3.1 - Air Quality

This section describes the potential air quality effects of project implementation on the project site and its surrounding area. Descriptions and analysis in this section are based on the result of the California Air Resources Board's (CARB's) OFFROAD2011 off-road construction equipment emissions model and the CARB's EMFAC2011 mobile source emission model. The emissions estimates are included in this Draft EIR as Appendix B, Air Quality and Greenhouse Gas Emissions.

3.1.1 - Existing Conditions

Local Climate

The project is located in the City of Beaumont and in the unincorporated area of Cherry Valley in Riverside County and is within the South Coast Air Basin (air basin). To the west of the air basin is the Pacific Ocean. To the north and east of the air basin are the San Gabriel, San Bernardino, and San Jacinto mountains, while the southern limit of the air basin is the San Diego County line. The air basin consists of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The air quality in the air basin is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day.

Dominant airflows provide the driving mechanism for transport and dispersion of air pollution. The mountains surrounding the region form natural horizontal barriers to the dispersion of air contaminants. Air pollution created in the coastal areas and around the Los Angeles area is transported inland until it reaches the mountains where the combination of mountains and inversion layers generally prevent further dispersion. This poor ventilation results in a gradual degradation of air quality from the coastal areas to inland areas. Air stagnation may occur during the early evening and early morning periods of transition between day and nighttime flows. The region also experiences periods of hot, dry winds from the desert, known as Santa Ana winds. If the Santa Ana winds are strong, they can surpass the sea breeze, which blows from the ocean to the land, and carry the suspended dust and pollutants out to the ocean. If the winds are weak, they are opposed by the sea breeze and cause stagnation, resulting in high pollution events.

The annual average temperature varies little throughout much of the air basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). Average temperatures in the area are typically range from the mid-30s to in the winter to the mid-90s in the summer. The majority of the annual rainfall in the area occurs between December and April. The average annual precipitation in the City of Beaumont is 20.9 inches.

Temperature inversions limit the vertical depth through which pollution can be mixed. Among the most common temperature inversions in the air basin are radiation inversions, which form on clear winter nights when cold air off mountains sink to the valley floor while the air aloft over the valley

remains warm. These inversions, in conjunction with calm winds, trap pollutants near the source. Other types of temperature inversions that affect the air basin include marine, subsidence, and high-pressure inversions.

Summers often have periods of hazy visibility and occasionally unhealthful air, while air quality impacts in the winter tend to be localized. Higher temperatures and sunshine can contribute to air pollutant formation, particularly ozone. Impacts of ozone are discussed in the impact sections of this analysis.

Local Air Quality

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. For evaluation purposes, the SCAQMD has divided the air basin into 36 Source Receptor Areas (SRA) within the air basin operating monitoring stations in most of the areas. These SRAs are designated to provide a general representation of the local meteorological, terrain, and air quality conditions within the particular geographical area. The project is within Source Receptor Area 29, Banning Airport. The SCAQMD operates an air monitoring station in Source Receptor Area 29 at the Banning Airport. Ozone, PM_{10}, $PM_{2.5}$ and NO_2 are monitored at the Banning Airport. SO_2 levels in the area are negligible and are not reported.

Table 3.1-1 summarizes 2009 through 2011 published monitoring data, which is the most recent 3-year period available from the CARB. The data show that during the past few years, the project area has exceeded the ozone, PM_{10}, and $PM_{2.5}$ standards. Monitoring data for CO were taken from the nearby monitoring station in Palm Springs.

Table 3.1-1: Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2009	2010	2011
Ozone	1 Hour	Max 1 Hour (ppm)	0.133	0.124	0.127
		Days > State Standard (0.09 ppm)	55	31	35
	8 Hour	Max 8 Hour (ppm)	0.104	0.107	0.11
		Days > State Standard (0.07 ppm)	91	77	59
		Days > National Standard (0.075 ppm)	70	60	41
Carbon monoxide	1 Hour	Max 1 Hour (ppm)	0.96	0.80	0.81
	8 Hour	Max 8 Hour (ppm)	0.67	0.56	0.65
		Days > State Standard (9.0 ppm)	0	0	0
		Days > National Standard (9 ppm)	0	0	0

Table 3.1-1 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	Item	2009	2010	2011
Nitrogen dioxide	Annual	Annual Average (ppm)	0.011	0.012	0.010
	1 Hour	Max 1 Hour (ppm)	0.056	0.066	0.061
		Days > State Standard (0.18 ppm)	0	0	0
Inhalable coarse particles (PM_{10})	Annual	Annual Average ($\mu g/m^3$)	23.7	20.2	17.8
	24 hour	Max 24 Hour ($\mu g/m^3$)	99.0	55.0	51.0
		Days > State Standard (50 $\mu g/m^3$)	1	1	0
		Days > National Standard (150 $\mu g/m^3$)	0	0	0
Fine particulate matter ($PM_{2.5}$)	Annual	Annual Average ($\mu g/m^3$)	13.6	13.6	ID
	24 Hour	24 Hour ($\mu g/m^3$)	49.7	50.6	46.7
		Days > National Standard (35 $\mu g/m^3$)	ID	ID	ID

Notes and Abbreviations:
> = exceed ppm = parts per million $\mu g/m^3$ = micrograms per cubic meter
ID = insufficient data ND = no data max = maximum
Est = Estimated
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
Sources: California Air Resources Board 2013a.

Attainment Status

The Environmental Protection Agency (EPA) and the CARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there is inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards. Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the Federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the Federal annual $PM_{2.5}$ standard is met if the three-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the air basin are shown in Table 3.1-2. These pollutants are defined as "criteria pollutants." The air basin is designated as nonattainment for the state and national ozone, PM_{10}, and $PM_{2.5}$, standards. The air basin is also in nonattainment for the state annual nitrogen dioxide standard.

Table 3.1-2: South Coast Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide (annual)	Nonattainment	Attainment
Nitrogen dioxide	Attainment	Unclassified[1]
Sulfur dioxide	Attainment	Attainment
PM_{10}	Nonattainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment

Notes:
[1] EPA set a new one-hour standard for nitrogen dioxide at a level of 100 parts per billion on January 25, 2010, which became effective April 12, 2010. The EPA has not yet identified or designated areas not meeting the new standard, based on the existing community-wide monitoring network.
Source: CARB, 2013b

Toxic Air Contaminants

Besides the criteria air pollutants listed above, there is another group of substances found in ambient air referred to as hazardous air pollutants (HAPs) under the Federal Clean Air Act and toxic air contaminants (TACs) under the California Clean Air Act. These contaminants tend to be localized and are found in relatively low concentrations in ambient air. However, they can result in adverse chronic health effects if exposure to low concentrations occurs for long periods. They are regulated at the local, state, and federal level. HAPs are the air contaminants identified by the EPA as known or suspected to cause cancer, serious illness, birth defects, or death. Many of these contaminants originate from human activities, such as fuel combustion and solvent use. Mobile Source Air Toxics (MSATs) are a subset of the 188 HAPs. Of the 21 HAPs identified by the EPA as MSATs, a priority list of six priority HAPs were identified that include diesel exhaust, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene. While vehicle miles traveled in the United States is expected to increase by 64 percent over the period 2000 to 2020, emissions of MSATs are anticipated to decrease substantially as a result of efforts to control mobile source emissions (by 57 percent to 67 percent depending on the contaminant).

Particulate matter from diesel exhaust is the predominant TAC in urban air and is estimated to represent about two-thirds of the cancer risk from TACs (based on the statewide average). According to ARB, diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by ARB, and are listed as carcinogens either under State Proposition 65 or under the Federal Hazardous Air Pollutants programs.

The CARB Statewide comprehensive air toxics program was established in the early 1980s. The TAC Identification and Control Act (AB 1807, Tanner 1983) created California's program to reduce exposure to air toxics. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, Connelly 1987) supplements the AB 1807 program by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks.

Under AB 1807, the ARB is required to use certain criteria in the prioritization for the identification and control of air toxics. In selecting substances for review, the CARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community." AB 1807 also requires the ARB to use available information gathered from the ARB 2588 program to include in the prioritization of compounds. In September 1992, the Hot Spots Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to reduce their risk through a risk management plan.

The SCAQMD has developed the MATES-III study (SCAQMD 2008) in order to calculate the toxic emissions levels throughout the air basin and associated cancer risks. According to the SCAQMD's MATES-III study, the western portion of the project site has an estimated cancer risk of 305 in one million persons exposed to TACs. This compares to an average risk of 1,194 basin-wide average.

Sensitive Receptors

Those individuals who are sensitive to air pollution include children, the elderly, and persons with preexisting respiratory or cardiovascular illness. The SCAQMD considers a sensitive receptor to be a location that houses or attracts children, the elderly, people with illnesses, or others who are especially sensitive to the effects of air pollutants. Examples of sensitive receptors include hospitals, residences, convalescent facilities, and schools.

