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?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Environmental Setting

3.3.1.1 Local Climate and Meteorological Conditions

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

3.3.1.2 Criteria Pollutants

Criteria air pollutants are those contaminants for which State and Federal ambient air quality standards have been established for the protection of public health and welfare. Criteria pollutants include: ozone (O_3) carbon monoxide (CO), oxides of nitrogen (NO_X), sulfur dioxide (SO_2), and particulate matter.

- **O_3** is formed in the atmosphere through a series of complex photochemical reactions involving NO_X, reactive organic gases (ROGs) (also known as reactive organic compounds [ROCs]), and sunlight occurring over several hours. Since O_3 is not emitted directly into the atmosphere, but is formed as a result of photochemical reactions, it is classified as a secondary or regional pollutant. Because these O_3-forming reactions take time, peak O_3 levels are often found downwind of major source areas. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma, and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.
- **CO** is primarily formed through the incomplete combustion of organic fuels. Higher CO values are generally measured during winter when dispersion is limited by morning surface inversions. Seasonal and diurnal variations in meteorological conditions lead to lower values in summer and in the afternoon. CO is an odorless, colorless gas that affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease and affect mental alertness and vision.
- **Nitric oxide (NO)** is a colorless gas formed during combustion processes which rapidly oxidizes to form nitrogen dioxide (NO_2), a brownish gas. The highest NO_2 values are generally measured in urbanized areas with heavy traffic. Exposure to NO_2 may increase the potential for respiratory infections in children and cause difficulty in breathing even among healthy persons and especially among asthmatics.
- **SO_2** is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels, such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways, leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.
- **Particulate Matter**. Ambient air quality standards have been set for two classes of particulate matter: PM_{10} (coarse particulate matter less than 10 microns in aerodynamic diameter) and $PM_{2.5}$ (fine particulate matter 2.5 microns or less in aerodynamic diameter). Both consist of different types of particles suspended in

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

3.3.1.3 Local Air Quality

The Project site is located within the jurisdiction of the San Diego County Air Pollution Control District (SDCAPCD) and within the San Diego Air Basin. The San Diego Air Basin is designated as nonattainment for both the Federal and State ozone standards and the State PM_{10} and $PM_{2.5}$ standards. The closest air quality monitoring station and most representative of the Project site is the Camp Pendleton station, located 6.5 miles north-northwest of the Project site. The most recent ambient air quality data from the Project area indicate that State and Federal 8-hour O_3 standards are occasionally exceeded in the area (Table 3.3-1).

Table 3.3-1. Summary of Ambient Air Quality Data

Pollutant		2011	2012	2013
O_3 (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/m³])	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.

3.3.2 Regulatory Setting

3.3.2.1 Federal and State

Federal and State laws and regulations pertaining to this issue area and relevant to the 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.)	(PM_{10} and $PM_{2.5}$), and lead (Pb). 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. 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. • 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. 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 O_3 and adopt a NAAQS for fine particulate matter ($PM_{2.5}$).
CA	California Clean Air Act of 1988 (CCAA) (Assembly Bill [AB] 2595)	The CCAA requires all air districts in the State to endeavor to achieve and maintain State ambient air quality standards for O_3, CO, SO_2, NO_2, 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 O_3 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.
CA	Coastal Act Chapter 3 policies (see also Table 1-2)	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.
CA	Other	• 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.

3.3.2.2 Local

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

The SDCAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to progress towards attainment of State O_3 standards. Currently, the San Diego Air Basin is in "non-attainment" status for Federal O_3 and the State PM_{10} and $PM_{2.5}$; however, an attainment plan is only available for O_3. The RAQS was adopted in 1992 and was updated as recently as 2009, which was the latest update incorporating minor changes to the prior 2004 update. The 2009 update mostly clarifies and enhances emission reductions by implementing new ROC and NOx reduction measures. The criteria pollutant standards are generally attained when each air quality monitor within the region has had no exceedances during the previous 3 calendar years.

