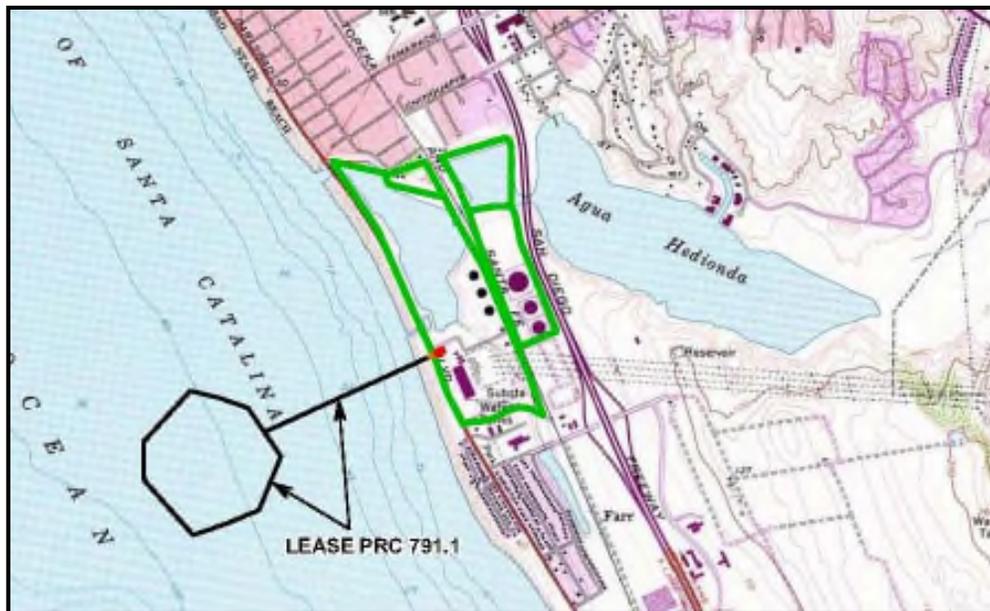


**MITIGATED NEGATIVE DECLARATION
CABRILLO POWER I LLC ENCINA MARINE OIL
TERMINAL DECOMMISSIONING PROJECT**

December 2015



Lead Agency:

California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, California 95825

Applicant:

Cabrillo Power I LLC
4600 Carlsbad Boulevard
Carlsbad, CA 92008

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LIST OF ABBREVIATIONS AND ACRONYMS

	ρ	density
	μPa	micropascal
A	AB	Assembly Bill
	ACM	asbestos-containing materials
	AHPA	Archaeological and Historic Preservation Act
	APCD	County of San Diego Air Pollution Control District
	APM	Applicant-proposed measure
	AQIA	Air Quality Impact Analysis
	ARPA	Archaeological Resources Protection Act
C	c	speed of sound
	Caltrans	California Department of Transportation
	CAP	Climate Action Plan
	CARB	California Air Resources Board
	CCAA	California Clean Air Act of 1988
	CCAR	California Climate Action Registry
	CCC	California Coastal Commission
	CDFG	California Department of Fish and Game
	CDFW	California Department of Fish and Wildlife
	CEC	California Energy Commission
	CECP	Carlsbad Energy Center Project
	CEQA	California Environmental Quality Act
	CESA	California Endangered Species Act
	CFR	Code of Federal Regulations
	CH ₄	methane
	CMP	Coastal Management Program
	CNEL	Community Noise Level Equivalent
	CNPS	California Native Plant Society
	CO	carbon monoxide
	CO ₂	carbon dioxide
	CO _{2e}	carbon dioxide equivalents
	CRHR	California Register of Historic Resources
	CSC	California Species of Special Concern
	CSLC	California State Lands Commission
	CSTMC	Construction Safety and Traffic Management/Control
	CWA	Clean Water Act
	CWP	Contractor Work Plan
	CZMA	Coastal Zone Management Act
D	dB	decibel
	dBA	A-weighted decibel
	DO	dissolved oxygen
	DPR	Dynamic Pipe Ramming
	DTSC	Department of Toxic Substances Control (California)

E	EFH	Essential Fish Habitat
	EIR	Environmental Impact Report
	EO	Executive Order
	EPS	Encina Power Station
	ESA	Environmental Site Assessment
F	FCAA	Federal Clean Air Act
	FE	Federally Endangered
	feet/s	feet per second
	FESA	Federal Endangered Species Act
	FP	Fully Protected
	FPP	Fire Prevention Plan
G	GHG	Greenhouse Gas
H	HMP	Habitat Management Plan
	HMTA	Hazardous Materials Transportation Act
	Hz	hertz
I	I-5	Interstate-5
	IS	Initial Study
K	kg	kilogram
	kg/m ² s	kilogram(s) per square meter(s) second(s)
	kHz	kilohertz
	kV	kilovolt
L	LBP	lead-based paint
	L _{dn}	Day-Night Average Sound Level
	L _{eq}	Energy Equivalent Sound Level
	L _{max}	Maximum Sound Level
M	m	meter
	m/s	meter(s) per second
	MBTA	Migratory Bird Treaty Act
	MCP	Mitigation Compliance Plan
	mg/kg	milligrams per kilogram
	mg/L	milligrams per liter
	MHCP	Multiple Habitat Conservation Program
	MISA	Marine Invasive Species Act
	MISP	Marine Invasive Species Program
	MLPA	California Marine Life Protection Act
	MM	mitigation measure
	MMP	Mitigation Monitoring Program
	MMPA	Marine Mammal Protection Act
	MMT	million metric tons
	MND	Mitigated Negative Declaration
	MOT	Marine Oil Terminal
	MPA	Marine Protection Area

MPO	Metropolitan Planning Organization
MRZ	Mineral Resource Zone
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSAP	Marine Safety and Anchoring Plan
MT	metric ton
MW	megawatt
MWCP	Marine Wildlife Contingency Plan
N	
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAS	non-native aquatic species
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCTD	North County Transit District
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO; NO _x	nitric oxide; nitrogen oxides
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O	
O ₃	ozone
OHP	Office of Historic Preservation (California)
OPA	Oil Pollution Act
OSCE	Open Space and Conservation Element
OSHA	Occupational Safety and Health Administration
OSPR	Office of Spill Prevention and Response
OSRP	Oil Spill Response Plan
OTC	once-through cooling
P	
Pb	lead
PCB	polychlorinated biphenyls
PERP	Portable Equipment Registration Program
PFMC	Pacific Fishery Management Council
PM	particulate matter
PM ₁₀	particulate matter less than 10 micrometers
PM _{2.5}	particulate matter less than 2.5 micrometers
POLB	Port of Long Beach
ppm	parts per million
PTS	permanent threshold shift
R	
RAQS	Regional Air Quality Strategy
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
rms	root mean squared
ROGs	reactive organic gases
Royal	Royal Environmental Services, Inc.

	RWQCB	Regional Water Quality Control Board
S	SANDAG	San Diego Association of Governments
	SB	Senate Bill
	SCB	Southern California Bight
	SCIC	South Coast Information Center
	SDCAPCD	San Diego County Air Pollution Control District
	SDDEH	County of San Diego Department of Environmental Health
	SDG&E	San Diego Gas and Electric
	SDNHM	San Diego Natural History Museum
	SE	State Endangered
	SEL	sound exposure level
	SEL _{cum}	cumulative sound exposure level
	SIP	State Implementation Plan
	SLIC	Spill, Leak, Investigation, and Cleanup Site
	SMARA	Surface Mining and Reclamation Act
	SO ₂	sulfur dioxide
	SO _x	sulfur oxides
	SOVCs	semi-volatile organic compounds
	SPL	sound pressure level
	SWPPP	Stormwater Pollution Prevention Plan
	SWRCB	State Water Resources Control Board
T	TPH	total petroleum hydrocarbon
	TSCA	Toxic Substances Control Act
	TTS	temporary threshold shift
U	U.S.	United States
	USACE	U.S. Army Corps of Engineers
	USC	United States Code
	USCG	U.S. Coast Guard
	USEPA	U.S. Environmental Protection Agency
	USFWS	U.S. Fish and Wildlife Service
V	VOCs	Volatile Organic Compounds
W	WL	Watch List
Z	Z	impedance

EXECUTIVE SUMMARY

1

2 This Mitigated Negative Declaration (MND) has been prepared by the California State
3 Lands Commission (CSLC), as lead agency under the California Environmental Quality
4 Act (CEQA) (Pub. Resources Code, § 21000 et seq.), to analyze and disclose the
5 environmental effects associated with the proposed Cabrillo Power I LLC Encina Marine
6 Oil Terminal Decommissioning Project (Project). The Project would authorize Cabrillo
7 Power I LLC (Applicant) to decommission the non-operational Encina Marine Oil
8 Terminal (MOT), a component of the Encina Power Station (EPS), in accordance with
9 the terms and conditions of the Applicant's existing CSLC Lease PRC 791.1.

10 The proposed Project is located in and offshore of the City of Carlsbad, San Diego
11 County. The tidelands and submerged lands under lease from the CSLC lie immediately
12 west and offshore of Carlsbad State Beach south of Agua Hedionda (Figure ES-1), and
13 encompass a mooring area and pipeline corridor (Figure ES-2). The offshore leased
14 lands are located within the area represented on the San Luis Rey, California, U.S.
15 Geological Survey 7.5-minute quadrangle map, Township 12S, Range 4W, San
16 Bernardino baseline and meridian.

17 The EPS, which is located at 4600 Carlsbad Boulevard, is fronted by Carlsbad
18 Boulevard and Carlsbad State Beach and houses the onshore termination of an
19 approximately 3,855-foot-long fuel oil submarine pipeline and a beach valve pit (the fuel
20 oil submarine pipeline is the only subsea pipeline at the EPS that will be
21 decommissioned as part of this Project; the subsea intake and discharge pipelines for
22 the EPS and adjacent Poseidon desalination plant are not part of this Project). From the
23 EPS, the pipeline crosses under Carlsbad Boulevard through an underpass conduit and
24 underpass end structure and below Carlsbad State Beach and a riprap groin to its
25 offshore termination in approximately 60 feet of water. An onshore and beach site map
26 is shown in Figure ES-3 (see also Figure A1-1 in Appendix A for a large-scale site map).

27 The CSLC prepared an MND because, while the Initial Study identified potentially
28 significant impacts related to the decommissioning of the MOT, after analysis of all the
29 facts and circumstances, CSLC staff believes that measures have been incorporated
30 into the Project proposal and agreed to by Cabrillo Power I LLC that avoid or mitigate
31 those impacts to a point where no significant impacts would occur.

32 PROPOSED PROJECT

33 The Project is primarily comprised of the 10 decommissioning elements listed below.
34 Onsite decommissioning activities are expected to occur over two construction seasons
35 and are currently scheduled to begin in September 2016 and end in January 2018.

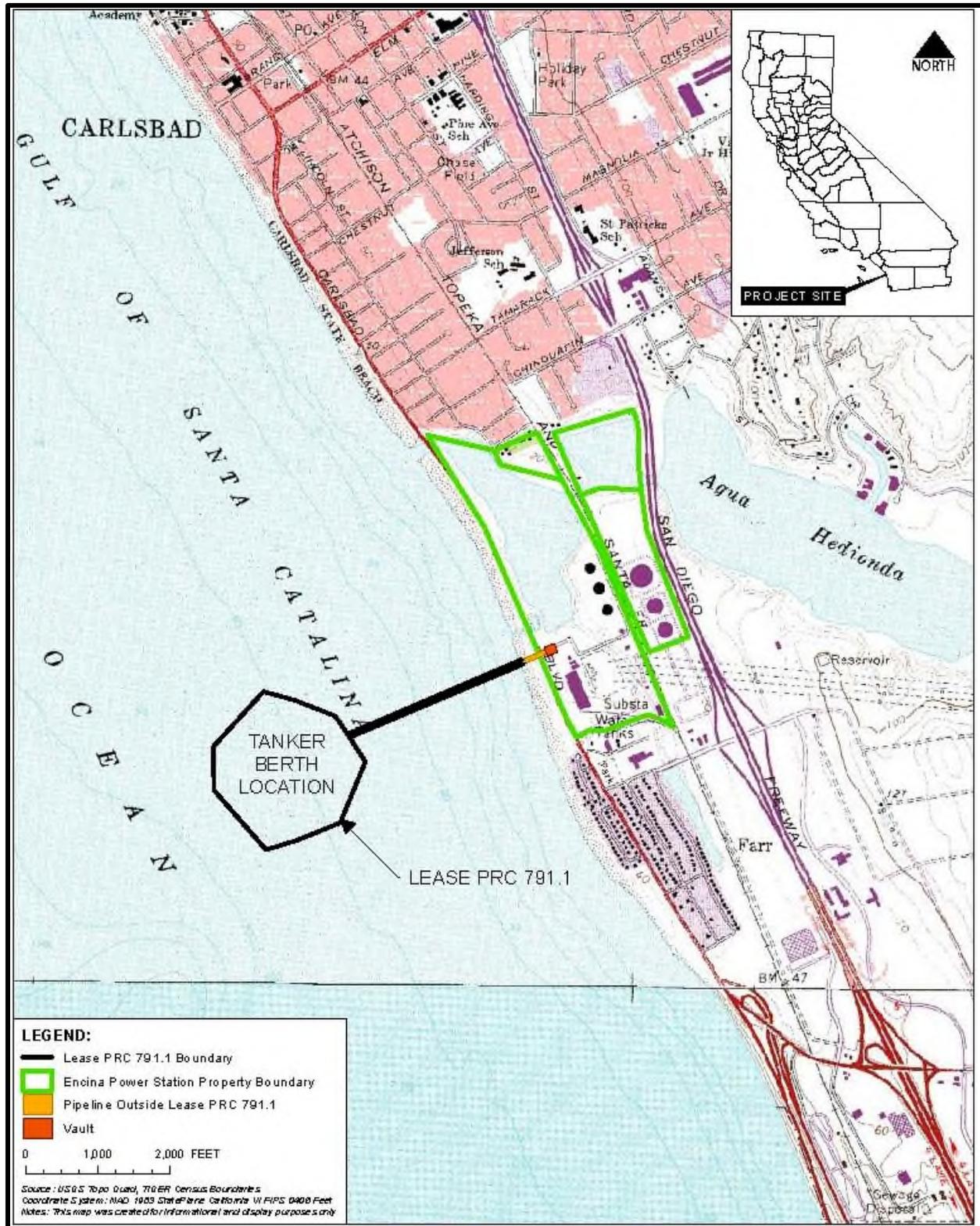


Figure ES-1. Project Site Location

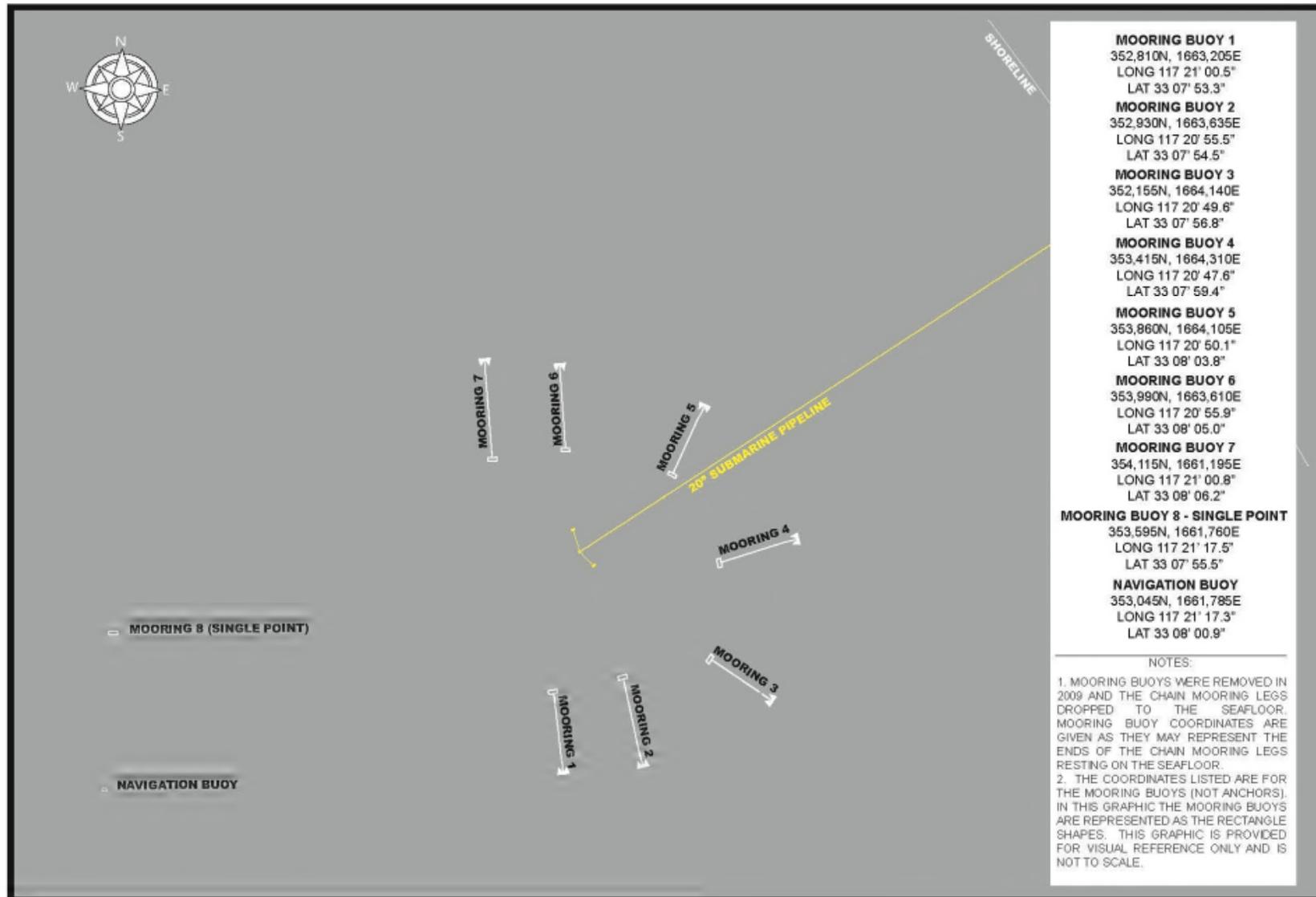


Figure ES-2. Mooring Area Detail



Figure ES-3. Onshore and Beach Site Map

- 1 1. Removal of the entire fuel oil submarine pipeline, two 14,000-pound Danforth
2 pipeline end anchors, and any remaining components of the pipeline termination
3 marker buoy;
- 4 2. Decommissioning of the beach valve pit and all associated electrical and piping
5 components;
- 6 3. Decommissioning of the underpass conduit;
- 7 4. Decommissioning of the underpass end structure;
- 8 5. Temporary removal of the riprap groin and restoration of the groin after the
9 underlying fuel oil submarine pipeline has been removed;
- 10 6. Restoration of the beach;
- 11 7. Removal of the remaining seven-point mooring system (chains and anchors);
- 12 8. Removal of the remaining single-point mooring (chain and anchor);
- 13 9. Removal of the remaining navigation buoy (chain and clump); and
- 14 10. Removal of all seafloor debris associated with the MOT operations.

15 For planning purposes, Project facilities are divided into four discrete segments of work
16 (onshore, beach, surf zone, and offshore segments) based on their location. The 3,855-
17 foot fuel oil submarine pipeline passes through all four segments, with each segment
18 requiring specific methods and equipment to perform the decommissioning work.

19 Onshore Segment

20 The onshore segment begins at the beach valve pit inside the EPS and extends
21 approximately 110 feet to the underpass end structure on the eastern edge of the
22 beach. Facilities located within this segment include a section of the fuel oil submarine
23 pipeline and fill line; the beach valve pit (including a reinforced concrete rectangular
24 vertical vault and horizontal shaft); the underpass conduit; the underpass end structure
25 (including a reinforced concrete rectangular vertical vault and horizontal shaft); all the
26 piping and electrical components; and appurtenances inside or attached to the outside
27 of these structures. Decommissioning work for this segment would be performed by
28 land-based crews and equipment and would include the following activities.

- 29 a) The entire fuel oil submarine pipeline would be removed from inside the beach
30 valve pit, the underpass conduit, and the underpass end structure. This section
31 of the pipeline would be extracted from the underpass through the beach valve
32 pit and into the existing EPS facility.
- 33 b) The fill line would be plugged with cement slurry. Once the cement slurry plug in
34 the fill line solidifies, the flanged end and pipe stub of the fill line (at the east wall

- 1 of the beach valve pit) would be removed and a permanent steel plate cap would
2 be welded on the cut end of the fill line.
- 3 c) At the beach valve pit, soil samples would be taken from underneath the floor. If
4 contaminated soil exceeding allowable limits is found, the floor of the beach valve
5 pit would be demolished and the underlying contaminated soil would be
6 remediated to comply with regulatory requirements. If the soil samples are not
7 contaminated, or if any contamination is less than allowable limits, the bottom
8 portion (5 feet below grade or deeper) of the beach valve pit would be left intact,
9 and the top portion (from the surface to 5 feet below grade) would be demolished
10 and broken down to 5 feet below existing contours or to the top of the horizontal
11 shaft of the beach valve pit, whichever is greater. The beach valve pit would then
12 be backfilled and compacted with native soil to existing grade.
- 13 d) The underpass conduit would be filled with a cement slurry plug and abandoned
14 in place.
- 15 e) The vertical vault portion of the underpass end structure would be excavated,
16 demolished, and removed in its entirety up to the transition point to the horizontal
17 shaft portion of the underpass end structure.
- 18 f) The horizontal shaft, wing walls, and a concrete footing of the underpass end
19 structure (located below the existing westerly sidewalk and westerly southbound
20 lane within the Carlsbad Boulevard right-of-way) would be abandoned in place.
- 21 g) The beach would be restored at the underpass end structure by backfilling the
22 excavation with native sand to current beach contours.
- 23 h) All recovered pipe, concrete, and steel debris would be disposed of or recycled
24 off-site.
- 25 i) All electrical and piping fixtures and appurtenances would be removed from
26 inside the beach valve pit, the underpass conduit, and the underpass end
27 structure, and abatement or removal of any contaminants including lead,
28 asbestos, and hydrocarbons that exceed allowable limits would be conducted.

29 Beach Segment

30 The beach segment begins at the west side of the underpass end structure and extends
31 approximately 220 feet into the intertidal zone near the mean low water line. Facilities
32 located within the beach segment include a section of the fuel oil submarine pipeline
33 and a riprap groin covering the pipeline. In order to excavate and remove the fuel oil
34 submarine pipeline, the riprap groin would need to be permanently or temporarily
35 removed. To determine potential near-field effects of removing the riprap groin (also
36 referred to as the South Beach Groin), Jenkins (2013) conducted a shoreline evolution
37 analysis (see Appendix L) to predict shoreline evolution over 20-year-long historic
38 periods of waves, tides, currents, and dredge disposal. The study showed that, although

1 removal would have no apparent short-term effect on shoreline change, long-term (10 to
2 20 years) cumulative impacts, generally erosional in nature, to the shoreline would
3 occur. Therefore, to retain the width of the existing shoreline, the riprap groin would be
4 restored to pre-Project contours following the removal of the fuel oil submarine pipeline.

5 Decommissioning work for this segment would be performed by land-based crews and
6 equipment, but limited to extreme low tide conditions when working in the intertidal
7 zone. Work in the beach segment would be accomplished as follows.

- 8 a) The riprap groin would be temporarily moved to expose the underlying fuel oil
9 submarine pipeline and stored on the beach during the pipeline removal process.
- 10 b) The fuel oil submarine pipeline would be removed in its entirety across the
11 beach. As the pipeline is excavated and exposed, it would be cut into sections
12 and trucked off-site, along with any associated debris, for disposal.
- 13 c) All excavations would be backfilled with native sand and the groin would be
14 restored to pre-project contours.

15 Surf Zone Segment

16 The surf zone segment begins at the approximate mean low water line and extends
17 approximately 750 feet offshore to the -15 foot bathymetric contour. Facilities located
18 within the surf zone segment include a section of the fuel oil submarine pipeline and
19 riprap groin. Excavation and removal of the submarine pipeline in the surf zone would
20 involve both land- and offshore-based crews and equipment. Land-based work would
21 be limited to extreme low tide conditions when working in the surf zone, and offshore-
22 based work would be limited by the shallowest depth (-15 foot bathymetric contour) at
23 which a barge or other floating support equipment can safely operate near the surf
24 zone. Work in the surf zone segment would be accomplished as follows.

- 25 • The riprap groin would be temporarily moved to expose the underlying fuel oil
26 submarine pipeline and stored on the beach during the pipeline removal process.
- 27 • The fuel oil submarine pipeline would be removed in its entirety. The pipeline
28 would be excavated and exposed from beneath the beach sand and riprap groin
29 and either removed using conventional, low-impact methods (Option 1) or
30 dynamic pipe ramming (Option 2). Both options are described in further detail in
31 Section 2.5.3.1. If either option is successful, this section of pipeline would be
32 pulled offshore and raised to the surface, cut into truckable sections to be
33 transported by barge to shore, and trucked to off-site disposal or recycling
34 facilities. If both options fail, the remaining segment would be abandoned in place
35 and the ends of the remaining pipeline would be opened to fill with sand.
- 36 • All required excavation would be backfilled with native sand and the groin would
37 be restored to pre-project contours.

1 Offshore Segment

2 The offshore segment begins at the backside of the surf zone (approximately -15 foot
3 bathymetric contour) and terminates approximately 2,525 feet offshore in approximately
4 60 feet of water. This segment includes the fuel oil submarine pipeline, remaining
5 mooring and navigation components, and all seafloor debris associated with the tanker
6 berth. Decommissioning work would be performed by offshore crews and equipment.
7 Work in the offshore segment would be accomplished as follows.

- 8 • The fuel oil submarine pipeline would be removed in its entirety. The pipeline
9 would be raised onto the deck of the derrick barge and cut it into sections (Option
10 1), or cut on the seafloor by divers and recovered (Option 2). Both options are
11 described in further detail in Section 2.5.4.2. In either case, this section of the
12 pipeline would be cut into truckable sections and transported by barge to shore to
13 be offloaded and trucked to off-site disposal or recycling facilities.
- 14 • The two 14,000-pound Danforth pipeline end anchors and mooring chains would
15 be recovered, transported off-site, and recycled at appropriate facilities.
- 16 • All remaining components of the tanker berth's seven-point mooring system,
17 single-point mooring, and pipeline marker and navigation buoys would be
18 completely removed, transported off-site, and recycled at appropriate facilities.
- 19 • All seafloor debris associated with the tanker berth and decommissioning
20 operations would be recovered and transported off-site for recycling or disposal.
21 Potential debris targets would be identified in the pre-decommissioning seafloor
22 debris survey and inspected by divers to determine their identity.

23 **EXISTING CONDITIONS**

24 The MOT is partially abandoned and was placed in "caretaker" status after
25 decommissioning/abandonment activities occurred in 2010. The 2010 decommissioning
26 activities and existing conditions are described below.

- 27 • The fuel oil submarine pipeline was pigged and flushed three times with potable
28 water to bring the hydrocarbon content of the water below non-detect limits. This
29 pipeline was then charged with a mixture of potable water and Nalco EC6106A
30 corrosion inhibitor to prevent internal corrosion of the pipeline. The pipeline has
31 since been under vacuum.
- 32 • The fuel oil cargo hose, hose buoy, and steel pipe reducer were removed when
33 the fuel oil submarine pipeline was pigged and flushed.
- 34 • Two 14,000-pound Danforth pipeline end anchors are located on either side of
35 the fuel oil submarine pipeline to anchor it in position and no decommissioning
36 work has been performed.

- 1 • Prior to 2010, the fuel oil submarine pipeline end marker buoy was lost. The
2 anchoring cable remains on the seafloor next to the end of the pipeline.
- 3 • The beach valve was removed from the onshore end of the fuel oil submarine
4 pipeline inside the beach valve pit, and the pipeline was blind flanged on both
5 ends and fitted with a flushing port. The bypass piping, which attaches the fuel oil
6 submarine pipeline to the fill line, remains intact and has also been blank flanged.
- 7 • The beach valve pit, underpass conduit, and underpass end structure remain
8 intact and in good condition and no decommissioning work has been performed.
- 9 • The riprap groin remains intact; no decommissioning work has been performed.
- 10 • The mooring buoys of the seven-point and single-point mooring systems were
11 removed, but the chains and anchors remain on the seafloor.
- 12 • The navigation buoy was removed, but its mooring chain and concrete clump
13 remain on the seafloor.

14 **ENVIRONMENTAL IMPACTS AND PROPOSED MITIGATION MEASURES**

15 The environmental factors checked below in Table ES-1 would be potentially affected
16 by this Project; a checked box indicates that at least one impact would be a “Potentially
17 Significant Impact” except that the Applicant has agreed to Project revisions, including
18 the implementation of mitigation measures (MMs), that reduce the impact to “Less than
19 Significant with Mitigation,” as detailed in Section 3 of this MND. Table ES-2 lists
20 proposed MMs designed to reduce or avoid potentially significant impacts. With
21 implementation of the proposed MMs, all Project-related impacts would be reduced to
22 less than significant.

Table ES-1. Environmental Issues and Potentially Significant Impacts

<input checked="" type="checkbox"/> Aesthetics	<input type="checkbox"/> Agriculture and Forest Resources	<input type="checkbox"/> Air Quality
<input checked="" type="checkbox"/> Biological Resources (Terrestrial and Marine)	<input checked="" type="checkbox"/> Cultural and Paleontological Resources	<input type="checkbox"/> Geology and Soils
<input type="checkbox"/> Greenhouse Gas Emissions	<input checked="" type="checkbox"/> Hazards and Hazardous Materials	<input checked="" type="checkbox"/> Hydrology and Water Quality
<input type="checkbox"/> Land Use and Planning	<input type="checkbox"/> Mineral Resources	<input checked="" type="checkbox"/> Noise
<input type="checkbox"/> Population and Housing	<input type="checkbox"/> Public Services	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Transportation/Traffic	<input type="checkbox"/> Utilities and Service Systems	
<input checked="" type="checkbox"/> Mandatory Findings of Significance		
<input type="checkbox"/> Other Major Areas of Concern: Commercial Fishing and Environmental Justice		

Table ES-2. Summary of Proposed Project Mitigation Measures

Aesthetics
MM AES-1: Project Scheduling
MM AES-2: Night-Lighting Spillage Minimization
Biological Resources
MM BIO-1: Marine Wildlife Contingency Plan (MWCP)
MM BIO-2: Dynamic Pipe Ramming (DPR) Soft -Start and Ramp-Up Procedure
MM BIO-3: Dynamic Pipe Ramming (DPR) Sound Source Characterization
MM BIO-4: Marine Wildlife Monitoring During Sound Source Characterization and Dynamic Pipe Ramming (DPR)
MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris Removal
MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP)
MM BIO-7: Oil Spill Response Plan (OSRP)
MM BIO-8: Flush Fuel Oil Submarine Pipeline
Cultural and Paleontological Resources
MM CUL-1: Cultural Resource Training
MM CUL-2: Archaeological and Tribal Cultural Resource Monitoring
MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal Cultural Resources are Discovered
MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan
MM CUL-5: Proper Disposition of Human Remains
Hazards and Hazardous Materials
MM HAZ-1: Use Certified Asbestos Abatement Contractor
MM HAZ-2: Use Licensed, Certified Lead-Based Paint (LBP) Contractor
MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA)
MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances
MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil
MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan Measures
Hydrology and Water Resources
MMs BIO-6, BIO-7, BIO-8, HAZ-3a, HAZ-3b, HAZ-4, and HAZ-5
Noise
MM NOI-1: Advanced Noticing
MM NOI-2: Shielding of Stationary Equipment
MM NOI-3: Advanced Notice to Swimmers and Divers
MM NOI-4: Observation and Removal of Divers and Swimmers from Waters in Project Area
Transportation/Traffic
MM TRA-1: Trucks Avoid Peak Hours
MM TRA-2: Carpooling
MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC) Plan
MM TRA-4: Protect Infrastructure Improvements
MM TRA-5: Local Notice to Mariners

1.0 PROJECT AND AGENCY INFORMATION

1.1 PROJECT TITLE

Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project)

1.2 LEAD AGENCY AND PROJECT SPONSOR

California State Lands Commission (CSLC)

100 Howe Avenue, Suite 100-South

Sacramento, CA 95825

Contact person:

Kelly Keen, Environmental Scientist

Division of Environmental Planning and Management

Kelly.Keen@slc.ca.gov

(916) 574-1938

Applicant:

Cabrillo Power I LLC

4600 Carlsbad Boulevard

Carlsbad, CA 92008

Contact person:

Jerry Carter, Plant Manager

NRG Cabrillo Power Operations

Jerry.Carter@nrgenergy.com

(760) 268-4011

1.3 PROJECT LOCATION

The proposed Project is located in and offshore of the City of Carlsbad, San Diego County. The Project would authorize Cabrillo Power I LLC (Applicant) to decommission the non-operational Encina Marine Oil Terminal (MOT), a component of the Encina Power Station (EPS), in accordance with the terms and conditions of the Applicant's existing CSLC Lease PRC 791.1. The tidelands and submerged lands under lease from the CSLC lie immediately west and offshore of Carlsbad State Beach south of Agua Hedionda (Figure 1-1), and encompass a mooring area and a pipeline corridor (Figure 1-2; see also Figure A1-1 in Appendix A and Figure ES-3). The offshore lease lands are located within the area represented on the San Luis Rey, California, U.S. Geological Survey 7.5-minute quadrangle map, Township 12 South, Range 4 West, San Bernardino baseline and meridian. The EPS, which was built in 1953, is located at 4600 Carlsbad Boulevard and is fronted by Carlsbad Boulevard and Carlsbad State Beach (Figure 1-3).

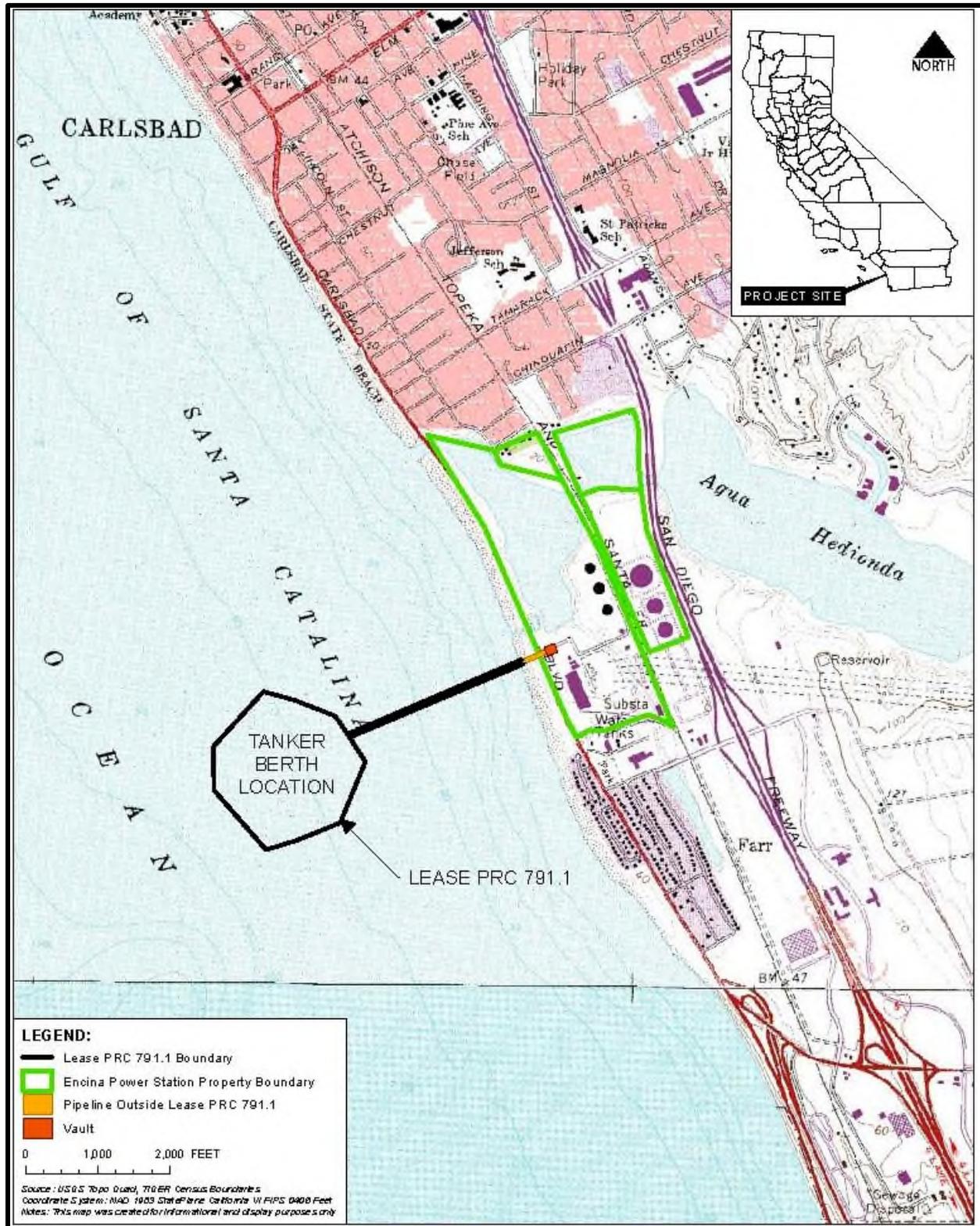


Figure 1-1. Project Site Location

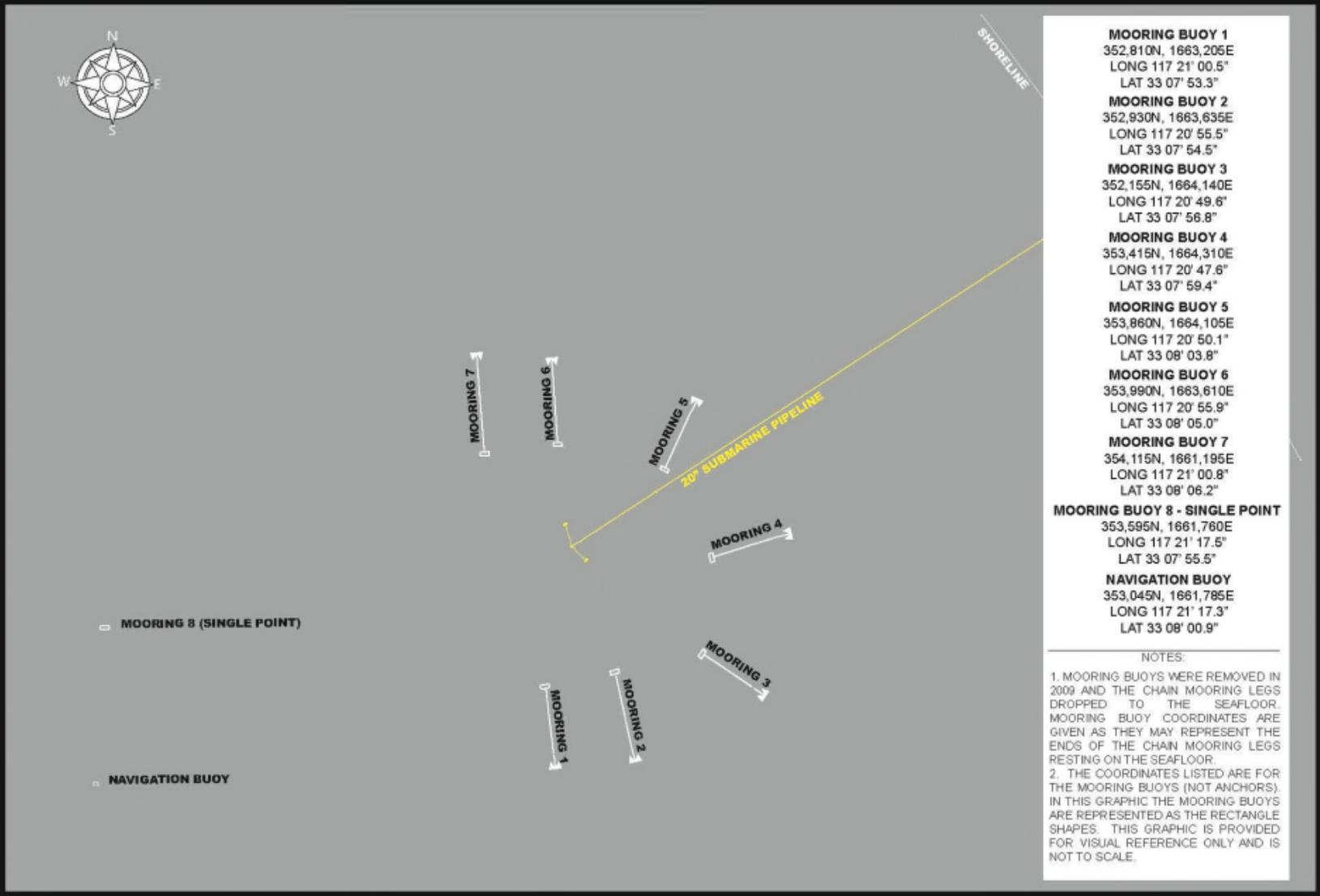


Figure 1-2. Mooring Area Detail

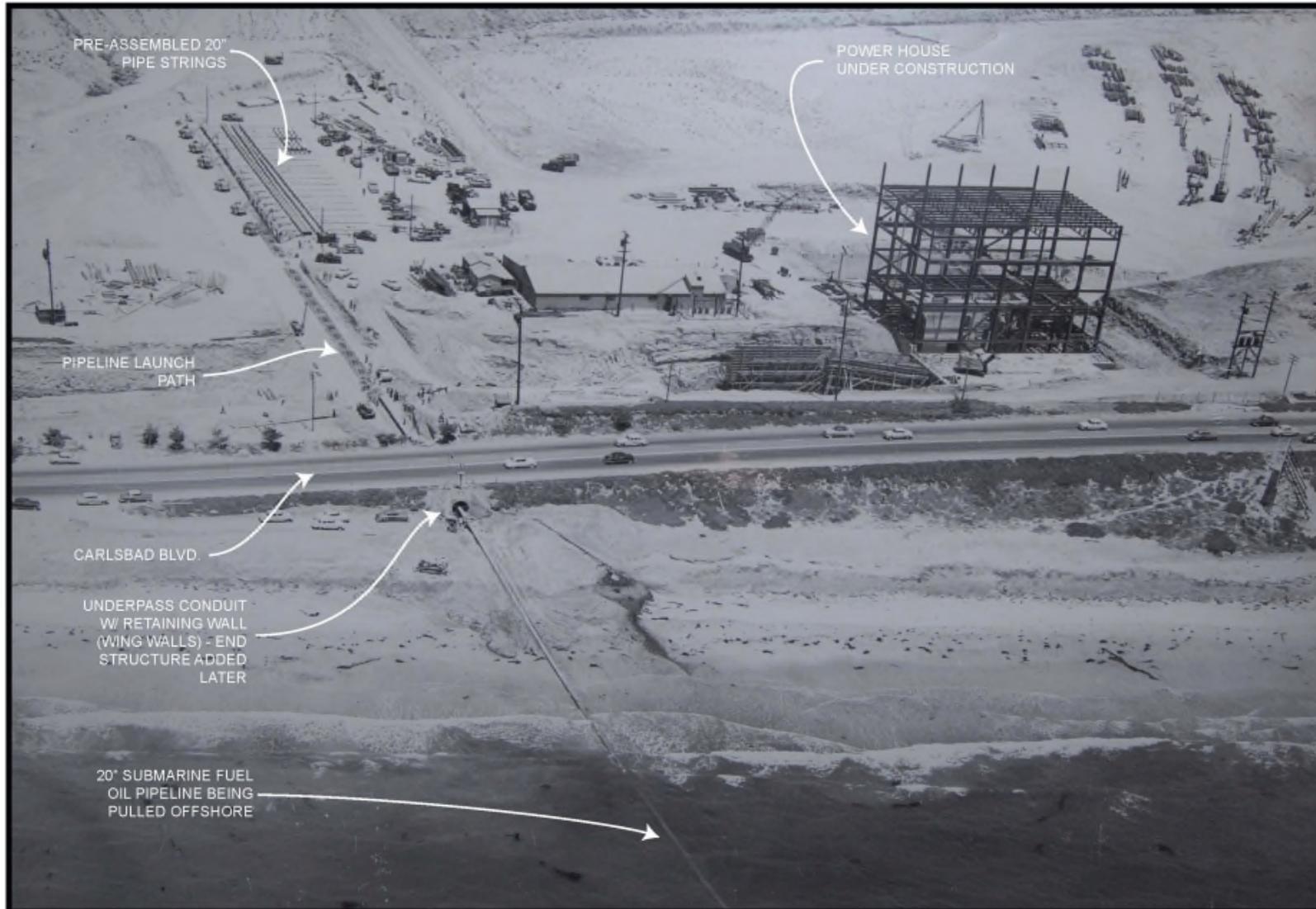


Figure 1-3. Original Construction Photograph

1 The EPS houses the onshore termination of an approximately 3,855-foot-long fuel oil
2 submarine pipeline¹ and a beach valve pit. From the EPS, this pipeline crosses under
3 Carlsbad Boulevard through an underpass conduit and underpass end structure and
4 below Carlsbad State Beach and a riprap groin to its offshore termination in
5 approximately 60 feet of water.

6 **1.4 ORGANIZATION OF MITIGATED NEGATIVE DECLARATION**

7 This Mitigated Negative Declaration (MND) is intended to provide the CSLC, as lead
8 agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code,
9 § 21000 et seq.), and other responsible agencies with the information required to
10 exercise their discretionary responsibilities with respect to the proposed Project. The
11 document is organized as follows.

- 12 • **Section 1** provides the Project background, Agency and Applicant information,
13 Project Objectives and anticipated agency approvals, and a summary of the
14 public review and comment process.
- 15 • **Section 2** describes the proposed Project including its location, layout,
16 equipment, and facilities. Section 2 also provides an overview of the Project's
17 operations and schedule.
- 18 • **Section 3** provides the Initial Study (IS), including the environmental setting,
19 identification and analysis of potential impacts, and discussion of various Project
20 changes and other measures that, if incorporated into the Project, would mitigate
21 or avoid those impacts, such that no significant effect on the environment would
22 occur. The IS was conducted by the CSLC pursuant to section 15063 of the
23 State CEQA Guidelines.²
- 24 • **Section 4** includes an environmental justice analysis and discussion consistent
25 with CSLC Policy.
- 26 • **Section 5** presents the Mitigation Monitoring Program (MMP).
- 27 • **Section 6** presents information on report preparation and references.
- 28 • **Appendices.** The appendices include specifications, technical data, and other
29 information supporting the analysis presented in this MND.
 - 30 ○ **Appendix A:** Project Description Support Exhibits
 - 31 ○ **Appendix B:** Nalco EC6106A Material Safety Data Sheet

¹ The fuel oil submarine pipeline is the only subsea pipeline at the EPS that will be decommissioned as part of this Project. The subsea intake and discharge pipelines for the EPS and adjacent Poseidon desalination plant are not part of this Project.

² The State "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

- 1 ○ **Appendix C:** Drawing AA 62302-B Underpass at Coordinate 7+00 and State
- 2 Highway
- 3 ○ **Appendix D:** Letter Report Regarding Pre-Demolition Asbestos and Lead
- 4 Paint Survey Encina Power Station Marine Terminal, Carlsbad, California.
- 5 Prepared by Royal Environmental Services Inc.
- 6 ○ **Appendix E:** Marine Safety and Anchoring Plan
- 7 ○ **Appendix F:** Marine Wildlife Contingency Plan
- 8 ○ **Appendix G:** Oil Spill Response Plan
- 9 ○ **Appendix H:** Air Quality and Greenhouse Gases Spreadsheets
- 10 ○ **Appendix I:** Encina Power Station Marine Biological Resources Survey to
- 11 Support the Project to Abandon or Remove the Marine Oil Terminal Facilities,
- 12 Prepared by Merkel & Associates
- 13 ○ **Appendix J:** Underwater Noise Impacts of Encina Power Station's Marine Oil
- 14 Terminal Decommissioning, Carlsbad, California 2015. Prepared by
- 15 Greeneridge Sciences, Inc. (Report 518-1)
- 16 ○ **Appendix K:** Cultural Resources Support Material
- 17 ○ **Appendix L:** Technical Memorandum: Shoreline Evolution Analysis of
- 18 Impacts Related to Removal of the South Beach Groin at Encina Power
- 19 Station, Carlsbad, CA. Prepared by Scott A. Jenkins, PhD (February 2013)
- 20 ○ **Appendix M:** Noise Support Information
- 21 ○ **Appendix N:** Comments on the Draft Mitigated Negative Declaration

22 **1.5 PROJECT BACKGROUND AND OBJECTIVES**

23 Use of State tidelands for the Encina MOT mooring facilities and fuel oil submarine
24 pipeline is authorized under CSLC Lease PRC 791.1. This site was originally leased to
25 San Diego Gas and Electric (SDG&E) in 1953 for 49 years. In that same year, the EPS
26 and offshore MOT were built. The EPS was originally constructed as an oil burning,
27 steam generating, electric power generation plant, with the MOT designed to transfer
28 bunker fuel oil between ocean vessels and shore-side storage facilities; however, in the
29 1980s, the power plant was converted to use natural gas as a fuel source, while the
30 MOT was retained to provide an alternative fuel source as required by the California
31 Independent System Operator. This requirement is no longer in place (effective January
32 1, 2009), and the need to maintain the MOT has ceased.

33 In 1999, Cabrillo Power I LLC acquired the EPS and MOT from SDG&E. The original
34 lease expired on March 23, 2002, but was continued in holdover status while an
35 Environmental Impact Report for a companion project was being prepared for the
36 extension of two rock groins protecting the entrance to Agua Hedionda Lagoon. That
37 project was ultimately abandoned, thus requiring the negotiation of a replacement lease

1 for the MOT to allow time to prepare a formal plan for removal or abandonment as an
2 independent project.

3 During the holdover period, the offshore MOT was placed into “caretaker” status after
4 decommissioning/abandonment activities occurred in 2010. On February 8, 2011, the
5 CSLC retroactively approved a 10-year lease that expired on March 23, 2012. Formal
6 abandonment planning lead to the issuance of a 3-year General Lease-Industrial Use to
7 Cabrillo Power I LLC beginning March 24, 2012, for the continued maintenance of
8 portions of the partially abandoned MOT. The current lease expired on March 23, 2015;
9 however, an application to extend the lease another 5 years is pending CSLC approval.

10 The 2010 decommissioning activities and existing conditions are described below.

- 11 • The fuel oil submarine pipeline was pigged and flushed three times with potable
12 water to bring the hydrocarbon content of the water below non-detect limits. This
13 pipeline was then charged with a mixture of potable water and Nalco EC6106A
14 corrosion inhibitor to prevent internal corrosion of the pipeline. The pipeline has
15 since been under vacuum.
- 16 • The fuel oil cargo hose, hose buoy, and steel pipe reducer were removed when
17 the fuel oil submarine pipeline was pigged and flushed.
- 18 • Two 14,000-pound Danforth pipeline end anchors, which were not
19 decommissioned in 2010, are located on either side of the fuel oil submarine
20 pipeline to anchor it in position.
- 21 • Prior to 2010, the fuel oil submarine pipeline end marker buoy broke loose and
22 was lost. The buoy anchoring cable remains on the seafloor next to the end of
23 the fuel oil submarine pipeline.
- 24 • The beach valve was removed from the onshore termination of the fuel oil
25 submarine pipeline inside the beach valve pit. This pipeline was blind flanged on
26 both ends and fitted with a flushing port. The bypass piping, which attaches the
27 fuel oil submarine pipeline to the fill line, remains intact and has also been blank
28 flanged.
- 29 • The beach valve pit, underpass conduit, underpass end structure, and riprap
30 groin remain intact (no decommissioning work was performed).
- 31 • The mooring buoys of the seven-point and single-point mooring systems were
32 removed, but the chains and anchors remain on the seafloor.
- 33 • The navigation buoy was removed, but its mooring chain and concrete clump
34 remain on the seafloor.

1 The Project objective is to decommission the MOT components in a manner that
2 satisfies the terms of CSLC Lease PRC 791.1 and other public agencies with
3 jurisdictional authority over Project elements.

4 **1.6 PUBLIC REVIEW AND COMMENT**

5 In accordance with State CEQA Guidelines sections 15072 and 15073, the CSLC is
6 releasing this MND for a minimum 30-day public review period to provide local and
7 State agencies and the public the opportunity to review and comment on the document.
8 In accordance with State CEQA Guidelines section 15074, subdivision (b), the CSLC
9 will review and consider the MND, together with any comments received during the
10 public review process and any modifications made in response to comments, prior to
11 taking action on the MND and Project.

12 **1.7 APPROVALS AND REGULATORY REQUIREMENTS**

13 The CSLC's authority is set forth in Division 6 of the California Public Resources Code
14 and it is regulated by the California Code of Regulations, Title 2, sections 1900–2970.
15 The CSLC has authority to issue leases or permits for the use of sovereign lands held in
16 the public trust, including all ungranted tidelands, submerged lands, and the beds of
17 navigable lakes and waterways, as well as certain residual and review authority for
18 tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub.
19 Resources Code, §§ 6301, 6306). All tidelands and submerged lands, granted or
20 ungranted, as well as navigable lakes and waterways, are subject to the protections of
21 the Common Law Public Trust. As general background, the State of California acquired
22 sovereign ownership of all tidelands and submerged lands and beds of navigable lakes
23 and waterways upon its admission to the United States in 1850. The State holds these
24 lands for the benefit of all people of the State for statewide Public Trust purposes, which
25 include but are not limited to waterborne commerce, navigation, fisheries, water-related
26 recreation, habitat preservation and open space. On tidal waterways, the State's
27 sovereign fee ownership extends landward to the mean high tide line, except for areas
28 of fill or artificial accretion. For the proposed Project, the CSLC has received an
29 application for decommissioning of the Encina MOT in accordance with the
30 requirements of Lease PRC 791.1 and termination of the lease.

31 The CSLC must comply with CEQA when it undertakes an activity defined by CEQA as
32 a "project" that must receive some discretionary approval (i.e., the CSLC has the
33 authority to deny the requested lease, permit, or other approval) which may cause either
34 a direct physical change in the environment or a reasonably foreseeable indirect change
35 in the environment. CEQA requires the CSLC to identify the significant environmental
36 impacts of its actions and to avoid or mitigate those impacts, if feasible.

- 1 In addition to the CSLC, the Project is subject to the review and approval of other
- 2 Federal, State and local entities with statutory and/or regulatory jurisdiction over various
- 3 aspects of the Project (see Table 1-1).

Table 1-1. Agencies with Review/Approval over Project Activities

Permitting Agency		Anticipated Approvals/Regulatory Requirements
Local	City of Carlsbad	Demolition Permit Grading Permit Roadway Encroachment Permit Development Permit (if necessary) Haul Route Permit (if necessary) Stormwater Pollution Prevention Plan (SWPPP) Permit
	County of San Diego Department of Environmental Health (SDDEH) - Voluntary Assistance Program	California Health and Safety Code sections 101480-101490 authorize the SDDEH to enter into voluntary agreements for the oversight of remedial action at sites contaminated by wastes
	San Diego County Air Pollution Control District (APCD)	Rules compliance
State	California State Lands Commission (CSLC)	Lease Offshore Geophysical Survey Permit
	California Coastal Commission (CCC)	Coastal Development Permit
	California Department of Fish and Wildlife (CDFW)	California Fish and Game Code California Endangered Species Act
	California Department of Parks and Recreation (State Parks)	Public Resources Code sections 5001-5019.5 Right-of-Entry Permit
	Native American Heritage Commission (NAHC)	Tribal Consultation (see Appendix K)
	San Diego Regional Water Quality Control Board (San Diego RWQCB)	CWA Section 401 Water Quality Certification
Federal	U.S. Army Corps of Engineers (USACE)	Clean Water Act Section 404 (under Nationwide Permit No. 12)
	U.S. Fish and Wildlife Service (USFWS)	Section 7 Consultation under Federal Endangered Species Act (if necessary)
	National Marine Fisheries Service (NMFS)	Title 33 Code of Federal Regulations - Navigation and Navigable Waters Navigation consultation Notice to Mariners
	U.S. Coast Guard (USCG)	

- 4 Because Project components are proposed in the coastal zone within the jurisdiction of
- 5 the California Coastal Commission, Table 1-2 identifies coastal-related Federal and
- 6 State laws and programs that are relevant to the Project; specific policies are listed in
- 7 Section 3, Environmental Analysis and Checklist, of this MND for each environmental
- 8 issue area.

Table 1-2. Major Coastal Laws, Regulations, and Policies

U.S.	Coastal Zone Management Act (CZMA) (42 USC 4321 et seq.)	The CZMA recognizes a national interest in coastal zone resources and in the importance of balancing competing uses of those resources, giving full consideration to aesthetic, cultural and historic, ecological, recreational, and other values as well as the needs for compatible economic development. Pursuant to the CZMA, coastal states develop and implement comprehensive coastal management programs (CMPs) that describe uses subject to the CMP, authorities and enforceable policies, and coastal zone boundaries, among other elements. The CZMA also gives state coastal management agencies regulatory control (“federal consistency” review authority) over federal activities and federally licensed, permitted or assisted activities, if the activity affects coastal resources; such activities include military projects at coastal locations and outer continental shelf oil and gas leasing, exploration and development. The CCC and San Francisco Bay Conservation and Development Commission coordinate California’s federally approved CMPs and federal consistency reviews within their respective jurisdictions.
CA	California Coastal Act (Coastal Act) of 1976 (Pub. Resources Code, §§ 30000 et seq.) CCC Federal Consistency Program/ California Coastal Management Program	Pursuant to the Coastal Act, the CCC, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. The Coastal Act includes specific policies (see Chapter 3) that address issues such as shoreline public access and recreation, lower cost visitor accommodations, terrestrial and marine habitat protection, visual resources, landform alteration, agricultural lands, commercial fisheries, industrial uses, water quality, offshore oil and gas development, transportation, development design, power plants, ports, and public works. Development activities in the coastal zone generally require a coastal permit from either the CCC or the local government: (1) the CCC retains jurisdiction over the immediate shoreline areas below the mean high tide line and offshore areas to the 3 nautical mile State water limit; and (2) following certification of county- and municipality-developed Local Coastal Programs, the CCC has delegated permit authority to many local governments for the portions of their jurisdictions within the coastal zone. The CCC also implements the CZMA as it applies to federal activities (e.g., development projects, permits, and licenses) in the coastal zone by reviewing specified federal actions for consistency with the enforceable policies of Chapter 3 of the Coastal Act.

2.0 PROJECT DESCRIPTION

2.1 NEED FOR PROJECT

The proposed Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project) is needed to decommission the Marine Oil Terminal (MOT) components in a manner that satisfies the terms of California State Lands Commission (CSLC) Lease PRC 791.1 and other public agencies with jurisdictional authority over Project elements.

2.2 PROJECT LOCATION

The proposed Project is located in and offshore of the City of Carlsbad, San Diego County. The property under lease from the CSLC includes parcels of tidelands and submerged lands lying immediately west and offshore of Carlsbad State Beach south of Agua Hedionda. The leased land encompasses a mooring area and a pipeline corridor. (See Section 1.3, Project Location, and Figure A1-1 in Appendix A.)

2.3 ENCINA MOT COMPONENTS AND THEIR EXISTING DISPOSITION

2.3.1 Fuel Oil Submarine Pipeline

The fuel oil submarine pipeline extends approximately 3,855 feet³ from an onshore beach valve pit at the Encina Power Station (EPS), underneath Carlsbad Boulevard and Carlsbad State Beach, to its termination in approximately 60 feet water depth. It is comprised of a 20-inch-diameter by 0.5-inch wall welded steel pipe with a 2-inch external somastic and cement weight coating, and it terminates in a 300-pound, 20-inch-diameter flange. The pipeline is anchored on the seafloor with two 14,000-pound Danforth anchors that lie on either side of the line and are connected to the pipeline's steel collar with 90-foot-long anchor chains (see Figure A2-1 in Appendix A). A plastic spar buoy, which served as the pipeline end marker buoy, was anchored to the seafloor with a steel cable attached to a small concrete clump.

In 2010, during initial EPS MOT decommissioning activities, a steel pipe reducer and a fuel oil cargo hose that were located at the offshore end of the fuel oil submarine pipeline were removed. The anchoring cable for the end marker buoy, which had broken loose and was lost prior to 2010, was found on the seafloor near the end of pipeline. The pipeline was pigged and flushed three times with potable water from its offshore termination to its onshore termination to bring the hydrocarbon level below 15 parts per

³ An approximately 500-foot extension was added to the offshore end of the pipeline in about 1973, and a steel collar was later placed around the pipeline near its offshore termination (due to a change in MOT ownership, some facility records are unavailable, and dates of certain activities are inferred from available documents).

1 million (ppm) (see Section 2.4.2.7). The flush water was sampled during each of the
2 three pigging events and tested for hydrocarbon content; the final sample was tested
3 and found to be at non-detect levels. The fuel oil submarine pipeline was then filled with
4 1,450 barrels (approximately 60,900 gallons) of potable water and 385 gallons of Nalco
5 EC6106A corrosion inhibitor (for a total of approximately 61,285 gallons) containing a
6 biocide ingredient approved by the CSLC (see Appendix B, Nalco EC6106A Material
7 Safety Data Sheet). The pipeline was capped with a blind flange with a fitted flushing
8 port and has since been under vacuum with no signs of leakage.

