APPENDIX H
MARINE WILDLIFE CONTINGENCY PLAN

1.0 INTRODUCTION

This Marine Wildlife Contingency Plan (MWCP) has been developed for Pacific Gas and Electric Company (PG&E) in support of the proposed Pt. Buchon Ocean Bottom Seismometer (OBS) Project (Project) (Figure 1). The Project consists of the placement of temporary and long-term OBS units and the cable that will connect the long-term OBS units with an existing onshore power supply and data recording facility. This MWCP has been prepared at the request of the California State Lands Commission (CSLC), the lead agency for the environmental analysis of the Project. This MWCP includes measures that specify: a) the distance, speed, and direction transiting vessels will maintain when in proximity to a marine mammal or reptile; b) qualifications, number, location, and authority of onboard marine mammal and reptile monitors; and c) reporting requirements in the event of an observed impact to marine organisms.

1.1 PROJECT DESCRIPTION

The proposed Project consists of placing temporary and long-term OBS instruments and a data/power supply cable onto the seafloor. The temporary units are "self-contained" and will be placed on the seafloor for approximately 2 weeks. The long-term OBS units will be connected via cable to an onshore data recorder and power source and will remain in-place for up to 10 years. Installation of the intertidal portion of the cable will require an extension of an existing PVC conduit located on the rip-rap armor rock within the intertidal area of the Diablo Canyon Power Plant (DCPP) intake embayment. The PVC conduit will house the cable across the existing rock rip-rap where it will connect to onshore recording equipment located within an existing building within the DCPP facility.

1.1.1 Temporary OBS Units

Each temporary OBS unit will record ambient sound and seafloor movement (termed "noise" in geophysical terms) to allow assessment of background conditions. The temporary OBS units are self-contained units each comprising two spheres that encase digitizers, data loggers, and rechargeable batteries.

1.2.2 Long-Term OBS Units

The long-term OBS units will record earthquake-generated ground movement and sound data and continually transmit real-time data to the onshore facility through the cable. Each long-term OBS unit is a 30 cm (1 ft) -diameter titanium-encasement that encloses digitizers and data loggers, which is covered by a 1.8 m (6.0 ft) wide by 0.3 m (1.0 ft) high concrete dome that secures and protects the unit. The concrete dome has an aperture located at the top to facilitate attachment to the proposed cable. Each long-term OBS unit is powered by electricity provided by a shore-based power source that is transmitted through the attached cable. Collected data is transmitted to a shore-based recorder through the same cable.

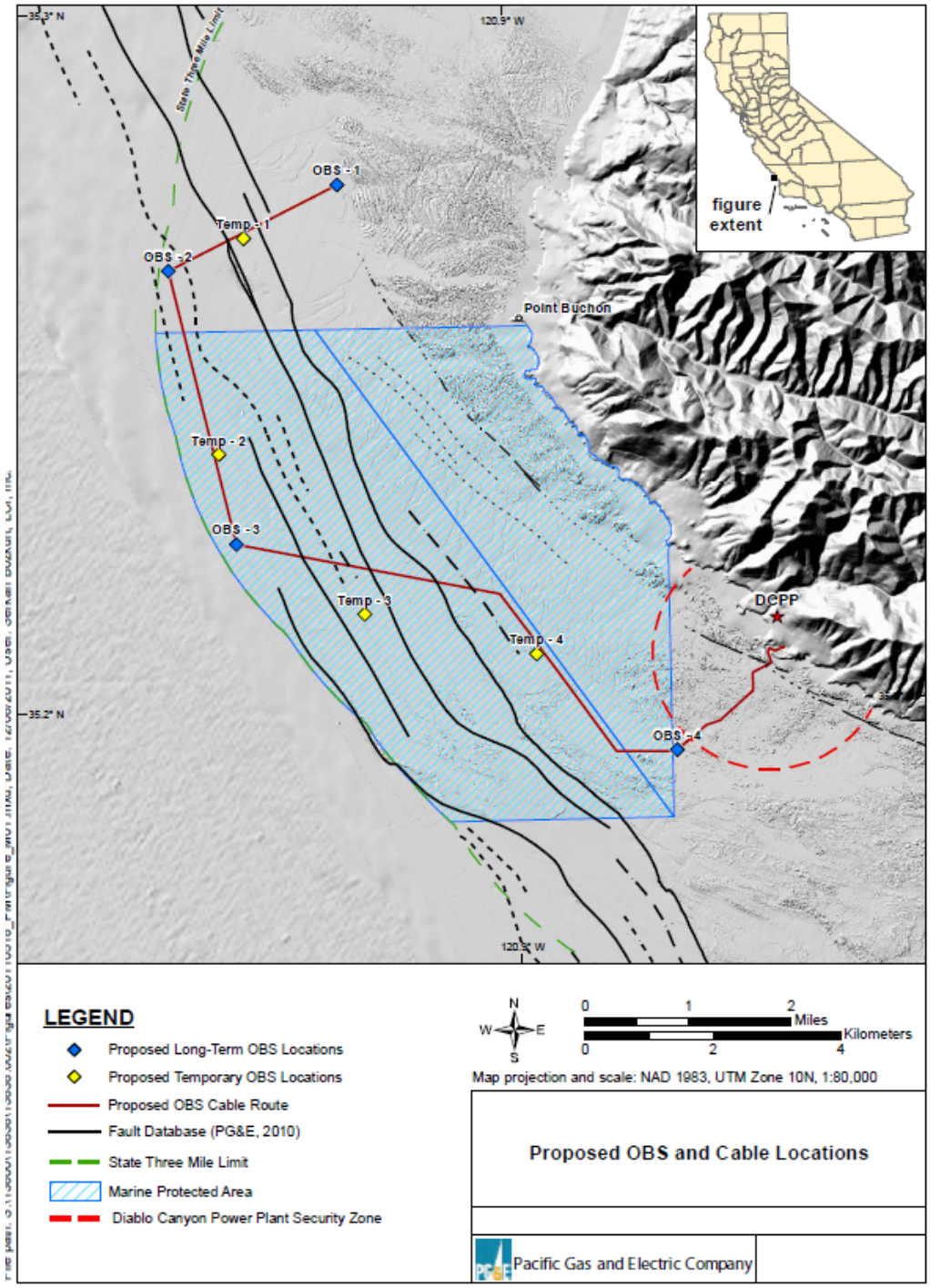

Figure 1. Site Specific Project Area Including Temporary and Long-Term OBS Locations

2.0 PROPOSED PROJECT AREA AND SCHEDULE

The proposed Project will be located in the waters of the Pacific Ocean offshore of the DCPP along the south-central coast of California, approximately 26 km (16 mi) west of the city of San Luis Obispo. As such, the Project area extends from the DCPP (located onshore), seaward to the State of California jurisdictional limit located 5.6 km (3.0 nautical miles [nm]) from the shoreline and between Point Buchon (to the north) to Point San Luis (to the south) (Figure 1). All of the OBS units and all but approximately 1.1 km (0.7 mi) of the 18.3 km (11.4 mi) long cable will be placed onto sedimentary seafloor habitat. The non-sedimentary habitat along the cable route includes low and high-relief rocky substrate between 26 to 27 m [85 to 88 ft]); (35 to 37 m [115 to 121 ft]; 58 m (190 ft) and between 62 and 65 m (203 and 212 ft) water depths along the cable route.

