These fire monitors are fed with bay water by a 2,000 gpm diesel engine-driven pump. The three monitors located around the loading arm area are pointed at locations high on the loading arm supports so that starting the fire pump will immediately spray cooling water on the loading arms. This fire extinguishing system is started by pushing one of the red buttons. One portable 150 lb. wheeled extinguisher and three portable 20 lb. extinguishers are also located on the wharf. There are no fire response vessels located near the terminal. At the present time, it does not appear that the wharf fire detection/suppression system meets the full requirements of the MOTEMS, and a significant adverse impact is identified.

No discussion or procedure for dealing with tank vessel fires could be found in Shore's manuals addressing fires or emergency response. This has been identified as a deficiency in the manual and in planning for emergency response and is considered a significant impact.

Mitigation Measures for OS-6:

OS-6a: Shore shall implement mitigation measure OS-3a to provide for quick release devices that would allow a vessel to depart the wharf quickly would help in the event of a fire.

OS-6b: Shore Terminals shall develop a set of procedures for dealing with tank vessel fires and explosions for tankers berthed at the Shore terminal. The procedures should include the steps to follow in the event of a tank vessel fire and describe

how Shore and the vessel will coordinate activities. The procedures shall also identify other capabilities that can be procured if necessary in the event of a major incident. The procedures shall be submitted to CSLC within 6 months of lease renewal. CSLC shall have final approval of the plan.

OS-6c: Shore Terminals shall ensure that the fire detection/suppression system conforms to the MOTEMS, Section 8.0.

OS-3a, to provide for quick release of mooring lines, could help, as previously discussed, to prevent damage to the wharf and vessel.

Shore's Operations Manual presently has no discussion or procedure for dealing with tank vessel fires or emergency response. Procedures need to be inplace in planning for emergency response, so that the wharf operations crew follows appropriate steps to ensure that emergency response measures are implemented without incident in an emergency situation.

The fire detection/suppression system is required to conform to the MOTEMS, Section 8.0. The section addresses the minimum standards required for fire detection, prevention and suppression at MOTS.

CEQA FINDING NO. OS-8

PARTICIPATION IN RESPONSE CAPABILITY FOR ACCIDENTS IN BAY AND OUTER COAST

Impact: **OS-8: Spills from accidents in the Bay could result in impacts to water quality or biological resources that could be significant adverse (Class II) impacts for those that can be contained during first response efforts; or significant adverse (Class I) impacts that would have residual impacts. While Shore does not have legal responsibility for tankers, it does have responsibility to participate in improving general response capabilities.**

Class: I and II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

Spill Response for Vessels Transiting the Bay

Response to a spill from a tanker is the responsibility of the vessel owner/operator. As a result of OPA 90, each vessel is required to have an oil 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. All tanker companies operating within California waters must demonstrate by signed contract to the USCG and CDFG that they have, either themselves or under contract, the necessary response assets to respond to a worst case release as defined under federal and state regulations. Shore does not own or operate any tank vessels and thus, is not responsible for spills from tankers once they have left the terminal. Shore would respond to spills from tankers at their terminal.

Response to a vessel spill would consist of containment (deploying booms), recovery (deploying skimmers), and protection of sensitive resources. If the oil were to reach the shore and/or foul wildlife, the shoreline and wildlife would be cleaned. If the tanker's spill response contractor is unable to adequately respond to the spill, the USCG could step in and order additional response equipment and hire additional response contractors that could include both Clean Bay and MSRC. If required, additional equipment and manpower would be made available from local contractors, other spill cooperatives (Clean Seas, Clean Coastal Waters), and MSRC at other locations.

While response contractors can provide the equipment and manpower required by OPA 90 and OSPR, it is unlikely that they could prevent a large spill from causing significant contamination of the shoreline. The Area Contingency Plan (USCG and Office of Oil Spill Prevention and Response 2000) identifies sensitive resources within the Bay Area and methodologies for protecting and cleaning up those areas. Consistent with the findings of the other resource disciplines in the Draft EIR (DEIR), it was concluded that, although the probability of a large spill from a tank vessel is small, the consequences of a spill could be significant (see DEIR Sections 3.2 Water Quality, 3.3 Biological Resources, 3.4 Commercial Fisheries, 3.5 Land Use/Recreation, and 3.9 Visual Resources). Based on the anticipated spills and on the impacts to resources, it is concluded that the impact of spills would be adverse and significant and range from spills that can be contained during first response efforts with rapid cleanup (Class II) to those complex spills that result in a significant impacts (Class I) with residual effects after mitigation. While Shore does not have legal responsibility for tankers, it does have responsibility to participate in improving general response capabilities.

Spill Response for Vessels Transiting the Outer Coast

As above, the vessel owner/operator is responsible for cleaning up spills and must be able to identify what assets will be used. The Area Contingency Plan identifies sensitive resources along the outer coast and measures to be used in protecting these resources.

Response to spills outside the Bay would be somewhat different from that inside the Bay. First, the environment outside the Bay may be more difficult to work in because of sea conditions. Booms become less effective as wave heights increase, losing much of their effectiveness once waves exceed 6 feet. There may be conditions when it would be impossible to provide any response actions. However, when wave energy is such that it is impossible to deploy response equipment, the wave energy causes the oil to be dispersed much more rapidly.

Second, it may not be necessary to try to contain and clean up a spill if it does not threaten the shoreline or a sensitive area. In this case, the spiller would monitor the trajectory of the spill in accordance with methodologies presented in the Area Contingency Plan.

If the spill could affect the shoreline or sensitive area, then the response efforts would consist of containing and cleaning as much oil as necessary, and protecting sensitive areas.

The response contractor's large response vessels are located inside the Bay. It would take the vessels a minimum of 2 hours to get underway and exit the Bay, and 24 hours to reach the Fort Bragg area. While the contractor response capability meets the minimum requirements of OPA 90 and OSPR, a large spill could still result in significant, adverse impacts (Class I) to sensitive resources as described in other resources sections of this document. While Shore does not have legal responsibility for tankers, it does have responsibility to participate in improving general response capabilities.

Mitigation Measures for OS-8:

OS-8a: As a lease condition, Shore shall agree to participate in an analysis to determine the adequacy of the existing VTS in the Bay Area, if such a study is conducted by a federal, state, or local agency during the life of the lease. Agencies such as the San Francisco Bay Harbor Safety Committee often conduct studies of safety issues within the Bay Area. As vessel traffic increases in and around the Bay Area and as technology improves, it may be necessary and feasible to upgrade and expand the VTS in and around the Bay Area. Shore shall designate a representative(s) to participate in this analysis and toward the upgrade or expansion of the VTS per terms, including financial, to be agreed upon with other study participants.

OS-8b: As a lease condition, Shore shall agree to respond to the spill as if it were its own, without assuming liability, until such time as the vessel's response organization can take over management of the response actions in a coordinated manner.

As presented above, the tanker owner/operator has responsibility for spills from their tanker. Shore does not have any legal responsibility for tanker spills. Nevertheless, as a participant in any analysis to examine upgrades to the VTS, Shore can help to improve transit issues and response capabilities in general, which help to reduce the

potential for incidents and the consequences of spills within the Bay. For a spill near the Shore terminal, Shore is more suited to provide immediate response to a spill using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The marine terminal staff is fully trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill.

CEQA FINDING NO. WQ-2

SEGREGATED BALLAST WATER DISCHARGE COULD IMPAIR WATER QUALITY

Impact: **WQ-2: Discharge of ballast water that contains harmful microorganisms could impair several of the project area's beneficial uses, including commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, water contact recreation, non-contact water recreation, fish spawning, and wildlife habitat. Therefore discharge of segregated ballast water is determined to have a potentially significant impact to water quality (Class I).**

Class: I

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

Ballast water is used to stabilize tankers and barges. Ballast water is taken up to compensate for the lightering of vessels bringing crude oil or products to the Shore terminal. Ballast water is kept in tanks that are segregated from oily cargo. Sometimes, however, ballast may be taken into cargo holds where it will come in contact with oil. Nonsegregated ballast water is considered a hazardous waste in California and cannot be discharged to Bay or coastal waters. If nonsegregated ballast water must be unloaded at the Shore terminal, it is transferred to a truck provided by a contractor and taken to a suitable waste handling facility (R. Brandes, Shore Terminals LLC, Personal Communication 2002).

Vessels may discharge ballast water from segregated ballast tanks into San Francisco Bay as they take on product from the Shore terminal or during transfer of product from a larger vessel to a smaller vessel or barge at Anchorage No. 9. This ballast water contains the pollutants present in the water at the port where it was taken on. If this water contains higher levels of pollutants than are present in San Francisco Bay, discharge of this water could have an adverse water quality impact. Because the ballast tank is segregated, no pollutants are transmitted to the ballast water from the cargo and little, if any, pollutants occur from leaching of material from segregated ballast tanks. In addition, ballast water contains an assemblage of organisms living in the water where the ballast was taken on.