9 **2.3.2 Beach Valve Pit**

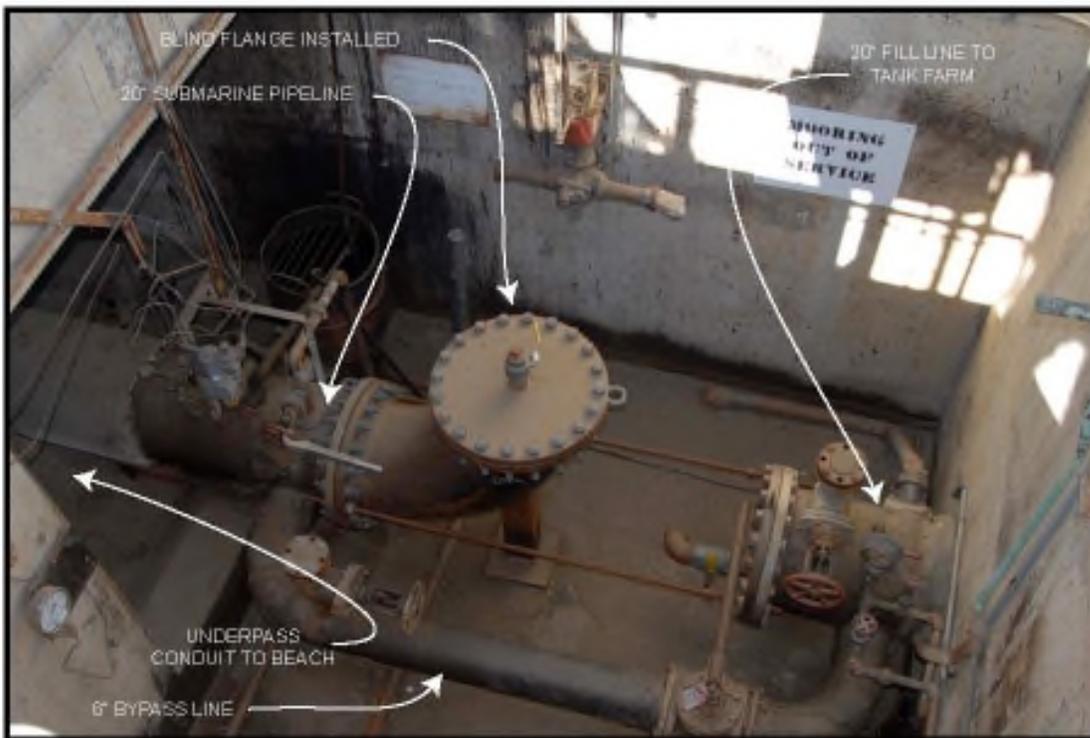
10 The beach valve pit is located inside the EPS facility alongside Carlsbad Boulevard.
11 This reinforced concrete structure consists of a rectangular vault, a buried rectangular
12 horizontal shaft, and miscellaneous pipes and electrical appurtenances (see Figure
13 2-1). The outside measurements of the rectangular vault are approximately 14 feet long,
14 12 feet wide, and 15 feet deep, including a sump. The beach valve pit is secured with a
15 hand railing around the rim of the pit and is accessible via a welded steel ladder
16 attached to the pit wall. Additionally, an awning is elevated over the beach valve pit. The
17 rectangular horizontal shaft is a homogeneous part of the vault that extends in a
18 west/southwest direction underneath the sidewalk and terminates underneath Carlsbad
19 Boulevard where it connects to a reinforced concrete pipe underpass. The horizontal
20 shaft portion of the beach valve pit is approximately 17 feet long from the westerly wall
21 of the vault and is approximately 10 feet high by 10 feet wide (outside dimensions).

22 The beach valve pit houses the onshore termination of the fuel oil submarine pipeline,
23 which was connected to (and could be isolated from) the fill line (to the tank farm) via a
24 beach valve, but now terminates in a flanged connection (90-degree elbow) with a
25 2-inch-diameter sampling port fitted into the blind flange (see bottom photograph in
26 Figure 2-1).

27 A 6-inch-diameter bypass pipe taps into the side of the fuel oil submarine pipeline
28 termination and connects to the side of the fuel oil fill line to the tank farm. The fill line is
29 comprised of 20-inch-diameter by 0.31-inch-thick wall, ASTM A-155 Grade B carbon
30 steel pipe, with an external corrosion coating. The fill line extends approximately
31 18 inches through the east wall of the beach valve pit and continues approximately
32 380 feet underground to a second valve pit where it passes through a valve and
33 continues beyond that point to the tank farm. The distance from the fill line's point of
34 origin in the beach valve pit to the end of the tank farm is approximately 1,650 feet. The
35 beach valve pit remains intact and in good condition, and no decommissioning work has
36 been performed on this structure.



BEACH VALVE PIT EXTERIOR



BEACH VALVE PIT INTERIOR

Figure 2-1. Beach Valve Pit Photographs

1 **2.3.3 Underpass Conduit**

2 The underpass conduit is a reinforced concrete pipe that contains the fuel oil submarine
3 pipeline. Buried approximately 2 to 3 feet underneath Carlsbad Boulevard (see
4 Appendix C), the 8-foot-diameter underpass conduit measures approximately 73 feet in
5 length, socket to socket, and is supported on the east and west end with concrete
6 footings. The shoreward termination of the underpass conduit begins at its socketed
7 connection to the horizontal shaft of the beach valve pit located underneath the east
8 side of Carlsbad Boulevard. The underpass conduit extends underneath Carlsbad
9 Boulevard and ties into the horizontal shaft of the underpass end structure (see Section
10 2.3.4, below) buried underneath the beach adjacent to the west of Carlsbad Boulevard.

11 At the westerly (seaward) end of the underpass conduit, where it connects to the
12 horizontal shaft of the underpass end structure, reinforced concrete retaining wing walls
13 were constructed. The wing walls extend approximately 10 feet in length at
14 approximately 30-degree angles off the underpass centerline to the northwest and
15 southwest of the underpass end structure. The wing walls were originally constructed to
16 be approximately 5 feet above the top of the underpass conduit; however, the wing
17 walls were cut and lowered to accommodate the widening of Carlsbad Boulevard and
18 the existing sidewalk (see Figure A1-2 in Appendix A). As a result, the wing walls are
19 not visible and their present status cannot be confirmed at this time.

20 Inside the underpass conduit, the fuel oil submarine pipeline is bedded on a layer of
21 sand (approximately 1 foot in depth) placed on the inside floor of the underpass conduit.
22 According to a hazardous materials survey performed by Royal Environmental Services,
23 Inc. and reported on February 12, 2013 (see Appendix D), the sand inside the
24 underpass near the beach valve pit was tested and found to contain total hydrocarbons
25 at levels ranging from 1,300 milligrams/kilogram (mg/kg) to 35,000 mg/kg.

26 The underpass conduit remains intact and in good condition, and no decommissioning
27 work has been performed on this structure.

28 **2.3.4 Underpass End Structure**

29 The underpass end structure consists of a reinforced concrete vertical vault and
30 horizontal shaft that connects to the west end of the underpass conduit (see Figure 2-2
31 and Appendix C). The fuel oil submarine pipeline exits the underpass conduit and end
32 structure through a port and is currently buried underneath the beach.

33 The horizontal shaft and vertical vault of the underpass end structure are
34 homogeneous. The horizontal shaft is approximately 10 square feet and 10 feet deep
35 (outside dimensions), and is connected to the underpass conduit via a formed socket
36 filled with hot-poured para-plastic.



Photograph of original construction in 1953. The termination of the underpass pipe conduit (8' dia) and retaining wall (wing walls) can be seen. The underpass end structure is shown under construction. The retaining wall is now located underneath the #2 southbound lane of Carlsbad Blvd. The end structure, when constructed, extended another 16'-7-1/4" toward the beach.



Photograph of end structure taken January 2013. The round vent and manhole access port of the underpass end structure are all that is visible of above the beach sand. Approximately 10' of the end structure's 16'-7-1/4" length is located underneath Carlsbad Blvd. and the sidewalk shown in this photograph.

Figure 2-2. Underpass End Structure Photographs

1 The vertical vault is approximately 15.5 feet high, 10 feet wide, and 6.5 feet deep
2 (outside dimensions). The top of the vertical vault contains a 30-square-inch manhole
3 and a vent pipe that is approximately 18 inches in diameter and 7 feet high. The floor of
4 the vertical vault consists of a gravel-filled sump or drain that is open to the beach on
5 the bottom of the structure (beneath the gravel fill).

6 Compared to as-built plans, it appears that Carlsbad Boulevard was widened after the
7 underpass end structure was constructed in 1954. As a result, the horizontal shaft
8 appears to be covered by the existing sidewalk on the west side of Carlsbad Boulevard,
9 while the vertical vault's manhole and vent pipe are exposed at the edge of the sidewalk
10 on the beach. The end structure remains intact and in good condition, and no
11 decommissioning work has been performed on this structure.

12 **2.3.5 Riprap Groin**

13 A riprap groin protects the fuel oil submarine pipeline on the beach and in the surf zone.
14 At its widest visible point, the groin measures approximately 55 feet and extends
15 approximately 160 feet into the surf zone from the high water line; however, the actual
16 width and length of the groin is unknown because much of it is buried beneath sand.
17 Based on the as-built drawing of the underpass end structure, it is possible that the
18 groin extends approximately 250 feet below the existing beach to the wing walls of the
19 underpass end structure (see Appendix C). The depth of the fuel oil submarine pipeline
20 underneath the groin is unknown. The riprap groin remains intact and in good condition,
21 and no decommissioning work has been performed on this structure.

22 **2.3.6 Seven-Point Mooring System**

23 A seven-point mooring system was used to moor ships or barges offloading fuel oil into
24 the MOT's submarine pipeline. Each leg of this system consisted of: a single 30,000
25 pound (105 ton) Baldt Light Weight Type anchor; four to six shots (360 feet to 540 feet)
26 of 2.75-inch to 3-inch anchor chain weighing approximately 119.8 tons; and one
27 horizontal cylindrical painted steel mooring buoy (see Figure A2-2 in Appendix A). In
28 operation, mooring wires from a tanker or barge were connected to the top of each
29 mooring buoy and tensioned by the tanker's or barge's mooring winches to center the
30 vessel near the end of the fuel oil submarine pipeline. The mooring buoy was removed
31 during the EPS MOT 2010 decommissioning, but the anchors and chains of the seven-
32 point mooring system remain on the seafloor at depths ranging from 42 feet to 78 feet.

33 **2.3.7 Single-Point Mooring System**

34 A single-point mooring was placed offshore of the tanker berth mooring for use by an
35 attending tugboat. This single-point mooring consisted of: a single 14,000-pound Navy
36 stockless anchor; approximately 450 feet of 2.75- to 3.25-inch anchor chain; and a

1 single horizontal cylindrical painted steel mooring buoy (West Coast can type). The
2 mooring buoy for this single-point mooring was removed during the EPS MOT 2010
3 decommissioning, but the chain and anchor remain on the seafloor.

4 **2.3.8 Navigation Buoy**

5 A lighted navigation buoy fitted with a bell was used to mark the offshore entrance of the
6 MOT. Located approximately 1,800 feet offshore of the fuel oil submarine pipeline
7 termination, in approximately 110 feet of water, the buoy was anchored to the seafloor
8 by a 1.5- to 2.75-inch-diameter anchor chain attached to a 64-cubic-foot concrete clump
9 on the seafloor. The navigation buoy was removed during the EPS MOT 2010
10 decommissioning, but the anchor chain and concrete clump remain on the seafloor.

11 **2.4 PROJECT OVERVIEW**

12 **2.4.1 Project Elements**

13 The Project described herein is comprised of the following decommissioning elements:

- 14 1. Removal of the entire fuel oil submarine pipeline including the two 14,000-pound
15 Danforth pipeline end anchors and any remaining components of the pipeline
16 termination marker buoy;
- 17 2. Decommissioning of the beach valve pit and all associated electrical and piping
18 components;
- 19 3. Decommissioning of the underpass conduit;
- 20 4. Decommissioning of the underpass end structure;
- 21 5. Temporary removal of the riprap groin and restoration of the groin after the
22 underlying fuel oil submarine pipeline has been removed;
- 23 6. Restoration of the beach;
- 24 7. Removal of the remaining seven-point mooring system (chains and anchors);
- 25 8. Removal of the remaining single-point mooring (chain and anchor);
- 26 9. Removal of the remaining navigation buoy (chain and clump); and
- 27 10. Removal of all seafloor debris associated with the MOT operations.

28 **2.4.2 Pre- and Post-Decommissioning Deliverables and Activities**

29 Certain activities and deliverables would be performed or provided prior to or after the
30 completion of decommissioning operations. These activities and deliverables are listed
31 and described below.

1 2.4.2.1 Marine Safety and Anchoring Plan

2 A preliminary Marine Safety and Anchoring Plan (MSAP) was prepared for the Project
3 (see Appendix E). The MSAP would be updated prior to Project commencement to
4 reflect the most current ocean floor conditions in the Project area based upon a pre-
5 decommissioning seafloor survey. The purpose of the MSAP is to provide a precise set
6 of procedures and protocols that would be used by the decommissioning contractor
7 when executing the marine decommissioning work. The primary concerns addressed by
8 the MSAP are personal, environmental, and vessel safety.

9 2.4.2.2 Marine Wildlife Contingency Plan

10 A Marine Wildlife Contingency Plan (MWCP) was prepared for the Project and is
11 provided in Appendix F. The purpose of the MWCP is to provide measures that would
12 be incorporated into the Project that are designed to reduce or eliminate impacts of the
13 proposed decommissioning activities on marine wildlife.

14 2.4.2.3 Oil Spill Response Plan

15 An Oil Spill Response Plan (OSRP) was prepared for the Project and is provided in
16 Appendix G. The purpose of the OSRP is to present an overview of the measures
17 incorporated into the Project design to minimize the potential for a hydrocarbon release
18 and to outline the procedures and protocols that would be used in the event of an
19 onshore or offshore oil spill resulting from Project activities.

20 2.4.2.4 Contractor Work Plan

21 A technical consultant and marine contractor would develop and submit a Contractor
22 Work Plan (CWP) a minimum of 60 days prior to the start of decommissioning for review
23 by the CSLC staff and other appropriate permitting agencies. The CWP would include
24 engineered decommissioning plans and specifications provided by a licensed
25 professional engineer and fully detail the contractor's planned scope of work,
26 methodologies, manpower, equipment, and schedule. Additionally, the CWP would
27 incorporate all permit conditions and include critical operations and curtailment plans, a
28 spill response and cleanup plan, a site safety plan, a dive safety plan, an emergency
29 response plan, noise management plans, best management practices, and other
30 essential plans and information pertinent to decommissioning operations.

31 2.4.2.5 Mitigation Compliance Plan

32 An environmental consultant would develop and submit an environmental Mitigation
33 Compliance Plan (MCP) at least 60 days prior to the start of decommissioning
34 operations. The MCP would be used by environmental monitors to assure that all
35 Project operations comply with all permit conditions and reporting requirements.

1 2.4.2.6 Pre- and Post-Decommissioning Seafloor Debris Surveys

2 The offshore decommissioning work would begin and end with a seafloor debris survey.
3 The survey would be completed by a marine surveyor, technicians, and an
4 environmental monitor aboard a commercial survey boat (approximately 35 feet in
5 length) with a side-scan sonar system (400% coverage) and fathometer (alternatively a
6 3D multi-beam sonar system), and a commercial grade differential global positioning
7 system with sub-meter accuracy.⁴ The survey would encompass the entire underwater
8 worksite bordered by the contractor's planned derrick barge anchorages, which would
9 be positioned to avoid rock outcroppings and kelp beds plus an offset of approximately
10 500 feet. The surveyor would produce a map to serve as the baseline for seafloor
11 conditions at the underwater worksite prior to the start of decommissioning operations.
12 After decommissioning is complete, a seafloor debris survey of the underwater worksite
13 would be repeated with the same equipment to identify any debris introduced during
14 Project operations. If debris is found at the worksite, all items would be removed by the
15 contractor, transported off-site, and recycled at appropriate permitted facilities. The pre-
16 and post-decommissioning survey map would be provided to CSLC staff and other
17 permitting agencies for approval and sign-off of Project completion.

18 2.4.2.7 Pre-Decommissioning Fuel Oil Submarine Pipeline Flush

19 During the 2010 EPS MOT decommissioning, the fuel oil submarine pipeline was
20 pigged, flushed to lower hydrocarbon levels to non-detect levels, and placed in storage
21 with a mixture of potable water and Nalco EC6106A totaling approximately 61,285
22 gallons. As a precautionary measure, prior to the start of decommissioning work, the
23 pipeline contents would be re-sampled for hydrocarbon content. If hydrocarbon levels of
24 15 ppm or higher are found in the pipeline, it would be pigged and flushed to bring the
25 hydrocarbon level to a non-detect level. The Nalco EC6106A preservative currently in
26 the pipeline contains a biocide ingredient (see Appendix B, Nalco EC6106A Material
27 Safety Data Sheet), so the storage water would be displaced from the pipeline with a
28 seawater flush prior to opening the pipeline to the ocean for decommissioning. The
29 pipeline would be flushed from its offshore termination to its onshore termination at the
30 beach valve pit, where the potable water and preservative mixture would be recovered
31 and transported off-site for treatment and disposal.

32 The flushed water used to clean the interior of the fuel oil submarine pipeline would be
33 chemically analyzed for the presence of volatile organic compounds (VOCs) using U.S.
34 Environmental Protection Agency (USEPA) Method 8260 (gas chromatography mass
35 spectrometry) or for isopropanol by USEPA Method 8015M (flame ionization detection-

⁴ Because the surveys would require the use of geophysical equipment that generates noise during data acquisition, the survey must be conducted by an operator that possesses an Offshore Geophysical Survey Permit through the CSLC's Low-Energy Offshore Geophysical Permit Program.

1 direct injection), and for the presence of semi-volatile organic compounds (SVOCs)
2 using USEPA Method 8270. Acceptable residual concentrations of VOCs, isopropanol,
3 and SVOCs would be determined in coordination with the Regional Water Quality
4 Control Board and would be in compliance with California Ocean Plan discharge
5 requirements (State Water Resources Control Board [SWCRB] 2012). Alternatively, the
6 pipeline contents may be displaced from the offshore termination to the onshore
7 termination with air or nitrogen to lighten the fuel oil submarine pipeline for recovery
8 using a reverse pipe lay removal method (discussed in Section 2.5.4, Offshore
9 Decommissioning Activities). Depending on the method selected to remove the offshore
10 segment of the pipeline, the offshore termination may be left open to the ocean after
11 flushing to permit the water level inside the pipeline to fall to sea level.

12 2.4.2.8 Final Report and As-Built Drawings

13 A Project report would be prepared for submission to CSLC staff within 30 days of
14 Project completion. This report would include: (1) an overview of the Project; (2) the
15 final disposition of all facility components, a discussion of any major events that
16 occurred during decommissioning, and lessons learned; (3) a scaled map showing the
17 location and coordinates of any facilities abandoned-in-place and a description of those
18 facilities; and (4) MCP documentation.

19 **2.5 MOT DECOMMISSIONING PLANS AND PROCEDURES**

20 This section provides the general plans and procedures that may be employed during
21 MOT decommissioning; final plans and procedures would be provided in the CWP. For
22 decommissioning planning purposes, the Project components and facilities have been
23 divided into four discrete work segments (onshore, beach, surf zone, and offshore)
24 based on the environment in which they are located, methods and equipment required
25 to perform the decommissioning work, and seasonal work constraints. Although the
26 MOT facilities and decommissioning activities are presented from east to west (onshore
27 to offshore), the scheduled progression of these activities does not follow this order. The
28 Project schedule is discussed in Section 2.6, Preliminary Decommissioning Schedule.

29 **2.5.1 Onshore Decommissioning Activities**

30 The onshore segment begins at the beach valve pit inside the EPS and extends
31 approximately 110 feet to the underpass end structure adjacent to Carlsbad Boulevard
32 on the eastern edge of the beach (see Figure 2-3). Facilities located within the onshore
33 segment include a section of the fuel oil submarine pipeline and fill line, the beach valve
34 pit, the underpass conduit, underpass end structure, and all piping, electrical
35 components, and appurtenances located inside or attached to the outside of these
36 structures. The decommissioning work for the onshore segment would be performed by
37 land-based crews and equipment and accomplished as described below.

1 2.5.1.1 Fuel Oil Submarine Pipeline

2 This section of the fuel oil submarine pipeline is approximately 110 feet long and weighs
3 approximately 13.4 tons (dry weight). The entire pipeline would be removed from inside
4 the beach valve pit, the underpass conduit, and the underpass end structure. This
5 section of the pipeline would be extracted from the underpass conduit and end structure
6 through the beach valve pit and into the EPS facility (see Figure A2-3 in Appendix A).
7 The recovered pipeline would be disposed or recycled off-site.

8 Prior to removal, this section of pipeline would be flushed with seawater or purged with
9 air or nitrogen to free any water inside the pipeline. To remove this segment, pipeline
10 would be cut into sections using flame (oxy-acetylene) or saw cutting methods. If the
11 flame cutting method is used, the somastic and cement weight coating on the pipeline
12 would need to be removed at each cut point, and because the somastic coating
13 contains small amounts of asbestos, an asbestos safety plan and asbestos trained
14 crews would be required to remove, contain, and dispose of the somastic waste (see
15 Appendix D, page 3). Once the pipeline is cut, a winch and rigging would be used to
16 drag the pipeline sections one at a time from the underpass to the beach valve pit. A
17 crane stationed alongside the beach valve pit would be used to raise the pipeline
18 sections out of the beach valve pit and place them on trucks for off-site disposal and
19 recycling.

20 2.5.1.2 Fill Line

21 The fill line would be filled with a Class G oilfield cement slurry plug⁵ and remain buried
22 within the EPS facility to be decommissioned at a future date. Only the fill line
23 termination point located inside the beach valve pit is within the scope of this Project.
24 The blind flange inside the beach valve pit would be removed and a soft pig would be
25 inserted in the fill line. The blind flange would then be fitted with a cement port and
26 reinstalled. A cement hose would be attached to the port and cement slurry would be
27 pumped into the fill line, pressing the soft pig in front of it. Approximately 20 feet of
28 cement slurry would be placed in the fill line (1.5 cubic yards of slurry); however, the
29 cement slurry may be installed the entire length of the fill line (a distance of
30 approximately 380 feet) to the second valve pit within the EPS facility (28 cubic yards of
31 slurry) (see Figure A2-4 in Appendix A). Once the cement slurry plug solidifies in the fill
32 line, the flanged end and pipe stub would be cut (via flame or saw cutting) and removed
33 (less than 300 pounds of recyclable steel), and a permanent steel plate cap would be
34 welded on the cut end of the fill line. The flanged end and pipe stub would be placed on
35 trucks for off-site disposal and recycling.

⁵ A Class G cement is intended for use as a basic cement from surface to 8,000 feet depth.

1 2.5.1.3 Beach Valve Pit

2 The beach valve pit houses the onshore termination of the fuel oil submarine pipeline
3 and consists of a rectangular vault and a buried rectangular horizontal shaft. Soil
4 samples would be taken from underneath the floor of the beach valve pit. If
5 contaminated soil exceeding allowable limits is found, the floor of the beach valve pit
6 would be demolished and the underlying contaminated soil would be remediated to
7 comply with regulatory requirements. Should the soil samples reveal no contamination
8 or levels less than allowable limits, the bottom portion (5 feet below grade and deeper)
9 of the beach valve pit would be left intact, and the top portion (surface to 5 feet below
10 grade) would be demolished and broken down to 5 feet below existing contours or to
11 the top of the horizontal shaft, whichever is greater. The concrete walls would be broken
12 down with concrete breakers mounted on excavators (or equivalent), creating
13 approximately 8.7 cubic yards of concrete and reinforcing bar debris that would be
14 recovered and shipped off-site for recycling or disposal. The beach valve pit would then
15 be backfilled and compacted with approximately 87 cubic yards of native soil from off-
16 site sources (see Figure A1-3 and Figure A2-5 in Appendix A). Native soil and sand
17 backfill from off-site sources will have similar grain size characteristics and color to the
18 surrounding soil and sand at the Project site, and will be derived from approved and
19 permitted sources in accordance with the Surface Mining and Reclamation Act.

20 2.5.1.4 Underpass Conduit

21 The underpass conduit (and rectangular horizontal shafts of the beach valve pit and
22 underpass end structure) would be filled with Class G oilfield cement slurry and
23 abandoned in place. These components are buried under existing sidewalks and
24 Carlsbad Boulevard.

25 Inside the underpass conduit, the fuel oil submarine pipeline rests on a 12-inch-deep
26 bed of sand (15 cubic yards). A portion of this sand was checked and found to contain
27 hydrocarbon contamination, but the bulk of this sand has not been surveyed for
28 hydrocarbons. As such, samples would be taken to determine the level of hydrocarbon
29 contamination. The sand would be removed and disposed or recycled off-site
30 depending on the presence and quantity of contamination.

31 After the fuel oil submarine pipeline, vertical vault, and all sand bedding, electrical
32 components, piping, and appurtenances have been removed, a cement slurry plug
33 would be installed in the underpass conduit. To install the cement slurry plug, a
34 temporary framework (wood or metal forms) would be constructed at each end of the
35 underpass conduit. One form would be placed at the horizontal shaft opening on the
36 west wall of the beach valve pit. The second form would be placed where the vertical
37 vault of the underpass end structure was cut and removed from the horizontal shaft (see
38 Section 2.5.2.5, Underpass End Structure). Cement slurry installation ports would be

1 installed in the forms, and tremie pipes may be required to distribute the slurry the full
2 length of the underpass conduit. Vent pipes would also be installed, as appropriate, to
3 ensure that the cement slurry completely fills the underpass conduit from floor to ceiling.
4 The total cement slurry volume is estimated at approximately 198 cubic yards. Detailed
5 engineered plans and specifications for the forms and cementing process would be
6 provided with the CWP. Once the cement plug has been installed and set, the
7 temporary forms would be removed (see Figure A1-4 and Figure A2-6 in Appendix A).

8 2.5.1.5 Underpass End Structure

9 Prior to demolition, the vent pipe, manhole, metal ladder, and any other appurtenances
10 located inside the vertical vault and horizontal shaft of the underpass end structure
11 would be removed. The vertical vault would then be excavated, demolished, and
12 removed in its entirety, separating it from the end structure horizontal shaft. In addition,
13 the gravel bed underneath the vertical vault (approximately 7.1 cubic yards) would be
14 removed, and the soil underneath the gravel bed would be tested for contaminants. If
15 the soil exceeds regulatory allowable limits, it would be excavated, transported off-site,
16 and properly disposed. The horizontal shaft, wing walls, and concrete footing of the
17 underpass end structure would be abandoned in place.

18 Because the vertical vault is completely buried underneath the beach, approximately
19 452 cubic yards of sand and possibly riprap would be excavated to expose the vertical
20 vault for cutting and demolition (assuming an excavation that is 18 feet deep with a 36-
21 foot radius and walls at a 2:1 slope) (see Figure A2-7 and Figure A2-8 in Appendix A).
22 The beach sand would be stockpiled on the beach and used for backfill after the vertical
23 vault is removed. As-built drawings indicate the possible presence of riprap (as much as
24 45 tons) below the beach at the underpass end structure; if riprap is found, it would be
25 stored onsite and used as backfill after the vertical vault is removed. Once excavated,
26 the vertical vault would be cut and separated from the horizontal shaft using abrasive
27 saws, concrete saws, diamond wire cutting, or other concrete cutting methods that
28 produce a reasonably smooth cut suitable to seal off the horizontal shaft with cement.
29 Once broken up, the vertical vault would be trucked off-site for recycling or disposal.

30 The horizontal shaft, wing walls, and concrete footing of the underpass end structure
31 would be abandoned in place. These structures are located below the existing westerly
32 sidewalk and southbound lane within the Carlsbad Boulevard right-of-way. If these
33 components were removed, both southbound lanes of Carlsbad Boulevard may need to
34 be temporarily shut down to facilitate excavation; therefore, limiting the removal of these
35 structures would ensure that the current roadway sub-grade and sub-base remain
36 undisturbed. However, removal of the vertical vault may require demolition and
37 replacement of the western sidewalk where it crosses the underpass end structure (see
38 Figure A1-5 in Appendix A).

1 The beach at the underpass end structure would be restored to pre-project contours by
2 backfilling the excavation with native sand (approximately 452 cubic yards); however,
3 the actual amount of sand required to backfill the excavation would depend on the
4 amount of riprap, if any, found below the existing sand beach. Assuming approximately
5 45 tons of riprap is found and removed, approximately 127 cubic yards of sand would
6 be required for backfill (see Figure A2-9 in Appendix A).

7 2.5.1.6 Electrical Components, Piping, and Appurtenances

8 All electrical components, piping, and appurtenances would be removed from inside the
9 beach valve pit, the underpass conduit, and the underpass end structure. This would
10 include removal of all above ground electrical components, the existing awning structure
11 and slab that surrounds the top edge of the beach valve pit, the concrete block wall, and
12 all handrails. Crews certified in the removal and containment of hazardous materials
13 would abate all contaminants including lead, asbestos, and hydrocarbons that exceed
14 regulatory allowable limits and transport them off-site for disposal. The volume of debris
15 generated during this phase of demolition is estimated to weigh less than 1 ton.

16 **2.5.2 Beach Decommissioning Activities**

17 The beach segment begins at the west side of the underpass end structure and extends
18 approximately 220 feet into the intertidal zone near the mean low water line. Facilities
19 located within the beach segment include a section of the fuel submarine pipeline and
20 the riprap groin. Decommissioning work for the beach segment would be performed by
21 land-based crews and equipment, but limited to extreme low tide conditions when
22 working in the intertidal zone. Work within the beach segment would be accomplished
23 as described below.

24 2.5.2.1 Riprap Groin

25 In order to excavate and remove the fuel oil submarine pipeline, the riprap groin would
26 need to be permanently or temporarily removed. To determine potential near-field
27 effects of removing the riprap groin (also referred to as the South Beach Groin), Jenkins
28 (2013) conducted a shoreline evolution analysis (see Appendix L) to predict shoreline
29 evolution over 20-year-long historic periods of waves, tides, currents, and dredge
30 disposal. The study showed that, although removal would have no apparent short-term
31 effect on shoreline change, long-term (10 to 20 years) cumulative impacts, generally
32 erosional in nature, to the shoreline would occur. Therefore, to retain the width of the
33 existing shoreline, the riprap groin would be restored to pre-Project contours following
34 the removal of the fuel oil submarine pipeline. The largest erosional impacts would
35 occur at South Beach, where beach widths would be locally reduced by as much as 17
36 feet, 20 years after the groin is removed. Removal of the South Beach Groin would also
37 reduce the median retention time of dredged sands placed on South Beach by 1 month.

1 Since dredging and beach disposal of the dredged sands typically occurs every 2 years,
2 an average loss of 1 month of retention time adds up to a significant loss of beach sand
3 volume over many years for the North Beach/Middle Beach/South Beach back-passing,
4 sand re-cycling system. Therefore, to retain the width of the existing shoreline, the
5 riprap groin would be temporarily removed to excavate the fuel oil submarine pipeline
6 and restored to pre-Project contours following the pipeline removal process.

7 The riprap groin may extend under the beach to the west face of the underpass end
8 structure and, if so, would require the excavation of overlying sand to reach and
9 temporarily remove the groin to access the pipeline. To dismantle the groin, a bulldozer
10 and front-end loader would push existing sand from the beach onto the groin to provide
11 a temporary pad for a crawler crane to reach the seaward end of the groin. The crawler
12 crane would be equipped with rock tongs or similar tools to remove the riprap, working
13 from the seaward edge of the groin and moving shoreward. Because the groin may
14 extend underneath the beach to the under-pass end structure, a bulldozer and front-end
15 loader would excavate the sand to expose the groin. The maximum excavation depth is
16 estimated at 10 feet, and the walls of all sand excavations would be cut back to a 2:1
17 slope for safety purposes. Temporary shoring may also be used to hold the sand
18 excavation open to facilitate removal of this section of the pipeline. A front-end loader or
19 equivalent equipment would be used to transport the riprap to a pre-designated storage
20 area on the beach until the pipeline is removed. Once the underlying pipeline is
21 removed, the groin would be restored to pre-project contours starting from the west end
22 of the underpass structure and working seaward. Because the original riprap would be
23 reused to restore the groin, no off-site rock disposal or additional rock and sand backfill
24 is anticipated (see Figure A2-10 in Appendix A).

25 2.5.2.2 Fuel Oil Submarine Pipeline

26 This segment of the fuel oil submarine pipeline is approximately 220 feet long and
27 weighs approximately 26.7 tons (dry weight). Prior to removal, the pipeline segment
28 would be flushed with seawater to free any wastewater from inside this pipeline. The
29 pipeline would be removed in its entirety across the beach. As the pipeline is excavated
30 and exposed it would be cut into sections to facilitate removal. Cutting would be
31 performed using flame (oxy-acetylene torches) or saw cutting methods. If the flame
32 cutting method is used, the somastic and cement weight coating on the pipeline would
33 need to be removed at each cut point, and because the somastic coating contains small
34 amounts of asbestos, an asbestos safety plan and asbestos trained crews would be
35 required to remove, contain, and dispose of the somastic waste. Once the pipeline is
36 cut, a crane stationed alongside the pipeline would be used to raise the pipe sections
37 onto a truck for off-site disposal and recycling. After the pipeline is removed, all required
38 excavation would be backfilled with native sand and the riprap groin would be restored
39 to pre-project conditions (see Figure A2-11 in Appendix A).

1 2.5.3 Surf Zone Decommissioning Activities

2 The surf zone segment begins at the approximate mean low water line and extends
3 approximately 750 feet offshore to the -15 foot bathymetric contour. Facilities located
4 within the surf zone segment include the fuel oil submarine pipeline and riprap groin.
5 Excavation and removal of the pipeline in the surf zone would involve both land- and
6 offshore-based crews and equipment. Land-based work would be limited to extreme low
7 tide conditions when working in the surf zone, and offshore-based work would be limited
8 by the shallowest depth (-15 foot bathymetric contour) at which a barge or other floating
9 support equipment can safely operate near the surf zone. The riprap groin would be
10 temporarily removed to accommodate removal of the pipeline and later restored as
11 described above in Section 2.5.2.1, Riprap Groin. Fuel oil submarine pipeline
12 decommissioning work in the surf zone segment would be accomplished as described
13 below.

14 2.5.3.1 Fuel Oil Submarine Pipeline

15 This section of the fuel oil submarine pipeline is 750 feet in length and weighs
16 approximately 91.1 tons (total dry weight), and would be removed in its entirety if
17 feasible. In the surf zone, the pipeline is covered by an existing riprap groin, which
18 would be temporarily removed and stored on the beach during the pipeline removal
19 process. The depth of the pipeline underneath the groin is unknown; however, it is
20 thought to be fairly shallow. There are two reasons for this assumption: (1) the pipeline
21 was pulled offshore from the beach and never excavated and buried; and (2) groin
22 protection over a pipeline is typically only required when a pipeline becomes exposed
23 on the beach and seafloor. Additionally, past seafloor surveys revealed exposed
24 portions of the offshore fuel oil submarine pipeline, which could mean that the pipeline
25 may only have a shallow cover over it in the surf zone. If this is the case, it may be
26 feasible to remove the entire surf zone section using conventional or low-impact
27 methods (Option 1). Should the as-found disposition of the pipeline foil efforts for
28 removal using the methods in Option 1, dynamic pipe ramming (DPR) technology would
29 be employed in an attempt to vibrate and extract the pipeline from under the seafloor
30 (Option 2).⁶ If Option 1 or Option 2 is successful, this section of the pipeline would be
31 pulled offshore and raised to the surface, cut into truckable sections to be transported
32 by barge to shore, and trucked to off-site disposal or recycling facilities. If both options
33 fail to extract the surf zone section, the remaining portion of pipeline would be
34 abandoned in place and the ends of the pipeline would be opened to fill with sand. After
35 work in the surf zone is complete, the groin would be restored to pre-project contours.
36 The removal methods for Option 1 and Option 2 are described in Table 2-1.

⁶ Although DPR has not been previously used to remove pipelines in the surf zone, it has been successfully used to remove longer sections of pipeline stuck in horizontal directional drilling bores. Most recently, DPR was used to extract buried subsea pipelines in the Gulf of Mexico and Midwest.

Table 2-1. Surf Zone Fuel Oil Submarine Pipeline Removal Options

<p>Option 1 – Surf Zone Removal Using Conventional Crews and Equipment</p>	<p>Land-based crews and equipment would work from onshore into the surf zone, as far as low tide and surf conditions permit, to remove as much of the pipeline in the surf zone as possible. Marine-based crews and equipment would then work from offshore into the surf zone, as far as tides and surf conditions permit, to extract the remaining pipeline in the surf zone. At each cut-point on the pipeline, a bell hole would be dug underneath the pipeline and the somastic and cement weight coatings would be removed. If above water, the pipeline would be cut with oxy-acetylene; if underwater, it would be cut with an oxy-arc or a guillotine saw. Compared to an oxy-arc, a guillotine saw may eliminate the need to remove the somastic and cement weight coating and minimize the bell hole excavation. Both the oxy-arc and guillotine saw are handheld or hand-applied, and neither produces appreciable noise nor substantial waste or byproduct. During the removal process, floatation may be used in combination with the above methods to lighten the pipeline and pull the remaining section out of the surf zone. Once removed, the pipeline would be lightened with floatation or filled with air, then lifted onto the barge deck to be cut into sections for off-site recycling or disposal.</p>
<p>Option 2 – Surf Zone Removal by DPR</p>	<p>DPR may be ideally suited to remove this section of the pipeline because the pipeline is relatively short (750 feet), may be exposed on the seafloor or only moderately buried, and is of known composition, construction, and integrity. To remove this segment using DPR, a pneumatic ram (hammer), attached to the offshore end of the pipeline, would vibrate the pipeline out of the surf zone while the tension winch, stationed on the offshore support barge, would drag the recovered pipeline offshore (see Figure A2-12 in Appendix A). Pull forces necessary to extract the pipeline out of the surf zone would be calculated and analyzed by a California licensed professional engineer and provided in the CWP. A six-point anchor system would be required for the barge, with four of the six points acting as reaction anchors to keep the barge in place while the tension winch drags the pipeline out of the surf zone. Once removed, the pipeline would be lightened with floatation or filled with air and then lifted onto the deck of the barge to be cut for off-site recycling and disposal.</p>

1 **2.5.4 Offshore Decommissioning Activities**

2 The offshore segment begins at the backside of the surf zone (at approximately the -15
 3 foot bathymetric contour) and terminates approximately 2,525 feet offshore in
 4 approximately 60 feet of water. This segment includes the fuel oil submarine pipeline
 5 and all of the remaining mooring and navigation components and seafloor debris
 6 associated with the tanker berth. Work within the offshore segment would be performed
 7 by offshore crews and equipment and accomplished as described below.

8 **2.5.4.1 Fuel Oil Submarine Pipeline End Anchors**

9 The two fuel oil submarine pipeline end anchors and their chains would be removed in
 10 their entirety from the seafloor. The anchors weigh 14,000 pounds each and are
 11 connected to the pipeline via a steel collar fastened to the pipeline end and attached
 12 with two 90-foot lengths of 2-inch stud link anchor chains. To remove the end anchors

1 from the pipeline, offshore crews and equipment would either cut the collar bolts and
 2 remove the collar, or cut the 2-inch stud link anchor chain near the steel anchor collar.
 3 The two end anchors would be raised to the surface using the 2-inch stud link anchor
 4 chains, lifted to the deck of the derrick barge using the deck winch, and hauled onboard
 5 for off-site recycling and disposal. No excavation would be necessary.

6 2.5.4.2 Fuel Oil Submarine Pipeline

7 The offshore segment of the fuel oil submarine pipeline is approximately 2,775 feet long
 8 and weighs approximately 337.2 tons (dry weight). If the offshore section of the pipeline
 9 is buried, underwater excavation would be required. Once the pipeline is freed from the
 10 end anchors, the pipeline would be raised to the deck of the derrick barge and cut into
 11 sections (Option 1), or the pipeline would be cut on the seafloor by divers and recovered
 12 (Option 2). The latter option is less desirable as it requires extensive diver intervention
 13 with inherent safety risks, while the former, and preferred, option requires substantially
 14 less diver intervention and can be performed on the deck of the barge. In either case,
 15 the offshore segment would be cut into truckable sections and transported by barge to
 16 shore to be offloaded and trucked to off-site disposal or recycling facilities. The removal
 17 methods in Option 1 and Option 2 are shown in Table 2-2.

Table 2-2. Offshore Fuel Oil Submarine Pipeline Removal Options

<p>Option 1 – Reverse Pipe Lay Method</p>	<p>The reverse pipe lay method would keep the pipeline intact (with minimal loss of external coatings) while it is pulled aboard the barge and cut into sections, would avoid underwater cutting, and could be performed fairly rapidly assuming that the depth of cover over the pipeline is minimal or non-existent. Engineered plans and calculations for this method would be provided by a California licensed engineer and included with the CWP. Under this method, the end of the pipeline would be raised to the surface (possibly with the aid of flotation buoys and/or applied tension) and winched aboard the derrick barge through a stinger (projecting from the end of the barge) that transitions the pipeline out of the water and onto the deck. As the pipeline is brought aboard the derrick barge, the pulling operation would be periodically halted, and a sling or other rigging brake would be applied to the pipeline section near the gunwale of the barge. Tension would be applied to the active leg of the pipeline (floating/submerged section) by the barge’s reaction anchors and rigging brake to remove a band of somastic and cement weight coating. The pipeline would then be cut and hoisted onto a materials barge for transportation to shore to be offloaded and trucked to off-site disposal or recycling facilities. This process would be repeated until the offshore section of the pipeline is completely removed (see Figure A2-13 in Appendix A). Divers operating from the derrick barge or from a second support barge or vessel would work ahead of the recovery operation to expose the pipeline if buried. An airlift or other excavation device would be used to uncover the pipeline.</p> <p>To assist with lightening the pipeline during this removal process, the pipeline may need to be voided of water. If this is necessary, the open end of the pipeline would remain on the deck of the barge or would be sealed before being placed back in the ocean so it doesn’t refill with water. Voiding would require that the</p>
--	--

Table 2-2. Offshore Fuel Oil Submarine Pipeline Removal Options

	<p>pipeline be left intact to the beach, at a minimum, or into the EPS facility, preferably, so the water inside the pipeline can be collected onshore and properly disposed. This would impact the decommissioning schedule since the offshore segment of the pipeline must be voided and removed before removal operations can occur in the surf zone and beach segments, and probably the onshore segment (at least removal of the pipeline).</p>
<p>Option 2 – Seafloor-Based Removal</p>	<p>Seafloor-based removal may be used to remove the pipeline or possibly used in tandem with the reverse pipe lay method, depending on if sections of the pipeline are exposed on the seafloor. Engineered plans and calculations for this removal method would be provided by a California licensed engineer and included with the CWP. Under this method, the pipeline would be excavated in short sections, probably 150 feet or less, which would depend on the limits of the diver’s dive umbilical, the operating radius of the crane boom with the excavation tool, and the size of the derrick barge and crane. The first pipeline section would be uncovered, with the support of a crane, using a large airlift (12-inch-diameter or larger steel or steel and plastic pipe) or a Toyo submersible pump-type dredging system. Bell holes would be excavated at predetermined intervals (cut points) along the excavated section of the pipeline to provide divers with circumferential access to cut and remove bands of somastic and cement weight coating at each cut point. An oxy-arc or guillotine saw would be used to cut the bands of coating. Both methods are handheld or hand-applied, and neither produces appreciable noise nor substantial waste or byproduct. Once, or as, the bands of coating are removed, divers would cut the pipeline into sections using the preferred cutting method. Slings would be applied to each section and hoisted to the surface by the derrick barge crane and placed on the materials barge or support boat for transportation to shore to be offloaded and trucked to off-site disposal or recycling facilities. This process would be repeated one section at a time, probably starting with the offshore end and working shoreward, until the offshore section of the pipeline is completely removed (see Figure A2-14 in Appendix A).</p>

1 2.5.4.3 Mooring and Buoy System Components

2 All remaining components of the tanker berth’s seven-point mooring system, single-
 3 point mooring, fuel oil submarine pipeline marker buoy, and navigation buoy would be
 4 removed in their entirety, transported off-site, and recycled at appropriate facilities. A
 5 derrick barge or deck barge with a four-point mooring system, crane, and pull winch
 6 would likely be used to recover the mooring system components. A dive team would
 7 work from the barge deck, and a tugboat would remain onsite to tend the barge and set
 8 and recover its anchors. All anchorages would be set in accordance with the anchor
 9 coordinates established on the anchor pre-plot that would be part of the approved CWP.

10 If the remains of a mooring leg are buried under the seafloor, additional effort would be
 11 required to locate and possibly expose and remove these components. In this case, the
 12 use of mooring buoy or anchor coordinates from previous surveys would be helpful to
 13 position a diver with a handheld magnetometer at the chain or anchor’s approximate
 14 location to locate the ferrous metal below the seafloor.

1 Once a buried target is identified as a mooring system component, its recovery would
 2 depend on the type of component and its disposition. If the target is a buried anchor
 3 chain, then additional excavation may be required to locate and expose the bitter end of
 4 the chain. Once the end of the anchor chain is located, divers would attach a pull wire to
 5 the chain and deck crews would pull it to the surface with a pull winch located on the
 6 deck of the derrick barge. Alternatively, if a chain is located (and not the bitter end),
 7 divers would be employed to cut the chain with oxy-arc underwater cutting equipment.
 8 Once a cut to the chain is made, one of the cut ends would be attached to a buoy while
 9 the other would be attached to a pull winch, located on the deck of the support vessel,
 10 to extract the first chain segment from the seafloor. This chain segment would either
 11 lead to the bitter end of the chain or to an anchor. If it leads to an anchor, the anchor
 12 would be recovered. Once this first chain segment is recovered, the support vessel
 13 would return to the buoyed end of the other chain segment, recover the end to the
 14 surface, and extract the chain segment from the seafloor. Excavation, if required, would
 15 be performed via hand jetting (using divers with portable high-pressure jetting
 16 equipment) or the likely preferred method of airlifting (suspending a 12-inch-diameter
 17 steel airlift operated by the support vessel crane under the direction of a diver) (see
 18 Figure A2-15 and Figure A2-16 in Appendix A).

19 2.5.4.4 Seafloor Debris

20 All seafloor debris associated with the tanker berth and decommissioning operations
 21 would be removed. Potential debris targets would be identified in the pre-and post-
 22 decommissioning seafloor debris surveys and inspected by divers to determine their
 23 identity. All debris items associated with the tanker berth operations, and any introduced
 24 during Project operations, would be recovered and transported off-site for recycling or
 25 disposal. The quantity of seafloor debris, if any, is unknown at this time.

26 2.6 PRELIMINARY DECOMMISSIONING SCHEDULE

27 Decommissioning is scheduled to occur in 2016 and 2017, with an estimated 2018
 28 completion date. The following is a summary of the tentative Project milestones:

- 29 • Receive All Regulatory Agency Permits..... June 2016
- 30 • CWP Submitted..... July 2016
- 31 • MCP Submitted..... July 2016
- 32 • CWP Approved..... August 2016
- 33 • Offshore Segment Decommissioning Starts..... September 2016
- 34 • Onshore Segment Decommissioning Starts..... September 2016
- 35 • Beach Segment Decommissioning Starts..... September 2017
- 36 • Surf Zone Segment Decommissioning Starts..... September 2017
- 37 • Complete Decommissioning Work..... January 2018
- 38 • Complete Post-Decommissioning Reporting..... February 2018

1 A preliminary decommissioning schedule is provided as Table A1-1 in Appendix A. The
2 schedule is based on a 5-day, 12-hour/day work week; however, additional hours,
3 including 24-hour operations, may be required to complete these activities and to
4 maintain the Project schedule (e.g., to work with the tide schedule). Additional time was
5 not built into the schedule to account for possible inclement weather, unworkable tide
6 conditions, or additional work that may be created due other unforeseen conditions.

7 If the reverse pipe lay method is used to recover the fuel oil submarine pipeline in the
8 offshore segment, the pipeline may need to be voided of water. Voiding would need to
9 occur before removal of the surf zone, beach, and preferably onshore segments are
10 removed so the displaced water can be captured in the EPS facility and disposed off-
11 site. In this case, offshore decommissioning work must be completed before work in the
12 other segments can occur. The onshore and offshore segments are currently scheduled
13 to be decommissioned in fall/winter 2016, which may accommodate this scenario. Once
14 the water is removed from the fuel oil submarine pipeline, the onshore work may be
15 started, and the beach and surf zone segments would be removed in fall/winter 2017.

16 **2.7 SHORE BASE**

17 The decommissioning contractor, once selected, shall establish a shore base to support
18 offshore operations and serve as a local embarkation point for offshore crews and
19 equipment. Oceanside Harbor, the most likely local embarkation point, is approximately
20 6 miles from the offshore worksite and has historically been the point of embarkation for
21 offshore crews working at the EPS MOT tanker berth. Alternative shore base locations
22 are the Port of Los Angeles, Port of Long Beach, or San Diego Bay.

23 **2.8 MANPOWER AND EQUIPMENT ESTIMATES**

24 Table A2-1 in Appendix A provides personnel and equipment estimates, which are
25 based on the anticipated duration of projected tasks and are subject to change.

26 **2.9 PROJECT WORK AREAS**

27 The onshore and beach segments include staging areas for the placement of materials
28 and equipment, temporary storage of riprap and sand, temporary truck parking during
29 loading operations, and equipment movement. These Project work areas, as well as
30 ingress and egress routes, are shown in Figure A2-17 in Appendix A. The offshore
31 Project safety and survey boundary in which Project vessels would operate during
32 decommissioning activities is identified in Figure A1-1 in Appendix A.

33 **2.10 MATERIAL IMPORT/EXPORT AND ASSOCIATED TRUCK TRIPS**

34 Table A1-2 in Appendix A summarizes the projected areas, volumes, and weights of the
35 recovered debris and decommissioned MOT components set for recycling or disposal.

3.0 ENVIRONMENTAL CHECKLIST AND ANALYSIS

1
2 This section contains the Initial Study (IS) that was completed for the proposed Cabrillo
3 Power I LLC (Cabrillo Power I LLC or Applicant) Encina Marine Oil Terminal
4 Decommissioning Project (Project) in accordance with the requirements of California
5 Environmental Quality Act (CEQA). The IS identifies site-specific conditions and
6 impacts, evaluates their potential significance, and discusses ways to avoid or lessen
7 impacts that are potentially significant. The information, analysis and conclusions
8 included in the IS provide the basis for determining the appropriate document needed to
9 comply with CEQA. For the Project, based on the analysis and information contained
10 herein, California State Lands Commission (CSLC) staff have found that the IS shows
11 that there is substantial evidence that the Project may have a significant effect on the
12 environment but revisions to the Project would avoid the effects or mitigate the effects to
13 a point where clearly no significant effect on the environment would occur. As a result,
14 the CSLC has concluded that a Mitigated Negative Declaration (MND) is the appropriate
15 CEQA document for the Project.

16 The evaluation of environmental impacts provided in this IS is based in part on the
17 impact questions contained in Appendix G of the State CEQA Guidelines; these
18 questions, which are included in an impact assessment matrix for each environmental
19 category (Aesthetics, Agriculture/Forest Resources, Air Quality, Biological Resources,
20 etc.), are “intended to encourage thoughtful assessment of impacts.” Each question is
21 followed by a check-marked box with column headings that are defined below.

- 22 • **Potentially Significant Impact.** This column is checked if there is substantial
23 evidence that a Project-related environmental effect may be significant. If there
24 are one or more “Potentially Significant Impacts,” a Project Environmental Impact
25 Report (EIR) would be prepared.
- 26 • **Less than Significant with Mitigation.** This column is checked when the
27 Project may result in a significant environmental impact, but the incorporation of
28 identified Project revisions or mitigation measures would reduce the identified
29 effect(s) to a less than significant level.
- 30 • **Less than Significant Impact.** This column is checked when the Project would
31 not result in any significant effects. The Project’s impact is less than significant
32 even without the incorporation of Project-specific mitigation measures.
- 33 • **No Impact.** This column is checked when the Project would not result in any
34 impact in the category or the category does not apply.

35 The environmental factors checked below would be potentially affected by this Project;
36 a checked box indicates that at least one impact would be a “Potentially Significant
37 Impact” except that the Applicant has agreed to Project revisions, including the

- 1 implementation of mitigation measures (MMs), that reduce the impact to “Less than
 2 Significant with Mitigation.”

Table 3-1. Environmental Issues and Potentially Significant Impacts

<input checked="" type="checkbox"/> Aesthetics	<input type="checkbox"/> Agriculture and Forest Resources	<input type="checkbox"/> Air Quality
<input checked="" type="checkbox"/> Biological Resources	<input checked="" type="checkbox"/> Cultural Resources	<input type="checkbox"/> Geology and Soils
<input type="checkbox"/> Greenhouse Gas Emissions	<input checked="" type="checkbox"/> Hazards and Hazardous Materials	<input checked="" type="checkbox"/> Hydrology and Water Quality
<input type="checkbox"/> Land Use and Planning	<input type="checkbox"/> Mineral Resources	<input checked="" type="checkbox"/> Noise
<input type="checkbox"/> Population and Housing	<input type="checkbox"/> Public Services	<input type="checkbox"/> Recreation
<input checked="" type="checkbox"/> Transportation/Traffic	<input type="checkbox"/> Utilities and Service Systems	
<input checked="" type="checkbox"/> Mandatory Findings of Significance		
<input type="checkbox"/> Other Major Areas of Concern: Commercial Fishing and Environmental Justice		

- 3 Detailed descriptions and analyses of impacts from Project activities and the basis for
 4 their significance determinations are provided for each environmental factor on the
 5 following pages, beginning with Section 3.1, Aesthetics. Relevant laws, regulations, and
 6 policies potentially applicable to the Project are listed in the Regulatory Setting for each
 7 environmental factor analyzed in this IS.

8 AGENCY DETERMINATION

9 Based on the environmental impact analysis provided by this Initial Study:

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

10 _____
Signature

Date

11 Kelly Keen, Environmental Scientist
 12 Division of Environmental Planning and Management
 13 California State Lands Commission

1 **3.1 AESTHETICS**

AESTHETICS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 **3.1.1 Environmental Setting**

3 The Encina Marine Oil Terminal (MOT) is fronted by Carlsbad State Beach and
 4 Carlsbad Boulevard. Carlsbad State Beach is a popular area for surfing, swimming, skin
 5 diving, fishing, picnicking, and other recreational activities. Beach and ocean resource
 6 use is greatest within the Project vicinity in summer and during weekends; however, the
 7 beach area, associated undesignated bluff trails, and designated bike lane, which is
 8 located (striped) on the ocean side of Carlsbad Boulevard, are well utilized by walkers,
 9 joggers, and/or bicyclists year-round.

10 Carlsbad Boulevard is a popular beach access route and is identified as a Scenic Route
 11 in the Agua Hedionda Land Use Plan (City of Carlsbad 2010b) and a Community
 12 Theme Corridor in the City of Carlsbad (2013b) General Plan Circulation Element. The
 13 Interstate-5 (I-5) transportation corridor, located to the east of the Encina Power Station
 14 (EPS), is an Eligible State Scenic Highway and is considered a Community Scenic
 15 Corridor by the City of Carlsbad.

16 The Encina MOT fuel oil submarine pipeline extends from the onshore EPS facility to its
 17 offshore termination and is covered on Carlsbad State Beach with riprap that extends
 18 into the surf zone (see foreground of Figure 3.1-1 A and Figure 3.1-1 B). South of the
 19 riprap groin, a wall extends along the beach (in front of the EPS) to a bluff south of the
 20 site. Approximately 300 feet north of the riprap groin are two sets of riprap rock jetties
 21 (intake and outfall channels) associated with Agua Hedionda Lagoon. The pipeline
 22 crosses Carlsbad Boulevard below ground and is accessed via a beach valve pit
 23 located within the EPS. Views of the beach valve pit from Carlsbad Boulevard are
 24 partially blocked by perimeter fencing at the EPS (see Figure 3.1-2).

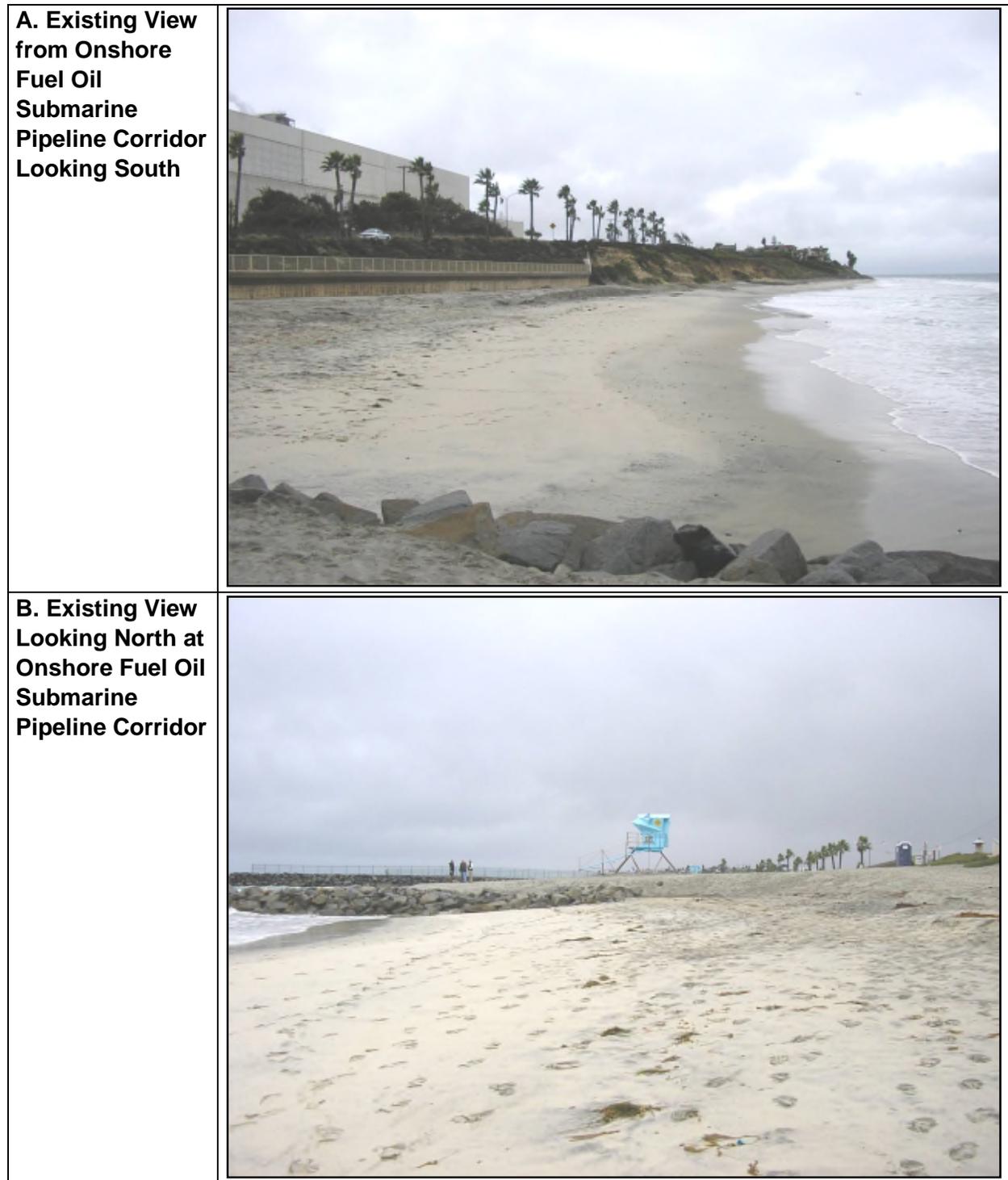


Figure 3.1-1. Beach Views Looking South and North

**A. Existing View
from Beach at
Carlsbad
Boulevard
Looking East**



**B. Existing View
from Carlsbad
Boulevard
Looking
Northeast**



Figure 3.1-2. Views from Carlsbad Boulevard Looking East

1 **3.1.2 Regulatory Setting**

2 3.1.2.1 Federal and State

3 Federal and State laws and regulations pertaining to this issue area and relevant to the
 4 Project are identified in Table 3.1-1.

Table 3.1-1. Laws, Regulations, and Policies (Aesthetics)

U.S.	CZMA (see Table 1.2).	
CA	California Scenic Highway Program	The California Scenic Highway Program, managed by the California Department of Transportation, was created to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. State highways identified as scenic, or eligible for designation, are listed in California Streets and Highways Code section 260 et seq.
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	The Coastal Act is concerned with protecting the public viewshed, including views from public areas, such as roads, beaches, coastal trails, and access ways. Section 30251 states: "Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of the surrounding area, and, where feasible, to restore and enhance visual quality in visually degraded areas."

5 3.1.2.2 Local

6 The City of Carlsbad (2006) General Plan Open Space and Conservation Element
 7 (OSCE) contains the following aesthetics-related goal, objective, and policy relevant to
 8 onshore Project activities.

- 9 • Goal A.4: A city that preserves as open space, hillsides, ridges, valleys, canyons,
 10 lagoons, beaches and other unique resources that provide visual and physical
 11 relief to the Cityscape.
- 12 • Objective B.7: To minimize impacts from new development on hillsides, ridges,
 13 valleys, canyons, lagoons, beaches and other unique resources that provide
 14 visual and physical relief to the cityscape.
- 15 • Policy C.1: Utilize sensitive design criteria to preserve the unique and special
 16 resources in the City and to integrate them into the design of any development.

17 The General Plan Parks and Recreation Element (City of Carlsbad 2003) includes the
 18 following special resource, open space, and cultural historical areas goal relevant to
 19 onshore Project activities:

- 20 • Goal A.3: A City that preserves areas of scenic, historic, and cultural value.

1 **3.1.3 Impact Analysis**

2 **a) Have a substantial adverse effect on a scenic vista?**

3 **Less than Significant with Mitigation.** The presence of onshore and offshore vessels
4 and equipment at the Project site would result in short-term aesthetic impacts to views
5 of the beach and ocean. Project operations would be visible to people: (1) on Carlsbad
6 Boulevard, other local streets, and possibly I-5 and the railroad corridor; (2) recreating
7 on the beach; (3) engaging in ocean activities (e.g., recreational boating); and (4) at
8 ocean-view homes in the area. Views of offshore vessels, which would be needed for
9 decommissioning activities, are not entirely incongruent with typical ocean views, and
10 the site was historically used for fuel transfers, with large vessels mooring at the MOT
11 and vessels and equipment located offshore during periodic maintenance of the MOT.

12 Offshore and surf zone work would include two barges, two tug boats, and two crew
13 boats. Work in the surf zone would also require the use of onshore equipment, including
14 two excavators, one bulldozer, one front-end loader, one crawler crane, and smaller
15 miscellaneous equipment. Similar equipment would also be used for work in the beach
16 and onshore segments. All equipment would be visible to the public during
17 decommissioning. Offshore equipment would be on-site for about 7 months (3 months
18 for the surf zone segment and 4 months for the offshore segment). Equipment operating
19 on the beach, which would be used for portions of the onshore, beach, and surf zone
20 segments, would be in service over a period of about 5 months, although not
21 continuously. Onshore equipment operations east of Carlsbad Boulevard are expected
22 to occur over 3 months; however, not all of the equipment would be in operation during
23 this period and, unlike the beach and ocean, the area east of Carlsbad Boulevard is not
24 considered a scenic vista (see Table A1-1 in Appendix A).

