

APPENDIX C

MARINE SAFETY AND ANCHORING PLAN

C.1 INTRODUCTION

This Marine Safety and Anchoring Plan (MSAP) has been developed specifically to support the marine operations that will take place in decommissioning the Dynergy MBPP tanker berth facilities. The purpose of this MSAP is to provide a set of procedures and protocols that will be used by the decommissioning contractor when executing the Dynergy MBPP marine terminal decommissioning project (Project). The primary concerns addressed by this MSAP are personal safety, environmental safety, and vessel safety. The decommissioning contractor will be required to comply with USCG requirements for operations at this location and will be required to comply with other marine safety requirements as prescribed and monitored by Dynergy. These provisions include:

- Incorporation of this Marine Safety and Anchoring Plan into the Contractor Work Plan
- Use of USCG prescribed Navigational Lighting
- Development and Implementation of a Marine Communications Plan
- Development and Implementation of a Ship Traffic Response Plan
- Development and Implementation of Dive Plan
- Development and Implementation of an Emergency Response Plan
- Development and Implementation of a Critical Operations and Curtailment Plan
- Development and Implementation of a Pre-Approved Anchor Pre-Plot
- Publication of a Local Notice to Mariners

C.2 DISTRIBUTION OF MSAP

This MSAP will be distributed to all applicable regulatory agencies including the U.S. Coast Guard Station Morro Bay (USCG) and the City of Morro Bay Harbor Master as well as all project management including, but not limited to, the decommissioning contractor's management and all subcontractor managers. It will also be distributed to all marine supervisors, support vessel operators, radio operators, and diving supervisors. In addition, a copy of this MSAP will be placed on each support vessel utilized in this Project.

C.3 TRAINING

All project managers, environmental monitors, and field supervisors will review the contents of this MSAP at the Project kick-off meeting that will take place when all permits have been issued and prior to Project activities. Comments or suggestions made during the kickoff meeting that would enhance operational safety may be inserted into this MSAP. A final draft of this MSAP will be included in the Contractor Work Plan and submitted to the California State Lands Commission (CSLC) prior to start of work.

C.4 OFFSHORE SEGMENT LOCATION

The offshore segment work will take place in Estero Bay, California, just offshore of the Dynergy MBPP onshore facilities. The offshore segment activities will move as far as approximately 3,740 ft (1,127.8 m) offshore and as close to the surf zone as safely feasible. The offshore work area is not within any ship traffic areas but may be accessed by fisherman and recreational boaters. This area is exposed to open ocean swells and frequently experiences heavy sea states and surf during the fall, winter and spring months. Sea states during the summer season in this area are typically mild to moderate with occasional heavy sea states. The seafloor within the offshore work area is comprised of a silty sand

bottom. The water visibility is generally in excess of 1.5 m (five ft) during the summer months.

The offshore work area is controlled by the USCG. Morro Bay Harbor (Harbor), located approximately one-mile south of the offshore work area, is controlled by the City of Morro Bay Harbor Patrol. The Harbor is frequented by commercial and recreational boaters who moor in the Harbor. The Harbor vessel traffic is moderate and is comprised primarily of vessels less than 30.5 m (100 ft) in overall length. The offshore segment is not within a U.S. Coast Guard Vessel Traffic Service area and there are no restrictions on vessel operations or vessel anchoring in this area.

C.5 OPERATIONAL PROTOCOLS

The following operational protocol is intended for use by the offshore decommissioning contractor during the Project.

C.5.1 Inform and Notify

Notices will be issued the decommissioning contractor, as appropriate, and in compliance with all Project environmental permit conditions. At a minimum, notices shall include:

1. Decommissioning contractor to file Local Notice to Mariners with the USCG 15 days prior to the start of marine operations at the site.
2. Decommissioning contractor shall notify the City of Morro Bay Harbor Master in writing of the pending offshore operations approximately 15 days prior to the start of activities.
3. Decommissioning contractor shall give verbal notification to the CSLC the day before offshore operations begin.

C.6 ANCHOR PLAN

All offshore work will take place from the derrick barge that will be anchored at the work area to provide a stationary work platform. The derrick barge will utilize a four-point mooring spread that will be deployed in pre-planned and pre-plotted anchor sets. The four-point mooring system will be used for all mooring requirements.

C.6.1 Definition of an Anchorage

For purposes of this Project, an “anchorage” is defined as any combination of anchors set at predetermined locations to provide anchorage within a defined work area. For example, a four-point anchorage involves the deployment of one anchor from each of the four corners of the derrick barge or support vessel (Figure C-1).

