HELIX Environmental Planning

Membrane Filtration Reverse Osmosis (MFRO) Facility Project

Air Quality and Greenhouse Gas Emissions Technical Report

February 2020 | ESC-31

Prepared for:

City of Escondido
1521 S. Hale Avenue
Escondido, CA 92029

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, CA 91942

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ACRONYMS AND ABBREVIATIONS

$\mu g/m^3$	micrograms per cubic meter
AB	Assembly Bill
ADT	average daily trips
amsl	above mean sea level
APN	Assessor's Parcel Number
ATCM	Air Toxic Control Measures
BMPs	best management practices
C_2F_6	hexafluoroethane
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CF_4	tetraflouromethane
CFC	chlorofluorocarbon
CH_4	methane
City	City of Escondido
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	County of San Diego
DPM	diesel particulate matter
EO	Executive Order
°F	Fahrenheit
GHG	greenhouse gas
gpm	gallons per minute
GWP	global warming potential
H_2S	hydrogen sulfide
HAP	hazardous air pollutant

ACRONYMS AND ABBREVIATIONS (cont.)

HARRF	Hale Avenue Resources Recovery Facility
HFC	hydrofluorocarbon
HI	Hazard Index
HRA	health risk assessment
IEM	Iowa Environmental Mesonet
IPCC	Intergovernmental Panel on Climate Change
KWh	kilowatt-hour
LCFS	Low Carbon Fuel Standard
Lead	pb
LOS	Level of Service
MF	membrane filtration
MFRO	membrane filtration/reverse osmosis
mg/m^3	milligrams per cubic meter
mgd	million gallons per day
MMT	million metric tons
mpg	miles per gallon
mph	miles per hour
MPO	Metropolitan Planning Organization
MT	metric ton
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHTSA	National Highway Traffic Safety Administration
NO	nitrogen oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O_3	ozone
OEHHA	Office of Environmental Health Hazard Assessment
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
ppm	parts per million

ACRONYMS AND ABBREVIATIONS (cont.)

RAQS	Regional Air Quality Strategies
RO	reverse osmosis
ROG	reactive organic gas
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SANDAG	San Diego Association of Governments
SAR	Second Assessment Report
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SF_6	sulfur hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SRF	State Revolving Fund
SWRCB	State Water Resources Control Board
TACs	toxic air contaminants
UNFCCC	United Nations Framework Convention on Climate Change
URF	unit risk actor
USEPA	U.S. Environmental Protection Agency
V	volts
VDE	visible dust emissions
VMT	vehicle miles traveled
VOC	volatile organic compound
WRCC	Western Regional Climate Center

EXECUTIVE SUMMARY

This report presents an assessment of potential air quality and greenhouse gas (GHG) emission impacts during construction and operation of the City of Escondido's (City's) proposed Membrane Filtration Reverse Osmosis (MFRO) Facility Project (project). The MFRO Facility would provide advanced treatment for Title 22 quality reuse water produced at the Hale Avenue Resources Recovery Facility (HARRF). The MFRO facility would consist of a MFRO process building, outdoor storage tanks and pump stations, and underground pipeline connections to existing City water and wastewater infrastructure, including a product water pipeline along Washington Avenue. The proposed MFRO facility would be located at the City-owned lot at 901 West Washington Avenue.

The project would result in emissions of criteria air pollutants during construction and operation. Construction emission sources would include fugitive dust, heavy construction equipment exhaust, and vehicle trips associated with workers and haul trucks. Construction of the project would comply with San Diego Air Pollution Control District (SDAPCD) Rule 55, *Fugitive Dust*. Operational emissions associated with the project would include pollutants primarily associated with energy use, vehicular traffic related to staff activities and chemical deliveries, and emissions from the standby generator. Project emissions of criteria pollutants during general construction activities would not exceed City significance thresholds. Operational emissions would be below the City significance thresholds.

Construction and operation of the project would not result in exposure of sensitive receptors to significant quantities of toxic air contaminants (TACs), including diesel particulate matter from heavy equipment exhaust and the proposed diesel-powered standby generator. Odors emissions from construction and operational activities would not adversely affect a substantial number of people.

