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4.3 AIR QUALITY

Would the Proposed Project:	Potentially Significant Impact	Less-than-Significant Impact with Mitigation Incorporated	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 that exceed quantitative thresholds for ozone precursors)?	✓			
d) Expose sensitive receptors to substantial pollutant concentrations?			✓	
e) Create objectionable odors affecting a substantial number of people?			✓	

4.3.0 Introduction

This section describes the existing air quality within the San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company—hereinafter referred to as "the Applicants"—proposed Pipeline Safety & Reliability Project (Proposed Project) area and evaluates the potential air quality impacts associated with construction and operation of the Proposed Project. The Proposed Project involves the construction, operation, and maintenance of an approximately 47-mile-long, 36-inch-diameter natural gas transmission pipeline that will carry natural gas from SDG&E's existing Rainbow Metering Station to the pipeline's terminus on Marine Corps Air Station (MCAS) Miramar. Although some potentially significant impacts may occur during construction, they will be short-term and temporary. The potential air quality impacts from the operation and maintenance phase of the Proposed Project will be less than significant with the incorporation of Applicants-Proposed Measures (APMs).

4.3.1 Methodology

The Proposed Project is located entirely within the jurisdiction of the San Diego County Air Pollution Control District (SDAPCD); therefore, existing air quality within San Diego County was researched using data obtained from the district's network of air quality monitoring stations. Recent regulations and guidance documents from the California Air Resources Board (CARB),

California Public Utilities Commission (CPUC), California Energy Commission, and the SDAPCD were also reviewed.

The Proposed Project's air emissions were assessed by estimating emission rates from construction, operation, and maintenance activities, and then comparing them to established significance criteria. Air pollutant emission rates were estimated using the publicly available software California Emissions Estimator Model (CalEEMod) Version 2013.2.2. This computer model allows users to generate estimates of construction and operational emissions of various pollutants, including inhalable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), carbon monoxide (CO), oxides of nitrogen (NO_x), sulfur oxides (SO_x), reactive organic gases (ROGs), and carbon dioxide. CalEEMod also allows users to input minimization measures and evaluate their effects on emission rates.

4.3.2 Existing Conditions

This section describes the regulations and regulatory agencies applicable to air quality for the Proposed Project, the regional climate and meteorology, and the existing air quality conditions in the Proposed Project area.

Regulatory Background

Federal

The 1970 federal Clean Air Act (CAA) established National Ambient Air Quality Standards (NAAQS) for six pollutants: ozone (O_3), PM_{10}, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. These six criteria pollutants are known to have adverse impacts on human health and the environment. To protect human health and the environment, the United States (U.S.) Environmental Protection Agency (EPA) has set primary and secondary maximum ambient thresholds. The primary thresholds were set to protect human health, particularly that of children and the elderly, as well as individuals that suffer from chronic lung conditions (e.g., asthma and emphysema). The secondary standards were set to protect the natural environment and prevent further deterioration of animals, crops, vegetation, and buildings. The NAAQS are comprised of the primary and secondary standards.

The 1977 CAA required each state to develop and maintain a State Implementation Plan (SIP) for each criteria pollutant that exceeds ambient air quality standards (AAQS). The SIP serves as a tool to reduce pollutants that are known to cause impacts that exceed the ambient thresholds and to achieve compliance with the NAAQS. In 1990, the CAA was amended to strengthen regulation of both stationary and mobile emission sources for the criteria pollutants.

In July 1997, the U.S. EPA developed new health-based NAAQS for O_3 and PM_{10}. However, these standards were not fully implemented until 2001, after the resolution of several lawsuits. The O_3 standard of 0.08 parts per million (ppm) is now based on a longer averaging period (eight hours versus one hour), recognizing that prolonged exposure to O_3 is more damaging. In March 2008, the U.S. EPA further lowered the eight-hour O_3 standard from 0.08 ppm to 0.075 ppm. The PM standard is based on finer particles (2.5 microns and smaller versus 10 microns and smaller), recognizing that finer particles may have a higher residence time in the lungs and

contribute to greater respiratory illness. Table 4.3-1: State and Federal Ambient Air Quality Standards contains a list of the NAAQS.

State

The California CAA (CCAA) of 1988 requires air districts to develop and implement strategies to attain CAAQS. Table 4.3-1: State and Federal Ambient Air Quality Standards contains a list of the CAAQS. For some pollutants, the CAAQS are more stringent than the NAAQS. Regional air quality management districts, such as the SDAPCD, had to prepare an air quality plan specifying how federal and state standards would be met.

The CARB enforces the CAAQS and works with the State's Office of Environmental Health Hazard Assessment (OEHHA) in identifying TACs and enforcing rules related to TACs, including the Air Toxic Hot Spots Information and Assessment Act of 1987. Enacted to identify TAC hot spots where emissions from specific sources may expose individuals to an elevated risk of adverse health effects, the act requires that businesses or other establishments identified as significant sources of toxic emissions provide the affected population with information about health risks posed by the emissions.

The CARB also regulates mobile emission sources in California (e.g., construction equipment, trucks, and automobiles) and oversees the air districts. Relevant programs related to oversight of mobile source emissions include the Off-Road and On-Road Mobile Sources Emission Reduction programs, the Portable Equipment Registration Program (PERP), and the Airborne Toxic Control Measure (ATCM) for Diesel PM (DPM) from Portable Engines. The Mobile Sources Emission Reduction programs are aimed at reductions of NO_x, volatile organic compounds (VOCs), CO, and PM_{10}. The CARB has also adopted specific control measures for the reduction of DPM from off-road, in-use diesel vehicles (rated 25 horsepower and higher), such as backhoes, dozers, and earthmovers used in construction projects. Additional DPM control measures are also in place for heavy-duty on-road diesel trucks operated by public utilities and municipalities. The PERP and ATCM for DPM from Portable Engines program provide for statewide registration and control of DPM from portable engines rated 50 horsepower and higher.

Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350)

The Clean Energy and Pollution Reduction Act of 2015, which was enacted on September 11, 2015, establishes a new set of objectives in clean energy, clean air, and pollution reduction for 2030 and beyond. The act requires the amount of electricity generated and sold from renewable energy resources to be increased to 50 percent by December 31, 2030, which is an increase in the state's Renewables Portfolio Standard (RPS) goal of 33 percent by 2020, established by Senate Bill (SB) 2 in 2011. In addition, statewide energy efficiency savings in electricity and natural gas must be doubled through energy efficiency and conservation efforts. As with SB 2, the act requires the CPUC to establish efficiency targets for electric and gas companies that are consistent with the statewide targets. To track RPS compliance, the CPUC's Energy Division has developed an RPS Compliance Report spreadsheet for retail sellers to report their progress in reaching the established targets on an annual basis. Further, the law defines pollution reduction objectives for the State of California.

Table 4.3-1: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Standard	
			Primary	Secondary
O_3	1 hour	0.09 ppm (180 micrograms per cubic meter [µg/m^3])	Not Applicable (NA)	NA
	8 hours	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	0.075 ppm (147 µg/m^3)
PM_{10}	24 hours	50 µg/m^3	150 µg/m^3	150 µg/m^3
	Annual arithmetic mean	20 µg/m^3	50 µg/m^3	50 µg/m^3
$PM_{2.5}$	24 hours	NA	35 µg/m^3	35 µg/m^3
	Annual arithmetic mean	12 µg/m^3	15 µg/m^3	15 µg/m^3
CO	1 hour	20 ppm (23 milligrams per cubic meter [mg/m^3])	35 ppm (40 mg/m^3)	NA
	8 hours	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	NA
	8 hours (Lake Tahoe)	6 ppm (7 mg/m^3)	NA	NA
NO_2	1 hour	0.18 ppm (339 µg/m^3)	100 parts per billion (ppb)	NA
	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	0.053 ppm (100 µg/m^3)
SO_2	1 hour	0.25 ppm (655 µg/m^3)	75 ppb	NA
	3 hours	NA	NA	0.5 ppm (1,300 µg /m^3)
	24 hours	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	NA
	Annual arithmetic mean	NA	0.030 ppm (80 µg/m^3)	NA
Lead	30 days	1.5 µg/m^3	NA	NA
	Rolling 3 months	NA	0.15 µg/m^3	0.15 µg/m^3
	Quarterly	NA	1.5 µg/m^3	1.5 µg/m^3
Sulfates	24 hours	25 µg/m^3	NA	NA

Sources: CARB 2009; U.S. EPA 2014

Table Notes:
1. California standards for O_3, PM_{10}, $PM_{2.5}$, CO (except Lake Tahoe), NO_2, SO_2 (one hour and 24 hours), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Title 17, Section 70200 of the California Code of Regulations.
2. NAAQS (other than O_3, particulate matter [PM], and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest eight-hour concentration in a year—averaged over three years—is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current federal policies.
3. The concentration is expressed first in the units used to promulgate the standard. The equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; "ppm" in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure that can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the health of the public.
6. National Secondary Standards: The levels of air quality necessary to protect public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used, but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.
8. The CARB has identified lead and vinyl chloride as toxic air contaminants (TACs) with no threshold level of exposure for adverse health effects established. These actions allow for implementation of control measures at levels below the ambient concentrations specified for these pollutants.
9. National lead standard, rolling three-month average; the final rule was signed October 15, 2008.

Local

Pursuant to Article XII, Section 8 of the California Constitution, the CPUC has exclusive jurisdiction in relation to local government to regulate the design, siting, installation, operation, maintenance, and repair of natural gas pipeline transmission facilities. Other state agencies have concurrent jurisdiction with the CPUC. Although local governments do not have the power to regulate such activities, the CPUC encourages, and the Applicants participate in, cooperative discussions with affected local governments to address their concerns where feasible. As part of the environmental review process, the Applicants have considered relevant regional and county, policies, and issues, and have prepared this evaluation of the Proposed Project's potential impacts to air quality.

San Diego County Air Pollution Control District

The air districts are primarily responsible for regulating stationary emission sources at industrial and commercial facilities within their respective geographic areas and for preparing the air quality plans that are required under the federal and California CAAs. The SDAPCD is the primary agency responsible for planning, implementing, and enforcing federal and state ambient standards in San Diego County. The plans, rules, and regulations presented in the following subsections apply to all sources in the jurisdiction of the SDAPCD.

San Diego County Air Pollution Control District Air Quality Plans

The SDAPCD's air quality plans collectively provide an overview of the region's air quality and air pollution sources, and identify the pollution control measures needed to expeditiously attain and maintain air quality standards. The SDAPCD's air quality plans include the San Diego portion of the California SIP and the San Diego Regional Air Quality Strategy (RAQS), which address federal and state requirements, respectively.

Ozone Air Quality Management Plan

The SDAPCD SIP predicts that state and local programs will allow San Diego County to reach attainment status for the previously applicable 0.08 ppm federal eight-hour O_3 AAQS (per the SIP submitted to the U.S. EPA in June 2007). It is anticipated that the U.S. EPA will designate San Diego County as a nonattainment area for the new 0.075 ppm eight-hour O_3 standard in the future. The SDAPCD will have to submit an updated SIP to address the new stringent standard at that time.