Ships that visit the Shore marine terminal follow an established pattern from as far south as San Pedro, California, to as far north as the Cook Inlet in the Gulf of Alaska. The levels of certain pollutants in some of those ports may exceed ambient levels in Suisun Bay. In cases where the pollutant in ballast water exceeds the concentration in San Francisco estuary, the volume of water discharged (2.5 million gallons) is small compared to the volume of water in San Francisco Bay so that concentrations in discharged ballast water would reach background levels rapidly. Therefore, the discharge of segregated ballast water at the Shore terminal or Anchorage No. 9 is not expected to result in long-term elevations of contaminant levels that exceed criteria in the California Toxics Rule.

On the other hand, non-indigenous organisms in ballast water may have significant adverse impacts to area biological resources and water quality. Release of segregated ballast water could have a significant adverse impact to water quality if viruses, toxic algae, or other harmful microorganisms were released. Suisun Bay and the Carquinez Strait are on the 303(d) list of impaired waterbodies for exotic species. Harmful algal blooms have been associated with such adverse effects as mass mortalities of pelicans and sea lions (attributed to the toxin domoic acid produced by the diatom *Pseudo-nitzchia australis*) off coastal California (Committee on Environment and Natural Resources 2000). Ballast water discharges have been implicated as one mechanism for the spread of harmful algae. Mid-ocean exchange reduces reproduction of exotic organisms but is not completely effective. One study of the ballast water of ships that had conducted mid-ocean exchange showed that ships that exchanged ballast water had 5 percent of the number of organisms and half the number of species compared to ships that did not exchange (Cohen 1998). Another study showed that 14 of 32 ships that conducted mid-ocean ballast exchange retained significant amounts of sediment and dinoflagellate cysts. Discharge of ballast water that contains harmful microorganisms could impair several of the project area's beneficial uses, including commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, water contact recreation, non-contact water recreation, fish spawning, and wildlife habitat. Therefore, discharge of segregated ballast water is determined to have a potentially significant impact to water quality.

Mitigation Measures for WQ-2:

WQ-2: Because the Shore terminal does not have any facilities to treat ballast water for microorganisms, Shore shall ensure that any vessel using its terminal complies with the California Marine Invasive Species Control Act (Public Resources Code Sections 71200 through 71271. See Appendix E of the DEIR for key components of the Act). Vessels must exchange their ballast water in mid-ocean waters, before entering the waters of the state or they must retain all ballast water on board the vessel (Public Resources Code Section 71204.2). Shore will advise agents of shipping companies having control over vessels that have called at the Shore Marine Terminal as of the date of adoption of the cited Mitigation Monitoring Program, and agents of shipping companies having control over vessels that would be likely to call at the Shore Marine Terminal in the future about the California Marine Invasive Species Control Act. Shore will ensure that a Questionnaire containing the following questions is provided to the Vessel Operator, and inform the Vessel Operator that the Questionnaire should be completed on behalf of the vessel, by its Captain or authorized representative, and provided to the CSLC's Marine Facilities Division's Northern California Field and Sacramento Offices, either electronically or by facsimile, prior to the vessel's entry into San Francisco Bay or in the alternative, at least 24 hours prior to the vessel's arrival at the Shore Marine Terminal.

The Questionnaire shall solicit the following information:

1. Does the vessel intend to discharge ballast water in San Francisco Bay, the Carquinez Strait or any other location(s) in a Delta waterway on its transit to the Shore Marine Terminal?

2. Does the vessel intend to discharge ballast water at the Shore Marine Terminal?

3. Which of the following means specified in the California Marine Invasive Species Act (CMISA) has the vessel operator used or intend to use on the current voyage to manage the vessel's ballast water: a mid-ocean exchange (as defined in Section 71200(g)); retain all ballast on board; or discharge the ballast water at the same location (as defined in Section 71204.2(c)(2)) where ballast originated, provided ballast water was not mixed with ballast water taken on in an area other than mid-ocean waters?

The measure provides an interim tracking mechanism until a feasible system to kill organisms in ballast water is developed. Until then, the discharge of ballast water to San Francisco Bay will remain a significant adverse impact. Mid-ocean exchange reduces the introduction of exotic species, but is not completely effective.

CEQA FINDING NO. WQ-3

WATER QUALITY DEGRADATION FROM VESSEL WASTE SPILLS

Impact: **WQ-3: Spills of sanitary wastewater, bilge water, and non-segregated ballast water, could degrade water quality and many spills would constitute chronic long-term degradation of water quality, resulting in a significant adverse impact (Class II).**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Any other liquid wastes that may need to be removed from vessels visiting the Shore terminal are discharged through a black oil pipeline in compliance with MARPOL waste discharge requirements. Therefore, unless there was a spill during transfer, none of these other wastes, which might include sanitary wastewater, bilge water, and non-segregated ballast water, would have any impact on water quality in the project area. A spill, however, would degrade water quality and many spills would constitute chronic long-term degradation of water quality, resulting in a significant adverse impact (Class II).

Mitigation Measures for WQ-3:

WQ-3: Shore shall prepare a SWPPP for the marine terminal that includes Best Management practices (BMPs) specifically to prevent leaks and spills during transfer of liquids between vessels and trucks on the wharf. The SWPPP shall be prepared within 6 months of lease implementation and reviewed by the CSLC and be available to the RWQCB.

Aggressive implementation of marine terminal specific BMPs to reduce the input of chemicals to the Bay from operations on the wharf would reduce or eliminate the Shore marine terminal's input of these substances to the environment and thereby reduce water quality degradation at the terminal.

CEQA FINDING NO. WQ-5

WATER QUALITY DEGRADATION FROM ANTI-FOULING PAINTS

Impact: **WQ-5: Marine anti-fouling paints are highly toxic containing copper, sodium, zinc, and tributyltin (TBT) and their use on vessels associated**

with the Shore terminal is considered to be a significant adverse impact to water quality that cannot be mitigated to less than significant (Class I).

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

Marine anti-fouling paints are used to reduce nuisance algal and marine growth on ships. These marine growths can significantly affect the drag of the vessel through the water and thus its fuel economy. Anti-fouling paints are biocides that contain copper, sodium, zinc, and TBT as the active ingredients. All of these are meant to be toxic to marine life that would settle or attach to the hull of ships. At a November 1997 session of the IMO Assembly in London, a resolution was approved that calls for the elimination of organotin biocides after 2003. The resolution language bans the application of tin biocides as anti-fouling agents on ships by January 1, 2003, and prohibits the presence of tin biocides after January 1, 2008. The Marine Environment Protection Committee of the IMO is developing a legal instrument to enforce the ban of TBT on vessels (Lewis 2001). Much concern has been raised about TBT effects on non-target marine species. New types of bottom paints that do not contain metal-based biocides are being developed and tested. Some of these coatings, such as self-polishing coatings, are now in use. Because of the high toxicity of organotins to marine organisms, the use of these substances on vessels associated with the Shore terminal is considered to be a significant adverse impact to water quality that cannot be mitigated to less than significant levels.

Mitigation Measures for WQ-5:

WQ-5: Shore will advise agents of shipping companies having control over vessels that have called at the Shore Marine Terminal as of the date of adoption of the cited Mitigation Monitoring Program, and agents of shipping companies having control over vessels that would be likely to call at the Shore Marine Terminal in the future about the requirements of the 2008 IMO prohibition of TBT applications to vessel hulls. Following the effective date of the IMO prohibition, Shore will ensure that the Captain or authorized representative of vessels intending to call at the Shore Marine Terminal certify that their vessel is in compliance and provide a copy of such certification to the CSLC's Marine

Facilities Division's Northern California Field and Sacramento Offices, either electronically or by facsimile, prior to the vessel's entry into San Francisco Bay or in the alternative, at least 24 hours prior to the vessel's arrival at the Shore Marine Terminal.

Until all TBT is phased out by 2008, vessels with old applications of TBT on their hulls will visit the Shore terminal. Although it is reasonable for Shore Terminals to require vessels to document no new TBT applications (per IMO mandate), Shore Terminals cannot feasibly require vessels to remove TBT from their hulls until the IMO mandate prohibiting the presence of TBT on shiphulls comes into effect in 2008. Prior to the effect date of the IMO mandate, the mitigation measure has Shore advise agents of shipping companies about the future requirements; after the effective date of the IMO mandate, Shore will certify that visiting vessels are in compliance and submit copies to CSLC. This will help to reduce impact to water quality by eliminating organotins, and also eliminate toxicity to marine organisms.