The closest sensitive receptors to the project are a number of residences located 0.13 mile to the east of the proposed recharge basin, and some scattered residences located along the pipeline route on Beaumont Avenue and to the south of the service area connection site. In addition, Beaumont High School is located to the north of the proposed recharge basin and Mountain View Middle School located to the south of the proposed recharge basin.

3.1.2 - Regulatory Setting

Air pollutants are regulated at the national, state, and air basin level with each agency having a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The CARB regulates at the state level while the SCAQMD regulates at the air basin level.

Federal and State Regulatory Agencies

The EPA handles global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards (NAAQS), also known as federal standards. There are national standards for six common air pollutants, called criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970.

The criteria pollutants are:

- Ozone
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide (CO)
- Lead
- Sulfur dioxide

The national standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary national standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain National standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. The CARB also administers California Ambient Air Quality Standards for the 10 air pollutants designated in the California Clean Air Act. The 10 State air pollutants are the 6 national standards listed above as well visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The national and state ambient air quality standards, relevant effects, properties, and sources of the pollutants are summarized in Table 3.1-3.

Several pollutants listed in Table 3.1-3 are not addressed in this analysis. Analysis of lead is not included in this report because the project is not anticipated to emit lead. Visibility-reducing particles are not explicitly addressed in this analysis because particulate matter is addressed. The project is not expected to generate or be exposed to vinyl chloride because proposed project uses do not utilize the chemical processes that create this pollutant and there are no such uses in the project vicinity. The proposed project is not expected to cause exposure to hydrogen sulfide because it would not generate hydrogen sulfide in any substantial quantity. There is no generation of hydrogen sulfide usage in the project area.

Table 3.1-3: Air Pollutant Descriptions

Air Pollutant	Averaging Time	California Standard	National Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1-hour	0.09 ppm	—	(a) Decrease of pulmonary function and localized lung edema in humans and animals; (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) increased mortality risk; (d) altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) vegetation damage; (f) property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), NO_X, and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_X) are mobile sources (on-road and off-road vehicle exhaust).
	8-hour	0.070 ppm	0.075 ppm			
Carbon monoxide (CO)	1-hour	20 ppm	35 ppm	(a) Aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) impairment of central nervous system functions; (d) possible increased risk to fetuses.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8-hour	9.0 ppm	9 ppm			
Nitrogen dioxide [c] (NO_2)	1-hour max	0.18 ppm	—	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) contribution to atmospheric discoloration.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides - NO_X (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_X is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_X can react with compounds to form nitric acid and related particles.	NO_X is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	1-hour 98th	—	0.100 ppm			
	Annual	0.030 ppm	0.053 ppm			

Table 3.1-3 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	California Standard	National Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide (SO_2)	1-hour	0.25 ppm	0.075 ppm[d]	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_X) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and national standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour[1]	—	0.5 ppm			
	24-hour	0.04 ppm	—			
Particulate matter (PM_{10})	24-hour	50 µg/m^3	150 µg/m^3	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) declines in pulmonary function growth in children; (c) increased risk of premature death from heart or lung diseases in the elderly. Daily fluctuations in $PM_{2.5}$ levels have been related to hospital admissions for acute respiratory conditions, school absences, and increased medication use in children and adults with asthma.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (1 micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter.	Stationary sources include fuel combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24-hour	—	35 µg/m^3			
	Annual	12 µg/m^3	15.0 µg/m^3			
Visibility Reducing Particles	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 - 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent.				

Table 3.1-3 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	California Standard	National Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24-hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO_4^{2-}. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[b]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction. The more serious effects of lead poisoning include behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs. Lead may also contribute to high blood pressure and heart disease.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. An aerosol is a collection of solid, liquid, or mixed-phase particles suspended in the air. Lead was first regulated as an air pollutant in 1976. Leaded gasoline was first marketed in 1923 and was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or national air quality standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering. Lead can be removed from the atmosphere through deposition to soils, ice caps, oceans, and inhalation.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride[b]	24-hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.

Table 3.1-3 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	California Standard	National Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Hydrogen sulfide	1-hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H_2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no state or national ambient air quality standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, high concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants, such as benzene.	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of VOCs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.

Table 3.1-3 (cont.): Air Quality Monitoring Summary

Air Pollutant	Averaging Time	California Standard	National Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	DPM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Abbreviations:
ppm = parts per million (concentration) $\mu g/m^3$ = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] National standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3 Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[c] Effective April 12, 2010, to attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb, or 188 $\mu g/m^3$

[d] To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Source of effects: SCAQMD 2007a, CARB 2009, NTP 2005a.
Source of standards: CARB 2013b.
Source of properties and sources: EPA 2003. NTP 2005b.

State of California Regulations

ARB Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling adopts new section 2485 within Chapter 10, Article 1, Division 3, title 13 in the California Code of Regulations. The measure limits the idling of diesel vehicles to reduce emissions of toxics and criteria pollutants. The driver of any vehicle subject to this section: (1) shall not idle the vehicle's primary diesel engine for greater than five minutes at any location; and (2) shall not idle a diesel-fueled auxiliary power system for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

ARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, requires that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park," and the parking brake is engaged. If the parking brake is not engaged, then the engine shutdown system shall shut down the engine after 900 seconds of continuous idling operation once the vehicle is stopped and the transmission is set to "neutral" or "park." Any project trucks manufactured after 2008 would be consistent with this rule, which would ultimately reduce air emissions.

ARB Regulation for In-Use Off-Road Diesel Vehicles. On July 26, 2007, the ARB adopted a regulation to reduce diesel particulate matter and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation imposed limits on idling, buying older off-road diesel vehicles, and selling vehicles beginning in 2008; requires all vehicles to be reported to ARB and labeled in 2009; and then in 2010 begins gradual requirements for fleets to clean up their fleet by getting rid of older engines, using newer engines, and installing exhaust retrofits. The regulation requires equipment to be retrofitted or retired. The regulation takes effect in phases, requiring the largest fleets to comply by 2010, medium fleets by 2013, and smaller fleets by 2015.

Statewide Truck and Bus Rule. On December 12, 2008, the ARB approved a new regulation to significantly reduce emissions from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance requirements between 2011 and 2023. By January 1, 2023, all vehicles must have a 2010 model year engine or equivalent. The regulation applies to all on-road heavy-duty diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds, agricultural yard trucks with off-road certified engines, and certain diesel fueled shuttle vehicles of any gross vehicle weight rating. Out-of-state trucks and buses that operate in California are also subject to the regulation.

South Coast Air Quality Management District

An AQMP is a plan prepared and implemented by an air pollution district for a county or region designated as nonattainment of the federal and/or California ambient air quality standards. The term nonattainment area is used to refer to an air basin where one or more ambient air quality standards are exceeded.

2003 AQMP

One of the purposes of the 2003 AQMP is to lead the air basin and portions of the Salton Sea Air Basin under SCAQMD jurisdiction into compliance with the 1-hour ozone and PM_{10} federal standards (South Coast Air Quality Management District 2003). One of the purposes of the 2007 AQMP is to lead the air basin into compliance of the federal 8-hour ozone and $PM_{2.5}$ standards.

The 2003 AQMP also replaced the 1997 attainment demonstration for the federal CO standard and provided a basis for a maintenance plan for CO for the future, and updated the maintenance plan for the federal nitrogen dioxide standard that the South Coast Air Basin has met since 1992 (2003 AQMP, page 1-1).

The 2003 AQMP also incorporated new scientific data in the form of updated emissions inventories, ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2003 AQMP utilized complex modeling to show that with the control measures, the air basin would be in compliance with the federal and state standards for all pollutants by 2010, except for the state ozone and PM_{10} standards and the state ozone and PM_{10} standard after 2010 or by the earliest practicable date, as mandated by the California Health and Safety Code Section 40462. The ARB approved the 2003 AQMP on August 1, 2003. The EPA's adequacy finding on the emissions budgets for conformity determination in the air basin was published in the Federal Register (69 FR 15325-15326).

2007 AQMP

The 2007 AQMP, which was adopted by the SCAQMD on June 1, 2007 (South Coast Air Quality Management District 2007a). On July 13, 2007, the SCAQMD Board adopted the 2007 Final AQMP Transportation Conformity Budgets and directed the Executive Officer to forward them to ARB for its approval and subsequent submittal to the EPA. On September 27, 2007, ARB adopted the State Strategy for the 2007 State Implementation Plan and the 2007 AQMP as part of the State Implementation Plan. On January 15, 2009, the EPA's regional administrator signed a final rule to approve in part and disapprove in part the SCAQMD 2003 1-hour ozone plan and the nitrogen dioxide maintenance plan. The parts of the plan that were approved strengthen the State Implementation Plan. The Clean Air Act does not require the disapproved portions of the plan, and the disapprovals do not start sanctions clocks.