25 In order to minimize the number of viewers affected by the Project, the present
26 decommissioning schedule avoids work during the summer (Memorial Day through
27 Labor Day). Additionally, a 5-day work week was identified in the Project Description to
28 avoid work on weekends when more people would be expected to use the beach.

29 To ensure that Project activities avoid the peak beach and ocean use periods, the
30 Applicant shall implement MM AES-1 to minimize the Project's aesthetic impact in the
31 area to less than significant.

32 **MM AES-1: Project Scheduling.** Onshore Project decommissioning shall be
33 conducted outside of the peak public beach/ocean-use periods (summer [May 31
34 to September 5] and weekends) in order to minimize the number of viewers
35 affected by the Project to the extent feasible. Exceptions allowing weekend work
36 may occur in certain limited cases such as when work requires an extreme low
37 tide that only occurs on a weekend.

1 **b) Substantially damage scenic resources, including, but not limited to, trees,**
2 **rock outcroppings, and historic buildings within a state scenic highway?**

3 **No Impact.** I-5, located east of the EPS, is an eligible, State scenic highway; however, it
4 has not been officially designated as such. As a result, the Project would not
5 substantially damage scenic resources, including trees, rock outcroppings, and historic
6 buildings, within a State scenic highway; therefore, there would be no impact.

7 **c) Substantially degrade the existing visual character or quality of the site and its**
8 **surroundings?**

9 **Less than Significant with Mitigation.** As discussed in **a)** above, the Project would
10 temporarily introduce construction materials, equipment, vessels and activities to the
11 Project area. This would be considered a short-term degradation of the visual character
12 of the beach and ocean area subject to Project activities. **MM AES-1** would serve to
13 mitigate this impact. Additionally, the subsurface fuel oil submarine pipeline and other
14 facilities would be decommissioned in a manner that would not degrade the existing
15 visual character of the site or surroundings. Therefore, with the implementation of **MM**
16 **AES-1**, the potential impacts of the Project on the existing visual character or quality of
17 the site and its surroundings would be reduced to less than significant.

18 **d) Create a new source of substantial light or glare which would adversely affect**
19 **day or nighttime views in the area?**

20 **Less than Significant with Mitigation.** No long-term sources of light, glare, or
21 nighttime lighting would be introduced by the Project; however, 24-hour operations may
22 occur to maintain the Project schedule, which would require the use of diesel-driven
23 light plants. As a result, nighttime operations may cause temporary adverse lighting
24 impacts to nearby residents. To reduce potential impacts caused by Project lighting, the
25 Applicant shall implement MM AES-2 to minimize substantial light and glare and ensure
26 potential impacts to day or nighttime views in the area are less than significant.

27 **MM AES-2: Night-Lighting Spillage Minimization.** Night-lighting required for
28 Project decommissioning activities shall be shielded and directed to the
29 immediate work area to avoid light spillage onto private property.

30 **3.1.4 Mitigation Summary**

31 Implementation of the following mitigation measures would reduce the potential for
32 Project-related impacts to aesthetics to less than significant.

- 33 • MM AES-1: Project Scheduling.
- 34 • MM AES-2: Night-Lighting Spillage Minimization.

1 **3.2 AGRICULTURE AND FOREST RESOURCES**

AGRICULTURE AND FOREST RESOURCES⁷ - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.2.1 Environmental Setting**

3 The onshore portion of the Project site is located within the EPS, which began operation
 4 in the City of Carlsbad in 1954. The area currently includes residential and industrial
 5 uses. No agricultural or forest resources are present in the Project area.

⁷ In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

1 **3.2.2 Regulatory Setting**

2 3.2.2.1 Federal and State

3 Federal and State laws and regulations pertaining to this issue area and relevant to the
4 Project are identified in Table 3.2-1.

Table 3.2-1. Laws, Regulations, and Policies (Agriculture/Forest Resources)

CA	Williamson Act (Gov. Code, §§ 51200-51207)	This Act enables local governments to enter into contracts with private landowners to restrict specific parcels of land to agricultural or related open space use, and provides landowners with lower property tax assessments in return. Local government planning departments are responsible for the enrollment of land into Williamson Act contracts. Generally, any commercial agricultural use would be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit.
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	Coastal Act policies applicable to this issue area are: <ul style="list-style-type: none"> • Section 30241 (Prime agricultural land; maintenance in agricultural production); • Section 30241.5 (Agricultural land; determination of viability of uses; economic feasibility evaluation); • Section 30242 (Lands suitable for agricultural use; conversion); and • Section 30243 (Productivity of soils and timberlands; conversions).

5 3.2.2.2 Local

6 There are no local goals, policies, and/or regulations applicable to this issue area for the
7 Project due to its location and the nature of the activity.

8 **3.2.3 Impact Analysis**

9 ***a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide***
10 ***Importance (Farmland), as shown on the maps prepared pursuant to the***
11 ***Farmland Mapping and Monitoring Program of the California Natural Resources***
12 ***Agency, to non-agricultural use?***

13 **No Impact.** There are no current or planned agricultural uses at the Project site.
14 Therefore, the Project would have no impact on Prime Farmland, Unique Farmland, or
15 Farmland of Statewide Importance.

16 ***b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?***

17 **No Impact.** There are no agricultural resources present at the Project site. Therefore,
18 the Project would not conflict with existing zoning for agriculture or occur on lands
19 operated under a Williamson Act contract with any local governments for the purpose of
20 restricting specific parcels of land to agricultural or related open space use.

1 **c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined**
2 **in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub.**
3 **Resources Code, § 4526), or timberland zoned Timberland Production (as defined**
4 **by Gov. Code, § 51104, subd. (g))?**

5 **No Impact.** There are no forest lands or timberlands located in the vicinity of the Project
6 site. Therefore, the Project would not conflict with existing zoning for, or cause rezoning
7 of, forest land, timberland, or timberland zoned Timberland Production.

8 **d) Result in the loss of forest land or conversion of forest land to non-forest use?**

9 **No Impact.** There are no forest lands or timberlands located in the vicinity of the Project
10 site. Therefore, the Project would not result in the loss of forest land or conversion of
11 forest land to non-forest use.

12 **e) Involve other changes in the existing environment, which due to their location**
13 **or nature, could result in conversion of farmland to non-agricultural use or**
14 **conversion of forest land into non-forest use?**

15 **No Impact.** There is no farm land or forest land located in the vicinity of the Project site.
16 Therefore, the Project would not alter the existing environment such that farmland or
17 forest land would be converted to non-agricultural or non-forest uses.

18 **3.2.4 Mitigation Summary**

19 The Project would not result in significant impacts to agriculture and forest resources;
20 therefore, no mitigation is required.

1 **3.3 AIR QUALITY**

AIR QUALITY – Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.3.1 Environmental Setting**

3 3.3.1.1 Local Climate and Meteorological Conditions

4 The Project is located within the San Diego Air Basin. San Diego County can be
 5 described as having a climate that is controlled by a semi-permanent subtropical high-
 6 pressure system that is located off the Pacific Ocean. In the summer, this strong high-
 7 pressure system results in clear skies, high temperatures, and low humidity. Very little
 8 precipitation occurs during the summer months because storms are blocked by the
 9 high-pressure system. Beginning in the fall and continuing through the winter, the high-
 10 pressure weakens and moves south, allowing storm systems to move through the area.
 11 Temperature, winds, and rainfall are more variable during these months, and stagnant
 12 conditions occur more frequently than during summer months. Weather patterns include
 13 periods of stormy weather with rain and gusty winds, clear weather that can occur after
 14 a storm, or persistent marine layer conditions, with our without ground fog. Carlsbad
 15 usually receives approximately 10.4 inches of rain per year, with February typically the
 16 wettest month. Onshore winds mostly predominate during both the spring and summer.
 17 The winds during the fall and winter have a more predominate offshore component.

1 3.3.1.2 Criteria Pollutants

2 Criteria air pollutants are those contaminants for which State and Federal ambient air
3 quality standards have been established for the protection of public health and welfare.
4 Criteria pollutants include: ozone (O₃) carbon monoxide (CO), oxides of nitrogen (NO_x),
5 sulfur dioxide (SO₂), and particulate matter.

- 6 • **O₃** is formed in the atmosphere through a series of complex photochemical
7 reactions involving NO_x, reactive organic gases (ROGs) (also known as reactive
8 organic compounds [ROCs]), and sunlight occurring over several hours. Since O₃
9 is not emitted directly into the atmosphere, but is formed as a result of
10 photochemical reactions, it is classified as a secondary or regional pollutant.
11 Because these O₃-forming reactions take time, peak O₃ levels are often found
12 downwind of major source areas. O₃ is considered a respiratory irritant and
13 prolonged exposure can reduce lung function, aggravate asthma, and increase
14 susceptibility to respiratory infections. Children and those with existing respiratory
15 diseases are at greatest risk from exposure to O₃.
- 16 • **CO** is primarily formed through the incomplete combustion of organic fuels.
17 Higher CO values are generally measured during winter when dispersion is
18 limited by morning surface inversions. Seasonal and diurnal variations in
19 meteorological conditions lead to lower values in summer and in the afternoon.
20 CO is an odorless, colorless gas that affects red blood cells in the body by
21 binding to hemoglobin and reducing the amount of oxygen that can be carried to
22 the body's organs and tissues. CO can cause health effects to those with
23 cardiovascular disease and affect mental alertness and vision.
- 24 • **Nitric oxide (NO)** is a colorless gas formed during combustion processes which
25 rapidly oxidizes to form nitrogen dioxide (NO₂), a brownish gas. The highest NO₂
26 values are generally measured in urbanized areas with heavy traffic. Exposure to
27 NO₂ may increase the potential for respiratory infections in children and cause
28 difficulty in breathing even among healthy persons and especially among
29 asthmatics.
- 30 • **SO₂** is a colorless, reactive gas that is produced from the burning of sulfur-
31 containing fuels, such as coal and oil, and by other industrial processes.
32 Generally, the highest concentrations of SO₂ are found near large industrial
33 sources. SO₂ is a respiratory irritant that can cause narrowing of the airways,
34 leading to wheezing and shortness of breath. Long-term exposure to SO₂ can
35 cause respiratory illness and aggravate existing cardiovascular disease.
- 36 • **Particulate Matter.** Ambient air quality standards have been set for two classes
37 of particulate matter: PM₁₀ (coarse particulate matter less than 10 microns in
38 aerodynamic diameter) and PM_{2.5} (fine particulate matter 2.5 microns or less in
39 aerodynamic diameter). Both consist of different types of particles suspended in

1 the air, such as metal, soot, smoke, dust, and fine mineral particles. The primary
 2 source of PM₁₀ emissions appears to be soil via roads, construction, agriculture,
 3 and natural windblown dust. Other sources of PM₁₀ include sea salt, particulate
 4 matter released during combustion processes (such as those in gasoline or
 5 diesel vehicles), and wood burning. Fugitive emissions from construction sites,
 6 wood stoves, fireplaces, and diesel truck exhaust are primary sources of PM_{2.5}.
 7 Depending on the source of particulates, toxicity and chemical activity can vary.
 8 Particulate matter is a health concern because when inhaled it can permanently
 9 damage the lungs; although both sizes of particulates can be dangerous, PM_{2.5}
 10 tends to be more damaging because it remains in the lungs once inhaled.

11 3.3.1.3 Local Air Quality

12 The Project site is located within the jurisdiction of the San Diego County Air Pollution
 13 Control District (SDCAPCD) and within the San Diego Air Basin. The San Diego Air
 14 Basin is designated as nonattainment for both the Federal and State ozone standards
 15 and the State PM₁₀ and PM_{2.5} standards. The closest air quality monitoring station and
 16 most representative of the Project site is the Camp Pendleton station, located 6.5 miles
 17 north-northwest of the Project site. The most recent ambient air quality data from the
 18 Project area indicate that State and Federal 8-hour O₃ standards are occasionally
 19 exceeded in the area (Table 3.3-1).

Table 3.3-1. Summary of Ambient Air Quality Data

Pollutant		2011	2012	2013
O₃ (parts per million [ppm])	Highest 1-Hour concentration (ppm)	0.085	0.092	0.078
	Highest 8-Hour concentration (ppm)	0.071	0.081	0.066
	Number of State Exceedances (8-hour>0.070 ppm)	2	1	0
	Number of Federal Exceedances (8-hour>0.075 ppm)	0	1	0
PM_{2.5}	Highest Sample (micrograms/cubic meter [µg/m ³])	30.7	*	*
	Number of Federal Exceedances (Samples>35)	0	*	*

Note: * means there were insufficient data available to determine the value.
 Source: California Air Resources Board (CARB) 2014.

20 **3.3.2 Regulatory Setting**

21 3.3.2.1 Federal and State

22 Federal and State laws and regulations pertaining to this issue area and relevant to the
 23 Project are identified in Table 3.3-2.

Table 3.3-2. Laws, Regulations, and Policies (Air Quality)

U.S.	Federal Clean Air Act (FCAA) (42 USC 7401 et	The FCAA requires the U.S. Environmental Protection Agency (USEPA) to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. National standards are established for ozone (O ₃), carbon monoxide (CO), nitrogen dioxide (NO ₂), sulfur dioxide (SO ₂), particulate matter
-------------	--	--

Table 3.3-2. Laws, Regulations, and Policies (Air Quality)

	seq.)	<p>(PM₁₀ and PM_{2.5}), and lead (Pb). In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO₂) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate Greenhouse Gas (GHG) emissions. Pursuant to the 1990 FCAA Amendments, USEPA classifies air basins (or portions thereof) as in “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the NAAQS are achieved. The classification is determined by comparing monitoring data with State and Federal standards.</p> <ul style="list-style-type: none"> • An area is classified as in “attainment” for a pollutant if the pollutant concentration is lower than the standard. • An area is classified as in “nonattainment” for a pollutant if the pollutant concentration exceeds the standard. • An area is designated “unclassified” for a pollutant if there are not enough data available for comparisons. <p>The FCAA was first enacted in 1955 and has been amended numerous times in subsequent years (1963, 1965, 1967, 1970, 1977, and 1990). The FCAA mandates that the state submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The plans must include pollution control measures that demonstrate how the standards will be met. The 1990 amendments to the FCAA identify specific emission-reduction goals for areas not meeting the NAAQS. These amendments require a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or meet interim milestones. The sections of the FCAA that would most substantially affect the development of the Project include Title I (Nonattainment Provisions) and Title II (Mobile-Source Provisions). Title I provisions were established with the goal of attaining the NAAQS for criteria pollutants. The NAAQS were amended in July 1997 to include an 8-hour standard for O₃ and adopt a NAAQS for fine particulate matter (PM_{2.5}).</p>
CA	California Clean Air Act of 1988 (CCAA) (Assembly Bill [AB] 2595)	<p>The CCAA requires all air districts in the State to endeavor to achieve and maintain State ambient air quality standards for O₃, CO, SO₂, NO₂, and PM; attainment plans for areas that did not demonstrate attainment of State standards until after 1997 must specify emission reduction strategies and meet milestones to implement emission controls and achieve more healthful air quality. The 1992 CCAA Amendments divide O₃ nonattainment areas into four categories of pollutant levels (moderate, serious, severe, and extreme) to which progressively more stringent requirements apply. State ambient air standards are generally stricter than national standards for the same pollutants; California also has standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.</p>
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	<p>Section 30253, subdivision (c) requires that new development shall be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.</p>
CA	Other	<ul style="list-style-type: none"> • Under California's Diesel Fuel Regulations, the sulfur limit in diesel fuel is limited to 15 parts per million (ppm). • The California Air Resources Board's (CARB's) Heavy Duty Diesel Truck Idling Rule (Cal. Code Regs., tit. 13, § 2485) prohibits heavy-duty diesel trucks from idling for longer than 5 minutes at a time (except while queuing, provided the queue is located beyond 100 feet from any homes or schools). • The Statewide Portable Equipment Registration Program (PERP) regulates portable engines/engine-driven equipment units. Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts.

1 3.3.2.2 Local

2 The SDCAPCD is the local agency primarily responsible for attaining the air quality
3 standards established by the California Air Resources Board (CARB) and U.S.
4 Environmental Protection Agency (USEPA). The SDCAPCD implements programs and
5 regulations to control air pollution released from stationary sources within the district, as
6 well as implementing programs to encourage alternative means of transportation.
7 SDCAPCD Rule 10 requires new stationary sources of air pollution to obtain an
8 authority to construct and permit to operate, which allows the SDCAPCD to verify
9 compliance of the new source with emissions limits and other requirements of the
10 SDCAPCD's Rules and Regulations.

11 The SDCAPCD developed a Regional Air Quality Strategy (RAQS) to provide control
12 measures to progress towards attainment of State O₃ standards. Currently, the San
13 Diego Air Basin is in "non-attainment" status for Federal O₃ and the State PM₁₀ and
14 PM_{2.5}; however, an attainment plan is only available for O₃. The RAQS was adopted in
15 1992 and was updated as recently as 2009, which was the latest update incorporating
16 minor changes to the prior 2004 update. The 2009 update mostly clarifies and enhances
17 emission reductions by implementing new ROC and NO_x reduction measures. The
18 criteria pollutant standards are generally attained when each air quality monitor within
19 the region has had no exceedances during the previous 3 calendar years.

20 The RAQS is largely based on population predictions by the San Diego Association of
21 Governments (SANDAG). Projects that produce less growth than predicted by SANDAG
22 would generally conform to the RAQS, and projects that create more growth than
23 projected by SANDAG may create a significant impact assuming the project produces
24 unmitigated emission generation in excess of the regional standards.

25 The City of Carlsbad (2006) General Plan OSCE identified "a city with clean air" as the
26 air quality goal and the following policy relevant to onshore Project activities.

- 27
- Policy C.6: The City shall monitor all construction to ensure that proper steps are
28 taken by developers to reduce short-term construction related impacts to air
29 resources. During cleaning, grading, earth moving, or excavation developers shall:
30
 - Control fugitive dust by regular watering, paving construction roads, or other
31 dust preventive measures;
 - Maintain equipment engines in proper tune;
 - Seed and water until vegetation cover is grown;
 - Spread soil binders;
 - Wet the area down, sufficient enough to form a crust on the surface with
32 repeated soakings, as necessary, to maintain the crust and prevent dust pick-
33 up by the wind;
 - Street sweeping, should silt be carried over to adjacent public thoroughfares;
- 34
35
36
37
38

- 1 ○ Use water trucks or sprinkler systems to keep all areas where vehicles move
- 2 damp enough to prevent dust raised when leaving the site;
- 3 ○ Wet down areas in the late morning and after work is completed for the day;
- 4 ○ Use low sulfur fuel (0.5 percent by weight) for construction equipment.

5 **3.3.3 Impact Analysis**

6 ***a) Conflict with or obstruct implementation of the applicable air quality plan?***

7 **No Impact.** The RAQS outlines the SDAPCD's plans and control measures to attain
8 State air quality standards for O₃. The SDAPCD also relies on the State Implementation
9 Plan, which includes the SDAPCD's plans and control measures for attaining the
10 National Ambient Air Quality Standard for O₃. The RAQS relies on information from the
11 CARB and SANDAG, including projected future growth in source emissions projections
12 in the County to determine strategies and regulatory controls to reduce stationary
13 source emissions. CARB mobile source emission projections and SANDAG growth
14 projections are based on population and vehicle trends and land use plans developed
15 by the cities and the County of San Diego. As such, projects that propose development
16 that is consistent with the growth anticipated by the general plans would be consistent
17 with the RAQS (County of San Diego Land Use and Environment Group 2007). The
18 Project is limited to short-term MOT decommissioning activities and would not alter local
19 or regional population projections. Thus, the Project is consistent with the RAQS and
20 would not conflict with or obstruct implementation of applicable air quality plans.

21 ***b) Violate any air quality standard or contribute substantially to an existing or*** 22 ***projected air quality violation?***

23 **Less than Significant Impact.** Sources of air pollution associated with the Project
24 include onshore heavy equipment, transfer dump trucks, cement trucks, marine vessels,
25 and associated onboard equipment. Under SDCAPCD Rule 11, mobile sources are
26 exempt from Rule 10 permit requirements; however, portable onshore construction
27 equipment such as generators, compressors and power winches would be subject to
28 the Statewide Portable Equipment Registration Program.

29 The Project site is located in the City of Carlsbad, which has not adopted quantitative
30 thresholds for determining the significance of construction or mobile source-related air
31 quality impacts; however, the County of San Diego has adopted screening level
32 thresholds for use with CEQA, taken from SDCAPCD Rule 20.2. Although Rule 20.2
33 pertains to non-major stationary sources, emission levels triggering an Air Quality
34 Impact Analysis (AQIA) may be used as an indication of the potential to cause a
35 violation of ambient air quality standards. Emission levels that trigger an AQIA are listed
36 in Table 3.3-3 and may be used for comparative purposes as air quality thresholds of
37 significance for the purposes of this assessment.

Table 3.3-3. SDCAPCD AQIA Trigger Levels

Pollutant	Pounds/Hour	Pounds/Day	Tons/Year
PM ₁₀	--	100	15
Oxides of Nitrogen (NO _x)	25	250	40
Oxides of Sulfur (SO _x) ¹	25	250	40
Carbon Monoxide (CO)	100	550	100
Volatile Organic Compounds (VOC)	-	75	13.7
Lead and Lead Compounds	-	3.2	0.6
Respirable Particulate Matter (PM ₁₀)	-	100	15
Fine Particulate Matter (PM _{2.5})	-	55	10

¹ SO_x are compounds of sulfur and oxygen molecules. Sulfur dioxide (SO₂) is the predominant form found in the lower atmosphere.

1 Offshore vessels and equipment would generate the majority of Project-associated air
 2 emissions. These emissions were quantified using harbor craft emission factors
 3 presented in The Port of Long Beach (POLB) 2005 Air Emission Inventory (POLB
 4 2007). Emissions generated by heavy equipment to be used onshore (excavators,
 5 bulldozer, loader, crane, and smaller equipment) were quantified using emission factors
 6 derived from the URBEMIS 2007 model and load factors from the OFFROAD model.
 7 On-road sources used to truck out excavated materials, truck infill sand and cement,
 8 and for worker commute trips were quantified using the Emfac2007 model.

9 Estimated emissions of criteria pollutants are presented in Table 3.3-4.⁸ As detailed in
 10 Section 2, Project Description, there are two proposed methodologies (Options 1 and 2)
 11 to complete decommissioning activities in both the surf zone and offshore segments.
 12 Although in-field success would determine which method is more effective and thus
 13 used, the options with the highest emissions are presented in the emissions
 14 calculations. Proposed equipment listed for each decommissioning segment in Table
 15 A2-1 in Appendix A was used to estimate emissions as detailed in Appendix H, which
 16 breaks down each segment into specific phases/tasks. Decommissioning of the onshore
 17 and offshore segments would occur simultaneously, and their daily emissions were
 18 combined as peak pounds per day, as shown in Table 3.3-4. This approach was also
 19 taken for the beach and surf zone segments since these segments would also be
 20 decommissioned simultaneously.

21 To estimate emissions of criteria pollutants for comparison to the AQIA triggers, each
 22 phase's/task's emissions were calculated as peak pounds per day and combined with
 23 the simultaneously occurring phase/task per Table A1-1 in Appendix A. No attempt was
 24 made to separate Option 1 from Option 2 for either segment. Estimated daily emissions
 25 for the beach and surf zone segments (combined) are expected to be less than the
 26 onshore and offshore segments (combined).

⁸ Lead emissions are not presented in the emissions tables as lead-containing fuels would not be used.

Table 3.3-4. Air Emissions Summary

ESTIMATED CRITERIA POLLUTANTS (PEAK POUNDS/DAY)						
		NO_x	ROG/VOC	PM₁₀	CO	SO₂
2016	Onshore Decommissioning	61.88	6.39	2.39	35.01	0.11
	Offshore Decommissioning	152.72	10.76	6.38	79.60	1.64
	Maximum (pounds/day)	214.6	17.15	8.77	114.61	1.75
2017	Beach Decommissioning	27.05	2.79	0.91	17.34	0.05
	Surf Zone Decommissioning	144.44	12.67	5.74	76.62	1.03
	Maximum (pounds/day)	171.49	15.46	6.65	93.96	1.08
AQIA Trigger/Screening Threshold (pounds/day)		250	75	100	550	250
Exceeds Threshold¹		No	No	No	No	No
ESTIMATED CRITERIA POLLUTANTS (TOTAL TONS)						
		NO_x	ROG/VOC	PM₁₀	CO	SO₂
Pre- and Post-Surveys		0.06	0.00	0.00	0.04	0.00
Onshore Decommissioning		1.13	0.14	0.05	0.86	0.00
Offshore Decommissioning		8.25	0.58	0.34	4.28	0.09
Beach Decommissioning		0.78	0.08	0.03	0.53	0.00
Surf Zone Decommissioning		2.46	0.19	0.10	1.27	0.22
Total Project Air Emissions (tons)		12.68	0.99	0.52	6.99	0.32
Maximum (tons/year)²		9.44	0.72	0.39	5.19	0.09
AQIA Trigger/Screening Threshold (tons/year)		40	13.7	15	100	40
Exceeds Threshold		No	No	No	No	No

Notes: PM_{2.5} emissions are not calculated due to the lack of emission factors for construction equipment; however, if one conservatively assumes estimated PM₁₀ emissions represent PM_{2.5} emissions, Project emissions would be below the PM_{2.5} thresholds.

¹ Threshold is not exceeded for either 2016 or 2017 construction years.

² Maximum (peak) tons/year are expected from September 2016 through August 2017 (includes pre- and post-surveys, onshore decommissioning, and offshore decommissioning).

1 Table 3.3-4 also provides estimates of the total tons of criteria pollutants per segment
 2 (per Table A2-1 in Appendix A). A maximum tons per year of air emissions is
 3 anticipated for the period September 2016 through August 2017 based upon the
 4 sequence of phases/tasks as shown in Table A1-1 in Appendix A, which include pre-
 5 and post-surveys and onshore and offshore decommissioning.

6 As provided in Table 3.3-4, Project emission totals calculated as peak pounds per day
 7 do not exceed AQIA triggers used as indicators or thresholds of significance, while
 8 emission totals calculated as peak tons per year are also below the annual AQIA trigger
 9 (Project emission totals are cumulative, not annual, and include emissions for the
 10 Project duration). Therefore, the Project would not violate any air quality standard or
 11 contribute substantially to an existing or projected air quality violation, and this impact
 12 would be less than significant. However, to further reduce Project air emissions and

1 ensure that they remain below the threshold, Applicant Proposed Measures (APMs)
2 would be implemented as feasible.

3 **APM AIR-1: Air Emissions Compliance Program.** The Project will incorporate
4 an Air Emissions Compliance Program to ensure that Project emissions are in
5 conformance with the approved Project. This Program will provide detailed
6 information regarding the internal combustion engines used, the duration of use,
7 the fuel consumed, and the calculated emissions.

8 **APM AIR-2: Low-Emission Engines – Offshore.** Use marine vessels and
9 offshore equipment with low emissions engines, certified to meet Federal Tier III
10 requirements, if available.

11 **APM AIR-3: Low-Emission Engines – Onshore.** Use heavy equipment
12 onshore with the best available low emissions engines (Tier III or IV), if available.

13 **APM AIR-4: Mobilize from Nearest Port.** Mobilize marine vessels and
14 equipment from the nearest port supporting these vessels.

15 **APM AIR-5: Dispose Materials at Nearest Port.** Dispose of recovered anchors
16 and associated materials at the nearest port accepting these materials.

17 **APM AIR-6: Low-Sulfur Fuel.** All Project diesel-powered equipment used during
18 the Project shall use diesel fuel with a sulfur content of 15 parts per million (ppm)
19 or less.

20 ***c) Result in a cumulatively considerable net increase of any criteria pollutant for***
21 ***which the Project region is non-attainment under an applicable federal or state***
22 ***ambient air quality standard (including releasing emissions which exceed***
23 ***quantitative thresholds for ozone precursors)?***

24 **Less than Significant Impact.** The Project would result in a less than significant net
25 increase in criteria pollutant emissions for which the San Diego Air Basin is considered
26 non-attainment. Further, the Project's incremental contribution of emissions would not
27 be cumulatively considerable as it would not hinder progress towards attainment of
28 State and Federal ambient air quality standards. The Project is temporary, is not located
29 near areas of poor air quality (based on ambient air quality monitoring), and is located
30 near the beach/ocean which would allow for adequate dispersion of pollutants and
31 prevent accumulation of emissions. Therefore, the Project would not result in a
32 cumulatively considerable net increase of any criteria pollutant for which the Project
33 region is non-attainment under an applicable Federal or State ambient air quality
34 standard, and this impact would be less than significant.

1 **d) Expose sensitive receptors to substantial pollutant concentrations?**

2 **Less than Significant Impact.** With regard to air pollutant impacts, sensitive receptors
3 are defined as people that have an increased sensitivity to air pollution or environmental
4 contaminants. Sensitive receptor locations include schools, parks and playgrounds, day
5 care centers, nursing homes, hospitals, and residential dwelling unit(s). The closest
6 sensitive receptors to the Project site are the residences located about 1,400 feet south
7 of the fuel oil submarine pipeline landfall (i.e., where the pipeline crosses the mean high
8 tide line) or 1,000 feet from the closest work area. The closest school to the Project site
9 is Jefferson Elementary School, located 0.95 mile north of the Project site. Sensitive
10 receptors are not anticipated to be exposed to substantial pollutant concentrations due
11 to the Project site's distance away from sensitive receptors, generally dispersed nature
12 of the Project's pollution sources, and adequate dispersion of pollutants by sea breezes.
13 Therefore, the Project is unlikely to expose sensitive receptors to substantial pollutant
14 concentrations, and this impact would be less than significant.

15 **e) Create objectionable odors affecting a substantial number of people?**

16 **Less than Significant Impact.** SDCAPCD Rule 51 and the California Health and
17 Safety Code prohibit emissions that would result in a nuisance to a considerable
18 number of persons. The exhaust of diesel-powered vessels and equipment to be used
19 by the Project may be considered an objectionable odor by some portion of the local
20 population; however, due to the location of the Project and distance from residential
21 areas, these odors would be highly dispersed prior to reaching local residences and
22 therefore would not be considered a nuisance. Therefore, it is unlikely that the Project
23 would create objectionable odors affecting a substantial number of people, and this
24 impact would be less than significant.

25 **3.3.4 Mitigation Summary**

26 The Project would not result in significant impacts to air quality; therefore, no mitigation
27 is required. The following APMs would be implemented to further reduce impacts.

- 28 • APM AIR-1: Air Emissions Compliance Program.
- 29 • APM AIR-2: Low-Emission Engines – Offshore.
- 30 • APM AIR-3: Low-Emission Engines – Onshore.
- 31 • APM AIR-4: Mobilize from Nearest Port.
- 32 • APM AIR-5: Dispose Materials at Nearest Port.
- 33 • APM AIR-6: Low-Sulfur Fuel.

1 **3.4 BIOLOGICAL RESOURCES**

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

2 **3.4.1 Environmental Setting**

3 3.4.1.1 Terrestrial Environment and Biology

4 Historically, the onshore portion of the Project area supported coastal salt marsh, but
 5 was converted to residential and industrial uses, including electric generation at the
 6 EPS which began operation in the City of Carlsbad in 1954. The following discussion of
 7 biological resources at the EPS is taken from the Final Staff Assessment for the
 8 Carlsbad Energy Center Project (CECP), which included a biological resources survey
 9 of the entire 95-acre EPS in 2003 and a 2007 reconnaissance-level survey of the CECP

1 site (approximately 1,000 feet east-northeast of the onshore fuel oil submarine pipeline)
2 and a 1-mile buffer.

3 *The CECP site is highly disturbed and/or developed due to ongoing operations*
4 *within the existing Encina Power Station. The majority of the CECP footprint is*
5 *composed of bare ground or a combination of bare ground and gravel with scattered*
6 *ruderal vegetation. Plant species observed include iceplant (*Carpobrotus edulis*),*
7 *totalote (*Centaurea melitensis*), horseweed (*Conyza* sp.), black mustard (*Brassica**
8 *nigra), fountain grass (*Pennisetum setaceum*), wild oat (*Avena fatua*), foxtail chess*
9 *(*Bromus madritensis* ssp. *rubens*), tree tobacco (*Nicotiana glauca*), western marsh-*
10 *rosemary (*Limonium californicum*), salt heliotrope (*Heliotropium curasavicum*),*
11 *buckwheat (*Eriogonum* sp.), and cudweed (*Gnaphalium* sp.). Eucalyptus*
12 *(*Eucalyptus* sp.) plantings occur along the northern and eastern perimeter of the*
13 *CECP site and serve as visual screens of the Encina Power Station. These plantings*
14 *are mature eucalyptus trees greater than 45 feet in height and of sufficient canopy*
15 *cover to potentially support nesting raptors.*

16 *Due to the frequency and intensity of disturbance from operation of the Encina*
17 *Power Station, the proposed CECP site does not provide habitat capable of*
18 *supporting a diverse assemblage of wildlife. Direct wildlife observations in the project*
19 *area include common species such as California ground squirrel (*Spermophilus**
20 *beecheyi) and a variety of bird species typically found in disturbed and developed*
21 *areas such as house finch (*Carpodacus mexicanus*), northern mockingbird (*Mimus**
22 *polyglottus), mourning dove (*Zenaida macroura*), rock dove (*Columba livia*),*
23 *European starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), and*
24 *American crow (*Corvus branchyrhynchos*). Additional common bird species*
25 *observed within the proposed CECP site include Anna's hummingbird (*Calypte**
26 *anna), black phoebe (*Sayornis nigricans*), common yellowthroat (*Geothlypis trichas*),*
27 *and California towhee (*Pipilo crissalis*).*

28 **Vegetation**

29 The fuel oil submarine pipeline corridor does not support terrestrial vegetation; however,
30 vegetation is present on Carlsbad State Beach between the surf zone and Carlsbad
31 Boulevard south of the pipeline corridor. Vegetation present in this area includes native
32 shrub species; these species are isolated from the beach by a concrete retaining wall.

33 **Sensitive Habitats**

34 The Agua Hedionda Lagoon (outer lagoon) is located approximately 300 feet north of
35 the fuel oil submarine pipeline corridor and is the source of cooling water for the EPS.
36 The lagoon has been dredged periodically to ensure adequate flow to the cooling water
37 inlet since 1954. The Lagoon supports special-status species such as the southwestern

1 pond turtle (*Actinemys marmorata*), white-faced ibis (*Plegadis chihi*), and western
 2 snowy plover (*Charadrius alexandrinus nivosus*) and provides foraging habitat for
 3 American peregrine falcon (*Falco peregrinus anatum*) and osprey (*Pandion haliaetus*).
 4 The estuarine and marsh habitat surrounding the lagoon provides suitable nesting
 5 habitat for special-status species such as the California least tern (*Sterna antillarum*
 6 *browni*), elegant tern (*Sterna elegans*), Belding’s savannah sparrow (*Passerculus*
 7 *sandwichensis beldingi*), California brown pelican (*Pelecanus occidentalis*), and coastal
 8 California gnatcatcher (*Polioptila californica californica*).

9 The EPS (including onshore portions of the MOT) is located within the boundary of the
 10 City of Carlsbad’s (2004) Habitat Management Plan (HMP), which guides local
 11 implementation for the North County Multiple Habitat Conservation Program (MHCP)
 12 (SANDAG 2003). The MHCP focuses on habitat preservation and enhancement for the
 13 coastal California gnatcatcher, and designated Agua Hedionda Lagoon and adjacent
 14 areas to the east as core habitat area. Critical habitat for the coastal California
 15 gnatcatcher was finalized on December 19, 2007, but excluded habitat areas
 16 immediately east of Agua Hedionda Lagoon as they are protected under the MHCP.

17 **Special Status Species**

18 Based on reviews of the California Natural Diversity Database, City of Carlsbad’s HMP,
 19 and other environmental documents prepared for projects in the area, several special
 20 status species have the potential to occur in the vicinity of the EPS (Table 3.4-1).

Table 3.4-1. Special Status Species that May Occur in EPS Vicinity

Species	Category
California adolphia (<i>Adolphia californica</i>)	CNPS List 2
Coast woolly-head (<i>Nemacaulis denudata var. denudata</i>)	CNPS List 1B
Cliff spurge (<i>Euphorbia misera</i>)	CNPS List 2
Orcutt’s pincushion (<i>Chaenactis glabriuscula ssp. orcuttiana</i>)	CNPS List 1B
South Coast saltscale (<i>Atriplex pacifica</i>)	CNPS List 1B
Wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>)	CNPS List 2
Saltmarsh skipper butterfly (<i>Panoquina errans</i>)	Special Animal
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	FE
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE; CSC
Southwestern pond turtle (<i>Actinemys marmorata</i>)	CSC
American peregrine falcon (<i>Falco peregrinus anatum</i>)	FP
Belding’s savannah sparrow (<i>Passerculus sandwichensis beldingi</i>)	SE
California brown pelican (<i>Pelecanus occidentalis californicus</i>)	FP
California least tern (<i>Sterna antillarum browni</i>)	FE; SE; FP
Coastal California gnatcatcher (<i>Polioptila californica</i>)	FT; CSC
Cooper’s hawk (<i>Accipiter cooperi</i>)	WL
Elegant tern (<i>Sterna elegans</i>)	WL
Light-footed clapper rail (<i>Rallus longirostris levipes</i>)	FE; SE; FP

Table 3.4-1. Special Status Species that May Occur in EPS Vicinity

Species	Category
Osprey (<i>Pandion haliaetus</i>)	WL
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>)	FT; CSC
White-faced ibis (<i>Plegadis chihi</i>)	WL
Pocketed free-tailed bat (<i>Nyctinomops femorosaccus</i>)	CSC

Acronyms: CNPS = California Native Plant Society; CSC = California Species of Special Concern; FE = Federally Endangered; FP = Fully Protected; SE = State Endangered; WL = Watch List.

1 Most of the special-status species listed above have been reported in MHCP core
 2 habitat areas, including Core #4 which includes Agua Hedionda Lagoon. The EPS,
 3 including the onshore fuel oil submarine pipeline corridor, does not provide suitable
 4 habitat for these species; however, a 1959 California Natural Diversity Database entry
 5 reports that coast woolly-heads (*Nemacaulis denudata* var. *denudate*) were found on
 6 the sandy beach near the EPS. It is unknown if this species has been found there
 7 recently. In addition, the 2007 Western Snowy Plover Recovery Plan indicates that
 8 snowy plovers bred along the shore of Agua Hedionda Lagoon prior to 2000, but have
 9 not been found breeding at Carlsbad State Beach since. It is possible that the western
 10 snowy plover may forage along Carlsbad State Beach during the non-breeding season
 11 (September to February).

12 3.4.1.2 Marine Environment and Biology

13 The offshore area adjacent to the EPS is located within the larger biogeographic zone
 14 known as the Southern California Bight (SCB), which encompasses approximately
 15 22,000 square miles with boundaries that span from Point Conception, California, in the
 16 north to Cabo Colnett, Baja California, in the south. The SCB has a high upwelling
 17 index, (upward flowing current) between April and August, but geostrophic or wind-
 18 driven flows may occur year round (City of Carlsbad 2005).

19 Descriptions of intertidal and subtidal habitats and biota provided below were derived
 20 mainly from existing literature dated prior to 2005, and supplemented and updated by
 21 information collected during a Project-specific biological resources survey performed by
 22 Merkel & Associates (2013a). A copy of the Merkel & Associates survey report is
 23 provided in Appendix I.

24 **Intertidal Habitats and Biota**

25 The beach habitat in the Project vicinity consists mainly of wave-swept sandy shores.
 26 Sand cover on the beaches and in the nearshore varies seasonally. In the winter,
 27 intertidal sand is transported offshore and the underlying cobble is exposed.
 28 Additionally, riprap is present on the sand beach within the Project area, and covers the
 29 intertidal portion of the fuel oil submarine pipeline.

1 Species common to the sandy beach include: air-breathing pill bugs (*Alloniscus*
2 *perconvexus*), an isopod (*Tylos punctatus*), the amphipod beach hopper (*Orchestoidea*
3 *californiana*), the mole crab (*Emerita analoga*), the opossum (*mysid*) shrimp
4 (*Archaeomysis maculata*), the polychaete worm (*Euzonus mucronata*), the bean clam
5 (*Donax gouldi*), and the Pismo clam (*Tivela stultorum*) (City of Carlsbad 2005).

6 The California grunion (*Leuresthes tenuis*) is also a species common to the Project
7 area, with a range that extends from Point Conception, California, to Point Abrejos,
8 Baja California. Although this species inhabits nearshore waters (from the surf to a
9 depth of 60 feet), they leave the water at night to spawn on beaches during the spring
10 and summer months. For four consecutive nights, beginning on the nights of the full and
11 new moons, spawning occurs after high tides and continues for several hours.
12 Spawning occurs from March through August and occasionally in February and
13 September, with peak spawning occurring from late March to early June. In 1927,
14 regulations were instituted that mandated a closed season for 3 months, from April
15 through June. In 1947, species abundance had improved and the closure was
16 shortened to April through May. This closure is still in effect to protect grunion during
17 their peak spawning period (CDFW 2014).

18 Except for the manmade riprap, the closest rocky intertidal habitat is located about
19 3,250 feet down coast (south) of the EPS discharge channel (the area between the
20 southern set of double jetties across from the Aqua Hedionda Lagoon), which is located
21 approximately 2,950 feet south of the riprap covering the fuel oil submarine pipeline.
22 Although a list of biota associated with that rocky intertidal habitat was not found,
23 studies on the north and south riprap jetties at the mouth of Agua Hedionda Lagoon
24 found species typical of southern California rocky intertidal habitats. Surf grass
25 (*Phyllospadix spp.*) was also observed on the north jetty riprap and on rock reefs
26 offshore of the EPS in water depths of 20 feet or less (Le Page and Ware 2001).

27 **Subtidal Habitats and Biota**

28 The sedimentary habitat continues offshore along the fuel oil submarine pipeline
29 corridor, however, rocky subtidal substrate to the north and south support kelp and
30 other macroalgae (City of Carlsbad 2005). Species listed by EA Engineering, Science,
31 and Technology (1997, cited in City of Carlsbad 2005) as associated with the subtidal
32 sand habitat within the vicinity of the EPS include: a polychaete (*Prionospio pygmaeus*),
33 a proboscis worm (*Carinoma mutabilis*), a sea spider (*pycnogonid*) (*Callipallene*
34 *californiensis*), two crustaceans (*Megaluropus sp.* and *Leptocuma forsmanni*), and the
35 sand dollar (*Dendraster excentricus*). Le Page and Ware (2001) completed a series of
36 spot dives offshore of the EPS and report a sedimentary (sand) bottom with the tube-
37 building worm *Diopatra sp.* present in approximately 18 feet of water at the two
38 locations closest to the existing fuel oil submarine pipeline.

1 The City of Carlsbad (2005) reports that fish associated with the sedimentary habitat
2 within the vicinity of the Project area include the speckled sanddab (*Citharichthys*
3 *stigmaeus*), northern anchovy (*Engraulis mordax*), queenfish (*Seriphus politus*), sand
4 bass (*Paralabrax nebulifer*), white croaker (*Genyonemus lineatus*), honeyhead turbot
5 (*Pleuronichthys verticalis*), and California halibut (*Paralichthys californicus*). No eelgrass
6 was reported within the subtidal sedimentary habitat.

7 Several sources of information document the location of rocky substrate and kelp in the
8 immediate Project area. Those sources include the City of Carlsbad Final EIR Precise
9 Development Plan and Desalination Project (City of Carlsbad 2005); the San Diego and
10 Orange County Region Nine Kelp Survey Consortium (reporting kelp conditions in 2011)
11 (MBC Applied Environmental Sciences 2012); the Encina Power Station Marine
12 Biological Resources Survey (reporting hard bottom and kelp conditions) (Merkel &
13 Associates 2013a); and the Cabrillo Power I LLC Encina Power Station Bathymetry and
14 Geophysical Survey (Fugro Pelagos, Inc. [Fugro] 2013) (documenting hard bottom and
15 kelp coverage). The findings from each source are discussed below.

16 As described in the City of Carlsbad Final EIR Precise Development Plan and
17 Desalination Project (City of Carlsbad 2005), the offshore and northward extension of
18 the intertidal rocky substrate south of the fuel oil submarine pipeline supports a
19 relatively large kelp bed; a smaller and seasonal kelp bed associated with the other rock
20 habitat within the Project area is located approximately 3,600 feet to the north of the
21 riprap covering the pipeline.

22 The San Diego and Orange County Region Nine Kelp Survey Consortium states that
23 kelp bed size and health varies considerably from year to year depending on a variety of
24 environmental factors including available light, sedimentation, nutrient pulses, grazing
25 by herbivores, storms, and the El Niño Southern Oscillation. The kelp canopy coverage
26 immediately offshore of the EPS, as measured between the years 1967 and 2011,
27 varied from 0 to just under 0.4 square kilometers, with the greatest coverage observed
28 in 2008. The average bed area per year for this kelp bed mirrored the other beds in the
29 San Diego region from 1967 through 2011, either generally reacting favorably or
30 negatively with large stimuli such as the La Niña and El Niño Southern Oscillations.
31 Figure 3.4-1 shows kelp coverage in the Project area as of December 2011 as reported
32 in the Status of the Kelp Beds 2011 for the San Diego and Orange County Region Nine
33 Kelp Survey Consortium (MBC Applied Environmental Sciences 2012).

34 In their biological resources survey report (Appendix I), Merkel & Associates (2013a)
35 also identified the location of hard bottom and kelp in the Project area (Figure 3.4-2).
36 Their findings match those of Fugro's bathymetric and geophysical survey map (April
37 2013) with the exception that some areas at the southern limits of Fugro's survey map
38 are identified as kelp whereas Merkel & Associates identified these areas as bedrock.

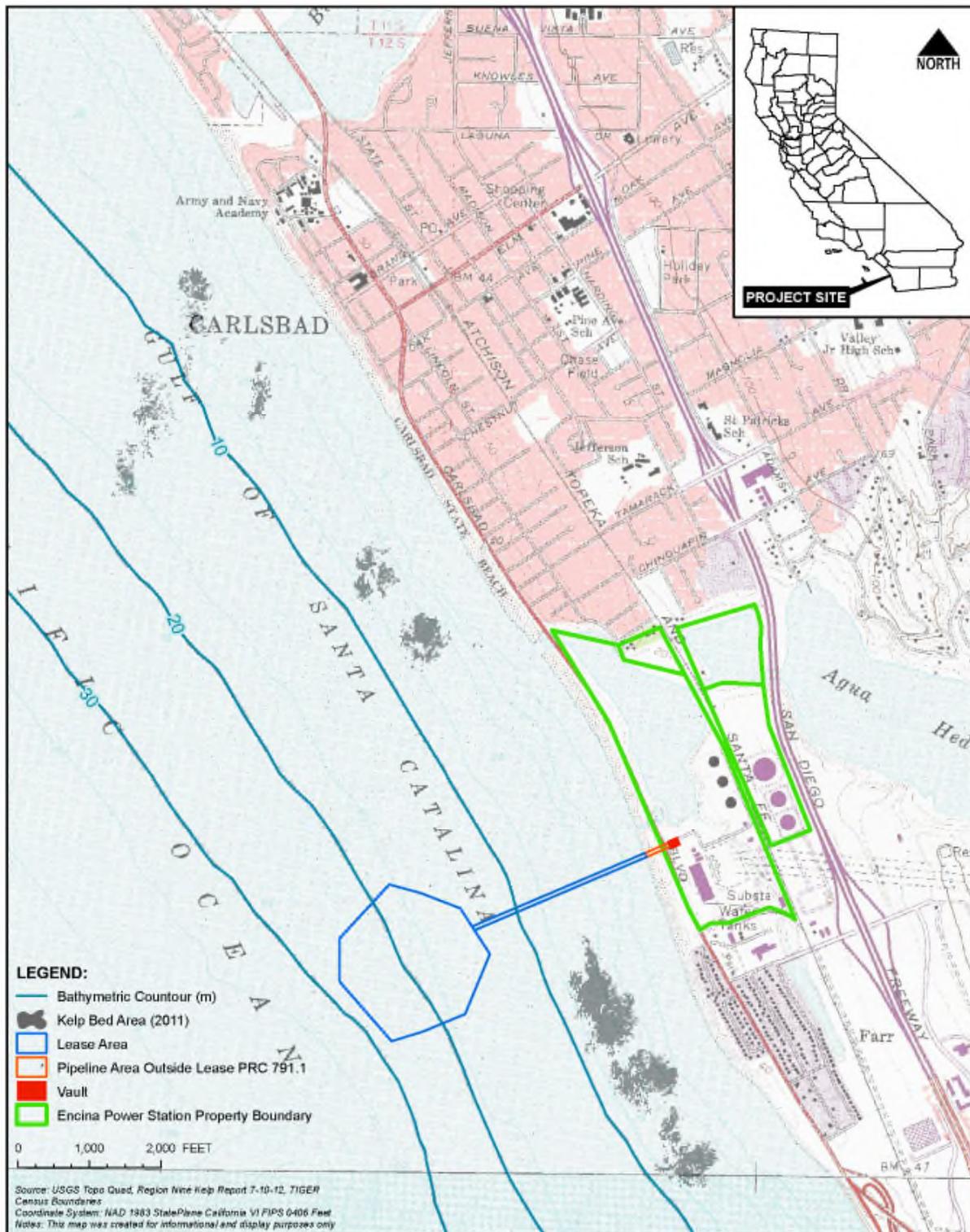


Figure 3.4-1. Project Area Kelp Coverage (2011)

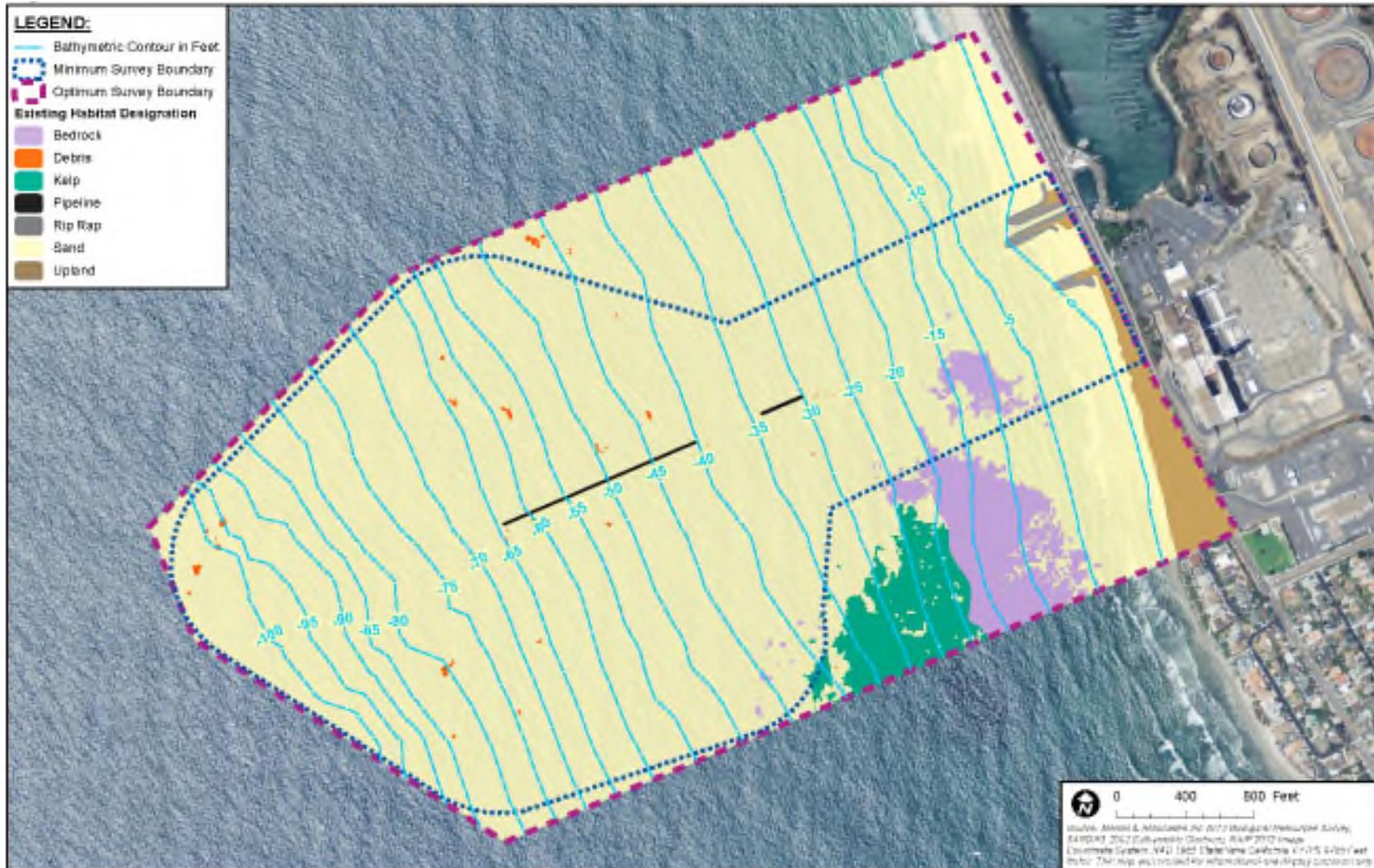


Figure 3.4-2. Marine Habitats in the Vicinity of the EPS

1 The bathymetry and surficial features (kelp and hard bottom) as mapped by Fugro is
2 used as the base for the Project Site Map (Figure A1-1 in Appendix A).

3 Macrophytic brown algal taxa recorded within the rocky seafloor habitats offshore of the
4 EPS and within the kelp bed north of the Project site include the southern sea palm
5 (*Eisenia arborea*), feather boa kelp (*Egregia laevigata*), oar weed (*Laminaria farlowii*),
6 and bladder chain kelp (*Cystoseira osmundacea*). Understory "turf algae," including
7 *Dictyota flabellata* and *Rhodomenia californica*, have also been recorded within these
8 kelp beds (City of Carlsbad 2005; Le Page and Ware 2001).

9 Kelp bed-associated epifauna (attached organisms) reported within the Project region
10 include invertebrates; the dominant species is the tube-building polychaete (*Diopatra*
11 *ornata*), but other species present include sea fans (*Muricea californica* and *M.*
12 *fructicosa*), a sea anemone (*Anthopleura elegantissima*), a tunicate (*Styela*
13 *montereyensis*), the dog or Kellet's whelk (*Kelletia kelletii*), and sea urchins
14 (*Strongylocentrotus franciscanus* and *S. purpuratus*). Encrusting species such as
15 bryozoans, other tunicates, sponges, and hydrozoans are also abundant (EA
16 Engineering, Science and Technology 1997 [as cited in City of Carlsbad 2005]; Le Page
17 and Ware 2001).

18 Several surveys cited in City of Carlsbad (2005) document the presence of fish species
19 associated with the kelp beds in the Project area, including kelp bass (*Paralabrax*
20 *clathratus*), sand bass (*P. nebulifer*), black surfperch (*Embiotoca jacksoni*), kelp
21 surfperch (*Brachyistius frenatus*), white surfperch (*Phaenerodon furcatus*), black
22 surfperch (*Embiotoca jacksoni*), California sheephead (*Semicossyphus pulcher*), rock
23 wrasse (*Halichoeres semicinctus*), seniorita (*Oxyjulis californica*), and topsmelt
24 (*Atherinops affinis*).

25 **Offshore Seafloor Habitat and Biota**

26 A seafloor habitat mapping study using a side-scan sonar and ROV was completed
27 offshore the EPS in February 2013 in water depths ranging from approximately 10 to
28 120 feet mean lower low water (Merkel & Associates 2013a). Figure 3.4-2 shows the
29 survey area and a copy of the survey report is provided as Appendix I.

30 Sonar data were used to develop a seafloor habitat map and ground-truthing of the
31 interpreted habitats was completed using the ROV. Merkel & Associates (2013a)
32 reports that sedimentary habitat comprised 350 of the 387 acre survey area; the surficial
33 sediments consisted of fine sand throughout the survey area. Hard bottom habitat,
34 consisting of rock reefs, comprises the remaining 27 acres (7% of the survey area) as
35 shown in Figure 3.4-2. Along the southern boundary of the survey area, approximately
36 15 acres of bedrock reef habitat was recorded. Hard bottom substrate is present in

1 water depths ranging from -5 to -20 feet, with a small patch located approximately 100
2 feet south of the fuel oil submarine pipeline corridor (Merkel & Associates 2013a).

3 During the February survey, biologists were not able to detect surfgrass beds due to an
4 inability to access the shallow waters over the reef features. Merkel & Associates
5 (2013a) does, however, indicate that surfgrass on these reefs cannot be ruled out and
6 have been previously observed in this area. Surfgrass may also be present on the top of
7 the reef at the southeastern portion of the study area (Merkel & Associates 2013a).

8 Kelp beds documented in this survey are dominated by giant kelp (*Macrocystis*
9 *pyrifera*), which ranges from water depths of about -20 feet to -120 feet. Approximately
10 12 acres of kelp forest habitat was present along the southern boundary of the Merkel &
11 Associates' study area in water depths ranging from -20 to -45 feet.

12 In their report, Merkel & Associates (2013a) noted several species associated with
13 sedimentary habitat within the Project area at various water depths. At a water depth of
14 -25 feet, a sea pen (*Stylatula elongata*) and thornback ray (*Platyrrhinoidis triseriata*) were
15 recorded. In water depths up to 45 feet, Ichthyofauna species were found, including the
16 Dover sole (*Microstomus pacificus*), longspine combfish (*Zaniolepis latipinnis*), Pacific
17 sanddab (*Citharichthys sordidus*), speckled sanddab (*C. stigmaeus*), and unidentified
18 rockfish (*Sebastes spp.*). In water depths between 45 and 75 feet, the black-eyed goby
19 (*Coryphopterus nicholsii*) and California lizardfish (*Synodus lucioceps*) were observed.

20 A variety of targets were detected from the sonar survey, including two exposed
21 sections of the fuel oil submarine pipeline:

- 22 • A 150-foot-long section, found at water depths ranging from 30 to 35 feet; and
- 23 • A 1,100-foot-long section, found between the 40-foot and 63-foot isobaths.

24 The relatively low relief of the fuel oil submarine pipeline and the adjacent sandy habitat
25 suggest that the pipeline is intermittently buried and exposed and is, therefore, unlikely
26 to support a diverse community of perennial marine organisms (Merkel & Associates
27 2013a). No kelp or other epibiota were observed on the exposed portions of pipeline.

28 The sonar survey also detected anchors and chain, which support some epibiota,
29 including tunicates, bryozoans, sponges, sea fans (*Muricea spp.*), and turf red algae
30 (*Corallina spp.*), but few perennial macroalgal species and no canopy-forming
31 macrophytic algae. Two juvenile lobsters (*Panulirus interruptus*) and a black-eyed goby
32 were observed adjacent to one exposed anchor chain. Smaller isolated targets detected
33 by the sonar survey were also investigated. Most were biological, consisting of organic
34 material such as shells that had likely fallen off or had been scraped off of the surface
35 moorings. The debris piles typically consisted of mounds of mussel shells (*Mytilus spp.*),

1 which supported a number of small crustaceans, including unidentified crab and shrimp
2 species, and occasionally squid eggs (Merkel & Associates 2013a).

3 **Sea Turtles**

4 Sea turtles that may be found in the Project area include the leatherback sea turtle
5 (*Dermachelys coriacea*) and loggerhead sea turtle (*Caretta caretta*), both of which are
6 federally endangered species, and the green sea turtle (*Chelonia mydas*) and olive
7 ridley sea turtle (*Lepidochelys olivacea*), which are listed as Federally threatened
8 species. Additional information on these sea turtles and their status is provided in the
9 Project-specific Marine Wildlife Contingency Plan (MWCP) (Appendix F).

10 **Marine Mammals**

11 The area in and around the Project site supports local populations of marine mammals,
12 including bottlenose dolphins (*Tursiops truncatus truncatus*) (offshore and coastal
13 species), California sea lions (*Zalophus californianus*), and Pacific harbor seals (*Phoca
14 vitulina richardsi*). The California gray whale (*Eschrichtius robustus*) may also be
15 present in the Project area as it migrates from Baja California to Alaska. Based on
16 abundance and zoogeographic distribution information, marine wildlife most likely to be
17 encountered by vessels during transit include the common dolphin (*Delphinus delphis*),
18 Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), bottlenose dolphin, California
19 sea lion, Pacific harbor seal, southern sea otter (*Enhydra lutris nereis*), and California
20 gray whale. All marine mammal species are fully protected under the Marine Mammal
21 Protection Act (MMPA), with additional protection to endangered and threatened
22 species under the Federal Endangered Species Act (FESA) and California Endangered
23 Species Act. The only endangered or threatened marine mammal species expected to
24 occur in and around the Project site is the southern sea otter, which is considered a
25 threatened species under the FESA. Additional information on the biology of these and
26 other marine wildlife is provided in the Project-specific MWCP (Appendix F).

27 **Non-Native Aquatic Species**

28 Non-native aquatic species (NAS), also known as non-indigenous aquatic species,
29 include plants, animals, and micro-organisms that have been introduced or transported
30 to new regions through various human activities. In coastal environments, commercial
31 shipping is the most significant vector for invasions, and vessel biofouling and ballast
32 water are considered the primary contributors of NAS. Once established, NAS can
33 cause significant ecological, economic, and human health problems in the receiving
34 environment, including altering the structure and function of ecosystems, causing
35 declines in native and commercial fisheries, and spreading human pathogens. The
36 California Department of Fish and Wildlife (CDFW) (formally California Department of
37 Fish and Game [CDFG]) recognizes 347 NAS with established populations in California

1 coastal waters (CDFW Office of Spill Prevention and Response [OSPR] 2014). The
 2 origin of many NAS is unknown; however, the majority of NAS in California appear to be
 3 native to the northwest Pacific or northeast Atlantic.