CEQA FINDING NO. WQ-6

WATER QUALITY DEGRADATION FROM ROUTINE VESSEL MAINTENANCE

Impact: **WQ-6: Routine vessel maintenance would have the potential to degrade water quality due to chronic spills during transfers of lubricating oils, resulting in adverse significant (Class II) impacts.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Minor repair and routine maintenance of vessels may occur at the Shore terminal. Most of these repairs have little effect on water quality. Vessels may take on lubricating oils at the wharf, which have a potential to spill into the water. All transfer areas, i.e., work areas around risers, loading arms, hydraulic systems, etc., are protected by berms and drain to sumps from which wastes are pumped onshore. No hull cleaning occurs at the Shore terminal. Routine vessel maintenance would have the potential to degrade water quality due to chronic spills during transfers of lubricating oils. The impact of chronic spills is adverse and significant (Class II).

Mitigation Measures for WQ-6:

WQ-6: Mitigation measure WQ-3 applies, which addresses preparation of a SWPPP for the marine terminal.

Aggressive implementation of marine terminal specific BMPs to reduce the input of chemicals to the Bay from operations on the wharf would reduce the Shore marine terminal's input of these substances to the environment and thereby reduce water quality degradation at the terminal.

CEQA FINDING NO. WQ-7

WATER DEGRADATION FROM WHARF STORMWATER RUNOFF

Impact: **WQ-7: Stormwater runoff from the Shore terminal may contribute pollutants to the Bay in concentrations that may adversely impact some benthic species within the local area, resulting in a significant adverse impact (Class II) to water quality.**

Class: II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the RWQCB 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.

FACTS SUPPORTING THE FINDING(S)

Stormwater runoff is the largest contributor of pollutants to San Francisco Bay (Davis et al. 2000). Hydrocarbons and other contaminants that accumulate on surfaces of the Shore terminal pier will run off to the ocean during storms. A 6-inch high curb surrounds the wharf deck and all materials on the surface drain into a 25-barrel capacity sump. The sump pumps the contents through a 2-inch oil slop line to an onshore oil-water separator. This is primarily a stormwater collection sump, though it can also serve to contain a product discharge. The sump is normally empty, but does collect flush down water and/or stormwater after rainfall. The sump is open to visual inspection, which is done daily by the wharf technician. During periods of rainfall, the sump is inspected frequently to ensure the float valve is operating properly. The terminal is manned 24 hours per day, which makes this a viable procedure to avoid overfilling the sump. Should the float valve fail, the technician would observe a rise in the level of the sump during his inspection, and the manual switch would be activated. Should the manual switch also fail, a vacuum truck would be used to empty the sump. The float valve is designed to activate when the sump contains approximately two feet, or 300 gallons, of impacted water. Should the switch fail to activate, the sump still has 150 percent additional capacity. In the worst case, the sump would overflow into the concrete curb containment system that surrounds the wharf. Hence, pollutants that accumulate on the

wharf deck should not enter the Bay and degrade water quality. However, there is the potential for contaminants to accumulate on the surface of other parts of the pier from routine vehicle use, maintenance activities, and other operations. The Shore terminal Storm Water Pollution Prevention Plan (SWPPP) does not that specifically address the potential for pollutant input from the wharf.

Concentrations of a number of contaminants in sediments at the Shore terminal are at levels that exceed the ER-L indicating that some adverse biological effects may occur to species sensitive to these contaminants (see DEIR Table 3.2-17). Several of these contaminants exceed the concentrations at a nearby reference site and also are above average levels for North Bay and San Francisco Estuary Ambient Sediment Concentrations. Therefore, contamination from the Shore terminal may be contributing pollutants to the Bay and concentrations may affect some benthic species adversely within the local area. Because contaminant levels in the vicinity of the Shore terminal exceed criteria, any runoff from the pier is considered to have a significant adverse impact to water quality.

Mitigation Measures for WQ-7:

WQ-7: As per mitigation measure WQ-3, Shore shall prepare a SWPPP for the marine terminal. Shore Terminals shall implement additional BMPs to reduce the input of chemicals to the Bay from the marine terminal, including (at a minimum) (1) conducting all vehicle maintenance on land not over water or marshland, (2) berming all areas on the pier where maintenance activities are being conducted and cleaning up all spilled contaminants before berms are removed, (3) washing the surface of the pier to the extent practical and directing washwater into sumps, (4) maintenance of sumps, and (5) posting signs to educate all workers to the importance of keeping contaminants from entering the Bay.

Aggressive implementation of marine terminal specific BMPs to reduce the input of chemicals to the Bay from operations on the wharf would reduce the Shore marine terminal's input of these substances to the environment and thereby reduce water quality degradation at the terminal.

CEQA FINDING NO. WQ-9

WATER DEGRADATION FROM SHORE TERMINAL OIL AND PRODUCT LEAKS AND SPILLS

Impact: **WQ-9: Potential impacts on water quality can result from leaks or spills. Small leaks or spills (less than 50 bbl) related to Shore operations could result in significant (Class II) impacts, while large spills (greater than 50 bbl) could result in significant adverse impacts (Class I).**

Class: I and II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

A wide range of crude oil, feed stocks, additives, and processed petroleum products are transferred through the Shore terminal between its upland storage facilities and vessels that call at the pier. The Shore terminal also handles a variety of light and dark petroleum products and oxygenates. Light products handled by the facility include finished gasoline, gasoline components and blend stocks, jet fuels, diesel fuels, and cutter stocks. Dark products include crude oils, gas oils, residual materials, condensates and other refinery petrochemical feedstocks. Oxygenates have been handled at the Shore terminal, including MTBE, but have been phased out.

The fate of spilled oil in the marine environment is determined by a variety of complex and interrelated physical, chemical, and biological transformations. The physical and chemical processes involved in the "weathering" process of spilled oil include evaporation, dissolution and vertical mixing, photochemical oxidation, emulsification, and sedimentation. The rate of these weathering processes is influenced by a variety of abiotic factors, e.g., water temperature, suspended particulates, water clarity, physical-chemical properties inherent to the oil itself (e.g., vapor pressure, solubility, aromatic, asphaltene, and wax content), and the relative composition of the hydrocarbon source matrix, e.g., crude oil or refined products. The mass fraction of aromatic present in a crude oil is an important indicator of potential toxicity of a spill because aromatics are considered the most toxic hydrocarbons in oil. The asphaltene and wax content determines water-in-oil emulsion formation and is an indicator of how well crude oil will form a stable emulsion or mousse in seawater.

The biological processes involved in the weathering of spilled oil include microbial degradation and uptake of hydrocarbons by larger organisms and its subsequent metabolism. The biodegradation of petroleum by microorganisms is one of the principal mechanisms for removal of petroleum from the marine environment. Enhancement of natural biodegradation processes by microbes may be one of the least ecologically damaging ways of removing oil from the marine environment. Uptake of hydrocarbons by large organisms usually has adverse impacts in the biota because of the toxicity of petroleum hydrocarbons.

The duration of potential impacts to water quality is variable and depends on the type of oil spilled. The most toxic period for crude oil spilled is the first few days due to volatile,

low molecular weight hydrocarbons (BLM 1980). Product spills of gasoline and fuels may evaporate faster than crude oil, but are generally more toxic and more soluble. 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 (Chambers Group 1988).

Most small leaks or spills (less than 50 bbl) related to operations at the Shore terminal could result in significant, adverse (Class II) impacts that can be mitigated to less than significant, because they could be easily contained. However, the severity of impact from larger leaks or spills (greater than 50 bbl) at the marine terminal depends on (1) spill size, (2) oil composition, (3) spill characteristics (instantaneous vs. prolonged discharge), (4) the effect of environmental conditions on spill properties due to weathering, and (5) the effectiveness of cleanup operations. In the event of an oil spill, the initial impacts would be to the quality of surface waters and the water column, followed by potential impacts to sedimentary and shoreline environments. Following an oil spill, hydrocarbon fractions would be partitioned into different regimes and each fraction would have a potential impact on water quality. Large spills (greater than 50 bbl) at the Shore terminal pier could result in significant adverse impacts (Class I) on water quality.

Mitigation Measures for WQ-9:

WQ-9: Mitigation measures OS-3a through OS-3d (Operational Safety/Risk of Upset) shall be implemented.

The measures would lower the probability of an oil spill by allowing for quick release of mooring lines (OS-3a), monitoring of tension of the mooring lines (OS-3b), allision avoidance (OS-3c), and ensuring through maintenance and inspection that damaged or aging wharf components are in proper operating condition (OS-3d). These measures help to reduce the potential for spills and their associated impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant.

CEQA FINDING NO. WQ-10

WATER QUALITY DEGRADATION IN BAY OR OUTER COAST FROM ACCIDENTAL VESSEL SPILLS

Impact: **WQ-10: A significant impact to water quality (Class I or II impact) could result from leaks or an accidental spill of crude oil or oil product from a vessel spill along tanker routes either in San Francisco Bay or outer coast waters.**

Class: I and II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

The fate and water quality impacts of oil from a spill associated with vessels servicing the Shore terminal would be similar to the impacts described above for a spill at the terminal. A significant impact to water quality (Class I or II impact) would result from an accidental spill of crude oil or oil product from a vessel transiting San Francisco Bay or outer coast waters. A larger oil spill is more likely from accidents associated with vessels in transit than a spill at the marine terminal. Most tanker spills/accidents and larger spills that cannot be quickly contained either in the Bay or along the outer coast would result in significant, adverse (Class I) impacts.