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

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

- Policy C.6: The City shall monitor all construction to ensure that proper steps are taken by developers to reduce short-term construction related impacts to air resources. During cleaning, grading, earth moving, or excavation developers shall:
  - Control fugitive dust by regular watering, paving construction roads, or other 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 repeated soakings, as necessary, to maintain the crust and prevent dust pick-up by the wind;
  - Street sweeping, should silt be carried over to adjacent public thoroughfares;

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

3.3.3 Impact Analysis

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

No Impact. The RAQS outlines the SDAPCD's plans and control measures to attain State air quality standards for O_3. The SDAPCD also relies on the State Implementation Plan, which includes the SDAPCD's plans and control measures for attaining the National Ambient Air Quality Standard for O_3. The RAQS relies on information from the CARB and SANDAG, including projected future growth in source emissions projections in the County to determine strategies and regulatory controls to reduce stationary source emissions. CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the County of San Diego. As such, projects that propose development that is consistent with the growth anticipated by the general plans would be consistent with the RAQS (County of San Diego Land Use and Environment Group 2007). The Project is limited to short-term MOT decommissioning activities and would not alter local or regional population projections. Thus, the Project is consistent with the RAQS and would not conflict with or obstruct implementation of applicable air quality plans.

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

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

The Project site is located in the City of Carlsbad, which has not adopted quantitative thresholds for determining the significance of construction or mobile source-related air quality impacts; however, the County of San Diego has adopted screening level thresholds for use with CEQA, taken from SDCAPCD Rule 20.2. Although Rule 20.2 pertains to non-major stationary sources, emission levels triggering an Air Quality Impact Analysis (AQIA) may be used as an indication of the potential to cause a violation of ambient air quality standards. Emission levels that trigger an AQIA are listed in Table 3.3-3 and may be used for comparative purposes as air quality thresholds of 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 (SO_2) is the predominant form found in the lower atmosphere.

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

Estimated emissions of criteria pollutants are presented in Table 3.3-4.[8] As detailed in Section 2, Project Description, there are two proposed methodologies (Options 1 and 2) to complete decommissioning activities in both the surf zone and offshore segments. Although in-field success would determine which method is more effective and thus used, the options with the highest emissions are presented in the emissions calculations. Proposed equipment listed for each decommissioning segment in Table A2-1 in Appendix A was used to estimate emissions as detailed in Appendix H, which breaks down each segment into specific phases/tasks. Decommissioning of the onshore and offshore segments would occur simultaneously, and their daily emissions were combined as peak pounds per day, as shown in Table 3.3-4. This approach was also taken for the beach and surf zone segments since these segments would also be decommissioned simultaneously.

To estimate emissions of criteria pollutants for comparison to the AQIA triggers, each phase's/task's emissions were calculated as peak pounds per day and combined with the simultaneously occurring phase/task per Table A1-1 in Appendix A. No attempt was made to separate Option 1 from Option 2 for either segment. Estimated daily emissions for the beach and surf zone segments (combined) are expected to be less than the 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**	**PM_{10}**	**CO**	**SO_2**
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 Threshold[1]		**No**	**No**	**No**	**No**	**No**
ESTIMATED CRITERIA POLLUTANTS (TOTAL TONS)						
		NO_x	**ROG/VOC**	**PM_{10}**	**CO**	**SO_2**
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 PM_{10} 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).

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

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

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

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.

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.

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

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

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

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

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)?

Less than Significant Impact. The Project would result in a less than significant net increase in criteria pollutant emissions for which the San Diego Air Basin is considered non-attainment. Further, the Project's incremental contribution of emissions would not be cumulatively considerable as it would not hinder progress towards attainment of State and Federal ambient air quality standards. The Project is temporary, is not located near areas of poor air quality (based on ambient air quality monitoring), and is located near the beach/ocean which would allow for adequate dispersion of pollutants and prevent accumulation of emissions. Therefore, the Project would not 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, and this impact would be less than significant.

d) Expose sensitive receptors to substantial pollutant concentrations?

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

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

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

3.3.4 Mitigation Summary

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

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