4 The CSLC is the lead implementing agency for the State’s Marine Invasive Species
 5 Program (MISP), which strives to prevent NAS release from commercial vessels to
 6 California waters. The MISP began in 1999 with the passage of California’s Ballast
 7 Water Management for Control of Nonindigenous Species Act, which addressed the
 8 threat of NAS introductions through ships’ ballast water. In 2003, the Marine Invasive
 9 Species Act (MISA) was passed, reauthorizing and expanding the 1999 Act, which
 10 directed the CSLC to formulate recommendations to prevent or minimize the
 11 introduction of NAS discharges for vessels 300 gross registered tons or greater,
 12 capable of carrying ballast water, operating in State waters. All vessels that depart a
 13 California port or place are required to submit to the CSLC a Ballast Water Reporting
 14 Form that includes information about port of origin, how the ballast water was managed,
 15 and how much ballast water was discharged (CSLC 2014).

16 The CSLC also regulates vessel biofouling under the MISA. Since 2008, the CSLC has
 17 required vessels subject to the MISA to submit an annual Hull Husbandry Reporting
 18 Form, and regularly remove vessel biofouling. These data, in conjunction with results
 19 from CSLC-funded biological research, help in the identification of management
 20 practices to reduce the risk of NAS introductions through vessel biofouling. The CSLC
 21 has proposed regulations (specifically to amend Cal. Code Regs., tit. 2, div. 3, ch. 1, art.
 22 4.8) that would establish management requirements for vessel biofouling, including the
 23 use of a biofouling management plan specific to the vessel, biofouling log book, and use
 24 of antifouling systems or practices to deter or prevent species attachment.

25 **3.4.2 Regulatory Setting**

26 3.4.2.1 Federal and State

27 Federal and State laws and regulations pertaining to this issue area and relevant to the
 28 Project are identified in Table 3.4-2.

Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

U.S.	Endangered Species Act (FESA) (7 USC 136, 16 USC 1531 et seq.)	The FESA, which is administered in California by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), provides protection to species listed as threatened or endangered, or proposed for listing as threatened or endangered. Section 9 prohibits the “take” of any member of a listed species. <ul style="list-style-type: none"> • Take is defined as “...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” • Harass is “an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited
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Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

		<p>to, breeding, feeding, or sheltering.”</p> <ul style="list-style-type: none"> • Harm is defined as “...significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.” <p>When applicants are proposing projects with a Federal nexus that “may affect” a federally listed or proposed species, the Federal agency is required to consult with the USFWS or NMFS, as appropriate, under Section 7, which provides that each Federal agency must ensure that any actions authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of areas determined to be critical habitat.</p>
U.S.	Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 USC 1801 et seq.)	<p>The MSA is the primary law governing marine fisheries management in U.S. Federal waters. The MSA was first enacted in 1976 and amended in 1996. Amendments to the 1996 MSA require the identification of Essential Fish Habitat (EFH) for federally managed species and the implementation of measures to conserve and enhance this habitat. Any project requiring Federal authorization, such as a USACE permit, is required to complete and submit an EFH Assessment with the application and either show that no significant impacts to the essential habitat of managed species are expected or identify mitigations to reduce those impacts. Under the MSA, Congress defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 USC 1802(10)). The EFH provisions of the MSA offer resource managers a means to heighten consideration of fish habitat in resource management. Pursuant to section 305(b)(2), Federal agencies shall consult with the NMFS regarding any action they authorize, fund, or undertake that might adversely affect EFH.</p>
U.S.	Marine Mammal Protection Act (MMPA) (16 USC 1361 et seq.)	<p>The MMPA is designed to protect and conserve marine mammals and their habitats. It prohibits takes of all marine mammals in the U.S. with few exceptions. The NMFS may issue a take permit under section 104 if the activities are consistent with the purposes of the MMPA and applicable regulations at 50 CFR, Part 216. The NMFS must also find that the manner of taking is “humane” as defined in the MMPA. If lethal taking of a marine mammal is requested, the applicant must demonstrate that using a non-lethal method is not feasible.</p>
U.S.	Migratory Bird Treaty Act (MBTA) (16 USC 703-712)	<p>The MBTA was enacted to ensure the protection of shared migratory bird resources. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird, their eggs, parts, and nests, except as authorized under a valid permit. The responsibilities of Federal agencies to protect migratory birds are set forth in Executive Order (EO) 13186. The USFWS is the lead agency for migratory birds. The USFWS issues permits for takes of migratory birds for activities such as scientific research, education, and depredation control, but does not issue permits for incidental take of migratory birds.</p>
U.S.	Other	<ul style="list-style-type: none"> • The Bald and Golden Eagle Protection Act makes it illegal to import, export, take (including molest or disturb), sell, purchase or barter any bald eagle or golden eagle or parts thereof. • Clean Water Act (33 USC 1251 et seq.) and Rivers and Harbors Act (33 USC 401) (see Section 3.9, Hydrology and Water Quality). • CZMA (see Table 1-2). • EO 13112 requires Federal agencies to use authorities to prevent introduction of invasive species, respond to and control invasions in a cost-effective and environmentally sound manner, and provide for restoration of native species and habitat conditions in invaded ecosystems. • EO 13158 requires Federal agencies to identify actions that affect natural or cultural resources within a Marine Protected Area (MPA) and, in taking such

Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

		actions, to avoid harm to the natural and cultural resources that are protected by a MPA.
CA	California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.)	The CESA provides for the protection of rare, threatened, and endangered plants and animals recognized by the California Department of Fish and Wildlife (CDFW), and prohibits the taking of such species without its authorization; CESA also provides protection for species designated as candidates for threatened or endangered listings. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened species and endangered species (Fish & G. Code, § 2070). The CDFW also maintains a list of candidate species, which are species that the CDFW has formally noticed as under review for addition to the threatened or endangered species lists. The CDFW also maintains lists of Species of Special Concern that serve as watch lists. Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may affect a candidate species. The CESA also requires a permit to take a State-listed species through incidental or otherwise lawful activities (§ 2081, subd. (b)).
CA	California Marine Life Protection Act (MLPA) (Fish & G. Code, §§ 2850–2863)	Passed by the State Legislature in 1999, the MLPA required the CDFW to redesign its system of MPAs to increase its coherence and effectiveness at protecting the state's marine life, habitats, and ecosystems. For the purposes of MPA planning, a public-private partnership commonly referred to as the MLPA Initiative was established, and the State was split into five distinct regions (four coastal and the San Francisco Bay) each of which had its own MPA planning process. All four coastal regions have completed these individual planning processes. As a result the coastal portion of California's MPA network is now in effect statewide. Options for a planning process in the San Francisco Bay have been developed for consideration at a future date.
CA	Lake and Streambed Alteration Program (Fish & G. Code, §§ 1600-1616)	The CDFW regulates activities that would interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. These regulations require notification of the CDFW for lake or stream alteration activities. If, after notification is complete, the CDFW determines that the activity may substantially adversely affect an existing fish and wildlife resource, the CDFW has authority to issue a Streambed Alteration Agreement.
CA	Other relevant California Fish and Game Code sections	<ul style="list-style-type: none"> • The California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.) is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act includes provisions that prohibit the taking of listed rare or endangered plants from the wild and a salvage requirement for landowners. The Act directs the CDFW to establish criteria for determining what native plants are rare or endangered. Under section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. • The California Species Preservation Act (Fish & G. Code, §§ 900-903) provides for the protection and enhancement of the amphibians, birds, fish, mammals, and reptiles of California. • Fish and Game Code sections 3503 & 3503.5 prohibit the taking and possession of native birds' nests and eggs from all forms of needless take. These regulations also provide that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nests or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.

Table 3.4-2. Laws, Regulations, and Policies (Biological Resources)

		<ul style="list-style-type: none"> • Fish and Game Code sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), & 5515 (fish) designate certain species as “fully protected.” Fully protected species, or parts thereof, may not be taken or possessed at any time without permission by the CDFW. • Fish and Game Code section 3513 does not include statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game, migratory birds.
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	<p>Coastal Act policies applicable to this issue area are:</p> <ul style="list-style-type: none"> • Section 30230 states: Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes. • Section 30231 addresses biological productivity and water quality. • Section 30233, which applies in part to development activities within or affecting wetlands and other sensitive areas among other requirements, identifies eight allowable uses, requires that the proposed project be the least environmentally damaging feasible alternative, and where applicable, requires feasible and appropriate mitigation. • Section 30240 states: (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas. (b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

1 3.4.4.2 Local

2 The City of Carlsbad (2006) General Plan OSCE contains the following biological
3 resources-related goals, objective, and policy relevant to onshore Project activities.

- 4 • Goal A.1: A city that protects environmentally sensitive land and buffer areas.
- 5 • Goal A.7: A city which makes every possible effort to preserve sensitive flora and
6 fauna.
- 7 • Objective B.12: To ensure that whenever possible, new development does not
8 adversely impact sensitive environmental resources.
- 9 • Policy C.19: Preserve natural resources by: protecting fish, wildlife, and
10 vegetation habitats; retaining the natural character of waterways, shoreline
11 features, hillsides, and scenic areas and viewpoints; safeguarding areas for
12 scientific and educational research; respecting the limitations for air and water
13 resources to absorb pollution; encouraging legislation that will assist logically in
14 preserving these resources and, protecting archeological and paleontological
15 resources.

1 **3.4.3 Impact Analysis**

2 ***a) Have a substantial adverse effect, either directly or through habitat***
3 ***modifications, on any species identified as a candidate, sensitive, or special***
4 ***status species in local or regional plans, policies, or regulations, or by the***
5 ***California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

6 Terrestrial Biology

7 **Less than Significant Impact.** Decommissioning and abandonment activities on land
8 would mostly be limited to developed areas (mostly paved) within the EPS, the fuel oil
9 submarine pipeline corridor under Carlsbad Boulevard, and the beach. While several
10 special-status species have been reported in MHCP core habitat areas, the EPS and
11 onshore pipeline corridor do not provide suitable habitat for these species; however, two
12 species have been reported in the Project's vicinity: the coast woolly-head and western
13 snowy plover.

14 A 1959 entry in the California Natural Diversity Database reports that coast woolly-
15 heads were found on the beach near the EPS; however, due to scouring/deposition by
16 tides and storm waves, no suitable habitat for this species is apparent on the beach;
17 therefore, there would be no loss of suitable habitat for coast woolly-head. As a result, it
18 is unlikely that the Project would have a substantial adverse effect on the coast woolly-
19 head, and this impact would be less than significant.

20 The 2007 Western Snowy Plover Recovery Plan indicates that this species has not
21 been found breeding at Carlsbad State Beach. The area, however, provides potential
22 foraging habitat for the species. Because foraging opportunities are limited by existing
23 human activities at Carlsbad State Beach and Project activities on the beach would be
24 short-term (5 months), it is unlikely that the Project would have a substantial adverse
25 effect on the western snowy plover, and this impact would be less than significant.

26 Marine Biology

27 Grunion Spawning

28 **Less than Significant Impact.** The Project has the potential to impact grunion
29 spawning habitat. Grunion spawning occurs from March through August and
30 occasionally in February and September, with peak spawning in late March to early
31 June (CDFW 2014). Due the abundance of grunion spawning habitat elsewhere in the
32 region and the scheduling of beach segment decommissioning activities during most of
33 the non-grunion spawning periods, the impact to grunion habitat is considered less than
34 significant. Although impacts to grunion are considered less than significant,
35 decommissioning of the beach and surf zone segments is scheduled to begin in
36 September and may overlap with the end of the grunion spawning season. To further

1 reduce the potential for impacts and ensure they remain less than significant, the
2 following APMs would be implemented.

3 **APM BIO-1a: Grunion Avoidance.** Intertidal activities will be scheduled outside
4 of the grunion spawning season, which is generally three or four nights after the
5 highest tide associated with each full or new moon and then only for a 1- to 3-
6 hour period each night following high tide from late February or early March to
7 August or early September.

8 **APM BIO-1b: Grunion Surveys and Avoidance.** If scheduling is not possible
9 under APM BIO-1a, intertidal grunion surveys will be conducted during grunion
10 spawning tidal periods to document that grunion have not used the site. Intertidal
11 activities shall not occur if grunion spawning is observed in the Project area.

12 Marine Vessel and Marine Wildlife Interaction

13 **Less than Significant with Mitigation.** Project-related vessel activity in the Project
14 area and to and from the Project's shore base would increase the probability of marine
15 vessel and marine wildlife interactions, including collisions. The shore base for offshore
16 marine operations is unknown at this time; however, the most likely local embarkation
17 point would be Oceanside Harbor due to its proximity to the Project area. If dockage
18 cannot be found there, however, the shore base may be located in the Port of Long
19 Beach, Port of Los Angeles, or Unified Port of San Diego. Marine mammals are
20 expected to be present within the Project area's marine waters throughout the year.
21 Currently, Project activities are scheduled to avoid the gray whale migration period
22 (December through May) with the exception of the certain phases/tasks associated with
23 decommissioning the offshore segment, which would extend into the beginning of
24 January. Potential impacts to marine wildlife from interactions with Project vessels (e.g.,
25 harassment or strikes) during transit are considered possible, though unlikely.

26 To ensure that potential vessel-related impacts to marine wildlife as a result of Project
27 activities are avoided or minimized to less than significant, the following measure would
28 be implemented.

29 **MM BIO-1: Marine Wildlife Contingency Plan (MWCP).** A MWCP shall be
30 prepared for review and approval by California State Lands Commission staff
31 prior to the commencement of decommissioning activities. The MWCP shall
32 include, but not be limited to, the following elements:

- 33 • Description of the pre-decommissioning training seminar that will be
34 provided to educate Project personnel on identifying marine wildlife in the
35 Project area and to provide an overview of the wildlife mitigation measures
36 to be implemented;
- 37 • Qualifications, number, location, and authority of onboard Marine Wildlife
38 Monitors (MWMs);

- 1 • Acoustic safety zone radius that will be enforced by the MWMs during
- 2 dynamic pipe ramming activities;
- 3 • Distance, speed, and direction transiting vessels will maintain when in
- 4 proximity to a marine mammal or reptile;
- 5 • Discussion of how impacts associated with marine wildlife entanglement in
- 6 Project vessel anchor lines will be minimized; and
- 7 • Observation recording procedures and reporting requirements in the event
- 8 of an observed impact to marine wildlife.

9 Marine Wildlife Anchor Line Entanglement

10 **Less than Significant with Mitigation.** Once onsite, Project vessels would be
11 anchored during MOT decommissioning, creating the potential for marine wildlife
12 entanglement in Project-associated anchor lines. However, with the implementation of
13 **MM BIO-1**, the potential for marine wildlife entanglement in anchor lines would be
14 reduced to less than significant.

15 Underwater Noise Impacts from Dynamic Pipe Ramming

16 If conventional removal methods are not successful in removing the surf zone segment
17 of the fuel oil submarine pipeline, dynamic pipe ramming (DPR) may be employed,
18 which may result in significant underwater noise impacts to marine wildlife. (DPR uses a
19 hammer that is pneumatically or hydraulically powered to drive [push] or extract [pull] an
20 attached section of the pipeline.) As a result, Greeneridge Sciences, Inc. (Greeneridge)
21 was contracted to perform an evaluation of DPR's potential acoustic impacts on marine
22 wildlife (Grebner and Kim 2015; Appendix J), which serves as the basis for the acoustic
23 impact analysis described below.⁹

24 Greeneridge reported that the acoustic propagation conditions at the MOT site suggest
25 that sound levels will decrease relatively rapidly with increasing range from the DPR
26 source. Further, DPR operations are expected to be short-term and only last
27 approximately four hours. Additional noise insulation would occur from the concrete
28 coating around the pipeline and because much of the fuel oil submarine pipeline within
29 the surf zone segment is buried. Although no published data are available on the sound
30 levels and frequency composition of DPR, the physical characteristics of DPR are
31 similar to vibratory pile driving, which were used by Greeneridge to provide a qualitative
32 evaluation of potential acoustic impacts on marine wildlife. A quantitative evaluation was
33 not provided because, even assuming vibratory pile driving is a reasonable proxy for

⁹ Greeneridge's acoustic impact analysis is based on the National Marine Fisheries Service's (NMFS) current acoustic thresholds. The acoustic safety zone to be implemented during DPR activities will reflect NMFS's updated and finalized acoustic thresholds (anticipated in late 2015). Refer to the following section, *Marine Mammals*, for more information.

1 DPR, the limited and highly variable acoustic measurements available for vibratory pile
2 driving prohibit meaningful quantitative estimates of sound produced for comparison to
3 regulatory standards for acoustic impacts to marine wildlife.

4 As described in Greeneridge's report, the vibratory pile driving proxy showed sound
5 energy over a broad range of frequencies. The highest sound pressure level (SPL) was
6 about 180 decibels (dB) referenced to (re) 1 micropascal (μPa)¹⁰ (root-mean-square
7 [rms]¹¹), for the one-third octave band centered at 1 kilohertz (kHz). The frequency
8 range from 400 Hertz (Hz) to 3 kHz is a region of high-energy for vibratory pile driving,
9 with received levels of 170 dB re 1 μPa (rms) or more. Within a wider frequency range
10 from 200 Hz to 10 kHz, received levels exceeded 160 dB re 1 μPa (rms).

11 The hearing ranges of all marine species examined in the Greeneridge report shared
12 some degree of overlap with the sound frequencies produced by the pile driver proxy.
13 Some species (baleen whales, pinnipeds, and birds) showed extensive overlap in
14 hearing sensitivity with the proxy, while others (dolphins, fishes, and sea turtles) showed
15 more limited overlap. Potential impacts to marine species are dependent on sound
16 source levels and frequencies, animal hearing sensitivity, proximity to the sound source,
17 noise duration, and time of operation.

18 Hearing sensitivities of marine species vary depending upon their anatomy and
19 physiology. For example, some species, such as marine mammals, seem to be more
20 sensitive to the sound pressure component of sound, while some fish appear to be
21 more sensitive to the particle motion component of sound. Additionally, a species'
22 hearing sensitivity to sound also varies depending upon the frequency of the sound,
23 since not all marine species hear equally well at all frequencies. Potential acoustic-
24 related impacts associated with DPR on marine species found within the Project area
25 are discussed below.

26 *Marine Mammals*

27 **Less than Significant with Mitigation.** The National Marine Fisheries Service (NMFS),
28 a division of the National Oceanic and Atmospheric Administration (NOAA), has
29 identified acoustic threshold (received sound level) criteria above which marine
30 mammals are predicted to experience changes in their hearing sensitivity, either
31 permanent or temporary hearing threshold shifts. Physiological responses such as
32 auditory or non-auditory tissue injuries are known as Level A Harassment in the MMPA
33 and harm in the FESA. Level A Harassment becomes a concern when the sound levels
34 from human-made sounds reach or exceed the acoustic threshold associated with

¹⁰ 1 μPa is the reference sound pressure for sound in water.

¹¹ Root-mean-square (rms) is the average of the squared sound pressure over some duration.

1 auditory injury in marine species. A permanent threshold shift (PTS) is a permanent,
 2 irreversible increase in an animal’s auditory threshold within a given frequency band or
 3 range of the animal’s normal hearing. A temporary threshold shift (TTS) is a temporary,
 4 reversible increase in the threshold of audibility at a specific range of frequencies. While
 5 TTS is not an injury, it is considered Level B Harassment by the MMPA and harassment
 6 by the FESA. Along with TTS, Level B Harassment also includes behavioral impacts.
 7 For pinnipeds and cetaceans, NMFS has specified Level A SPL thresholds as 190 and
 8 180 dB re 1 μ Pa (rms), respectively. The Level B SPL threshold for all marine mammals
 9 is 160 dB re 1 μ Pa (rms).

10 The current acoustic threshold levels, used for most sound sources, consist of a single
 11 threshold for cetaceans and a single threshold for pinnipeds regardless of the sound
 12 source. That is, they do not take into account exposure, duration, sound frequency
 13 composition, repetition rate, and a species’ hearing sensitivity. In 2013, NMFS proposed
 14 new acoustic threshold levels in its Draft Guidance for Assessing the Effects of
 15 Anthropogenic Sound on Marine Mammal Hearing that take into account some of these
 16 factors, including dividing marine mammals into functional hearing groups. On July 23,
 17 2015, NMFS released a second draft of its guidance document for a 45-day public
 18 comment period. NMFS anticipates that the guidance document will be finalized in late
 19 2015, which will be used to inform the acoustic safety zone radius to be implemented
 20 during DPR activities.

21 Hearing group designations for marine mammal species are shown in Table 3.4-3. The
 22 assumption is that all species within a functional hearing group have approximately the
 23 same hearing sensitivity.

Table 3.4-3. Functional Marine Mammal Hearing Groups and Ranges

Functional Hearing Group	Functional Hearing Range*
Low-frequency cetaceans ² (baleen whales)	7 Hz to 25 kHz
Mid-frequency cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency cetaceans (true porpoises, <i>Kogia</i> , river dolphins, <i>Cephalorhynchus</i> , <i>Lagenorhynchus cruciger</i> , and <i>L. australis</i>)	200 Hz to 180 kHz
Phocid pinnipeds (underwater) (true seals)	75 Hz to 100 kHz
Otariid pinnipeds (underwater) (sea lions and fur seals)	100 Hz to 48 kHz

Acronyms: Hz = Hertz; kHz = kilohertz.

*Represents the frequency band of hearing for an entire group as a composite (i.e., all species within the group), where individual species’ hearing ranges are typically not as broad. Functional hearing is defined as the range of frequencies a group hears without incorporating non-acoustic mechanisms (Wartzok and Ketten 1999). This is ~60 to ~70 dB above best hearing sensitivity (Southall et al. 2007) for all functional hearing groups except LF cetaceans, where no direct measurements on hearing are available. For LF cetaceans, the lower range is based on recommendations from Southall et al. 2007 and the upper range is based on information on inner ear anatomy and vocalizations.

Source: NOAA 2015.

1 Greeneridge found that low-frequency cetacean hearing overlaps with the entire higher
2 energy region of the pile driver proxy. As noted in the Greeneridge report, gray whales
3 are a low-frequency cetacean species likely to occur in the MOT area during
4 decommissioning activities, and as such, could be impacted by DPR. During their
5 southern migration, gray whales are abundant and often visible in nearshore waters
6 from Monterey Bay to San Diego; offshore San Diego, gray whales usually swim within
7 6.2 miles (10 kilometers) of the coast. If DPR were to occur during their southern
8 migration, gray whales have the potential to be exposed to the maximum energy levels
9 emitted. If the vibratory pile driving characteristics of the proxy (e.g., frequency range
10 and sound levels) is a close approximation to the actual unknown DPR emissions at the
11 MOT location and gray whales are within 6.2 miles of shore, then behavioral impacts
12 are potentially a concern. Proximity to the sound source is important for this species;
13 however, impacts due to sound duration should be temporary since these whales are
14 predominantly migrating and should not be deterred by any short divergences from their
15 path, especially with a human-made sound nearshore. Outside of the December to mid-
16 February timeframe, gray whales should not be impacted because they typically swim
17 further offshore or are absent from the area. Presently, the Project is scheduled to avoid
18 the gray whale migration season with the exception that offshore operations extend into
19 the early part of January. As a result, there is the potential for DPR to significantly
20 impact gray whales. Given the information above and the temporary use of DPR
21 (approximately 4 hours), the implementation of **MM BIO-1** and the following measures
22 would ensure that potential impacts to gray whales and other low-frequency cetacean
23 species are avoided or mitigated to less than significant.

24 **MM BIO-2: Dynamic Pipe Ramming (DPR) Soft-Start and Ramp-Up**
25 **Procedure.** The contractor conducting DPR operations shall begin the procedure
26 at a reduced level and repeat the sound producing activity, gradually increasing
27 the intensity of the operation prior to initiating normal construction levels. The
28 duration of the ramp-up during Project operations shall be determined by a
29 qualified marine biologist and based upon the findings of a sound source
30 characterization study for DPR. This procedure will be used any time DPR
31 operations are initiated.

32 **MM BIO-3: Dynamic Pipe Ramming (DPR) Sound Source Characterization.**
33 Prior to DPR operations, a marine acoustics specialist shall be retained to
34 conduct underwater noise measurements during a trial operation of the
35 equipment at the Project site. In coordination with the National Oceanic and
36 Atmospheric Administration (NOAA), the results of the underwater noise
37 measurements shall be used to determine preclusion radii for marine wildlife
38 (mammals and reptiles) safety during DPR operations based on NOAA's acoustic
39 thresholds in place at the time of Project operations for permanent and temporary
40 threshold shifts. A copy of the sound source characterization shall be provided to
41 California State Lands Commission staff and NOAA within 2 weeks of
42 completion.

1 The sound source characterization for DPR would likely be conducted immediately prior
2 to Project operations using DPR since the DPR equipment would be onsite.

3 **MM BIO-4: Marine Wildlife Monitoring During Sound Source**
4 **Characterization and Dynamic Pipe Ramming (DPR).** Qualified marine wildlife
5 monitors (MWMs) shall be onsite and present throughout sound source
6 characterization and DPR operations. Once the marine wildlife preclusion radii
7 (i.e., safety zone) have been determined, MWMs shall be located such that
8 he/she has a clear view of the marine waters within the safety zone and beyond.
9 The MWMs shall indicate that a designated safety zone is clear of marine wildlife
10 (mammals and reptiles) prior to the start of DPR operations and shall have the
11 authority to stop DPR operations if marine wildlife are observed at any time within
12 the safety zone. The initial safety zone to be implemented during sound source
13 characterization will be 1,000 feet. The initial safety zone will be revised to reflect
14 new thresholds for permanent and temporary threshold shifts (PTS and TTS)
15 should they be finalized by the National Oceanic and Atmospheric Administration
16 prior to Project operations. The safety zone to be implemented during DPR will
17 be modified as necessary based on the sound source characterization results
18 and will reflect the PTS and TTS thresholds in place at the time of Project
19 operations.

20 As indicated above, a 1,000-foot safety zone would be implemented during sound
21 source characterization. This safety zone is based upon a conservative model of
22 acoustic propagation for the DPR proxy provided by Greeneridge, which indicates that
23 the safety radii for a received level of 180 dB re 1 μ Pa is 260 m or 853 feet.

24 Greeneridge found that mid-frequency cetacean hearing only partially overlaps the
25 frequency range of the pile driver proxy, so impacts to mid-frequency cetaceans are
26 expected to be minimal, except for the coastal bottlenose dolphin. Both the common
27 and Pacific-white sided dolphins are expected to be found along or seaward of the 100-
28 fathom curve (i.e., region where water depth is 600 feet or more), which is several
29 kilometers from the sound source at the MOT location. While these dolphins may detect
30 the DPR, the impact is expected to be low. These two species also forage at night when
31 presumably construction operation would cease. The coastal bottlenose dolphin spends
32 most of its time within 1,640 feet of shore and shoreward of the MOT location. The pile
33 driver proxy sound levels are highest at approximately 1 kHz, which is a region of low
34 hearing sensitivity in bottlenose dolphins. Meanwhile, the region of the dolphins'
35 greatest sensitivity (approximately 10 kHz) corresponds to frequencies at which the
36 energy content of the pile driving is low. If these coastal dolphins are in the area, their
37 foraging, communication, and normal swimming trajectories could be impacted, as well
38 as vocal communication masked. Given the information above and the temporary use of
39 DPR (approximately 4 hours), along with the implementation of **MM BIO-1**, **MM BIO-2**,
40 **MM BIO-3**, and **MM BIO-4**, potential impacts to mid-frequency cetaceans likely to be
41 found near the MOT would be avoided or mitigated to less than significant.

1 Greeneridge did not identify any high-frequency cetaceans in or near the Project area
2 that would temporally or spatially overlap with DPR activities; however, the
3 implementation of **MM BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-4** would ensure that
4 potential impacts to any high-frequency cetaceans near the MOT are avoided or
5 mitigated to less than significant. Greeneridge also found that the hearing ranges for
6 both the harbor seal and California sea lion overlap the entire frequency range of the
7 pile driver proxy. Furthermore, the highest sound levels for the pile driver proxy overlap
8 frequencies at which pinniped hearing is most sensitive. Harbor seals and California sea
9 lions that may be seen near the MOT location are likely local inhabitants that swim close
10 to shore. Both the sound level and duration of exposure to DPR would increase the
11 impact on these pinnipeds. While pinnipeds are capable of swimming away from the
12 Project site, some animals may remain if the immediate area is their habitat or they may
13 be disoriented by the sound. As a result, DPR could result in a potentially significant
14 impact to harbor seals and California sea lions. Given the information above and the
15 temporary use of DPR (approximately 4 hours), along with the implementation of **MM**
16 **BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-4**, potential impacts to pinnipeds found near
17 the MOT would be avoided or mitigated to less than significant.

18 *Sea Turtles*

19 **Less than Significant with Mitigation.** Sea turtles appear to be sensitive to low-
20 frequency sounds with a functional hearing range of approximately 100 Hz to 1.1 kHz. It
21 has been suggested that sea turtle hearing thresholds should be equivalent to TTS
22 thresholds for low-frequency cetaceans when animals are exposed to impulsive (e.g.,
23 impact pile driving) and non-impulsive (e.g., vibratory pile driving, DPR) anthropogenic
24 sounds. However, more recently, the Acoustical Society of America standards
25 committee suggested that sea turtle hearing was probably more similar to that of fishes
26 than marine mammals. Turtles have been presumed to have the same thresholds as
27 those fishes with swim bladders not involved in hearing. Thus, sea turtle mortality and
28 mortal injury would be expected at sound levels greater than a SEL_{cum} of 210 dB re 1
29 μPa^2 -s and a SPL of 207 dB re 1 μPa (peak) (see Appendix J for more information).

30 With respect to sea turtles, Greeneridge found that there is overlap between the hearing
31 range of sea turtles and the sound frequencies produced by the pile driver proxy, but
32 the proxy's frequency of maximum energy (1 kHz) is at the upper end of their hearing
33 range, where their ability to detect the sound is expected to be poor. The sound level
34 and duration of exposure are likely important components for sea turtles since they are
35 slow swimmers and it would take longer for them to leave an area. Leatherback sea
36 turtles may be the most impacted by noise exposure due to their broader hearing range
37 (i.e., 200 Hz to 1 kHz); however, the likelihood of this species being in the MOT area is
38 very low. Some potential responses of sea turtles to human-made sounds include
39 increased surface time, decreased foraging, displacement, and startle reactions.
40 Leatherback sea turtles are an endangered species wherever they are found, and both

1 green and olive ridley sea turtles are threatened species, so extra precautions and
2 potential mitigation are warranted if they enter the area. As a result, DPR could result in
3 a potentially significant impact to sea turtles found near the MOT. Given the information
4 above and the temporary use of DPR (approximately 4 hours), along with the
5 implementation of **MM BIO-1**, **MM BIO-2**, **MM BIO-3**, and **MM BIO-4**, impacts to sea
6 turtles would be avoided or mitigated to less than significant.

7 *Fish*

8 **Less than Significant.** Hearing capabilities vary considerably between fish species and
9 within fish groups. Fish species within a group may also differ substantially in terms of
10 their hearing structures. Fishes hear when hair cells are directly stimulated by particle
11 motion in the water. Some fishes also have swim bladders or other air sacs that can
12 detect and convert the pressure component of a sound field into particle motion, which
13 directly stimulates the inner ear, allowing the fishes to detect sound. The majority of
14 fishes are hearing generalists, which usually only hear sounds up to 1.5 kHz. Hearing
15 specialists, some of which can hear sounds up to 3 to 4 kHz or more, have adaptations
16 that lower their hearing threshold, thereby enhancing their ability to detect sounds in
17 their hearing range (Popper 2003; Hastings and Popper 2005). For instance, unlike
18 hearing generalists, whose primary hearing is provided by direct stimulation of the inner
19 ear, hearing specialists have evolved several mechanisms to acoustically couple the
20 swim bladder to the middle ear. Specializations that enhance hearing vary among
21 species and may include an extension of the swim bladder, a direct mechanical
22 connection between the swim bladder and inner ear, or a separate bubble of gas near
23 the ear (Ramcharitar et al. 2001; Hastings and Popper 2005; Popper et al. 2014).
24 Mortality and injury to fish as a result of sound varies depending upon the anatomy and
25 physiology of the fish. For example, mortality and potential mortal injury thresholds for
26 fishes with swim bladders are lower than for fishes without swim bladders.

27 The only U.S. regulatory guidelines for the effects of sound on fish were developed by
28 the Fisheries Hydroacoustic Working Group, which stated a SPL of 206 dB re 1 μ Pa
29 (peak) for the onset of physiological effects of pile driving on fish. In 2014, the
30 Acoustical Society of America developed guidelines for sound exposure criteria for fish
31 and grouped them into four categories: (1) fish with no swim bladder; (2) fish with a
32 swim bladder not involved in hearing; (3) fish with a swim bladder involved in hearing;
33 and (4) eggs and larvae. These guidelines suggest that mortality and mortal injury
34 would be expected for fish with swim bladders and eggs and larvae at sound levels
35 greater than a cumulative sound exposure level (SEL_{cum})¹² of 210 dB re 1 μ Pa²-s and a
36 SPL of 207 dB re 1 μ Pa (peak). For fish with no swim bladders, mortality and mortal

¹² The cumulative sound exposure level (SEL_{cum}) is the total cumulative energy received by an organism or object over time in a sound field.

1 injury would be expected at sound levels greater than a SEL_{cum} of 219 dB re 1 $\mu Pa^2 \cdot s$
2 and a SPL of 213 dB re 1 μPa (peak). A discussion of these guidelines is provided in
3 the report prepared by Greeneridge and is provided as Appendix J.

4 It is thought that the fishes in the Pacific Ocean are mostly hearing generalists (Hastings
5 and Popper 2005). Hearing thresholds for fish that may be in the Project area (e.g.,
6 blackeye goby, sand bass, kelp bass, white croaker, northern anchovy) partially overlap
7 with the frequency region of high energy for the pile driver proxy (Appendix J, Table 4,
8 provides impact pile driving exposure criteria for fishes). Considering hearing sensitivity
9 alone, the northern anchovy, a hearing specialist, would be able to detect the highest
10 energy levels of the pile driver proxy and may be the most sensitive to sound levels
11 emitted by DPR. However, fish injuries are more related to particle motion than pressure
12 and increased sound levels may affect sensory cilia located along their bodies and in
13 their inner ears. In general, fishes are especially sensitive to sound and those within
14 close proximity to a loud or prolonged sound source may be impacted by death, hearing
15 loss, and non-auditory tissue damage. Non-fatal responses of fish to sound include
16 changes in swimming behavior, water column position, and schooling patterns, and may
17 also elicit startle responses, area evacuation, and freezing in place reactions. Since
18 fishes have such diverse ecologies, both the sound level exposure and duration would
19 be important to the overall fish environment in the MOT area. In the case of DPR
20 operations at the Project site, it is possible that fishes, depending upon their proximity to
21 the noise source, may be fatally injured or exhibit non-fatal responses such as moving
22 further away from the sound source. Because DPR activities would be temporary
23 (approximately 4 hours) and there are no protected fish species in the Project area, this
24 impact is considered less than significant.

25 *Birds*

26 **Less than Significant.** According to the Greeneridge report, compared to other
27 vertebrates, birds have relatively consistent auditory structures and hearing capabilities
28 regardless of size. The center-frequency and high-frequency limits of bird hearing,
29 however, are inversely proportional to the bird's size and weight. On average, a bird's
30 hearing ranges from 500 Hz to 6 kHz, with some exceptions, and no birds are known to
31 hear over 15 kHz. There is only extremely limited information on diving bird sensitivity to
32 sound underwater; therefore, the discussion of bird hearing and impacts presented in
33 the Greeneridge report is derived from in-air audiograms. Additionally, there are no
34 underwater acoustic guidelines for diving birds.

35 The frequency regions of high-energy levels for the pile driver proxy coincide with the
36 greatest in-air hearing sensitivity for diving birds (1 to 3 kHz) and for birds, in general
37 (approximately 1 to 4 kHz). Diving birds are especially vulnerable approaching a sound
38 source not only because birds have higher thresholds of hearing (i.e., less sensitive
39 hearing) than humans, but also because the sound-reflecting nature of the air-sea

1 interface tends to trap waterborne sounds beneath the sea surface. Birds are likely to
2 detect lower-level DPR sounds only shortly before encountering the support vessel, and
3 there likely would be few or no indicators of underwater DPR noise until a bird lands
4 upon or dives into the water. Birds on the water or diving in the area have the potential
5 to be exposed to the maximum sound energy from DPR. Near a pile driving site off
6 Point Loma, CA, least tern counts were lower on days with pile driving compared to
7 days without pile driving. Potential indicators of behavioral stresses due to noise on
8 birds may include a startle response, difficulty detecting prey or predators, masking of
9 communication sounds, physical displacement, and changing breeding or nesting sight
10 locations. Awareness of bird species and their responses are especially important since
11 some of the birds in the area are listed as threatened or endangered species. As stated
12 in the Greeneridge report, since the duration of underwater sound exposure for diving
13 birds is expected to be short, TTS and PTS resulting from DPR are unlikely. Impacts to
14 birds above water would likely be limited to startle responses and avoidance of the area
15 during DPR. Further, DPR operations are scheduled to occur outside of the bird
16 breeding and nesting season (February through July), so breeding and nesting activities
17 would not be impacted. Given the information above and the temporary use of DPR
18 (approximately 4 hours), this impact is considered to be less than significant.

19 Underwater Noise Impacts from Pre- and Post-Decommissioning Surveys

20 **Less than Significant with Mitigation.** Pre- and post-decommissioning seafloor debris
21 surveys would be conducted utilizing geophysical survey equipment (a side-scan sonar
22 or equivalent) within the Project area. The purpose of the pre-decommissioning survey
23 is to provide a baseline image of the seafloor that can be used to check against the
24 results of a post-decommissioning survey to ensure that any decommissioning-related
25 debris is identified and recovered. The post-decommissioning survey would aid in
26 identifying targeted debris items that were missed or may have resulted from offshore
27 decommissioning operations.

28 These surveys would require the use of a marine vessel and geophysical equipment
29 that generate noise during the data acquisition. **MM BIO-5** requires the Applicant to
30 obtain a geophysical survey permit through the CSLC's Low-Energy Offshore
31 Geophysical Permit Program (OGPP). The OGPP requirements include the protection
32 of marine wildlife from potential noise impacts associated with such surveys. A separate
33 MWCP would be prepared for these surveys to meet the OGPP requirements and
34 include, at a minimum, information on the following:

- 35 • Survey location, schedule, and proposed survey track lines;
- 36 • Survey vessel(s);
- 37 • Survey equipment (e.g., frequency, source level);
- 38 • Safety zones;

- 1 • Qualifications, number, location, and authority of onboard MWMs;
- 2 • Information on marine wildlife that may occur in the proposed survey area;
- 3 • Distance, speed, and direction transiting vessels would maintain when in
- 4 proximity to a marine mammal or reptile;
- 5 • Observation recording procedures and reporting requirements in the event of an
- 6 observed impact to marine wildlife; and
- 7 • Other site-specific considerations relevant to the survey design.

8 With the inclusion of **MM BIO-5**, noise impacts associated with the pre- and post-

9 decommissioning seafloor debris surveys would be reduced to less than significant.

10 **MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and**

11 **Debris Removal.** The offshore work shall begin and end with seafloor debris

12 surveys. The Applicant's contractor shall perform a side-scan sonar (with 400%

13 coverage) and bathymetric survey, or multi-beam sonar survey, of the

14 underwater worksite prior to the arrival of the contractor's marine equipment

15 spread at the worksite. The survey shall encompass the entire underwater

16 worksite bordered by the contractor's planned derrick barge anchorages plus an

17 offset of approximately 500 feet. Derrick barge anchorages shall be positioned to

18 avoid rock outcroppings and kelp beds. A map shall be produced by the surveyor

19 and shall serve as the baseline for the seafloor conditions at the underwater

20 worksite prior to the start of work.

21 All surveys employing low-energy geophysical equipment, including remotely

22 operated vehicle surveys, must be conducted by an entity holding a valid

23 geophysical survey permit under the California State Lands Commission's

24 (CSLC) Low-Energy Offshore Geophysical Permit Program (see

25 www.slc.ca.gov/Programs/OGPP.html). Therefore, the Applicant shall obtain a

26 valid Permit prior to initiating the surveys.

27 After decommissioning work is complete, the contractor shall be required to

28 perform a second side-scan sonar (with 400% coverage) and bathymetric survey

29 in the same underwater work area. The surveyors shall again produce a map of

30 the survey area and use it to identify any items of seafloor debris introduced into

31 the underwater worksite by decommissioning operations. The contractor shall

32 remove all debris, if any, related to the offshore tanker berth facilities and

33 operations and the decommissioning work.

34 The Applicant shall provide: (1) the pre-decommissioning survey map to CSLC

35 staff and permitting agencies for approval at least 60 days prior to Project

36 implementation; and (2) the post-decommissioning map to CSLC staff within 30

37 days of survey completion for agency sign-off.

1 **b) Have a substantial adverse effect on any riparian habitat or other sensitive**
2 **natural community identified in local or regional plans, policies, regulations or by**
3 **the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

4 Terrestrial Environment

5 **Less than Significant.** The EPS is located within the boundary of the City of Carlsbad's
6 HMP, which guides the local implementation of the North County MHCP. The North
7 County MHCP focuses on habitat preservation and enhancement for the California
8 gnatcatcher, and Agua Hedionda Lagoon (located approximately 300 feet north of the
9 fuel oil submarine pipeline) and adjacent areas to the east have been designated as
10 core habitat areas for this species. The Agua Hedionda Lagoon also supports special-
11 status species; however, the EPS and onshore fuel oil submarine pipeline do not
12 provide suitable habitat for these species, except for the coast-woolly head and western
13 snowy plover described in item **a)**, where the Project was found to have a less than
14 significant impact on these two species. Given the information above and in item **a)**, the
15 Project would not have a substantial adverse effect on any riparian habitat or other
16 sensitive natural community, and this impact would be less than significant.

17 **Marine Environment**

18 The marine environment is considered to be a sensitive resource and is protected, as
19 described in Section 3.4.2, through the implementation of the California Coastal Act,
20 MLPA, MSA, and other regulations specific to particular species, including marine
21 species. Hard bottom habitat in the Project area is considered a sensitive marine
22 community because it is one of the least abundant benthic habitats along the southern
23 California coast, yet is among the most important habitats for rockfish and other marine
24 species. Additionally, hard bottom substrate provides a base for kelp stands, which in
25 turn provide nurseries, feeding grounds, and shelter to a variety of marine species.

26 Potential Seafloor/Hard Bottom Disturbance and Debris

27 **Less than Significant with Mitigation.** During the removal of Project infrastructure
28 (e.g., anchors, chains, fuel oil submarine pipeline) from the sea floor, ocean sediments
29 would be disturbed, mixing with the water column and creating turbidity. As these
30 sediments precipitate, they may be redistributed onto rocky substrate in the Project area
31 and cover bottom-dwelling organisms. Increased turbidity may also temporarily interfere
32 with light penetration and photosynthesis in nearby kelp beds, while changes in water
33 clarity may temporarily reduce the suitability of the water for habitation by fish. However,
34 these impacts are expected to be short-term, limited in areal extent, and similar to
35 turbidity generated by storm waves. Other sedimentary habitat alteration could occur if
36 pieces of concrete coating fall off of the fuel oil submarine pipeline. To ensure that

1 pieces of concrete and other debris are not left on the seafloor, **MM BIO-5** would be
2 implemented to mitigate the potential impact to less than significant.

3 The Project may also result in the loss of hard bottom associated with the temporary
4 removal of the riprap groin on the beach. This temporary removal of riprap for the
5 excavation of the fuel oil submarine pipeline is considered less than significant as this
6 habitat is routinely scoured and supports an epibiota that is common throughout the
7 region on similar substrates. Hard bottom habitat may also be lost due to the removal of
8 the pipeline (exposed/non-buried segments) and the associated mooring anchors and
9 chains; however, this would be a less than significant impact due to their limited size
10 and habitat value.

11 Placement of anchors and/or anchor lines from Project-related vessels may also result
12 in potential damage to sensitive rocky habitat and kelp beds. To ensure that impacts to
13 sensitive rocky habitat and kelp beds from anchors and/or anchor lines are avoided or
14 mitigated to less than significant, the following measure would be implemented.

15 **MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).** A final MSAP
16 shall be developed following the analysis of seafloor habitat and bathymetric data
17 to be collected during the pre-decommissioning survey. Additionally, a diver-
18 biologist survey shall be conducted to ensure that all pre-determined vessel
19 anchor locations are positioned in sedimentary habitats and avoid rocky
20 substrate and kelp by at least 50 feet. The final plan shall be submitted to
21 California State Lands Commission staff for review at least 2 weeks prior to the
22 commencement of Project activities.

23 A draft MSAP for the Project can be found in Appendix E that includes measures to
24 avoid such impacts.

25 Potential Discharge of Petroleum Products and Biocide

26 **Less than Significant with Mitigation.** The Project may result in an accidental
27 discharge of petroleum products from Project vessels and equipment, which would have
28 the potential to significantly impact marine resources. The Applicant would implement
29 the following mitigation measure to avoid or reduce potential impacts associated with an
30 accidental discharge of petroleum products from Project vessels and equipment to less
31 than significant.

32 **MM BIO-7: Oil Spill Response Plan (OSRP).** An OSRP has been prepared for
33 the Project. Each Project vessel shall have a copy of the plan and shall maintain
34 the required onboard and subcontracted spill response equipment. Additional
35 shore-based response equipment shall be onsite, which can be used for first-
36 response containment and collection of petroleum that reaches the shoreline. If
37 needed, subcontracted shoreline recovery personnel and additional equipment,

1 as identified in the OSRP shall be deployed to the site to assist in the recovery
2 and disposal of spilled petroleum.

3 The OSRP for the Project can be found in Appendix G.

4 Although the fuel oil submarine pipeline was flushed and pigged, residual petroleum
5 products and the biocide associated with the Nalco EC6106A preservative may be
6 present. To ensure that potential impacts to marine habitats and biota associated with
7 an accidental release into the marine environment of petroleum products and the Nalco
8 EC6106A biocide preservative are avoided or reduced to less than significant, the
9 following measure would be implemented.

10 **MM BIO-8: Flush Fuel Oil Submarine Pipeline.** Prior to opening the fuel oil
11 submarine pipeline to the ocean during the decommissioning process, this
12 pipeline shall be flushed from its offshore termination to its onshore termination at
13 the beach valve pit with seawater to displace the potable water and preservative.
14 The potable water and preservative mixture shall be recovered at the beach
15 valve pit and transported off-site for treatment and disposal.

16 Potential Spread of NAS

17 **Less than Significant Impact.** Due to the use of marine vessels, the Project may result
18 in the spread of NAS through ballast water and vessel biofouling. However, the potential
19 spread of NAS would be addressed through the implementation of existing CSLC
20 programs, including the CSLC's Ballast Water Management Program and Biofouling
21 Removal and Hull Husbandry Reporting. Additionally, the Project's potential contribution
22 to the spread of NAS would be further minimized by implementation of the following
23 APM.

24 **APM BIO-2: Prevent Introduction of Non-Native Aquatic Species (NAS).** All
25 Project vessels shall: (1) originate from Oceanside Harbor, the Ports of Long
26 Beach/Los Angeles, or San Diego Bay; (2) be continuously based out of
27 Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay
28 since last dry docking; or (3) have underwater surfaces cleaned before entering
29 southern California at vessel origination point and immediately prior to transiting
30 to the Project site. Additionally, and regardless of vessel size, ballast water for all
31 Project vessels must be managed consistent with California State Lands
32 Commission (CSLC) ballast management regulations, and Biofouling Removal
33 and Hull Husbandry Reporting Forms shall be submitted to CSLC staff. Project
34 vessels shall also be available for inspection by CSLC staff for compliance.
35 Further, as part of the Project kickoff meeting, a qualified marine biologist,
36 approved by CSLC staff, shall provide information to all Project personnel about
37 the spread of NAS in California waters and the programs (CSLC Ballast Water

1 Management Program and Biofouling Removal and Hull Husbandry Reporting)
2 that will be implemented to minimize this hazard.

3 ***c) Have a substantial adverse effect on federally protected wetlands as defined by***
4 ***Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal***
5 ***pool, coastal, etc.) through direct removal, filling, hydrological interruption, or***
6 ***other means?***

7 **No Impact.** The Project is not located within or adjacent to federally protected wetlands
8 as defined in Section 404 of the Clean Water Act; therefore, the Project would have no
9 impact to federally protected wetlands.

10 ***d) Interfere substantially with the movement of any native resident or migratory***
11 ***fish or wildlife species or with established native resident or migratory wildlife***
12 ***corridors, or impede the use of native wildlife nursery sites?***

13 **Less than Significant Impact.** The Project may affect the movement of terrestrial and
14 marine wildlife as a result of decommissioning activities, which would occupy certain
15 areas of the land and ocean. However, the Project would not substantially interfere with
16 the movement of migratory fish or wildlife species or impeded the use of native wildlife
17 nursery sites, as described in **a)**, due to the temporary, short-term nature of the Project
18 and the limited area of disturbance associated with decommissioning activities;
19 therefore, the impact would be less than significant.

20 ***e) Conflict with any local policies or ordinances protecting biological resources,***
21 ***such as a tree preservation policy or ordinance?***

22 **Less than Significant with Mitigation.** The City of Carlsbad OSCE goals, objective,
23 and policy, as described in Section 3.4.2 Regulatory Setting, seek(s) to preserve natural
24 resources by protecting fish, wildlife, and vegetation habitats. As described above under
25 item a), the Project has the potential to adversely impact grunion and significantly
26 impact other sensitive marine wildlife. To avoid or reduce potential impacts to fish as
27 wildlife to less than significant, **MM BIO-1** through **MM BIO-7** would be implemented,
28 which would also meet the intent of the relevant OSCE goals, objective, and policy.

29 ***f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural***
30 ***Community Conservation Plan, or other approved local, regional, or State habitat***
31 ***conservation plan?***

32 **No Impact.** As described above, the EPS is located within the boundary of the City of
33 Carlsbad's HMP, which guides local implementation of the MHCP. The MHCP focuses
34 on habitat preservation and enhancement for the California gnatcatcher, Agua
35 Hedionda Lagoon, and adjacent areas to the east as core habitat area; however,
36 Project activities would not impact the Agua Hedionda Lagoon or adjacent areas that

1 the MHCP designates as core habitat. Since the Project does not conflict with local,
2 regional, or State habitat conservation plan provisions, there would be no impact.

3 **3.4.4 Mitigation Summary**

4 Implementation of the following mitigation measure(s) would reduce the potential for
5 Project-related impacts to biological resources to less than significant.

- 6 • MM BIO-1: Marine Wildlife Contingency Plan (MWCP).
- 7 • MM BIO-2: Dynamic Pipe Ramming (DPR) Soft-Start and Ramp-Up Procedure.
- 8 • MM BIO-3: Dynamic Pipe Ramming (DPR) Sound Source Characterization.
- 9 • MM BIO-4: Marine Wildlife Monitoring During Sound Source Characterization and
10 Dynamic Pipe Ramming (DPR).
- 11 • MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris
12 Removal.
- 13 • MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- 14 • MM BIO-7: Oil Spill Response Plan (OSRP).
- 15 • MM BIO-8: Flush Fuel Oil Submarine Pipeline.

16 The following measures are proposed by the Applicant to further reduce less than
17 significant impacts to grunion spawning and transfer of NAS.

- 18 • APM BIO-1a: Grunion Avoidance.
- 19 • APM BIO-1b: Grunion Surveys and Avoidance.
- 20 • APM BIO-2: Prevent Introduction of Non-Native Aquatic Species (NAS).

1 **3.5 CULTURAL AND PALEONTOLOGICAL RESOURCES**

CULTURAL AND PALEONTOLOGICAL RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code section 21074?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 **3.5.1 Environmental Setting**

3 3.5.1.1 Archaeological Resources

4 The general Project area is sensitive for archaeological resources. A records search
 5 conducted in January 2013, by the South Coast Information Center (SCIC) using a
 6 0.25-mile radius around the Project site, identified one archaeological site, CS-SDI-
 7 16885. This site is located east of the beach valve pit (also referred to as “vault” by
 8 Conejo Archaeological Consultants [Conejo] in this section) and outside the footprint of
 9 the proposed work. As stated in a January 21, 2013, letter report prepared by Conejo
 10 (see Appendix K):

11 *CA-SDI is a small, sparse scatter of artifacts with shell on a bluff overlooking the*
 12 *western portion of Agua Hedionda lagoon. The site was first recorded by Gallegos &*
 13 *Associates in 2003 (James et al 2003). Tift (2004) indicates that the site is probably*
 14 *associated with CA-SDI-6751.*

15 As reported by Smallwood (2005, as described in Conejo 2013 [Appendix K]):

16 *Historic photographs of the EPS [Encina Power Station] revealed that prior to its*
 17 *construction the entire property had been graded, some areas were leveled and*
 18 *filled, a stream was channelized, the lagoon was dredged, and a large underground*
 19 *intake was constructed to bring water into the plant from the ocean.... In short, the*
 20 *entire EPS property has received a high level of disturbance. Geological borings in*
 21 *the area revealed that the soils at Site CA-SDI-16885 are composed of reddish*

1 *brown sandy terrace material that has been mechanically re-deposited as fill to a*
2 *depth of approximately 2.5 to 10 feet (ibid.). In light of the information obtained from*
3 *historic photographs and the results of the geological borings, it is apparent that*
4 *these surface artifacts were mechanically re-deposited during the previous grading*
5 *that occurred on the EPS property, beginning in the 1950s. Artifacts may be present*
6 *subsurface in the fill soils at this location, but it has been determined that the*
7 *artifacts observed at the site do not exhibit any contextual integrity. However,*
8 *additional artifacts or archaeological deposits may exist subsurface in undisturbed*
9 *soils near Fuel Oil Tanks #2 and #3.*

10 *The Agua Hedionda lagoon lies in an area where, at least during the Late Prehistoric*
11 *and Protohistoric periods, the traditional territories of two Native American groups,*
12 *the Luiseno and the Kumeyaay, may have overlapped.... In any case, the site is*
13 *indicative of prehistoric occupation, food processing activities, and subsistence*
14 *strategies associated with the lagoon and terrace resources.*

15 The exact location of the second site, CA-SDI-210, is unclear. A review of Google
16 Earth's aerial coverage of the EPS indicated that CA-SDI-210's estimated site location
17 was subject to extensive grading during construction of the existing plant. As a result,
18 buried intact deposits associated with CA-SDI-210 may also occur within the EPS.

19 According to Conejo, eight archaeological investigations have been conducted within a
20 0.25-mile radius of the Project site, three of which included sections of the on-land
21 portion of the Project area consisting of the beach and Carlsbad Boulevard. These
22 archaeological investigations were conducted by Byrd and O'Neill in 2002, Polan in
23 1981, and Woodward and Stammerjohan in 1985. Guerrero, Stropes, and Gallegos's
24 archaeological investigation in 2004 was conducted within the EPS, but does not
25 include the current Project site.

26 3.5.1.2 Tribal Cultural Resources

27 **Native American Heritage Commission**

28 The Native American Heritage Commission (NAHC) searched its Sacred Lands File for
29 Native American cultural sites and found no occurrences within 0.5 mile of the Project
30 site (NAHC letter to Conejo dated January 11, 2013; see Appendix K). The NAHC also
31 noted that the area around Agua Hedionda Lagoon is very culturally sensitive and that a
32 known underwater village is located several miles north of the site.

33 **Native American Representatives**

34 The NAHC provided Conejo with a list of Native American representatives who could
35 potentially provide important information on cultural sites near the Project site. On
36 January 30, 2013, Conejo contacted the Native American representatives on the NAHC

1 list; to date, three responses have been received (see Appendix K for Native American
 2 communication records). In a February 20, 2013, letter to Conejo, the Pala Tribal
 3 Historic Preservation Office indicated that the MOT is not within the recognized tribal
 4 Traditional Use Area and requested to be kept informed of documentation of cultural
 5 sites and other Project information. A representative of the San Luis Rey Band of
 6 Mission Indians also contacted Conejo via telephone. The representative explained that
 7 several Native American sites are located around the Agua Hedionda Lagoon, stated
 8 that they have seen scattered marine shell within the power plant, and opined that,
 9 given the area’s archaeological sensitivity, a Native American should monitor any earth
 10 disturbances associated with the Project even in previously disturbed onshore areas. In
 11 a March 5, 2013, letter to Conejo, the Rincon Band of Luiseno Indians communicated its
 12 concerns regarding the potential for cultural resource finds within the Luiseno Aboriginal
 13 Territory, in addition to their desire for a Native American to monitor any archaeological
 14 surveys or ground disturbance at the Project site.

15 3.5.1.3 Historical Resources

16 **Federal, State, and Local Historical Listings**

17 As reported by Conejo, the National Register of Historic Places (NRHP) listings include
 18 no properties within or adjacent to the Project site. No California Historical Landmarks,
 19 California Register Historical Properties, or California Points of Historical Interest are
 20 located within or adjacent to the Project site. Additionally, no historical landmarks
 21 designated by the City of Carlsbad are located within or adjacent to the Project site.

22 **CSLC's Shipwreck Database**

23 Conejo (2013) conducted a review of the SCIC's shipwreck database, which identified
 24 no shipwrecks within a 0.25-mile radius of the Project site. The CSLC Shipwreck
 25 Database lists 67 shipwrecks for San Diego County and the closest shipwrecks to the
 26 EPS are listed in Table 3.5-1 and shown in Figure 3.5-1 (CSLC 2013).

Table 3.5-1. Shipwrecks near the Project Site

Ship Name	George W. Hind	Glen Mayne	Ardor	Nomad
Type	Bark	Barge	?	?
Year Built	1919	1918	?	?
Year Sunk	1936	1939	1945	1943
Cause	Foundered	Foundered	?	?
Tonnage	1389	431	?	?
Approximate Distance from EPS	2 miles, NW	0.6 mile, south	1.2 miles, NNW	1.2 miles, NNW

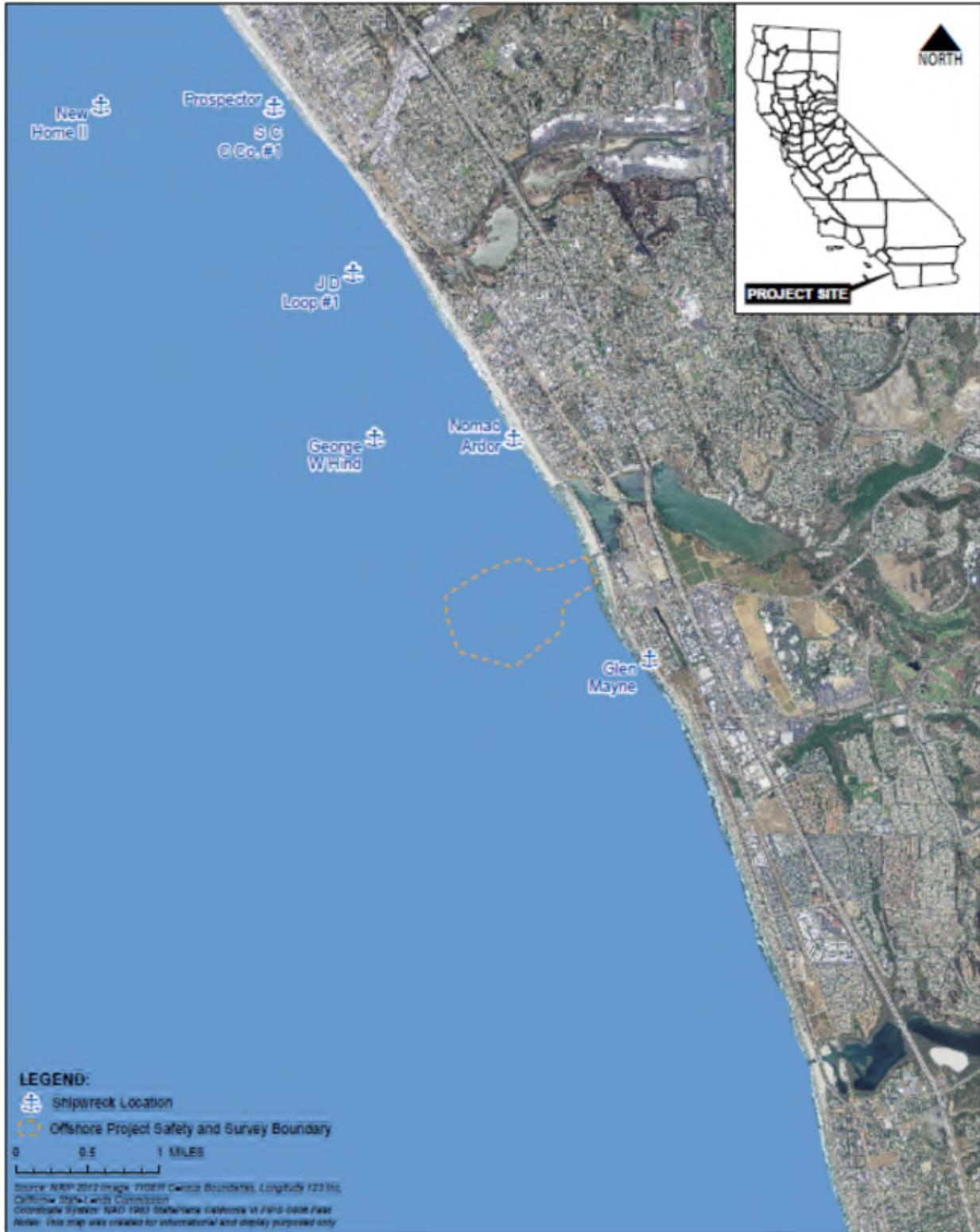


Figure 3.5-1. CSLC Shipwreck Database Map

1 **Cultural Resources Evaluation & Department of Parks and Recreation Primary**
2 **Record 37-032953.**

3 The MOT was evaluated by Laura S. White, M. A., Robert White, and David Van Horn
4 Ph. D., of John Minch and Associates, Inc. in February of 2013 for significance using
5 both NRHP and CEQA criteria (provided in Appendix K). The findings of the evaluation
6 were reported in “A Cultural Resource Evaluation of the Cabrillo Power I LLC Encina
7 Site Offshore Marine Oil Terminal, Carlsbad, San Diego County” and on the appropriate
8 Department of Parks and Recreation 523 series forms submitted to the SCIC at San
9 Diego State University (Appendix K). The MOT was assigned Primary Record Number
10 37-032953, and a summary of the findings are as follows.