Mitigation Measures for WQ-10:

WQ-10: Shore Terminals shall implement mitigation measures OS-8a and OS-8b of the Operational Safety/Risk of Upset Section addressing potential participation in VTS upgrade evaluations, and Shore response actions for spills at or near the terminal.

Response capability for containment and cleanup of vessel spills while transiting the Bay or outer coast is not Shore's responsibility. Nevertheless, as a participant in any analysis to examine upgrades to the VTS (OS-8a), Shore can help to improve transit issues and response capabilities in general, which help to reduce the consequences of spills within the Bay. For a spill near the Shore terminal, Shore is more suited to provide immediate response (OS-8b) to a spill using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The marine terminal staff is fully trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill.

CEQA FINDING NO. BIO-3

BIOLOGICAL IMPACTS FROM MAINTENANCE DREDGING TO JUVENILE DUNGENESS CRABS AND YOUNG CHINOOK SALMON

Impact: **BIO-3: Loss of juvenile Dungeness crabs and young Chinook salmon would be a significant, adverse impact because dredging at the time when juveniles are moving through the area could disrupt the migration patterns of these species (Class II). Because of the low volume of material dredged, less than significant impacts (Class III) occur to plankton, other benthos, other fishes, and birds.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

In order to maintain adequate depth for tankers, the berth on the north side of the Shore terminal pier must be dredged about every three years. Approximately 6,000 cubic yards (cy) of material were excavated in 2004. In the past this material has been disposed of at the Corps' Dredged Material Management Office (DMMO) designated disposal site SF-9 (Carquinez Strait). For this analysis it is assumed that Shore Terminals would continue to dispose of dredged wharf material to this site and/or other DMMO-approved sites, including upland reuse areas.

Juvenile Dungeness crabs could be subjected to a significant, adverse impact if dredging occurs at the time when juveniles are moving through the area, which could disrupt the migration patterns of the species (Class II). The impact could be mitigated to less than significant by avoiding dredging during September when first year Dungeness crabs are most abundant in Suisun Bay (Baxter et al. 1999).

Chinook salmon may be disturbed during maintenance dredging, primarily due to turbidity, although there is some potential that juvenile salmon could be entrained by the dredge. Turbidity during dredging is expected to occur only in the immediate vicinity of the dredging activity. However, because young Chinook salmon are known to occur in the vicinity of the terminal and because the winter and spring runs are so reduced, the impacts of maintenance dredging would be potentially significant (Class II). Impacts could be reduced to less than significant by conducting dredging in July and August, when winter and spring run smolt activity is lowest.

Mitigation Measures for BIO-3:

BIO-3a: In order to reduce the entrainment of juvenile Dungeness crab, Shore Terminals shall schedule dredging to avoid the month of September when juvenile Dungeness crabs are most abundant in the project area.

BIO-3b: Although chances of entrainment of salmon is relatively low, to protect the salmon, Shore Terminals shall schedule dredging in July and August when winter and spring run Chinook salmon smolt activity is lowest.

Avoidance of the times of the year when Dungeness crab and Chinook salmon smolt May be present would reduce impacts to these species to less than significant.

CEQA FINDING NO. BIO-4

INTRODUCTION OF NON-INDIGENOUS SPECIES FROM SEGREGATED BALLAST WATER

Impact: **BIO-4: Invasive organisms/introduction of non-indigenous species in segregated ballast water released in the Bay could have significant (Class I) impacts to plankton, benthos, fishes, and birds.**

Class: I

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

Tankers servicing the Shore marine terminal do not discharge unsegregated ballast water to the Bay. However, they may discharge segregated ballast water. Segregated ballast water is expected to be relatively free of chemical pollutants, but the ballast water may harbor exotic species that upon release may cause problems in the estuary's ecosystem. Exotic organisms have had a devastating effect on the estuary's planktonic ecosystem (Carlton 1979; Cohen 1998). For example, the Asian clam *Potamocorbula amurensis*, thought to have been introduced in ballast water, has depleted phytoplankton populations in Suisun Bay by its intensive feeding (San Francisco Estuary Project 1997). In addition to reducing the food base by feeding on phytoplankton, voracious feeding by the Asian clam also has directly reduced some zooplankton populations (Lehman 1998). Furthermore, introduced zooplankton species such as *Sinocalanus doerri* and *Pseudodiaptomus forbesi* appear to have outcompeted native species in Suisun Bay and the western Delta (Herbold et al. 1991). If a foreign species were introduced that could flourish in the Bay, impacts to the existing planktonic communities could be significant (Class I).

Introduction of exotic species, including the Asian clam introduced in 1986, has had a devastating effect on the benthic community of the estuary. Almost all of the dominant benthic invertebrate species in San Francisco estuary are introduced and extremely high densities of the Asian clam have been documented in Suisun Bay and the rate of invasions is increasing. The recently introduced green crab, for example, could affect benthic communities by preying on bivalves and outcompeting indigenous Dungeness crabs. Invasive organisms in ballast water could have a significant impact to the benthic community (Class I).

In addition to the introduction of invasive non-native species in ballast water, exotic organisms can be introduced to San Francisco Bay via transit on ship's hulls. Many species are thought to have been introduced to San Francisco Bay via ships' hulls (Carlton 2001). The phasing out of tributyltin (TBT) based paints to control ship fouling may increase the introduction of fouling species transported on vessel hulls. Introduction of non-indigenous species via hull fouling on ships servicing the Shore marine terminal also could have a significant adverse impact (Class I).

The introduction of exotic species to San Francisco Bay via ship traffic has not only devastated the San Francisco Bay ecosystem, it has resulted in the spread of exotic species to other areas of the west coast (Wasson et al. 2001). For example, San Francisco Bay is suspected of being an important source of introduction of exotic species to Elkhorn Slough (Wasson et al. 2001). The Australian reef-forming tubeworm (*Ficopomatus enigmaticus*), the European green crab, and the western Pacific tortellini snail (*Philine auriformis*) all invaded San Francisco Bay, probably via international ship traffic, before spreading along the California coast.

The introduction of non-indigenous species in ballast water discharges or by hull fouling could have a number of adverse effects on fish populations in San Francisco Bay. The eggs, larvae, or adults of non-native fishes may be present in ballast water discharges. Non-native species compete with native fishes. In addition, non-indigenous aquatic species such as the Asian clam tend to destabilize food webs. Asian clams feed voraciously at multiple levels in the food chain, ultimately reducing the food available for fishes (Cohen and Carlton 1995). Furthermore, because of the ability of Asian clams to filter large volumes of water, this species tends to concentrate pollutants such as selenium and organotins in its tissues (Periera et al. 1999). Fishes that feed on the Asian clam have the potential to ingest large quantities of toxins. Finally, ballast water may introduce harmful algae. Harmful algal blooms have caused fish kills in a number of places (Committee on Environment and Natural Resources 2000). Introduction of non-indigenous species has the potential to have a significant adverse impact on fishes (Class I).

The introduction of non-indigenous species by ballast water discharges or hull fouling could have adverse effects on bird populations in San Francisco Bay. Some waterfowl, especially diving ducks, consume large numbers of Asian clams. Because they filter large amounts of water, Asian clams may have high concentrations of contaminants in

their tissues (Pereira et al. 1999). Birds that feed on this species thus may ingest large quantities of such harmful substances as selenium. In addition, toxic algae may be introduced in ballast water discharges. For example, more than 100 cormorants and California brown pelicans died in Monterey Bay in 1991 from domoic acid poisoning produced by the diatom *Pseudo-nitzchia* (Committee on Environment and Natural Resources 2000). The introduction of non-indigenous species from operations at the Shore marine terminal has the potential to have a significant adverse impact on water-associated birds in San Francisco Bay (Class I).

Mitigation Measures for BIO-4:

BIO-4: Implement Mitigation Measure WQ-2 addressing ballast water management.

As per the previous discussion of WQ-2, Shore has no facilities to treat segregated ballast water and it may not be economically feasible to construct a system for treating ballast water to remove exotic species. The measure provides an interim tracking mechanism until a feasible system to kill organisms in ballast water is developed.

CEQA FINDING NO. BIO-6

BIOTA IMPACTS FROM OIL SPILLS AT THE SHORE TERMINAL

Impact: **BIO-6: The impacts of a spill on the biota at or near the Shore terminal have the potential to spread through the Carquinez Strait and into Suisun and San Pablo Bays. Vulnerable biota are plankton, benthos, eelgrass, fishes, marshes, birds, and mammals. Per Operational Safety/Risk of Accidents section, small spills at the terminal (less than 50 bbls) should be able to be contained (Class II impacts). However, spills larger than 50 bbls may not be able to be contained and Shore Terminals may not have adequate boom to protect all the sensitive areas at the most risk that could be oiled within 3 hours of a spill from the terminal. Impacts from large spills are considered to be significant adverse (Class I) impacts.**

Class: I and II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the CDFG and USFWS (for BIO-6d) 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.