The 2007 AQMP outlines a detailed strategy for meeting the federal health-based standards for $PM_{2.5}$ by 2015 and 8-hour ozone by 2024 while accounting for and accommodating future expected growth. The 2007 AQMP incorporates significant new emissions inventories, ambient measurements,

scientific data, control strategies, and air quality modeling. Most of the reductions will be from mobile sources, which are currently responsible for about 75 percent of all smog and particulate forming emissions. The 2007 AQMP includes 37 control measures proposed for adoption by the SCAQMD, including measures to reduce emissions from new commercial and residential developments, more reductions from industrial facilities, and reductions from wood burning fireplaces and restaurant charbroilers.

2012 AQMP

The 2012 AQMP was adopted December 7, 2012 (South Coast Air Quality Management District 2012b). The purpose of the 2012 AQMP for the air basin is to set forth a comprehensive and integrated program that will lead the air basin into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update of the air basin's projections in meeting the federal 8-hour ozone standards. The AQMP will be submitted to the U.S. EPA as the State Implementation Plan (SIP) once it is approved by the SCAQMD Governing Board and the ARB. Specifically, the AQMP will serve as the official SIP submittal for the federal 2006 24-hour $PM_{2.5}$ standard, for which U.S. EPA has established a due date of December 14, 2012. In addition, the AQMP will update specific elements of the previously approved 8-hour ozone SIP: 1) an updated emissions inventory and, 2) new control measures and commitments for emissions reductions to help fulfill the Section 182(e)(5) portion of the 8-hour ozone SIP.

The 2012 AQMP proposes air basin-wide $PM_{2.5}$ measures that will be implemented by the 2014 attainment date, episodic control measures to achieve air quality improvements (would only apply during high $PM_{2.5}$ days), Section 182(e)(5) implementation measures (to maintain progress towards meeting the 2023 8-hour ozone national standard), and transportation control measures. Most of the control measures focus on incentives, outreach, and education.

Proposed $PM_{2.5}$ reduction measures in the 2012 AQMP include the following:

- Further NO_X reductions from RECLAIM
- Further reductions from residential wood burning devices
- Further reductions from open burning
- Emission reductions from under-fired charbroilers
- Further ammonia reductions from livestock waste
- Backstop measures for indirect sources of emissions from ports and port-related sources
- Further criteria pollutant reductions from education, outreach and incentives

There are multiple VOC and NO_X reductions in the 2012 AQMP to attempt to reduce ozone formation, including further VOC reductions from architectural coatings, miscellaneous coatings, adhesives, solvents, lubricants, mold release products, consumer products.

The 2012 also contains proposed mobile source implementation measures for the deployment of zero- and near-zero emission on-road heavy-duty vehicles, locomotives, and cargo handling equipment. There are measures for the deployment of cleaner commercial harbor craft, cleaner ocean-going marine vessels, cleaner off-road equipment, and cleaner aircraft engines.

The 2012 AQMP proposes the following mobile source implementation measures:

On-road mobile sources:

- Accelerated penetration of partial zero-emission and zero-emission vehicles and light-heavy and medium-heavy duty vehicles through funding assistance for purchasing the vehicles.
- Accelerated retirement of older light-, medium-, and heavy-duty vehicles through funding incentives.
- Further emission reductions from heavy-duty vehicles serving near-dock rail yards through a proposed control measure that calls for a requirement that any cargo container moved between the Ports of Los Angeles and Long Beach to the nearby rail yards with zero-emission technologies.

Off-road mobile sources:

- Extension of the SOON provision for construction/industrial equipment, which provides funding to repower or replace older Tier 0 and Tier 1 equipment.
- Further emission reductions from freight and passenger locomotives calls for an accelerated use of Tier 4 locomotives in the air basin.
- Further emission reductions from ocean-going marine vessels while at berth.
- Emission reductions from ocean-going marine vessels.

The 2012 AQMP also relies upon the Southern California Association of Governments regional transportation strategy, which is in its adopted 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2011 Federal Transportation Improvement Program, which contains the following sections:

- Linking regional transportation planning to air quality planning: making sure that the regional transportation plan supports the goals and objectives of the AQMP/SIP.
- Regional transportation strategy and transportation control measures: the RTP/SCS contains improvements to the regional multimodal transportation system including the following: active transportation (non-motorized transportation - biking and walking); transportation demand management; transportation system management; transit; passenger and high-speed rail; goods

movement; aviation and airport ground access; highways; arterials; and operations and maintenance.

- Reasonably available control measure analysis.

South Coast Air Quality Management District Rules

The AQMP for the air basin establishes a program of rules and regulations administered by SCAQMD to obtain attainment of the state and national air quality standards. The rules and regulations that apply to this project include, but are not limited to, the following rules.

SCAQMD Rule 402 prohibits a person from discharging from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

SCAQMD Rule 403 governs emissions of fugitive dust during construction and operation activities. Compliance with this rule is achieved through application of standard Best Management Practices, such as application of water or chemical stabilizers to disturbed soils, covering haul vehicles, restricting vehicle speeds on unpaved roads to 15 miles per hour, sweeping loose dirt from paved site access roadways, cessation of construction activity when winds exceed 25 mph, and establishing a permanent ground cover on finished sites.

SCAQMD Rule 1108 governs the sale, use, and manufacturing of asphalt and limits the VOC content in asphalt used in the South Coast Air Basin. This rule would regulate the VOC content of asphalt used during construction. Therefore, all asphalt used during construction of the project must comply with SCAQMD Rule 1108.

SCAQMD Rule 1186 limits the presence of fugitive dust on paved and unpaved roads and sets certification protocols and requirements for street sweepers that are under contract to provide sweeping services to any federal, state, county, agency or special district such as water, air, sanitation, transit, or school district.

Local

As discussed previously in Section 1 of this Draft EIR, the SGPWA is exempt from local land use policies and ordinances in accordance with California Government Code Sections 53091(d) and 53091(e). Although exempt for the proposed project, SGPWA has chosen to provide a discussion of the local land use policies and ordinances.

City of Beaumont General Plan

The City of Beaumont General Plan contains the following goals and policies that address air quality.

Resource Management Element

Goal 3. The City of Beaumont will cooperate in regional efforts to improve air quality.

Policy 8. The City of Beaumont will encourage incorporation of energy conservation features in new developments and in the renovation of existing development.

Policy 9. The City of Beaumont will require feasible fugitive dust reduction techniques to be utilized during construction activities such as regularly watering down the construction area.

Beaumont Municipal Code

The Beaumont Municipal Code establishes the following air quality provisions that are relevant to the project.

Chapter 17.04 Performance Standards

Section 17.04.050 Air Quality

The California Air Resources Board and the South Coast Air Quality Management District (SCAQMD) are the agencies responsible for the implementation of the Clean Air Act at the local level. In order to protect the health and welfare of those persons living, working, or visiting the City of Beaumont, the following performance standards with respect to air quality are outlined in this Section.

A. Smoke and Particulates. No smoke of any type shall be emitted from a source in excess of SCAQMD standards. No elements of dust, fly ash, vapors, fumes, gases or other forms of air pollution shall be permitted in excess of the standards set by the SCAQMD or that can cause damage to human health, animals, vegetation, or that can cause excessive soiling at any location.

B. Permits. Before a building or occupancy permit is issued by the City, the applicant shall be required to show proof that he has secured the necessary permits from the SCAQMD or that the project is exempt from SCAQMD regulations as of the date of filing of the City application.

C. Enforcement and Standards. In enforcing these regulations, the City shall use the same point of measurement as utilized by the SCAQMD. (Ord. 920 Section 2, 9/2007)

17.04.060 Odors

In order to protect the well being of the community and to eliminate the blighting influences of odors, the following performance standards with respect to the generation of odors are outlined in this Section.

A. Odor Generating Activities. Any process that creates or emits any odors, gases, or other odorous matter shall comply with the standards set by the South Coast Air Quality Management District (SCAQMD).

B. Quantified Standard. No odors, gases, and odorous matter shall be emitted in quantities to be detectable when diluted in a ratio of one (1) volume diluted air to four (4) volumes clean air at the point of greatest concentration. (Ord. 920 Section 2, 9/2007)

County of Riverside General Plan

The County of Riverside General Plan contains the following goals and policies that address air quality.

Air Quality Element

Policy AQ 1.1. Promote and participate with regional and local agencies, both public and private, to protect and improve air quality.

Policy AQ 1.2. Support the Southern California Association of Government's (SCAG) Regional Growth Management Plan by developing intergovernmental agreements with appropriate governmental entities such as the Western Riverside Council of Governments (WRCOG), the Coachella Valley Association of Governments (CVAG), sanitation districts, water districts, and those subregional entities identified in the Regional Growth Management Plan.