11 *As for Criterion A of the NRHP, the MOT is not associated with any event important*
12 *in the history of United States. Terminals such as these were common for water-*
13 *cooled, coastal power plants that were originally designed to burn fuel oil to generate*
14 *electricity. They are currently utilized in the off-loading of crude oil for refineries*
15 *along the southern California coast. That is, submarine pipelines are not unique in*
16 *their role of conveying petroleum from ships/barges to land installations or into land-*
17 *based distribution networks. As for Criterion B, the MOT is not associated with the*
18 *lives of any individual important to national history. As for Criterion C, the pipeline*
19 *itself comprises prefabricated sections of concrete jacketed steel pipe. The pipe is of*
20 *robust construction but of standard design. The mooring anchors are of standard*
21 *design (Danforth) and are modern. The vault and tunnel are devoid of any significant*
22 *architectural features. The rip-rap jetty is also ubiquitous in nature. None of the*
23 *components of the MOT are considered the work of a master and there is no*
24 *evidence that unique methods or materials were utilized in their construction. As per*
25 *Criterion D, given the utilitarian uses of MOT, it is highly unlikely that it has the*
26 *potential to yield additional information pertinent to national history. Consequently,*
27 *the MOT, including the eight modern anchors that are less than 50 years of age,*
28 *does not appear significant pursuant to NHRP criteria.*

29 3.5.1.4 Paleontological Resources

30 The following information is from the California Energy Commission (CEC) Final Staff
31 Assessment (CEC 2009) for the CECP. Given the proximate location of the Project site
32 to the CECP site (which is within the northeast section of the EPS), similar
33 paleontological resources (described below) are expected to be found.

34 *Pleistocene age paralic deposits, which represent all soils mapped at the surface of*
35 *the CECP power plant site and the linear route, are generally considered to have a*
36 *high paleontological sensitivity. However, all fossils in the San Diego Natural History*
37 *Museum (SDNHM) collection from terrace sediments in the area were recovered*
38 *from units on older wave-cut benches at higher elevations inland from the site. The*

1 *Eocene age Santiago Formation, which has been mapped in the floor of the current*
2 *tank farm, is also highly sensitive. Furthermore, fossil remains have been*
3 *documented from the nearby Carlsbad State Beach. The nearest documented fossil*
4 *locality is approximately 500 to 750 feet south of the ocean-water pipeline intake and*
5 *discharge locations.*

6 *Many paleontological sites are documented within 3 miles of the CECP Project area.*
7 *The SDNHM collection contains specimens from 113 localities, including 30 from*
8 *Pleistocene paralic deposits and 58 from the Santiago Formation. The Quaternary*
9 *fossils consist of marine invertebrates, such as worms, bryzoans, foraminifers, tusk*
10 *shells, ostracods, barnacles, crabs, snails, clams, oysters, pectens, sand dollars,*
11 *and sea urchins, as well as continental vertebrates, such as proboscideans*
12 *(mammoth and elephants), turkeys, rodents, tapirs, horses, camels, deer, and*
13 *bison. The specimens from the Santiago Formation were collected from marine,*
14 *lagoon, estuarine and fluvial siltstones and sandstones. The SDNHM collection*
15 *also includes specimens from two sites at Carlsbad State Beach. The localities are*
16 *approximately 1,600 feet and 4,000 feet southwest of the 23-acre CECP site, and*
17 *have produced vertebrate fossils of terrestrial mammals, including oreodonts (now*
18 *extinct plant-eaters distantly related to pigs, hogs, peccaries and hippopotamuses).*
19 *The nearest of these fossil localities is approximately 500 to 750 feet south of the*
20 *ocean-water pipeline intake and discharge locations. The reported source from*
21 *which the fossils were recovered is fluvial sandstone of the Oligocene-age Sespe or*
22 *Vaqueros Formations.*

23 *Although the age and geologic unit designation is in disagreement with previous*
24 *geologic mapping in the area, the Tertiary sediments hosting the vertebrate fossils is*
25 *considered to be equivalent to the marine deposits (mapped as Santiago Formation)*
26 *that underlie Quaternary terrace deposits at the CECP site.*

27 *Marine invertebrate fossils, including mollusks, crustaceans and echinoids, and*
28 *marine vertebrates, including sharks, rays and bony fish, have been recovered by*
29 *the San Bernardino County Museum from Pleistocene terrace deposits. No fossil*
30 *locality is within one mile of the CECP site, however. Terrestrial mammal remains,*
31 *including camel, horse and mammoth, have been recovered from wave-cut bench*
32 *sediments that are older than those on the power plant site. The Natural History*
33 *Museum of Los Angeles County collection does not contain vertebrate fossil remains*
34 *from the Carlsbad area. The museum does consider the potential for encountering*
35 *significant vertebrate fossils in Quaternary terrace deposits near the surface and in*
36 *older sediments in deeper excavations to be low and high, respectively. The fossil*
37 *records website maintained by the University of California - Museum of Paleontology*
38 *indicates that several gastropod specimens of Quaternary age have been recovered*
39 *from the Carlsbad and Agua Hedionda lagoon areas.*

1 **3.5.2 Regulatory Setting**

2 3.5.2.1 Federal and State

3 Federal and State laws and regulations pertaining to this issue area and relevant to the
 4 Project are identified in Table 3.5-2.

Table 3.5-2. Laws, Regulations, and Policies (Cultural and Paleontological)

U.S.	Archaeological and Historic Preservation Act (AHPA)	The AHPA provides for the preservation of historical and archaeological data that might be irreparably lost or destroyed as a result of (1) flooding, the building of access roads, the erection of workmen’s communities, the relocation of railroads and highways, and other alterations of terrain caused by the construction of a dam by an agency of the U.S. or by any private person or corporation holding a license issued by any such agency; or (2) any alteration of the terrain caused as a result of a Federal construction project or federally licensed project, activity, or program. This Act requires Federal agencies to notify the Secretary of the Interior when they find that any federally permitted activity or program may cause irreparable loss or destruction of significant scientific, prehistoric, historical, or archaeological data. The AHPA built upon the national policy, set out in the Historic Sites Act of 1935, "...to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance...."
U.S.	Archaeological Resources Protection Act (ARPA)	The ARPA states that archaeological resources on public or Indian lands are an accessible and irreplaceable part of the nation’s heritage and: <ul style="list-style-type: none"> • Establishes protection for archaeological resources to prevent loss and destruction due to uncontrolled excavations and pillaging; • Encourages increased cooperation and exchange of information between government authorities, the professional archaeological community, and private individuals having collections of archaeological resources prior to the enactment of this Act; • Establishes permit procedures to permit excavation or removal of archaeological resources (and associated activities) located on public or Indian land; and • Defines excavation, removal, damage, or other alteration or defacing of archaeological resources as a “prohibited act” and provides for criminal and monetary rewards to be paid to individuals furnishing information leading to the finding of a civil violation or conviction of a criminal violator. ARPA has both enforcement and permitting components. The enforcement provision provides for the imposition of both criminal and civil penalties against violators of the Act. The ARPA's permitting component allows for recovery of certain artifacts consistent with the standards and requirements of the National Park Service (NPS) Federal Archeology Program.
U.S.	National Historic Preservation Act (NHPA) (16 USC 470 et seq.)	This applies only to Federal undertakings. Archaeological resources are protected through the NHPA, as amended, and its implementing regulation, Protection of Historic Properties (36 CFR 800), the AHPA, and the ARPA. This Act presents a general policy of supporting and encouraging the preservation of prehistoric and historic resources for present and future generations by directing Federal agencies to assume responsibility for considering the historic resources in their activities. The NHPA requires that Federal agencies consider and evaluate the effect that Federal projects may have on historic properties under their jurisdiction. A Traditional Cultural Property (TCP) is one that is eligible for the National Register of Historic Places (NRHP) because of its association with the cultural practices or beliefs of a living community. The State implements the

Table 3.5-2. Laws, Regulations, and Policies (Cultural and Paleontological)

		<p>NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), within the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level and advises Federal agencies regarding potential effects on historic properties. The OHP also maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State’s jurisdictions, including commenting on Federal undertakings.</p>
U.S.	Other	<ul style="list-style-type: none"> • Executive Order 13007, “Indian Sacred Sites,” requires that Federal agencies with legal or administrative responsibility for management of Federal lands, “to the extent practicable permitted by law, and not clearly inconsistent with essential agency functions, to: (1) accommodate access to, and ceremonial use of, Indian sacred sites by Indian religious practitioners; and (2) avoid adversely affecting the physical integrity of such sacred sites.” • Executive Order 13158 requires Federal agencies to (1) identify actions that affect natural or cultural resources that are within a Marine Protected Area (MPA); and (2) in taking such actions, to avoid harm to the natural and cultural resources that are protected by a MPA. • NPS Abandoned Shipwreck Act of 1987 (43 USC 2101–2106). Under this Act, states have the responsibility for management of living and nonliving resources in State waters and submerged lands, including certain abandoned shipwrecks. The NPS has issued guidelines that are intended to: maximize the enhancement of cultural resources; foster a partnership among sport divers, fishermen, archeologists, sailors, and other interests to manage shipwreck resources of the states and the U.S.; facilitate access and utilization by recreational interests; and recognize the interests of individuals and groups engaged in shipwreck discovery and salvage. Specific provisions of the Act’s guidelines include procedures for locating and identifying shipwrecks, methods for determining which shipwrecks are historic, and preservation and long-term management of historic shipwrecks.
CA	CEQA (Pub. Resources Code, § 21000 et seq.)	<p>As the CEQA lead agency, the CSLC is responsible for complying with all provisions of the CEQA and State CEQA Guidelines that relate to “historical resources.” A historical resource includes: (1) a resource listed in, or eligible for listing in, the California Register of Historic Resources (CRHR); (2) a resource included in a local register of historical or identified as significant in an historical resource surveys; and (3) any resource that a lead agency determines to be historically significant for the purposes of CEQA, when supported by substantial evidence in light of the whole record. The CRHR was created to identify resources deemed worthy of preservation on a State level and was modeled closely after the National Register. The criteria, which are nearly identical to those of the National Register but focus on resources of statewide significance (see State CEQA Guidelines § 15064.5, subd. (a)(3)), are defined as any resource that meets any of the following criteria: (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; (2) Is associated with lives of persons important in our past; (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (4) Has yielded, or may be likely to yield, information important in prehistory or history. Properties listed, or formally designated as eligible for listing, on the National Register are automatically listed on the CRHR, as are certain State Landmarks and Points of Interest. A lead agency is not precluded from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1, subdivision (j), or 5024.1 (State CEQA Guidelines § 15064.5, subd. (a)(4)).</p>

Table 3.5-2. Laws, Regulations, and Policies (Cultural and Paleontological)

CA	Coastal Act Chapter 3 policies (see also Table 1-2)	Section 30244 states: Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.
CA	Assembly Bill (AB) 52 (Gatto, Stats. 2014, ch. 532)	AB 52 (effective July 1, 2015) adds sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3 to CEQA, relating to consultation with California Native American tribes, consideration of tribal cultural resources, and confidentiality. The definition of tribal cultural resources considers tribal cultural values in addition to scientific and archaeological values when determining impacts and mitigation. AB 52 provides procedural and substantive requirements for lead agency consultation with California Native American tribes and consideration of effects on tribal cultural resources, as well as examples of mitigation measures to avoid or minimize impacts to tribal cultural resources. AB 52 establishes that if a project may cause a substantial adverse change in the significance of a tribal cultural resource, that project may have a significant effect on the environment. Lead agencies must avoid damaging effects to tribal cultural resources, when feasible, and shall keep information submitted by tribes confidential.
CA	Public Resources Code section 5097.98	This code states protocol for notifying the most likely descendent from the deceased if human remains are determined to be Native American in origin. It also provides mandated measures for appropriate treatment and disposition of exhumed remains.
CA	Health and Safety Code section 7050.5	This code states that if human remains are exposed during construction, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.998. The Coroner has 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are determined to be of Native American descent. The NAHC will contact most likely descendants, who may recommend how to proceed.

1 3.5.2.2 Local

2 The City of Carlsbad (2006) General Plan OSCE contains the following historical,
 3 cultural, and special resource protection goals, objectives, and policies relevant to
 4 onshore Project activities.

- 5 • Goal A.1: A city in which its existing and continuing heritage is protected,
 6 preserved, recognized and enhanced.
- 7 • Goal A.5: A city that preserves, where possible, historic, cultural, archeological,
 8 paleontological, and educational resources.
- 9 • Objective B.1: To encourage property owners to utilize all available incentives for
 10 the preservation of historic resources.
- 11 • Objective B.3: To preserve areas of unique scenic, historical, archeological,
 12 paleontological and cultural value, and where possible, provide public access to
 13 these areas.
- 14 • Objective B.6: To minimize environmental impacts to sensitive resources within
 15 the City.

- 1 • Policy C.10: Prohibit the alteration of properties of state or national significance,
2 unless reviewed under requirements of the California Environmental Quality Act.
- 3 • Policy C.19: Preserve natural resources by: ... protecting archeological and
4 paleontological resources.

5 **3.5.3 Impact Analysis**

6 ***a. Cause a substantial adverse change in the significance of a historical resource*** 7 ***as defined in § 15064.5?***

8 **No Impact.** Project implementation would not impact known shipwrecks or other known
9 historically significant sites. Although the EPS MOT was built in 1953 and is over 60
10 years old, as indicated above, it does not meet the criteria for listing in the NRHP or
11 California Register of Historic Resources. Therefore, the Project would not impact
12 historical resources.

13 ***b) Cause a substantial adverse change in the significance of an archaeological*** 14 ***resource pursuant to § 15064.5?***

15 **Less than Significant with Mitigation.** The EPS is located within a general area
16 considered sensitive for archaeological resources, and onshore decommissioning work
17 may have the potential to impact known (CA-SDI-210) or unknown archaeological
18 resources if earth disturbances extend outside of the previously disturbed construction
19 areas, vertically or horizontally.

20 To ensure that potential impacts to archaeological resources are avoided or mitigated to
21 less than significant, the following measures would be implemented.

22 **MM CUL-1: Cultural Resource Training.** A pre-construction meeting, inclusive
23 of agency personnel, shall be organized to educate onsite construction personnel
24 as to the sensitivity of archaeological and tribal cultural resources in the area. If
25 agency personnel cannot attend, the meeting shall be held and documentation of
26 the meeting shall be submitted to those agencies. The Applicant's personnel
27 shall instruct all construction and Project personnel to avoid removing cultural
28 materials from the Project site. Evidence of compliance with this mitigation
29 measure shall be documented, and provided to California State Lands
30 Commission staff, prior to onshore work.

31 **MM CUL-2: Archaeological and Tribal Cultural Resource Monitoring.** All
32 construction will be confined to previously disturbed areas within the beach valve
33 pit if feasible; however, to ensure no previously unknown archaeological or tribal
34 cultural resources are unintentionally damaged, all excavation shall be monitored
35 by a professional archaeologist and a Native American representative, who shall

1 have the authority to temporarily halt or redirect Project construction in the event
2 that potentially significant cultural resources are exposed.

3 **MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal**
4 **Cultural Resources are Discovered.** In the event that potentially significant
5 archaeological or tribal cultural resources are discovered any time during
6 construction, all earth disturbing work within the vicinity of the discovery shall be
7 temporarily suspended or redirected until a professional archaeologist and a
8 representative from the culturally affiliated California Native American tribe(s)
9 (tribal representative) as determined by the Native American Heritage
10 Commission have evaluated the nature and significance of the discovery. In the
11 event that a potentially significant archaeological or tribal cultural resource is
12 discovered, Cabrillo Power I LLC, the California State Lands Commission
13 (CSLC), and any local, State or Federal agency with approval or permitting
14 authority over the Project that has requested/required such notification shall be
15 notified.

16 Impacts to previously unknown significant archaeological or tribal cultural
17 resources shall be avoided through preservation in place if feasible. Damaging
18 effects to tribal cultural resources will be avoided or minimized following the
19 measures identified in Public Resources Code section 21084.3, subdivision (b), if
20 feasible, unless other measures are mutually agreed to by the lead archaeologist
21 and tribal representative that would be as or more effective.

22 If the lead archaeologist and tribal representative(s) mutually agree that
23 damaging effects to tribal cultural resources will be avoided or minimized, then
24 work in the area may resume. If the lead archaeologist and tribal
25 representative(s) do not agree, the CSLC's tribal liaison will attempt to resolve
26 the issue. If the tribal liaison cannot resolve the issue, the tribal liaison will submit
27 the matter to the CSLC's Executive Officer for resolution. A Native American
28 representative shall monitor any mitigation work associated with Native American
29 cultural material.

30 ***c) Cause a substantial adverse change in the significance of a tribal cultural***
31 ***resource as defined in Public Resources Code section 21074?***

32 **Less than Significant with Mitigation.** As discussed in Section 3.5.1.2, Tribal Cultural
33 Resources:

- 34 • A Sacred Lands File search conducted by the NAHC did not identify Native
35 American cultural places or properties within 0.5 mile of the Project footprint;
- 36 • The NAHC noted that the Project site is located several miles north of a known
37 underwater village and that the area around the Agua Hedionda Lagoon to the
38 north of the Project site is considered very culturally sensitive; and
- 39 • The NAHC provided a contact list of Native American representatives to Conejo
40 to gather information on cultural sites near the Project site (see Appendix K).

1 Conejo contacted the Native American representatives on January 30, 2013, and
2 received three responses. These responses indicated that although the MOT is not
3 within a recognized tribal Traditional Use Area, there are several Native American sites
4 located around Agua Hedionda Lagoon, and scattered marine shell debris has been
5 seen within the power plant. Given the potential area's archaeological sensitivity, it was
6 recommended that a Native American representative monitor any earth disturbances
7 associated with the Project, even in previously disturbed onshore areas. Additionally,
8 the Native American representatives requested to be kept informed of any documented
9 cultural resources at the Project site.

10 AB 52 made changes to CEQA regarding tribal cultural resources and consultation with
11 California Native American Tribes who have previously requested to be notified of
12 projects in the geographic area traditionally and culturally affiliated with that tribe (see
13 Table 3.5-2). Although CSLC staff has not received written requests for notification, staff
14 notified the Native American representatives on the NAHC contact list on October 2,
15 2015, to engage with those tribes proactively to ensure they have the opportunity to
16 provide meaningful input on the Project's potential effects (see Appendix K).

17 To ensure that potential impacts to tribal cultural resources are avoided or mitigated to
18 less than significant, all onsite construction personnel will be educated on the potential
19 for and sensitivity of tribal cultural resources in the area (**MM CUL-1**). Additionally, all
20 construction will be confined to previously disturbed areas within the beach valve pit if
21 feasible; however, to ensure no previously unknown tribal cultural resources are
22 unintentionally damaged, all excavation shall be monitored by a professional
23 archaeologist and a Native American representative who shall have the authority to
24 temporarily halt or redirect Project construction in the event that potentially significant
25 tribal cultural resources are exposed (**MM CUL-2**). In the event tribal cultural resources
26 are discovered, **MM CUL-3** will be implemented and a Native American representative
27 will monitor any mitigation work associated with Native American cultural material.
28 Therefore, with the implementation of **MM CUL-1**, **MM CUL-2**, and **MM CUL-3**, potential
29 impacts to tribal cultural resources at the Project site will be avoided or reduced to less
30 than significant.

31 ***d) Directly or indirectly destroy a unique paleontological resource or site or***
32 ***unique geologic feature?***

33 **Less than Significant with Mitigation.** Due to the high paleontological sensitivity in the
34 area, any Project activities requiring excavation of previously undisturbed sedimentary
35 formations onshore would have a potential for impacting paleontological resources.

36 Potential impacts to paleontological resources can be avoided by avoiding disturbance
37 of previously undisturbed native soils as identified above in **MM CUL-2**. If impacts

1 cannot be fully mitigated with **MM CUL-2**, the following measure would be implemented
2 to avoid or minimize potential impacts to less than significant.

3 **MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan.** A
4 qualified paleontologist shall be retained to evaluate the onshore activities and
5 develop a Paleontological Resource Evaluation and Mitigation Plan if Project
6 activities extend into previously undisturbed sedimentary formations. The
7 mitigation plan shall include construction monitoring and collection and archiving
8 of any paleontological finds.

9 **e) Disturb any human remains, including those interred outside of formal**
10 **cemeteries?**

11 **Less than Significant with Mitigation.** The Project is not expected to impact human
12 burials; however, in the unanticipated event that burials are encountered they must be
13 managed in accordance with state law.

14 To ensure that the potential impacts to any unanticipated burials encountered during
15 Project activities are avoided or mitigated to less than significant, the following measure
16 would be implemented.

17 **MM CUL-5: Proper Disposition of Human Remains.** If human remains are
18 unearthed, State Health and Safety Code section 7050.5 requires that no further
19 disturbance shall occur until the County Coroner has made the necessary
20 findings as to origin and disposition pursuant to Public Resources Code section
21 5097.98. If the remains are determined to be of Native American descent, the
22 coroner has 24 hours to notify the Native American Heritage Commission.
23 Cabrillo Power I LLC and California State Lands Commission staff shall be
24 notified immediately of the discovery.

25 **3.5.4 Mitigation Summary**

26 Implementation of the following mitigation measure(s) would reduce the potential for
27 Project-related impacts to cultural and paleontological resources to less than significant.

- 28 • MM CUL-1: Cultural Resource Training.
- 29 • MM CUL-2: Archaeological and Tribal Cultural Resource Monitoring.
- 30 • MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal
31 Cultural Resources are Discovered.
- 32 • MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan.
- 33 • MM CUL-5: Proper Disposition of Human Remains.

1 **3.6 GEOLOGY AND SOILS**

GEOLOGY AND SOILS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.6.1 Environmental Setting**

3 3.6.1.1 Regional Setting

4 **Geology**

5 The Project area is within the Peninsular Ranges geomorphic province, which is
 6 characterized by major northwest-striking, right-lateral strike-slip faults (CEC 2009). The
 7 Rose Canyon Fault (part of the Newport-Inglewood-Rose Canyon Fault Zone mapped
 8 approximately 2 miles southwest of the EPS) and Elsinore Fault are the closest major
 9 offshore and onshore faults, respectively. Since the Project area is in an active geologic
 10 area, it could be subject to intense levels of earthquake-related ground shaking.

1 The geology of the Peninsular Ranges is similar to the Sierra Nevada Range. Mesozoic
2 granitic and lesser gabbroic and metamorphic rocks form the core of the geomorphic
3 province (CEC 2009). The nearest mapped Mesozoic rocks are approximately 2.5 miles
4 east of the EPS site. Relatively thin Tertiary and Quaternary sediments deposited in
5 marine and transitional environments overlie the crystalline basement rocks. Continental
6 sediments are locally common as well, particularly in modern drainages. Post-Mesozoic
7 rocks are prevalent along the coast and extend 5 to 8 miles inland in the vicinity of
8 Carlsbad. The inland sediments reflect periods of higher sea levels in the past, as well
9 as uplift due to tectonic activity.

10 According to CEC (2009), fill from grading of the EPS site covers Quaternary and
11 Tertiary sediments that were deposited in marine and transitional environments.
12 Quaternary age paralic sediments immediately underlie the artificial fill. These deposits
13 represent transitional facies associated with a series of wave-cut terraces. The oldest
14 paralic deposits are present to the east and uphill from the coastline. As sea level fell in
15 response to decreases in ocean water volume and/or temperature and uplift associated
16 with regional and local tectonics, paralic sediments were deposited on progressively
17 lower wave-cut terraces. The most recent terrace deposits associated with a stranded
18 bench are represented by the materials present at the EPS. Terraces were cut into
19 middle Eocene deposits of the Santiago Formation in the Carlsbad area, so Quaternary
20 sediments are in unconformable contact with Tertiary sediments. The marine arkosic
21 sandstones were derived from granitic sources to the east.

22 **Soils**

23 The current Natural Resources Conservation Service (2013) mapping for San Diego
24 County, as accessed via the Web Soil Survey on January 21, 2013, identifies soils in
25 the Project area as Cr – Coastal beaches (nearshore and shoreline), TeF – Terrace
26 escarpments (part of the shoreline), and MIC – Marina loamy coarse sand (immediately
27 inland from the shore). Subsurface exploration conducted by Geo-Logic Associates for
28 the Poseidon Desalination Plant site, which is located adjacent to the EPS, is underlain
29 by artificial fill and very light brown to green-brown silty sandstone interbedded with
30 siltstone and mapped as mid-Eocene Santiago Formation. It is not known if the portion
31 of the EPS where the beach valve pit is located received fill prior to construction.

32 **Groundwater**

33 Groundwater beneath the EPS is generally brackish and is designated as having no
34 beneficial uses (CEC 2009). Due to seasonal and tidal influences, groundwater levels
35 fluctuate between 14 feet and 10 feet above mean sea level. As reported in the EIR for
36 the Poseidon Desalination Plant (City of Carlsbad 2005), the groundwater table at the
37 site was encountered during drilling at a depth of 20.8 to 28.9 feet below the existing
38 ground surface (an approximate elevation of 1.1 to 14.2 feet above mean sea level).

1 **Topography**

2 The topography of the EPS site is moderate to flat and generally slopes west toward
3 Carlsbad Boulevard and the Pacific Ocean.

4 3.6.1.2 Offshore Conditions

5 **Regional Sediment Movement**

6 Offshore sediment transport via movement of sand suspended in the water column
7 generally moves parallel to the San Diego coastline (CSLC 2005). Longshore transport
8 in the Project vicinity is 80 percent to the south and 20 percent to the north when
9 averaged for the year; in winter, longshore transport from north to south is more
10 dominant. Net annual movement of sand is approximately 310,000 cubic yards of sand
11 per year toward the south. Jetties constructed along the coast can interrupt both the
12 northward and southward movement of sand; because southward longshore transport
13 dominates, sand tends to accumulate on beaches on the north side of the jetties and
14 tends to be eroded from beaches on the south side of the jetties (CSLC 2005). Artificial
15 replenishment of beaches in the Project area has focused on three beaches—the beach
16 located north of Agua Hedionda Lagoon (referred to as the North Beach), the beach
17 between the inlet and outlet of the lagoon (Middle Beach), and the beach south of the
18 discharge channel (South Beach)—to partially offset the erosion caused by the existing
19 jetties at the inlet and discharge channels of the Agua Hedionda Lagoon.

20 About 400 to 500 feet south of the Agua Hedionda Lagoon discharge jetty is the riprap
21 covering the fuel oil submarine pipeline, also known as the South Beach Groin. In order
22 to excavate and remove the pipeline, this riprap groin would need to be temporarily
23 removed. To determine potential near-field effects of removing the South Beach Groin,
24 Jenkins (2013) conducted a shoreline evolution analysis (see Appendix L) using
25 computer simulations from a peer-reviewed Coastal Evolution Model and reached the
26 following conclusions from simulations using the model to predict shoreline evolution
27 over 20-year long historic periods of waves, tides, currents, and dredge disposal.

- 28 • Removal of the South Beach Groin would have no apparent effect on shoreline
29 change over the short-term. Only after 5 years was there a discernible difference
30 in shoreline change in the absence of the South Beach Groin, which was
31 localized to South Beach where removal of the groin caused a small amount of
32 shoreline retreat on the order of 6 feet.
- 33 • Removal of the South Beach Groin would have a cumulative impact, generally
34 erosional in nature, on the shoreline over the long-term (10 to 20 years). The
35 largest erosional impacts would occur at South Beach, where beach widths
36 would be locally reduced by as much as 17 feet, 20 years after the groin is
37 removed. Removal of the South Beach Groin would also reduce the median

1 retention time of dredged sands placed on South Beach by 1 month; longer
2 retention times (18 to 20 months) are possible, but dependent on the South
3 Beach Groin remaining in its present condition and location. Since dredging and
4 beach disposal of the dredged sands typically occurs every 2 years, an average
5 loss of 1 month of retention time adds up to a significant loss of beach sand
6 volume over many years for the North Beach/Middle Beach/South Beach back-
7 passing, sand re-cycling system.

8 Although the long-term effects of removing the groin on the beach bluff or public
9 infrastructure, such as the sea wall in the Project area, was not modeled, it is possible
10 that under storm conditions bluff erosion and erosion in the vicinity of the sea wall may
11 occur based upon the conclusion that the beach's width would be reduced by as much
12 as 17 feet, 20 years after the removal of the groin.

13 **Project Area Seafloor Conditions**

14 In 2005, Divecon recorded underwater video during an overhaul of the MOT, which was
15 later reviewed by Padre Associates, Inc. staff to evaluate the seafloor conditions in the
16 Project area. Based on the video footage, the fuel oil submarine pipeline appears to be
17 on soft bottom substrate closer to shore and buried about halfway in the ocean
18 sediment. In Merkel & Associates, Inc.'s February 2013 marine biological survey (see
19 Appendix I), portions of the pipeline and some of the anchors and chains were on the
20 surface of the seafloor; however, the condition of the MOT fuel oil submarine pipeline
21 and mooring anchors with respect to their location on or beneath sediments or rock
22 varies depending upon the time of year and other factors affecting the longshore
23 transport of marine sand. Based on the Merkel & Associates, Inc. (2013b) study and
24 Fugro's bathymetric and geophysical survey conducted in the spring of 2013, low relief
25 rocky substrate is present in the nearshore/shallow subtidal area immediately south of
26 the pipeline corridor. The seafloor topography between the shore and the tanker
27 moorings slopes moderately westward to an ocean depth of -100 feet, as shown on the
28 EPS MOT drawing (Cabrillo Power I LLC 2008). Beyond the -100 water depth there is a
29 steep drop in the offshore topography.

30 **3.6.2 Regulatory Setting**

31 3.6.2.1 Federal and State

32 Federal and State laws and regulations pertaining to this issue area and relevant to the
33 Project are identified in Table 3.6-1.

Table 3.6-1. Laws, Regulations, and Policies (Geology and Soils)

CA	Alquist-Priolo Earthquake Fault Zoning Act (Pub. Resources Code, §§ 2621-2630)	This Act requires that "sufficiently active" and "well-defined" earthquake fault zones be delineated by the State Geologist and prohibits locating structures for human occupancy across the trace of an active fault.
	California Building Code (CBC) (Cal. Code Regs., tit. 23)	The CBC contains requirements related to excavation, grading, and construction of pipelines alongside existing structures. A grading permit is required if more than 50 cubic yards of soil are moved. Sections 3301.2 and 3301.3 contain provisions requiring protection of adjacent properties during excavations and require a 10-day written notice and access agreements with adjacent property owners.
	California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690 and following as Division 2, Chapter 7.8)	This Act and the Seismic Hazards Mapping Regulations (Cal. Code Regs., tit. 14, Div. 2, Ch. 8, Art. 10) are designed to protect the public from the effects of strong ground shaking, liquefaction, landslides, other ground failures, or other hazards caused by earthquakes. The Act requires that site-specific geotechnical investigations be conducted identifying the hazard and formulating mitigation measures prior to permitting most developments designed for human occupancy. Special Publication 117, <i>Guidelines for Evaluating and Mitigating Seismic Hazards in California</i> (California Geological Survey 2008), constitutes guidelines for evaluating seismic hazards other than surface fault rupture and for recommending mitigation measures as required by section 2695, subdivision (a).
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	Coastal Act policies applicable to this issue area are: <ul style="list-style-type: none"> • Section 30253 requires, in part, that: New development shall: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. • Section 30243 states in part: The long-term productivity of soils and timberlands shall be protected....

1 3.6.1.2 Local

2 The City of Carlsbad (2006) General Plan OSCE contains the following geology and
3 soils-related objective and policies relevant to onshore Project activities.

4 • Objective B.2: To protect public health and safety by preserving natural and man-
5 made hazard areas as open space and taking special precautionary measures to
6 protect the public safety where development is possible and permitted.

7 • Policy C.8: Require a city permit for any grading, grubbing, or clearing of
8 vegetation in undeveloped areas, with appropriate penalties for violations.

9 • Policy C.12: Require that grading be accomplished in a manner that will maintain
10 the appearance of natural hillsides and other landforms wherever possible.

11 • Policy C.13: Require that soil reports, plans for erosion and sediment control
12 measures and provisions of maintenance responsibilities.

1 **3.6.3 Impact Analysis**

2 ***a) Expose people or structures to potential substantial adverse effects, including***
3 ***the risk of loss, injury, or death involving:***

4 ***i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-***
5 ***Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or***
6 ***based on other substantial evidence of a known fault? Refer to Division of Mines***
7 ***and Geology Special Publication 42.***

8 **No Impact.** As reported in the City of Carlsbad (undated[a]) General Plan Public Safety
9 Element, there are no known active or potentially active faults within city limits, and the
10 closest known active fault is the Rose Canyon Fault Zone, several miles offshore.
11 Additionally, no risk of loss of life or property in a seismic event would result from the
12 Project, which involves decommissioning of infrastructure and does not include the
13 construction of any buildings or structures that would potentially be damaged or cause
14 injury or death. Therefore, this Project is not likely to expose people or structures to
15 potential substantial adverse effects due to the rupture of a known earthquake fault.

16 ***ii) Strong seismic ground shaking?***

17 **No Impact.** There is the potential for Project infrastructure and workers to be subjected
18 to seismic ground shaking if a significant earthquake occurred in the area during Project
19 implementation. However, decommissioning activities would not create adverse effects
20 to people or structures related to ground shaking; therefore, no impact would occur.

21 ***iii) Seismic-related ground failure, including liquefaction?***

22 **No Impact.** As stated in the City of Carlsbad (undated[a]) General Plan Public Safety
23 Element, portions of the City underlain by deep, soft, saturated soils may be susceptible
24 to liquefaction, lurch cracking, lateral spreading, and local subsidence. However, the
25 Project is limited to the removal and in-place abandonment of existing onshore and
26 offshore infrastructure. Infrastructure abandoned in place would be filled with earth or
27 cement for stabilization (e.g., the Project includes filling the underpass conduit and
28 rectangular horizontal shafts with cement slurry and abandoning the structures in place;
29 see Figure A1-4 in Appendix A). These structures are buried under existing sidewalks
30 and Carlsbad Boulevard, and filling these voids would ensure continued stability of the
31 road and sidewalks over the long-term. The vertical vault of the underpass end structure
32 is completely buried underneath the sand beach and would be removed and backfilled
33 with sand to restore the disturbed area to pre-Project conditions. Removal of the vertical
34 vault may require demolition and replacement in-kind of the western sidewalk along
35 Carlsbad Boulevard where it crosses the underpass; however, no new construction is
36 proposed that would be subject to seismic-related ground failure such as liquefaction.

1 Therefore, this Project is not likely to expose people or structures to potential substantial
2 adverse effects due to seismic-related ground failure, including liquefaction.

3 ***iv) Landslides?***

4 **No Impact.** The Project site is located both onshore and offshore. The topography of
5 the Project area does not include slopes or other features that would have the potential
6 to become unstable and result in a landslide. Therefore, this Project is not likely to
7 expose people or structures to potential substantial adverse effects due to landslides.

8 ***b) Result in substantial soil erosion or the loss of topsoil?***

9 **Less than Significant Impact.** Excavation would be required to remove the underpass
10 end structure vertical vault, the fuel oil submarine pipeline, and any contaminated soils
11 that are identified. Excavated areas would be backfilled to re-establish pre-Project
12 conditions. Because of the nature of the activity and location, the Project would not
13 result in substantial soil erosion or loss of topsoil. The Project would also require the
14 temporary removal and subsequent replacement of the South Beach Groin. Since the
15 riprap groin would be restored to pre-Project conditions, the temporary removal of the
16 groin would have a less than significant impact on beach erosion or loss of beach sand.

17 ***c) Be located on a geologic unit or soil that is unstable, or that would become***
18 ***unstable as a result of the Project, and potentially result in on- or off-site***
19 ***landslide, lateral spreading, subsidence, liquefaction or collapse?***

20 **No Impact.** See discussion for **a)** above.

21 ***d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform***
22 ***Building Code (1994), creating substantial risks to life or property?***

23 **No Impact.** See discussion for **a)** above.

24 ***e) Have soils incapable of adequately supporting the use of septic tanks or***
25 ***alternative wastewater disposal systems where sewers are not available for the***
26 ***disposal of waste water?***

27 **No Impact.** The Project does not require a wastewater disposal system; therefore, no
28 impacts will occur.

29 **3.6.4 Mitigation Summary**

30 The Project would not result in significant impacts relating to geology and soils; no
31 mitigation is required.

1 **3.7 GREENHOUSE GAS EMISSIONS**

GREENHOUSE GAS EMISSIONS –Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.7.1 Environmental Setting**

3 GHGs are defined as any gas that absorbs infrared radiation in the atmosphere. GHGs
 4 include, but are not limited to, water vapor, carbon dioxide (CO₂), methane (CH₄), and
 5 nitrous oxide (N₂O). These GHGs lead to the trapping and buildup of heat in the
 6 atmosphere near the earth’s surface, commonly known as the Greenhouse Effect.
 7 There is increasing evidence that the Greenhouse Effect is leading to global climate
 8 change. The potential adverse impacts of global climate change in California include:
 9 the exacerbation of air quality problems; a reduction in the quality and supply of water to
 10 the State from the Sierra snowpack; a rise in sea levels resulting in the displacement of
 11 thousands of coastal businesses and residences; damage to marine ecosystems and
 12 the natural environment and an increase in the incidences of infectious diseases,
 13 asthma, and other human health-related problems (Health & Saf. Code, § 38501).

14 The primary source of GHG in the United States is energy-use related activities, which
 15 include fuel combustion, as well as energy production, transmission, storage and
 16 distribution. Energy related activities generated 84 percent of the total U.S. emissions
 17 on a carbon equivalent basis in 2012. Fossil fuel combustion represents the vast
 18 majority of the energy related GHG emissions, with CO₂ being the primary GHG.

19 The University of San Diego School of Law Energy Policy Initiative Center prepared a
 20 regional GHG inventory to examine emissions sources and levels in San Diego County,
 21 inclusive of the cities (County of San Diego Land Use and Environment Group 2013).
 22 The study concluded that transportation is the most important emissions sector for the
 23 State and San Diego region and accounts for a higher proportion of GHG emissions in
 24 San Diego compared to the State, while electricity-related emissions represent the
 25 same proportion relative to the State as a whole. Industrial and agricultural emissions
 26 are substantially less represented in San Diego County compared to the State. Within
 27 the City of Carlsbad, the largest GHG emissions sector is transportation (39%), followed
 28 by commercial and industrial (3%), residential (2%), solid waste (3%), and wastewater
 29 (1%) (City of Carlsbad 2015a).

1 **3.7.2 Regulatory Setting**

2 3.7.2.1 Federal and State

3 Federal and State laws and regulations pertaining to this issue area and relevant to the
 4 Project are identified in Table 3.7-1.

Table 3.7-1. Laws, Regulations, and Policies (Greenhouse Gas Emissions)

U.S.	Federal Clean Air Act (FCAA) (42 USC 7401 et seq.)	In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO ₂) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate Greenhouse Gas (GHG) emissions.
CA	California Global Warming Solutions Act of 2006 (AB 32)	Under AB 32, CARB is responsible for monitoring and reducing GHG emissions in the State and for establishing a statewide GHG emissions cap for 2020 that is based on 1990 emissions levels. CARB (2009) has adopted the AB 32 Climate Change Scoping Plan (Scoping Plan), which contains the main strategies for California to implement to reduce CO ₂ equivalent (CO ₂ e) emissions by 169 million metric tons (MMT) from the State’s projected 2020 emissions level of 596 MMT CO ₂ e under a business-as-usual scenario. The Scoping Plan breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the State’s GHG inventory, but does not directly discuss GHG emissions generated by construction activities.
CA	Senate Bills (SB) 97 and 375	<ul style="list-style-type: none"> • Pursuant to SB 97, the State Office of Planning and Research prepared and the Natural Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Effective as of March 2010, the revisions to the CEQA Environmental Checklist Form (Appendix G) and the Energy Conservation Appendix (Appendix F) provide a framework to address global climate change impacts in the CEQA process; State CEQA Guidelines section 15064.4 was also added to provide an approach to assessing impacts from GHGs. • SB 375 (effective January 1, 2009) requires CARB to develop regional reduction targets for GHG emissions, and prompted the creation of regional land use and transportation plans to reduce emissions from passenger vehicle use throughout the State. The targets apply to the regions covered by California’s 18 metropolitan planning organizations (MPOs). The 18 MPOs must develop regional land use and transportation plans and demonstrate an ability to attain the proposed reduction targets by 2020 and 2035.
CA	Executive Orders (EOs)	<p>EO B-30-15 (Gov. Brown, April 2015) established a new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 to ensure California meets its target to reduce GHG emissions to 80 percent below 1990 levels by 2050. It also directed all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to reduce GHG emissions to meet the 2030/2050 targets.</p> <p>Under EO S-01-07, which set forth a low carbon fuel standard for California, the carbon intensity of California’s transportations fuels is to be reduced by at least 10 percent by 2020.</p> <p>EO S-3-05 established statewide GHG emission targets of reducing emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below the 1990 level by 2050.</p>

1 3.7.2.2 Local

2 The County of San Diego (2012) adopted a Climate Action Plan (CAP) in June 2012 to
3 address the issues of growth and climate change through meaningful GHG emissions
4 reductions consistent with Assembly Bill (AB) 32, Governor’s Executive Order S-3-05,
5 and the State CEQA Guidelines. The County’s CAP includes a GHG emissions
6 inventory and forecast, GHG reduction targets, community and local government
7 measures and actions to reduce GHG emissions, and monitoring procedures.

8 The City of Carlsbad (2015a) adopted a CAP in September 2015 that: is designed to
9 reduce City GHG emissions and streamline environmental review of future development
10 projects in the City; anticipates development within the City consistent with the recently
11 updated General Plan; and includes an emissions inventory and GHG forecasts which
12 are compared to GHG reduction targets. As reported in the City’s CAP, the City is
13 forecast to meet emission targets in 2020 with: (1) implementation of state and federal
14 actions; (2) General Plan Land Use and roadways; and (3) additional General Plan
15 policies and actions. However, to address an emissions gap in 2035, this CAP includes
16 GHG reduction measures to close the gap between forecast emissions and emission
17 targets in 2035. These measures focus on incorporating elements (e.g., photovoltaic
18 systems, energy efficiency retrofits, transportation demand management, water utility
19 system improvements) into proposed development to reduce GHG emissions. With
20 these measures, the City’s CAP meets emission targets for 2020 and 2035.

21 **3.7.3 Impact Analysis**

22 ***a) Generate greenhouse gas emissions, either directly or indirectly, that may have***
23 ***a significant impact on the environment?***

24 **Less than Significant Impact.** In October 2008, the CARB created a Preliminary Draft
25 Staff Proposal, *Recommended Approaches for Setting Interim Significance Thresholds*
26 *for Greenhouse Gases under the California Environmental Quality Act*. In this
27 document, the CARB discusses the dangers of global climate change and the need for
28 a defined set of significance thresholds for operations, construction, and transportation,
29 and provides a preliminary proposal for a threshold of significance for GHG emissions.
30 The threshold consists of a quantitative threshold of 7,000 metric tons (MT) of CO₂
31 equivalent (CO₂e) per year (MTCO₂e/year) for operational emissions (excluding
32 transportation) and performance standards for construction and transportation
33 emissions. The goal of this effort is to mitigate GHG emissions from industrial projects
34 on a statewide level. Over time, implementation of AB 32 will reduce or mitigate GHG
35 emissions from industrial sources.

36 San Diego County Air Pollution Control District Rule 60.1 identifies de minimis
37 emissions for small stationary sources, including 20,000 tons per year of GHGs (CO₂e).

1 This de minimis emissions rate is used as a threshold of significance for the Project
 2 overall. The City of Carlsbad CAP includes the following project screening threshold:
 3 “the City has determined that new development projects emitting less than 900 MTCO_{2e}
 4 annual GHG would not contribute considerably to cumulative climate change impacts,
 5 and therefore do not need to demonstrate consistency with the CAP.” This threshold is
 6 applied to the Project exclusive of the offshore components. Project-generated GHGs
 7 (primarily engine exhaust) would come from marine vessels and onboard equipment,
 8 heavy-duty construction equipment, transfer dump trucks, cement trucks, and worker
 9 vehicles (Table A2-1 in Appendix A). Approximately 1,725 MTCO_{2e} would be generated
 10 over the Project duration, as shown in Table 3.7-2, with peak emissions (1,200 MTCO_{2e}
 11 per year) anticipated from September 2016 through August 2017.

Table 3.7-2. Estimated Greenhouse Gas Total Project Emissions

AIR EMISSIONS SUMMARY		CO ₂	N ₂ O	CH ₄	MTCO _{2e}
Pre-Survey	Pounds/Segment	6,689.55	0.17	0.49	3.06
	English Tons	3.34	0.00	0.00	
Onshore Decommissioning	Pounds/Segment	372,261.00	9.56	21.20	244.44
	English Tons	267.13	0.01	0.01	
Offshore Decommissioning	Pounds/Segment	2,062,695.77	52.83	134.57	950.93
	English Tons	1,038.65	0.03	0.7	
Beach Decommissioning	Pounds/Segment	315,755.43	8.08	17.99	190.17
	English Tons	207.75	0.01	0.01	
Surf Zone Decommissioning	Pounds/Segment	652,325.25	16.71	41.96	332.21
	English Tons	362.87	0.01	0.02	
Post-Survey	Pounds/Segment	6,689.55	0.17	0.49	3.06
	English Tons	3.34	0.00	0.00	
Total – Project Air Emissions (English Tons/Year)		1,883.09	0.05	0.11	-
Peak English Tons/Year¹		1,312.47	0.03	0.08	
Total – Project Air Emissions					1,723.88
Total Peak MTCO_{2e}					1,201.50

¹ The Project years considered in estimating Peak Tons/Year are provided in Table A1-1 in Appendix A (September 2016 through August 2017).

12 As described in Section 2, Project Description, there are two proposed methodologies
 13 (Options 1 and 2) to complete decommissioning activities in both the surf zone and
 14 offshore segments. Although in-field success would determine which method is more
 15 effective and thus used, the options with the highest emissions are presented in Table
 16 3.7-2 and in Appendix H.

17 GHG emissions were estimated for motor vehicles utilizing load factors from the
 18 CalEEMod Model and emissions factors from Tables C.3 and C.4 of the California
 19 Climate Action Registry (CCAR) General Reporting Protocol (CCAR 2009). GHG
 20 emissions were estimated for heavy equipment and vessels utilizing load factors from
 21 the OFFROAD model and the Port of Long Beach 2010 Emissions Inventory Table 3.3

1 (POLB 2011), with emissions factors from Table C.3 and C.6 of the CCAR General
2 Reporting Protocol (CCAR 2009).

3 As indicated in Table 3.7-2, Project-related GHG emissions would not approach nor
4 exceed the 20,000 MTCO_{2e} per year significance threshold for San Diego County;
5 therefore, impacts associated with GHGs would be less than significant. Additionally,
6 Project-related emissions for the combined onshore, beach, and surf zone
7 decommissioning segments would total 766.82 MTCO_{2e}, which is less than the 900
8 MTCO_{2e} threshold in the City of Carlsbad's CAP. As a result, the Project would not
9 generate GHG emissions, either directly or indirectly, that may have a significant impact
10 on the environment; therefore, the impact would be less than significant.

11 Although no mitigation is required, implementation of **APM AIR-1: Air Emissions**
12 **Compliance Program, APM AIR-2: Low-Emission Engines – Offshore, APM AIR-3:**
13 **Low-Emission Engines – Onshore, APM AIR-4: Mobilize from Nearest Port, APM**
14 **AIR-5: Dispose Materials at Nearest Port, and APM AIR-6: Low-Sulfur Fuel** would
15 further reduce this less than significant impact, as would **MM TRA-2: Carpooling** (for
16 the latter, see Section 3.16, Transportation/Traffic).

17 ***b) Conflict with an applicable plan, policy or regulation adopted for the purpose***
18 ***of reducing the emissions of greenhouse gases?***

19 **No Impact.** As described under item **a)** above, Project-related emissions associated
20 with Project components (onshore, beach, and surf zone decommissioning segments)
21 within the City are less than the 900 MTCO_{2e} threshold in the City of Carlsbad's CAP.
22 Because Project-related emissions would be short-term and cease upon Project
23 completion, GHGs from decommissioning activities would not conflict with any county or
24 state policy to reduce GHG emissions, including Executive Orders S-3-05, S-01-07, and
25 B-30-15. Therefore, the Project would not conflict with any applicable plan, policy, or
26 regulation adopted for the purposes of reducing GHG emissions.

27 **3.7.4 Mitigation Summary**

28 The Project, which includes implementation of the air quality APMs listed below, would
29 not result in significant GHG emissions impacts; therefore, no mitigation is required.

- 30 • APM AIR-1: Air Emissions Compliance Program.
- 31 • APM AIR-2: Low-Emission Engines – Offshore.
- 32 • APM AIR-3: Low-Emission Engines – Onshore.
- 33 • APM AIR-4: Mobilize from Nearest Port.
- 34 • APM AIR-5: Dispose Materials at Nearest Port.
- 35 • APM AIR-6: Low-Sulfur Fuel.
- 36 • MM TRA-2: Carpooling.

1 **3.8 HAZARDS AND HAZARDOUS MATERIALS**

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

2 **3.8.1 Environmental Setting**

3 3.8.1.1 Environmental Database Findings

4 An online review of the California Department of Toxic Substances Control (DTSC)
 5 Envirostor database on July 10, 2014, determined that one site is currently listed within
 6 approximately 0.5 mile of the Project area. This site is a tiered permit status site
 7 associated with the EPS, which was closed in 2004.

1 The State Water Resources Control Board (SWRCB) (2015) GeoTracker database was
2 also reviewed in July 2015 for information on any documented sites of environmental
3 concern in the Project area. Four closed sites were identified by GeoTracker at the
4 EPS, and included soil contamination of diesel, gasoline, and heating or fuel oil, and
5 non-polychlorinated biphenyl (PCB) transformer oil. Two sites were closed by the
6 SWRCB in 1996, the others were closed in 2005 and 2015. Only one records pertaining
7 to any of the sites closed in or before 2005 are available through the GeoTracker
8 website. A March 16, 2005, letter from the County of San Diego Department of
9 Environmental Health (SDDEH), Land and Water Quality Division (2005) regarding site
10 T0608160564 indicated that the site, used for fuel tank farm operations, was
11 investigated for diesel and heavy metals. Contaminated soil with diesel and heavy
12 metals was found at shallow depths, and groundwater had a low concentration of
13 dissolved diesel and trace amounts of some heavy metals. To meet the cleanup goals
14 for the site, soil remediation was performed in 2004 in eight areas with total petroleum
15 hydrocarbon (TPH) concentrations higher than 1,000 milligrams per kilogram (mg/kg) by
16 excavating and recycling 4,426 cubic yards of contaminated material. The letter further
17 stated that changes to the proposed use of the site as mixed residential/commercial
18 may require reevaluation to determine if the change would pose a risk to public health,
19 and that any contaminated soil excavated as part of subsurface construction work must
20 be managed in accordance with the legal requirements at that time.

21 The fourth closed site, Spills, Leaks, Investigation, and Cleanup Site (SLIC) Local Case
22 # H13941-005 (GeoTracker ID T10000003098), was identified approximately 420 feet
23 southeast of the beach valve pit. This case, which was closed as of May 6, 2015, was
24 the result of a 2011 underground transformer release from EPS Unit 5 main transformer
25 cooling piping. According to the case closure summary, approximately 400 gallons of
26 non-PCB transformer oil leaked to the ground. The ruptured pipes were immediately
27 repaired and approximately 20 cubic yards of impacted soil were excavated from the
28 leak area. Soil sampling was conducted and the results of analysis showed low levels of
29 transformer oil remaining at 3 feet below grade. However, it was concluded that
30 because the transformer oil residue at the site is likely made of low-toxicity and low
31 mobility petroleum hydrocarbons, the residue, which has been capped with asphalt can
32 be left in place and does not pose a significant health risk (County of San Diego
33 Department of Environmental Health, Land and Water Quality Division 2013).

34 An open Cleanup Program Site (Local Case # H13941-004, GeoTracker ID
35 SLT19726861) (SWRCB 2014a; 2014b; 2014c, Rincon Consultants, Inc. 2014a; 2014b)
36 was also identified near the administration building (under construction) at the EPS.
37 This site was initially associated with the fuel oil leak in November 2007. Several
38 additional Voluntary Assistance Program applications, assessments, action plans, and
39 SDDEH communications are associated with Local Case # H13941-004, GeoTracker ID
40 SLT19726861 for other documented sites of environmental concern within the EPS.

1 Most of the documented sites of environmental concern were identified during
2 construction of the Poseidon Carlsbad Seawater Desalination Plant, which is located in
3 areas previously occupied by EPS petroleum storage tanks and a wastewater treatment
4 plant, when contaminants associated with past handling, storage, and use of petroleum
5 hydrocarbons were encountered. Documented sites of environmental concern in the
6 area of the EPS tank farms are not discussed here because the closest tank site to the
7 proposed Project is located more than 1,300 feet east of the beach valve pit. The
8 documented sites of environmental concern closest to the Project are discussed below.

9 On August 6, 2013, petroleum hydrocarbon odors were detected during initial
10 excavation and construction of the Intake Pump Station (located 200 feet east of the
11 beach valve pit) for the Carlsbad Desalination Plant. Soil samples were evaluated and
12 found to contain diesel and motor oil. Soil assessment and remedial measures to be
13 implemented during construction of the Intake Pump Station and 72-inch Water Supply
14 and associated Discharge Lines were proposed with cleanup goals as approved by the
15 SDDEH for the EPS (Rincon Consultants, Inc. 2013). In July 2014, petroleum
16 hydrocarbon odors were also reported during excavation for a 72-inch underground
17 water supply line at the EPS. Rincon Consultants conducted soil assessment and
18 remediation at the excavation site, which is located approximately 370 feet east of the
19 beach valve pit. Soil samples were taken and assessed, and it was determined that
20 TPH concentrations exceeded the established cleanup goals for two samples; other
21 samples did not exceed cleanup goals. The contaminated soil was excavated and
22 disposed off-site; however, contaminated soil south of the sample locations was not
23 assessed as it was outside of the area of concern (Rincon Consultants, Inc. 2014b).

24 3.8.1.2 Asbestos-Containing Material

25 Royal Environmental Services, Inc. (Royal) was retained by Cabrillo to test the fuel oil
26 submarine pipeline and associated facilities for asbestos-containing materials (ACM). A
27 February 2013 report by Royal (see Appendix D) identifies three materials associated
28 with the pipeline that contained asbestos:

- 29 • Gray/black colored pipe mastic which underlies the concrete covering on the
30 pipeline and is also present in patches along the pipeline;
- 31 • Gray pipe wrap on the pipeline at the joint with the concrete wall at the west end
32 of the underpass end structure; and
- 33 • Black pipe wrap on the pipeline and attached 6-inch bypass pipe.

34 3.8.1.3 Lead-Based Paint

35 Royal conducted testing of lead-based paint (LBP) on surfaces within the vertical vault
36 of the beach valve pit and the fuel oil submarine pipeline under Carlsbad Boulevard to
37 determine whether the paint contains lead. One gray-painted steel pipe (approximately

1 20 feet long and 1 inch in diameter) located within the vertical vault of the beach valve
2 pit and tunnel (i.e., the beach valve pit horizontal shaft, underpass conduit, and
3 underpass end structure horizontal shaft and vertical vault) under Carlsbad Boulevard
4 was identified as having lead equal to or greater than the California Division of
5 Occupational Safety and Health LBP threshold (0.06% by weight or 600 ppm) and the
6 USEPA LBP threshold (0.5% by weight or 5,000 ppm) for worker protection. Because of
7 the loose, flaky, and/or otherwise damaged LBP found on the steel pipe, the paint/pipe
8 requires abatement prior to demolition or handling for metal recycling. Royal also opined
9 that other similarly gray-painted equipment/facilities in the EPS likely contain LBP and
10 should also be abated prior to demolition.

11 3.8.1.4 Other Known and Potentially Unknown Contaminants

12 The beach valve pit and vertical concrete vault have features such as an existing drain
13 that, if compromised, could have released petroleum hydrocarbons to surrounding soils.
14 Similarly, in the event that there were past pipeline leaks, soil in the immediate area of
15 the pipeline could contain petroleum hydrocarbons and/or other chemicals of concern.

16 Royal collected samples of loose soil collected in the vertical vault of the beach valve pit
17 and the fuel oil submarine pipeline tunnel under Carlsbad Boulevard (approximately 10
18 feet into the tunnel from the vertical vault of the beach valve pit). Testing of the soil
19 samples for TPH, with a carbon range of C6 through C36 (from gasoline to oil), was
20 conducted by Calscience Environmental Laboratories using USEPA Method 8015
21 Modified. As reported by Royal, the soil from the floor of the vertical vault of the beach
22 valve pit contained TPH at 35,000 mg/kg and the sample from the tunnel contained TPH
23 at 1,300 mg/kg. Although soils with these levels of TPH do not meet the definition of a
24 hazardous waste, they must be managed as petroleum containing special waste. The
25 Royal report does not identify the source of these soils or contamination; however, it
26 states that soils further from the vertical vault of beach valve pit (i.e., within the tunnel)
27 likely contain lower or no concentration of TPH.

28 A gravel sump, which is open on the bottom, is located on the beach below the fuel oil
29 submarine pipeline (see Figure A1-2 in Appendix A). If the pipeline had leaked between
30 the beach valve pit and sump, any fuel oil released would likely have collected in the
31 sump due to the site topography, which slopes toward the beach.

32 3.8.1.5 Fuel Oil Submarine Pipeline Contents

33 According to the EPS Fueling Administrator, the fuel oil submarine pipeline was pigged
34 and flushed three times to bring the hydrocarbon level below 15 ppm; no surfactant was
35 used. The pipeline was also charged with Nalco EC6106A corrosion inhibitor to prevent
36 internal corrosion of the pipeline. The flushed water was tested for Hexane Extractable
37 Materials (oil and grease) by the San Diego Gas and Electric (SDG&E) Environmental

1 Analysis Laboratory (September 29, 2010) using USEPA Method 1664A (SDG&E
2 2010). Table 3.8-1 shows the test results.

Table 3.8-1. Pipeline Flush Water Analytical Results

Analyte	Results in milligrams per liter (mg/L)
Pipeline water during first pig	11
Pipeline water after first pig	USEPA Method 1664A could not be used due to the high concentration of oil in the sample. Visual estimation put this value at 3 percent oil. The upper practical limit for this method for a 1-liter sample is 1,000 mg/L.
Pipeline water after second pig	14
Pipeline water after third pig	Non-detect

3 The fuel oil submarine pipeline is presently filled with 1,450 barrels of potable water and
4 385 gallons of Nalco EC6106A, a preservative approved by the CSLC to protect the
5 pipeline (a Material Safety Data Sheet for Nalco EC6106A is provided in Appendix B).
6 The pipeline is under vacuum and has shown no signs of leakage.

7 3.8.2 Regulatory Setting

8 3.8.2.1 Federal and State

9 Federal and State laws and regulations pertaining to this issue area and relevant to the
10 Project are identified in Table 3.8-2.

Table 3.8-2. Laws, Regulations, and Policies (Hazards/Hazardous Materials)

U.S.	Clean Water Act (CWA) (33 USC 1251 et seq.)	The CWA is comprehensive legislation (it generally includes reference to the Federal Water Pollution Control Act of 1972, its supplementation by the CWA of 1977, and amendments in 1981, 1987, and 1993) that seeks to protect the nation's water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. (<i>see below and in Section 3.9, Hydrology and Water Quality</i>).
U.S.	California Toxics Rule (40 CFR 131)	In 2000, the USEPA promulgated numeric water quality criteria for priority toxic pollutants and other water quality standards provisions to be applied to waters in the State of California. USEPA promulgated this rule based on the Administrator's determination that the numeric criteria are necessary in the State of California to protect human health and the environment. Under CWA section 303(c)(2)(B), the USEPA requires states to adopt numeric water quality criteria for priority toxic pollutants for which the USEPA has issued criteria guidance, and the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses. These Federal criteria are legally applicable in California for inland surface waters, enclosed bays, and estuaries.
U.S.	Hazardous Materials Transportation Act (HMTA) (49 USC 5901)	The HMTA delegates authority to the U.S. Department of Transportation to develop and implement regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. Additionally, the USEPA's Hazardous Waste Manifest System is a set of forms, reports, and procedures for tracking hazardous waste from a generator's site to the disposal site. Applicable regulations are contained primarily in CFR Titles 40 and 49.
U.S.	National Oil	Authorized under the Comprehensive Environmental Response, Compensation,

Table 3.8-2. Laws, Regulations, and Policies (Hazards/Hazardous Materials)

	and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300)	and Liability Act of 1980, 42 USC 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986, Pub. L. 99 through 499; and by CWA section 311(d), as amended by the Oil Pollution Act of 1990 (OPA), Pub. L. 101 through 380. The NCP outlines requirements for responding to both oil spills and releases of hazardous substances. It specifies compliance, but does not require the preparation of a written plan. It also provides a comprehensive system for reporting, spill containment, and cleanup. The U.S. Coast Guard (USCG) and USEPA co-chair the National Response Team. In accordance with 40 CFR 300.175, the USCG has responsibility for oversight of regional response for oil spills in “coastal zones,” as described in 40 CFR 300.120.
U.S.	Oil Pollution Act (OPA) (33 USC 2712)	The OPA requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances. The passage of the OPA motivated California to pass a more stringent spill response and recovery regulation and the creation of a State Office of Spill Prevention and Response to review and regulate oil spill plans and contracts.
U.S.	Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.)	The RCRA authorizes the USEPA to control hazardous waste from “cradle-to-grave,” which encompasses its generation, transportation, treatment, storage, and disposal. RCRA’s Federal Hazardous and Solid Waste Amendments from 1984 include waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. The Department of Toxic Substances Control is the lead State agency for corrective action associated with RCRA facility investigations and remediation.
U.S.	Toxic Substances Control Act (15 USC 2601–2692)	This Act authorizes the USEPA to require reporting, record-keeping, testing requirements, and restrictions related to chemical substances and/or mixtures. It also addresses production, importation, use, and disposal of specific chemicals, such as polychlorinated biphenyls (PCBs), asbestos-containing materials, lead-based paint, and petroleum.
U.S.	Other	<ul style="list-style-type: none"> • Act of 1980 to Prevent Pollution from Ships requires ships in U.S. waters, and U.S. ships wherever located, to comply with International Convention for the Prevention of Pollution from Ships. • Convention on the International Regulations for Preventing Collisions at Sea. These regulations establish “rules of the road” such as rights-of-way, safe speed, actions to avoid collision, and procedures to observe in narrow channels and restricted visibility. • Inspection and Regulation of Vessels (46 USC Subtitle II Part B). Federal regulations for marine vessel shipping are codified in 46 CFR parts 1 through 599 and are implemented by the USCG, Maritime Administration, and Federal Maritime Commission. These regulations provide that all vessels operating offshore, including those under foreign registration, are subject to requirements applicable to vessel construction, condition, and operation. All vessels (including motorboats) operating in commercial service (e.g., passengers for hire, transport of cargoes, hazardous materials, and bulk solids) on specified routes (inland, near coastal, and oceans) are subject to requirements applicable to vessel construction, condition, and operation. These regulations also allow for inspections to verify that vessels comply with applicable international conventions and U.S. laws and regulations. • Navigation and Navigable Waters regulations (33 CFR) include requirements pertaining to prevention and control of releases of materials (including oil spills) from vessels, traffic control, and restricted areas, and general ports and waterways safety.
CA	Coastal Act Chapter 3 policies (see	Section 30232 states: <i>Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and</i>

Table 3.8-2. Laws, Regulations, and Policies (Hazards/Hazardous Materials)

	also Table 1-2)	<i>cleanup facilities and procedures shall be provided for accidental spills that do occur.</i>
CA	Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (Gov. Code, § 8574.1 et seq.; Pub. Resources Code, § 8750 et seq.)	This Act and its implementing regulations seek to protect State waters from oil pollution and to plan for the effective and immediate response, removal, abatement, and cleanup in the event of an oil spill. The Act requires vessel and marine facilities to have marine oil spill contingency plans and to demonstrate financial responsibility, and requires immediate cleanup of spills, following the approved contingency plans, and fully mitigating impacts on wildlife. The Act assigns primary authority to the Office of Spill Prevention and Response (OSPR) division within the CDFW to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in the marine waters of the State. The CSLC assists OSPR with spill investigations and response.
CA	Other	<ul style="list-style-type: none"> • California Clean Coast Act (SB 771) establishes limitations for shipboard incinerators, and the discharge of hazardous material—including oily bilgewater, graywater, and sewage—into State waters or a marine sanctuary. It also provides direction for submitting information on visiting vessels to the CSLC and reporting of discharges to the State water quality agencies. • California Harbors and Navigation Code specifies a State policy to “promote safety for persons and property in and connected with the use and equipment of vessels,” and includes laws concerning marine navigation that are implemented by local city and county governments. This Code also regulates discharges from vessels within territorial waters of the State of California to prevent adverse impacts on the marine environment. This Code regulates oil discharges and imposes civil penalties and liability for cleanup costs when oil is intentionally or negligently discharged to the State waters. • California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690) and Seismic Hazards Mapping Regulations (Cal. Code Regs., tit. 14, Div. 2, Ch. 8, Art. 10) (See Section 3.6, <i>Geology and Soils</i>). • Hazardous Waste Control Act (Cal. Code Regs., tit. 26) defines requirements for proper management of hazardous materials. • Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.) (See Section 3.9, <i>Hydrology and Water Quality</i>).