The Project will be initiated in summer 2012 and is expected to be completed over a 14-day period with only daytime operations proposed. The vessel, the M.V. *Michael Uhl*, a 31 m (100 ft) long, steel-hulled vessel owned and operated by Maritime Logistics, will be used for the Project and will return to Morro Bay each evening. A briefing on the roles of the onboard observers and procedures to be followed during the Project will be completed prior to the initiation of the in-water operations.

3.0 MARINE WILDLIFE, PROJECT MONITORING AND MITIGATIONS

3.1 MARINE WILDLIFE

The marine mammals along the central California coast, of which most can occur within the Project area, include 18 cetaceans (whales, dolphins, and porpoises), six pinnipeds (seals and sea lions), and one fissiped (southern sea otter) shown in Table 1 (Daugherty, 1966). Seasonal abundances of these taxa vary with pinnipeds and some dolphins being considered year-round residents, while other species are migratory (i.e. gray whales [*Eschrichtius robustus*]) or are most common during specific months (i.e. blue whales [*Balaenoptera musculus*] and humpback whales *[Megaptera novaeangliae*] in the summer and fall months). Within the Project area, permanent residents and migrants could be expected.

During recent surveys within the Project area, commonly observed species included; gray whale, humpback whale, Minke whale (*Balaenoptera acutorostrata*), killer whale (*Orcinus orca*), common and bottlenose dolphins (*Delphinus capensis* and *Tursiops truncates,* respectively) California sea lion (*Zalophus californianus*), Dall's porpoise (*Phocoenoides dalli*), blue whale, Pacific harbor seal (*Phoca vitulina richardsi*), elephant seal (*Mirounga angustirostris*), southern sea otter (*Enhydra lutris nereis*), and Risso's dolphin (*Grampus griseus*) (Padre, 2011; Tenera, 2007; Tenera, 2008). Life history descriptions are included in Attachment 1 of this MWCP.

Four species of marine turtles could occur within the Project area: olive Ridley turtle (*Lepidochelys olivacea*), leatherback turtle (*Dermochelys coriacea*), loggerhead turtle (*Caretta*

caretta), and green turtle (*Chelonia mydas*). Marine turtles have been documented off of the DCPP through 2009; all sightings have been green turtles (PG&E, 2009).

Table 3-1 Abundance Estimates for Marine Mammals and Reptiles of California Unless Otherwise Indicated

Common Name *Scientific Name*	Population Estimate	Current Population Trend
REPTILES		
Cryptodira		
Olive Ridley turtle *Lepidochelys olivacea*	1.39 million (Eastern Tropical Pacific)**	Increasing
Green turtle *Chelonia mydas*	3,319 – 3,479** (Eastern Pacific Stock)	Decreasing
Loggerhead turtle *Caretta caretta*	1,000 (California)**	Decreasing
Leatherback turtle *Dermochelys coriacea*	178 (California)**	Decreasing
MAMMALS		
Mysticeti		
California gray whale *Eschrichtius robustus*	19,126 (Eastern North Pacific Stock)	Fluctuating annually
Fin whale *Balaenoptera physalus*	2,624 (California/Oregon/Washington Stock)	Increasing off California
Humpback whale *Megaptera novaeangliae*	1,878 (California/Oregon/Washington Stock)	Increasing
Blue whale *Balaenoptera musculus*	2,046 (Eastern North Pacific Stock)	Unable to determine
Minke whale *Balaenoptera acutorostrata*	202 (California/Oregon/Washington Stock)	No long-term trends suggested
Northern right whale *Eubalaena japonica*	17 (based on photo-identification) (Eastern North Pacific Stock)	No long-term trends suggested
Sei whale *Balaenoptera borealis*	83 (Eastern North Pacific Stock)	No long-term trends suggested
Odontoceti		
Short-beaked common dolphin *Delphinus delphis*	343,990 (California/Oregon/Washington Stock)	Unable to determine
Harbor porpoise *Phocoena phocoena*	1,478 (Morro Bay Stock)	Unable to determine
Dall's porpoise *Phocoenoides dalli*	32,106 (California/Oregon/Washington Stock)	Unable to determine
Pacific white-sided dolphin *Lagenorhynchus obliquidens*	21,406 (California/Oregon/Washington Stock)	No long-term trends suggested
Risso's dolphin *Grampus griseus*	4,913 (California/Oregon/Washington Stock)	No long-term trends suggested
Northern right whale dolphin *Lissopelphis borealis*	6,019 (California/Oregon/Washington Stock)	No long-term trends suggested
Long-beaked common dolphin *Delphinus capensis*	17,127 (California Stock)	Unable to determine
Bottlenose dolphin *Tursiops truncatus*	684 (California/Oregon/Washington Offshore Stock) 290 (California Coastal Stock)	No long-term trends suggested
Sperm whale *Physeter macrocephalus*	751 (California/Oregon/Washington Stock)	No long-term trends suggested

Common Name *Scientific Name*	Population Estimate	Current Population Trend
Short-finned pilot whale *Globicephala macrorhynchus*	465 (California/Oregon/Washington Stock)	No long-term trends suggested
Killer whale *Orcinus orca*	85 (Eastern North Pacific Southern Resident Stock) 162 (Eastern North Pacific Offshore Stock)	Declining No long-term trends suggested
California sea lion *Zalophus californianus*	141,842 (U.S. Stock)	Unable to determine; increasing in most recent three year period
Northern elephant seal *Mirounga angustirostris*	74,913	Increasing
Pacific harbor seal *Phoca vitulina richardsi*	31,600	Stable
Northern fur seal *Callorhinus ursinus*	5,395 (San Miguel Island Stock)	Increasing
Guadalupe fur seal *Arctocephalus townsendi*	3,028 (Mexico Stock) Undetermined in California	Increasing
Northern (Steller) sea lion *Eumetopias jubatus*	42,366 (Western U.S. Stock)	Decreasing
Fissipedia		
Southern sea otter *Enhydra lutris nereis*	2,711*	Unable to determine

*Estimates provided by National Marine Fisheries Service (*NOAA Fisheries 2011*)*

* Estimate provided by USGS (2010)

** Estimates provided by National Marine Fisheries Service (NMFS) (2004), Marquez, et al. (2002), Eguchi et al. (2007), Benson et al. (2007), and NMFS (2007). Estimates are based on number of current numbers of nesting females.