FACTS SUPPORTING THE FINDING(S)

The analysis of the impacts to biological resources of an oil spill at the Shore marine terminal considers the sensitivity of each component of the biota to oil and the vulnerability of its populations in the project area to a spill. Sensitivity considers how sensitive the organisms are to oil while vulnerability considers how much of a population could be affected by a spill. This assessment of oil spill impacts relied on documented biological damages to resources from historic spill events as well as computer modeling to determine the vulnerability of the biological resources within the Bay.

Documented biological damage from an oil spill has ranged from little apparent damage in the Apex Galveston Bay spill (Greene 1991) to widespread and long-term damage, such as the 1969 West Falmouth spill (Sanders 1977). Some of the factors influencing the extent of damage caused by a spill are the dosage of oil, type of oil, local weather conditions, location of the spill, time of year, methods used for cleanup, and the affected area's previous exposure to oil. Other levels of concern are the possibility of food chain contamination by petroleum products and the impact of an oil spill on the structure of biological communities as a whole.

Oil spilled into marine waters gradually changes in chemical and physical makeup as it is dissipated by evaporation, dissolution and mixing, or dilution in the water column. Various fractions respond differently to these processes, and the weathered residue behaves differently from the material originally spilled. Toxicity usually tends to decrease as oil weathers.

Laboratory tests have demonstrated the toxicity of petroleum hydrocarbons for many organisms. Soluble aromatic compounds in crude oil are generally toxic to marine organisms at concentrations of 0.1 to 100 ppm. Planktonic larval stages are usually the most sensitive. Very low levels of petroleum, below 0.01 mg/L, can affect such delicate organisms as fish larvae (NRC 1985).

Biological impacts of oil spills include lethal and sublethal effects and indirect effects resulting from either habitat alteration and/or 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 is sublethal effects. Sublethal effects are those which do not kill an individual but which render it less able to compete with individuals of the same and other species.

Plankton

Impacts to plankton from an oil spill could range from direct lethal effects caused by high concentrations of oil in the surface layers of the water column after a major spill to a variety of sublethal effects such as decreased phytoplankton photosynthesis and abnormal feeding and behavioral patterns in zooplankton. Studies of oil spills have generally failed to document major damage to plankton, although lethal effects or severe oiling of individual zooplankton organisms in the immediate vicinity of a spill has been reported in a number of studies. Because plankton distribution and abundance are so variable in time and space, evidence of damage might be very difficult to document, even if it did occur.

Because the San Francisco Bay is a semi-enclosed system, plankton are more vulnerable to oil than on the open coast and are likely to be exposed to the oil for a longer period of time. Furthermore, recruitment from adjoining unoiled areas might be less available. Plankton communities in San Pablo and Suisun Bays would be particularly vulnerable to an oil spill because these areas are most isolated from recruitment from open ocean plankton populations. Furthermore, the phytoplankton populations in Suisun Bay have been decimated from heavy grazing by the Asian clam. Zooplankton species such as the copepod *Eurytrema affinis* and the opossum shrimp, *Neomysis mercedis* also would be particularly susceptible to an oil spill because they have restricted distributions centered on Suisun Bay and because populations have declined substantially in recent years. The most sensitive area for plankton within the San Francisco Bay estuary is in the entrapment zone where phytoplankton populations and important zooplankton species, such as the opossum shrimp, tend to concentrate. During periods of low river flow, the entrapment zone is located in the eastern part of Suisun Bay and the western Delta. During periods of high flow, it is located throughout Suisun Bay and into the Carquinez Strait. Within San Pablo and Suisun Bays, phytoplankton and zooplankton populations are most abundant over the shallow areas. The impacts to plankton of a spill at the Shore marine terminal have the potential to be significant (Class I or II).

Modeled oil spill Scenarios No. 5 and No. 6, within the Unocal EIR (Chambers Group 1994), both indicated that a 1,000 barrel spill in the vicinity of Shore Terminals could have a substantial adverse impact to plankton in Suisun Bay. Scenario No. 5 contacted 48.93 percent of the open water habitat in Suisun Bay and Scenario No. 6 contacted 16.97 percent of the open water habitat in Suisun Bay. Similarly, the trajectory analyses in the Shore Terminal Oil Spill Response Plan indicated that in the winter most of Suisun Bay west of Simmons Island and the eastern end of the Carquinez Strait would have greater than a 50 percent probability of contact with oil. Under summer conditions, the model indicated that much of Suisun Bay east of the Shore terminal pier would have a greater than 50 percent chance of contact with oil. Based on these analyses, plankton communities are judged to be at high risk of significant adverse impacts from a large spill at Shore Terminals.

Benthos

The impacts of an oil spill on the benthos within San Francisco Bay has the potential to be pervasive and long-lasting because oil can become entrapped within the semi-enclosed system of the Bay and repeatedly redistributed into the sediments. An oil spill would be likely to selectively affect more sensitive species such as amphipods, increasing the domination of hardy exotic species. Impacts to soft substrate benthos within San Francisco Bay would be most severe in intertidal mudflats where oil would wash ashore and become incorporated in the sediments. An oil spill within San Francisco Bay has the potential to cause significant impacts to the benthos in intertidal mudflat and shallow slough channels (Class I or II).

Impacts to the benthos were documented in the 1988 Shell Martinez Spill (Fischel and Robilliard 1991). Surveys after the spill determined that benthic organisms were absent in the most heavily oiled portions of Peyton Slough. The abundance and diversity of epibenthic invertebrates were lower in the oiled sloughs than in unoiled areas. Grass shrimp abundance was lowest in the heavily oiled Peyton and West Martinez mudflats. Clams from Peyton Slough had higher concentrations of petroleum aromatic hydrocarbons in their tissues than clams from other areas.

The most sensitive benthic invertebrate resource that would be at risk from an oil spill at Shore Terminals is Dungeness crab. The juvenile stages of Dungeness crab are found throughout San Francisco Bay, but especially in San Pablo Bay. The juvenile stages of this species might be particularly vulnerable to oil. An oil spill could have significant, adverse impacts on Dungeness crab because a spill at the time when juvenile Dungeness crab are moving through San Francisco Bay would interfere with migration patterns and because a large spill could substantially affect a year class and result in a population decline (Class I or II).

The oil spill trajectory analysis in Shore Terminals Oil Spill Response Plan indicates that much of the intertidal mudflat habitat in Suisun Bay has a greater than 50 percent probability of contact with oil during a reasonable worst case spill. The significant mudflat habitat at Suisun Shoal would be contacted within the first 3 hours of a spill. Under these oil spill scenarios, most of the Dungeness crab habitat in Suisun Bay also would be contacted by oil. In addition, under winter conditions, oil would spread into southeast San Pablo Bay where additional intertidal mudflats and juvenile Dungeness crab habitat would be contacted by oil.

Eelgrass

Another marine resource within San Francisco Bay that would be particularly vulnerable to oil spill impacts is eelgrass. Many studies on the biological impacts of oil spills have documented impacts to marine grasses. For example, eelgrass growth and reproduction appear to have been impaired by oil contamination from the Exxon Valdez spill (Holloway 1991). Under the 10,000 barrel spill trajectory analysis performed for Clean Bay, some eelgrass habitat in San Pablo Bay would be contacted by oil (Wickland Oil Martinez 1998). No eelgrass was oiled in the 1988 Shell Martinez spill. While eelgrass is at relatively low risk from a spill at Shore Terminals, impacts of an oil

spill on eelgrass would be significant (Class I or II).

Fishes

Particularly sensitive fish species within the San Francisco Bay estuary include those with a restricted distribution, such as the federal and State threatened Delta smelt, as well as the anadromous fishes that pass through the northern reach on their way to the Delta and Central Valley rivers to spawn. All these species are at particular risk not only because a large percentage of their populations might be contacted by a single oil spill, but also because their populations have been declining in recent years. The project area is designated Critical Habitat for Delta smelt, winter run and spring run Chinook salmon and Central Valley steelhead.

The juvenile stages of striped bass, steelhead and Chinook salmon tend to spend considerable time in the shallow waters of the North Bay before they pass out of the Golden Gate and into the open ocean. If oil became trapped in the shallow waters of the North Bay, young striped bass and young Chinook salmon might be particularly at risk. Potential impacts of a spill within the San Francisco Bay estuary on Delta smelt and anadromous fishes would be significant (Class I or II).