C.6.2 Definition of an Anchor Leg

The anchors will anchor the derrick barge by wire ropes (anchor wires) that are connected to anchor winches fastened to the deck of the derrick barge. A wire rope pennant (crown line) will be attached to the crown (bottom end) of each anchor and will be supported by, and pass through, a floating steel buoy to facilitate environmentally friendly recovery of the anchors (Figure C-2). A combination of one anchor, the attaching anchor wire, a crown line and a crown buoy represent one “anchor leg”.

C.6.3 Predefined Anchor Sets

The decommissioning contractor will produce an anchor pre-plot as part of the Contractor Work Plan preparation. The anchor pre-plot will be included in the Contractor Work Plan with the final Marine Safety and Anchoring Plan. However, the actual anchor locations may be adjusted in the field as conditions dictate. Hard bottom will be identified in the pre-decommissioning side scan sonar debris survey and the final anchor placements will avoid all hard bottom. The survey coordinates for all anchor sets will be recorded by the Project’s full time marine surveyor.

A safety zone is proposed around each anchor set. This safety zone will be defined as an imaginary boundary drawn between each anchor crown buoy of the anchor set. The purpose of this safety zone is to provide a visual boundary that helps commercial and recreational vessels from entering

the immediate work areas. The safety zone will be physically discernable at the work areas by visually sighting between the crown buoys of the anchor set. The crown buoys will be marked with appropriate colors, striping and lettering, and will be also be marked with strobe lights.