The animals shown in Table 1 are mammals and reptiles that are known to occur in the marine waters off of California, of which most, but not all, could be present in the Project area during Project activities. Table 2 provides information on the seasonal variations in the marine wildlife community within the Project area. Additional details on the biology of these animals are provided in Attachment 1 (Species Descriptions).

3.2 MONITORING

3.2.1 Vessel Operations

The Project vessel will travel the approximate 15 to 20 km (8 to 11 nautical miles [nm]) between the Port of Morro Bay and the Project area in a direct route (generally south from the Port of Morro Bay to the site). Except during transit to and from the port the speed of the primary vessel will not exceed 9.3 km/hr (5.0 knots), further reducing the chances for wildlife/vessel collisions. As such, there is a potential for encountering marine wildlife while in transit and during Project activities.

Up to two qualified (approved by NOAA Fisheries and/or experienced in marine wildlife observations) marine wildlife monitors will be onboard the vessel throughout the period of the vessel transit and OBS and cable placement. During transit between the Port of Morro Bay and the Project area, a marine wildlife monitor will be positioned on the vessel so that he/she will have a clear view of the area of ocean that is in the direction of the course of travel in order to observe marine mammals/turtles and to institute measures to avoid potential collisions with

Table 2. Marine Wildlife Species and Most Likely Periods of Occurrence within the Project Area

Family / Common Name	Month of Occurrence[1] J	F	M	A	M	J	J	A	S	O	N	D
REPTILES												
Cryptodira												
Olive Ridley turtle (T)[2]												
Green turtle (T)[1, 2]												
Loggerhead turtle (T)[2]												
Leatherback turtle (E)[2]												
MAMMALS												
Mysticeti												
California gray whale												
Blue whale (E)												
Fin whale (E)												
Humpback whale (E)												
Minke whale												
Sei whale (E)												
Northern right whale (E)												
Odontoceti												
Short-beaked common dolphin												
Dall's porpoise												
Harbor pPorpoise												
Long-beaked common dolphin												
Pacific white-sided dolphin												
Risso's dolphin												
Sperm whale												
Short-finned pilot whale												
Bottlenose dolphin												
Northern right whale dolphin												
Killer wWhale												
Pinnipedia												
Northern fur seal[3]												
California sea lion												
Northern elephant seal[4]												
Pacific harbor seal												
Guadalupe fur seal (T)												
Steller sea lion												
Fissipedia												
Southern sea otter (T)[5]												

Relatively uniform distribution | Not expected to occur | More likely to occur due to seasonal distribution

(E) Federally listed endangered species.
(T) Federally listed threatened species.
(1) Where seasonal differences occur, individuals may also be found in the "off" season. Also, depending on the species, the numbers of abundant animals present in their "off" season may be greater than the numbers of less common animals in their "on" season.
(2) Rarely encountered, but may be present year-round. Greatest abundance during July through September.
(3) Only a small percent occur over continental shelf (except near San Miguel rookery, May-November).
(4) Common near land during winter breeding season and spring molting season.
(5) Only nearshore (diving limit 100 feet).
Sources: Bonnell and Dailey (1993), NOAA Fisheries (2011), NCCOS (2007)

marine mammals. In general, the vessel will maintain a minimum distance of at least 100 m (330 ft) from marine wildlife to minimize the chance of collision or disturbance. This distance exceeds the recommended distance set by the NOAA Fisheries, which suggests a distance of 100 yards (300 ft) from whales; no minimum distance is specified for marine reptiles.

If the marine wildlife monitor(s) should sight marine wildlife within the path of the vessel, he/she will report to the vessel operator who will then immediately slow down or change course in order to avoid contact, unless those actions will jeopardize the safety of the vessel or crew. The marine wildlife monitor(s) shall have the authority to recommend the halt of operations, or redirect the vessel, should those operations or vessel location pose an immediate threat to marine wildlife, unless those actions will jeopardize the safety of the vessel or crew.

Dolphins can usually be identified from a distance due to the surface disturbance created as they travel through the water. Dolphins generally tolerate or even approach vessels. Resting and foraging dolphins tend to avoid boats while socializing dolphins will often "run" with a boat leaping from the water, or riding the bow or stern waves. In the event that dolphins are found to be riding the boat waves or frolicking near the vessel, the vessel will slow down and keep a steady course until the dolphins lose interest.

Very little information describing pinnipeds responses to vessels is available; however sea lions in the water often tolerate close and frequent approaches by vessels, especially around fishing vessels. The California sea lion is the only pinniped off the California coast that regularly uses man-made structures such as docks, buoys, oil and gas structures and even slow moving vessels onto which they haul-out. It has been determined that sea lions hauled-out on land are more responsive and react when boats approach within 100 to 200 m (330 to 660 ft) (Bartholomew, 1967). Harbor seals often move into the water in response to approaching boats. Even small boats that approach within 100 m (330 ft) displace harbor seals from haul out areas. Less severe disturbances can cause alert reactions without departure.

Based on behavioral patterns with pinnipeds, implementation of avoidance and minimization measures, and the presence of marine wildlife monitors as previously discussed, a collision at sea with pinnipeds is not likely. However, in the unlikely event that a sea lion, harbor seal, or other pinniped species is hauled-out in an area where harm may come to the animal, the NOAA Fisheries (Long Beach office) will be consulted for guidance on how to encourage the animal to move from the hazard area without harassment.

The onboard monitor(s) and all other personnel will be watchful as the vessel crosses the path of a whale or anytime whales are observed in the area. The onboard monitor(s) will advise the vessel operator on methods to reduce or eliminate potential effects to the marine wildlife. In general, the vessel operator, in consultation with the onboard monitor, will observe the following guidelines:

- The vessel will maintain a minimum distance of at least 100 m (330 ft) from sighted whales and other marine wildlife (e.g., sea turtles);
- The vessel will not cross directly in front of or across the path of migrating whales or any other threatened or endangered marine mammals or marine turtles;

- When paralleling whales, the vessel will operate at a constant speed that is not faster than the whale's;
- Care will be taken to ensure that female whales will not be separated from their calves;
- The vessel will not be used to herd or drive whales; and,
- If a whale engages in evasive or defensive action, the vessel will drop back until the animal calms or moves out of the area.

3.2.2 Fishing Gear Clearance

In addition to submitting the required Notice to Mariners and prior to the start of each work day, the onboard crew will complete an observational "run" within the proposed installation corridor. Any deployed fishing equipment that is observed will be noted, its location recorded, and the California Department of Fish and Game (CDFG) Central office in San Luis Obispo will be contacted.