The SDAPCD maintains the RAQS, which acts as a road map demonstrating how the district will eventually meet the state O_3 AAQS. The RAQS details the measures and regulations that focus on managing and reducing O_3 precursors, such as NO_x and VOCs. The RAQS control measures concentrate on stationary sources that are under the SDAPCD's jurisdiction; however, all emission sources and control measures are included, such as any under the jurisdiction of the CARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products) and the U.S. EPA (e.g., aircraft, ships, trains, and pre-empted off-road equipment).

Particulate Matter Air Quality Management Plan

The CCAA does not require local districts to establish an air quality management plan for state PM_{10} nonattainment, but the SDAPCD has prepared a report entitled Measures to Reduce

Particulate Matter in San Diego County. The SDAPCD is considering rulemaking for source category-specific PM control measures for emissions from residential wood combustion and from fugitive dust generated at construction sites and from unpaved roads.

San Diego County Air Pollution Control District Regulation IV – Prohibitions, Rule 50 – Visible Emissions

This rule prohibits any activity that will create air contaminant emissions darker than 20-percent opacity for more than an aggregate of three minutes in any consecutive 60-minute period.

San Diego County Air Pollution Control District Regulation IV – Prohibitions, Rule 51 – Nuisance

This regulation prohibits any activity that will discharge air contaminants that cause or have a tendency to cause injury, detriment, nuisance, or annoyance to people and the public or which endanger the comfort, repose, health or safety of any such persons or the public, or damage to any business or property.

San Diego County Air Pollution Control District Regulation IV – Prohibitions, Rule 55 – Fugitive Dust Control

This regulation prohibits any activity that will discharge visible dust emissions into the atmosphere beyond the property line bounding the activity for more than three minutes during any 60-minute period. This regulation also prohibits visible roadway dust due to track-out or carry-out.

San Diego County Air Pollution Control District Rule XV – Federal Conformity

The federal conformity rule prohibits any federal actions that may be inconsistent with the SDAPCD's efforts to achieve attainment with the NAAQS.

San Diego Association of Governments' 2014 Regional Energy Strategy

The 2014 Regional Energy Strategy is an energy policy guide used to support decision-making by the San Diego Association of Governments (SANDAG) and its member agencies through 2050 with the goal of assisting the San Diego region in meeting the energy needs of a growing population, housing stock, and workforce, while maintaining and enhancing regional quality of life and economic stability. The Regional Energy Strategy establishes long-term goals in 11 areas, including energy efficiency, renewable energy, distributed generation, transportation fuels, land use and transportation planning, border energy issues, and the green economy. In addition, the strategy identifies the following six early actions for SANDAG and local governments to focus on in the near term:

1. pursue a comprehensive building retrofit program to improve efficiency and install renewable energy systems;

2. create financing programs to pay for projects and improvements that save energy;

3. utilize the SANDAG-SDG&E Local Government Partnership to help local governments identify opportunities and implement energy savings at government facilities and throughout their communities;

4. support land use and transportation planning strategies that reduce energy use and greenhouse gas (GHG) emissions;

5. support planning of electric charging and alternative fueling infrastructure; and

6. support the use of existing and unused reclaimed water to decrease the amount of energy needed to meet the water needs of the San Diego region.

To accomplish these objectives, the Regional Energy Strategy calls for increased use of natural gas for certain transportation applications and the continued efficient use of electricity generation. The strategy reports that the San Diego region can improve air quality, promote public heath, and reduce GHG emissions by improving the transition to alternative fuel vehicles, including compressed natural gas, liquefied natural gas, propane, biodiesel and hybrid technologies. Additionally, the strategy reports that natural gas power will provide stability and reliability to balance power supplied from renewables that are variable in nature, such as wind and solar. The Regional Energy Strategy recommends that the region should "monitor and evaluate regional natural gas storage and pipeline capacity to accommodate future demand."

Regional Climate and Meteorology

The climate in the San Diego Air Basin (SDAB) is generally warm, with low annual rainfall occurring mostly during the winter months. The climate plays an important role in the air quality of the SDAB. When cool, moist air from the coast travels toward the higher elevations, a temperature inversion can occur. This inversion layer prevents polluted air from rising and dispersing. According to the SDAPCD, most air quality exceedances are recorded on the lower mountain slopes that experience an inversion layer.

The climate of San Diego County, as with all of Southern California, is largely controlled by the strength and position of the Pacific High. This high-pressure ridge over the West Coast creates a repetitive pattern of frequent early morning cloudiness, hazy afternoon sunshine, clean daytime onshore breezes, and little temperature change throughout the year. Limited rainfall occurs in the winter as the fringes of mid-latitude storms occasionally move through the area. Average temperatures in January range from between 43 and 49 degrees Fahrenheit (°F) at night to between 65 and 69°F during the day. The warmest month is August, when the high temperatures average between 77 and 89°F. Annual rainfall ranges from 10 to 15 inches along the Proposed Project alignment.

Air Quality

Criteria Air Pollutants

O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, and lead are all criteria air pollutants (CAPs) that are regulated in California. Non-methane ethane VOCs, also referred to as ROGs, are also regulated as precursors to the formation of O_3. These CAPs and their effects on humans are discussed in the following subsections.

Ozone

O_3 is a colorless gas that is not directly emitted as a pollutant, but is formed when hydrocarbons and NO_x react in the presence of sunlight. Low wind speeds or stagnant air mixed with warm temperatures typically provide optimum conditions for the formation of O_3. Because O_3 formation does not occur quickly, O_3 concentrations often peak downwind of the emission source. As a result, O_3 is of regional concern as it impacts a larger area. When inhaled, O_3 irritates and damages the respiratory system.