Policy AQ 1.3. Participate in the development and update of those regional air quality management plans required under federal and state law, and meet all standards established for clean air in these plans.

Policy AQ 1.4. Coordinate with the SCAQMD and MDAQMD to ensure that all elements of air quality plans regarding reduction of air pollutant emissions are being enforced.

Policy AQ 1.5. Establish and implement air quality, land use and circulation measures that improve not only the County's environment but the entire region's.

Policy AQ 2.1. The County land use planning efforts shall assure that sensitive receptors are separated and protected from polluting point sources to the greatest extent possible.

Policy AQ 2.2. Require site plan designs to protect people and land uses sensitive to air pollution through the use of barriers and/or distance from emissions sources when possible.

Policy AQ 2.3. Encourage the use of pollution control measures such as landscaping, vegetation and other materials, which trap particulate matter or control pollution.

Policy AQ 4.1. Encourage the use of building materials / methods which reduce emissions.

Policy AQ 4.5. Require stationary pollution sources to minimize the release of toxic pollutants through:

- Design features
- Operating procedures
- Preventive maintenance
- Operator training
- Emergency response planning

Policy AQ 4.6. Require stationary air pollution sources to comply with applicable air district rules and control measures.

Policy AQ 4.7. To the greatest extent possible, require every project to mitigate any of its anticipated emissions which exceed allowable emissions as established by the SCAQMD, MDAQMD, SOCAB, the Environmental Protection Agency and the California Air Resources Board.

Policy AQ 4.9. Require compliance with SCAQMD Rules 403 and 403.1, and support appropriate future measures to reduce fugitive dust emanating from construction sites.

3.1.3 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to air quality are significant environmental effects, the following questions are analyzed and evaluated.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan? (See Air Quality Plan Impact AIR-1.)

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (See Air Quality Standards / Violations Impact AIR-2.)

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)? (See Criteria Pollutant Impact AIR-3.)

d) Expose sensitive receptors to substantial pollutant concentrations? (See Sensitive Receptors Impact AIR-4.)

e) Create objectionable odors affecting a substantial number of people? (See Odors Impact AIR-5.)

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations.

SCAQMD Significance Thresholds

While the final determination of whether a project is significant is within the purview of the Lead Agency pursuant to Section 15064(b) of the CEQA Guidelines, SCAQMD recommends that its quantitative air pollution thresholds be used to determine the significance of project emissions. If the Lead Agency finds that the project has the potential to exceed these air pollution thresholds, the project should be considered to have significant air quality impacts. The SCAQMD has defined two sets of air quality significance thresholds that are applicable to the project: regional significance thresholds and localized significance, each of which is discussed below.

Regional Significance Thresholds

The following regional significance thresholds have been established by SCAQMD to protect air resources within the air basin as a whole, as project emissions can potentially contribute cumulatively to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the South Coast Air Basin region with regional construction or operational emissions in excess of any of the thresholds presented in Table 3.1-4 are considered to have a significant regional air quality impact. These thresholds set daily limits for construction and operational emissions and considers all project-generated emissions from both onsite and offsite activities.

Table 3.1-4: SCAQMD Regional Thresholds

Pollutant	Construction (pounds per day)	Operation (pounds per day)
Nitrogen oxides (NO_X)	100	55
Volatile organic compounds (VOC)	75	55
Particulate matter (PM_{10})	150	150
Particulate matter ($PM_{2.5}$)	55	55
Sulfur oxides (SO_X)	150	150
Carbon monoxide (CO)	550	550
Source: SCAQMD 1993.		

Local Significance Thresholds

The SCAQMD Governing Board adopted a methodology for calculating localized air quality impacts through localized significance thresholds (LSTs), which is consistent with SCAQMD's Environmental Justice Enhancement Initiative I-4. LSTs represent the maximum emissions from a project that will not cause or contribute to an exceedance of the most stringent applicable State or national ambient air quality standard. LSTs were developed in recognition of the fact that criteria

pollutants such as CO, NO_X, and PM_{10} and $PM_{2.5}$ in particular, can have local impacts at nearby sensitive receptors as well as regional impacts. The LSTs are developed for each source receptor area and are applicable to NO_X, CO, PM_{10}, and $PM_{2.5}$. The SCAQMD has not defined LSTs for SO_x or VOC. Separate LSTs have been defined for construction and operations. The SCAQMD LST assessment process only considers emissions generated from onsite emission sources.

To facilitate the localized assessment process, the SCAQMD LST methodology (SCAQMD 2009) provides a series of look-up tables that contain LSTs for the Source Receptor Areas established within the air basin. If onsite construction emissions exceed the LSTs for the Source Receptor Area where the project is located, then the project would be considered to have a significant local air quality impact. This methodology applies to projects that disturb areas up to 5 acres in size each day. The current look-up tables cover the years 2006 through 2008, the most current look-up tables. The LSTs for the proposed project were obtained from the look-up tables in the SCAQMD Final LST Methodology in Source Receptor Area 29, Banning Airport, the Source Receptor Area where the project is located.

Construction

As noted in Table 3.1- 9 below, the construction area disturbed on a daily basis is dependent on the construction phase ranging from a minimum of 1.5 acres during the construction of the service connection to 5 acres during construction of the recharge basins. The location to the sensitive receptors from the proposed construction activities are described in Table 3.1-8. A receptor distance of 25 meters was assumed for NOx and CO based on the average location of operational equipment where a sensitive receptor could be located for a period of 8 hours or less (i.e., the school to the south of the project). The 8-hour period is the averaging time of concentration these pollutants as depicted in Table 3.1-3. A receptor distance of 200 meters was assumed for PM_{10} and $PM_{2.5}$ based on the average location of operational equipment where a sensitive receptor could be located for a period of at least 24 hours (i.e., the residences located to the east of the project). The 24-hour period is the averaging time of concentration for these pollutants as depicted in Table 3.1-3. The localized construction significance thresholds are shown in Table 3.1-5 for the various construction phases.

Table 3.1-5: Project Localized Construction Significance Thresholds

Pollutant	Localized Significance Threshold (pounds/day)				
	Recharge Basin[1]	Well Construction[2]	Pipeline Construction[3]	Jack and Bore[4]	Service Connection[5]
Nitrogen oxides (NO_X)	236	103	193	178	126
Particulate matter (PM_{10})	180	6	16	14	8
Particulate matter ($PM_{2.5}$)	55	4	9	8	5
Carbon monoxide (CO)	2,817	1,000	2,179	1,966	1,271

Notes:
[1] Based on Source Receptor Area 29, 5 acres disturbed area and receptor distance of 25 meters for NO_2 and CO and 200 meters for PM_{10} and $PM_{2.5}$.
[2] Based on Source Receptor Area 29, 1 acre disturbed area (smallest disturbed entry in the SCAQMD LST look-up tables and a receptor distance of 25 meters
[3] Based on Source Receptor Area 29, 3.5 acres disturbed area and receptor distance of 25 meters.
[4] Based on Source Receptor Area 29, 3.0 acres disturbed area and receptor distance of 25 meters.
[5] Based on Source Receptor Area 29, 1.5 acres disturbed area and receptor distance of 25 meters.
Source: SCAQMD, 2009.

Operation

The principal onsite operational emissions used in the operational LST assessment derive from the use of a bulldozer and one water truck during the routine maintenance of the recharge basin. The emissions from the two haul truck trips for excess soils are not part of the operational LST assessment because the LST assessment is for onsite activities and not the 7-mile one-way hauling of soil. The use of a water truck will depend on the moisture of the soil at the time of maintenance. Table 3.1-6 summarizes the applicable LSTs for project operations. A receptor distance of 25 meters was assumed for NOx and CO based on the average location of operational equipment where a sensitive receptor could be located for a period of 8 hours or less (i.e., the school to the south of the project). The 8-hour period is the averaging time of concentration these pollutants as depicted in Table 3.1-3. A receptor distance of 200 meters was assumed for PM10 and PM2.5 based on the average location of operational equipment where a sensitive receptor could be located for a period of at least 24 hours (i.e., the residences located to the east of the project). The 24-hour period is the averaging time of concentration for these pollutants as depicted in Table 3.1-3.

Table 3.1-6: Project Localized Operational Significance Thresholds

Pollutant	Localized Significance Threshold (pounds/day)
Nitrogen dioxide	236[1]
Carbon monoxide	2,817[1]
PM_{10}	44[2]
$PM_{2.5}$	14[2]

Note:
[1] The LSTs were derived for Source Receptor Area 29, a 5-acre operational area, and a receptor distance of 25 meters.
[2] The LSTs were derived for Source Receptor Area 29, a 5-acre operational area, and a receptor distance of 200 meters
Source: SCAQMD 2009.