Sandy Owen
San Luis Obispo Field Office
3196 South Higuera Street, Suite A
San Luis Obispo, California 93401
(805) 594-6177
SLOwen@dfg.ca.gov

Unless the Party Chief and vessel captain determine that the installation can be operated closer, an area within 30 m (100 ft) of the observed commercial fishing gear will be avoided until the gear is removed by the owner or by an authorized CDFG agent.

3.2.3 Survey Monitoring

Prior to the initiation of the proposed Project, the principal marine monitor will contact the NOAA Fisheries Long Beach staff and available private whale-watching operations to acquire information on the composition and relative abundance of marine mammals within the work area and region. That information will allow the monitors to be better prepared for the offshore monitoring and to have the latest information on marine wildlife presence within the survey area. That information will be conveyed to the survey and vessel crew prior to departure.

3.3 MITIGATION MEASURES

In addition to the measures discussed above, the following operation-related actions will be implemented:

1) Onboard monitoring will be completed by a qualified monitor who will be located at a high vantage point onboard the vessel and will use binoculars to observe marine wildlife throughout the period of Project. Up to two onboard monitors will be on the vessel and, if multiple monitors are onboard, will rotate watches every 4 hours (in accordance with NOAA Fisheries' recommendations).

2) All operations will be completed during daylight to maximize marine wildlife observations and the institution of other mitigation measures.

3) The onboard monitor(s) shall observe and record the presence of marine wildlife (mammals and reptiles) during the deployment of the OBS units and cable and shall have the authority to advise changes in operations if the actions are resulting in potentially significant impacts to the wildlife and if those actions will not jeapordize vessel or crew safety.

4) The onboard monitor(s) will record all observations of marine mammals and reptiles including, where possible, the species, number of individuals, behavior, distance from the vessel, and direction of movement, on a pre-printed form (see Attachment 2). Actions taken when an animal is observed within the Project and the results of those actions will also be recorded.

4.0 REPORTING PROCEDURES

4.1 COLLISION REPONSE

If a collision with marine wildlife occurs, the vessel operator must document the conditions under which the accident occurred, including the following:

- location of the vessel when the collision occurred (latitude and longitude);
- date and time;
- speed and heading of the vessel;
- observation conditions (e.g., wind speed and direction, swell height, visibility in miles or kilometers, and presence of rain or fog);
- species of marine wildlife contacted;
- whether an observer was observing for marine wildlife; and,
- names of vessel, operator (the company), and captain or officer in charge of the vessel at time of accident.

The information will be provided on the form shown in Attachment 2. After a collision, the vessel should stop, if safe to do so, however the vessel is not obliged to stand by and may proceed after confirming that it will not further damage the animal by doing so. The vessel will then communicate by radio or telephone all details to the vessel's base of operations.

From the vessel's base of operations, a telephone call will be placed to the Stranding Coordinator, NOAA Fisheries (National Marine Fisheries Service [NMFS]), Southwest Region, Long Beach, to obtain instructions. Alternatively, the vessel captain may contact the NOAA Fisheries Stranding Coordinator directly using the marine operator to place the call or directly from an onboard telephone, if available to:

Southwest Regional Stranding Coordinator
National Marine Fisheries Service
501 West Ocean Blvd, Suite 4200
Long Beach, CA 90802-4213
562-594-6177
Contact: Sarah Wilkin

Email: sarah.wilkin@noaa.gov

It is unlikely that the vessel will be asked to stand by until NOAA Fisheries or CDFG personnel arrive, but this will be determined by the Stranding Coordinator. According to the Marine Mammal Protection Act, the vessel operator is not allowed to aid injured marine wildlife or recover the carcass unless requested to do so by the NOAA Fisheries Stranding Coordinator.

Collisions with or other Project-resulting impacts to marine wildlife will be reported promptly to the NOAA Fisheries Stranding Coordinator. From the report, the Stranding Coordinator will coordinate subsequent action, including enlisting the aid of marine mammal rescue organizations, if appropriate.

Although NOAA Fisheries has primary responsibility for marine mammals in both state and federal waters, the CDFG should also be advised that an incident has occurred in state waters affecting a protected species. Reports should be communicated to the federal and state agencies listed below:

Federal	**State**	**State**
Sarah Wilkin, Stranding Coordinator Southwest Region National Marine Fisheries Service Long Beach, California (562) 594-6177	Enforcement Dispatch Desk California Department of Fish and Game Long Beach, California (562) 590-5132	California State Lands Commission Mineral Resources Management Division Long Beach, California (562) 590-5071

4.2 MONITORING REPORT

A technical report documenting the Project activities for each phase and including observations of marine wildlife, and a summary of encounters with any marine mammals and/or turtles will be prepared. The report will be submitted to the appropriate agencies within 30 days of completion of Project.

5.0 REFERENCES

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ATTACHMENT 1
MARINE WILDLIFE DESCRIPTIONS

The species discussed below could occur with the proposed survey area although not all of the species discussed would be expected to occur during the survey period.

Cryptodira (Turtles). Several species of sea turtles occur within waters off the California coast; however, four species are most likely to occur within the Project area waters: olive Ridley turtle (*Lepidochelys olivacea*), leatherback turtle (*Dermochelys coriacea*), loggerhead turtle (*Caretta caretta),* and green turtle (*Chelonia mydas*). Overall, populations of marine turtles have been greatly reduced due to over-harvesting and loss of nesting sites in coastal areas (Ross, 1982). Three of the species (olive Ridley, loggerhead, and green) are listed as threatened under the FESA, while the leatherback turtle is federally listed as an endangered species.

In the eastern Pacific, most of the turtles nest along the coasts of Mexico and Central America. The nesting season or cycle varies greatly between species, but is generally from May to September. Marine turtles breed at sea; and the females return to their natal beaches to lay their eggs. Female turtles can nest several times in a season but at 2 to 3-year intervals. The eggs, after being laid in the sand, hatch in about 2 months; and the young instinctively head for the sea (MFS Globenet Corp./WorldCom Network Services, 2000). General distribution and species-specific information are provided in the following paragraphs.

Green turtle. Green turtles generally occur worldwide in waters with temperatures above 20°C (MFS Globenet Corp./WorldCom Network Services, 2000; Department of the Navy, 2000). Green turtles have been reported as far north as Redwood Creek in Humboldt County and off the coasts of Washington, Oregon, and British Columbia (Channel Islands National Marine Sanctuary, 2000; MFS Globenet Corp./WorldCom Network Services, 2000). The green turtle is thought to nest on the Pacific coasts of Mexico, Central America, South America, and the Galapagos Islands. There are no known nesting sites along the west coast of the U.S., and the only known nesting location in the continental U.S. is on the east coast of Florida (MFS Globenet Corp./WorldCom Network Services, 2000;). Green turtles are sighted year-round in marine waters off the southern California coast, with the highest concentrations occurring during July through September. Green turtles are omnivores, feeding primarily on algae and sea grasses (MFS Globenet Corp./WorldCom Network Services, 2000), but also eat fish and invertebrates (e.g., sardines, anchovies, jellies, mollusks, worms, etc.) (MFS Globenet Corp./WorldCom Network Services, 2000). Recent population estimates for green turtles indicate that at least 3,319 individuals are known to occur in the eastern Pacific (NOAA Fisheries and USFWS, 2007). This population is believed to be increasing (NOAA, 2008).