Figure C-1 Typical Anchor Set

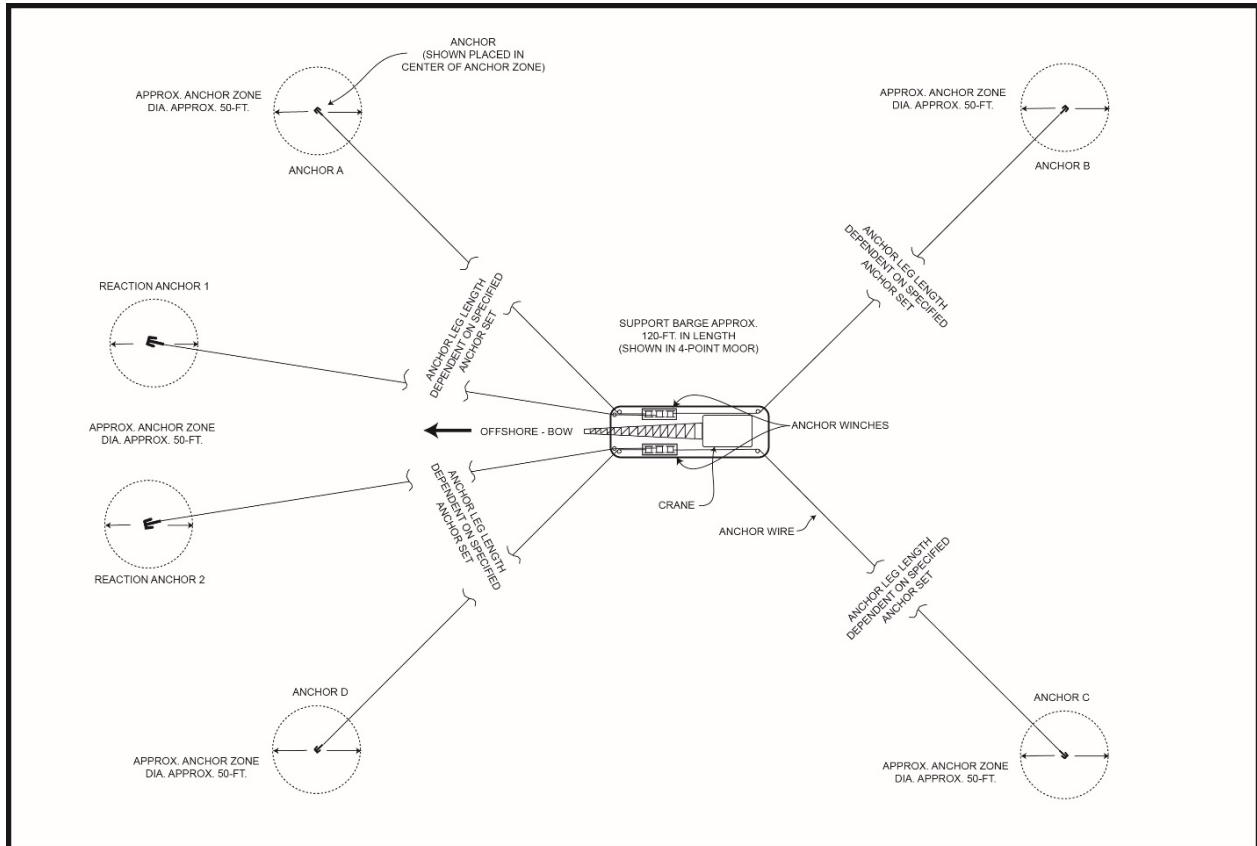
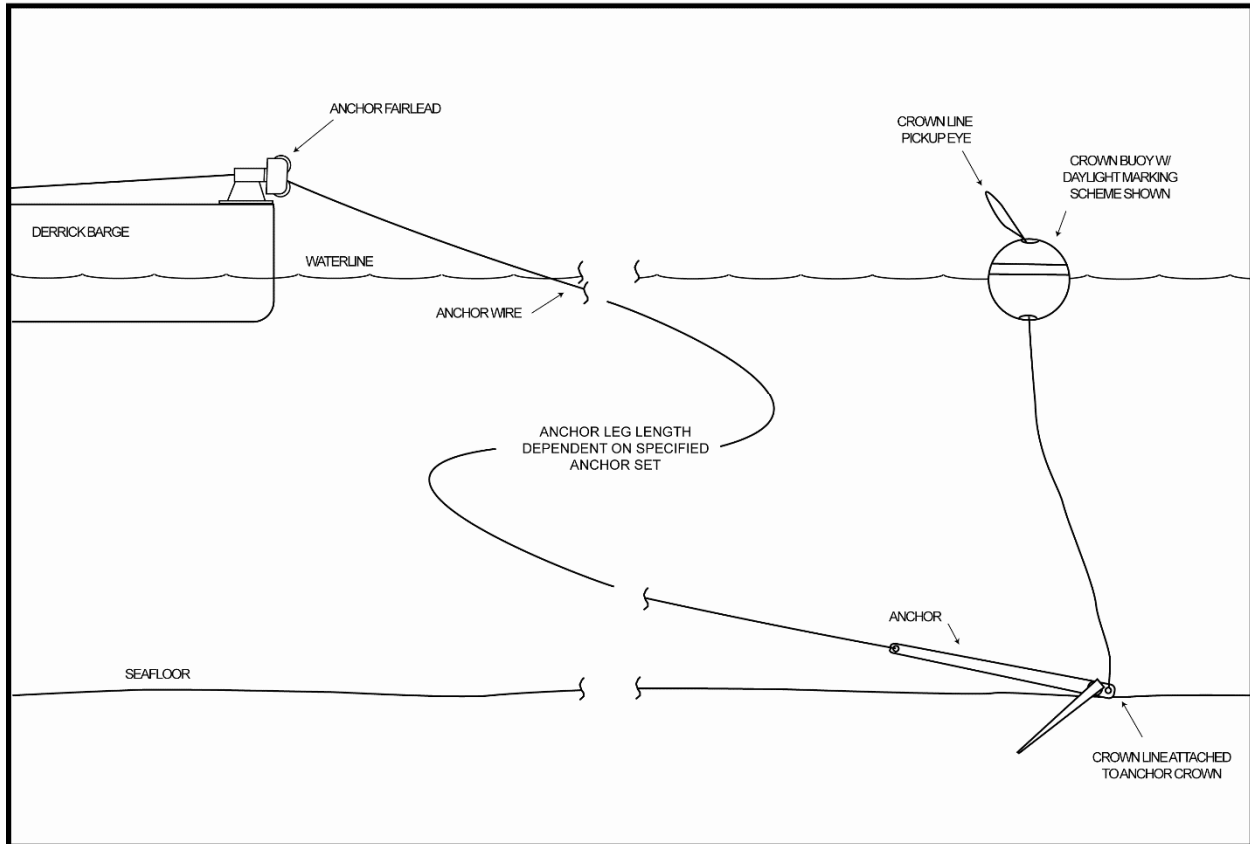


Figure C-2 Typical Anchor Leg



C.7 IDENTIFICATION OF VESSELS AND BUOYS

The derrick barge, support vessels and buoys will be marked in accordance with the United States Code of Federal Regulations, Title 33, Chapter 34, Subchapter I, Part C and the publication titled Private Aids to Navigation.