Particulate Matter

PM, which is defined as particles suspended in a gas, is often a mixture of substances, including metals, nitrates, organic compounds, and complex mixtures, such as diesel exhaust and soil. PM can be traced back to both natural and man-made sources. The most common sources of natural PM are dust and fires, while the most common man-made source is the combustion of fossil fuels.

PM causes irritation to the human respiratory system when inhaled. The extent of the health risks due to PM exposure can be determined by the size of the particles. The smaller the particles, the deeper they can be deposited in the lungs. PM is often grouped into two categories—inhalable PM less than 10 microns in diameter (PM_{10}) and fine PM less than 2.5 microns in diameter ($PM_{2.5}$).

Carbon Monoxide

CO is a colorless, odorless, and tasteless gas that is directly emitted as a byproduct of combustion. CO concentrations tend to be localized to the source, and the highest concentrations are associated with cold, stagnant weather conditions. CO is readily absorbed through the lungs into the blood, where it reduces the ability of the blood to carry oxygen.

Nitrogen Oxides

NO_x is a generic name for the group of highly reactive gases that contain nitrogen and oxygen in varying amounts. Many types of NO_x are colorless and odorless. However, when combined with particles in the air, the common pollutant NO_2 can often be seen as a reddish-brown layer over many urban areas.

NO_x forms when fuel is burned at high temperatures. Typical man-made sources of NO_x include motor vehicles, fossil-fueled electricity generation utilities, and other industrial, commercial, and residential sources that burn fuels. NO_x can harm humans by affecting the respiratory system. Small particles can penetrate the sensitive parts of the lungs, cause or worsen respiratory disease, and aggravate existing heart conditions. As discussed previously, O_3 is formed when NO_x and hydrocarbons react with sunlight.

Sulfur Oxides

SO_x are formed when sulfur-containing materials are processed or burned. SO_x sources include industrial facilities (e.g., petroleum refineries and cement manufacturing and metal-processing facilities), locomotives, large ships, and some non-road diesel equipment.

A wide variety of health and environmental impacts are associated with SO_x because of the way it reacts with other substances in the air. A number of people are particularly sensitive to SO_x emissions, including children, the elderly, people with asthma, and people with heart or lung disease. When inhaled, these particles gather in the lungs and contribute to increased respiratory symptoms and disease, difficulty breathing, and premature death.

Volatile Organic Compounds

VOCs (or ROGs) are a group of chemicals that react with NO_x and hydrocarbons in the presence of heat and sunlight to form O_3. Examples of VOCs include gasoline fumes and oil-based paints. This group of chemicals does not include methane (CH_4) or other compounds determined by the U.S. EPA to have negligible photochemical reactivity.

Air Quality Designations

Three air quality designations can be given to an area for a particular pollutant:

- Nonattainment: This designation applies when air quality standards have not been consistently achieved.
- Attainment: This designation applies when air quality standards have been achieved.
- Unclassified: This designation applies when insufficient monitoring data exists to determine a nonattainment or attainment designation.

The current CAAQS and NAAQS attainment status is provided in Table 4.3-2: SDAPCD Attainment Status. The SDAPCD is currently designated as a nonattainment area for O_3, PM_{10}, and $PM_{2.5}$ at the state level; and nonattainment for O_3 at the federal level.

Table 4.3-2: SDAPCD Attainment Status

CAPs	State	Federal
O_3 (eight-hour)	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Attainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Sulfates	Attainment	Not Applicable
Lead	Attainment	Attainment
Hydrogen Sulfide	Unclassified	Not Applicable
Visibility Reducing Particles	Unclassified	Not Applicable

Source: SDAPCD 2013
Note: As shown in Table 4.3-1: State and Federal Ambient Air Quality Standards, there are no federal standards for sulfates, hydrogen sulfide, or visibility reducing particles.

Toxic Air Contaminants

TACs are the listed toxic pollutants as established by OEHHA. Under Assembly Bill 1807, the CARB is required to use certain criteria in prioritizing, identifying, and controlling air toxics. In selecting substances for review, the CARB must consider pollutants that may pose a threat to human health or cause or contribute to serious illnesses or death. For many TACs, no threshold level exists below which adverse health impacts may not be expected to occur. This contrasts with the CAPs, for which acceptable levels of exposure can be determined and for which the federal and state governments have set AAQS.

PM emissions generated by diesel combustion (i.e., DPM) are of particular concern in California. In 1998, the OEHHA completed a 10-year comprehensive human health assessment of diesel exhaust. The results of this assessment formed the basis for the CARB to formally identify DPM as a TAC that poses a threat to human health. Because no established AAQS exist for TACs, they are managed on a case-by-case basis, depending on the quantity and type of emissions and the proximity of potential receptors. DPM emissions result from a wide variety of sources, including on-road and off-road vehicles and stationary and portable internal combustion engines. In California, statewide DPM emissions from stationary, area wide, and on- and off-road mobile sources totaled approximately 16,300 tons in 2010.

Ambient Air Quality

Violations of NAAQS and CAAQS for O_3, PM, and CO have occurred historically in the Proposed Project area. The frequency of violations and current air quality conditions at the two monitoring sites nearest to the Proposed Project area are summarized for O_3, PM_{10}, and $PM_{2.5}$ in Table 4.3-3: Recent Air Quality Concentrations and Table 4.3-4: Frequency of Air Quality Standard Violations.[1] As shown in these tables, the air quality in the surrounding areas has been relatively stable over the past four years; however, in some cases PM concentrations have increased over time.