Olive Ridley turtle. The olive Ridley turtle is distributed circumglobally and is regarded as the most abundant sea turtle in the world (Eguchi, 2007). Within the east Pacific, the normal range of olive Ridley turtles is from southern California to Peru (NOAA, 2008). However, they have been reported as far north as Washington, Oregon, and are a considered to be a rare

visitor to the California coast (MFS Globenet Corp./WorldCom Network Services, 2000). The olive Ridley turtle is omnivorous, feeding on fish, crabs, shellfish, jellyfish, sea grasses, and algae (Channel Islands National Marine Sanctuary, 2000; MFS Globenet Corp./WorldCom Network Services, 2000), and may dive to considerable depths (79 to 300 m [260 to 980 ft]).

Major nesting beaches are located on the Pacific coasts of Mexico and Costa Rica (MFS Globenet Corp./WorldCom Network Services, 2000; Eguchi, 2007). The population on Pacific beaches in Mexico has declined from an estimated 10 million adults in 1950 to less than 80,000 in 1983 due to excessive over-harvesting (Channel Islands National Marine Sanctuary, 2000; MFS Globenet Corp./WorldCom Network Services, 2000). Conservation measures, such as increased nesting beach protection and closure of the turtle fishery in 1990, have led to a dramatic increase in the once largest nesting population in the world. The number of olive Ridley nests has increased from 50,000 in 1988 to over 700,000 in 1994 to more than a million nests in 2000 (Márquez et al. 2002). The eastern tropical Pacific population is estimated at 1.39 million, which is consistent with the dramatic increases of olive Ridley nesting populations that have been reported (Eguchi, 2007).

Loggerhead turtle. Loggerhead turtles primarily occur in subtropical to temperate waters and are generally found over the continental shelf (MFS Globenet Corp./WorldCom Network Services, 2000). Loggerhead turtles are omnivorous and feed on a wide variety of marine life including shellfish, jellyfish, squid, sea urchins, fish, and algae (MFS Globenet Corp./WorldCom Network Services, 2000; Channel Islands National Marine Sanctuary, 2000).

The eastern Pacific population of loggerhead turtles breeds on beaches in Central and South America. Southern California is considered to be the northern limit of loggerhead turtle distribution (MFS Globenet Corp./WorldCom Network Services, 2000). However, loggerhead turtles have stranded on beaches as far north as Washington and Oregon (2000 Channel Islands National Marine Sanctuary, 2000; MFS Globenet Corp./WorldCom Network Services, 2000;). In addition, in 1978, a loggerhead turtle was captured near Santa Cruz Island in southern California (MFS Globenet Corp./WorldCom Network Services, 2000). Loggerhead turtle abundance in southern California waters is higher in the winter during warm years than cold years. However, during the summer months (July through September) abundance is similar in warm and cold years. In the U.S. nesting occurs only in Florida and the worldwide population appears to be decreasing (Conant, et al., 2009).

Leatherback turtle. Leatherback turtles are the most common sea turtle off the west coast of the U.S. (Department of the Navy, 2000; Channel Islands National Marine Sanctuary, 2000). Leatherback turtles have been sighted as far north as Alaska and as far south as Chile (Channel Islands National Marine Sanctuary, 2000; MFS Globenet Corp./WorldCom Network Services, 2000; Department of the Navy, 2000). Their extensive latitudinal range is due to their ability to maintain warmer body temperatures in colder waters (MFS Globenet Corp./WorldCom Network Services, 2000). Off the U.S. west coast, leatherback turtles are most abundant from July to September. Few nearshore sightings are reported off northern California, Oregon, Washington, and southern California. In southern California waters, leatherback turtles are most common during the months of July through September, and in years when water temperatures are above normal. In January, 2010, NOAA submitted a proposal to revise the

current habitat for the leatherback turtle to include the coastal areas between Point Arenas to Point Vicente in California.

Leatherback turtles are omnivores, but feed principally on soft prey items such as jellyfish and planktonic chordates (e.g., salps) (Channel Islands National Marine Sanctuary, 2000; MFS Globenet Corp./WorldCom Network Services, 2000). Recent population estimates for the eastern Pacific leatherback turtles indicates that at least 178 individuals are known to occur off of California (Benson et. al., 2007). The worldwide population is believed to be decreasing, however nesting trends on U.S. beaches have been increasing in recent years (NOAA, 2008).

Mysteceti. Three families of mysticetes, or baleen whales, occur in central California waters. Species include the gray whale, the northern right whale, and members of the rorquals family (Balaenopteridae). Rorquals are characterized as having pleated throats that expand to take in water, which is then strained outward through the baleen. Rorqual species include: blue whale, fin whale, humpback whale, and minke whales.

Although individual species' patterns vary, baleen whales range widely in the North Pacific, migrating between coldwater summer feeding grounds in the north and winter calving grounds in the south (Bonnell and Dailey, 1993). The mating season generally begins during the southbound migration and lasts through winter. Most baleen whales feed low on the food chain, eating a variety of swarming, shrimp-like invertebrates (Bonnell and Dailey, 1993). Some species also take small schooling fishes and squid. Larger rorquals, such as the blue whale, appear to feed mainly on large crustaceans, while the diets of smaller baleen whales tend to include more fish.