1 3.8.2.2 Local

2 The City of Carlsbad (undated[a]) General Plan contains the following hazardous
3 materials-related goal and policy relevant to onshore Project activities.

- 4 • Goal: A City which minimizes injury, loss of life, and damage to property resulting
5 from hazardous materials disaster occurrence.
- 6 • Policy 1: Review land use decisions to consider constraints presented by the
7 potential for on-site and off-site contamination by use, transfer, storage, or land
8 disposal of hazardous materials and wastes. Land use decisions should be
9 consistent with Federal, State and county environmental regulations.

10 The McClellan-Palomar Airport Land Use Compatibility Plan (County of San Diego
11 Airport Land Use Commission 2010) establishes an Airport Influence Area, which

1 identifies areas likely to be impacted by noise and flight activity created by aircraft
2 operations at the airport. The Airport Influence Area also identifies areas where new
3 development may adversely affect airport operations.

4 **3.8.3 Impact Analysis**

5 **a) Create a significant hazard to the public or the environment through the routine**
6 **transport, use, or disposal of hazardous materials?**

7 **Less than Significant with Mitigation.** Decommissioning activities have the potential
8 to impact the public or environment. For example, the removal of the fuel oil submarine
9 pipeline and other equipment/facilities could result in the release of ACM or LBP into the
10 environment, exposing workers, and potentially the public, to asbestos- or lead-related
11 health hazards. The pipeline currently contains water and a preservative, which, along
12 with any unanticipated residual oil in previously pigged pipelines, could also be released
13 to the environment. Further, due to the site's previous use of transferring of oil,
14 decommissioning activities requiring soil excavation have the potential to expose
15 workers to contaminants. Lastly, accidental spills of petroleum (including diesel fuel)
16 from Project vessels may occur; other Project vessel discharges would be in
17 accordance with applicable regulations.

18 To ensure that potential hazards or hazardous materials impacts to the public and
19 environment are avoided or mitigated to less than significant, **MM BIO-7: Oil Spill**
20 **Response Plan (OSRP)**, **MM BIO-8: Flush Fuel Oil Submarine Pipeline**, and the
21 following measures would be implemented.

22 **MM HAZ-1: Certified Asbestos Abatement Contractor.** Pipeline removal shall
23 be conducted in accordance with all regulations pertaining to asbestos utilizing a
24 certified asbestos abatement contractor to perform any such work.

25 **MM HAZ-2: Licensed/Certified Lead-Based Paint (LBP) Contractor.** A
26 California licensed contractor certified by the California Department of Public
27 Health shall be contracted to accomplish LBP abatement prior to the
28 commencement of onshore demolition and to ensure proper disposal of paint
29 flakes (which must be handled as a hazardous waste), abated pipes, and
30 equipment.

31 **MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA).** An
32 extended Phase I ESA review, as well as the assessment of soils around and in
33 the beach valve pit, shall be conducted to address potential soil contamination
34 issues at the Project site prior to the commencement of decommissioning
35 activities. If contamination is identified, the appropriate measures to address the
36 hazard shall be added to the Contractor Work Plan. This may include excavation
37 and removal of contaminated soil to a legal disposal site, or onsite treatment of

1 contaminated soil. A copy of the Phase 1 ESA shall be provided to California
2 State Lands Commission staff within 2 weeks of completion.

3 **MM HAZ-3b: Personnel Trained to Work with Hazardous Substances.** All
4 work requiring removal of facilities shall be conducted by personnel trained to
5 work with hazardous substances and any suspicious soils (stained or with an
6 unusual odor) or groundwater (showing a sheen or with an unusual odor), shall
7 be tested and treated in accordance with all applicable laws.

8 **MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing**
9 **Soil.** Soil in the bottom of the beach valve pit known to have levels of TPH shall
10 be disposed of as a petroleum-containing special waste.

11 As discussed in Section 4.6, Cultural Resources, due to the presence of archaeological
12 site CA-SDI-210 and the paleontologically sensitive Santiago Formation, any
13 remediation efforts that could disturb previously undisturbed earth material would have
14 the potential to result in impacts to cultural resources. Mitigation involving the use of
15 archaeologists, Native Americans, and/or paleontologists would necessitate that these
16 monitors be appropriately trained to work with hazardous substances.

17 ***b) Create a significant hazard to the public or the environment through***
18 ***reasonably foreseeable upset and accident conditions involving the release of***
19 ***hazardous materials into the environment?***

20 **Less than Significant with Mitigation.** Decommissioning activities include the use of
21 offshore vessels and offshore and onshore equipment that may result in the accidental
22 release of hazardous materials, and subsequent environmental and human exposure,
23 due to accidental spills of petroleum (including diesel fuel) from Project vessels or
24 accidental releases of fuels, lubricants, or other materials. To ensure that potential
25 impacts associated with the accidental release of hazardous materials are avoided or
26 mitigated to less than significant, the following measures would be implemented.

27 **MM HAZ-5: Onshore Hazardous Materials Management and Contingency**
28 **Plan Measures.** The onshore contractor shall develop and implement hazardous
29 materials management and contingency plan measures for onshore operations.
30 The measures shall be provided to California State Lands Commission staff as
31 part of a Stormwater Pollution Prevention Plan or a separate plan prior to Project
32 implementation. Measures shall include, but not be limited to, identification of:
33 appropriate fueling and maintenance areas for equipment; best management
34 practices for fueling and operation of equipment (e.g., daily inspection of
35 equipment); a spill response; and spill response supplies to be maintained onsite.

36 ***c) Emit hazardous emissions or handle hazardous or acutely hazardous***
37 ***materials, substances, or waste within one-quarter mile of an existing or***
38 ***proposed school?***

1 **Less than Significant Impact.** The closest school to the Project site is Jefferson
2 Elementary School located at 3743 Jefferson Street, which is 0.95 mile to the north
3 based upon the Carlsbad Unified School District (2014) online School Locator
4 measuring tool. Hazardous materials that may be encountered during Project
5 decommissioning (e.g., LBP, ACM, hydrocarbons) as described above would be very
6 localized and would not impact the closest school. Short-term air pollutants from
7 construction vessels and equipment are discussed in Section 3.3, Air Quality.

8 ***d) Be located on a site which is included on a list of hazardous materials sites***
9 ***compiled pursuant to Government Code section 65962.5 and, as a result, would it***
10 ***create a significant hazard to the public or the environment?***

11 **Less than Significant with Mitigation.** As described above, the EPS is included on a
12 list of hazardous materials sites (per Gov. Code, § 65962.5, commonly referred to as
13 the "Cortese List") (SWRCB 2015; DTSC 2015). Specifically, an open Cleanup Program
14 Site (Local Case # H13941-004, GeoTracker ID SLT19726861) is located at the EPS.
15 No documented sites of environmental concern associated with Local Case # H13941-
16 004, GeoTracker ID SLT19726861, nor any closed sites within the EPS are within
17 Project boundaries; however, as discussed under item **a)** above, if contamination is
18 encountered during decommissioning activities, there would be the potential for health-
19 related hazards to workers and possibly the public. Implementation of **MM HAZ-3a** and
20 **MM HAZ-3b** would ensure that the potential for environmental or human health impacts
21 from exposure to hazardous material sites is avoided or reduced to less than significant.

22 ***e) For a project located within an airport land use plan or, where such a plan has***
23 ***not been adopted, within two miles of a public airport or public use airport, would***
24 ***the project result in a safety hazard for people residing or working in the project***
25 ***area?***

26 **No Impact.** The McClellan-Palomar Airport is located about 3 miles southeast of the
27 Project site. Based on a review of McClellan-Palomar Airport Land Use Compatibility
28 Plan (County of San Diego Airport Land Use Commission 2010), the Project site is not
29 located within an airport safety zone; therefore, no impacts would occur.

30 ***f) For a project within the vicinity of a private airstrip, result in a safety hazard for***
31 ***people residing or working in the project area?***

32 **No Impact.** There are no private airstrips located in proximity to the Project site;
33 therefore, no impacts would occur.

34 ***g) Impair implementation of or physically interfere with an adopted emergency***
35 ***response plan or emergency evacuation plan?***

1 **No Impact.** According to the City of Carlsbad’s (undated[b]) website, the San Diego
2 County Office of Emergency Services is responsible for maintaining the county
3 emergency plan, which facilitates regional mutual aid. The City of Carlsbad's
4 Emergency Management Administrative Team maintains the Carlsbad Emergency
5 Operations Plan (City Plan). These plans are consistent and interoperable to maximize
6 regional mutual aid support. Based upon a review of the Unified San Diego County
7 Emergency Services Organizational Area Emergency Plan (2010) (County Plan), the
8 Project does not include any elements that would interfere (physically or operationally)
9 with this plan. Because the City Plan is consistent and interoperable with the County
10 Plan, the Project would not interfere with implementation (physically or operationally) of
11 the City Plan; therefore, no impacts would occur.

12 ***h) Expose people or structures to a significant risk of loss, injury or death***
13 ***involving wildland fires, including where wildlands are adjacent to urbanized***
14 ***areas or where residences are intermixed with wildlands?***

15 **No Impact.** The Project site is not in or adjacent to a wildland fire hazard area;
16 therefore, no impacts would occur.

17 **3.8.4 Mitigation Summary**

18 Implementation of the following mitigation measure(s) would reduce the potential for
19 Project-related impacts to hazards and hazardous materials to less than significant.

- 20 • MM HAZ-1: Certified Asbestos Abatement Contractor.
- 21 • MM HAZ-2: Licensed/Certified Lead-Based Paint Contractor.
- 22 • MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA).
- 23 • MM HAZ-3b: Personnel Trained to Work with Hazardous Substances.
- 24 • MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil.
- 25 • MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan
26 Measures.
- 27 • MM BIO-7: Oil Spill Response Plan (OSRP).
- 28 • MM BIO-8: Flush Fuel Oil Submarine Pipeline.

1 **3.9 HYDROLOGY AND WATER QUALITY**

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

2 **3.9.1 Environmental Setting**

3 The Project site is located within the offshore and nearshore areas adjacent to the EPS
 4 on CSLC Lease PRC 791.1. The EPS is located between the San Luis Rey River to the
 5 north and San Marcos Creek to the south within the Carlsbad Hydrologic Unit and Agua

1 Hedionda Lagoon watershed; the latter has an approximate drainage area of 29 square
2 miles in the cities of Carlsbad, Vista, and Oceanside, San Diego County. The main
3 stream in the watershed, Agua Hedionda Creek, begins on the southwestern slopes of
4 the San Marcos Mountains in north San Diego County, flowing generally southwestward
5 to the Agua Hedionda Lagoon and Pacific Ocean (City of Carlsbad 2005).

6 Regulation of water quality in the State of California is under the control of the SWRCB
7 and Regional Water Quality Control Boards (RWQCBs). The California Ocean Plan
8 (SWRCB 2012) states that “the beneficial uses of the ocean waters of the State that
9 shall be protected include industrial water supply; water contact and non-contact
10 recreation, including aesthetic enjoyment; navigation; commercial and sport fishing;
11 mariculture; preservation and enhancement of designated Areas of Special Biological
12 Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish
13 spawning and shellfish harvesting.” The Ocean Plan also identifies water quality
14 objectives (e.g., physical, bacterial, chemical, biological characteristics) to protect the
15 beneficial uses of ocean waters. Physical water quality objectives applicable to ocean
16 discharges include:

- 17 • Floating particulates and grease and oil shall not be visible;
- 18 • The discharge of waste shall not cause an aesthetically undesirable discoloration
19 of the ocean surface; and
- 20 • Natural light shall not be significantly reduced at any point outside the initial
21 dilution zone as the result of the discharge of waste.

22 According to the SWRCB (2010), Agua Hedionda Creek is on the Section 303(d) List of
23 Impaired Water Bodies for pathogens, metals/metalloids, nutrients, salinity, and toxicity.
24 Identified sources of pollutants include natural sources, urban runoff, and unspecified
25 non-point sources; sources of metals/metalloids are unknown. The Agua Hedionda
26 Lagoon is not on the 303(d) list. According to the 2009 CEC report for the CECF, the
27 groundwater beneath the EPS is generally brackish and is designated as having no
28 beneficial uses.

29 Pursuant to National Pollutant Discharge Elimination System (NPDES) Permit
30 CA0001350, Order No. R9-2006-0043, the Applicant monitors discharge receiving
31 waters at 28 stations near the EPS for four water quality parameters: temperature, pH,
32 dissolved oxygen (DO), and percent light transmittance. Fall 2012 receiving water
33 quality monitoring results include: surface temperatures ranged from 58.02 degrees
34 Fahrenheit (°F) to 59.61 °F; surface percent light transmittance ranged from 72.77
35 percent to 93.89 percent; surface measurements of DO ranged from 7.98 milligrams per
36 liter (mg/L) to 8.55 mg/L; and surface pH values ranged from 8.19 to 8.23 (Merkel &
37 Associates, Inc. 2013b).

1 **3.9.2 Regulatory Setting**

2 3.9.2.1 Federal and State

3 Federal and State laws and regulations pertaining to this issue area and relevant to the
 4 Project are identified in Table 3.9-1.

Table 3.9-1. Laws, Regulations, and Policies (Hydrology and Water Quality)

U.S.	Clean Water Act (CWA) (33 USC 1251 et seq.)	<p>The CWA is comprehensive legislation (it generally includes reference to the Federal Water Pollution Control Act of 1972, its supplementation by the CWA of 1977, and amendments in 1981, 1987, and 1993) that seeks to protect the nation’s water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. These water quality standards are promulgated by the USEPA and enforced in California by the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs). CWA sections include:</p> <ul style="list-style-type: none"> • <u>State Water Quality Certification</u>. Section 401 (33 USC 1341) requires certification from the State or interstate water control agencies that a proposed water resources project is in compliance with established effluent limitations and water quality standards. USACE projects, as well as applicants for Federal permits or licenses are required to obtain this certification. • <u>National Pollutant Discharge Elimination System (NPDES)</u>. Section 402 (33 USC 1342) establishes conditions and permitting for discharges of pollutants under the NPDES. • <u>Ocean Discharges</u>. Section 403 (33 USC 1343) addresses criteria and permits for discharges into the territorial seas, the contiguous zone, and the oceans. • <u>Permits for Dredged or Fill Material</u>. Section 404 (33 USC 1344) authorizes a separate permit program for disposal of dredged or fill material in U.S. waters.
U.S.	Oil Pollution Act (OPA) (33 USC 2712)	The OPA requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances. The passage of the OPA motivated California to pass a more stringent spill response and recovery regulation and the creation of the Office of Spill Prevention and Response (OSPR) to review and regulate oil spill plans and contracts.
U.S.	Rivers and Harbors Act (33 USC 401)	This Act governs specified activities (e.g., construction of structures and discharge of fill) in “navigable waters” of the U.S. (waters subject to the ebb and flow of the tide or that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce). Under section 10, excavation or fill within navigable waters requires approval from the USACE, and the building of any wharf, pier, jetty, or other structure is prohibited without Congressional approval.
CA	Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.) (Porter-Cologne)	Porter-Cologne is the principal law governing water quality in California. The Act established the SWRCB and nine RWQCBs who have primary responsibility for protecting State water quality and the beneficial uses of State waters. Porter-Cologne also implements many provisions of the Federal CWA, such as the NPDES permitting program. Pursuant to the CWA § 401, applicants for a Federal license or permit for activities that may result in any discharge to waters of the U. S. must seek a Water Quality Certification (Certification) from the State in which the discharge originates. Such Certification is based on a finding that the discharge will meet water quality standards and other appropriate requirements of State law. In California, RWQCBs issue or deny certification for discharges within their jurisdiction. The SWRCB has this responsibility where projects or activities affect waters in more than one RWQCB’s jurisdiction. If the

Table 3.9-1. Laws, Regulations, and Policies (Hydrology and Water Quality)

		<p>SWRCB or a RWQCB imposes a condition on its Certification, those conditions must be included in the Federal permit or license.</p> <p>Statewide Water Quality Control Plans include: individual RWQCB Basin Plans; the California Ocean Plan; the San Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan (Bay-Delta Plan); the Water Quality Control Plan for Enclosed Bays and Estuaries of California; and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). These Plans contain enforceable standards for the various waters they address. For example:</p> <ul style="list-style-type: none"> • <u>Basin Plan</u>. Porter-Cologne (§ 13240) requires each RWQCB to formulate and adopt a Basin Plan for all areas within the Region. Each RWQCB establishes water quality objectives to ensure the reasonable protection of beneficial uses and a program of implementation for achieving water quality objectives within the basin plans. 40 CFR 131 requires each State to adopt water quality standards by designating water uses to be protected and adopting water quality criteria that protect the designated uses. In California, the beneficial uses and water quality objectives are the State's water quality standards. • The <u>California Ocean Plan</u> establishes water quality objectives for California's ocean waters and provides the basis for regulation of wastes discharged into the State's ocean and coastal waters. For example, the Ocean Plan incorporates the State water quality standards that apply to all NPDES permits for discharges to ocean waters.
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	<p>Coastal Act policies applicable to this issue area are:</p> <ul style="list-style-type: none"> • Section 30231 states The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams. • See also: Section 30233 (Diking, filling or dredging; continued movement of sediment and nutrients); and Section 30235 (Construction altering natural shoreline), which states in part ...Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.
CA	Other	<ul style="list-style-type: none"> • Under California Code of Regulations, Title 23, the Central Valley Flood Protection Board regulates specific river, creek, and slough crossings for flood protection: (1) new crossings must maintain hydraulic capacity through such measures as in-line piers, adequate stream bank height (freeboard), and measures to protect against stream bank and channel erosion, and (2) improvements, including crossings, must be constructed in a manner that does not reduce the channel's capacity or functionality, or that of any Federal flood control project. • California Water Code section 8710 requires that a reclamation board permit be obtained prior to the start of any work, including excavation and construction activities, if projects are located within floodways or levee sections. Structures for human habitation are not permitted within designated floodways.

1 3.9.2.2 Local

2 The City of Carlsbad (2006) General Plan OSCE contains the following water quality
3 objective and policies relevant to onshore Project activities.

- 4 • Objective: B.1: To control storm water pollutants.
- 5 • Policy C.4: Prior to making land use decisions, utilize methods available to
6 estimate increases in pollutant loads and flows resulting from projected future
7 development. The City shall require developments to incorporate structure and
8 non-structural best management practices to mitigate the projected increases in
9 pollutant loads.
- 10 • Policy C.7: Post-development runoff from a site shall not contain pollutant loads
11 which cause or contribute to an exceedance of receiving water quality objectives
12 or which have not been reduced to the maximum extent practicable.
- 13 • Policy C.9: Developments shall implement appropriate recommendations to
14 protect water quality found in the San Diego Association of Government's Water
15 Quality Element of its Regional Growth Management Strategy.
- 16 • Policy C.22: Prohibit alteration of waterways and water bodies that would cause
17 significant adverse impacts on the environment.
- 18 • Policy C.24: Conserve, and protect the water resources including, but not limited
19 to, floodplains, shoreline, lagoons, waterways, lakes, ponds, and the ocean.

20 **3.9.3 Impact Analysis**

21 ***a) Violate any water quality standards or waste discharge requirements?***

22 **Less than Significant with Mitigation.** The Project has the potential to violate water
23 quality standards or waste discharge requirements. The introduction of vessels and
24 equipment into the offshore water environment would result in short-term risks for
25 adverse effects on marine water quality in the event of an accidental spill (e.g., fuel
26 leak). Any aesthetically undesirable discoloration of the ocean surface that would occur
27 as a result of an accidental spill would also be contrary to the California Ocean Plan
28 objective. Implementation of **MM BIO-7: Oil Spill Response Plan (OSRP)** would
29 ensure that potential impacts associated with the accidental discharge of fuels, oils, or
30 lubricants are avoided or mitigated to less than significant. Additionally, Project vessels
31 routinely discharge ballast, bilge, and cooling water, which may increase turbidity within
32 the water column or result in an unanticipated or accidental discharge; however, it is
33 anticipated that all vessel discharges would be conducted in accordance with applicable
34 USCG regulations and would not violate any water quality standards.

1 The ocean bottom in the Project area is subject to annual scouring wherein several feet
2 of sand is transported in and out of the Project area; this mixing of ocean bottom
3 materials in the water column at the Project site is a natural occurrence. Work activities
4 in the marine environment, including removal of the fuel oil submarine pipeline, anchors
5 and chains, and debris, would disturb the ocean bottom, and result in a limited, localized
6 increase in turbidity. Any Project-related turbidity would be localized and is not expected
7 to result in the violation of any water quality standard. Implementation of **MM BIO-6:**
8 **Final Marine Safety and Anchoring Plan (MSAP)** would ensure that potential impacts
9 associated with anchoring are avoided or mitigated to less than significant.

10 As discussed in Section 3.8, Hazards and Hazardous Materials, the fuel oil submarine
11 pipeline currently contains potable water and a preservative; however, unanticipated
12 residuals of oil may exist in previously pigged pipelines. Pipeline removal could release
13 pipeline contents into the environment, which would violate water quality standards.
14 Implementation of **MM BIO-8: Flush Fuel Oil Submarine Pipeline** would ensure that
15 potential impacts from the accidental release of contents in the pipeline are avoided or
16 mitigated to less than significant.

17 A search of the SWRCB GeoTracker and California DTSC Envirostor online databases
18 in 2014 did not identify any hazardous material sites impacting the beach or ocean floor
19 in the Project area. Additionally, no hazardous materials spills affecting marine
20 resources have been documented in the area. Thus, seafloor and beach materials that
21 would be disturbed are not expected to contain contaminants.

22 Project activities have the potential to result in the discharge of fuels and lubricants to
23 soils, surface water and groundwater. As discussed in Section 3.8, Hazards and
24 Hazardous Materials, excavation in areas with known hydrocarbon contamination
25 (beach valve pit/vertical vault), if not properly conducted, may result in runoff that could
26 violate water quality standards. Implementation of **MM HAZ-3a: Extended Phase I**
27 **Environmental Site Assessment (ESA)**, **MM HAZ-3b: Use Personnel Trained to**
28 **Work with Hazardous Substances**, **MM HAZ-4: Disposal of Total Petroleum**
29 **Hydrocarbon (TPH)-Containing Soil**, and **MM HAZ-5: Onshore Hazardous Materials**
30 **Management and Contingency Plan Measures** would ensure that the potential
31 impacts associated with the discharge of fuels and lubricants into the soils, surface
32 water, and groundwater are avoided or mitigated to less than significant. Because of the
33 limited amount of ground disturbance that would occur onshore and the existing
34 conditions at the Project site (e.g., relatively flat topography and paved or compacted
35 soil), erosion and sedimentation of surface water is also not anticipated to be a
36 significant Project-related impact.

37 ***b) Substantially deplete groundwater supplies or interfere substantially with***
38 ***groundwater recharge such that there would be a net deficit in aquifer volume or***
39 ***a lowering of the local groundwater table level (e.g., the production rate of pre-***

1 **existing nearby wells would drop to a level which would not support existing land**
2 **uses or planned uses for which permits have been granted)?**

3 **No Impact.** The Project is a short-term decommissioning of an existing facility and
4 would not use substantial water resources. There are no elements of the project that
5 would interfere with groundwater recharge; therefore, there would be no impact.

6 **c) Substantially alter the existing drainage pattern of the site or area, including**
7 **through the alteration of the course of a stream or river, in a manner which would**
8 **result in substantial erosion or siltation on- or off-site?**

9 **Less than Significant Impact.** The Project would include the excavation of soil and
10 beach sand; however, because all excavated areas would be restored to pre-Project
11 conditions, impacts would be less than significant.

12 **d) Substantially alter the existing drainage pattern of the site or area, including**
13 **through the alteration of the course of a stream or river, or substantially increase**
14 **the rate or amount of surface runoff in a manner which would result in flooding**
15 **on- or off-site?**

16 **No Impact.** The Project would not alter existing drainage patterns or increase the rate
17 or amount of stormwater runoff in a manner that would result in flooding on- or off-site;
18 therefore, there would be no impact.

19 **e) Create or contribute runoff water which would exceed the capacity of existing**
20 **or planned stormwater drainage systems or provide substantial additional**
21 **sources of polluted runoff?**

22 **Less than Significant with Mitigation.** Project activities would not create new
23 discharges of water to a stormwater drain system. However, as discussed under item **a)**
24 above, contaminate runoff could result if onshore equipment, containing fuels and
25 lubricants, or contaminated soils are improperly managed. Implementation of **MM HAZ-**
26 **3a, MM HAZ-3b, MM HAZ-4, and MM HAZ-6** would avoid or mitigate the potential
27 impacts associated with the creation of polluted runoff to less than significant.

28 **f) Otherwise substantially degrade water quality?**

29 **Less than Significant with Mitigation.** Project activities with the potential to degrade
30 water quality are discussed and addressed in **a)** and **e)** above.

31 **g) Place housing within a 100-year flood hazard area as mapped on a federal**
32 **Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard**
33 **delineation map?**

1 **No Impact.** The Project does not include housing within a 100-year flood hazard area;
2 therefore, there would be no impact.

3 ***h) Place within a 100-year flood hazard area structures which would impede or***
4 ***redirect flood flows?***

5 **No impact.** The Project does not include placing new structures in the 100-year flood
6 hazard area; therefore, there would be no impact.

7 ***i) Expose people or structures to a significant risk of loss, injury or death***
8 ***involving flooding, including flooding as a result of the failure of a levee or dam?***

9 **No Impact.** Due to the nature and location of the Project, people and structures would
10 not be exposed to a significant risk of loss, injury, or death due to flooding risks
11 associated with dam or levee failure; therefore, there would be no impact.

12 ***j) Inundation by seiche, tsunami, or mudflow?***

13 **Less than Significant Impact.** The Project area is located south and east of the
14 western end of the Agua Hedionda Lagoon, which is susceptible to seiche (City of
15 Carlsbad [undated(a)]). Since, the Project is limited to infrastructure decommissioning,
16 and decommissioning is a short-term activity, it is not anticipated that workers would be
17 impacted by a seiche. The Project is also located adjacent to and in the ocean, areas
18 susceptible to a tsunami; however, due to the short duration of the Project, impacts of a
19 tsunami are considered low. Additionally, because of the relatively level topography of
20 the site and surroundings, the potential for damaging mudflow is not expected to be a
21 significant hazard at the Project site. As a result, impacts from a seiche, tsunami, or
22 mudflow are unlikely and impacts would be less than significant.

23 **3.9.4 Mitigation Summary**

24 Implementation of the following mitigation measure(s) would reduce the potential for
25 Project-related impacts to hydrology and water quality to less than significant.

- 26 • MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- 27 • MM BIO-7: Oil Spill Response Plan (OSRP).
- 28 • MM BIO-8: Flush Fuel Oil Submarine Pipeline.
- 29 • MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA).
- 30 • MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances.
- 31 • MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil.
- 32 • MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan
- 33 Measures.

1 **3.10 LAND USE AND PLANNING**

LAND USE AND PLANNING – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.10.1 Environmental Setting**

3 The MOT is located offshore from the EPS. The MOT moorings and fuel oil submarine
 4 pipeline within State waters are within CSLC Lease PRC 791.1 (Figure 3.10-1). The
 5 subsurface pipeline crosses Carlsbad State Beach and Carlsbad Boulevard and
 6 terminates in the beach valve pit located within the EPS onshore facility. The EPS is
 7 located in the City of Carlsbad adjacent to the southern edge of the Agua Hedionda
 8 Lagoon. The total land acreage of the existing EPS is approximately 95 acres, not
 9 including Agua Hedionda Lagoon acreage owned by the Applicant. The EPS is bounded
 10 by SDG&E property to the south, I-5 to the east, Carlsbad Boulevard to the west, and
 11 Agua Hedionda Lagoon to the north. Freight rail and North County Transit District
 12 (NCTD) passenger rail services cross the EPS site.

13 Other Project area land uses include residential development located approximately
 14 0.25 mile (1,400 feet) south and 0.65 mile (3,500 feet) north of the fuel oil submarine
 15 pipeline landfall. Carlsbad State Beach is a popular recreational and natural resource.
 16 Additionally, Carlsbad Boulevard includes a designated bike lane used by bikers,
 17 walkers, and joggers. Shoreline and nearshore land uses in the Project area include two
 18 sets of jetties, located north of the Project pipeline corridor, that constitute the intake
 19 and outfall channels to support the operation of the EPS once-through cooling (OTC)
 20 system. In the Project area the ocean is used for boating, sailing, kayaking, fishing, and
 21 lobster trapping. Commercial fisheries are described further in Section 4.1, Commercial
 22 and Recreational Fishing. Recreation is discussed in Section 3.15, Recreation.

23 A maximum of 500,000 cubic yards of spoils are dredged by the Applicant from the
 24 outer basin of the Agua Hedionda Lagoon when required. This dredged beach sand-
 25 quality material is placed on the beaches to the north and the south of the Agua
 26 Hedionda Lagoon inlet channel and EPS discharge channel.



Figure 3.10-1. Aerial Photo of the Project Area

1 **3.10.2 Regulatory Setting**

2 3.10.2.1 Federal and State

3 Federal and State laws and regulations pertaining to this issue area and relevant to the
4 Project are identified in Table 1-2.

5 3.10.2.2 Local

6 The City of Carlsbad’s land use plans and regulations applicable to onshore Project
7 activities include: the General Plan (comprising eight “elements”), Municipal Code
8 (Zoning), Encina Power Station Precise Development Plan, and the South Carlsbad
9 Coastal Redevelopment Project Area Plan. The City has an adopted Local Coastal
10 Program (City of Carlsbad 2010a); however, the segment covering the Project area
11 (Agua Hedionda Lagoon Segment) is not used because certification by the California
12 Coastal Commission was deferred. The North County MHCP and HMP for Natural
13 Communities are applicable to the City, including Agua Hedionda Lagoon, but not the
14 Project site. Specific goals, objectives, and policies from the above mentioned plans
15 applicable to land use are discussed below.

16 **City of Carlsbad General Plan**

17 The City of Carlsbad (2013a) General Plan Land Use Element identifies the desirable
18 pattern for the ultimate development of the City and addresses the provision of
19 adequate public facilities necessary to serve the land uses identified in the General
20 Plan. Specifically, the Land Use Element identified the following land use goal,
21 objective, and policies relevant to onshore Project activities.

- 22 • Goal: A City which protects and conserves natural resources, fragile ecological
23 areas, unique natural assets and historically significant features of the
24 community.
- 25 • Objective: To establish the preservation of the natural habitat of the rivers,
26 riverbanks, streams, bays, lagoons, estuaries, marshes, beaches, lakes,
27 shorelines and canyons and other areas containing rare and unique biological
28 resources as a high priority.
- 29 • Policy C.5: Limit future development adjacent to the lagoons and beach in such a
30 manner so as to provide to the greatest extent feasible the physical and visual
31 accessibility to these resources for public use and enjoyment.
- 32 • Policy C.7: Require comprehensive environmental review in accordance with the
33 California Environmental Quality Act (CEQA) for all projects that have the
34 potential to impact natural resources or environmental features.

1 • Policy C.8: Require that the construction of all projects be monitored to ensure
2 that environmental conditions and mitigating measures are fully implemented and
3 are successful.

4 • Policy C.9: Implement to the greatest extent feasible the natural resource
5 protection policies of the Local Coastal Program.

6 The City of Carlsbad (2006) General Plan OSCE also contains goals, resources, and
7 policies that are relevant to the Project.

8 • Goal A.1: An open space system of aesthetic value that maintains community
9 identity, achieves a sense of natural spaciousness, and provides visual relief in
10 the cityscape.

11 • Objective B.1: To preserve, protect and enhance those areas of the City that
12 provide unique and special open space functions including, but not limited to,
13 cultural and visual amenities, active and passive recreational uses, landmarks,
14 buffers between incompatible land uses, wildlife habitats, and unique and
15 desirable vegetation.

16 The City of Carlsbad is updating its General Plan and has proposed draft goals and
17 policies that are either: the same as existing goals, objectives, or policies; a modified
18 version of one or more existing goal, objective or policy (some existing goals,
19 objectives, and policies have been reworded and/or combined to build upon the intent,
20 clarify, reflect current status, and/or to reduce redundancy); or new, meaning that the
21 topic is not addressed by an existing goal, objective, or policy. Based upon a review of
22 the City of Carlsbad's (undated[c]) "Comparison of Proposed and Existing General Plan
23 Goals and Policies" document, the following new General Plan policies, if adopted, may
24 be considered relevant to the Project.

25 • Proposed Land Use and Community Design Element:
26 ○ Policy: Carlsbad Boulevard/Agua Hedionda Center, 2.P.79 West of the
27 Railroad Tracks. This policy calls for the decommissioning, demolition, and
28 remediation of the EPS site among other items.

29 • Proposed Open Space, Conservation and Recreation Element
30 ○ Goal: Beaches, Parks and Recreation, 4-G.8 - Improve and maintain high
31 quality beaches for residents and visitors.

32 • Proposed Arts, History, Culture and Education Element
33 ○ Policy: Archaeological and Paleontological Resources, 7-P.10 - Require
34 consultation with the appropriate organizations and individuals (e.g.,
35 Information Centers of the California Historical Resources Information
36 Systems, the Native American Heritage Commission, and Native American
37 groups and individuals) to minimize potential impacts to cultural resources
38 that may occur as a result of a proposed project

1 **Encina Power Station Precise Development Plan**

2 The Encina Power Station Precise Development Plan (City of Carlsbad 2014a) applies
3 to approximately 95 acres of property owned by the Applicant. This plan acknowledges
4 that decommissioning the EPS and remediating the site has begun.

5 **South Carlsbad Coastal Redevelopment Project Area Plan**

6 No elements of the South Carlsbad Coastal Redevelopment Project Area Plan are
7 directly relevant to the Project. The plan states, however, that uses for the generation
8 and transmission of electrical energy require a finding of “extraordinary public benefit
9 (Carlsbad Housing and Redevelopment Commission 2005).” The City Council has
10 made a finding that the potential future amended Carlsbad Energy Center Project
11 (CECP) would be of extraordinary public benefit. Decommissioning of EPS components
12 furthers a goal of a potential future Amended CECP within the redevelopment plan area.

13 **3.10.3 Impact Analysis**

14 ***a) Physically divide an established community?***

15 **No Impact.** The Project is a short-term decommissioning project and would not
16 physically divide an established community.

17 ***b) Conflict with any applicable land use plan, policy, or regulation of an agency***
18 ***with jurisdiction over the Project (including, but not limited to the general plan,***
19 ***specific plan, local coastal program, or zoning ordinance) adopted for the***
20 ***purpose of avoiding or mitigating an environmental effect?***

21 **Less than Significant Impact.** The Project does not propose any uses that are
22 inconsistent with planned uses of the Project site and, over the long-term, would
23 maintain the natural assets of the Project area. Decommissioning activities would result
24 in short-term impacts both onshore (e.g., use of the beach and parking spaces on
25 Carlsbad Boulevard near the Project site) and offshore (e.g., uses of the ocean for
26 recreation), including direct preclusion from the placement of construction vehicles,
27 vessels, equipment, workers, and materials and indirect preclusion of persons seeking
28 to avoid construction noise. However, physical areas of impact would be restored to
29 pre-Project conditions and the Project schedule is generally based on a 5-day, 12-
30 hour/day work week, that avoids high use periods (summer months and weekends).
31 Exceptions to this general schedule may occur as described in Section 2.6, Preliminary
32 Decommissioning Schedule. Decommissioning activities requiring the use of equipment
33 within the City of Carlsbad require compliance with Chapter 8.48 of the City Municipal
34 Code, which limits disturbing or offensive construction noise to the hours between 7:00
35 a.m. and sunset on weekdays, between 8:00 a.m. and sunset on Saturdays, and

1 prohibits such noise on Sundays and on 10 major holidays; however, Section 8.48.020
2 allows the City Manager to permit exceptions to these limits in nonresidential zones
3 where there are no inhabited dwellings within 1,000 feet of the noise source. In addition
4 to being temporary, these effects would be limited in area to the Project site, and access
5 to the beach and ocean is plentiful elsewhere in the Carlsbad area.

6 The EPS is zoned PU (Public Utility) and the land across Carlsbad Boulevard from the
7 EPS is zoned OS (Open Space), each with their own corresponding land use
8 designations. South of the fuel oil submarine pipeline landfall is an area zoned R-1
9 (One-Family Residential) with a land use designation RLM (Residential Low - Medium
10 Density). The Agua Hedionda Lagoon located north of the pipeline landfall is zoned OS
11 with a corresponding land use designation. Residential land uses located beyond the
12 Agua Hedionda to the north are zoned R-2 (Two-Family Residential) and RD-M
13 (Residential Density - Multiple). The land use designations are also residential (RM and
14 RH respectively) (City of Carlsbad 2012a; 2012b). Decommissioning of the EPS MOT is
15 consistent with these land use and zoning designations, and by decommissioning and
16 restoring the site in an environmentally safe manner, the Project aligns with the goals
17 and polices of the City of Carlsbad's General Plan (Land Use Element and Open Space
18 and Conservation Element) and Encina Power Station Precise Development Plan.
19 Removal of the pipeline offshore, including any associated infrastructure and debris,
20 would also restore the ocean bottom in support of Coastal Act Chapter 3 policies.

21 The Applicant would have to obtain additional required permits/approvals, as listed in
22 Section 1.7, prior to the start of decommissioning. With implementation of the MMs
23 identified in this MND and compliance with any conditions required by other agencies
24 with jurisdiction over the Project, the Project would be consistent with applicable plans,
25 policies, and regulations; therefore, the impact would be less than significant.

26 ***c) Conflict with any applicable habitat conservation plan or natural community***
27 ***conservation plan?***

28 **No Impact.** As described in Section 3.4, Biological Resources, the EPS is located within
29 the boundary of the City of Carlsbad's HMP, which guides local implementation for the
30 North County MHCP. The North County MHCP focuses on habitat preservation and
31 enhancement for the California gnatcatcher, and Agua Hedionda Lagoon and adjacent
32 areas to the east have been designated a core habitat area in the MHCP. The Project
33 would not adversely affect the California gnatcatcher or its habitat; therefore, the Project
34 would not conflict with any applicable habitat or natural community conservation plan.

35 **3.10.4 Mitigation Summary**

36 The Project would not result in significant impacts to land use and planning; no
37 mitigation is required.

1 **3.11 MINERAL RESOURCES**

MINERAL RESOURCES – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.11.1 Environmental Setting**

3 The Project site is located in and offshore of the City of Carlsbad. The onshore
 4 component is located immediately west of Carlsbad State Beach and south of Agua
 5 Hedionda and supports recreational, open space, and industrial uses. No mineral
 6 resource extraction occurs at or within the vicinity of the Project site. According to the
 7 City of Carlsbad (2006) OSCE, Carlsbad does not have any economically significant
 8 mineral resources. According to California Geological Survey (2012a, 2012b) reports
 9 regarding aggregate sustainability in California, Western San Diego County is one of the
 10 areas with the greatest projected future need for aggregate due to a significant deficit in
 11 local production in this area (only 167 tons of production of 1,014 required million tons).

12 **3.11.2 Regulatory Setting**

13 3.11.2.1 Federal and State

14 Federal and State laws and regulations pertaining to this issue area and relevant to the
 15 Project are identified in Table 3.11-1.

Table 3.11-1. Laws, Regulations, and Policies (Mineral Resources)

CA	Surface Mining and Reclamation Act (SMARA) (Pub. Resources, §§ 2710-2796)	<p>In accordance with SMARA, the California Geological Survey classifies the regional significance of mineral resources and assists in the designation of lands containing significant aggregate resources. Mineral Resource Zones (MRZs) have been designated to indicate the significance of mineral deposits. The MRZ categories are:</p> <ul style="list-style-type: none"> • MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence. • MRZ-2: Areas where adequate information indicates significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence. • MRZ-3: Areas containing mineral deposits the significance of which cannot be evaluated from available data. • MRZ-4: Areas where available information is inadequate for assignment to any other MRZ.
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1 3.11.2.2 Local

2 The City of Carlsbad (2006) General Plan OSCE addresses mineral resources;
3 however, since there are no economically significant mineral resources in the City, there
4 are no relevant goals, objectives, or policies relevant to onshore Project activities.

5 **3.11.3 Impact Analysis**

6 ***a) Result in the loss of availability of a known mineral resource that would be of***
7 ***value to the region and the residents of the State?***

8 **No Impact.** The Project area consists of a developed energy facility site, public road,
9 beach, and ocean, and no mineral resource areas are located at the Project site,
10 adjacent to the Project site, or within the City of Carlsbad. Therefore, the project would
11 not result in the loss of availability of a known mineral resource that would be of value to
12 the region and the residents of the State.

13 ***b) Result in the loss of availability of a locally important mineral resource***
14 ***recovery site delineated on a local general plan, specific plan or other land use***
15 ***plan?***

16 **No Impact.** The Project area consists of a developed energy facility site, public road,
17 beach, and ocean, and no mineral resource areas are located at the Project site,
18 adjacent to the Project site, or within the City of Carlsbad. Therefore, the Project would
19 not result in the loss of availability of a locally important mineral resource recovery site
20 delineated on a local general plan, specific plan or other land use plan.

21 The beach valve pit would be backfilled and compacted with approximately 87 cubic
22 yards of native soil from off-site sources (see Figure A1-3 and Figure A2-5 in Appendix
23 A). Native backfill soil and sand from off-site sources will be obtained from approved
24 and permitted sources in accordance with the Surface Mining and Reclamation Act and
25 will have similar grain size characteristics and color to the surrounding soil and sand at
26 the Project site.

27 **3.11.4 Mitigation Summary**

28 The Project would not result in significant impacts to mineral resources; no mitigation is
29 required.

1 **3.12 NOISE**

NOISE – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.12.1 Environmental Setting**

3 The MOT lies primarily offshore, with approximately 300 feet of fuel oil submarine
 4 pipeline located onshore below riprap on Carlsbad State Beach and extending under
 5 Carlsbad Boulevard to the beach valve pit within the EPS. Noise sources in the Project
 6 area include: traffic on Carlsbad Boulevard, I-5, and other local roads; passing trains;
 7 ocean waves; marine vessels; and various sounds from local land uses. Residential
 8 uses (considered to be noise sensitive) are located north and south of Project area, with
 9 the closest located about 1,400 feet south of the pipeline landfall.

10 **3.12.1.1 Air Noise Characteristics**

11 Noise is defined as unwanted or objectionable sound. Measurement of sound involves
 12 determining three variables: (1) magnitude, (2) frequency, and (3) duration. The
 13 magnitude of variations in air pressure associated with sound waves results in the
 14 quality commonly referred to as loudness. Human ears respond to a very wide range of
 15 sound pressures producing numbers of awkward size when sound pressures are

1 related on an arithmetic (1, 2, 3...) scale. It has therefore become customary to express
2 sound pressure level in decibels which are logarithmic (1, 10, 100...) ratios comparing
3 sound pressures to a reference pressure. The reference pressure commonly used for
4 noise measurements in air is 20 μ Pa. The quietest sound that a normal young adult
5 human ear can hear is assigned the value 0 dB. A multiplication of sound pressure by a
6 factor of 10 corresponds to an increase in sound pressure level of 20 dB. A doubling of
7 any value of sound pressure corresponds to an increase in sound pressure level of 6
8 dB. As a rule of thumb, a 1 dB change in sound level requires close attention to notice a
9 change in loudness, whereas a 3 dB change is clearly noticeable, and a 10 dB change
10 would be nearly twice (or one-half) as loud. Some sample typical SPLs for common
11 sounds are: 10 dB for rustling of leaves; 60 dB for ordinary conversation at 3 feet; and
12 100 dB for a power mower at 5 feet.

13 Because decibels are logarithmic ratios, they cannot be manipulated in the same way
14 as arithmetic numbers. Addition of decibels produces results such as 70 dB + 70 dB =
15 73 dB. When the difference between two sound levels is greater than about 10 decibels,
16 the lesser sound is negligible in terms of affecting the total level.

17 Sound level diminishes as distance from the source increases. For a “point” source of
18 sound in free space, the rate at which the sound attenuates is inversely proportional to
19 the square of the distance from the source. This means the sound level would drop 6 dB
20 each time the distance from the source is doubled. A stream of vehicles on a busy
21 highway represents a “line” source of sound and the attenuation rate is only about 3 dB
22 for each doubling of distance.

23 Another characteristic of sound that must be considered is frequency, which is
24 measured in Hz. One vibration per second equals 1 Hz. The human ear responds to
25 sounds in the frequency range from 20 Hz to 20 kHz. While loudness depends primarily
26 on sound pressure, it is also affected by frequency, and while pitch is closely related to
27 frequency, it also depends on sound pressure. Thus, a 2 kHz tone at 5 dB SPL sounds
28 just as loud as a 20 Hz tone at 70 dB SPL. A 20 Hz sound at 70 dB is quiet to the ear,
29 while a 2 kHz sound at 70 dB is quite loud. Because of these variations, systems have
30 been developed to relate physical measurements of sound to human response.
31 Presently, the most widely used measure of loudness for community noise evaluation is
32 the A-weighted sound level. Sound levels using this system are referred to as dBA.

33 The duration of noise and the time period at which it occurs are important factors in
34 determining the human response to sound. For example, noise induced hearing loss is
35 directly related to the magnitude, frequency, and duration of exposure. Annoyance due
36 to noise is also associated with how often noise is present and how long it persists. One
37 approach to quantifying time-varying noise levels is to calculate the Energy Equivalent
38 Sound Level (L_{eq}) for the time period of interest. The L_{eq} represents a sound level which,

1 if continuous, would contain the same total acoustical energy as the actual time-varying
 2 noise which occurs during the observation period.

3 In a residential or other noise sensitive environment, noise is more disturbing at night
 4 than during the day. Thus, noise indices have been developed to account for the
 5 differences in intrusiveness between daytime and nighttime noise. The Community
 6 Noise Level Equivalent (CNEL) and the Day-Night Average Sound Level (L_{dn}) are such
 7 indices. CNEL and L_{dn} values result from the averaging of hourly L_{eq} values for a 24-
 8 hour period, with a weighting factor applied to the nighttime L_{eq} values (and the evening
 9 values for CNEL). The CNEL penalizes noise levels during the night (10:00 p.m. to 7:00
 10 a.m.) by 10 dB to account for the increased sensitivity of people to noise after dark.
 11 Evening noise levels (7:00 p.m. to 10:00 p.m.) are penalized 5 dB by the CNEL. The L_{dn}
 12 also penalizes nighttime noise levels by 10 dB, but does not penalize evening levels.
 13 These two indices are generally equivalent. In general, the CNEL may be thought
 14 qualitatively as an accumulation of noise associated with individual events occurring
 15 throughout a 24-hour period. The noise of each individual event is accounted for in a
 16 separate, discrete measurement that integrates the changing sound level over time as,
 17 for example, when an aircraft approaches, flies overhead, then continues off into the
 18 distance. These integrated sound levels for individual operations are referred to as
 19 SELs. The accumulation of the SELs from each individual operation during a 24-hour
 20 period determines the CNEL for the day.

21 To limit population exposure to physically and/or psychologically significant noise levels,
 22 the State and various local cities and counties in the state have established guidelines
 23 and/or ordinances to control noise as discussed in Section 3.12.2, Regulatory Setting.

24 3.12.1.2 Existing Community Noise Environment

25 Padre Associates, Inc. collected ambient (baseline) noise measurements at two
 26 onshore locations near the Project area using a Larson Davis LXT noise meter (Figure
 27 3.12-1). Noise level readings were taken in 15-minute intervals using an A-weighted
 28 frequency. Table 3.12-1 describes the two locations and the results of ambient noise
 29 measurements taken on January 14, 2013, between 9:15 a.m. and 9:35 a.m. (weekday
 30 morning). These measurements provide a snap shot of the existing noise environment
 31 and are representative of daytime noise levels within that timeframe only.

Table 3.12-1. Ambient (Baseline) Noise Levels

Approximate Location	Ambient Noise Level (dBA L_{eq})
Carlsbad Beach, within the existing fuel oil submarine pipeline alignment, approximately 50 feet from the edge of Carlsbad Boulevard	62.8 dBA
Carlsbad Beach, approximately 1,300 feet south of the fuel oil submarine pipeline alignment, 150 feet from the center of Carlsbad Boulevard	60.6 dBA



Figure 3.12-1. Ambient Noise Level Measurement Locations

1 3.12.1.3 Underwater Noise Characteristics

2 According to the National Research Council of the National Academies (2003), in the
 3 absence of shipping, natural forces are the dominant sources of long-term averaged
 4 noise at all frequencies in the ocean. The dominant source of naturally occurring ocean
 5 noise across the frequencies from 1 Hz to 100 kHz is associated with ocean surface
 6 waves generated by the wind acting on the sea surface. Above 100 kHz, the thermal
 7 agitation of the ocean medium itself is the dominant contributor to ocean noise.
 8 Additionally, biological sounds such as dolphin whistling and echolocation, whale calls,
 9 and snapping shrimp make noticeable contributions to ocean noise at specific times.
 10 Elastic vibrations in the earth are also known to contribute to ocean noise.

11 Anthropogenic or human-caused noise in the marine environment is an important
 12 component of ocean noise and includes the following general noise-source categories:
 13 shipping, seismic surveying, sonars, explosions, industrial activity, and miscellaneous
 14 sources. Vessel traffic is a major contributor to noise in the world’s oceans, especially at
 15 low-frequencies between 5 and 500 Hz.

16 Sound waves in the underwater environment are similar to sound in air; however, sound
 17 attenuates much quick in air than in water, meaning that sound can propagate over
 18 longer distances in water than in air. Sound in water also propagates much faster. The

1 speed of sound in water is generally accepted as approximately 1,500 meters per
2 second (m/s) or 4,921 feet per second (feet/s) compared to 340 m/s or 1,115 feet/s in
3 the air, though it is affected by numerous variables such as temperature and salinity,
4 etc. A major difference between underwater and in-air sound measures is that the
5 amplitude of the reference pressure variation in the case of underwater sound is by
6 definition 1 μPa (versus 20 μPa in air). This difference is an important cause of
7 misunderstanding when comparing above-water sound levels with underwater sound
8 levels because both are expressed in decibels, but with respect to a different reference
9 level. A second important difference is the difference in characteristic impedance
10 between water and air. The characteristic impedance (Z) is the product of density ρ and
11 speed of sound c . Thus, $Z = \rho \times c$. In water, impedance is approximately $1,000 \times 1,500$
12 kilograms per square meter seconds ($\text{kg}/\text{m}^2\text{s}$), whereas in air impedance is
13 approximately $1.2 \times 340 \text{ kg}/\text{m}^2\text{s}$. This difference corresponds to a factor of almost 3,700,
14 meaning that a particular pressure variation in water represents much less power than
15 the same pressure variation in air (Ainslie et al. 2009).

16 Numerous factors influence the efficiency of sound transmission in the ocean, including,
17 but not limited to: the variation of sound speed within the water column, bottom
18 bathymetry, sediment and subbottom layer composition and thickness. As reported by
19 Greeneridge (Appendix J), in the case of the MOT decommissioning site, the
20 parameters describing the acoustic waveguide environment are generally associated
21 with high transmission loss, which means that sound energy decreases rapidly with
22 distance in this environment. The very shallow waters (roughly 30 m or less) lend
23 themselves to repeated interactions of sound waves with the seafloor and sea surface,
24 with sound energy lost in each interaction. In addition, the fine sand comprising the
25 sediment layer attenuates sound energy more than sediments of larger grain size.
26 Furthermore, historical sound speed profiles measured in the shallow waters off
27 California are typically isovelocity (approximately the same sound speed throughout the
28 water column) or downward-refracting (refracts sound waves toward the seafloor) and
29 thus do not enhance long-range sound transmission. All of these waveguide
30 characteristics suggest that sound originating at the MOT decommissioning site would
31 likely suffer from relatively high acoustic transmission loss and its received levels would
32 decrease rapidly with distance from the source.

33 **3.12.2 Regulatory Setting**

34 3.12.2.1 Federal and State

35 Federal and State laws and regulations pertaining to this issue area and relevant to the
36 Project are identified in Table 3.12-2.

Table 3.12-2. Laws, Regulations, and Policies (Noise)

U.S.	<ul style="list-style-type: none"> • The Noise Control Act (42 USC 4910) required the USEPA to establish noise emission criteria, as well as noise testing methods (40 CFR Chapter 1, Subpart Q). These criteria generally apply to interstate rail carriers and to some types of construction and transportation equipment. The USEPA published a guideline (USEPA 1974) containing recommendations for acceptable noise level limits affecting residential land use of 55 dBA L_{dn} for outdoors and 45 dBA L_{dn} for indoors. • The Department of Housing and Urban Development Environmental Standards (24 CFR Part 51) set forth the following exterior noise standards for new home construction (for interior noise levels, a goal of 45 dBA is set forth and attenuation requirements are geared to achieve that goal): <ul style="list-style-type: none"> ○ 65 L_{dn} or less – Acceptable ○ 65 L_{dn} and < 75 L_{dn} – Normally unacceptable, appropriate sound attenuation measures must be provided ○ > 75 L_{dn} – Unacceptable • Federal Highway Administration Noise Abatement Procedures (23 CFR Part 772) are procedures for noise studies and noise abatement measures to help protect the public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. It establishes five categories of noise sensitive receptors and prescribes the use of the Hourly L_{eq} as the criterion metric for evaluating traffic noise impacts. • Federal Energy Regulatory Commission Guidelines On Noise Emissions From Compressor Stations, Substations, And Transmission Lines (18 CFR 157.206(d)(5)) require that “the noise attributable to any new compressor stations, compression added to an existing station, or any modification, upgrade or update of an existing station, must not exceed a L_{dn} of 55 dBA at any pre-existing noise sensitive area (such as schools, hospitals, or residences).” • NTIS 55019-74-004, 1974 (“Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety”). In response to a Federal mandate, the USEPA provided guidance in this document, commonly referenced as the, “Levels Document,” that establishes an L_{dn} of 55 dBA as the requisite level, with an adequate margin of safety, for areas of outdoor uses including residences and recreation areas. The USEPA recommendations contain a factor of safety and do not consider technical or economic feasibility (i.e., the document identifies safe levels of environmental noise exposure without consideration for achieving these levels or other potentially relevant considerations), and therefore should not be construed as standards or regulations.
CA	<p>State regulations for limiting population exposure to physically and/or psychologically significant noise levels include established guidelines and ordinances for roadway and aviation noise under California Department of Transportation as well as the now defunct California Office of Noise Control. The California Office of Noise Control land use compatibility guidelines provided the following:</p> <ul style="list-style-type: none"> • An exterior noise level of 60 to 65 dBA Community Noise Equivalent Level (CNEL) is considered "normally acceptable" for residences. • A noise level of 70 dBA CNEL is considered to be "conditionally acceptable" (i.e., the upper limit of "normally acceptable" noise levels for sensitive uses such as schools, libraries, hospitals, nursing homes, churches, parks, offices, and commercial/professional businesses). • A noise level of greater than 75 dBA CNEL is considered "clearly unacceptable" for residences.

1 3.12.2.2 Local

2 To address noise-related issues, the City of Carlsbad relies on two primary documents:
 3 the City of Carlsbad General Plan Noise Element (1994) and Noise Guidelines Manual

1 (1995). The purpose of the Noise Guidelines Manual is to provide guidelines and
2 procedures to implement policies outlined in the Noise Element of the City of Carlsbad
3 General Plan, which establishes general policies and specific noise standards to
4 achieve noise compatibility between land uses. The Noise Element identified one
5 objective applicable to onshore Project activities:

- 6 • Objective B.2: To control harmful or undesirable noise is relevant to the Project.

7 Noise generated from construction activities is regulated by Carlsbad Municipal Code
8 Section 8.47. When potential noise impacts from construction activities have been
9 identified (for projects requiring approval from the City), conditions from the Noise
10 Guidelines Manual may be implemented to minimize those impacts. For example, prior
11 to project approval, the project proponent may be required to produce evidence
12 acceptable to the City that:

- 13 • All construction vehicles or equipment, fixed or mobile, operated within 1,000 feet
14 of a dwelling or noise sensitive use shall be equipped with properly operating and
15 maintained mufflers;
- 16 • Stockpiling and/or vehicle staging areas shall be located as far as practicable
17 from dwellings and other noise sensitive receptors.

18 Carlsbad Municipal Code Section 8.48 addresses construction noise with a limit to
19 construction working hours as follows.

- 20 • 8.48.010 Limitation of hours for construction (Ord. 3109 § 1 (part), 1978)). The
21 erection, demolition, alteration, or repair of any building or structure or the
22 grading or excavation of land in such manner as to create disturbing, excessive
23 or offensive noise during the following hours, except as hereinafter provided, is a
24 violation of this code:
 - 25 ○ After sunset on any day, and before seven a.m., Monday through Friday, and
26 before eight a.m. on Saturday; and
 - 27 ○ All day on Sunday, Birthday of Martin Luther King Jr., Presidents' Day,
28 Columbus Day, New Year's Day, Memorial Day, Independence Day, Labor
29 Day, Veterans Day, Thanksgiving Day and Christmas Day.
- 30 • 8.48.020 Exceptions (Ord. 3109 § 1 (part) 1978).
 - 31 ○ An owner/occupant or resident/tenant of residential property may engage in a
32 home improvement or home construction project involving the erection,
33 demolition, alteration or repair of a building or structure or the grading or
34 excavation of land on any weekday between the hours of seven a.m. and
35 sunset and on weekends between the hours of eight a.m. and sunset,
36 provided such project is for the benefit of said residential property and is
37 personally carried out by said owner/occupant or resident/tenant.

- 1 ○ The city manager may grant exceptions to Section 8.48.010 by issuing a
2 permit in the following circumstances: when emergency repairs are required
3 to protect the health and safety of any member of the community; and in
4 nonresidential zones, provided there are no inhabited dwellings within one
5 thousand feet of the building or structure being erected, demolished, altered
6 or repaired or the exterior boundaries of the site being graded or excavated.

7 Based on the City of Carlsbad Noise Guidelines Manual, an exterior noise level of up to
8 60 dBA CNEL is considered "normally acceptable" for residential uses. A noise level
9 between 60 and 70 dBA CNEL is considered to be "normally unacceptable" and a noise
10 level of greater than 75 dBA CNEL is discouraged for construction of new residences.
11 Noise levels up to 70 dBA CNEL are considered to be normally acceptable for water
12 recreation areas (these are general standards, not construction noise thresholds).

13 **3.12.3 Impact Analysis**

14 ***a) Result in exposure of persons to or generation of noise levels in excess of***
15 ***standards established in the local general plan or noise ordinance, or applicable***
16 ***standards of other agencies?***

17 Noise in Air

18 **Less than Significant with Mitigation.** Decommissioning activities would generate
19 temporary noise in the vicinity of the Project site. Noise levels and potential noise-
20 related impacts at receptor points near the Project site depend on three factors: (1) the
21 location and type of noise-generating equipment (source); (2) the distance between the
22 noise sources and sensitive receptors; and (3) the obstacles or barriers between the
23 noise sources and sensitive receptors that may influence sound propagation. The
24 nearest sensitive receptors are residential uses located about 1,400 feet south of the
25 fuel oil submarine pipeline landfall. To estimate noise levels at this location, a worst
26 case "noise-producing" scenario (requiring the most equipment/vessels in operation)
27 was calculated based on: construction equipment and vessel noise levels during
28 decommissioning activities in the onshore, beach, surf zone, and offshore segments;
29 the percent usage factor for each piece of equipment or vessel; and the distance
30 between each noise-generating piece of equipment or vessel and the sensitive receptor
31 using the Federal Highway Administration Roadway Construction Noise Model (RCNM).
32 Table 3.12-3 shows the reference noise levels at 50 feet from the source for the types of
33 equipment associated with the Project under the modeled scenarios, as well as the
34 expected percent usage factor for the worst case phase/task for a given
35 decommissioning segment (e.g., hours of operation for the piece of equipment/total
36 operating hours [days x 12 hours per day]). Equipment with usage factors of less than
37 one percent is not included in the table below.