Sensitive Receptors

Some exposed population groups—including children, the elderly, and the ill—can be especially vulnerable to airborne chemicals and irritants and are termed "sensitive receptors." In addition, due to sustained exposure durations, all persons located within residential areas are considered to be sensitive receptors. The Proposed Project will be installed primarily within existing roadways and road shoulders and crosses the cities of Escondido, Poway, and San Diego; unincorporated areas in San Diego County; and MCAS Miramar. In developed areas, the Proposed Project will be located directly adjacent to many sensitive receptors; approximately 8,200 residences are located within 300 feet of the alignment. Section 4.10 Land Use and Planning provides locations where residences will be in close proximity to the Proposed Project components.

[1] The Escondido station is located approximately 0.8 mile east of the Proposed Project area at 600 East Valley Parkway in Escondido and the Kearny Villa Road monitoring station is located approximately 2.2 miles southwest of the Proposed Project area along Kearny Villa Road within MCAS Miramar.

Table 4.3-3: Recent Air Quality Concentrations

Monitoring Station	Year	O_3, Maximum 1-hour (ppm)	PM_{10}, Maximum 24-hour ($\mu g/m^3$)	$PM_{2.5}$, Maximum 24-hour ($\mu g/m^3$)
Escondido	2013	0.084	80.0	56.3
	2012	0.084	33.0	70.7
	2011	0.098	40.0	27.4
	2010	0.105	42.0	33.3
Kearny Villa Road	2013	0.081	39.0	22.0
	2012	0.099	35.0	20.1
	2011	0.093	--	--
	2010	0.073	--	--

Source: CARB 2015b
Notes: "--" = insufficient or unavailable data.

Table 4.3-4: Frequency of Air Quality Standard Violations

Monitoring Station	Year	Number of Days in Exceedance of Standard			
		State 1-hour O_3	State 24-hour PM_{10}	National 24-hour PM_{10}	National 24-hour $PM_{2.5}$
Escondido	2013	0	6	0	2.5
	2012	0	0	0	3.1
	2011	1	0	0	0
	2010	2	0	0	0
Kearny Villa Road	2013	0	0	0	0
	2012	1	--	--	--
	2011	0	--	--	--
	2010	0	--	--	--

Source: CARB 2015b
Notes: "--" = insufficient or unavailable data.
Days that exceed the CAAQS for PM_{10} are based on monitoring on every sixth day.

4.3.3 Impacts

Significance Criteria

San Diego County Air Pollution Control District Thresholds

To determine whether a significant impact will occur during construction, the SDAPCD recommends quantifying construction emissions and comparing them to the significance thresholds (pounds per day) found in the SDAPCD regulations for stationary sources (pursuant to Rule 20.1, et seq.) and shown in Table 4.3-5: Air Quality Significance Thresholds. Accordingly, if emissions during Proposed Project construction exceed the thresholds that apply to stationary sources, then construction activities will have the potential to violate air quality standards or contribute substantially to existing violations.

Table 4.3-5: Air Quality Significance Thresholds

Pollutant	Significance Threshold	
	Pounds per Day	Tons per Year
PM_{10}	100	15
$PM_{2.5}$	55*	10*
CO	550	100
NO_x	250	40
SO_x	250	40
VOCs	75**	13.7***

Source: SDAPCD 2015b

* EPA "Proposed Rule to Implement the Fine Particle National Ambient Air Quality Standards" published September 8, 2005. Also used by the South Coast Air Quality Management District (SCAQMD).

** Threshold for VOCs based on the threshold of significance for VOCs from the SCAQMD for the Coachella Valley.

*** Threshold based on 75 pounds per day multiplied by 365 days per year and divided by 2,000 pounds per ton.

California Environmental Quality Act Guidelines

In addition to the previously mentioned criteria, Appendix G of the California Environmental Quality Act (CEQA) Guidelines determines that impacts to air quality would be significant if the Proposed Project:

- Conflicts with or obstructs implementation of the applicable air quality plan
- Violates any air quality standard or contributes substantially to an existing or projected air quality violation
- Results in a cumulatively considerable net increase of any criteria pollutant for which the Proposed Project region is classified as nonattainment under an applicable federal or state AAQS

- Exposes sensitive receptors to substantial pollutant concentrations
- Creates objectionable odors affecting a substantial number of people

Question 4.3a – Applicable Air Quality Plan Conflicts – *Potentially Significant Impact*

When determining whether a project will conflict with an air quality plan, the primary focus is to evaluate if the project's emissions are properly anticipated in the regional air planning process and if these emissions are reduced where feasible. To determine if the emissions were captured during the air quality planning process, it is necessary to assess the Proposed Project's consistency with the RAQS. Consistency with the RAQS is determined by evaluating if the Proposed Project's emissions exceed the CAP thresholds established by the SDAPCD and if the Proposed Project will result in growth that has been anticipated.

CalEEMod was used to simulate the anticipated emissions during construction using site-specific information to generate emission rates based on the Proposed Project's anticipated size, schedule, land use, and construction methods described in Chapter 3 – Project Description.[2] Using this data, the model calculated the maximum daily emissions for a range of pollutants. The CalEEMod input and output are provided in Attachment 4.3–A: CalEEMod Reports.