Fishes that spawn in the Bay also might be particularly vulnerable to an oil spill because the egg and larval stages are so sensitive to oil. Important fish species that spawn primarily in the Bay include Pacific herring, longfin smelt, yellowfin goby, plainfin midshipman, bay goby, and topsmelt. Impacts to Pacific herring, which lay thin eggs on the partially hard substrate within the estuary, would be particularly susceptible to oil and impacts of a spill in the Bay could be significant (Class I or II). Several studies documented lethal and sublethal effects of oil on the eggs and larvae of Pacific herring following the 1989 *Exxon Valdez* oil spill (Norcross et al. 1996, McGurk and Brown 1996, Hose et al. 1996). Similarly, impacts to longfin smelt, which spawn primarily in the fresh-water at the eastern end of the estuary, could be significant if oil got into this part of the estuary (Class I or II).

To determine the relative risk to fishes from an oil spill at Shore Terminals, the percentage of habitat of sensitive fish species contacted by Unocal EIR Scenarios No. 5 and 6, a 1,000 barrel spill near Shore Terminals, was analyzed. Although a large oil spill would have a significant (Class I or II) adverse impact on spring and winter run Chinook salmon and Central Valley steelhead because it would contaminate designated Critical Habitat, the risk of substantially affecting the population of these sensitive species is relatively low. Both of these scenarios also affected less than 10 percent of the preferred habitat of striped bass and white sturgeon, indicating a low risk to these anadromous species. However, Scenario No. 5 contacted 13.7 percent of American shad habitat and 10.7 percent of starry flounder habitat (Scenario No. 6 contacted less than 2 percent of the habitat of these species). Therefore, American shad and starry flounder could be considered to be at moderate risk from a spill at Shore Terminals.

The federal and state listed threatened Delta smelt is the sensitive species most at risk from a spill at the Shore marine terminal. Scenario No. 5 contacted 55 percent of the

shallow water habitat in Suisun Bay where a large portion of the Delta smelt population could come in contact with oil. In addition, as discussed above, Scenarios 5 and 6 indicate that the plankton assemblage, which includes the zooplankton prey of the Delta smelt, is at high risk from a spill at Shore Terminals.

The larger oil spills modeled in Shore Terminals' Oil Spill Response Plan and the 10,000 barrel spill trajectory analysis performed for Clean Bay are consistent with the relative risk to sensitive fish species derived from the Unocal spill scenarios except that Pacific herring spawning habitat in San Pablo Bay would be at some risk of contact from these larger spills and a larger percentage of habitat used by young Chinook salmon might be oiled.

Localized effects on fishes were observed in the Shell Martinez spill. Fish abundance was reduced in the oiled sloughs, but no region-wide impacts on fishes were detected (Fischel and Robilliard 1991). Studies following the Martinez spill showed that individuals of the staghorn sculpin (*Leptocottus armatus*) in the vicinity of the spill had enhanced hydrocarbon metabolizing enzymes (Spies 1989). These results suggest that the spill may have had localized sublethal effects on resident fish populations.

Tidal Marshes

Vegetated marshes within the San Francisco estuary are one of the habitats which would be most sensitive to an oil spill. In most oil spills that have contacted saltmarshes, damage has been noted to marsh vegetation (NRC 1985). When a large spill drifts ashore, tidal areas often are subjected to heavy oiling. In the case of saltmarshes, oil may become incorporated into sediments where it may persist for years. Furthermore, San Francisco Bay tidal marshes provide habitat for many sensitive species. Clearly any saltmarsh in San Francisco Bay would be likely to suffer significant impacts if it was contacted by oil from a spill associated with the Shore marine terminal (Class I or II). The Area Contingency Plan (USCG and OSPR 2000) identifies tidal marshes in San Francisco Bay as areas with high priority for protection in the event of an oil spill.

In Unocal Scenario No. 5, oil contacted 68.3 percent of the tidal marsh habitat in Suisun Bay and 12 percent in the entire San Francisco Estuary. In Scenario No. 6, 20.1 percent of the tidal marsh in Suisun Bay and 3.5 percent of the marsh in San Francisco Estuary were oiled. Marshes oiled in both these scenarios included Martinez Marsh, Peyton Slough/Bulls Head Marsh, Point Edith, Hastings Slough, Seal Island and Shore Acres Marsh. In addition, in Scenario No. 5, oil contacted Roe Island, Simmons Island, Freeman Island, Snag Island, and portions of Goodyear Sough. Project area marshes clearly are at high risk from a large spill at Shore Terminals. Sensitive plant species in these marshes also are at high risk from a spill at the Shore marine terminal. These sensitive plant species include the federal endangered Suisun thistle, the federal endangered and State rare soft bird's beak, the State rare Mason's lilaeopsis, the Delta tule pea (California Native Plant Society 1B list), Delta mugwort (California Native Plant Society List 2) and Suisun marsh aster (California Native Plant Society 1B list).

In the winter season oil trajectory run in Shore Terminals Oil Spill Response Plan, Hastings Slough, Point Edith, Seal Island, Bulls Head Marsh, Martinez Marsh and Benicia Marsh were all contacted by oil within 3 hours. Goodyear Slough, Southampton Bay, Ryer Island, and Roe Island were contacted by oil within 6 hours. For the summer season spill, Hastings Slough, Point Edith, Seal Island and Bulls Head Marsh were contacted by oil within 3 hours and Goodyear Slough, Benicia Marsh, Ryer Island, Roe Island and Martinez Marsh were contacted by oil within 6 hours. Other project area marshes were contacted by oil in these modeled spills but it took 12 hours or more for oil to reach them, indicating lower risk.

Approximately 148 acres of marsh shoreline were oiled by the 1988 Shell Martinez spill, of which 32 acres were heavily oiled (almost completely covered with oil), 15 acres were moderately oiled, and about 98 acres were lightly oiled (small isolated patches of oil) (Fischel and Robilliard 1991). The area of slough banks oiled was approximately 4 acres. The marsh vegetation was most heavily oiled along the shoreline east of Peyton Slough and at Ryer Island. Much of the heavily oiled vegetation was removed as part of clean up activities. By fall of 1989, areas that had been heavily oiled were recovering from the spill.

Avifauna

Oil spills can affect birds directly through oil contamination and indirectly through degradation of important habitat. The direct effect of oiling on birds is predominantly contamination of feathers, removing insulative qualities and reducing buoyancy (Holmes and Cronshaw 1977; Moskoff 2000). Oiling of feathers leads to elevated metabolic rate and hypothermia (Hartung 1967). Oiled birds may also ingest oil through preening of feathers or feeding on contaminated prey. Effects of ingested oil can range from acute irritation and difficulties in water absorption to general pathologic changes in some organs (Crocker et al. 1974; Fry 1987; Nero and Associates 1983). Ingestion of oil can also result in changes in yolk structure and reduction in number of eggs laid and egg hatchability (Hartung 1965; Grau et al. 1977). Oiled birds that are able to return to a nest can contaminate the exterior of eggs, reducing hatchability (Hartung 1965; Patten and Patten 1977).

Indirect effects result principally from contamination of habitat where feeding occurs. These effects may be significant in shallow waters of bays, mudflats, and estuaries where waterfowl, rails, wading birds, and shorebirds feed. For these birds, loss or reduction in food resources can affect survival during migration and success of nesting efforts.

Sensitive seabird species that occur in San Francisco Bay include the federal and State endangered California least tern, the State and federal endangered California brown pelican and the double crested cormorant, a California Species of Special Concern. These species spend much of their time out of contact with the water so they have a relatively low vulnerability to direct oiling. The impacts of an oil spill would be primarily loss of foraging habitat. Loss of foraging habitat for the California least tern is of particular concern because least terns breed at Pittsburg at the eastern end of the

project area. Loss of foraging habitat during the least tern breeding season would be a significant adverse impact (Class I or II). Double-crested cormorants also have a small colony on Wheeler Island in Suisun Bay east of the project area. All of the modeled oil spill scenarios resulted in a substantial amount of oil on the waters of Suisun Bay indicating that the foraging habitat of the small colonies of California least tern and double-crested cormorant would be contaminated from a spill of 1,000 barrels or more at Shore Terminals. Therefore, foraging habitat of the breeding colonies of these seabirds is it high risk from a spill at Shore Terminals. California brown pelicans do not breed in the project area and their major roosting sites are in the Central Bay. Therefore, important foraging habitat for the California brown pelican is at relatively low risk from a spill at Shore Terminals.

Large migrant or wintering populations of loons, grebes, and scoters are found in San Francisco Bay from about October through March. In the Bay, the migrant or wintering waterfowl also includes large populations of diving or dabbling ducks that spend most time on the water where they can be contacted by oil spills. The San Francisco Bay estuary is used by several hundred thousand waterfowl from late fall through spring as a critical feeding ground. Substantial mortality of wintering waterfowl or loss of essential habitat would likely result from oil spills and would constitute a significant impact (Class I or II).

