

1 **3.9 HYDROLOGY AND WATER QUALITY**

<b>HYDROLOGY AND WATER QUALITY – Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant with Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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)**

<b>U.S.</b>	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"> <li>• <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.</li> <li>• <u>National Pollutant Discharge Elimination System (NPDES)</u>. Section 402 (33 USC 1342) establishes conditions and permitting for discharges of pollutants under the NPDES.</li> <li>• <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.</li> <li>• <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.</li> </ul>
<b>U.S.</b>	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.
<b>U.S.</b>	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.
<b>CA</b>	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"> <li>• <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.</li> <li>• 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.</li> </ul>
<b>CA</b>	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"> <li>• 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.</li> <li>• 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.</li> </ul>
<b>CA</b>	Other	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>

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.