C.7.1 Derrick Barge

The derrick barge will serve as the anchored work platform at the offshore segment work area. The derrick barge may range in size from 36.6 m (120 ft) in length to 54.9 m (180 ft). The deck of the derrick barge will carry a crane and other support equipment and will be equipped with extensive deck lighting.

C.7.1.1 Daylight Marking Scheme - Under Tow. When the derrick barge is under tow in daytime, a single three-dimensional “diamond shape” not less than 0.6 m (two ft) in length and width will be suspended above the deck of the derrick barge at the highest point possible.

C.7.1.2 Daylight Marking Scheme – Anchored. When anchored in daytime, two three-dimensional “ball shapes,” each not less than 0.6 m (two ft) in diameter, will be suspended in a vertical line at the highest point possible above the deck of the derrick barge on the side at which the work is taking place. **Nighttime Marking Scheme - Under Tow.** When under tow at nighttime, the derrick barge will be marked with sidelights and a stern light.

C.7.1.3 Nighttime Marking Scheme – Anchored. When anchored at nighttime, two “all-round” red lights in a vertical line will be displayed at the side of the derrick barge at which the work is taking place. In addition, two “all-round” green lights in a vertical line will be displayed at the side of the derrick barge on which another vessel may safely pass. In addition, the deck shall be lighted with deck illumination lights as needed.

C.7.2 Crown Buoys

The derrick barge shall be moored with a four-point mooring system. Although the mooring system anchors will be located on the seafloor, crown lines with floating buoys will be attached to the anchor crowns to facilitate placement and recovery of the anchor and to provide a visual reference of the safety zone established around the work site. The crown buoys shall consist of spherical or cylindrical metal or plastic buoys that will sit upright and visible above water line.

C.7.2.1 Daylight Marking Scheme. The crown buoys will be white in color and will be marked with a five-inch wide band of blue reflective tape horizontally around the circumference of the buoy.

C.7.2.2 Nighttime Marking Scheme. The crown buoys will be marked with a white strobe type marking lights when the buoys are deployed at night. The lights will be attached to the top of the buoy and will be visible for a distance of approximately six miles. The lights will flash at a frequency of approximately 25 flashes per minute. The lights will be activated by a photocell that turns the light on at the onset of darkness and turns the light off in daylight. A “JOTRON” MF-1112 or equivalent will be used.

C.7.3 Support Tugboat

A support tugboat will be required to deploy and recover the derrick barge anchors. The support tugboat may also be used to tow the derrick barge. These rules will apply to any tugboat towing a barge on this Project. A second tugboat may be used to support a materials or deck barge to haul recovered pipe to a dock for offloading and disposal.

C.7.3.1 Daylight Marking Scheme - When Towing. When towing the derrick barge or materials (deck) barge in daytime, the support tug will display three three-dimensional “shapes” suspended above the deck in a vertical line. These shapes shall consist of “round shapes” not less than 0.6 m (two ft) in diameter in the highest and lowest positions, and a “diamond shape” not less than 0.6 m (two ft) in length and width in the middle of the vertical line.

C.7.3.2 Nighttime Marking Scheme. With and Without a Tow. When not towing at nighttime, the support tugs will be marked with sidelights and a stern light. When towing at nighttime, the support tugs will be marked with three all-round lights in a vertical line where they can best be seen. The highest and lowest of these lights shall be red and the middle light shall be green.

C.8 GENERAL ANCHORING PROCEDURES

The following general anchoring procedures will be used in deploying and recovering all anchors used to support the offshore segment work.

C.8.1 Surface Navigation and Pre-Plots

A full-time professional marine surveyor will be utilized throughout the Project to position anchors and to position the derrick barge or over the EMT offshore facilities. The marine surveyor will use differential geographic positioning system (DGPS) equipment with sub-meter accuracy to accurately locate and position the floating equipment or anchors at the predetermined required positions.

C.8.2 DGPS System

A commercial-quality DGPS system will be installed in the wheelhouse of the support tug. All bathymetric and geophysical survey data and diver verification data obtained by Chevron in support of the Project will be pre-programmed into this DGPS system before the onsite work begins. The planned anchorages and all debris targets will also be pre-programmed into the DGPS system. A backup system

and uninterruptible power source will also be provided.