3.1.4 - Methods and Assumptions

The air emissions from the construction and operation of the project were estimated using the CARB OFFROAD2011 emission model for estimating emissions from off-road construction equipment and the CARB EMFAC2011 mobile source emission model for estimating emissions from on-road motor vehicles.

Estimation of Construction Emissions

The extent of construction emissions varies substantially from day to day based on the types of equipment in operation, construction activity, and meteorological conditions. Construction emissions result from the operation of off-road construction equipment, worker and haul truck travel, evaporative emissions from asphalt paving and from fugitive dust generated from various earth-moving activities. The project's construction consists of several phases including construction of the recharge basin, pipeline construction, jack and boring construction, and construction of the service connection. The inventory of construction equipment expected to be used in each construction phase is shown in Table 3.1-7 and Table 3.1-8.

Table 3.1-7: Inventory of Project Construction Equipment

Phase	Length (days)[1]	Onsite Workers[2]	Construction Equipment[2]	Hours/ day[2]	HP[2]	Hauling
Recharge Basin	80	12	2 Scrapers 2 rubber tired dozer 2 tracked dozer 1 Grader 3 water truck	7 7 7 6 3	232 358 358 162 381	None[1]
Well Construction	2	5	Bore/drill rig Generator Set Forklift Grout Pump Welder	24 24 6 12 12	250 40 90 125 40	None
Pipeline Construction	25	6	See Table 3.1-8 below			28,000 cubic feet export (1,100 cubic yards)[3]
Jack and Bore	4	5	1 Bore/Drill Rig 2 Excavators 2 Other Materials Handling Equipment (Side Boom)	7 7 7	120 250 250	None[3]
Service Connection	12	6	1 excavator 1 rubber tired backhoe 1 water truck	7 7 2	157 75 381	None[3]

Notes:
HP = horsepower
Peak Hours/Day = hours per day the onsite equipment's engines are running onsite.
1 Source: Albert A. Webb Associates 2013. The 1,100 cubic yards of soil from the pipeline alignment is proposed to be exported to one of three locations: the proposed recharge facility site, the service connection site, and the offsite triangular parcel north of the proposed recharge basin and south of Brookside Avenue. The offsite triangular parcel is located approximately 500 feet west of the pipeline proposed along Brookside Avenue.
2 Source: Michael Brandman Associates 2013 based on assumptions for other similar projects.
3 Source: Atkins 2013.

Table 3.1-8: Inventory of Project Construction During Pipeline Construction

Equipment Name	Number	Peak Hours/ Day	HP
Excavation and Shoring			
Haul Truck[1]	2	4	189
Backhoe	1	7	108
Loader	1	7	108
Excavator	2	7	168
Compactor	1	4	8
15-ton Crane	1	7	399
Water Truck	1	3	189
Pipe Installation and Backfilling			
Haul Truck[2]	3	6	189
Hydraulic Jack	1	6	—
Welding truck with Generator	1	4	45
40-kilowatt Generator	1	6	60
Street Restoration			
Paver	1	2	100
Roller	1	2	80

Notes:
HP = horsepower
Peak Hours/Day = hours per day the onsite equipment's engines are running onsite.
[1] There are two haul trucks assumed to export dirt from the pipeline to one of three soil sites.
[2] The two haul trucks for the pipeline installation and backfilling phase are assumed to be used to import asphalt.; one haul truck would transport pipeline segments
Source: Michael Brandman Associates 2013 based on assumptions for other similar projects.

The amount of fugitive dust emissions generated during construction was based on the number of equipment hours and the maximum daily disturbance activities possible for each piece of equipment. The SCAQMD CalEEMod model provides recommendations as to the maximum daily disturbance possible for several pieces of construction equipment as shown in Table 3.1-9.

Table 3.1-9: Areas Disturbed During Construction

Phase	Equipment	Acres/8-hr-day per Piece of Equipment[1, 2]	Total Acres/8-hr-day[3]
Recharge Basin	2 Scrapers 2 rubber tired dozer 2 tracked dozer 1 Grader 1 water truck	1.0 0.5 0.5 0.5 0.5	2 1 1 .5 .5 Total = 5 acres/day
Well Construction	Smallest disturbed area in the SCAQMD LST mass emission rate lookup tables	1.0	1 acre
Pipeline Construction	2 Haul Trucks - Soil Export 2 Haul Trucks - Asphalt Import 1 Haul Truck - Pipeline Segments 1 Backhoe 1 Loader 2 Excavator 1 Compactor 1 15-ton Crane 1 Water Truck 1 Hydraulic Jack 1 Welding truck with Generator 1 40-kilowatt Generator 1 Paver 1 Roller	0.0 0.0 0.0 0.5 0.5 1.0 0.0 0.5 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.5 0.5 2.0 0.0 0.5 0.0 0.0 0.0 0.0 0.0 Total = 3.5 acres/day
Jack and Bore	1 Bore/Drill Rig 2 Excavators 2 Other Materials Handling Equip.	0.5 1.0 0.5	0.5 2.0 0.5 Total = 3.0 acres/day
Service Connection	1 excavator 1 rubber tired backhoe 1 water truck	1.0 0.5 0.0	1.0 0.5 0.0 Total = 1.5 acres/day

Notes:
[1] The pieces of equipment showing 0.0 acres per 8-hour day include construction equipment that are on-road vehicles and would not disturb any acreage onsite.
[2] The SCAQMD's guidance indicates that tractors, graders, and dozers would impact 0.5 acre per 8-hour day (acres/8-hr-day) and scrapers would impact 1 acre/8-hour day. The equipment to be used for construction not identified in the SCAQMD's guidance (excavators, dump trucks, backhoes, and loaders) are assigned an impact area based on a worst-case scenario and the anticipated fugitive dust to be generated by each piece. As identified in the project description, the project would not impact more than 5 acres per day during construction.
[3] The total acreage is used in CalEEMod to generate fugitive dust. This acreage represents the total acres disturbed during the construction phase; the equipment may disturb the same area multiple times per day. Therefore, a backhoe and a loader could disturb the same 0.5 acre during pipeline construction; however, the total acreage disturbed for the fugitive dust evaluation is a combined one acre for both of these pieces of equipment. Although the construction area associated with pipeline construction is less than one acre, the total acreage disturbed for the fugitive dust evaluation is 3.5 acres per day.
Source: Michael Brandman Associates, 2013.

The maximum amount of area disturbed during each construction phase was used to estimate fugitive dust emissions.

SCAQMD Rule 403 requires fugitive dust generating activities follow best available control measures to reduce emissions of fugitive dust. The best available control shown in Table 3.1-10 are incorporated by reference as necessary to meet Rule 403

Table 3.1-10: Fugitive Dust Best Available Control Measures

Best Available Control Measure[1]	Associated Measure in CalEEMod[2]
Clearing and Grubbing 02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing. 02-2 Stabilize soil during clearing and grubbing activities. 02-3 Stabilize soil immediately after clearing and grubbing activities. **Earth Moving Activities** 08-1 Pre-apply water to depth of proposed cuts 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction 08-3 Stabilize soils once earth-moving activities are complete	Water exposed surfaces three times per day
Staging Areas 13-1 Stabilize staging areas during use by limiting vehicle speeds to 15 miles per hour.	Reduce speed on unpaved roads to 15 miles per hour.
Notes: [1] SCAQMD Rule 403.	

Operations

Once operational, periodic maintenance of the recharge basins would be required. If the recharge basins continue to infiltrate at an acceptable rate, the time between maintenance activities would be extended. It is anticipated that each recharge basin would likely be serviced on an annual basis. Maintenance activities would involve temporarily taking an individual basin out of commission, allowing the basin to thoroughly dry over several weeks, regrading and ripping the basin bottom with a bulldozer, and, if necessary, regrading and tracking the basin slopes, although this final step in not expected to be regularly required. In addition, a water truck is assumed to be used, when necessary. Each basin would take approximately one day to grade, rip, and track. Since SGPWA has plans to temporarily take the pipeline offline every year to perform mandatory annual maintenance activities, it is also possible that the recharge facility would be shut down during this period, with each basin being serviced during the shut down period. Each cleaning assumes that a bulldozer would remove the silt layer built up on the basin's bottom. An estimated 100 cubic yards of silt would be removed

annually by the use of two haul truck trips per day over five days to complete the five proposed basins.

3.1.5 - Project Impact Analysis and Mitigation Measures

This section discusses potential impacts associated with the proposed project and provides mitigation measures, where necessary.