All of the modeled oil spills resulted in 10 percent or more of the open water in Suisun Bay being contacted by oil. Therefore waterfowl are at relatively high risk of localized impacts from a spill at Shore Terminals. Unocal Scenario No. 5, a 1,000 barrel spill near Shore Terminals under winter conditions, resulted in oil contact with 5.3 percent of the waterfowl habitat in San Francisco Bay with an estimated mortality of 50 to 200 birds. Therefore although some birds would likely be lost, the number is relatively small. However, particularly high densities of canvasbacks are found in Grizzly Bay. Unocal Scenario No. 5 resulted in a substantial amount of oil entering Grizzly Bay. Of the oil spill trajectories modeled for Shore's Oil Spill Response Plan, the winter trajectory showed that oil had a 40 to 50 percent chance of entering Grizzly Bay and under the summer conditions the probability was greater than 50 percent. Based on these oil spill models, wintering canvasback are at substantial risk from a spill at Shore Terminals.

In San Francisco Bay, habitat of rails, terns, wading birds, and shorebirds could also be contacted by oil spills, e.g., the 1988 Shell Oil Refinery spill, Palawski and Takekawa 1988. Direct effects on these birds from oil spills are suspected but difficult to assess. Observations of oil-streaked shorebirds are common immediately following oil spills, but carcasses are rarely recovered (Larsen and Richardson 1990). It is likely that shorebirds and wading birds are able to avoid oiling to some extent by retreating from exposed habitat. Even if contacted, they may be able to avoid hypothermia from light oiling because they remain on land and may find some shelter in vegetation. Nevertheless, preening of oiled feathers would lead to ingestion of oil and resultant pathological effects. Another serious concern is secondary impacts from contamination of food resources on beaches and mudflats. Not only could oil ingestion take place during feeding, the presence of oil might substantially reduce the food available to

sustain these populations. The San Francisco Bay estuary is used by up to 1 million shorebirds as a critical feeding area in the Pacific Flyway. Substantial mortality of wintering shorebirds or loss of essential habitat would likely result from oil spills and would constitute a significant impact (Class I or II).

Less than 1 percent of the wintering shorebird population in San Francisco Bay occurs in Suisun Bay (Chambers Group 1994). Therefore, the risk of significant population impacts to shorebirds from a spill at Shore Terminals is low. However, based on the modeled oil spill scenarios, intertidal mudflat habitat within the project area is at moderate risk of contact with oil from a spill at Shore Terminals, suggesting that there may be localized impacts to shorebirds. Suisun Shoal, an important shorebird foraging and roosting location near the Shore terminal pier, is at particular risk from a spill at Shore Terminals. The oil trajectory analysis done for the Shore Terminals Oil Spill Response Plan indicated that Suisun Shoal would be contacted by oil from a spill at Shore Terminals within 3 hours.

The State threatened California black rail occurs in marshes throughout the project area. Based on recent surveys, close to 45 percent of the black rail population in San Francisco Bay occurs in marshes in the Carquinez Strait and Suisun Bay (Spautz and Nur 2002). As discussed above, trajectory analysis of large oil spills originating at or near Shore Terminals, indicate that project area marshes are at high risk from an oil spill at the terminal. Therefore, black rails are at high risk from a spill associated with operation of the Shore marine terminal. The federal and State endangered California clapper rail also would be affected if a spill at Shore Terminals fouled marshes in the project area. However, although some individual clapper rails might suffer adverse effects, most of the California clapper rail population in San Francisco Bay is located outside the project area and the overall risk of a Shore Terminals' spill to the California clapper rail population as a whole is low.

Marine Mammals

Significant impacts could occur if oil contacted a harbor seal haul out area (Class I or II). Oil on land and in the nearshore waters where harbor seals forage would produce greatest damage during the spring pupping season. Although adult harbor seals can die in oil spills, this would be relatively rare and have a minor effect on the population. From data in Mansfield (1970), heavy oiling of a haulout site might kill up to 5 percent of adult animals present. A more serious threat is oiling of newborn pups whose dense fur (lanugo) protects them from cold. Death could result from hypothermia, ingestion of oil, or starvation if separated from the mother. An oil spill from the Shore marine terminal has an extremely low probability of contacting a harbor seal haul out site. Therefore, harbor seals are at very low risk from a spill at the Shore marine terminal.

Ability to Protect Sensitive Resources from a Spill at Shore Terminals

Shore Terminals' Oil Spill Response Plan (Blue Water Consultants 2001) was evaluated in the context of the Area Contingency Plan (USCG and OSPR 2000) strategies to protect sensitive resources most at risk from a spill at Shore Terminals. Shore

Terminals' Oil Spill Response Plan recognizes sensitive resources at most risk from a spill at the terminal. These are listed in Table 2-11 of the Oil Spill Response Plan. Sensitive areas that could be impacted within three hours of a spill are the greatest concern for immediate protection. These resources include Suisun Shoal, Hastings Slough/Point Edith/Seal Island, Bulls Head Marsh/Pacheco Creek, Martinez Marsh and Benicia Marsh. To protect these areas according to the strategies in the Area Contingency Plan, a minimum of 10,000 feet of boom is required. Although, through its oil spill response contractor NRC, Shore Terminals has access to almost 65,000 feet of boom, it appears that only 5,100 feet of boom are available from locations where they can be deployed within 3 hours. Therefore, Shore Terminals may not have adequate boom available to protect all the sensitive areas that may be oiled within 3 hours of a spill at the terminal. Furthermore, the Area Contingency Plan recommends using sonic devices to scare birds away from Suisun Shoal if this area becomes oiled. The Shore Terminals' Oil Spill Response Plan does not identify a source of such sonic devices, although it does identify a contractor for rehabilitating oiled wildlife.

Mitigation Measures for BIO-6:

The following mitigation measures shall be implemented by Shore Terminals to mitigate oil spill impacts to the maximum extent feasible:

BIO-6a: Implement all the mitigation measures included in OS-3 through OS-6 in Operational Safety/Risk of Accidents to either lower the probability of an oil spill or increase response capability.

BIO-6b: Demonstrate to the satisfaction of the CSLC that Shore Terminals can successfully implement its Oil Spill Response Plan and can deploy within 3 hours all the boom necessary to simultaneously protect all the sensitive resources at risk of contact with oil within 3 hours from a spill at Shore Terminals.

BIO-6c: Identify a source of sonic hazing devices to scare birds away from Suisun Shoal and demonstrate to the CSLC that these devices can be deployed within 3 hours of a spill at Shore Terminals.

BIO-6d: When a spill occurs, develop procedures for clean up of any sensitive biological areas contacted by oil, in consultation with biologists from CDFG and USFWS, to avoid damage from clean up activities.

BIO-6e: If damage occurs, the last resort is restoration and compensation. Any loss of resources shall be documented as soon as possible after a large spill. The sampling methods and 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.

Containment of small spills and protection of sensitive resources may reduce biological impacts to less than significant (Class III) for small spills. For large spills, significant impacts are likely. Sensitive areas that could be impacted within three hours of a spill are the greatest concern for immediate protection including Suisun Shoal, Hastings

Slough/Point Edith/Seal Island, Bulls Head Marsh/Pacheco Creek, Martinez Marsh and Benicia Marsh. Implementing measures OS-3 through OS-6 help increase response capability and reduce risk of accidents. The measures would lower the probability of an oil spill by allowing for quick release of mooring lines that would allow a vessel to depart the wharf quickly in the event of a fire (OS-3a), monitoring of tension of the mooring lines (OS-3b), allision avoidance (OS-3c), and ensuring through maintenance and inspection that damaged or aging wharf components are repaired or replaced (OS-3d). OS-4 implements measures OS-3d, GEO-11a (requirement for a pipeline analysis) and GEO-11b (pipelines must meet MOTEMS for pipeline integrity). These measures help to reduce the potential for spills and their associated impacts. However, the impacts associated with the consequences of larger spills, greater than 50 bbls, could remain significant even after all feasible mitigation. OS-5 requires that Shore update their Wharf Operations Manual. OS-6 requires Shore to implement OS-3a for quick release mooring devices that would allow a vessel to depart the wharf quickly would help in the event of a fire; OS-6b requires that Shore develop procedures for dealing with tank vessel fires and tanker explosions; and OS-6c shall ensure that the fire detection/suppression system conforms to the MOTEMS, Section 8.0.

The Area Contingency Plan strategies require a minimum of 10,000 feet of boom for protection. Although, through its oil spill response contractor NRC, Shore Terminals has access to almost 65,000 feet of boom, it appears that only 5,100 feet of boom are available from locations where they can be deployed within 3 hours. Shore Terminals, therefore, by providing adequate boom available to protect all the sensitive areas that may be oiled within 3 hours of a spill at the terminal, would be providing the maximum feasible mitigation to aid in oil containment. In addition, the Area Contingency Plan recommends using sonic devices to scare birds away from Suisun Shoal if this area becomes oiled. The Shore Terminals' Oil Spill Response Plan does not identify a source of such sonic devices; thus, by identifying a source (assuming one is available locally), sonic devices should then be able to be used to scare birds away during cleanup actions. Consultation for cleanup actions with CDFG and USFWS will avoid damage that can occur during cleanup operations. Immediate documentation of any damage from oil spills is critical to the determination of compensation and methods for data collection determined prior to a spill aids in the effectiveness of documentation.