C.8.3 Surface Positioning

The existing Project site data will be viewed by the marine surveyor on a computer display located in the wheelhouse and real-time positioning of the support tugboat will be superimposed over the existing Project site data. The display will update approximately every 0.5 seconds and the support tug operator will be available to view the display along with the marine surveyor, piloting the support tug to the exact location required.

When airlifting or submersible pump dredging to excavate the offshore pipeline segment, the same system will be used to position the tip of the derrick barge crane boom and the airlift or submersible pump over the real-time displayed position of the buried pipeline.

C.8.4 Deploying and Recovering Anchors

With the exception of the first anchor deployed, all derrick barge anchors will be deployed and recovered by the support tug utilizing the basic procedures described in this section.

The first anchor may be lowered from the support tug to the seafloor at the pre-designated anchor location. Once the first anchor is lowered, the support tug will "fly" the other anchors from the derrick barge or support vessel to the pre-designated anchor locations specified.

"Flying" anchors is an anchoring procedure in which the anchor is carried or suspended by the support tug and carried to the pre-designated anchor location with a crown line. The anchor is lowered by the crown line into place at the pre-designated site when the anchors are deployed, and the anchor is raised vertically by the crown line with a winch for transport back to the support barge when the anchors are "weighed" (lifted off of the seafloor). Flying anchors to and from location eliminates unnecessary anchor wire contact with the bay or channel floors. It should be noted that at no time will the decommissioning contractor be permitted to drag anchors across the sea floor.

In this application, the "crown line" will consist of a synthetic soft line or wire rope pennant with one end attached to the crown or base of the anchor stock and the other end attached to a floating anchor marking buoy. Use of a crown line enables the support tug to slip (trip) an anchor backwards out of its set rather than having the support barge righting the anchor with the anchor wire during the anchor weighing process. Recovering anchors by utilizing crown lines generally disturbs the sea floor less than weighing the anchor vertically with the anchor wire or chain.

C.8.5 Establishing and Maintaining Safety Zones

The anchor crown buoys will serve as visual indicators of the safety zone established around the offshore segment work area. The safety zones will be described in the Notice to Mariners and a thorough description of the crown buoys provided.

C.9 MARINE COMMUNICATIONS PLAN

This marine communications plan will be used by the marine work vessels to communicate with each other, to communicate with vessel traffic in and around the offshore segment work areas and to communicate with the USCG Station Morro Bay.

C.9.1 Work Site Radio Communications

Radio communications will be conducted using VHF-FM marine band radios. The offshore work crews will monitor channel 16.

C.9.2 Cellular Telephone Contact

The decommissioning manager, the offshore decommissioning contractor superintendent and pertinent managers and supervisors will be available by cellular telephone. These individuals and their contact numbers will be located in the Operational Contact list included in the Contractor's Work Plan, and will also be submitted to the CSLC prior to Project activities.

C.10 CRITICAL OPERATIONS AND CURTAILMENT PLAN

Following are critical operation issues and responses specific to this Project. A final Critical Operations and Curtailment Plan will be included in the Contractor Work Plan:

C.10.1 Refueling of Vessels and Equipment

Critical Operation: The support vessels and equipment mounted on the deck of the derrick barge or support vessel will require periodic refueling. As with any refueling requirement, the possibility of spillage exists.

Curtailment: All refueling of support vessels will take place at the local shore base or at approved fueling docks. Refueling of the equipment mounted on the deck of the support barge will take place from integral fuel tanks built into the support barge, or from USCG approved deck-mounted fuel totes. If necessary, USCG approved fuel totes will be used and transported to site where they will be placed on the deck of the support barge with the support barge crane. There will be no cross-vessel refueling allowed. All refueling operations will follow USCG regulations and oil spill containment equipment will be onsite in accordance with Appendix E - Oil Spill Response Plan contained in this Project Execution Plan and the Contractor Work Plan.

C.10.2 Sanitation

Critical Operation: Sanitation needs of the offshore work crews.

Curtailment: Portable sanitation devices (Porta-Potty or equivalent) will be placed on the deck of the derrick barge. These devices will be changed out on a weekly basis or as needed to ensure clean sanitation facilities. No effluents or sanitation wastes will be allowed to enter the Pacific Ocean.

C.10.3 Unsafe Sea States

Critical Operation: Unsafe sea states may create hazardous working environments that result in accidents and damage or injury to personnel or equipment, and possibly result in oil spills.