Air Quality Plan

Impact AIR-1	The project could conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis

According to the 1993 SCAQMD Handbook, there are two key indicators of consistency with the AQMP:

- Indicator 1: Whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP. Project applicability: Applicable and assessed below.
- Indicator 2: A project would conflict with the AQMP if it will exceed the assumptions in the AQMP in 2010 or increments based on the year of project build-out and phase. Project applicability: Not applicable. The Handbook indicates that key assumptions to use in this analysis are population number and location and a regional housing needs assessment. The parcel-based land use and growth assumptions and inputs used in the Regional Transportation Model run by the Southern California Association of Governments that generated the mobile inventory used by the SCAQMD for AQMP are not available. Therefore, this indicator is not applicable.

In addition to Indicator 1 above, consistency with the AQMP will also be determined based on project compliance with applicable control measures, rules, and regulations, as discussed below.

Project's Contribution to Air Quality Violations

According to the SCAQMD, the project is consistent with the AQMP if the project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP (SCAQMD 1993, page 12-3).

As discussed in Impact AIR-2, during construction or operation, the project would not exceed the localized significance thresholds for any pollutant for each individual construction phase or when more than one construction phase would overlap in time given the distances where the individual construction phases would occur. Further as discussed in Impact AIR-3, the project construction

could exceed the SCAQMD's regional emission significance threshold for NO_X during the recharge basin construction and/or if the recharge basin construction, pipeline construction or service connection construction would occur simultaneously. Therefore, the project could contribute substantially to an existing or projected air quality violation on a regional basis.

Control Measures

The next criterion is compliance with the control measures in the 2003, the 2007, and the 2012 AQMPs. The 2003 AQMP contains a number of land use and transportation control measures including the following: the District's Stationary and Mobile Source Control Measures; State Control Measures proposed by ARB; and Transportation Control Measures provided by Southern California Association of Governments. ARB's strategy for reducing mobile source emissions include the following approaches: new engine standards; reduce emissions from in-use fleet, require clean fuels, support alternative fuels and reduce petroleum dependency, work with EPA to reduce emissions from national and state sources, and pursue long-term advanced technology measures (AQMP 2003, page 4-25). Transportation control measures provided by Southern California Association of Governments include those contained in the Regional Transportation Plans, the most current version of which is the 2008 Regional Transportation Plan. The Regional Transportation Plan has control measures to reduce emissions from on-road sources by incorporating strategies such as high occupancy vehicle interventions, transit, and information-based technology interventions (AQMP 2003, page 4-19). The measures implemented by ARB and Southern California Association of Governments affect the project indirectly by regulating the vehicles that the residents may use and regulating public transportation. The project indirectly would comply with the control measures set by ARB and Southern California Association of Governments.

The focus of the 2007 AQMP is to demonstrate attainment of the national $PM_{2.5}$ ambient air quality standard by 2015 and the national 8-hour ozone standard by 2024, while making expeditious progress toward attainment of state standards. The proposed strategy, however, does not attain the previous national 1-hour ozone standard by 2010 as previously required prior to the recent change in national regulations. This is to be accomplished by building upon improvements from the previous plans and incorporating all feasible control measures while balancing costs and socioeconomic impacts. The 2007 AQMP indicates that $PM_{2.5}$ is formed mainly by secondary reactions or sources. Therefore, instead of reducing fugitive dust, the strategy for reducing $PM_{2.5}$ focuses on reducing precursor emissions of SO_X, directly emitted $PM_{2.5}$, NO_X, and VOC.

The Final 2007 AQMP control measures consist of four components. The first component is SCAQMD's Stationary and Mobile Source Control Measures. The Final 2007 AQMP includes 30 short-term and mid-term stationary and seven mobile source control measures for SCAQMD implementation. A complete listing of the measures is in the 2007 AQMP and includes measures such as VOC reductions from gasoline transfer and dispensing facilities, further NO_X reductions from space heaters, localized control program for PM emission hot spots, urban heat island, energy

efficiency and conservation, etc. Some of the measures will become new rules and some will be amendments to existing rules. When the rules pass, the owner-operator will follow the applicable rules.

The purpose of the 2012 AQMP for the air basin is to set forth a comprehensive and integrated program that will lead the air basin into compliance with the federal 24-hour $PM_{2.5}$ air quality standard, and to provide an update of the air basin's projections in meeting the federal 8-hour ozone standards. The 2012 AQMD relies on a number of stationary source and mobile source control measures on VOC and NO_X emissions to reduce ozone concentrations. Such measures would include the deployment of zero- and near-zero emission on-road heavy-duty vehicles, locomotives, and cargo handling equipment, and accelerated replacement of Tier 0 and Tier 1 off road construction equipment.

The second component is ARB's Proposed State Strategy, which includes short- and mid-term control measures aimed at reducing emissions from sources that are primarily under state jurisdiction, including on-road and off-road mobile sources, and consumer products. These measures are required in order to achieve the remaining emission reductions necessary for $PM_{2.5}$ attainment. ARB's strategy includes measures such as improvements to California's Smog Check Program, expanded passenger vehicle retirement, cleaner in-use heavy-duty trucks, reductions from port related sources, cleaner off-road equipment, evaporative and exhaust strategies, pesticide strategies, etc. When these measures are implemented by the ARB, the project would be required to follow them.

The third component is SCAQMD Staff's Proposed Policy Options to Supplement ARB's Control Strategy. SCAQMD staff believe that a combination of regulatory actions and public funding is the most effective means of achieving emission reductions. As such, the 2007 Final AQMP proposes three policy options for the decision makers to consider in achieving additional reductions. The first option is to incorporate the SCAQMD proposed additional control measures as a menu of selections further reducing emissions from sources primarily under state and national jurisdiction. The second option is to have the State fulfill its NO_X emission reduction obligations under the 2003 AQMP by 2010 for its short-term defined control measures plus additional reductions needed to meet the NO_X emission target between 2010 and 2014. The third option is based on the same rate of progress under Policy Option 1, but it relies heavily on public funding assistance to achieve the needed NO_X reductions via accelerated fleet turnover to post-2010 on-road emission standards or the cleanest off-road engine standards in effect today or after 2010. This strategy does not apply to the project.

The fourth component consists of Regional Transportation Strategy and Control Measures provided by Southern California Association of Governments. Transportation plans within the air basin are statutorily required to conform to air quality plans in the region, as established by the 1990 Federal Clean Air Act and reinforced by other Acts. The region must demonstrate that its transportation plans and programs conform to the mandate to meet the national ambient air quality standards in a timely

manner. The Regional Transportation Plan, prepared by the Southern California Association of Governments, is developed every 4 years with a 20-year planning horizon to meet the long-term transportation planning requirements for emission reductions from on-road mobile sources within the air basin. The biennial Regional Transportation Improvement Program requires that the short-term implementation requirements of the Transportation Conformity Rule be met by Southern California Association of Governments. The first 2 years of the program are fiscally constrained and demonstrate timely implementation of a special category of transportation projects called Transportation Control Measures. In general, Transportation Control Measures are those projects that provide emission reductions from on-road mobile sources, based on changes in the patterns and modes by which the regional transportation system is used. Strategies are grouped into three categories: high occupancy vehicle strategy, transit and systems management, and information-based technology (traveling during a less congested time of day). Southern California Association of Governments approved the transportation measures in the Regional Transportation Plan, which have been included in the region's air quality plans. The Transportation Control Measures will be implemented and will subsequently reduce emissions in the air basin. The project's operational personnel who will use the transportation system may experience less congestion due to the implementation of the Transportation Control Measures.

The project would comply with all of the SCAQMD's applicable rules and regulations. Therefore, the project complies with this criterion.

Level of Significance Before Mitigation

Potentially significant impact

Mitigation Measures

Mitigation Measures AIR-1 and AIR-2 are required to reduce regional impacts to less than significant levels.

MM AIR-1 During construction of the recharge basin, the construction contractor can use the construction equipment assumed in this analysis and the two scrapers shall be equipped with a Tier 3 level engine capable of achieving a NO_X emission rate of 2.7 grams per horsepower-hour for each scraper. Based on the peak hours per day of construction and horsepower as reflected in Table 3.1-8 of this Draft EIR, the emission reduction rate would reduce regional emissions of NO_X by the project to below 100 pounds per day. If the construction contractor chooses an alternative mix of construction equipment, the construction contractor shall demonstrate through modeling that potential construction emissions do not exceed the regional or local significance thresholds. If the contractor cannot demonstrate that emissions would be below 100 pounds per day, the contractor will not be allowed to use the alternative mix of construction equipment.

MM AIR-2 Under unforeseen conditions, if there is an overlap of construction phases due to delays in design or weather, the construction contractor shall demonstrate through modeling that potential construction emissions do not exceed the regional significance thresholds. If the contractor cannot demonstrate that emissions would be below the regional significance thresholds, the contractor will not be allowed to use the alternative mix of construction equipment.

Level of Significance After Mitigation

Less than significant impact.