CEQA FINDING NO. BIO-7

IMPACTS TO BIOLOGICAL RESOURCES IN BAY OR OUTER COAST FROM ACCIDENTAL SPILLS

Impact: **BIO-7: A significant impact to biological resources (Class I or II impact) could result from spills of crude oil or product from a vessel in transit along tanker routes either in San Francisco Bay or outer coast waters.**

Class: I

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

The impacts to biological resources of oil from a spill associated with vessels servicing the Shore marine terminal would be similar to the impacts described above for a spill at the terminal. A significant impact to biological resources (Class I or II impact) probably would result from an accidental spill of crude oil or oil product from a vessel spill along tanker routes either in San Francisco Bay or outer coast waters. A larger oil spill is more likely from a vessel accident than a spill at the marine terminal. Most tanker spills/accidents and larger spills that cannot be quickly contained either in the Bay or along the outer coast would result in significant, adverse (Class I) impacts.

Based on sensitivity, vulnerability, and the extent to which a tanker spill could contact a substantial portion of the resource, resources most likely to suffer substantial impacts from a tanker spill include:

- Rocky intertidal habitat
- Juvenile Dungeness crabs
- Wintering waterfowl (if spill occurs in winter)
- Double-crested cormorant
- California clapper rails and black rails
- Marsh sandwort (if spill occurs near Golden Gate)
- California least tern
- California brown pelican

Mitigation Measures for BIO-7:

BIO-7: Shore Terminals shall implement mitigation measures OS-8a and OS-8b of the Operational Safety/Risk of Upset section addressing potential participation in VTS upgrade evaluations, and Shore response actions for spills at or near the terminal.

Response capability for containment and cleanup of vessel spills while transiting the Bay or outer coast is not Shore's responsibility. Nevertheless, as a participant in any analysis to examine upgrades to the VTS (OS-8a), Shore can help to improve transit issues and response capabilities in general which help to reduce the consequences of spills within the Bay. For a spill near the Shore terminal, Shore is more suited to provide immediate response (OS-8b) to a spill using its own equipment and resources, rather than waiting for mobilization and arrival of the vessel's response organization. The marine terminal staff is fully trained to take immediate actions in response to spills. Such action will result in a quicker application of oil spill equipment to any spill and improve control and recovery of such spill. Impacts to biological resources from spills near the terminal caused by transiting vessels may be able to be reduced to less than significant with containment by Shore Terminals with implementation of OS-8b.

CEQA FINDING NO. FSH-2

IMPACTS ON FISH AND HABITAT FROM BALLAST WATER DISCHARGE

Impact: **FSH-2: Invasive species discharged from ballast water could impair water quality (Impact WQ-2) and biological resources (Impact BIO-4) that would also impair commercial and sports fishing activities in the Bay and outer coast, resulting in significant adverse (Class I) impacts.**

Class: I

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental 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(S)

Impacts on fish and habitat will likely continue from discharge of ballast water, stormwater runoff, and maintenance dredging. Water Quality (impact WQ-2) concludes that discharges of ballast water from tankers at Shore terminal may contain harmful microorganisms that could impair fishing activities, estuarine habitat, fish migration, preservation of rare and endangered species, and fish spawning. Biological Resources (impact BIO-4) concludes that discharged ballast water and non-indigenous species that attach to ship hulls can continue to have devastating effects on benthic resources. The

invasive species could out-compete Dungeness crabs and other species important to the food web. Introduction of non-indigenous species, such as the Asian clam, may compete with native fishes and may reduce available food. Asian clams also tend to concentrate pollutants such as selenium and organotins in its tissues. Fishes that feed on the Asian clam, that include bottom feeders such at sturgeon, may have the potential to ingest quantities of toxins. Invasive species' adverse effects on fish and habitat have the potential to impair sport and commercial fisheries in the Bay and on the outer coast and likely cause significant adverse impacts.

Mitigation Measures for FSH-2:

FSH-2: Shore Terminals shall implement the mitigation measure WQ-2 for completion of a ballast water reporting form for each vessel and adhere to the current "Ballast Water Management for Control of Nonindigenous Species".

As previously discussed under WQ-2., the measure provides an interim tracking mechanism until a feasible system to kill organisms in ballast water is developed.

CEQA FINDING NO. FSH-3

FISH CONTAMINATION FROM WHARF STORMWATER RUNOFF

Impact: **FSH-3: Shore contributes incrementally to water quality contamination and thus fish contamination, which could result in a loss of fishing opportunities because anglers prefer to stay away from contaminated fishing area. This is a significant adverse (Class II) impact.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

Stormwater run-off may increase adverse biological effects on species sensitive to contaminants. In addition, impact WQ-7 concludes that constituents in runoff, such as arsenic, copper, lead, mercury, zinc, fluorine and phenanthyrene are at elevated levels near Shore Terminals and are probably causing adverse effects on benthic organisms. As a result, contamination from the terminal may incrementally contribute pollutants to the Estuary that are accumulating at levels high enough to degrade beneficial uses, including fishing and enjoyment of Estuary resources. Of particular concern is the effect of mercury and other pollutants on anglers who consume white croaker, leopard shark,

striped bass, sturgeon and other fish species caught in the area. Shore's contribution of runoff is small, but because water quality contaminant levels exceed water quality criteria, Shore contributes incrementally to area fish contamination. This could result in a loss of fishing opportunities because many anglers prefer to stay away from areas known to contain contaminated fish, and results in a significant adverse impact (Class II).

Mitigation Measure for FSH-3:

FSH-3: Shore Terminals shall implement Mitigation Measure WQ-7.

A feasible system to kill organisms in ballast water has not been developed. Mitigation Measure WQ-7 adds additional BMP's to the Shore Terminals SWPPP to address stormwater runoff from the wharf. Impacts from contaminants in stormwater runoff from Shore Terminals can be reduced to less than significant by limiting future discharges.

Aggressive implementation of marine terminal specific BMPs to reduce the input of substances to the Bay from operations on the wharf would reduce the Shore marine terminal's input of these substances to the environment and thereby reduce water quality degradation at the terminal and thus fish contamination.

CEQA FINDING NO. FSH-4

SPACE USE CONFLICTS ON BAY SHRIMP FISHERS FROM TRANSITING VESSELS

Impact: **FSH-4: Space use conflicts between transiting vessels serving the Shore marine terminal could occur if commercial shrimp trawlers operate 12 hours or more per day during the fishing season. A significant adverse (Class II) impact could result.**

Class: II

Finding(s): a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

FACTS SUPPORTING THE FINDING(S)

In the Carquinez Strait, vessels servicing the Shore terminal would be expected to continue transiting directly through the shrimp trawl grounds. Due to the location of the trawl grounds, area available to transiting vessels and the .25 mile buffer, shrimp trawlers would likely continue to avoid fishing in the vicinity of a transiting vessel during its journey through the Strait. The vessel transit route would continue to block nearly all of the 2.7 square mile shrimp trawl area for the next 20 years. However, about

.35 square mile (or about 13 percent of the trawl grounds) would likely be blocked at any one time, as a vessel steams through the area. However, the time factor that a vessel travels through the area must be considered. On average, a vessel would be in the fishery area about 24 minutes for a one-way trip. Round trip transit times through the shrimp fishing area would range from six to eleven days per year depending on the number of vessels servicing the terminal. Assuming shrimp trawling occurs year round, over the next 20 years, the shrimp fishery would be blocked from about 1.6 percent to 3 percent of the time, resulting in a less than significant impact (Class III). If fishing occurs 12 hours per day, the percentage of time commercial trawlers would not have available to fish due to vessel transits through the fishing area would likely increase to 3.2 percent to 6 percent of the time available during the year, resulting in a significant adverse impact (Class II).

Mitigation Measures for FSH-4:

FSH-4: Shore Terminals shall notify the shrimp trawlers operating in the Carquinez Strait of increases in vessel transits associated with terminal operations. In addition, Shore shall inform incoming vessel operators of shrimp trawling activities near the terminal.

By providing information to shrimp trawlers and increasing the awareness of vessel operators to trawling activities, potential space conflicts can be sufficiently reduced or avoided.

CEQA FINDING NO. FSH-5

SPACE USE CONFLICTS ON BAY HERRING FISHERY FROM TRANSITING VESSELS

Impact: **FSH-5: Space use conflicts between transiting vessels serving the Shore marine terminal and commercial herring operators could occur resulting in interference or displacement of herring fishing activities. A significant adverse (Class II) impact could result.**

Class: II

Finding(s):

a) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the Final EIR.

b) Such changes or alterations are within the responsibility and jurisdiction of the CDFG 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.