Curtailment: Daily weather forecasting and projected sea state conditions will be provided by a professional marine weather forecasting service on a daily basis. These forecasts shall provide short term (next 12 hours) and long term (3 day) forecasts. Marine operations will be suspended anytime sea states become unsafe in the opinion of the decommissioning manager and/or the decommissioning contractor superintendent, or supervisors.

C.11 DIVE PLAN

The offshore decommissioning contractor shall develop and implement a Project-specific dive plan that identifies all diving requirements and environments, lists all planned diving methods and equipment, identifies the dive team composition and quantities, lists all team member responsibilities, provides a list of all diving procedures, and provides a diving emergency action plan.

All diving will be performed from the anchored derrick barge and will use surface supplied air diving techniques. The underwater work site is located in shallow water (less than 55 feet) and, therefore, eliminates the need for decompression diving or the use of a deck decompression chamber. All diving will be no-decompression.

All diving equipment will be commercial grade diving equipment. The basic diving spread will consist of a diver's air compressor, standby air source, rack box (diver air manifold), pneumofathometer (for checking the diver's depth), umbilical, diving helmet, and two-way diver communications.

All diving will take place in accordance with the most current Association of Diving Contractors International (ADCI) Consensus Standards for Commercial Diving and Underwater Operations, U.S.

Department of Labor Occupational Safety and Health Administration Standard 29 CFR, Part 1901, Subpart T - Commercial Diving Operations, USCG 46 CFR, Part 197.200, Subpart B – Commercial Diving Operations, and California Code of Regulations, Title 8, Subchapter 7, Group 26, Article 152 – Diving Operations. The commercial diving service shall use U.S. Navy no-decompression limits, decompression tables, residual nitrogen tables or ADCI recognized equivalent dive tables.

All divers will be qualified as specified in the above referenced regulations and in keeping with ADCI Consensus Standards for Commercial Diving and Underwater Operations.

C.12 SITE SAFETY PLAN

The decommissioning contractor will develop and implement a site-specific personnel and environmental safety plan for all of its operations at the Project site. The Site Safety Plan shall include specific safety tools that will be used on the Project. The Site Safety Plan shall comply with all Dynegy contractor safety requirements.

C.13 EMERGENCY RESPONSE PLAN

As part of its Contractor Work Plan, the decommissioning contractor shall be required to develop a site specific Emergency Response Plan. This plan shall be published and distributed to all project workers and posted aboard all project support vessels and inside the project's field office trailers. The plan will include the following elements:

The emergency response plan shall include a list of the potential hazards (emergency condition) to project personnel specific to the decommissioning project. On this project, the list will include, at a minimum, diving accidents, injuries, fire, sudden illnesses such as cardiac arrest, and oil spills.

The emergency response plan shall include a matrix composed of the potential emergency conditions and the designated responses and contacts for each emergency condition.

The emergency response plan shall include a list containing the phone numbers for all local emergency service providers that may be called upon to support a project emergency. These contacts will include local hospitals, the nearest decompression chamber, local diving medicine physicians, police department, fire department, and the like. Physical addresses and maps for local hospitals and emergency clinics will also be provided.

C.14 OPERATIONAL CONTACT LIST

An Operational Contact list will be included in the Contractor's Work Plan that will be submitted to the CSLC prior to Project activities. This contact list will include contact information for the facility owner/operator, project managers, offshore decommissioning superintendent, authorities, agencies, support facilities and contractors that are involved with the offshore decommissioning work.

C.15 U.S. COAST GUARD LOCAL NOTICE TO MARINERS

This MSAP requires the decommissioning contractor to file a Local Notice to Mariners with the USCG no less than 15 days prior to the start of work. This notice will inform local boaters of the potential navigational hazards associated with the offshore segment operations. This notice shall state the following:

_____ contractor name _____ will be conducting debris recovery and diving operations at Estero Bay, California beginning _____, 2018 through _____, 2018. The derrick barge _____ barge name _____ will be onsite along with the support tugboat _____ tugboat name _____, and the vessel _____ vessel name _____. A four-point mooring system will anchor the derrick barge. All anchors will be marked with a white spherical steel crown buoy marked with a five-inch wide reflective blue band, and at night time, flashing white lights. These removal operations will involve extensive diving and, as such, all vessels are requested to remain at least 152.4 m (500 ft) outside of the perimeter formed by the derrick barge's four crown buoys. The tugboat will monitor VTS

channel 16 when working at the site. For further comments or details, contact the L123 Decommissioning Manager, Mark Steffy, at project manager's contact number.