The application of Mitigation Measures AIR-1 and AIR-2 will ensure that NO_X construction emissions will be less than 100 pounds per day. The estimated construction emissions that would occur during the construction of the recharge basin after application of mitigation measures are shown in Table 3.1-15. As shown in Table 3.1-15, the NO_X construction emissions will be less than 100 pounds per day.

Local Air Quality Standards / Violations

Impact AIR-2 **The project would not violate an air quality standard or contribute substantially to an existing or projected air quality violation.**

The localized construction analysis uses significance thresholds that represent the maximum project emissions that would not cause or contribute to an exceedance of the most stringent applicable national or state ambient air quality standard. (SCAQMD 2008). The localized significance thresholds are specific to each source receptor area. If the project results in emissions that do not exceed those thresholds, it follows that those emissions would not cause or contribute to a local exceedance of the appropriate ambient air quality standard. This impact focuses on the project's potential to cause or contribute to a local exceedance of an ambient air quality standard.

Impact Analysis - Construction

Table 3.1-11 compares the project's local air emissions resulting from onsite construction activities with the SCAQMD localized construction significance thresholds for each construction phase.

Table 3.1-11: Localized Construction Assessment

Construction Phase	Construction Emissions (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Recharge Basin				
Project Emissions	104.7	42.1	12.6	8.6
Significance Threshold	236	2,817	180	55
Exceeds Threshold?	No	No	No	No

Table 3.1-11 (cont.): Localized Construction Assessment

Construction Phase	Construction Emissions (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Well Construction				
Project Emissions	46.8	31.9	2.1	2.0
Significance Threshold	103	1,000	6	4
Exceeds Threshold?	No	No	No	No
Pipeline Construction[2]				
Project Emissions	71.4	35.3	14.6	4.6
Significance Threshold	193	2,197	16	9
Exceeds Threshold?	No	No	No	No
Service Connection				
Project Emissions	9.7	4.4	0.5	0.5
Significance Threshold	126	1,271	8	5
Exceeds Threshold?	No	No	No	No

Notes:
NO_x = Oxides , CO = Carbon Monoxide, PM_{10} = Particulate Matter less than 10 microns, and $PM_{2.5}$ = Particulate Matter less than 2.5 microns
1 The construction equipment (number, type, hours of operation, and horsepower) for each phase is provided in Tables 3.1-7 and 3.1-8.
2 Daily total emissions during the pipeline construction include excavation and shoring, jack and bore, installation, and street restoration.
Source: Appendix B, Air Quality and Greenhouse Gas Emissions.

As noted from the above table, each specific construction phase by itself would not exceed the applicable localized construction significance thresholds. However, even if two or more construction phases were to overlap, the areas where the construction would be occurring are sufficiently far apart that any potential local air quality impacts would not overlap and, therefore, the individual construction phase LSTs are appropriate even if construction phases overlapped.

Impact Analysis - Operations

The project's operational emissions would result from the maintenance activities associated with the cleanout of the recharge basins. The well pump used for irrigation was assumed to be electrically powered. The project's operational emissions compared to the SCAQMD's localized operational significance thresholds are shown in Table 3.1-12.

Table 3.1-12: Results of the Localized Operational Assessment

Operations	Operational Emissions (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Maintenance of Recharge Basin				
Project Emissions	22.3	9.8	9.5	6
Significance Threshold	236	2,817	44	14
Exceeds Threshold?	No	No	No	No

Notes:
NO_x = Oxides , CO = Carbon Monoxide, PM_{10} = Particulate Matter less than 10 microns, and $PM_{2.5}$ = Particulate Matter less than 2.5 microns
[1] The operational emissions are based on the use of a bulldozer and one water truck during the routine maintenance of the recharge basin.
Source: Appendix B, Air Quality and Greenhouse Gas Emissions.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance Before Mitigation

Less than significant impact.

Criteria Pollutant

Impact AIR-3	**The project could 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).**

Impact Analysis

Section 15130(b) of the CEQA Guidelines states the following:

> The following elements are necessary to an adequate discussion of significant cumulative impacts: 1) Either: (A) A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or (B) A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact.

In accordance with CEQA Guidelines 15130(b), this analysis of cumulative impacts is based on a summary of projections analysis. This analysis considers the current CEQA Guidelines, which

includes the recent amendments approved by the Natural Resources Agency and effective on March 18, 2010. This analysis is based on the 2003 and 2007 AQMPs. The South Coast Air Basin is in nonattainment for ozone, particulate matter (PM_{10} and $PM_{2.5}$), and nitrogen dioxide, which means that concentrations of those pollutants currently exceed the ambient air quality standards for those pollutants. When concentrations of ozone, PM_{10}, $PM_{2.5}$, and nitrogen dioxide exceed the ambient air quality standard, then those sensitive to air pollution (i.e., children, elderly, sick) could experience health effects such as decrease of pulmonary function and localized lung edema in humans and animals, increased mortality risk, and risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans.

Under the amended CEQA Guidelines, cumulative impacts may be analyzed using other plans that evaluate relevant cumulative effects. The AQMPs describe and evaluate the future projected emissions sources in the South Coast Air Basin and sets forth a strategy to meet both state and federal Clear Air Act planning requirements and federal ambient air quality standards. Therefore, the AQMPs are relevant plans for a CEQA cumulative impacts analysis as the guiding documents in bringing the basin into compliance with federal ambient air quality standards. The 2003 AQMP updates the attainment demonstration for the federal standards for ozone and PM_{10}; replaces the 1997 attainment demonstration for the federal CO standard and provides a basis for a maintenance plan for CO for the future; and updates the maintenance plan for the federal nitrogen dioxide standard that the South Coast Air Basin has met since 1992. The 2007and 2012 AQMPs focus on ozone and $PM_{2.5}$. The AQMP also incorporates significant new scientific data, emission inventories, ambient measurements, control strategies, and air quality modeling.

In accordance with CEQA Guidelines section 15064, subdivision (h)(3), a lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program. As identified in Impact AIR-1, the project complies with the control measures in the 2003, 2007, and 2012 AQMPs and all of the SCAQMD's applicable rules and regulations. Under the CEQA Guidelines Amendments, the lead agency should explain how implementing the particular requirements in the plan, regulation, or program, ensure that the project's incremental contribution to the cumulative effect is not cumulatively considerable. To explain how implementing the requirements in the AQMPs ensures the project's incremental contribution to the cumulative effect is not cumulatively consideration, the following three-pronged analysis was performed. To result in a less than significant impact, the following criteria must be true:

1. Regional analysis: emissions of nonattainment pollutants below the regional significance thresholds.

2. Plan approach: project consistency with current air quality attainment plans including control measures and regulations.

3. Cumulative health impacts: less than significant cumulative health effects of the nonattainment pollutants.

Criterion 1: Regional Analysis

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The South Coast Air Basin is in nonattainment for PM_{10}, $PM_{2.5}$, nitrogen dioxide, and ozone. Therefore, if the project exceeds the regional thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the regional threshold for NO_X or VOC, then it follows that the project would contribute to a cumulatively considerable impact for ozone. If the project exceeds the NO_X threshold, it could contribute cumulatively to nitrogen dioxide concentrations.

Construction

The regional assessment includes all project-generated emissions from both onsite sources such as off-road construction equipment and off-site sources including worker and haul truck emission sources. Table 3.1-13 compares the project regional construction emissions with the relevant SCAQMD regional construction emission significance threshold. As noted from this table, the project's construction emissions could exceed the SCAQMD's regional emission significance thresholds for NO_X emissions during the recharge basin construction phase. In addition, the regional significance threshold for NO_X could also be exceeded if the construction of the recharge basins, the pipeline construction, or the service connection construction occurred simultaneously. As such, the project results in a significant regional air quality impact.

Table 3.1-13: Project Regional Construction Significance Assessment

Construction Phase	Construction Emissions (pounds/day)				VOC	SOx
	NO_X	CO	PM_{10}	$PM_{2.5}$		
Recharge Basin						
Project Emissions	105.0	44.2	12.6	8.6	8.8	0.1
Significance Threshold	100	550	150	55	75	150
Exceeds Threshold?	Yes	No	No	No	No	No
Well Construction						
Project Emissions	46.9	32.7	2.1	2.0	6.1	0.1
Significance Threshold	100	550	150	55	75	150
Exceeds Threshold ?	No	No	No	No	No	No

Table 3.1-13 (cont.): Project Regional Construction Significance Assessment

Construction Phase	Construction Emissions (pounds/day)				VOC	SOx
	NO_X	CO	PM_{10}	$PM_{2.5}$		
Pipeline Construction[1]						
Project Emissions	75.9	39.5	22.7	6.3	6.8	0.2
Significance Threshold	100	550	150	55	75	150
Exceeds Threshold?	No	No	No	No	No	No
Service Connection						
Project Emissions	9.8	6.4	0.5	0.5	0.9	0.1
Significance Threshold	100	550	150	55	75	150
Exceeds Threshold?	No	No	No	No	No	No

Note:
[1] Daily total during the pipeline excavation and shoring, installation, jack and bore, and street restoration construction
Source: Source: Appendix B, Air Quality and Greenhouse Gas Emissions.