PM is one of the primary air pollutants resulting from construction activities. The simulated PM emissions are the composite of two types of sources—fugitive dust and tailpipe emissions. Typical fugitive dust sources include earth-moving activities (e.g., excavation of the pipeline trench), the loading and unloading of fill and spoil materials, and vehicle travel across unpaved areas. The remaining CAP emissions result from the combustion of fossil fuels in both off-road construction equipment and on-road vehicles. The input assumptions and resulting output from the CalEEMod simulations have been included as Attachment 4.3–A: CalEEMod Reports and have been summarized in Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions. As shown in Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions, peak uncontrolled emissions are estimated to exceed applicable SDAPCD thresholds for PM_{10}, $PM_{2.5}$, CO, NO_x, and VOCs. However, these estimated emissions will be short-term and will be limited to the 12- to 18-month construction period.[3]

As described in Section 4.17 Utilities and Service Systems, the Applicants are currently developing a Major Projects Water Sourcing Plan that evaluates all potential sources of water for

[2] The analysis assumed that the approximately one-mile pre-lay segment—from near MP 37.9 to near MP 39.0—would not be used and that new pipe would be installed along the entire Proposed Project route; therefore, air quality impacts resulting from construction equipment are likely overstated. However, this analysis does not include air quality impacts associated with purging the pre-lay segment of existing pipe, or with providing a temporary portable natural gas system for the existing distribution pipelines connected to the pre-lay segment. Regardless, these activities are not anticipated to affect the significance findings presented in this section.

[3] The emissions presented in this analysis are based upon construction starting in 2018. The actual start date is unknown and subject to multiple factors. Each year, the fleet of available construction equipment and on-road vehicles will be equipped with cleaner engines. As a result, if the Proposed Project's construction start date is pushed beyond 2018, the associated emissions will be lower than what is presented in this analysis. In addition, construction was assumed to be completed within a 13-month timeframe; therefore, the results indicate a worst-case analysis of potential impacts. As a result, the analysis presented represents a conservative estimate of the potential emissions from the Proposed Project.

project construction needs, including potable, groundwater, surface waters and tertiary treated recycled water. APM-PUS-01 will require the Applicants and their contractors to identify available sources of recycled water in close proximity to the Proposed Project for use during construction. Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions evaluates the potential air quality impacts associated with sourcing all Proposed Project water from recycled water sources. As shown, emissions of all pollutants, except SO_x, will continue to exceed applicable SDAPCD thresholds.

Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions

Year	Emissions (pounds per day)					
	PM_{10}	**$PM_{2.5}$**	**CO**	**NO_x**	**SO_x**	**VOCs**
Proposed Project						
2018	288.81	71.05	726.09	879.81	1.72	100.31
2019	62.24	39.44	635.98	683.17	1.55	79.21
Threshold	100	55	550	250	250	75
Exceeded?	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**
Proposed Project with Implementation of APM-PUS-01						
2018	302.56	72.61	729.77	885.90	1.74	100.72
2019	71.14	40.49	639.57	688.75	1.57	79.61
Threshold	100	55	550	250	250	75
Exceeded?	**Yes**	**Yes**	**Yes**	**Yes**	**No**	**Yes**

To reduce impacts, the Applicants will implement APM-AIR-01 through APM-AIR-05. These APMs require the following:

- that unpaved construction areas are watered to reduce fugitive dust and to meet the requirements of SDAPCD Rule 55,
- that all loads are covered unless the material is wetted or there is at least two feet of freeboard from the top of the container,
- that all equipment is properly maintained,
- that trucks and vehicles in loading or unloading queues turn off their engines after five minutes of not being used,
- that all construction equipment will be Tier 3, or if Tier 3 equipment is not available for a particular type of equipment at the time of construction, equipment of a lesser tier will be used, and
- that travel on unpaved areas without a posted speed limit be 15 miles per hour (mph) or less.

APM-AIR-01, APM-AIR-04, and APM-AIR-05 were entered into CalEEMod and the resulting controlled emissions are presented in Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions.[4] With the implementation these APMs, the construction phase of the Proposed Project is estimated to continue to exceed the applicable SDAPCD thresholds for PM_{10}, CO, and NO_x; however, emissions for these pollutants will be reduced. Because APM-AIR-04 requires the use of Tier 3 equipment when available, the entire fleet of equipment may not be Tier 3 so the emissions from Proposed Project construction will be somewhere between those reported in Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions and Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions. Therefore, the Proposed Project will potentially conflict with or obstruct implementation of the applicable air quality plan, and thus will have a potentially significant, temporary impact in regard to plan consistency.

Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions also evaluates the potential emissions from implementing APM-PUS-01. If recycled water is used for the Proposed Project, estimated emissions will continue to exceed the applicable SDAPCD thresholds for PM_{10}, CO, and NO_x.

The Proposed Project will not create significant operational trips, as a residential or commercial development would, nor will it result in population growth. Once construction of the Proposed Project has been completed, emissions will be relatively low, resulting only from scheduled maintenance and operation activities. The anticipated emissions from operation and maintenance activities, as described in Table 3-6: Maintenance Activities in Chapter 3 – Project Description, were simulated using CalEEMod and the results are presented in Table 4.3-8: Estimated Peak Daily Operational Emissions. These results assume that all anticipated operation and maintenance activities will be conducted simultaneously; therefore, they present a worst-case scenario for daily operation and maintenance.

As shown in Table 4.3-8: Estimated Peak Daily Operational Emissions, all emissions will be below the applicable SDAPCD thresholds, and impacts will be less than significant during the operation and maintenance phase of the Proposed Project. A more detailed report describing the input parameters and resulting output from this simulation is presented in Attachment 4.3–A: CalEEMod Reports.

Question 4.3b – Air Quality Standard Violations

Construction – Potentially Significant Impact

The site development phase of the Proposed Project will require various pieces of heavy equipment, including excavators, loaders, and pipe benders. Street-legal haul trucks will be employed during material export or import activities. In addition, heavy hauling trucks will be employed for material delivery.