Due to the offshore nature of the proposed Project, several species of the mysticetes, which occur offshore central California, have the potential to occur within the Project area, or to be encountered by vessels traveling to the Project area. The species with the highest potential to be encountered during Project activities are detailed below:

California gray whale. The California gray whale population breeds and calves in lagoons along the west coast of Baja California and in the Gulf of California in the winter (NCCOS, 2007). At the end of the season, the population begins an 8,000 km (5,000 mi) coastal migration to summer feeding grounds to the north. Migrating California gray whales generally travel within 3 km (1.9 mi) of the shoreline over most of the route, unless crossing mouths of rivers and straits (Dohl et al., 1983). The southward migration generally occurs from December through February and peaks in January. The northward migration generally occurs from February through May in the study area; it peaks in March. The most recent population estimates of eastern North Pacific California gray whale indicated that approximately 19,126 individuals are known to occur (NOAA Fisheries, 2011). The California gray whale population growth rate was about 3.3 percent per year between 1968 and 1988 (NOAA, 1993), and following 3 years of review, was removed from the endangered species list on June 15, 1994. California gray whales were observed regularly from late summer through winter of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

Humpback whale. The humpback whale is considered an endangered species, due to intensive historical commercial whaling. Humpbacks are distributed worldwide and undertake extensive migration in parts of their range (Leatherwood et al., 1982; NMFS, 1991). The population in the Project area is referred to as the eastern northern stock, which spends the winter/spring months in coastal Central America and Mexico for breeding and calving and migrate to the coast of California to southern British Columbia in summer/fall to feed (NOAA Fisheries, 2011). The humpback whales are distributed mostly over shelf and slope habitats and are more frequently sighted off central California from March through November, with peaks in the summer and fall (NCCOS, 2007). Migrants passing through central California appear to follow a more inshore path than blue or fin whales (Bonnell and Dailey, 1993). The most recent population estimates of humpback whale indicate that at least 1,878 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). This population estimate is anticipated to be increasing (NOAA Fisheries, 2011). Humpback whales were observed on multiple occasions from late summer through winter of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011)

Blue whale. The blue whale is considered a federally listed endangered species due to intensive historical commercial whaling. Blue whales are distributed worldwide in circumpolar and temperate waters, and inhabit both coastal and pelagic environments (Leatherwood et al, 1982; Reeves et al., 1998). Like most baleen whales, they migrate between warmer waters used for breeding and calving in winter and high-latitude feeding grounds where food is plentiful in the summer. The most recent estimates of blue whale indicate that a minimum of 2,046 individuals are known to occur off the U.S. west coast (NOAA Fisheries, 2011). Data available from Barlow, et al. (2009) which summarizes observations made along specific aerial survey lines over the past 30 years, indicates that during that time, one observation of two blue whales has been recorded within the Project area. That observation was made in July 2000, approximately 2.4 km (1.5 mi) southwest of Pt. Buchon.

Minke whale. Minke whales are a coastal species that are widely distributed on the continental shelf throughout the eastern North Pacific (Green et al., 1989) and occur year-round off the coast of California. This species favor shallow water and venture near shore more often than other baleen whales (Watson, 1981), and they seem to be curious about shipping and approach moving vessels. The most recent estimates of Minke whales indicate that at least 202 individuals are known to occur off California, Oregon, and Washington and no long-term trend for the population has been identified at this time (NOAA Fisheries, 2011). Two Minke whales were observed from late summer through winter of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

Northern right whale. The northern right whale is considered federally endangered due to intensive historical commercial whaling. Like other baleen whales, right whales appear to migrate from high-latitude feeding grounds toward more temperate waters in the fall and winter, although the location of seasonal migration routes is unknown (Allen et al, 2011). The usual wintering ground of northern right whales extended from northern California to Washington, although sightings have been recorded as far south as Baja California and near the Hawaiian Islands (Allen et al, 2011; Gendron et al., 1999). According to the NOAA Fisheries (2011) the population estimate for the Eastern North Pacific Stock for this species remains low at only 17

individuals. No long-term population trends have been determined at this time (NOAA Fisheries, 2011).

Fin whale. The fin whale is a federally endangered species due to a severe worldwide population decline due to intensive commercial whaling. The most recent estimates of the fin whale population indicate that at least 2,624 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). There is some evidence that recent increases in fin whale abundance have occurred in California waters (Barlow, 1994; Barlow and Gerodette 1996, NOAA Fisheries, 2011), but these have not been significant (Barlow et al., 1997).

Sei whale. The sei whale is considered a federally endangered species. Sei whales were historically abundant off of the California coast and were the fourth most common whale taken by California coastal whalers in the 1950s-1960s but, due to intensive whaling, they are now considered "extraordinarily" rare (NOAA Fisheries, 2011; Allen et al., 2011). The most recent estimates of the sei whale northern Pacific stock population indicate that at least 83 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). Sei whales occur throughout most temperate and subtropical oceans of the world. The northern Pacific stock rarely ventures above 55^{o} N latitude or south of California (Allen et al., 2011). Like most baleen whales, they migrate between warmer waters used for breeding and calving in winter and high-latitude feeding grounds where food is plentiful in the summer. The northern Pacific stock ranges almost exclusively in pelagic waters and rarely ventures into coastal waters (Allen et al., 2011).

Odontoceti. Odontocetes, or toothed whales, which are commonly found in the central California waters, include: the sperm whale, several species of dolphins, porpoises, and small whales, and at least six species of beaked whale. With the exception of killer whales, which are the top predators in the ocean and feed on a wide variety of fishes, squid, pinnipeds, and cetaceans, odontocetes generally feed on schooling fishes and squid (Bonnell and Dailey, 1993). Major fish prey species include anchovy, mackerel, lanternfish, smelt, herring, and rockfishes. Octopus and crustaceans are also eaten on occasion.

Due to the offshore nature of the proposed Project, several of the odontocetes that exist within central California waters have the potential to occur within the Project area, or to be encountered by vessels traveling to the Project area. The species with the highest potential to be encountered during Project activities are discussed below.

Common dolphins. Common dolphins are found worldwide and are the most abundant cetaceans in California waters (Bonnell and Dailey, 1993). Two recognized species of common dolphin are found in central California waters. The long-beaked common dolphin (*Delphinus capensis*) is commonly found within about 90 km (55 mi) from the coastline. Its relative abundance changes both seasonally and inter-annually, with the highest densities observed during warm water events (Heyning and Perrin, 1994). A recent population estimate for this species is about 17,127 (NOAA Fisheries, 2011). The more numerous short-beaked common dolphin (*D. delphis*) ranges from the coast to 550 km (340 mi) offshore. The most recent estimates indicate the California-Washington population of this species to be 343,990

individuals making it the most abundant cetacean off California (NOAA Fisheries, 2011). California common dolphins are very gregarious and are frequently encountered in herds of 1,000 or more. Because populations tend to vary with water temperature, no long-term population trends have been determined at this time (NOAA Fisheries, 2011). Common dolphins were observed regularly from late summer through winter of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

Dall's porpoise. Dall's porpoise is one of the most abundant small cetaceans in the North Pacific and are found in shelf, slope, and offshore waters throughout their range (Koski et al., 1998). The Dall's porpoise is found year-round throughout the Project area (NCCOS, 2007). Dall's porpoise feeds mostly on Pacific hake (*Merluccius productus*), northern anchovy (*Engraulis mordax*), Pacific saury (*Cololabis saira*), juvenile rockfish (*Sebastes spp*), and cephalopods (NCCOS, 2007). The most recent population estimates indicate that at least 32,106 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). The population trend for this species has not yet been determined (NOAA Fisheries, 2011). Ten Dall's porpoises were observed from late summer through winter of 2010 during marine mammal monitoring events within Project area waters (Padre, 2011).