Table 3.12-3. Noise Levels at 50 Feet from Typical Project Equipment

Equipment Type (Number of Pieces)	Noise Level (L _{max}) at 50 Feet (dBA)	Percent Usage Factor (%)
Offshore Segment – Excavate and Remove Pipeline		
Barge with Generator (1)	81.0	100
Barge with Crane (1)	85.0	67
Barge Anchor Winches (2)	79.0	17
Barge with Pull Winch (1)	79.0	67
Tugboat #1 (1)	82.1	33
Tugboat #1 – Generator (1)	83.0	100
Tugboat #2 (1)	82.1	33
Tugboat #2 – Generator (1)	83.0	100
Crew Boat (1)	88.0	17
Crew Boat – Generator (1)	83.0	100
Welding Machine (1)	74.0	33
Jet Pump (1)	81.0	33
Industrial Air Compressor (1)	78.0	8
5120 Divers Air Compressor (1)	67.6	83
Surf Zone Segment – Excavate and Prepare for Surf Zone Extraction (Onshore)		
Excavator (2)	80.7	67
Dozer (1)	81.7	67
Loader (1)	79.1	33
Crane (1)	80.6	33
Divers Compressor (1)	67.6	67
Light Plant (2)	50.0	33
Surf Zone Segment – Excavate and Prepare for Surf Zone Extraction (Offshore)		
Barge with Generator (1)	80.0	100
Barge with Crane (1)	85.0	83
Barge Anchor Winches (2)	79.0	8
Barge with Pull Winch (1)	79.0	33
Tugboat #1 (1)	82.1	33
Tugboat #1 – Generator (1)	83.0	100
Crew Boat (1)	88.0	33
Crew Boat – Generator (1)	83.0	100
Welding Machine	74.0	50
Jet Pump (1)	81.0	50
Industrial Air Compressor (1)	78.0	33
5120 Divers Air Compressor (1)	67.6	33
Beach Segment – Remove/Store Riprap Groin		
Excavators (2)	80.7	42
Bulldozer (1)	81.7	67
Front-End Loader (1)	79.0	67
Crawler Crane (1)	81.0	67

Table 3.12-3. Noise Levels at 50 Feet from Typical Project Equipment

Equipment Type (Number of Pieces)	Noise Level (L_{max}) at 50 Feet (dBA)	Percent Usage Factor (%)
Onshore Segment – Cut and Demolish Underpass End Structure Vertical Vault		
Excavators (2)	81.0	67
Bulldozer (1)	82.0	67
Front-End Loader (1)	79.0	67
Generator (1)	81.0	83
Industrial Air Compressor (1)	78.0	50
Concrete Breaker (1)	90.0	33

Acronyms: L_{max} = maximum sound level; dBA = A-weighted sound level.

Notes: Noise levels are mostly provided from the Roadway Construction Noise Model (RCNM); however, tug and crew boat noise levels are from California State Lands Commission (2004). Winch noise levels were not available; as a result, the assumed noise level is based on RCNM levels for a rivet buster/chipping gun. Noise levels for the concrete breaker were not available; as a result, the assumed noise level is based on RCNM levels for a mounted impact hammer. The diver air compressor noise level is from the specifications for a MCH-6/EM single-phase electric compressor (Aerotecnica Coltri, S.p.A. 2014).

1 Decommissioning of the offshore and onshore segments would occur concurrently. For
 2 the analysis, below, the beach directly in front of the EPS was considered the closest
 3 sensitive noise receptor location from decommissioning activities in the offshore
 4 segment, with Project work vessels and offshore equipment estimated to be as close as
 5 1,200 feet from the beach. Given the information above and using the assumptions in
 6 Table 3.12-3, noise levels from offshore decommissioning activities closest to the beach
 7 are estimated to be 66.2 dBA L_{eq} . As a result, the increase in noise level over ambient is
 8 expected to be in the order of 3.4 dBA (derived from subtracting the appropriate
 9 ambient site-specific noise level from Table 3.12-1 [62.8 dBA] from the estimated noise
 10 level from offshore decommissioning activities [66.2 dBA]), and noise levels at the
 11 closest residence are estimated to be 65.2 dBA or 4.6 dBA above ambient noise levels.
 12 Generally, a 3 dBA increase in noise level is considered to be perceptible to most
 13 receptors; therefore it is expected that noise associated with offshore decommissioning
 14 activities (which are scheduled to span a 3-month period) would be noticeable to the
 15 closest residences and beachgoers.

16 It is noted that the reference noise level for the tugboat in Table 3-12.3 is not illustrative
 17 of a tugboat under load (e.g., moving a loaded barge). Over the course of the Project,
 18 barges would be loaded with anchors and chains for offshore recycling and disposal,
 19 which may elevate noise levels above those indicated in Table 3.12-3 for tugboat
 20 operations and could be discernable to sensitive receptors on the beach and in
 21 residential areas; however, these increased noise levels would be intermittent and
 22 would only occur when a tugboat moves a loaded barge. Furthermore, the modeled
 23 scenario does not take into account noise that may result from discrete events, such as
 24 the placement of anchors and chains on the barge. Noise levels generated by the
 25 placement of these objects on the barge would be dependent upon the barge surface

1 and method of placement; however, because the contractor would need to comply with
2 Occupational Safety and Health Administration (OSHA) regulations for workers, the
3 number of anchors and chains, as well as the distance of the operation from shore, it is
4 not expected that this activity would result in significant noise impacts on the public.

5 For the onshore segment, the demolishing of the vertical vault of the underpass end
6 structure (on the west side of Carlsbad Boulevard) was considered the worst-case
7 noise-producing scenario. Under the worst-case scenario (i.e., all equipment operating
8 at the same location), noise levels would be 82.8 dBA, or 20.0 dBA higher than ambient,
9 at a distance 100 feet from the work area, which would mask any noise from offshore
10 operations. Noise levels at the closest residence (1,400 feet away) are estimated to be
11 63.4 dBA, an increase of 2.8 dBA, which is not typically considered a perceptible
12 increase in noise; however, when combined with the noise produced as a result of
13 decommissioning activities in the offshore segment, noise levels at the closest
14 residence would be 66.4 dBA, an increase of 5.8 dBA from ambient. This particular
15 worst-case noise-producing scenario would last about three weeks. Remaining
16 decommissioning work in the onshore and offshore segments, including work in both
17 segments that would overlap (which would last approximately 3 months), would be
18 considerably less.

19 Most of the decommissioning work in the surf zone and beach segments would overlap,
20 with work occurring in the surf zone segment from September to early December and in
21 the beach segment from September to mid-November. The worst-case noise-producing
22 scenario for these segments would occur during the simultaneous restoration of the
23 riprap groin on the beach and the extraction of the fuel oil submarine pipeline from the
24 surf zone. Noise levels during the removal of the riprap groin are expected to be 78.1
25 dBA at 100 feet and, assuming that offshore work would occur 1,200 feet from shore,
26 noise levels from work in the surf zone segment would be 63.0 dBA onshore (not
27 including the use of DPR). The two combined noise levels from work in the surf zone
28 and beach segments in addition to the ambient noise level in the area would be 78.5
29 dBA onshore. At the closest residence, noise levels are estimated to be 63.0 dBA
30 (combined noise) during this worst-case noise-producing scenario. This noise level is an
31 increase of 2.4 dBA above ambient and is generally not considered a perceptible
32 increase in noise. More distant homes would experience lower Project-related noise
33 levels due to distance and some shielding (from beach activities) provided by buildings.

34 Beach decommissioning activities that do not overlap with offshore work (e.g., removal
35 and storage of riprap) are expected to increase noise levels at the closest residence by
36 an estimated 1.3 dBA, which is not considered a perceptible increase in noise; however,
37 within 100 feet of the work area, the noise level would be 79.1 dBA, which is 16.3 dBA
38 above ambient.

1 Additionally, if DPR were used to extract the fuel oil submarine pipeline from the surf
2 zone, a Taurus Rammer would generate additional noise over an approximate 4-hour
3 period. With a reference noise level of 93 dB at 50 m (164 feet) the Taurus Rammer
4 would result in a barely noticeable difference in construction noise relative to the
5 otherwise expected noise level at the beach and a substantial increase in noise at the
6 closest residence during this combined surf zone and beach segment work (2.2 dBA
7 and 9.7 dBA, respectively) (TT Technologies, Inc. 2014).¹³

8 Decommissioning activities requiring the use of equipment within the City of Carlsbad
9 would require compliance with Chapter 8.48 of the City of Carlsbad Municipal Code,
10 which limits disturbing or offensive construction noise between 7 a.m. and sunset on
11 weekdays, between 8 a.m. and sunset on Saturdays, and prohibits such noise on
12 Sundays and on 10 major holidays (Section 8.48.020 allows the city manager to permit
13 exceptions to these limits in nonresidential zones where there are no inhabited
14 dwellings within 1,000 feet of the noise source).

15 During decommissioning work in the surf zone and beach segment, nighttime or early
16 morning work, and possibly some weekend work, may be required to take advantage of
17 low tides in order to access the fuel oil submarine pipeline or riprap groin. The exact
18 timing of these events, if necessary at all, would depend on the tide schedule and the
19 progress of removing the pipeline and riprap groin. If nighttime, early morning, or
20 weekend work is necessary, an exemption from the requirements of Chapter 8.48 of the
21 City of Carlsbad Municipal Code would be required.

22 Overall, Project-generated noise levels may be considered significant in some cases, as
23 described above, where sensitive receptors would be subject to a noticeable increase in
24 noise levels. To ensure that potential short-term noise impacts associated with Project
25 activities are avoided or mitigated to less than significant, the following measures would
26 be implemented.

27 **MM NOI-1: Advanced Noticing.** Advanced notices shall be posted on the beach
28 and/or along Carlsbad Boulevard within a 1,500-foot radius around the fuel oil
29 submarine pipeline to notify the public about the location and timing of
30 decommissioning operations. The notices shall be: (1) posted at least 1 week
31 prior to any decommissioning operations on the beach or ocean, and shall
32 include a map of the Project site, contact name and phone number; (2)
33 maintained until all Project operations impacting the beach and marine
34 environment have been completed; and (3) removed within 1 week of completing
35 the operations described in the notice.

¹³For purposes of this analysis, the dB value for the Taurus Rammer was assumed to be equivalent to the noise level of this equipment if it were A-weighted. This may not be the case, however, and the noise level as weighted for the human hearing range may be higher or lower.

1 **MM NOI-2: Shielding of Stationary Equipment.** Onshore stationary noise
 2 sources shall be shielded, where feasible, using enclosures or barriers
 3 constructed of temporary prefabricated sound blankets or sound walls.

4 Additionally, proposed Project scheduling would avoid the summer months and
 5 weekends, which are the times when residents would be most likely to utilize
 6 outdoor living areas.

7 Underwater Noise

8 **Less than Significant with Mitigation.** The potential effects associated with DPR on
 9 marine wildlife are evaluated in Section 3.4, Biological Resources. The potential impacts
 10 to humans from underwater noise generated by DPR are discussed below.

11 Studies have shown that high levels of underwater noise can cause dizziness, hearing
 12 damage, or other sensitive organ damage to divers and swimmers and may elicit startle
 13 responses (TNO 2008). Table 3.12-4 presents noise thresholds identified for
 14 unprotected recreational divers.

Table 3.12-4. Suggested Noise Thresholds for Recreational Divers

Source	Frequency Range (Hz)	Maximum Value (dB re 1 μ Pa)
NATO Undersea Research Center	600 to 2,500	154
Diving Medical Advisory Committee	Unspecified; believed to be 1,500	201
Parvin	500 to 2,500	155

Source: TNO 2008

15 Based on the studies summarized above, which considered different noise sources (that
 16 may not be directly transferable to the proposed Project), underwater noise levels in
 17 excess of 154 dB re 1 μ Pa could be considered potentially harmful to recreational divers
 18 and swimmers in the Project area.

19 As described in the Greeneridge report, the vibratory pile driving proxy showed sound
 20 energy over a broad range of frequencies. The highest sound level was estimated at
 21 approximately 180 dB re 1 μ Pa (rms) for the one-third octave band centered at 1 kHz.
 22 The frequency range 400 Hz to 3 kHz is a region of high energy for vibratory driving,
 23 with received levels of 170 dB re 1 μ Pa (rms) or more. Within a wider frequency range
 24 from 200 Hz to 10 kHz, received levels exceeded 160 dB re 1 μ Pa (rms) (based on
 25 measured sound levels back propagated to 1 meter [3.28 feet]) However, Greeneridge
 26 also stated that because of the limited and highly variable acoustic measurements for
 27 vibratory pile driving, meaningful quantitative comparison of metrics to thresholds is
 28 prohibited.

1 Based on the information for the vibratory pile driving proxy, noise levels in excess of
2 the human safety threshold would be exceeded in close proximity to DPR operations.
3 Although divers, swimmers, surfers, or other persons may be present in the vicinity of
4 the offshore Project area, it would be unlikely that such persons would be able to
5 approach the Project work area as an offshore safety zone would be established (see
6 Figure A1-1 in Appendix A) and monitored by Project support boats; however, this
7 safety zone, as currently identified, may not be adequate for the protection of persons
8 underwater during DPR operations. Therefore, noise levels produced underwater by
9 DPR could be harmful to humans.

10 To ensure that potential noise impacts to divers, swimmers, surfers, or other persons
11 underwater from DPR operations are avoided or minimized to less than significant, the
12 following measures would be implemented.

13 **MM NOI-3: Advanced Notice to Swimmers and Divers.** At least 1 week prior to
14 and during dynamic pipe ramming (DPR) operations, written notice to swimmers
15 and divers shall be posted at area dive shops and along the beach within 1,500
16 feet of the DPR site indicating that swimming and diving in the Project area may
17 be harmful due to underwater noise impacts during DPR operations. The notice
18 shall state that the Project area should be avoided during the DPR operation
19 period, which shall be identified on the notice along with a map showing the
20 Project area and suggested area of preclusion for divers and swimmers. The
21 notice will also provide a contact name and phone number.

22 This notice may be a supplement by the notice described in **MM NOI-1** above.

23 **MM NOI-4: Observation and Removal of Divers and Swimmers from Waters**
24 **in Project Area.** Marine wildlife monitors (MWMs) onboard Project vessels shall
25 be instructed to observe for non-Project-related divers or swimmers in or about to
26 enter the safety zone established for marine wildlife; however, the safety zone for
27 human divers and swimmers may be modified based on the sound source
28 characterization to be conducted for dynamic pipe ramming. If such persons are
29 observed by MWMs or vessel crews, a support vessel shall be mobilized to
30 inform them that their presence is not allowed in the Project safety zone, and the
31 vessel crew shall arrange for them to be escorted from the active survey area.

32 ***b) Result in exposure of persons to or generation of excessive ground-borne***
33 ***vibration or ground-borne noise levels?***

34 **Less than Significant Impact.** The Project would require the use of terrestrial
35 construction equipment and vehicles; however, none of the equipment or vehicles are
36 expected to create any greater vibration than that associated with the common garbage
37 truck. Additionally, the construction site is distant enough from sensitive receptors (i.e.,
38 residences are located about 1,400 feet south of the fuel oil submarine pipeline landfall)

1 that vibrations from the Project would not be noticeable to these receptors; therefore,
2 the impact would be less than significant.

3 ***c) Result in a substantial permanent increase in ambient noise levels in the***
4 ***project vicinity above levels existing without the project?***

5 **No Impact.** The Project would result in a short-term increase in noise as a result of
6 decommissioning activities; however, the Project would not result in a substantial
7 permanent increase in ambient noise levels above existing levels; therefore, there
8 would be no impact.

9 ***d) Result in a substantial temporary or periodic increase in ambient noise levels***
10 ***in the project vicinity above levels existing without the project?***

11 **Less than Significant with Mitigation.** See response for **a)** above.

12 ***e) For a project located within an airport land use plan or, where such a plan has***
13 ***not been adopted, within two miles of a public airport or public use airport, would***
14 ***the project expose people residing or working in the project area to excessive***
15 ***noise levels?***

16 **No Impact.** The Project is not located within the Noise Hazard Area as identified in the
17 McClellan-Palomar Airport Land Use Compatibility Plan (San Diego County Airport Land
18 Use Commission 2010). As a result, the Project would not expose residents or workers
19 in the Project area to excessive noise associated with aviation; therefore, there would
20 be no impact.

21 ***f) For a project within the vicinity of a private airstrip, would the project expose***
22 ***people residing or working in the project area to excessive noise levels?***

23 **No Impact.** The Project site is not in the vicinity of a private airstrip; therefore, there
24 would be no impact.

25 **3.12.4 Mitigation Summary**

26 Implementation of the following mitigation measure(s) would reduce the potential for
27 Project-related noise impacts to less than significant.

- 28 • MM NOI-1: Advanced Noticing.
- 29 • MM NOI-2: Shielding of Stationary Equipment.
- 30 • MM NOI-3: Advanced Notice to Swimmers and Divers.
- 31 • MM NOI-4: Observation and Removal of Divers and Swimmers from Waters in
- 32 Project Area.

1 3.13 POPULATION AND HOUSING

POPULATION AND HOUSING – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 3.13.1 Environmental Setting

3 The EPS is located in the City of Carlsbad, whose population is growing at a rate three
 4 times that of the region as a whole. From 2000 to 2010, the City of Carlsbad's
 5 population grew from 78,274 to 105,328 people, with a projected population of 117,700
 6 people by 2020. A review of employment characteristics for Carlsbad, as shown in the
 7 Housing Element, indicates that of its employed residents, 5 percent are employed
 8 under the category of "Construction/Extraction/Maintenance" (City of Carlsbad 2014c).
 9 For comparison, 8 percent of the employed population in the County of San Diego falls
 10 into this category of employment (City of Carlsbad 2014a).

11 There were 44,422 housing units of all types within the City of Carlsbad in 2010 (City of
 12 Carlsbad 2014a). Of these, 52 percent were single-family detached. The remaining
 13 units were single-family attached, multi-family, mobile homes, and other. The overall
 14 housing vacancy rate in 2010 was 7.4 percent; however, this rate does not take into
 15 account the number of second homes that are in Carlsbad that are not available for sale
 16 or rent. Of the units available, the for-sale vacancy rate was 0.8 percent and the rental
 17 vacancy rate was 1.6 percent.

18 3.13.2 Regulatory Setting

19 3.13.2.1 Federal and State

20 No Federal or State laws relevant to this issue area are applicable to the Project.

1 3.13.2.2 Local

2 The City of Carlsbad (2014b) Draft General Plan Housing Element addresses housing
3 in the city; however, because the Project is a short-term decommissioning project, there
4 are no relevant goals, objectives, or policies applicable to onshore Project activities.

5 **3.13.3 Impact Analysis**

6 ***a) Induce substantial population growth in an area, either directly (for example, by***
7 ***proposing new homes and businesses) or indirectly (for example, through***
8 ***extension of roads or other infrastructure)?***

9 **Less than Significant Impact.** The Project would not induce substantial population
10 growth in the area, either directly or indirectly. The Project is a short-term and would not
11 provide new housing or long-term employment. Short-term construction employment
12 opportunities would be created, many of which would be for persons with specialized
13 skills (e.g., marine vessel, equipment operators). These workers are expected to come
14 from the Project region or be mobilized from ports in Southern California. As such, no
15 demand for additional permanent housing would result; therefore, the impact would be
16 less than significant.

17 ***b) Displace substantial numbers of existing housing, necessitating the***
18 ***construction of replacement housing elsewhere?***

19 **No Impact.** The Project would not displace substantial numbers of existing housing,
20 necessitating the construction of replacement housing elsewhere. The Project is short-
21 term and workers are expected to come from the Project region or be mobilized from
22 Ports in Southern California. As such, the Project would not displace existing housing;
23 therefore, there would be no impact.

24 ***c) Displace substantial numbers of people, necessitating the construction of***
25 ***replacement housing elsewhere?***

26 **No Impact.** The Project would not displace substantial numbers of people,
27 necessitating the construction of replacement housing elsewhere. The Project is short-
28 term and workers are expected to come from the Project region or be mobilized from
29 Ports in Southern California. As such, the Project would not displace people from the
30 area; therefore, there would be no impact.

31 **3.13.4 Mitigation Summary**

32 The Project would not result in significant impacts to population and housing; no
33 mitigation is required.

1 **3.14 PUBLIC SERVICES**

PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.14.1 Environmental Setting**

3 The Project is located in and offshore of the City of Carlsbad, which provides its citizens
 4 with public services within city limits. Onshore and offshore service providers are listed
 5 below in Table 3.14-1.

Table 3.14-1. Summary of Public Service Providers

Service	Provider
Fire Protection	Carlsbad Fire Department
Police Protection	Carlsbad Police Department
Schools	Carlsbad Unified School District
Parks	Carlsbad Parks and Recreation Department California Department of Parks and Recreation
Other: Maritime Law Enforcement	U.S. Coast Guard, Station San Diego

6 **Fire Protection**

7 The Carlsbad Fire Department includes a Fire Prevention Division and citywide
 8 Emergency Preparedness Division, including the Community Emergency Response
 9 Team and Hazard Mitigation Programs (City of Carlsbad 2015b). The closest fire
 10 stations to the Project site are Fire Stations No. 1 and No. 3, located in north Carlsbad
 11 approximately 1.5 miles north and northeast, respectively (City of Carlsbad 2015c).

1 **Police Protection**

2 Law enforcement services in the Project area are provided by the Carlsbad Police
 3 Department. The Carlsbad Police Department employs 162 full-time personnel, of which
 4 114 are sworn officers (City of Carlsbad 2015d). The Carlsbad Police Department is
 5 located approximately 4 miles east of the Project site. The San Diego County Sheriff is
 6 located approximately 5.5 miles northeast of the Project site.

7 **Schools**

8 Carlsbad Unified School District provides elementary and secondary education in the
 9 City of Carlsbad. There are no schools located adjacent to the Project site. The closest
 10 school to the Project site is Jefferson Elementary School, located 0.95 mile north of the
 11 Project site (Carlsbad Unified School District 2014).

12 **Parks**

13 Impacts to parks are discussed in Section 3.15, Recreation.

14 **Maritime Law Enforcement**

15 The U.S. Coast Guard (USCG) is responsible for maritime law enforcement. The USCG
 16 Sector San Diego office is located approximately 30 miles south of the Project site. This
 17 station enforces Federal Law from the U.S.-Mexico border to as far north as San Mateo
 18 Point (USCG 2015). In the event of an unauthorized spill to the marine environment, the
 19 USCG National Response Center would direct and assist with cleanup efforts.

20 **3.14.2 Regulatory Setting**

21 3.14.2.1 Federal and State

22 Federal and State laws and regulations pertaining to this issue area and relevant to the
 23 Project are identified in Table 3.14-1.

Table 3.14-2. Laws, Regulations, and Policies (Public Services)

U.S.	Code of Federal Regulations	<ul style="list-style-type: none"> • Under 29 CFR 1910.38, whenever an Occupational Safety and Health Administration (OSHA) standard requires one, an employer must have an Emergency Action Plan that must be in writing, kept in the workplace, and available to employees for review. An employer with 10 or fewer employees may communicate the plan orally to employees. Minimum elements of an emergency action plan are: <ul style="list-style-type: none"> ○ Procedures for reporting a fire or other emergency; ○ Procedures for emergency evacuation, including type of evacuation and exit route assignments; ○ Procedures to be followed by employees who remain to operate critical plant operations before they evacuate;
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Table 3.14-2. Laws, Regulations, and Policies (Public Services)

		<ul style="list-style-type: none"> ○ Procedures to account for all employees after evacuation; ○ Procedures to be followed by employees performing rescue or medical duties; and ○ The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan. ● Under 29 CFR 1910.39, an employer must have a Fire Prevention Plan (FPP). A FPP must be in writing, be kept in the workplace, and be made available to employees for review; an employer with 10 or fewer employees may communicate the plan orally to employees. Minimum elements of a FPP are: <ul style="list-style-type: none"> ○ A list of all major fire hazards, proper hazardous material handling and storage procedures, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard; ○ Procedures to control accumulations of flammable and combustible waste materials; ○ Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials; ○ The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires; and ○ The name or job title of employees responsible for the control of fuel source hazards. ○ An employer must inform employees upon initial assignment to a job of the fire hazards to which they are exposed and must also review with each employee those parts of the FPP necessary for self-protection. ● Under 29 CFR 1910.155, Subpart L, Fire Protection, employers are required to place and keep in proper working order fire safety equipment within facilities.
CA	California Code of Regulations	Under Title 19, Public Safety , the California State Fire Marshal (CSFM) develops regulations relating to fire and life safety. These regulations have been prepared and adopted to establish minimum standards for the prevention of fire and for protection of life and property against fire, explosion, and panic. The CSFM also adopts and administers regulations and standards necessary under the California Health and Safety Code to protect life and property.

1 3.14.2.2 Local

2 The City of Carlsbad (undated[a]) General Plan Public Safety Element contains the
3 following public service goals and objectives relevant to onshore Project activities.

4 ● Goal A (Fire and Emergency Medical Services): A City which minimizes the
5 injury, the loss of life and damage to property resulting from fire hazards.

6 ● Objective B.5: To consider, in land use decisions, site constraints in terms of
7 hazards and current levels of emergency service delivery capabilities. In areas
8 where population or building densities may be inappropriate to the hazards
9 present, measures shall be taken to mitigate the risk of life and property loss.

10 ● Goal A (Crime Hazards): A City which minimizes injury, loss of life, and damage
11 to property resulting from crime.

- 1 • Objective B.4: To encourage crime prevention through the planning process by
2 establishing specific design criteria and standards to be used in the review of
3 land use development.

4 **3.14.3 Impact Analysis**

5 ***a) Would the Project result in substantial adverse physical impacts associated***
6 ***with the provision of new or physically altered governmental facilities, need for***
7 ***new or physically altered governmental facilities, the construction of which could***
8 ***cause significant environmental impacts, in order to maintain acceptable service***
9 ***ratios, response times or other performance objectives for any of the public***
10 ***services:***

- 11 • Fire protection?
12 • Police Protection?
13 • Schools?
14 • Parks?
15 • Other public facilities?

16 **No Impact.** The Project is a short-term decommissioning project that does not involve
17 the construction of any residences, buildings, or infrastructure. During decommissioning
18 activities, there is the potential for a temporary increase in demand for fire, police, or
19 maritime law enforcement services; however, the Project is short-term and would not
20 require any additional services outside of those mentioned above and already available.
21 Therefore, there would be no impacts resulting from the Project that would require new
22 or physically altered governmental facilities associated with fire protection, police
23 services, schools, parks, or other public services.

24 **3.14.4 Mitigation Summary**

25 The Project would not result in significant impacts to public services; no mitigation is
26 required.

1 **3.15 RECREATION**

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2 **3.15.1 Environmental Setting**

3 The EPS is fronted by Carlsbad Boulevard and Carlsbad State Beach. Carlsbad State
 4 Beach and the Pacific Ocean provide recreational benefits such as opportunities for
 5 surfing, swimming, walking, nature observations, and other uses. Additionally, as shown
 6 in the City of Carlsbad (2013b) Circulation Element, Carlsbad Boulevard is designated
 7 as a bicycle route. The Agua Hedionda Lagoon is also a proximate recreational
 8 amenity. According to the Agua Hedionda Lagoon Foundation (2014) website,
 9 recreational activities associated with the Lagoon include a YMCA day camp,
 10 recreational boating, a mussel and abalone aquaculture facility, and a white-sea bass
 11 breeding and research facility. The Lagoon also provides opportunities for hiking, bird
 12 watching, wildlife photography and fishing.

13 In addition to the shoreline areas, the City of Carlsbad (2003) General Plan Parks and
 14 Recreational Element describes two other recreational areas within the Project vicinity.
 15 These include Cannon Park, located approximately 0.3 mile south of the nearshore 20-
 16 inch pipe landing and Cannon Lake located approximately 0.5 mile south of the
 17 nearshore 20-inch pipe landing. Cannon Park is designated by the City of Carlsbad as a
 18 “Special-Use” area while Cannon Lake is designated as a “Future Special Use Area”.

19 **3.15.2 Regulatory Setting**

20 3.15.2.1 Federal and State

21 Federal and State laws and regulations pertaining to this issue area and relevant to the
 22 Project are identified in Table 3.15-1.

Table 3.15-1. Laws, Regulations, and Policies (Recreation)

U.S.	CZMA (see Table 1.2).	
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	<p>Coastal Act Chapter 3 policies applicable to this issue area are:</p> <ul style="list-style-type: none"> • Section 30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses. • Section 30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area. • Section 30222. The use of private lands suitable for visitor-serving commercial recreational facilities designed to enhance public opportunities for coastal recreation shall have priority over private residential, general industrial, or general commercial development, but not over agriculture or coastal-dependent industry. • Section 30223. Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible. • Section 30224. Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.

1 3.15.2.2 Local

2 The City of Carlsbad (2003) General Plan Parks and Recreation Element addresses
 3 goals, policies, and objectives relating to park and recreation facilities within the city;
 4 however, none are relevant to onshore Project activities.

5 **3.15.3 Impact Analysis**

6 ***a) Would the project increase the use of existing neighborhood and regional***
 7 ***parks or other recreational facilities such that substantial physical deterioration***
 8 ***of the facility would occur or be accelerated?***

9 **Less than Significant Impact.** As a result of decommissioning activities in the area, it
 10 is possible that onshore construction workers may utilize park and recreation facilities in
 11 the short-term; however, due to the limited number of workers and the short-term nature
 12 of the Project, the Project would not introduce a new population that would create a
 13 demand for parks or other recreational facilities. Therefore, this impact is considered
 14 less than significant.

15 ***b) Does the project include recreational facilities or require the construction or***
 16 ***expansion of recreational facilities which might have an adverse physical effect***
 17 ***on the environment?***

1 **No Impact.** Decommissioning activities on the beach would require the temporary
2 removal of the lifeguard tower, which would require the Applicant to obtain a right-of-
3 entry permit from the California Department of Parks and Recreation. However, the
4 Project does not include the construction of recreational facilities, nor would it create a
5 demand for parks and recreational facilities such that new construction would be
6 warranted; therefore, there would be no impact.

7 **3.15.4 Mitigation Summary**

8 The Project would not result in significant impacts to recreation; no mitigation is
9 required.

1 **3.16 TRANSPORTATION/TRAFFIC**

TRANSPORTATION/TRAFFIC – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 **3.16.1 Environmental Setting**

3 Regional access to the Project site is provided from the south and the north via I-5. Both
 4 Cannon Road and Carlsbad Boulevard provide local access to the Project site.
 5 Roadways that would be used for onshore Project activities are described below.

- 6 • **I-5** is a major north-south freeway with four lanes in each direction near the
 7 Project site. Access from I-5 to the EPS and onshore Project areas occurs via
 8 Cannon Road. According to the California Department of Transportations
 9 (Caltrans 2011), I-5 carried approximately 200,000 average annual daily vehicle
 10 trips north of Cannon Road in 2011, and truck traffic accounts for approximately
 11 4.6 percent of all trips in this area.

- 1 • **Cannon Road** is an east-west roadway that connects Carlsbad Boulevard to I-5
2 south of the Project site. According to the City of Carlsbad (2013b) General Plan
3 Circulation Element, Cannon Road is classified as a major arterial. Major arterials
4 typically limit access to adjacent properties and enable circulation within the city,
5 as well as provide connection to regional roadways and freeways. It is an
6 undivided arterial with two lanes in each direction.
- 7 • **Tamarack Avenue** is an east-west roadway classified as a modified collector
8 street between Carlsbad Boulevard and Skyline Road.
- 9 • **Carlsbad Boulevard** is a north-south roadway that connects the Project site to
10 Cannon Road to the south and Tamarack Avenue to the north. According to the
11 City of Carlsbad (2013b) General Plan, Carlsbad Boulevard is a major arterial. It
12 is a divided arterial with two lanes in each direction with a designated bike route.

13 Data from the CECP environmental review (CEC 2009) indicate that all area roadways
14 in the Project vicinity were operating at an acceptable level, Level of Service C or better.
15 Truck routes in the City of Carlsbad are defined in the City Municipal Code and are
16 listed below (J. Kim, personal communication, 2014) (routes likely to be used by
17 Project-related traffic are in bold). Trucks must enter the EPS from the south (so that
18 entry into the facility can be made safely via a right turn) and must exit the EPS by
19 making a right turn onto Carlsbad Boulevard heading north.

- 20 1. **Carlsbad Boulevard from the northerly to the southerly city limits;**
- 21 2. Carlsbad Village Drive from Carlsbad Boulevard east to I-5 Freeway;
- 22 3. **Tamarack Avenue from I-5 Freeway to Carlsbad Boulevard;**
- 23 4. **Cannon Road from Carlsbad Boulevard to El Camino Real;**
- 24 5. I-5 Freeway, northerly city limits to southerly city limits;
- 25 6. Palomar Airport Road from Carlsbad Boulevard to easterly city limits;
- 26 7. El Camino Real from northerly city limits to southerly city limits;
- 27 8. La Costa Avenue from the westerly city limits to El Camino Real;
- 28 9. Rancho Santa Fe Road from the southerly city limits to the northerly city limits;
- 29 10. Olivenhain Road from the westerly city limits to Rancho Santa Fe Road;
- 30 11. Melrose Drive from Palomar Airport Road to the northerly city limits;
- 31 12. Faraday Avenue from Cannon Road to the easterly city limits;
- 32 13. College Boulevard from Palomar Airport Road to El Camino Real; and
- 33 14. El Fuerte Street from Palomar Airport Road to Faraday Avenue.

34 **3.16.2 Regulatory Setting**

35 3.16.2.1 Federal and State

36 Federal and State laws and regulations pertaining to this issue area and relevant to the
37 Project are identified in Table 3.16-1.

Table 3.16-1. Laws, Regulations, and Policies (Transportation/Traffic)

U.S.	Ports and Waterways Safety Act	This Act provides the authority for the USCG's program to increase vessel safety and protect the marine environment in ports, harbors, waterfront areas, and navigable waters, including by authorizing the Vessel Traffic Service, controlling vessel movement, and establishing requirements for vessel operation.
CA	California Vehicle Code	Chapter 2, Article 3 of the Vehicle Code defines the powers and duties of the California Highway Patrol, which has enforcement responsibilities for the vehicle operation and highway use in the State.
CA	Other	The California Department of Transportation is responsible for the design, construction, maintenance, and operation of the California State Highway System and the portion of the Interstate Highway System in California.

1 3.16.2.2 Local

2 The City of Carlsbad (2013b) General Plan Circulation Element the following
3 transportation/traffic objective applicable to onshore Project activities.

- 4 • Objective B.2: To reduce the number and severity of vehicular, bicycle and
5 pedestrian-related accidents.

6 **3.16.3 Impact Analysis**

7 ***a) Conflict with an applicable plan, ordinance or policy establishing measures of***
8 ***effectiveness for the performance of the circulation system, taking into account***
9 ***all modes of transportation including mass transit and non-motorized travel and***
10 ***relevant components of the circulation system, including but not limited to***
11 ***intersections, streets, highways and freeways, pedestrian and bicycle paths, and***
12 ***mass transit?***

13 **Less than Significant with Mitigation.** The Project includes decommissioning
14 activities that require land-based operations that would result in congestion and
15 potential safety hazards to pedestrians, bicyclists, and motorists. Movement of workers,
16 construction equipment, and materials would generate short-term vehicular trips for an
17 approximate 6-month period while land-based decommissioning activities occur (a
18 preliminary decommissioning schedule is provided as Table A1-1 in Appendix A).
19 During any given phase of the Project, an estimated maximum of 25 workers would
20 transit to and from the site. Staging for decommissioning and parking for land-based
21 workers would be provided within the EPS. Five large pieces and several smaller pieces
22 of equipment would be transported to the site and would be in use for most of the work
23 period. Due to the lengthy intervening period between work in the onshore segment and
24 beach segment, this equipment may need to be mobilized to the site on two separate
25 occasions. Flatbed trucks, dump trucks, vacuum trucks, and cement trucks would also
26 need to access the Project site for the transport and removal of recovered materials
27 (e.g., anchors, chains, and pipeline) for recycling or disposal, and to import backfill
28 (beach sand) and cement. An estimated 98 truck trips would be required for these
29 purposes over the 6-month period. Additional land-based trips would be generated at

1 the Project's shore base, which would be located at Oceanside Harbor, the Unified Port
2 of San Diego, Port of Long Beach, or Port of Los Angeles.

3 As shown on Figure 2-17, approximately 150 linear feet of parking area on Carlsbad
4 Boulevard would be used for temporary truck parking during loading operations, which
5 would impact an estimated seven parking spaces (assuming a stall length of 20 to 22
6 feet). Loading operations would be limited to periods when land-based equipment would
7 be brought to and from the beach and during other limited work tasks in the onshore
8 and beach segments, including: the removal of concrete, rebar, gravel, and riprap from
9 the underpass end structure (four truck trips); the import of beach sand backfill (nine
10 truck trips); and while backfilling the underpass end structure with beach sand (11 truck
11 trips). Although work in the onshore and beach segments would last 6 months (3
12 months for each segment), the parking spaces would not have be blocked off during
13 that entire period, only during the specific operations previously identified. In order to
14 temporarily block the parking spaces, the City of Carlsbad would require the Applicant
15 to obtain a Right-of-Way Permit. The permit requires that signage be posted a week
16 prior to the blockage and that the parking area be returned to its original condition when
17 it is no longer needed. The City of Carlsbad typically does not require mitigation for
18 temporary closures (J. Geldert, personal communication, July 7, 2014); however, the
19 Applicant would comply with all requirements of the Right-of-Way Permit, including the
20 provision of temporary replacement parking should it be required.

21 Implementation of the following measures would ensure that potential roadway
22 congestion (levels of service) impacts are avoided or mitigated to less than significant.

23 **MM TRA-1: Trucks Avoid Peak Hours.** Construction truck traffic affecting State
24 highways shall be confined to hours outside of the peak AM and PM commute
25 periods.

26 **MM TRA-2: Carpooling.** The contractor shall implement a worker carpool
27 program to minimize the number of vehicular trips required to transport workers
28 to and from the Project site. This measure shall be identified as a requirement in
29 the contractor bid package.

30 To ensure that potential impacts associated local traffic safety hazards (including
31 hazards to pedestrians, bicyclists, and motorists) are avoided or mitigated to less than
32 significant, the following measure will be implemented.

33 **MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC)**
34 **Plan.** A CSTMC Plan shall be developed for review by the City of Carlsbad and
35 implemented. The Plan shall include, but not necessarily be limited to: (1) traffic
36 control strategies; (2) traffic control devices to be used; (3) public awareness
37 strategies; (4) motorist information methods; (5) alternate pedestrian and bicycle

1 access routing; (6) work zone safety management strategies; and (7)
2 contingency and incident plans.

3 The Plan would include the requirement that the contractor obtain the necessary Right-
4 of-Way Permit required by the City of Carlsbad.

5 To ensure that potential impacts to public infrastructure from construction traffic are
6 avoided or reduced to less than significant, the following measure would be
7 implemented.

8 **MM TRA-4: Protect Infrastructure Improvements.** The Applicant shall ensure
9 that the onshore contractor include proper precautions to protect all existing
10 pavement, curbs, gutters, and drainage structures from unintentional damage
11 during Project construction. Any portion damaged as a result of Project
12 construction shall be repaired or replaced in accordance with current City of
13 Carlsbad Standard Construction Details.

14 Offshore vessel activity associated with the surf zone and offshore segments may also
15 temporarily interfere with vessels transiting through the marine work area; however, the
16 Project site is located outside of any recognized vessel transit lanes, and marine
17 construction traffic for the Project would abide by all applicable maritime regulations.

18 To ensure that potential impacts associated with offshore transportation hazards are
19 avoided or reduced to less than significant, the following measure would be
20 implemented.

21 **MM TRA-5: Local Notice to Mariners.** All offshore operations shall be described
22 in a Local Notice to Mariners to be submitted to the U.S. Coast Guard at least 15
23 days prior to decommissioning activities.

24 ***b) Conflict with an applicable congestion management program, including, but***
25 ***not limited to level of service standards and travel demand measures, or other***
26 ***standards established by the county congestion management agency for***
27 ***designated roads or highways?***

28 **No Impact.** SANDAG is responsible for regional transportation management in San
29 Diego County. In 2011, the SANDAG Board of Directors adopted the 2050 Regional
30 Transportation Plan and Sustainable Communities Strategy to facilitate a long-term
31 planning strategy for transportation in the region (SANDAG 2014); however, these
32 documents do not include any elements that are applicable to the Project, which is a
33 short-term decommissioning project. Therefore, there would be no impact.

34 ***c) Result in a change in air traffic patterns, including either an increase in traffic***
35 ***levels or a change in location that results in substantial safety risks?***

1 **No Impact.** The Project would not require increased air traffic or result in any changes
2 to air transportation; therefore, there would be no impact.

3 ***d) Substantially increase hazards due to a design feature (e.g., sharp curves or***
4 ***dangerous intersections) or incompatible uses (e.g., farm equipment)?***

5 **Less than Significant with Mitigation.** The Project would result in the temporary
6 introduction of roadway and sidewalk hazards due to construction as detailed in item **a)**
7 above. Therefore, **MM TRA-1** through **MM TRA-3** would be implemented to avoid or
8 mitigate safety hazards due to incompatible uses (construction vehicles conflict with
9 motorists, bicyclists and pedestrians) to less than significant.

10 ***e) Result in inadequate emergency access?***

11 **Less than Significant Impact.** The Project may result in a short-term encroachment on
12 Carlsbad Boulevard. In this case, a Right-of-Way Permit from the City of Carlsbad
13 would be required (J. Geldert, personal communication, July 7, 2014). All conditions of
14 the encroachment permit would be implemented and no long-term effect on roadway
15 access would result; therefore, the Project would have a less than significant impact on
16 emergency access.

17 ***f) Conflict with adopted policies, plans or programs regarding public transit,***
18 ***bicycle, or pedestrian facilities, or otherwise decrease the performance or safety***
19 ***of such facilities?***

20 **Less than Significant with Mitigation.** The Project would result in the temporary
21 introduction of roadway and sidewalk hazards due to construction as detailed in item **a)**
22 above. Therefore, **MM TRA-1** through **MM TRA-3** would be implemented to avoid or
23 mitigate conflicts with adopted policies, plans, or programs regarding public transit,
24 bicycle, or pedestrian facilities to less than significant.

25 **3.16.4 Mitigation Summary**

26 Implementation of the following mitigation measures would reduce the potential for
27 Project-related impacts to transportation/traffic to less than significant.

- 28 • MM TRA-1: Trucks Avoid Peak Hours.
- 29 • MM TRA-2: Carpooling.
- 30 • MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC) Plan.
- 31 • MM TRA-4: Protect Infrastructure Improvements.
- 32 • MM TRA-5: Local Notice to Mariners.

1 **3.17 UTILITIES AND SERVICE SYSTEMS**

UTILITIES AND SERVICE SYSTEMS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2 **3.17.1 Environmental Setting**

3 The Project is a short-term decommissioning project that would not result in the
 4 construction of new utility or service systems, nor create a new demand for permanent
 5 utilities or service systems. With respect to utilities and service systems, the primary
 6 needs of the Project include the ability to recycle or dispose of hazardous and non-
 7 hazardous waste.

8 During decommissioning, the Project would require temporary sanitation facilities that
 9 would be accomplished through the use of portable toilets and washing stations.
 10 Additionally, Project activities would have the potential to generate hazardous and non-
 11 hazardous solid waste associated with the removal of the fuel oil submarine pipeline.
 12 Potential hazardous waste associated with the Project components, including ACM,
 13 LBP, and/or other known and potential unknown contaminants are further discussed in

1 Section 3.8, Hazardous Materials. All hazardous materials will be taken to a facility
2 authorized to receive these materials.

3 Within the City of Carlsbad, Waste Management provides residential and commercial
4 trash service through a contract with the city; however, solid waste generated as a
5 result of decommissioning activities would likely be taken to Miramar Landfill for
6 recycling and/or disposal. According to the City of San Diego, the Miramar Landfill has
7 capacity anticipated until 2022 (City of San Diego 2015). The remaining capacity is over
8 15 million cubic yards (CalRecycle 2015). Disposal of anchors and chains would also
9 require transit to San Diego Harbor, located approximately 35 miles south of the Project
10 site, or to the Port of Long Beach/Port of Los Angeles for transfer to Miramar Landfill.

11 **3.17.2 Regulatory Setting**

12 3.17.2.1 Federal and State

13 Federal and State laws and regulations pertaining to this issue area and relevant to the
14 Project are identified in Table 3.17-1.

Table 3.17-1. Laws, Regulations, and Policies (Utilities and Service Systems)

CA	Coastal Act Chapter 3 policies (see also Table 1-2)	Coastal Act Chapter 3 policies applicable to this issue area are: <ul style="list-style-type: none"> • Section 30254 states: New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of new development, services to coastal-dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development. • Section 30254.5 states in part: Notwithstanding any other provision of law, the commission may not impose any term or condition on the development of any sewage treatment plant which is applicable to any future development that the commission finds can be accommodated by that plant consistent with this division....
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15 3.17.2.2 Local

16 There are no local goals, policies, and/or regulations applicable to this issue area that
17 are relevant to the Project.

1 **3.17.3 Impact Analysis**

2 ***a) Exceed wastewater treatment requirements of the applicable Regional Water***
3 ***Quality Control Board?***

4 **Less than Significant Impact.** The Project would be limited to onshore and offshore
5 decommissioning activities and would not exceed the wastewater treatment
6 requirements of the RWQCB. Short-term sanitary needs would be met by existing
7 facilities or systems on Project vessels or platforms and through the use of portable
8 restrooms (the companies providing these services are responsible for complying with
9 the applicable regulations pertaining to the disposal of sanitary waste). Therefore, there
10 would be a less than significant impact to wastewater treatment requirements.

11 ***b) Require or result in the construction of new water or wastewater treatment***
12 ***facilities or expansion of existing facilities, the construction of which could cause***
13 ***significant environmental effects?***

14 **No Impact.** The Project would be limited to onshore and offshore decommissioning
15 activities and would not require or result in the construction of new, or the expansion of
16 existing, water or wastewater treatment facilities. Short-term sanitary needs would be
17 met by existing facilities or systems on Project vessels or platforms and through the use
18 of portable restrooms; therefore, there would be no impact.

19 ***c) Require or result in the construction of new storm water drainage facilities or***
20 ***expansion of existing facilities, the construction of which could cause significant***
21 ***environmental effects?***

22 **No Impact.** Due to the nature of the Project, no additional stormwater drainage facilities
23 or expansion of such facilities would be required; therefore, there would be no impact.

24 ***d) Have sufficient water supplies available to serve the Project from existing***
25 ***entitlements and resources, or are new or expanded entitlements needed?***

26 **Less than Significant Impact.** The short-term water needs of the Project would be met
27 by local purveyors. Due to the minimal Project demand for water, no significant impact
28 would result.

29 ***e) Result in a determination by the wastewater treatment provider which serves or***
30 ***may serve the Project that it has adequate capacity to serve the Project's***
31 ***projected demand in addition to the provider's existing commitments?***

32 **Less than Significant Impact.** See response to **a)** above.

1 ***f) Be served by a landfill with sufficient permitted capacity to accommodate the***
2 ***Project's solid waste disposal needs?***

3 **Less than Significant Impact.** The Project would result in some decommissioning
4 residuals (e.g., anchors, chains, riprap, piping); however, the volume of these materials
5 would be insubstantial relative to the solid waste stream of the Project area.
6 Additionally, the Applicant proposes to implement the following APM to further reduce
7 the Project's solid waste disposal needs at landfills.

8 **APM UTI-1: Reuse and Recycle Debris.** The decommissioning contractor shall
9 dispose of recovered materials (e.g., anchors, chains, riprap, piping) that can be
10 reused and recycled at an appropriate facility if feasible.

11 ***g) Comply with federal, state, and local statutes and regulations related to solid***
12 ***waste?***

13 **Less than Significant Impact.** See response to **f)** above.

14 **3.17.4 Mitigation Summary**

15 The Project would not result in significant impacts to utilities and service systems; no
16 mitigation is required. However, the following APM would further reduce the Project's
17 less than significant impact to solid waste disposal capacity and would support the
18 intent of State regulations pertaining to solid waste reduction.

- 19 • APM UTI-1: Reuse and Recycle Debris.

1 **3.18 MANDATORY FINDINGS OF SIGNIFICANCE**

2 The lead agency shall find that a project may have a significant effect on the
 3 environment and thereby require an EIR to be prepared for the project where there is
 4 substantial evidence, in light of the whole record, that any of the following conditions
 5 may occur. Where prior to commencement of the environmental analysis a project
 6 proponent agrees to mitigation measures or project modifications that would avoid any
 7 significant effect on the environment or would mitigate the significant environmental
 8 effect, a lead agency need not prepare an EIR solely because without mitigation the
 9 environmental effects would have been significant (per State CEQA Guidelines, §
 10 15065).

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

11 **a) Does the project have the potential to degrade the quality of the environment,**
 12 **substantially reduce the habitat of a fish or wildlife species, cause a fish or**
 13 **wildlife population to drop below self-sustaining levels, threaten to eliminate a**
 14 **plant or animal community, reduce the number or restrict the range of a rare or**
 15 **endangered plant or animal, or eliminate important examples of the major periods**
 16 **of California history or prehistory?**

17 **Less than Significant with Mitigation.** As described in this MND, the Project has the
 18 potential to significantly impact the following environmental disciplines: Aesthetics,
 19 Biological Resources, Cultural and Paleontological Resources, Hazards and Hazardous

1 Materials, Hydrology and Water Quality, Noise, and Transportation/Traffic. However,
 2 measures have been identified in each environmental discipline’s respected section that
 3 would reduce these impacts to a level of less than significant.

4 ***b) Does the project have impacts that would be individually limited, but***
 5 ***cumulatively considerable? (“Cumulatively considerable” means that the***
 6 ***incremental effects of a project are considerable when viewed in connection with***
 7 ***the effects of past projects, the effects of other current projects, and the effects***
 8 ***of probable future projects.)***

9 **Less than Significant with Mitigation.** Past, current, and reasonably foreseeable
 10 projects that are within 0.25 mile of the proposed Project are provided in Table 3.18-1.

Table 3.18-1. Relevant Cumulative Projects

Project Name	Brief Description	Status
1. Agua Hedionda Lagoon Dredging	Periodic dredging of Agua Hedionda Lagoon to ensure adequate flow to the cooling water inlet for the EPS.	Periodic dredging
2. I-5 North Coast Corridor Project	I-5 Freeway improvements from La Jolla Village Drive in the City of San Diego and extend northward (approximately 27 miles) to Harbor Drive in the City of Oceanside.	Pending construction
3. Carlsbad Desalination Plant	The Carlsbad Desalination Plant is currently being built on industrially zoned land adjacent to the EPS by Poseidon Water.	Under construction
4. Carlsbad Boulevard Improvement Project	Carlsbad Boulevard improvements would be in support of the City of Carlsbad’s Mobility Element in its draft General Plan. Improvements include: completion of pedestrian and bikeway paths/lanes; construction of a roundabout at the intersection of Cannon Road and Carlsbad Boulevard; and improvements at the intersection of Carlsbad Boulevard and Tamarack Avenue.	Pending construction
5. PDP 00-02(C) - Agua Hedionda Sewer Lift Station & Gravity & Force Mains	This project extends in a north-south direction from the Agua Hedionda Lagoon to the Encina Water Pollution Control Facility. The project involves the installation of a sewer trunk line (3,960-foot-long force main and a 8,420-foot-long gravity sewer line), a sewer lift station (50 million gallons/day capacity), and a sewer support bridge (140-foot weathered steel span), and improvements to the Vista/Carlsbad Sewer Interceptor System.	Under construction
6. Carlsbad Energy Center Project	Construction of a new electric generating facility to be sited along the eastern boundary of the EPS that would replace the aging, inefficient EPS Units 1-5 that employ once-through cooling using seawater. Once constructed and operational, the project includes the removal and remediation of existing EPS generating equipment and structures.	Pending construction

11 As provided in this MND, the Project has the potential to significantly impact the
 12 following environmental disciplines: Aesthetics, Biological Resources (Marine), Cultural
 13 and Paleontological Resources, Hazards and Hazardous Materials, Hydrology and
 14 Water Quality, Noise, and Transportation/Traffic. However, measures have been
 15 identified that would reduce these impacts to a level of less than significant. For any

1 impacts to act cumulatively on any past, present, or any reasonably foreseeable
2 projects, these projects would have to have individual impacts in the same resource
3 areas at the same time and in the same localized area as the proposed Project.
4 Because the potential impacts of the proposed Project could be exacerbated by other
5 projects, the potential for cumulative impacts are described below.

6 Aesthetics. Projects that may impact the same visual receptor locations as the Project
7 include the CECP and the Carlsbad Boulevard Improvement Project (it is anticipated
8 that Agua Hedionda Lagoon Dredging would not occur concurrently with the Project).
9 These projects together with the proposed Project would exacerbate short-term
10 aesthetic impacts. The approved CECP has a requirement for landscape and fence
11 screening of certain visible construction areas (CEC 2009), and the Project would limit
12 onshore decommissioning months outside of the peak public use period. Project-
13 specific mitigation measures (identified in Section 3.1, Aesthetics), and the short-term
14 nature of the proposed Project and other projects in the area, would further mitigate the
15 Project's contribution to cumulative aesthetic impacts. Therefore, impacts to aesthetics
16 would be less than significant and are not cumulatively considerable.

17 Biological Resources (Marine). There are no identified pending or approved projects in
18 the Project area that, together with the proposed Project, would result in cumulative
19 impacts to marine resources. Therefore, impacts to marine biological resources are not
20 cumulatively considerable.

21 Cultural and Paleontological Resources. Impacts to cultural and paleontological
22 resources are potentially cumulatively significant under any circumstance; however,
23 Project-specific mitigation measures for cultural and paleontological resources
24 (identified in Section 3.5, Cultural and Paleontological Resources) would further mitigate
25 the Project's contribution to cumulative impacts on these resources. Therefore, impacts
26 associated with cultural and paleontological resources would be less than significant
27 and are not cumulatively considerable.

28 Hazards and Hazardous Materials. Worker and public health hazards associated with
29 the Project are generally site-specific in that they are associated with potential on-site
30 hazardous materials (e.g., LBP, ACM, hydrocarbon-containing soils). However, the
31 potential exposure to toxins may be considered cumulatively significant due to the
32 ubiquitous nature of toxins in the environment. Project-specific mitigation measures for
33 hazardous materials (identified in Section 3.8, Hazards and Hazardous Materials) would
34 further mitigate the proposed Project's contribution to cumulative hazardous materials
35 impacts. Therefore, impacts associated with hazardous materials would be less than
36 significant and are not cumulatively considerable.

37 Hydrology and Water Quality. Dredging of the Agua Hedionda Lagoon and other
38 construction projects, including the proposed Project, have the potential to result in

1 water quality impacts to marine and freshwater systems. It is expected that all projects
2 would comply with stormwater pollution management regulations, as well as project-
3 specific mitigation. Project-specific mitigation measures for water quality (identified in
4 Section 3.9, Hydrology and Water Quality) would further mitigate the proposed Project's
5 contribution to cumulative water quality impacts. Therefore, impacts associated to water
6 quality would be less than significant and are not cumulatively considerable.

7 Noise. The CECP is the only cumulative project listed above that is close enough
8 (spatially or temporally) to the Project area and of a nature to result in cumulative noise
9 impacts. Noise impacts resulting from the proposed Project would be short-term, and all
10 projects within the City of Carlsbad must comply with Chapter 8.48 of the City's
11 Municipal Code, which generally limits disturbing or offensive construction noise to the
12 hours between 7:00 a.m. and sunset on weekdays and between 8:00 a.m. and sunset
13 on Saturdays, and prohibits such noise on Sundays and major holidays. Project-specific
14 mitigation measures for noise (identified in Section 3.12, Noise) would further mitigate
15 the proposed Project's contribution to cumulative noise impacts. Therefore, impacts to
16 noise would be less than significant and are not cumulatively considerable.

17 Transportation/Traffic. Construction of the CECP and any other project in the vicinity of,
18 and at the same time as, the proposed Project would add traffic to local roadways and
19 could impact the existing traffic load and capacity of the street system. Construction
20 activities could also impact emergency access and parking capacity, encroach on public
21 transportation and pedestrian facilities, and introduce oversized and overweight
22 vehicles. The CECP includes a mitigation measure to address short-term transportation
23 impacts, which requires the project owner to consult with the City of Carlsbad and
24 prepare and submit a construction traffic control plan and implementation program to
25 the Compliance Project Manager for approval. Additionally, Project-specific mitigation
26 measures for transportation and traffic (identified in Section 3.16, Transportation/Traffic)
27 would further mitigate the proposed Project's contribution to cumulative transportation
28 and traffic impacts. The Project-incorporated mitigation measure MM TRA-3 requires
29 that the Applicant prepare and submit to the City of Carlsbad a Construction Safety and
30 Traffic Management/Control (CSTMC) Plan and obtain "Right-of-Way" Permits from the
31 City. This measure would ensure appropriate coordination with the City of Carlsbad
32 such that proposed improvements to Carlsbad Boulevard and Project implementation
33 would not conflict. With the implementation of mitigation, impacts to transportation and
34 traffic would be less than significant and are not cumulatively considerable.

35 Recreation/Utilities and Service Systems. The Project requirements for parks and
36 recreation facilities and utilities and service systems (e.g., water, sewage, solid waste
37 disposal capacity) are inconsequential (de minimis) on a cumulative basis due to the
38 short-term duration and nature of the Project. Therefore, impacts to these environmental
39 disciplines would be less than significant and are not cumulatively considerable.

1 The Project would have no impact on the following environmental disciplines and,
2 therefore, would not contribute to any cumulatively considerable impacts: Agriculture
3 and Forest Resources, Mineral Resources, and Public Services.

4 Mitigation measures that are required to reduce Project-specific impacts would reduce
5 the proposed Project's contribution to cumulatively significant impacts, as identified
6 above; therefore, no additional mitigation is required.

7 ***c) Does the project have environmental effects that would cause substantial***
8 ***adverse effects on human beings, either directly or indirectly?***

9 **Less than Significant with Mitigation.** As described in this MND, the proposed Project
10 may cause environmental effects that would cause substantial adverse effects on
11 human beings. For detailed information on these environmental effects, please refer to
12 the following environmental disciplines: Aesthetics, Hazards and Hazardous Materials,
13 Hydrology and Water Quality, Noise, and Transportation/Traffic. However, measures
14 are identified in each environmental discipline's respected section that would reduce
15 these impacts to a level of less than significant.

1 **4.0 OTHER MAJOR AREAS OF CONCERN**

2 **4.1 COMMERCIAL AND RECREATIONAL FISHING**

3 Coastal waters support both commercial and recreational fishing activities within the
4 Project area, and offshore decommissioning activities associated with the Project have
5 the potential to affect both commercial and recreational fisheries. Although this
6 environmental issue is not included in the California Environmental Quality Act (CEQA)
7 Appendix G Checklist, the California State Lands Commission (CSLC) is including it
8 here due to the location of the Project.

9 **4.1.1 Environmental Setting**

10 The California Department of Fish and Wildlife (CDFW) (formerly California Department
11 of Fish and Game) has established a series of reporting areas (Fish Blocks) within the
12 marine waters offshore California. Each Fish Block is 10° latitude by 10° longitude;
13 however, the area of water covered can be less than 100 square nautical miles due to
14 shoreline irregularities. Each Fish Block is uniquely numbered and commercial fishers
15 and recreational party boat operators report catch by including the Fish Block number
16 within which fish are caught. Summary catch data are available through the CDFW
17 Fisheries Statistics Branch (Los Alamitos, California) and are used to characterize
18 commercial and party boat recreational fishing within a project area. Figure 4.1-1 shows
19 the Fish Blocks within the Project region; the Project is located within Fish Block 822.

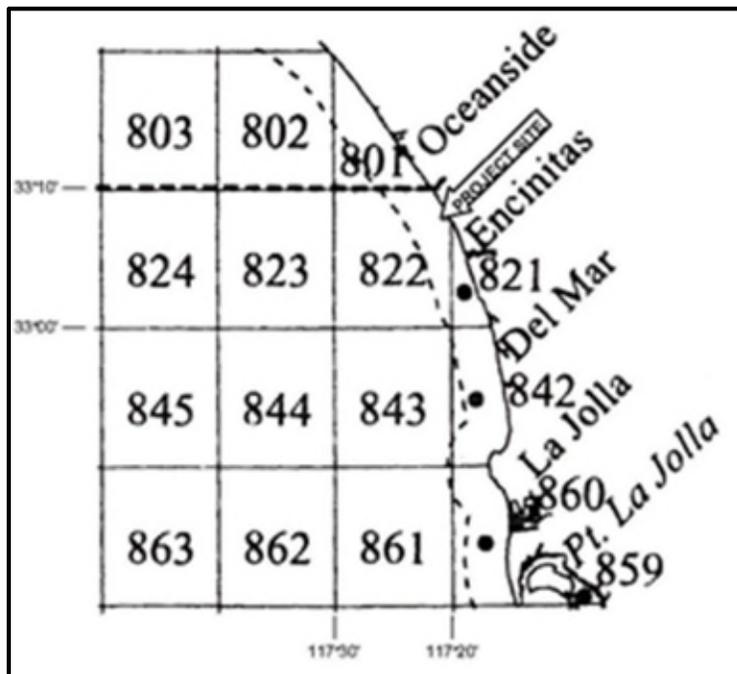


Figure 4.1-1. Regional and Project Site CDFW Fish Blocks

1 Because Fish Block 822 encompasses water depths of up to 2,300 feet and the catch is
 2 not separated by water depth at the time of reporting, it may not provide an accurate
 3 picture of what type of catch would occur at the Project site. Catch data from the
 4 adjacent and inshore Fish Block 821, which has a maximum water depth of about 900
 5 feet and is completely within State waters, are probably more characteristic of the
 6 commercial and recreational catch likely to occur within the Project site.