[4] CalEEMod does not allow the user to specify covering or watering of bulk material during transport, nor does it account for vehicle maintenance. As a result, the emission reductions associated with these measures are not captured in the analysis. Therefore, Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions presents conservative estimate of emissions.

Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions

Year	Emissions (pounds per day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOCs
Proposed Project						
2018	119.50	45.35	813.94	663.04	1.72	38.32
2019	56.77	35.49	709.45	572.76	1.55	33.76
Threshold	100	55	550	250	250	75
Exceeded?	**Yes**	**No**	**Yes**	**Yes**	**No**	**No**
Proposed Project with Implementation of APM-PUS-01						
2018	123.85	45.97	817.62	669.13	1.74	38.73
2019	59.64	35.94	713.04	578.34	1.57	34.16
Threshold	100	55	550	250	250	75
Exceeded?	**Yes**	**No**	**Yes**	**Yes**	**No**	**No**

Table 4.3-8: Estimated Peak Daily Operational Emissions

Year	Emissions (pounds per day)					
	PM_{10}	$PM_{2.5}$	CO	NO_x	SO_x	VOCs
Off-Road	7.16	6.59	108.71	191.98	0.34	19.10
Threshold	100	55	550	250	250	75
Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Construction of the Proposed Project will generate short-term air quality impacts during excavation and pipe installation activities. CalEEMod was used to simulate emissions from construction activities based on the schedule and construction equipment lists provided in Chapter 3 – Project Description. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials transported on site or off site. The results of this simulation are presented in Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions.

As described in response to Question 4.3a, the APMs were entered into CalEEMod, as appropriate, and the resulting controlled emissions are presented in Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions. A detailed discussion of the Proposed Project's potential to impact air quality from fugitive dust, construction equipment exhaust, and TAC sources is provided in the subsections that follow.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that have the potential to temporarily impact local air quality. In addition, fugitive dust may be a nuisance to those living and working in the Proposed Project area. Fugitive dust emissions are associated with vegetation clearing, excavation, and vehicle travel on roadways. In addition, fugitive dust emissions can vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from excavation and construction is expected to be short-term and will cease when these activities have been completed.

As described previously in response to Question 4.3a, the Applicants will implement APM-AIR-01 to ensure compliance with the SDAPCD's Rule 55. This APM will reduce the anticipated fugitive dust emissions, and impacts from fugitive dust alone will be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with transporting machinery and supplies to and from the Proposed Project area, emissions produced on site as the equipment is used, emissions from trucks transporting import and export material to and from the pipeline alignment, and emissions from construction worker trips to and from the site. Emitted pollutants will include PM_{10}, $PM_{2.5}$, CO, NO_x, and VOCs. As presented in Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions and Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions, the maximum daily emissions for each year of construction of the Proposed Project will exceed the SDAPCD's standards for all pollutants, except SO_x. Therefore, temporary impacts associated with construction will be potentially significant.

Toxic Air Contaminants

DPM will be emitted from on- and off-road vehicles that use diesel as fuel during the construction phase of the Proposed Project. Potential health effects associated with exposure to DPM are long-term and are evaluated on the basis of a lifetime of exposure (i.e., 70 years). Because construction activities are anticipated to progress at a rate of approximately 200 to 300

feet per day in these locations, the exposure for each sensitive receptor will be limited in duration.

The CARB has adopted ATCMs applicable to off-road diesel equipment and portable diesel engines with a rating of 50 brake horsepower or greater. The purpose of these ATCMs is to reduce PM emissions from engines that are subject to the rule. The ATCMs require diesel engines to comply with PM emission limitations on a fleet-averaged basis. The CARB has also adopted an ATCM that limits diesel-fueled commercial motor vehicle idling. The rule applies to motor vehicles with gross vehicular weight ratings greater than 10,000 pounds that are licensed for on-road use. The rule restricts vehicles from idling for more than five minutes at any location, with exceptions for idling that may be necessary to operate the vehicle.

All off-road diesel equipment, on-road heavy-duty diesel trucks, and portable diesel equipment used for the Proposed Project will meet the state's applicable ATCMs for control of DPM or NO_x in the exhaust and, as described in APM-AIR-04, equipment complying with Tier 3 EPA standards will be utilized when available. The mobile fleets used in the Proposed Project are expected to be in full compliance with these ATCMs. This will ensure that pollutant emissions in diesel engine exhaust do not exceed applicable federal or state air quality standards. As a result, impacts will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

As shown in Table 4.3-8: Estimated Peak Daily Operational Emissions, operation and maintenance of the Proposed Project will generate limited CAP emissions and will be in compliance with all applicable thresholds. Therefore, the operation and maintenance of the Proposed Project will have a less-than-significant impact on existing air quality standards.

Question 4.3c – Criteria Pollutant Increases

Construction – Potentially Significant Impact

As discussed previously, the Proposed Project area is currently considered a nonattainment area under the state standards for O_3, PM_{10}, and $PM_{2.5}$, and a nonattainment area under the federal standards for O_3. Table 4.3-6: Estimated Peak Daily Uncontrolled Construction Emissions and Table 4.3-7: Estimated Peak Daily Controlled Construction Emissions present the anticipated temporary CAP emission increases from construction. Although APMs will be implemented, which include minimizing vehicle idling time and controls for fugitive dust, emissions for pollutants will exceed applicable SDAPCD thresholds in a nonattainment area. As a result, these temporary construction emissions will be potentially significant.