Harbor porpoise. Harbor porpoise are found in coastal and inland waters from Point Conception, California to Alaska and across to Kamchatka and Japan. The harbor porpoise occurs year-round off of central California, mostly in the coastal ocean, and occasionally in bays, harbors and estuaries (NCCOS, 2007). The most recent population estimates for the harbor porpoise Morro Bay stock indicate that at least 1,478 individuals are known to occur in California between Cambria and Point Conception (NOAA Fisheries, 2011). The population trend is increasing for this species (NOAA Fisheries, 2011). Harbor porpoises were observed regularly while transiting to the Project area from late summer through winter of 2010 (Padre, 2011).

Pacific coast white-sided dolphin. Pacific coast white-sided dolphins primarily range along the coasts of California, Oregon, and Washington. This species frequents deep water foraging areas, but may move into nearshore areas in search of prey. Analysis of sighting patterns suggest that Pacific coast white-sided dolphins make north-south movements, occurring primarily off California in cold water months and moving northward to Oregon and Washington as waters warm in the late spring in summer (Forney et al., 2000; Allen et al., 2011). Pacific coast white-sided dolphin populations are not showing any long-term trend in terms of abundance, but have a current minimum population size of 21,406 off California, Oregon, and Washington (NOAA Fisheries, 2011).

Risso's dolphin. Risso's dolphins are present off central and southern California year-round (Dohl et al., 1981, 1983; Bonnell and Dailey, 1993). Risso's dolphins are found off California during the colder water months and are extending their range northward as water temperatures increase (Leatherwood et al., 1982; Allen et al., 2011). The most recent population estimates of Risso's dolphin indicate that at least 4,913 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). No long-term population trends have been determined at this time. Risso's dolphins can be observed year-round within the Project area. Risso's dolphins were observed regularly from late summer through winter of

2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

Short finned pilot whale. The short finned pilot whale (Globicephala macrorhynchus) is a relatively more southern or warm water species. Pilot whales were common off southern California until the early 1980's (Dohl et al., 1983), but disappeared from area waters following the 1982-83 El Nino (Bonnell and Dailey, 1993; Forney et al., 2000). Recently, pilot whales have begun reappearing in California waters, possibly in response to long-term changes in oceanographic conditions, but sightings are still rare (Forney et al., 2000). The most recent estimates indicate that at least 465 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). No long-term population trends have been determined, at this time.

Bottlenose dolphin. The bottlenose dolphin is probably more widely distributed than any other species of small cetacean in the eastern North Pacific (Leatherwood et al., 1982). This species occurring off the coast of California has been tentatively separated into a coastal form and offshore form. The coastal bottlenose dolphin is generally found within 1 km (0.6 mi) of shore and often enters the surf zone, bays, inlets, and river mouths (Leatherwood et al., 1987). The California coastal population is estimated at 290 and appears to form small resident groups that range along the coastline (NOAA Fisheries, 2011).

Offshore bottlenose dolphins are believed to have a more-or-less continuous distribution off the coast of California (Mangels and Gerrodette, 1994). The current minimal population of bottlenose dolphins is estimate at a minimum population size of 684 individuals off California, Oregon, and Washington (NOAA Fisheries, 2011). No long-term population trends have been determined at this time (NOAA Fisheries, 2011).

Northern right whale dolphin. The northern right whale dolphins are endemic to temperate waters of the North Pacific, where they range from the Mexican border to British Columbia (Leatherwood and Walker, 1979; Leatherwood et al., 1982). They are primarily found over the shelf and slope in U.S. coastal waters and are known to make seasonal north-south movements (Forney et al., 2000). Northern right whale dolphins are found primarily off California during colder-water months and shift northward into Oregon and Washington as water temperatures increase in late spring and summer (NCCOS, 2007). The most recent population estimates indicate that at least 6,019 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). No long-term population trends have been determined at this time (NOAA Fisheries, 2011). Ten northern right whale dolphins were observed from late summer through winter of 2010 during marine mammal monitoring events within Project area waters (Padre, 2011).

Killer whale. The killer whale occurring off the coast of California has been tentatively separated into a transient form, offshore form, and resident form. The transient form is the most frequently sighted killer whale off central California, and has been observed from southern California to Alaska. This form feeds on marine mammals, travels in small groups often over long ranges, and is usually vocally quiet (NCCOS, 2007). The species occurs year-round in the Project area and killer whales are most frequently sighted from January-May and from

September through November. The most recent population estimate for the Eastern North Pacific Southern Transient stock of killer whales is unknown (NOAA Fisheries, 2011). The resident form is primarily sighted in inland marine waters, and preys mostly on fish, lives in close family groups, and is quite vocal (NOAA Fisheries, 2011). The most recent population estimate for the Eastern North Pacific Southern Resident stock of killer whales is 85 animals (NOAA Fisheries, 2011). Two killer whales were observed regularly from late summer through winter of 2010 during marine mammal monitoring events within Project area waters (Padre, 2011).

Offshore killer whales have more recently been identified off the coasts of California, Oregon, and rarely, in Southeast Alaska (Carretta et al., 2008). They apparently do not mix with the transient and resident killer whale stocks found in these regions. The offshore type is more vocal, travels in larger groups, and feeds on fishes and squid (NOAA Fisheries, 2011). The total number of known offshore killer whales along the U.S. West Coast, Canada, and Alaska is 162 animals (NOAA Fisheries, 2011).

Sperm whale. The sperm whale is considered a federally endangered species due to historically intensive commercial whaling. The sperm whale is the largest of the toothed whales and is found predominately in temperate to tropical waters in both hemispheres (Gosho et al., 1984). Off California, sperm whales are present in offshore waters year-round, with peak abundance from April to mid-June and again from late August through November (Dohl et al., 1981, 1983; Gosho et al., 1984; Barlow et al., 1997). Sperm whales are primarily pelagic species and are generally found in waters with depths of greater than 1,000 m (3,300 ft) (Watkins, 1977), although their distribution does suggest a preference for continental shelf margins and seamounts, areas of upwelling and high productivity (Leatherwood and Reeves, 1986). The majority of sightings by Dohl et al. (1983) in their 3-year study off central and northern California were in waters deeper than 1,800 m (5,900 ft), but near the continental shelf edge. The most recent estimates indicate that at least 751 individuals are known to occur off California, Oregon, and Washington (NOAA Fisheries, 2011). No long-term population trends have been determined at this time (NOAA Fisheries, 2011).

Pinnipeds (Seals and Sea lions). Five of the 36 species of pinnipeds known worldwide occur off the central California coast. Three are eared seals (family Otariidae) and two are earless seals (family Phocidae). The species most likely to be encountered within the vicinity of the Project area include the California sea lion, northern fur seal, northern elephant seal, and the Pacific harbor seal.