7 4.1.1.1 Commercial Fishing

8 Table 4.1-1 lists the total reported pounds and value of the commercial catch from these
 9 two Fish Blocks for the most recently available 5-year period (2008 through 2012).

Table 4.1-1. Commercial Catch from Fish Blocks 821 and 822 (2008–2012)

Year	Fish Block 821		Fish Block 822	
	Pounds	Value	Pounds	Value
2008	38,406	\$374,771	573,155	\$225,563
2009	47,368	\$329,939	29,646	\$16,483
2010	107,024	\$585,812	1,038,376	\$268,487
2011	44,294	\$633,006	10,206	\$45,793
2012	7,772	\$85,368	5,812	\$56,339
Total	244,864	\$2,008,896	1,657,195	\$612,665

Source: CDFW unpublished.

10 For this 5-year period, the combined total commercial catch of three taxa, lobster
 11 (134,338 pounds, \$1,863,948), market squid (50,935 pounds, \$12,734), and all species
 12 of crab (27,590 pounds, \$23,587) accounted for 87 percent of the total pounds and 95
 13 percent of the total value of the reported catch from Fish Block 821. Within Fish Block
 14 822, the commercial catch for this period was dominated by market squid (1,576,534
 15 pounds, \$413,271), sardines (42,196 pounds, \$2,386), and lobster (13,426 pounds,
 16 \$166,237). Combined, these three taxa accounted for 98 percent of the total pounds
 17 reported and 95 percent of the total value.

18 The four most abundant taxa for these two Fish Blocks (lobster, market squid, all
 19 species of crab, and sardines) could be expected to be caught within the water depths
 20 and seafloor habitats within or adjacent to the Project site. Traps, usually left in-place for
 21 24 to 36 hours, are used to catch crab and lobster, while seine nets are used to catch
 22 the pelagic species (squid and sardines). Rocky seafloor habitats would be targeted for
 23 lobster, while crab traps are placed in both sedimentary and rocky habitats, depending
 24 upon which crab species is being sought. Most of the seining for sardines and squid
 25 would be expected to occur within water depths that are shoreward of the State 3-
 26 nautical mile limit.

1 4.1.1.2 Recreational Fishing

2 The commercial passenger vessel (party boat) recreational fishing catch for the two
3 Fish Blocks is summarized in Table 4.1-2 and includes the number of individuals kept
4 and thrown back.

Table 4.1-2. Commercial Party Vessel (Recreational) Catch (Number of Individuals) from Fish Blocks 821 and 822 (2008–2012)

Year	Block		Total
	821	822	
2008	2,567	16,495	19,062
2009	715	12,031	12,746
2010	928	12,063	12,991
2011	506	13,239	13,745
2012	1,404	10,058	11,462
Total	6,120	63,886	70,006

5 Three taxa (kelp bass [2,118 individuals], barred sand bass [*Paralabrax nebulifer*]
6 [1,015], and Pacific mackerel [983]) contributed 67 percent of the total reported
7 recreational catch for this period within Fish Block 821. The recreational catch from Fish
8 Block 822 was substantially larger than that reported from within Fish Block 821 with
9 four taxa (kelp bass [23,218], Pacific mackerel [12,938], barracuda [11,441] and barred
10 sand bass [7,785]), which contributed 87 percent of the total reported catch. The
11 composition of the catch suggests that party boats target water column (barracuda and
12 mackerel) and both rocky and sedimentary seafloor habitats. The submarine canyons
13 and relatively deep water that is particularly common within Fish Block 822 suggests
14 that most of the party boat fishing occurs within the State 3-nautical mile limit.

15 **4.1.2 Regulatory Setting**

16 4.1.2.1 Federal and State

17 Federal and State laws and regulations pertaining to this issue area and relevant to the
18 Project are identified in Table 4.1-3.

19 4.1.2.2 Local

20 There are no local goals, policies, and/or regulations applicable to this issue area.

Table 4.1-3. Laws, Regulations, and Policies (Commercial/Recreational Fishing)

CA	Coastal Act Chapter 3 policies (see also Table 1-2)	<p>Coastal Act Chapter 3 policies applicable to this issue area are:</p> <ul style="list-style-type: none"> • Section 30234 states: Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry. • Section 30234.5 states: The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.
CA	Other	<ul style="list-style-type: none"> • California Commercial Fishing Laws and Licensing Requirements. Commercial fishing is regulated by a series of laws passed by the Fish and Game Commission and issued each year in a summary document. Seasonal and gear restrictions within the various CDFW Districts, licensing instructions and restrictions, and species-specific fishing requirements are provided in the document. Most of the MPAs have commercial fishing restrictions (based on the designation of each area), which are also listed in the summary document. • California Ocean Sport Fishing Regulations. Each year, the Fish and Game Commission issues regulations on the recreational fishing within the marine waters of the State, specifying the fishing season for species, size and bag limits, and gear restrictions, licensing requirements; a section on fishing restrictions within MPAs is also now included.

1 **4.1.3 Impact Analysis**

2 No Federal or State significance criteria for impacts to commercial and recreational
 3 fisheries have been established and Appendix G of the State CEQA Guidelines does
 4 not list fisheries as a specific resource area. Given the prevalence and importance of
 5 recreational and commercial fishing in California, previous CSLC environmental
 6 analyses have evaluated the potential loss of available area, reduction of habitat, and/or
 7 substantial decrease in the number of organisms of commercial or recreational value as
 8 the basis for analyzing impacts. The criteria are generally based on what level of loss of
 9 access to fishing areas or seasons would be expected to substantially interfere with or
 10 adversely affect commercial or recreational fishers' livelihoods. For this assessment, a
 11 significant impact to commercial or recreational fisheries would occur if the following is
 12 expected.

13 **a) Fishermen are precluded from 10 percent or more of the fishing grounds**
 14 **during the Project;**

15 **Less than Significant Impact.** The decommissioning of the offshore MOT and removal
 16 of the fuel oil submarine pipeline, including the presence of vessels and anchor lines
 17 associated with Project activities, has the potential to preclude fishermen from the
 18 offshore Project area (area around the anchored marine vessels required for
 19 decommissioning operations). Decommissioning of the offshore and surf zone
 20 segments is expected to last approximately 7 months, with the offshore segment

1 occurring from September through January and the surf zone segment occurring from
2 September through early December. During this time, the area at the terminal end of the
3 fuel oil submarine pipeline within the anchor spreads would not be available to
4 commercial or recreational fishing activities.

5 As indicated in Section 4.1.1, the principal taxa representing an estimated 95 percent of
6 the commercial catch by value in the Project area (Fish Blocks 821 and 822) include
7 lobster, squid, crab and sardines. Squid and sardines (the two most abundant taxa in
8 the commercial catch within Fish Block 822) are highly mobile and commercial fishing
9 for those species occurs throughout the region. Due to the extensive available area to
10 fish for squid and sardines within the region, the preclusion of the offshore Project area
11 is not considered significant for fishermen targeting these species.

12 Decommissioning of the offshore and surf zone segments would partially overlap with
13 the commercial lobster season, which occurs from October through March (CDFW
14 2015a); however, because the impacted area is limited to sandy bottom habitat, it is not
15 an area that would be targeted for trapping lobster. Additionally, the Project's general
16 avoidance of hard bottom habitat (where lobster trapping is concentrated) for vessel
17 anchoring would further reduce the potential for impacts to lobstermen. Therefore,
18 impacts to lobstermen are expected to be less than significant.

19 Commercial crab fishing is seasonally unrestricted with the exception of Dungeness
20 crab; however, Dungeness crab is only occasionally caught south of Monterey,
21 California (CDFW 2015b) and was not identified in the above referenced catch data for
22 Fish Blocks 821 and 822. Other species of crab likely to be found in the Project area
23 based on the catch data include rock crab (yellow, red, and brown) (*Cancer sp.*) and
24 spider crab (also referred to as sheep crab [*Loxorhynchus grandis*]), which may be
25 found along the entire coast of southern California. The habitat preferences for these
26 crabs include rocky reefs and kelp beds with the exception of the spider crab, which is
27 found on soft bottom (CDFW 2015c). Due to the extensive available area to fish for crab
28 within the region, the temporary preclusion of the offshore Project area is not
29 considered significant for fishermen targeting these species.

30 Recreational species targeted in the Project area mainly comprise four taxa: kelp bass,
31 Pacific mackerel, barracuda, and barred sand bass. All of these species are found along
32 the entire coast of southern California. However, barracuda and barred sand bass are
33 more abundant during late spring through early summer and summer, respectively
34 (Schultze 1983; CDFW 2015d). Due to the limited area of preclusion for recreational
35 fishing, the temporary nature of the preclusion and the extensive area available to
36 recreational fishers to pursue these species elsewhere in the vicinity, the impact to
37 recreational fishing is not considered significant.

1 As stated above, impacts to commercial and recreational fishing would be less than
2 significant primarily because opportunities to fish for target species are readily available
3 in the Project region and the preclusion of the offshore Project area to fishing would be
4 temporary. Minimizing the number of vessel anchors and the length of anchor lines,
5 which would reduce the size of the necessary preclusion area, would also reduce
6 potential impacts to commercial and recreational fishing. Avoiding the placement of
7 anchors on rocky substrate, the preferred habitat for lobster and most crabs, would
8 further reduce the potential impacts on lobster and crab fishing. Although no mitigation
9 is required, **MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP)** and **MM**
10 **TRA-5: Local Notice to Mariners** incorporated into the Project would further reduce
11 this less than significant impact.

12 ***b) The Project alters the seafloor in such a manner as to reduce the availability of***
13 ***that area to commercial or recreational fisheries;***

14 **Less than Significant Impact.** Exposed segments of the fuel oil submarine pipeline
15 may provide locations along which lobster and crab traps could be oriented and may
16 provide habitat for rockfish species targeted by recreational fishermen; however, due to
17 its limited habitat value, removal of the pipeline would result in less than significant
18 impacts on lobster, crab, and rockfish resources. Additionally, the removal of the
19 pipeline, anchors, and chains would result in a temporary disturbance of seafloor
20 habitat; however, this impact is expected to be short-term and less than significant, with
21 seafloor sedimentary habitat expected to return to pre-removal conditions within three to
22 6 months of the completion of decommissioning activities. Therefore, the impact would
23 be less than significant.

24 ***c) The Project results in loss or damage to commercial fishing equipment;***

25 **Less than Significant Impact.** The majority of commercial fishing activities in the
26 Project area result in the placement of traps adjacent to hard bottom habitat or purse
27 seine for pelagic species (squid and sardines). Any traps that may be set in the Project
28 area are expected to be in or adjacent to hard bottom areas and away from the
29 immediate work area with the possible exception of spider crab traps. Hard bottom
30 areas will be avoided as provided by **MM BIO-6**.

31 Project vessels transiting between local ports and the Project site may result in the
32 potential for fishing gear to be damaged. During pre-Project training, as required under
33 **MM BIO-6** and **MM BIO-1: Marine Wildlife Contingency Plan (MWCP)**, Project-
34 related vessel operators are instructed to monitor for fishing gear as they transit to work
35 areas and are instructed to avoid observed gear. Commercial fishers would also be
36 notified and aware of the additional vessel traffic that would be associated with the
37 Project as a result of **MM TRA-5: Local Notice to Mariners**. As such, the potential for

1 loss or damage to commercial fishing equipment is unlikely and not considered to be
2 significant.

3 ***d) The Project results in a substantial reduction in the Essential Fish Habitat***
4 ***required by one or more of the species managed by the Pacific Fisheries***
5 ***Management Council's (PFMC) fisheries management plans.***

6 **Less than Significant Impact.** The Magnuson-Stevens Act defines Essential Fish
7 Habitat (EFH) as those waters and substrate necessary for spawning, breeding,
8 feeding, or growth to maturity (PFMC 1998). Within the Pacific region, the fisheries for
9 coastal pelagic species, Pacific coast groundfish (over 80 species) (PFMC 2005), west
10 coast highly migratory species, and west coast salmon species are federally managed
11 and EFH for these species is identified (NOAA 2015).

12 The offshore Project area is within the EFH for coastal pelagic species (including
13 northern anchovy, Pacific sardine [*Sardinops sagax caerulea*], Pacific mackerel
14 [*Scomber japonicas*], Jack mackerel [*Trachurus symmetricus*], and market squid)
15 (PFMC 2011), groundfish, and certain U.S. west coast highly migratory species (e.g.,
16 sharks such as the common thresher shark [*Alopias vulpinus*], pelagic thresher shark
17 [*Alopias pelagicus*], and bigeye thresher shark [*Alopias superciliosus*]) (PFMC 2003,
18 2005). Additionally, the offshore Project area includes canopy kelp and hard bottom
19 substrate (rocky reef), which are both identified as a habitat areas of particular concern
20 (HAPC) (PFMC 2014). The canopy kelp HAPC includes those waters, substrate, and
21 other biogenic habitat associated with canopy-forming kelp species (e.g., *Macrocystis*
22 *spp.* and *Nereocystis sp.*). The rocky reef HAPC includes those waters, substrates, and
23 other biogenic features associated with hard substrate (e.g., bedrock, boulders, cobble,
24 gravel) to the mean higher high water mark.

25 The Coastal Pelagic Species Fisheries Management Plan (Plan) identifies non-fishing
26 effects on coastal pelagic species EFH. Identified effects that are relevant to the Project
27 include discharge of oil or release of hazardous substances. As stated in the Plan, the
28 discharge of oil or release of a hazardous substance into estuarine and marine habitats,
29 or exposure to a product of reactions resulting from the discharge of oil or a release of a
30 hazardous substance, can have both acute and chronic effects of fish resources and
31 their prey, and also potentially reduce the marketability of target species.

32 As described in Section 3.4, Biological Resources, an accidental discharge of petroleum
33 products from Project vessels and equipment would have the potential to impact marine
34 resources and EFH identified above. Additionally, although the fuel oil submarine
35 pipeline has been flushed and pigged, it is possible that residual petroleum products
36 and the biocide associated with the Nalco EC6106A preservative could be released into
37 the water column, potentially impacting EFH. Effects of the biocide from an accidental

1 discharge of the fuel oil submarine pipeline preservative are addressed in Section 3.4,
2 Biological Resources, and Section 3.8, Hazards and Hazardous Materials.

3 The Project has the potential to impact hard bottom substrate and kelp as described in
4 Section 3.4, Biological Resources, if anchors and/or anchor lines from Project-related
5 vessels are placed onto hard bottom substrate and kelp. Also as described in Section
6 3.4, Biological Resources, removal of the pipeline, which is partially exposed on the
7 seafloor, would reduce hard substrate at the Project site; however, the small area of
8 pipeline is not significant and artificial hard bottom is not identified as HAPC.

9 Although no mitigation is required, implementation of **MM BIO-7: Oil Spill Response**
10 **Plan (OSRP)** and **MM BIO-8: Flush Fuel Oil Submarine Pipeline** already incorporated
11 into the Project would further reduce this less than significant impact. Implementation of
12 **MM BIO-6**, which is also already incorporated into the Project, would ensure that
13 potential impacts to HAPC remain less than significant.

14 **4.1.4 Mitigation Summary**

15 The Project would not result in significant impacts to commercial and recreational
16 fishing; therefore, no mitigation is required. However, the implementation of the
17 following mitigation measures would further avoid or reduce this less than significant
18 impact:

- 19 • MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- 20 • MM BIO-7: Oil Spill Response Plan (OSRP).
- 21 • MM BIO-8: Flush Fuel Oil Submarine Pipeline.
- 22 • MM TRA-5: Local Notice to Mariners.

23 **4.2 CSLC ENVIRONMENTAL JUSTICE POLICY**

24 Environmental justice is defined by California law as “the fair treatment of people of all
25 races, cultures, and incomes with respect to the development, adoption,
26 implementation, and enforcement of environmental laws, regulations, and policies.” This
27 definition is consistent with the Public Trust Doctrine principle that the management of
28 trust lands is for the benefit of all of the people. The CSLC adopted an environmental
29 justice policy in October 2002 to ensure that environmental justice is an essential
30 consideration in the agency’s processes, decisions, and programs. Through its policy,
31 the CSLC reaffirms its commitment to an informed and open process in which all people
32 are treated equitably and with dignity, and in which its decisions are tempered by
33 environmental justice considerations.

- 1 As part of the CSLC environmental justice policy, the CSLC pledges to continue and
2 enhance its processes, decisions, and programs with environmental justice as an
3 essential consideration by:
- 4 1) Identifying relevant populations that might be adversely affected by CSLC
5 programs or by projects submitted by outside parties for its consideration;
 - 6 2) Seeking out community groups and leaders to encourage communication and
7 collaboration with the CSLC and its staff;
 - 8 3) Distributing public information as broadly as possible and in multiple languages,
9 as needed, to encourage participation in the CSLC's public processes;
 - 10 4) Incorporating consultations with affected community groups and leaders while
11 preparing environmental analyses of projects submitted to the CSLC for its
12 consideration;
 - 13 5) Ensuring that public documents and notices relating to human health or
14 environmental issues are concise, understandable, and readily accessible to the
15 public, in multiple languages, as needed;
 - 16 6) Holding public meetings, public hearings, and public workshops at times and in
17 locations that encourage meaningful public involvement by members of the
18 affected communities;
 - 19 7) Educating present and future generations in all walks of life about public access
20 to lands and resources managed by the CSLC;
 - 21 8) Ensuring that a range of reasonable alternatives is identified when siting
22 facilities that may adversely affect relevant populations and identifying, for the
23 CSLC's consideration, those that would minimize or eliminate environmental
24 impacts affecting such populations;
 - 25 9) Working in conjunction with Federal, State, regional, and local agencies to
26 ensure consideration of disproportionate impacts on relevant populations, by
27 instant or cumulative environmental pollution or degradation;
 - 28 10) Fostering research and data collection to better define cumulative sources of
29 pollution, exposures, risks, and impacts;
 - 30 11) Providing appropriate training on environmental justice issues to staff and the
31 CSLC so that recognition and consideration of such issues are incorporated into
32 its daily activities;
 - 33 12) Reporting periodically to the CSLC on how environmental justice is a part of the
34 programs, processes, and activities conducted by the CSLC and by proposing
35 modifications as necessary.

1 **4.2.1 Methodology**

2 The CSLC environmental justice policy does not specify a methodology for conducting
3 programmatic-level analysis of environmental justice issues. Due to the limited extent of
4 the Project's impacts on the human environment, as established in Section 3 of this
5 document, this section provides a qualitative consideration of the Project's potential to
6 disproportionately affect low-income or minority communities.

7 This analysis focuses primarily on whether the Project has the potential to affect areas
8 of high-minority populations and/or low-income communities disproportionately and thus
9 create an adverse environmental justice effect. For the purpose of the environmental
10 analysis, the Project's inconsistency with the CSLC's Environmental Justice Policy
11 would occur if the Project would:

- 12 • Have the potential to disproportionately affect minority and/or low-income
13 populations adversely; or
- 14 • Result in a substantial, disproportionate decrease in employment and economic
15 base of minority and/or low-income populations residing in immediately adjacent
16 communities.

17 **4.2.2 Project Analysis**

18 The proposed Project includes the removal and/or decommissioning of the Encina
19 Power Station (EPS) Marine Oil Terminal (MOT) located in and offshore of the City of
20 Carlsbad, San Diego County. The property under lease from the CSLC includes parcels
21 of tidelands and submerged lands lying immediately west and offshore of Carlsbad
22 State Beach. Onshore decommissioning activities would occur primarily within the EPS
23 property boundary (within U.S. Census Tracts 178.13, 179, and 180; however, work
24 activities would be limited to U.S. Census Tract 178.13 [U.S. Census Bureau 2014a]),
25 but would also extend onto Carlsbad Boulevard and Carlsbad State Beach. Additionally,
26 in order to support offshore decommissioning activities, a shore base would be
27 established and would serve as the local embarkation point for offshore crews and
28 equipment. The shore base for offshore marine operations is unknown at this time;
29 however, the most likely local embarkation point would be Oceanside Harbor due to its
30 proximity to the Project area. If dockage cannot be found there, the shore base may be
31 located in the Port of Long Beach, Port of Los Angeles, or Unified Port of San Diego.

32 The Project's limited impact on the human environment is established in various
33 sections of this document. The discussion below considers the Project's potential to
34 disproportionately affect and low-income or minority communities.

1 **Demographics**

2 As indicated in Table 4.2-1, a summary of the regional demography shows that the
 3 proposed Project site (within Tract 178.13) is located within an area consisting of a
 4 predominantly white (88.3%), non-minority population. The demographics from Tract
 5 178.13 are consistent with its surroundings, as the City of Carlsbad is also comprised of
 6 a predominantly white (82.8%), non-minority community. By comparison, these areas
 7 contain considerably less minority populations (11.7 - 17.3%) than the County of San
 8 Diego as a whole, which has a minority population of up to 36 percent. However, the
 9 adjacent City of Oceanside (where offshore operations would likely originate) includes a
 10 minority population of approximately 34.7 percent, which is more consistent with the
 11 County of San Diego as a whole.

Table 4.2-1. U.S. Census Regional Demographic Comparisons (2010)

County/City /Tract	Total Population	White Population (%)	Ethnicity of Minority Population (%)						Minority Population (%)	Persons of Hispanic or Latino Origin From Total Population (%)
			Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Two Or More Races	Some Other Race		
Tract 178.13	4,106	88.3	0.6	0.4	5.5	0.1	3.1	2.0	11.7	7.9
City of Carlsbad	105,328	82.8	1.3	0.5	7.1	0.2	4.2	4.0	17.3	13.3
City of Oceanside	167,086	65.2	4.7	0.8	6.6	1.3	5.8	15.5	34.7	35.9
County of San Diego	3,095,313	64.0	5.1	0.9	10.9	0.5	5.1	13.6	36.0	52.3

Source: DP-1 Profile of General Population and Housing Characteristics, 2010 (U.S. Census 2014b).

12 Hispanic and Latino persons are considered minority persons, which is consistent with
 13 Federal and State environmental justice policies. However, as characterized in the U.S.
 14 Census data, above, Hispanic or Latino persons may fall within or identify with any
 15 racial category (e.g., White, Black, Native American). Because an unspecified
 16 percentage of Hispanic or Latino persons identify themselves as White, the U.S.
 17 Census data do not include Hispanic or Latino in the category of “ethnic minorities.” As
 18 a result, for a given population, the total percentage of persons belonging to “ethnic
 19 minorities,” as listed in Table 4.2-1, underestimates the actual percentage of minority
 20 community members. Since Hispanic and Latino persons represent a substantial portion
 21 of the minority communities within the Project area, the percentage of each area’s
 22 population identifying themselves as Hispanic or Latino is summarized below. As shown
 23 in Table 4.2-1, approximately 7.9 percent of persons within the Project area in Tract

1 178.13 classify themselves as being of Hispanic or Latino decent. This is relatively
 2 consistent with the City of Carlsbad, where approximately 13.3 percent of persons
 3 classify themselves as being Hispanic or Latino; however, with respect to the ethnic
 4 minority populations listed above, these percentages are considerably lower than the
 5 adjacent City of Oceanside (35.9%) and the County of San Diego as a whole (52.3%).

6 **Socioeconomics**

7 As shown in Table 4.2-2, the Project site and surrounding areas (within U.S. Census
 8 Tract 178.13) contain the highest incomes (approximately \$53,875 per capita and
 9 \$102,768 per median family) and the lowest percentage of individuals (5.7%) or families
 10 (5.3%) below the established poverty level compared to the City of Carlsbad the nearby
 11 City of Oceanside, and the County of San Diego.

Table 4.2-2. Socioeconomic Comparison of Affected Environment

County/City/Tract	Per Capita Income	Median Household Income	Median Family Income	Percentage of Individuals below Poverty Level	Percentage of Families Below Poverty Level
Tract 178.13*	\$53,875	\$90,136	\$102,768	5.7%	5.3%
City of Carlsbad	\$44,142	\$82,681	\$104,505	11.9%	9.5%
City of Oceanside	\$25,944	\$48,375	\$56,546	16.7%	12.6%
County of San Diego	\$30,844	\$61,426	\$71,608	15.2%	11.3%

Sources: *U.S. Census Bureau, 2008-2012 American Community Survey 5-Year Estimates (DP03) (U.S. Census Bureau 2014c) and U.S. Census Bureau, 2013 American Community Survey 1-Year Estimates (DP03) (U.S. Census Bureau 2014d).

12 4.2.2.1 Onshore, Beach, and Surf Zone Decommissioning Activities

13 As indicated in Tables 4.2-1 and 4.2-2, the onshore decommissioning area (including
 14 the onshore, beach, and surf zone segments) within the EPS and the City of Carlsbad
 15 contains a small percentage of minority and low-income populations. In comparison to
 16 regional demographics, the Project area shows a lower percentage of minority and low-
 17 income populations than the surrounding communities or the County of San Diego as a
 18 whole. As such, onshore decommissioning activities would not result in a
 19 disproportionate impact on high-minority populations or low-income communities.
 20 Additionally, the short-term duration of onshore decommissioning activities (up to 90
 21 days for each segment over two seasons) and the limited number of crew members
 22 (approximately 18 to 25 persons) would not result in a significant increase in traffic or
 23 need for long-term housing in nearby communities. Finally, the Project would not
 24 decrease the number of employment opportunities for minority and/or low-income
 25 populations in adjacent communities because the Project is limited to the short-term
 26 decommissioning of idle infrastructure.

1 As discussed in Section 4.1, decommissioning activities would also have the potential to
2 preclude fishing activities from the Project area or result in damage to fishing gear due
3 to the presence of Project vessels and anchor lines. As mentioned above,
4 decommissioning activities in the beach and surf zone segments would occur for up to
5 90 days during the Project's second season. Project-incorporated measures including
6 **MM BIO-6** and **MM TRA-5** would reduce the potential impacts of anchors and anchor
7 lines to hard bottom habitat and fishing gear and would notify mariners of Project
8 activities, respectively. Following decommissioning, no further preclusion would be
9 required and seafloor conditions would return to pre-removal conditions within 3 to 6
10 months. As a result, no long-term socioeconomic impacts to commercial or recreational
11 fishers would result.

12 Therefore, onshore, beach, and surf zone decommissioning activities associated with
13 the Project are consistent with the CSLC Environmental Justice Policy.

14 4.2.2.2 Offshore Decommissioning Activities

15 Offshore decommissioning activities would occur over approximately 120 days during
16 the first season of the Project and would require approximately 25 crew members and
17 five offshore vessels for the duration of these activities. Offshore decommissioning
18 activities have been scheduled to avoid the summer season in order to minimize
19 potential impacts to users of Carlsbad State Beach. The shore base for marine
20 operations is unknown at this time, however, the most likely local embarkation point
21 would be Oceanside Harbor, which is located approximately 6 miles north of the
22 offshore worksite. During decommissioning, a majority of offshore personnel would
23 likely be housed on vessels, however, others may require temporary housing (hotels)
24 near the selected shore base (e.g., Oceanside Harbor) for up to 4 months. As a result,
25 the addition of offshore crew members for up to 4 months would contribute to a slight
26 increase in housing demand and local traffic in the temporary host
27 community/communities. Although the City of Oceanside has a slightly larger population
28 consisting of minority and low-income persons than the Project site and surrounding
29 areas (within U.S. Census Tract 178.13), the City of Oceanside does not contain a
30 majority of minority populations (34.7%); and its percentage of minority populations is
31 consistent with the percentage of minority populations in San Diego County as a whole
32 (36.0%). A disproportionate impact to low-income or minority populations would not
33 result in association with offshore crew lodging due to the short-term nature of the
34 Project and minor addition of personnel and traffic to the City of Oceanside.

35 As discussed in Section 4.1, decommissioning activities would also have the potential to
36 preclude the offshore Project area from fishing activities or result in damage to fishing
37 gear due to the presence of Project vessels and anchor lines. As mentioned above,
38 these activities would occur for approximately 120 days during offshore
39 decommissioning. Project-incorporated measures including **MM BIO-6** and **MM TRA-5**

1 would reduce the potential impacts of anchors and anchor lines to hard bottom habitat
2 and fishing gear and would notify mariners of Project activities, respectively. Following
3 decommissioning, no further preclusion would be required and seafloor conditions
4 would return to pre-removal conditions within 3 to 6 months. As a result, no long-term
5 socioeconomic impacts to commercial or recreational fishers would result.

6 Therefore, offshore decommissioning activities associated with the Project are
7 consistent with the CSLC Environmental Justice Policy.

8 **4.2.3 Mitigation Summary**

9 The Project would not result in significant impacts to environmental justice populations;
10 therefore, no mitigation is required. However, the implementation of the following
11 Project-incorporated mitigation measures would further avoid or reduce this less than
12 significant impact.

- 13 • MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP).
- 14 • MM TRA-5: Local Notice to Mariners.

5.0 MITIGATION MONITORING PROGRAM

The California State Lands Commission (CSLC) is the lead agency under the California Environmental Quality Act (CEQA) for the Cabrillo Power I LLC Encina Marine Oil Terminal Decommissioning Project (Project). In conjunction with approval of this Project, the CSLC adopts this Mitigation Monitoring Program (MMP) for implementation of mitigation measures (MMs) for the Project to comply with Public Resources Code section 21081.6, subdivision (a) and State CEQA Guidelines sections 15091, subdivision (d) and 15097.

The Project authorizes Cabrillo Power I LLC (Applicant) to decommission the existing non-operational Encina Marine Oil Terminal (MOT), which is part of the Encina Power Station (EPS), in accordance with the terms and conditions of its existing CSLC Lease PRC 791.1.

5.1 PURPOSE

It is important that significant impacts from the Project are mitigated to the maximum extent feasible. The purpose of a MMP is to ensure compliance and implementation of MMs; this MMP shall be used as a working guide for implementation, monitoring, and reporting for the Project's MMs.

5.2 ENFORCEMENT AND COMPLIANCE

The CSLC is responsible for enforcing this MMP. The Project Applicant is responsible for the successful implementation of and compliance with the MMs identified in this MMP. This includes all field personnel and contractors working for the Applicant.

5.3 MONITORING

The CSLC staff may delegate duties and responsibilities for monitoring to other environmental monitors or consultants as necessary. Some monitoring responsibilities may be assumed by other agencies, such as affected jurisdictions, cities, and/or the California Department of Fish and Wildlife (CDFW). The CSLC and/or its designee shall ensure that qualified environmental monitors are assigned to the Project.

Environmental Monitors. To ensure implementation and success of the MMs, an environmental monitor must be on site during all Project activities that have the potential to create significant environmental impacts or impacts for which mitigation is required. Along with the CSLC staff, the environmental monitor(s) are responsible for:

- Ensuring that the Applicant has obtained all applicable agency reviews and approvals;

- 1 • Coordinating with the Applicant to integrate the mitigation monitoring procedures
2 during Project implementation (for this Project, many of the monitoring
3 procedures shall be conducted during the deconstruction phase); and
- 4 • Ensuring that the MMP is followed.

5 The environmental monitor shall immediately report any deviation from the procedures
6 identified in this MMP to the CSLC staff or its designee. The CSLC staff or its designee
7 shall approve any deviation and its correction.

8 Workforce Personnel. Implementation of the MMP requires the full cooperation of
9 Project personnel and supervisors. Many of the MMs require action from site
10 supervisors and their crews. The following actions shall be taken to ensure successful
11 implementation.

- 12 • Relevant mitigation procedures shall be written into contracts between the
13 Applicant and any contractors.
- 14 • For this Project, a marine wildlife training seminar (under **MM BIO-1: Marine
15 Wildlife Contingency Plan (MWCP)**) for all Project personnel working in the
16 marine environment would be held as part of a Project kickoff meeting wherein
17 Project mitigation would be discussed.

18 General Reporting Procedures. A monitoring record form shall be submitted to the
19 Applicant, and once the Project is complete, a compilation of all the logs shall be
20 submitted to the CSLC staff. The CSLC staff or its designated environmental monitor
21 shall develop a checklist to track all procedures required for each MM and shall ensure
22 that the timing specified for the procedures is followed. The environmental monitor shall
23 note any issues that may occur and take appropriate action to resolve them.

24 Public Access to Records. Records and reports are open to the public and would be
25 provided upon request.

26 **5.4 MITIGATION MONITORING TABLE**

27 This section presents the mitigation monitoring table (Table 5-1) for the following
28 environmental disciplines: Aesthetics, Biological Resources, Cultural Resources,
29 Hazards and Hazardous Materials, Hydrology and Water Quality, Noise, and
30 Transportation/Traffic. All other environmental disciplines were found to have less than
31 significant or no impacts and are, therefore, not included below. Additionally, Applicant-
32 proposed measures (APMs) would be implemented, as feasible, to further minimize less
33 than significant impacts for the following environmental disciplines: Air Quality,
34 Biological Resources, Greenhouse Gas Emissions, and Utilities and Service Systems.

1 These APMs are included here for the purpose of tracking. The table lists the following
2 information by column:

- 3 • Potential Impact (impact number, title, and impact class);
- 4 • Mitigation [or Applicant-Proposed] Measure (full text of the measure);
- 5 • Location (where impact occurs and mitigation measure should be applied);
- 6 • Monitoring/Reporting Action (action to be taken by monitor or Lead Agency);
- 7 • Timing (before, during, or after construction; during operation, etc.);
- 8 • Responsible Party; and
- 9 • Effectiveness Criteria (how the agency can know if the measure is effective).

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
Aesthetics						
Scenic Vista View Impact	MM AES-1: Project Scheduling. Onshore Project decommissioning shall be conducted outside of the peak public beach/ocean-use periods (summer [May 31 to September 5] and weekends) in order to minimize the number of viewers affected by the Project to the extent feasible. Exceptions allowing weekend work may occur in certain limited cases such as when work requires an extreme low tide that only occurs on a weekend.	Onshore	Review Project schedule and observe Project implementation for consistency with approved schedule	Throughout Project	Applicant and CSLC	Peak beach-use periods avoided
Night-Lighting	MM AES-2: Night-Lighting Spillage Minimization. Night-lighting required for Project decommissioning activities shall be shielded and directed to the immediate work area to avoid light spillage onto private property.	Onshore/Offshore	Observe nighttime lighting positioning for compliance	During nighttime work	Applicant and CSLC	Off-site light spillage minimized
Air Quality						
Air Emissions and Greenhouse Gases	APM AIR-1: Air Emissions Compliance Program. The Project will incorporate an Air Emissions Compliance Program to ensure that Project emissions are in conformance with the approved Project. This Program will provide detailed information regarding the internal combustion engines used, the duration of use, the fuel consumed, and the calculated emissions.	Onshore/Offshore	Review Project elements for compliance with Program	Throughout Project	Applicant and CSLC	Program criteria met (e.g., limits on duration of engine use, engine types used, fuel consumed)
	APM AIR-2: Low-Emission Engines – Offshore. Use marine vessels and offshore equipment with low emissions engines, certified to meet Federal Tier III requirements, if available.	Offshore	Document engines used or attempts to obtain Tier 3 engines	Throughout offshore Project operations	Applicant and CSLC	Reduce Project emissions from offshore and onshore engines
	APM AIR-3: Low-Emission Engines – Onshore. Use heavy equipment onshore with the best available low emissions engines (Tier III or IV), if available.	Onshore				
	APM AIR-4: Mobilize from Nearest Port. Mobilize marine vessels and equipment from the	Offshore	Document base port location	Throughout offshore	Applicant and CSLC	Minimize emissions

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	nearest port supporting these vessels.			Project operations		associated with trips from base port to Project site
	APM AIR-5: Dispose Materials at Nearest Port. Dispose of recovered anchors and associated materials at the nearest port accepting these materials.	Offshore	Document recovered offshore material disposal sites	Throughout offshore Project operations	Applicant and CSLC	Minimize emissions associated with trips from the Project site to materials disposal site
	APM AIR-6: Low-Sulfur Fuel. All diesel-powered equipment used during the Project shall use diesel fuel with a sulfur content of 15 parts per million (ppm) or less.	Onshore/Offshore	Document fuel source and type used	Throughout Project operations	Applicant and CSLC	Minimize emissions associated with fuel type used
Biological Resources						
Grunion Spawning	APM BIO-1a: Grunion Avoidance. Intertidal activities will be scheduled outside of the grunion spawning season, which is generally three or four nights after the highest tide associated with each full or new moon and then only for a 1- to 3-hour period each night following high tide from late February or early March to August or early September.	Beach/Surf Zone	Retain final Project schedule and conduct site visits	February through September	Applicant and CSLC	Project operations on beach avoided during grunion spawning
	APM BIO-1b: Grunion Surveys and Avoidance. If scheduling is not possible under APM BIO-1a, intertidal grunion surveys will be conducted during grunion spawning tidal periods to document that grunion have not used the site. Intertidal activities shall not occur if grunion spawning is observed in the Project area.	Beach/Surf Zone	Retain copy of grunion surveys	February through September	Applicant and CSLC	Project operations on beach avoided during grunion spawning
Spread of Non-Native Aquatic Species	APM BIO-2: Prevent Introduction of Non-Native Aquatic Species (NAS). All Project vessels shall: (1) originate from Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay; (2) be	Hull cleaning/biofouling removal to	Retain Biofouling Removal and Hull Husbandry	Biofouling removal Prior to Project	Applicant and CSLC	Introduction of NAS avoided Vessel operators made aware of

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
(NAS)	continuously based out of Oceanside Harbor, the Ports of Long Beach/Los Angeles, or San Diego Bay since last dry docking; or (3) have underwater surfaces cleaned before entering southern California at vessel origination point and immediately prior to transiting to the Project site. Additionally, and regardless of vessel size, ballast water for all Project vessels must be managed consistent with California State Lands Commission (CSLC) ballast management regulations, and Biofouling Removal and Hull Husbandry Reporting Forms shall be submitted to CSLC staff. Project vessels shall also be available for inspection by CSLC staff for compliance. Further, as part of the Project kickoff meeting, a qualified marine biologist, approved by CSLC staff, shall provide information to all Project personnel about the spread of NAS in California waters and the programs (CSLC Ballast Water Management Program and Biofouling Removal and Hull Husbandry Reporting) that will be implemented to minimize this hazard.	be conducted at vessel origination site ROV survey conducted at Project site At Project kickoff meeting site	Reporting Forms Conduct ROV survey for compliance with biofouling removal Retain Project kickoff meeting sign-in sheet	vessels transiting to Project site Submit Biofouling Removal and Hull Husbandry Reporting Forms prior to Project operations ROV survey conducted prior to Project operations During Project kickoff meeting		NAS regulations
Marine Vessel and Wildlife Interaction	MM BIO-1: Marine Wildlife Contingency Plan (MWCP). A MWCP shall be prepared for review and approval by California State Lands Commission staff prior to the commencement of decommissioning activities. The MWCP shall include, but not be limited to, the following elements: <ul style="list-style-type: none"> Description of the pre-decommissioning training seminar that will be provided to educate Project personnel on identifying marine wildlife in the Project area and to provide an overview of the wildlife mitigation measures to be implemented; 	Offshore	Retain MWCP and marine wildlife monitor notes	During all Project activities requiring the use of marine vessels and dynamic pipe ramming	Applicant and CSLC	Vessel- and noise-related impacts to marine wildlife avoided

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	<ul style="list-style-type: none"> • Qualifications, number, location, and authority of onboard Marine Wildlife Monitors (MWMs); • Acoustic safety zone radius that will be enforced by the MWMs during dynamic pipe ramming activities; • Distance, speed, and direction transiting vessels will maintain when in proximity to a marine mammal or reptile; • Discussion of how impacts associated with marine wildlife entanglement in Project vessel anchor lines will be minimized; and • Observation recording procedures and reporting requirements in the event of an observed impact to marine wildlife. 					
Underwater Noise Impact on Marine Wildlife	<p>MM BIO-2: Dynamic Pipe Ramming (DPR) Soft-Start and Ramp-Up Procedure. The contractor conducting DPR operations shall begin the procedure at a reduced level and repeat the sound producing activity, gradually increasing the intensity of the operation prior to initiating normal construction levels. The duration of the ramp-up during Project operations shall be determined by a qualified marine biologist and based upon the findings of a sound source characterization study for DPR. This procedure shall be used any time DPR operations are initiated.</p>	Surf Zone/Offshore	On-site monitor to verify	During DPR	Applicant and CSLC	Soft-start of DPR alerts wildlife of DPR operations prior to full implementation
	<p>MM BIO-3: Dynamic Pipe Ramming (DPR) Sound Source Characterization. Prior to DPR operations, a marine acoustics specialist shall be retained to conduct underwater noise measurements during a trial operation of the equipment at the Project site. In coordination with the National Oceanic and Atmospheric Administration (NOAA), the results of the underwater noise measurements shall be used to</p>	Surf Zone/Offshore	Retain copy of sound measurements from underwater acoustic specialist and resulting marine wildlife safety radii	Prior to DPR operations for removal of the surf zone segment of the fuel oil submarine	Applicant and CSLC	Sound source characterization conducted and marine wildlife safety radii determined

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	determine preclusion radii for marine wildlife (mammals and reptiles) safety during DPR operations based on NOAA’s acoustic thresholds in place at the time of Project operations for permanent and temporary threshold shifts. A copy of the sound source characterization shall be provided to California State Lands Commission staff and NOAA within 2 weeks of completion.			pipeline		
	MM BIO-4: Marine Wildlife Monitoring During Sound Source Characterization and Dynamic Pipe Ramming (DPR). Qualified marine wildlife monitors (MWMs) shall be onsite and present throughout sound source characterization and DPR operations. Once the marine wildlife preclusion radii (i.e., safety zone) have been determined, MWMs shall be located such that he/she has a clear view of the marine waters within the safety zone and beyond. The MWMs shall indicate that a designated safety zone is clear of marine wildlife (mammals and reptiles) prior to the start of DPR operations and shall have the authority to stop DPR operations if marine wildlife are observed at any time within the safety zone. The initial safety zone to be implemented during sound source characterization will be 1,000 feet. The initial safety zone will be revised to reflect new thresholds for permanent and temporary threshold shifts (PTS and TTS) should they be finalized by the National Oceanic and Atmospheric Administration prior to Project operations. The safety zone to be implemented during DPR will be modified as necessary based on the sound source characterization results and will reflect the PTS and TTS thresholds in place at the time of Project operations.	Surf Zone/ Offshore	Retain copy of MWM report	Prior to DPR operations for removal of the surf zone segment of the fuel oil submarine pipeline	Applicant, CSLC, and NMFS	Marine wildlife protected during sound source characterization and DPR

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
Sedimentary Habitat Alteration from Project-generated Debris	<p>MM BIO-5: Pre- and Post-Decommissioning Seafloor Debris Survey and Debris Removal.</p> <p>The offshore work shall begin and end with seafloor debris surveys. The Applicant’s contractor shall perform a side-scan sonar (with 400% coverage) and bathymetric survey, or multi-beam sonar survey, of the underwater worksite prior to the arrival of the contractor’s marine equipment spread at the worksite. The survey shall encompass the entire underwater worksite bordered by the contractor’s planned derrick barge anchorages plus an offset of approximately 500 feet. Derrick barge anchorages shall be positioned to avoid rock outcroppings and kelp beds. A map shall be produced by the surveyor and shall serve as the baseline for the seafloor conditions at the underwater worksite prior to the start of work.</p> <p>All surveys employing low-energy geophysical equipment, including remotely operated vehicle surveys, must be conducted by an entity holding a valid geophysical survey permit under the California State Lands Commission’s (CSLC) Low-Energy Offshore Geophysical Permit Program (see www.slc.ca.gov/Programs/OGPP.html). Therefore, the Applicant shall obtain a valid permit prior to initiating the surveys.</p> <p>After decommissioning work is complete, the contractor shall be required to perform a second side-scan sonar (with 400% coverage) and bathymetric survey in the same underwater work area. The surveyors shall again produce a map of the survey area and use it to identify any items of seafloor debris introduced into the underwater worksite by decommissioning operations. The</p>	Offshore	<p>Obtain Offshore Geophysical Survey Permit from the CSLC</p> <p>Retain copies of survey data</p>	<p>Pre-decommissioning survey no more than 90 days prior to marine activities</p> <p>Post-decommissioning surveys and debris removal no more than 90 days after completion of Project activities in the marine environment</p>	Applicant and CSLC	Surveys conducted providing evidence that any Project debris on the ocean floor has been recovered

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	contractor shall remove all items of debris, if any, related to the offshore tanker berth facilities and operations and the decommissioning work. The Applicant shall provide: (1) the pre-decommissioning survey map to CSLC staff and permitting agencies for approval at least 60 days prior to Project implementation; and (2) the post-decommissioning map to CSLC staff within 30 days of survey completion for agency sign-off.					
Impact of Anchor Placement on Rocky Habitat and Kelp Beds	MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP). A final MSAP shall be developed following the analysis of seafloor habitat and bathymetric data to be collected during the pre-decommissioning survey. Additionally, a diver-biologist survey shall be conducted to ensure that all pre-determined vessel anchor locations are positioned in sedimentary habitats and avoid rocky substrate and kelp by at least 50 feet. The final plan shall be submitted to California State Lands Commission staff for review at least 2 weeks prior to the commencement of Project activities.	Offshore	Retain copy of the final MSAP and notes from diver biologist regarding anchor placement	At least 30 days prior to initiation of decommissioning requiring anchoring	Applicant and CSLC	Rocky substrate and kelp beds are avoided during anchor placement
Accidental Discharge of Petroleum Products into the Marine Environment	MM BIO-7: Oil Spill Response Plan (OSRP). An OSRP has been prepared for the Project. Each Project vessel shall have a copy of the plan and shall maintain the required onboard and subcontracted spill response equipment. Additional shore-based response equipment shall be onsite, which can be used for first-response containment and collection of petroleum that reaches the shoreline. If needed, subcontracted shoreline recovery personnel and additional equipment, as identified in the OSRP shall be deployed to the site to assist in the recovery and disposal of spilled petroleum.	Offshore	Retain copy of OSRP and any incident reports Periodic inspection of vessels and onshore oil spill response equipment	During decommissioning activities in the marine environment	Applicant and CSLC	Discharge of petroleum products into the marine environment are avoided or, if one occurs, it is appropriately handled

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Timing	Responsible Party	Effectiveness Criteria
Accidental Release of Pipeline Water Preservative into Marine Environment	MM BIO-8: Flush Fuel Oil Submarine Pipeline. Prior to opening the fuel oil submarine pipeline to the ocean during the decommissioning process, this pipeline shall be flushed from its offshore termination to its onshore termination at the beach valve pit with seawater to displace the potable water and preservative. The potable water and preservative mixture shall be recovered at the beach valve pit and transported off-site for treatment and disposal.	Onshore/ Offshore	Site inspection to ensure pipeline was flushed Retain copy of communication indicating that displaced water was disposed at an appropriate facility		Applicant and CSLC	Release of the pipeline water preservative in the marine environment avoided
Cultural and Paleontological Resources						
Disturbance of Archaeological Resources	MM CUL-1: Cultural Resource Training. A pre-construction meeting, inclusive of agency personnel, shall be organized to educate onsite construction personnel as to the sensitivity of archaeological and tribal cultural resources in the area. If agency personnel cannot attend, the meeting shall be held and documentation of the meeting shall be submitted to those agencies. The Applicant's personnel shall instruct all construction and Project personnel to avoid removing cultural materials from the Project site. Evidence of compliance with this mitigation measure shall be documented, and provided to California State Lands Commission staff, prior to onshore work.		Document training	Prior to onshore excavations	Applicant and CSLC	Educate workers on the potential for cultural resources
	MM CUL-2: Archaeological and Tribal Cultural Resource Monitoring. All construction will be confined to previously disturbed areas within the beach valve pit if feasible; however, to ensure no previously unknown archaeological or tribal cultural resources are unintentionally damaged, all excavation shall be monitored by a professional archaeologist and a Native American representative, who shall have the authority to	Onshore	Extended Phase I Subsurface Archaeological Investigation & retain study documentation/ documentation of any additional	Prior to and/or during onshore ground disturbance	Applicant and CSLC	Confine Project disturbance area to previously disturbed areas Any archaeological resources within the Project

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	temporarily halt or redirect Project construction in the event that potentially significant cultural resources are exposed.		mitigation compliance Alternately, retain monitors' records and any subsequent mitigation activities (e.g., artifact collection/ curation)			disturbance area are identified and appropriately managed
	<p>MM CUL-3: Redirect Work if Previously Unknown Archaeological or Tribal Cultural Resources are Discovered. In the event that potentially significant archaeological or tribal cultural resources are discovered any time during construction, all earth disturbing work within the vicinity of the discovery shall be temporarily suspended or redirected until a professional archaeologist and a representative from the culturally affiliated California Native American tribe(s) (tribal representative) as determined by the Native American Heritage Commission have evaluated the nature and significance of the discovery. In the event that a potentially significant archaeological or tribal cultural resource is discovered, Cabrillo Power I LLC, the California State Lands Commission (CSLC), and any local, State or Federal agency with approval or permitting authority over the Project that has requested/ required such notification shall be notified.</p> <p>Impacts to previously unknown significant archaeological or tribal cultural resources shall be avoided through preservation in place if feasible.</p>	Onshore/ Offshore	<p>Inform Project contractors of archaeological resource notification procedure</p> <p>Document any reported finds including retention of any associated archaeological reports</p>	Throughout ground disturbing Project operations	Applicant and CSLC	Any unanticipated cultural resource finds are avoided until evaluated and mitigated

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	<p>Damaging effects to tribal cultural resources will be avoided or minimized following the measures identified in Public Resources Code section 21084.3, subdivision (b), if feasible, unless other measures are mutually agreed to by the lead archaeologist and tribal representative that would be as or more effective.</p> <p>If the lead archaeologist and tribal representative(s) mutually agree that damaging effects to tribal cultural resources will be avoided or minimized, then work in the area may resume. If the lead archaeologist and tribal representative(s) do not agree, the CSLC's tribal liaison will attempt to resolve the issue. If the tribal liaison cannot resolve the issue, the tribal liaison will submit the matter to the CSLC's Executive Officer for resolution. A Native American representative shall monitor any mitigation work associated with Native American cultural material.</p>					
Disturbance of Paleontological Resources	<p>MM CUL-4: Paleontological Resource Evaluation and Mitigation Plan. A qualified paleontologist shall be retained to evaluate the onshore activities and develop a Paleontological Resource Evaluation and Mitigation Plan if Project activities extend into previously undisturbed sedimentary formations. The mitigation plan shall include construction monitoring and collection and archiving of any paleontological finds.</p>	Onshore	Retain paleontologist and resulting report	Throughout onshore ground disturbing Project operations	Applicant and CSLC	Paleontological resources are avoided or appropriately mitigated (e.g., collected and curated)
Disturbance of Human Remains	<p>MM CUL-5: Proper Disposition of Human Remains. If human remains are unearthed, State Health and Safety Code section 7050.5 requires that no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.98. If the remains</p>	Onshore/Offshore	Retain record of any finds that are investigated as possible human remains	Throughout Project implementation	Applicant and CSLC	Any human remains encountered on the Project site are appropriately managed

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission. Cabrillo Power I LLC and California State Lands Commission staff shall be notified immediately of the discovery.					
Hazards and Hazardous Materials						
Asbestos	MM HAZ-1: Use Certified Asbestos Abatement Contractor. Pipeline removal shall be conducted in accordance with all regulations pertaining to asbestos utilizing a certified asbestos abatement contractor to perform any such work.	Onshore/Offshore	Confirm certified asbestos contractor Conduct site inspections to ensure certified personnel are conducting work	During pipeline removal activities impacting asbestos-containing material	Applicant and CSLC	Asbestos-containing material appropriately handled to avoid health impacts
Lead-Based Paint (LBP)	MM HAZ-2: Licensed/Certified Lead-Based Paint (LBP) Contractor. A California licensed contractor certified by the California Department of Public Health shall be contracted to accomplish LBP abatement prior to the commencement of onshore demolition and to ensure proper disposal of paint flakes (which must be handled as a hazardous waste), abated pipes, and equipment.	Onshore	Confirm certified LBP contractor Conduct site inspections to ensure certified personnel conducting work	Before decommissioning operations impacting LBP	Applicant and CSLC	LBP health hazard appropriately abated
Impacted Soil	MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA). An extended Phase I ESA review, as well as the assessment of soils around and in the beach valve pit, shall be conducted to address potential soil contamination issues at the Project site prior to the commencement of decommissioning activities. If contamination is identified, the appropriate measures to address the hazard shall be added to the Contractor Work Plan. This may include excavation and removal of contaminated soil to a legal disposal site, or onsite treatment of contaminated soil. A copy of the Phase 1 ESA	Onshore	Retain Extended Phase I ESA Report Conduct site visits to ensure any required remedial activities are conducted	Before start of onshore decommissioning activities	Applicant and CSLC County of San Diego Department of Environmental Health, Hazardous Materials Division	Any on-site contaminated soil is appropriately addressed to ensure that no human or environmental health hazards result from Project activities

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	shall be provided to California State Lands Commission staff within 2 weeks of completion.					
	Alternative to MM HAZ-3a: MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances. All work requiring removal of facilities shall be conducted by personnel trained to work with hazardous substances and any suspicious soils (stained or with an unusual odor) or groundwater (showing a sheen or with an unusual odor), shall be tested and treated in accordance with all applicable laws.	Onshore	Retain list of Project personnel and certifications for working with hazardous substances Record all actions related to suspicious soil or water encountered at the Project site Conduct site visits to ensure certified personnel are working on-site	During onshore Project operations	Applicant and CSLC County of San Diego Department of Environmental Health, Hazardous Materials Division	Any on-site contaminated soil is appropriately addressed to ensure that no human or environmental health hazards result from Project activities
	MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil. Soil in the bottom of the beach valve pit known to have levels of TPH shall be disposed of as a petroleum-containing special waste.	Onshore – beach valve pit/ vertical vault	Site inspection to ensure impacted soil is being removed from site (as necessary) Retain copy of facility-signed waste manifest indicating soil was accepted at an appropriate waste disposal facility	Before and/or during onshore Project operations	Applicant and CSLC	Any on-site contaminated soil is appropriately addressed to ensure that no human or environmental health hazards result from Project activities

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Timing	Responsible Party	Effectiveness Criteria
Accidental Release of Hazardous Material	<p>MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan Measures. The onshore contractor shall develop and implement hazardous materials management and contingency plan measures for onshore operations. The measures shall be provided to California State Lands Commission staff as part of a Stormwater Pollution Prevention Plan or a separate plan prior to Project implementation. Measures shall include, but not be limited to, identification of: appropriate fueling and maintenance areas for equipment; best management practices for fueling and operation of equipment (e.g., daily inspection of equipment); a spill response, and spill response supplies to be maintained onsite.</p> <p>Implement MM BIO-7: Oil Spill Response Plan (OSRP) (see above)</p>	Onshore	<p>Retain copy of the Plan</p> <p>Conduct site visits to ensure Plan is being implemented</p>	Prior to onshore Project operations	Applicant and CSLC	Accidental releases of hazardous material is avoided or responded to appropriately
Hydrology and Water Quality						
Violation of Water Quality Standards	<p>Implement MM BIO-6: Final Marine Safety and Anchoring Plan (MSAP) (see above)</p> <p>Implement MM BIO-7: Oil Spill Response Plan (OSRP) (see above)</p> <p>Implement MM BIO-8: Flush Fuel Oil Submarine Pipeline (see above)</p> <p>Implement MM HAZ-3a: Extended Phase I Environmental Site Assessment (ESA) (see above)</p> <p>Implement MM HAZ-3b: Use Personnel Trained to Work with Hazardous Substances (see above)</p> <p>Implement MM HAZ-4: Disposal of Total Petroleum Hydrocarbon (TPH)-Containing Soil (see above)</p> <p>Implement MM HAZ-5: Onshore Hazardous Materials Management and Contingency Plan Measures (see above)</p>					
Noise						
Short-term Noise in Air	<p>MM NOI-1: Advanced Noticing. Advanced notices shall be posted on the beach and/or along Carlsbad Boulevard within a 1,500-foot radius around the fuel oil submarine pipeline to notify the public about the location and timing of decommissioning operations. The notices shall be: (1) posted at least 1 week prior to any decommissioning operations on the beach or ocean, and shall include a map of the Project site, contact name and phone number; (2) maintained</p>	Onshore	<p>Retain copy of notice</p> <p>Photo document notices in place</p> <p>Conduct site inspections to ensure notices are maintained</p>	At least one week prior to and during beach and offshore Project operations	Applicant and CSLC	Advanced notices posted

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	until all Project operations impacting the beach and marine environment have been completed; and (3) removed within 1 week of completing the operations described in the notice.					
	MM NOI-2: Shielding of Stationary Equipment. Onshore stationary noise sources shall be shielded, where feasible, using enclosures or barriers constructed of temporary prefabricated sound blankets or sound walls.	Onshore	Conduct site inspections to verify use of portable shields	During onshore Project operations	Applicant and CSLC	Shields in place to reduce noise transmission
Short-term Underwater Noise from DPR	MM NOI-3: Advanced Notice to Swimmers and Divers. At least 1 week prior to and during dynamic pipe ramming (DPR) operations, written notice to swimmers and divers shall be posted at area dive shops and along the beach within 1,500 feet of the DPR site indicating that swimming and diving in the Project area may be harmful due to underwater noise impacts during DPR operations. The notice shall state that the Project area should be avoided during the DPR operation period, which shall be identified on the notice along with a map showing the Project area and suggested area of preclusion for divers and swimmers. The notice will also provide a contact name and phone number.	Onshore	Retain copy of notice Conduct site inspections to ensure notices are in place	At least one week prior to and during DPR operations	Applicant and CSLC	Advanced notices posted
	MM NOI-4: Observation and Removal of Divers and Swimmers from Waters in Project Area. Marine wildlife monitors (MWMs) onboard Project vessels shall be instructed to observe for non-Project-related divers or swimmers in or about to enter the safety zone established for marine wildlife; however, the safety zone for human divers and swimmers may be modified based on the sound source characterization to be conducted for dynamic pipe ramming. If such persons are observed by MWMs or vessel crews,	Offshore	Retain copy of MWM report	Immediately prior to and during DPR operations, including sound source characterization	Applicant and CSLC	Project area avoided by swimmers and divers during DPR operations

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	a support vessel shall be mobilized to inform them that their presence is not allowed in the Project safety zone, and the vessel crew shall arrange for them to be escorted from the active survey area.					
Transportation/Traffic						
Traffic Circulation	MM TRA-1: Trucks Avoid Peak Hours. Construction truck traffic affecting State highways shall be confined to hours outside of the peak AM and PM commute periods.	Onshore	Conduct site inspections	During onshore Project operations	Applicant and CSLC	
	MM TRA-2: Carpooling. The contractor shall implement a worker carpool program to minimize the number of vehicular trips required to transport workers to and from the Project site. This measure shall be identified as a requirement in the contractor bid package.	Onshore	Conduct site inspections. Create/maintain list of workers who carpool	During onshore Project operations	Applicant and CSLC	
Traffic Hazards	MM TRA-3: Construction Safety and Traffic Management/Control (CSTMC) Plan. A CSTMC Plan shall be developed for review by the City of Carlsbad and implemented. The Plan shall include, but not necessarily be limited to: (1) traffic control strategies; (2) traffic control devices to be used; (3) public awareness strategies; (4) motorist information methods; (5) alternate pedestrian and bicycle access routing; (6) work zone safety management strategies; and (7) contingency and incident plans.	Onshore	Retain copy of Plan Conduct site inspections	During onshore Project operations	Applicant, CSLC, and City of Carlsbad	Construction traffic safety measures implemented
Infrastructure	MM TRA-4: Protect Infrastructure Improvements. The Applicant shall ensure that the onshore contractor includes proper precautions to protect all existing pavement, curbs, gutters, and drainage structures from unintentional damage during Project construction. Any portion damaged as a result of Project construction shall be repaired or replaced in accordance with current City of Carlsbad Standard	Onshore	List protection measures and photo document roads before/after Project operations Obtain written confirmation that any needed	Prior to, during and, if necessary, after Project operations	Applicant, CSLC, and City of Carlsbad	Infrastructure protection measures implemented and any necessary repairs made

Table 5-1. Mitigation Monitoring Program

Potential Impact	Mitigation Measure (MM)	Location	Monitoring/ Reporting Action	Timing	Responsible Party	Effectiveness Criteria
	Construction Details.		repairs were made to City's satisfaction.			
Offshore Marine Traffic	MM TRA-5: Local Notice to Mariners. All offshore operations shall be described in a Local Notice to Mariners to be submitted to the U.S. Coast Guard at least 15 days prior to decommissioning activities.	Offshore	Retain copy of notice	Prior to offshore Project operations	Applicant, CSLC, and U.S. Coast Guard	Notice posted to inform mariners of Project traffic and operations
Utilities and Service Systems						
Solid Waste Disposal Capacity	APM UTI-1: Reuse and Recycle Debris. The decommissioning contractor shall dispose of recovered materials (e.g., anchors, chains, riprap, piping) that can be reused and recycled at an appropriate facility if feasible.	Onshore/ Offshore	Require contractor to identify final disposition of Project debris	After each Project decommissioning phase	Applicant and CSLC	Documented attempt to reuse or recycle Project debris

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6.0 MND PREPARATION SOURCES AND REFERENCES

This Mitigated Negative Declaration (MND) was prepared by the staff of the California State Lands Commission's (CSLC) Division of Environmental Planning and Management (DEPM), with the assistance of Padre Associates, Inc. The analysis in the MND is based on information identified, acquired, reviewed, and synthesized based on DEPM guidance and recommendations.

6.1 CSLC STAFF

Project Manager: Kelly Keen, Environmental Scientist, DEPM
Other: Eric Gillies, Assistant Chief, DEPM
Cy R. Oggins, Chief, DEPM

6.2 SECTION AUTHORS AND/OR REVIEWERS

Name and Title	Affiliation	MND Sections
Simon Poulter, Principal	Padre	All
Donna Hebert, Project Manager	Padre	All
Matthew Ingamells, Senior Biologist	Padre	Terrestrial Biology, Air Quality, Greenhouse Gases
Ray de Wit, Senior Marine Scientist	Padre	Marine Biology, Commercial Fisheries
Jennifer Leighton, Environmental Specialist	Padre	Environmental Justice
Patrick Crooks, Environmental Specialist	Padre	Air Quality, Greenhouse Gases, Commercial Fisheries

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