Operation and Maintenance – Less-than-Significant Impact

Operational emissions were simulated using CalEEMod, assuming the levels of traffic described in Section 3.7 Operation and Maintenance in Chapter 3 – Project Description. The results of these simulations are presented in Table 4.3-8: Estimated Peak Daily Operational Emissions. These increases in CAPs will be significantly less than those projected for the construction phase, and will be well below the acceptable significance thresholds. As a result, CAP increases due to operation and maintenance of the Proposed Project will be less than significant.

Question 4.3d – Sensitive Receptor Exposure – *Less-than-Significant Impact*

The Proposed Project alignment is primarily located in urban areas within the cities of Escondido, Poway, and San Diego; in unincorporated areas of San Diego County; and on MCAS Miramar. As described in Section 4.3.2 Existing Conditions, sensitive receptors have been identified directly adjacent to the Proposed Project alignment. Because construction is anticipated to progress at a rate of approximately 200 to 300 feet per day in these locations, the exposure for each sensitive receptor will be limited in duration. The Applicants will implement APM-AIR-01 through APM-AIR-04, which will require that fugitive dust emissions are controlled in accordance with SDAPCD Rule 55, material losses from open truck beds are minimized, and Tier 3 equipment is utilized when available. These APMs will further reduce the potential emissions.

Emissions resulting from operation and maintenance activities associated with the Proposed Project were also determined to be in compliance with the applicable SDAPCD thresholds. Neither the construction nor operation and maintenance phases of the Proposed Project will contribute to a violation of an existing air quality standard. As a result, the Proposed Project will have a less-than-significant impact on sensitive receptors.

Question 4.3e – Odor

Construction – Less-than-Significant Impact

Due to the nature of the Proposed Project, odor impacts are not anticipated. No significant sources of typical odor nuisances (e.g., hydrogen sulfide, ammonia, chlorine, and other sulfide-related emissions) will exist during construction. However, a potential source of Proposed Project-related odor will include diesel engine emissions. Due to the linear nature of pipeline construction, the Proposed Project will progress at a rate of approximately 200 to 300 feet per day; therefore, heavy equipment will be operated in each location for only a few days. Because these emissions will be temporary in nature, they will be less than significant.

The Applicants anticipate that cold tie-ins will be used to complete the connection of the Proposed Project to existing natural gas infrastructure. This process will result in approximately 65,800 standard cubic feet of natural gas being released to the atmosphere near the four planned cold tie-ins at the Rainbow Pressure-Limiting Station (at the beginning of the pipeline), the Line 1601 Cross-Tie (at approximate Milepost [MP] 23.4), mainline valve (MLV) 7 (at approximate MP 29.3), and the Line 2010 Cross-Tie (at the terminus of the pipeline). These releases will each last up to 90 seconds. Raw natural gas is a mixture with CH_4 as its main ingredient. By itself, CH_4 is odorless, colorless, and tasteless. As a safety measure, natural gas companies add a chemical odorant to the gas so that escaping gas can be detected. While these releases will generate a new source of odor, the gas (and therefore the odor) will be released one time at each of these four locations. The duration and distance that the odor will be detectable will depend upon the direction and speed of wind during and after the release. Typically, the odor quickly dissipates into atmosphere and, thus, will be short-lived. As a result, impacts will be less than significant.

Operation and Maintenance – Less-than-Significant Impact

As described previously, a chemical odorant will be added to natural gas so that unanticipated escapes can be detected. In accordance with Title 49, Part 192.179 (c) of the Code of Federal Regulations, each section of the pipeline will have a blowdown valve to allow the line to be rapidly reduced to atmospheric pressure. These blowdown valves will be located at each of the 10 MLVs distributed along the pipeline as identified in Table 3-2: Mainline Valve Locations in Chapter 3 – Project Description. The construction and maintenance of the line may require occasional releases of natural gas. Similar to the cold tie-in process, the released natural gas will quickly dissipate into the atmosphere, resulting in a very short-term (typically lasting between 10 and 20 minutes) odor. As described previously, the duration and distance that the odor will be detectable from these releases will depend upon the direction and speed of wind during and after the release. Because these releases will quickly dissipate and will be infrequent, odor impacts will be less than significant.

4.3.4 Applicants-Proposed Measures

The following APMs will be implemented to reduce potential impacts to air quality in the vicinity of the Proposed Project:

- **APM-AIR-01:** Water or approved dust control products will be applied to all exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) at a rate that maintains the soil moisture content to control fugitive dust and meet the San Diego County Air Pollution Control District Rule 55 requirements. Water will only be applied to graveled areas if dust is visible.

- **APM-AIR-02:** Open-bodied trucks transporting bulk materials that may become airborne will be completely covered, unless the bulk material is wetted or there is at least two feet of freeboard from the top of the container.

- **APM-AIR-03:** The Applicants or their contractor will maintain and operate construction equipment to minimize exhaust emissions. During construction, trucks and vehicles in loading and unloading queues will have their engines turned off after five minutes when not in use. Construction activities will be phased and scheduled to avoid emission peaks, and equipment use will be curtailed during second-stage smog alerts.

- **APM-AIR-04:** Off-road diesel construction equipment with a rating between 100 and 750 horsepower will be required to use engines compliant with United States Environmental Protection Agency Tier 3 non-road engine standards. In the event that Tier 3 equipment is not available for a particular type of equipment at the time of construction, equipment of a lesser tier will be used. Tier 3 equipment can only be substituted for a lesser tier (i.e., Tier 2 or Tier 1) with approval from the Applicants' air quality specialist.

- **APM-AIR-05:** Proposed Project-related vehicles will observe a maximum 15 mph speed limit on all unpaved access roads and within work areas, except on city and county roads and state and federal highways, where the posted maximum speed limit will be observed.

4.3.5 References

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ATTACHMENT 4.3–A: CALEEMOD REPORTS