Operations

The project's regional operational emissions results from the off-road equipment used in the maintenance of the recharge basin (i.e., bulldozer, water truck, and haul truck) and worker vehicles associated with the maintenance activities. The operation of the irrigation water pump is assumed to be electrically powered. Table 3.1-14 provides the estimate of the project's operational emissions along with the relevant SCAQMD regional operational emission significance thresholds. As noted from this table, the project's operational emissions would not exceed the SCAQMD's regional operational emission significance thresholds.

Table 3.1-14: Project Regional Operational Significance Assessment

Operations	Operational Emissions (pounds/day)				VOC
	NO_X	CO	PM_{10}	$PM_{2.5}$	
Project Emissions	22.9	10.6	10.4	6	1.8
Significance Threshold	55	550	150	55	55
Exceeds Threshold?	No	No	No	No	No

Source: Appendix B, Air Quality and Greenhouse Gas Emissions.

Summary

The regional significance analysis of project impacts indicates that construction emissions would exceed the SCAQMD regional construction emission significance threshold for NO_X. Therefore, the project would have a regionally cumulative impact according to this criterion.

Criterion 2: Plan Approach

The geographic scope for cumulative criteria pollution from air quality impacts is the South Coast Air Basin, because that is the area in which the air pollutants generated by the sources within the air basin circulate and are often trapped. The SCAQMD is required to prepare and maintain an AQMP and a State Implementation Plan to document the strategies and measures to be undertaken to reach attainment of ambient air quality standards. While the SCAQMD does not have direct authority over land use decisions, it is recognized that changes in land use and circulation planning are necessary to maintain clean air. The SCAQMD evaluated the entire air basin when it developed the AQMP.

According to the analysis contained in Impact AQ-2, the project is not consistent with the most recent AQMP without mitigation. Therefore, the project presents a potentially significant impact according to this criterion.

Criterion 3: Cumulative Health Impacts

The air basin is in nonattainment for ozone, nitrogen dioxide, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as the elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 3.1-3. The concentration of the pollutant in the air, the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. If a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects.

The regional analysis of construction emissions indicates that without mitigation, the project would exceed the SCAQMD regional significance thresholds for NO_X. NO_X is a precursor to ozone. Because ozone is a secondary pollutant (it is not emitted directly but formed by chemical reactions in the air), it can be formed miles downwind of the project site. Project emissions of NO_X may contribute to the background concentration of ozone and nitrogen dioxide and cumulatively cause health effects, such as those identified in Table 3.1-3.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implementation of Mitigation Measures AIR-1 and AIR-2 are required.

Level of Significance After Mitigation

Less than significant impact.

Mitigation Measures AIR-1 and AIR-2 are required to reduce project's regional construction emissions of NO_X during the construction of the recharge basin to less than significant levels. The mitigated construction emissions during the construction of the recharge basin are shown in Table 3.1-15. As shown below, the mitigated construction emissions would not exceed the NO_X threshold. Since Mitigation Measures AIR-1 and AIR-2 would reduce the proposed project's NO_X emissions to less than the SCAQMD threshold, the project's contribution to NO_X emissions as well as the contribution to background concentrations of ozone and nitrogen dioxide would be less than cumulatively considerable, and thus less than significant.

Table 3.1-15: Project Regional Construction Significance Assessment (with Mitigation)

Construction Phase	Construction Emissions (pounds/day)				VOC	SO_X
	NO_X	CO	PM_{10}	$PM_{2.5}$		
Recharge Basin						
Project Emissions	93.9	54.7	12.3	8.2	8.5	0.0
Significance Threshold	100	550	150	55	75	150
Exceeds Threshold?	No	No	No	No	No	No
Source: Appendix B, Air Quality and Greenhouse Gas Emissions.						

Sensitive Receptors

Impact AIR-4 **The project would not expose sensitive receptors to substantial pollutant concentrations.**

Impact Analysis

Localized Significance Threshold Analysis

The localized construction analysis uses thresholds that represent the maximum emissions for a project that would not cause or contribute to an exceedance of the most stringent applicable national or state ambient air quality standard (SCAQMD 2008). The thresholds are developed based on the ambient concentrations of that pollutant for each source receptor area and on the location of the sensitive receptors. The sensitive receptors locations are provided in Table 3.1-5. If the project results in emissions under those thresholds, it follows that the project would not cause or contribute to an exceedance of the standard. The standards are set to protect the health of sensitive individuals. If the standards are not exceeded at the sensitive receptor locations, it follows that the receptors would not be exposed to substantial pollutant concentrations.

The localized construction analysis (Impact AIR-2) demonstrated that without mitigation, the project would not exceed the localized significance thresholds for each individual construction phase nor

during the overlapping of any construction phase because of the different locations where the phased construction would occur. Therefore, according to this criterion, the air pollutant emissions during operation would be less than significant, would not exceed the ambient air quality standards in the immediate project vicinity, and would not result in health effects near the project site.

During operation (Impact AIR-2), the project's operational emissions would not exceed any local emission significance threshold. Therefore, according to this criterion, the air pollutant emissions during operation would be less than significant, would not exceed the ambient air quality standards in the immediate project vicinity, and would not result in health effects near the project site.

Toxic Air Pollutants

The off-road diesel equipment used during construction and operation would emit diesel particulate matter (DPM), which is identified as a carcinogen by the ARB. The State of California has determined that DPM from diesel-fueled engines poses a chronic health risk with chronic (long-term) inhalation exposure. The California Office of Environmental Health Hazard Assessment (OEHHA) recommends using a 70-year exposure duration for determining residential cancer risks.

Although construction of the project would involve the use of diesel-fueled vehicles, construction activities cause short-term exposure, and there are no methodologies to calculate short-term risks. The OEHHA methodologies establish long-term exposure variants of 9-, 30-, and 70-year exposures in "The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments." These exposures are chosen to coincide with EPA's estimates of the average (9 years), high-end estimates (30 years) of residence time, and a typical lifetime (70 years). OEHHA states their support for the use of cancer potency factors for estimating cancer risk for these exposure durations. However, as the exposure duration decreases, the uncertainties introduced by applying cancer potency factors derived from very-long-term studies increases. Short-term high exposures are not necessarily equivalent to longer-term lower exposures even when the total dose is the same. OEHHA therefore does not support the use of current cancer potency factor to evaluate cancer risk for exposures of less than 9 years (The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, page 8-4).

DPM during operation is expected to be minimal, and will only occur over one week per year. Toxic exposure from DPM during operation would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Odors

Impact AIR-5	The project would not create objectionable odors affecting a substantial number of people.

Impact Analysis

Background Information

Odors can cause a variety of responses. The impact of an odor results from interacting factors such as frequency (how often), intensity (strength), duration (in time), offensiveness (unpleasantness), location, and sensory perception.

Odor is typically a warning system that prevents animals and humans from consuming spoiled food or toxic materials. Odor-related symptoms reported in a number of studies include nervousness, headache, sleeplessness, fatigue, dizziness, nausea, loss of appetite, stomach ache, sinus congestion, eye irritation, nose irritation, runny nose, sore throat, cough, and asthma exacerbation (SCAQMD 2007a).

The SCAQMD's role is to protect the public's health from air pollution by overseeing and enforcing regulations (SCAQMD 2007a). The SCAQMD's resolution activity for odor compliance is mandated under California Health & Safety Code Section 41700, and falls under SCAQMD Rule 402. This rule on Public Nuisance Regulation states: "A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals."

The SCAQMD indicates that the number of overall complaints has declined over the last five years. Over the last four years, odor complaints make up 50 to 55 percent of the total nuisance complaints. Over the past decade, odors from paint and coating operations have decreased from 27 to 7 percent and odors from refuse collection stations have increased from 9 to 34 percent (SCAQMD 2007a).

Project Analysis

The SCAQMD recommends that odor impacts be addressed in a qualitative manner. Such an analysis shall determine whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Land uses typically considered associated with odors include wastewater treatment facilities, waste-disposal facilities, or agricultural operations. The project does not contain land uses typically associated with emitting objectionable odors. There should not be any odors associated with the water in the basin, since the SGPWA maintains the basins to ensure that odors do not occur.

Diesel exhaust and VOCs would be emitted during construction of the project, which are objectionable to some; however, emissions would disperse rapidly both vertically and horizontally from the project site, and therefore, would not reach an objectionable level as it travels offsite to sensitive receptors.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.