Otariidae. The species of Otariidae (eared seals) that may occur central California waters are: northern fur seal, Steller sea lion, and California sea lion, although the most common within the Project area is the California sea lion.

California sea lion. The California sea lion is the most abundant pinnipeds in California, representing 50 to 93 percent of all pinnipeds on land and about 95 percent of all sightings at sea (Bonnell et al., 1981; Bonnell and Ford, 1987). This species ranges from Baja, Mexico to British Columbia. The breeding time period and rookery occupancy is mid-May to late July (NCCOS, 2007). In central California, a small number of pups are born on Año Nuevo Island, Southeast Farallon Island, and occasionally at a few other locations; otherwise the central

California population is composed of non-breeders. The most recent population estimates for the California sea lion stock indicate that at least 141,842 individuals are known to occur in California (NOAA Fisheries, 2011). This number believed to be increasing despite recent drops in pups due to El Nino events occurring in the late 1990's (NOAA Fisheries, 2011). California sea lions were observed regularly from late summer through winter of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

Northern fur seal. The northern fur seal is the most abundant otarid in the Northern Hemisphere. Most of the population is associated with rookery islands in the Bering Sea and the Sea of Okhotsk, although a small population of northern fur seals has existed on San Miguel Island since the late 1950s or early 1960s (NOAA Fisheries, 2011). Adult females and juveniles migrate to the central California area (and Oregon and Washington) from rookeries on San Miguel Island in the SCB (Carretta *et al.,* 2006), and from the Pribilof Islands in the Bering Sea (NCCOS, 2007). During winter migration, female northern fur seals from the Pribilof Islands travel south and arrive off California beginning in February and remain until about August before returning to breeding grounds (NCCOS, 2007). The most recent population estimates for the San Miguel Island stock indicate that at least 5,395 individuals are known to occur (NOAA Fisheries, 2011). No long-term population trends have been determined at this time (NOAA Fisheries, 2011).

Steller sea lion. The Steller or northern sea lion is a federally threatened species. The Steller sea lion ranges along the North Pacific rim, from northern Japan, the Aleutian Islands, Gulf of Alaska, and south to Año Nuevo Island, California (the southernmost rookery). The most recent population estimate for the Steller sea lion indicate that at least 42,366 individuals in the Western U.S. Stock (NOAA Fisheries, 2011). This population is decreasing (NOAA Fisheries, 2011). Available information indicates that Steller sealions are rarely observed in the Project area, however they have been observed historically at Lion Rock, north of the DCPP intake embayment (Chambers, 1979). The furthest south rookery is Año Nuevo Island, north of Santa Cruz (NOAA, 2011b) Tenera, PG&E's marine biological consultant, also indicates that during the weekly endangered species surveys they conduct around DCPP, very few, and usually only single individuals have been observed. The most recent observation was in 2010 around the DCPP breakwater (John Steinbeck, personal communication, 2011).

Guadalupe fur seal. The Guadalupe fur seal is a federally threatened species, due to the near extinction by commercial sealing in the 19th century. The Guadalupe fur seal range is from Guadalupe Island north to the California Channel Islands, but individuals are occasionally sighted as far south as Tapachula near the Mexico-Guatemala border; as far north as Mendocino, California (Allen *et al.*, 2011). As their numbers increase, Guadalupe fur seals are expanding their range and are regularly seen on San Miguel and San Nicolas Islands, and, occasionally, on the South Farallones Islands. Presently, the species breed only on Isla de Guadalupe off the coast of Baja California, Mexico, although individual animals are appearing more regularly in the Channel Islands and a single pup was born on San Miguel Island in 1997 (Allen et al., 2011). The most recent population estimates for the Guadalupe fur seal in Mexico is 3,028 individuals. Overall, the population is increasing at approximately 13 percent, considered to be relatively rapid (NMFS, 2011).

Phocidae. Two species of Phocidae (earless seals) that are known to occur within the central California coast include the northern elephant seal and Pacific harbor seal.

Northern elephant seal. Northern elephant seals breed along the coast from Baja California north to Point Reyes. Northern elephant seals typically haul-out on land only to breed and molt and then disperse widely at sea. The breeding period is generally December through March and molting occurs April through August; females and juveniles molt in April to May; sub-adult males molt in May to June, and adult males molt in July to August; and yearlings molt in the fall. The northern elephant seal is present year-round off of central California; however, because they spend very little time at the surface and forage mostly offshore, at-sea sightings are rare (NCCOS, 2007). The most recent population estimates for the California breeding stock of Northern elephant seals indicated that at least 74,913 individuals are known to occur in California and the stock appears to increasing (NOAA Fisheries, 2011). No haul-out or rookeries have been documented within the Project area (NOAA Fisheries, 2011).

Pacific harbor seal. Pacific harbor seals range from Mexico to the Aleutian Islands (Allen et al., 2011). Pacific harbor seals are year-round residents of central California. Unlike most pinnipeds occurring off California, Pacific harbor seal maintain haul-out sites on the mainland on which they pup and breed (Allen et al., 2011). Haulouts may be occupied at any time of year for resting. Pupping generally occurs March-June and molting occurs May-July (NCCOS, 2007). The most recent minimum population estimates of the California stock indicate that at least 31,600 individuals are known to occur (NOAA Fisheries, 2011). After increases in the 1990s, this population is believed to be stable and possibly reaching its carrying capacity (NOAA Fisheries, 2011). Harbor seals were observed regularly from late summer through winter of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

Fissipedia. One fissiped species is known to occur within the central California coast, the Southern sea otter.

Southern sea otter. The southern sea otter is listed as “threatened” under the FESA, “depleted” under the Marine Mammal Protection Act (MMPA), and “fully protected” under California Fish and Game Code. Historically, the range of sea otters extended from the northern islands of the Japanese Archipelago northeast along Alaska and southward along North America to Baja California (Dailey et al., 1993). The sea otter was nearly extirpated by the fur trade during the 18th and 19th centuries. The current range extends from about Half Moon Bay in the north to Santa Barbara in the south. A small, satellite population of 20 to 40 animals also occurs at San Nicolas Island, the result of a translocation effort in the late 1980s (NCCOS, 2007). This species prefers rocky shoreline with water depth of less than 5 m (50 ft), which support kelp beds where they feed on benthic macroinvertebrates including clams, crabs, abalone, sea urchins, and sea stars. Recent minimum population estimates for southern sea otters in California indicate that at least 2,711 individuals are known to occur and no long-term trends in this population are available (USGS, 2010). Within the Project area, an increase in population could be seen during the period when most breeding occurs (June - November) (NCCOS, 2007). Southern sea otters were observed regularly from late summer through winter

of 2010 during marine mammal monitoring events within or near Project area waters (Padre, 2011).

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