Construction sources of GHG emissions would include heavy construction equipment and worker vehicle trips. Operational sources of GHG emissions sources would include energy, solid waste, stationary (standby generator), mobile (transportation), and water use. The project-related construction activities are estimated to generate a total of 881.6 metric tons (MT) of carbon dioxide equivalent (CO_2e). Construction emissions are amortized over 30 years, such that the proposed construction activities would contribute an average of 29.4 MT per year of CO_2e emissions. The project-related operational and amortized construction GHG emissions are estimated to generate 635.6 MT CO_2e per year. Project emissions would remain below the 2023 adjusted GHG threshold of 2,145 MT CO_2e per year established by the City. The project would not conflict with the City's Climate Action Plan or other regional and statewide GHG reduction plans.

The project is seeking funding from the Drinking Water State Revolving Fund for a portion of the construction work. As such, the project is subject to review by the State Water Resources Control Board and is required to show conformance with the federal standards. Project emissions of criteria pollutants during construction and operations would be below the General Conformity de minimis thresholds and, therefore, would be in conformance with the federal Clean Air Act.

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1.0 INTRODUCTION

This report presents an assessment of potential air quality and greenhouse gas (GHG) emissions impacts during construction and operation of the proposed City of Escondido (City) Membrane Filtration Reverse Osmosis (MFRO) Facility Project (project). The analysis has been prepared to support environmental review under the California Environmental Quality Act (CEQA) and federal standards (CEQA-Plus) as implemented under the State Water Resources Control Board (SWRCB) for the Clean Water State Revolving Fund (SRF) Program.

1.1 PROJECT LOCATION

The project site is located at 901 West Washington Avenue, approximately 55 feet southwest of the West Washington Avenue and Rock Springs Road intersection in the City of Escondido. The site is approximately 10.3 acres in size comprising Assessor's Parcel Number (APN) is 232-090-72-00 and is owned by the City. The site is accessible via a driveway along West Washington Avenue and a shared access driveway with two gated entrances on the west side. The site also is accessible towards the southeastern corner of the property from a bridge across the concrete flood control channel that connects the site to the City's Public Works Yard. The project site has a General Plan designation of GI (General Industrial) and is zoned as M-2 (General Industrial). See Figure 1, *Regional Location*, and Figure 2, *Project Location (Aerial Photograph)*.

1.1.1 Existing Site Conditions

The site is currently developed with one single-wide trailer used by a non-profit recycling group, one quadruple wide trailer used for training by various City departments, a metal storage building, and an asphalt paved parking lot. The remainder of the site is used by the City Public Works for storage and heavy equipment training, except for a location on the west side that is leased to a waste disposal corporation for the storage of empty roll-off bins.

1.2 PROJECT COMPONENTS

The proposed project would consist of a commercial/industrial building and associated tanks and processing/pumping equipment. The building would include partitioned areas to house the MFRO equipment, pumps, chemical storage, electrical room, control room, restrooms, break room, and janitorial closet. The MFRO Facility treatment equipment is proposed to operate with a minimum production capacity of 0.5 million gallons per day (mgd) (350 gallons per minute [gpm]), and maximum RO effluent production capacity of 2.0 mgd (1,390 gpm) which would be blended with conventionally (tertiary) recycled water for distribution (product water). The project would also include a new approximately one (1)-mile long product water pipeline that would transport the product water to an existing recycled water pipeline. Each component is further described below.

1.2.1 Facility Structures

The MFRO process building would be approximately 25,000 square feet with dimensions of approximately 192 feet long by 130 feet wide. The building would be divided into an equipment room to house the MFRO equipment, pumps, electrical room, and control room. Two restrooms, a break room,

and janitorial closet would also be provided. All equipment would be selected based on mechanical specifications to meet noise and efficiency standards.

Outside of the MFRO process buildings additional processing equipment would be constructed including: a 240,000-gallon inter-process storage tank (50 feet in diameter, 32 feet tall); an 800,000-gallon product storage blend tank (104 feet in dimeter, 34 feet tall); a product water pump station; and a 1,400-cubic foot surge tank. See Figure 3, *Site Plan*.

1.2.2 Pipelines

The new 24-inch product water pipeline would transport the blended product water approximately 1 mile east along Washington Avenue and south on Waverly Place to the existing recycled water pipeline, see Figure 2. In addition, pipelines entering the project site from the channel or south side would include the HARRF reuse influent pipeline, brine/reject waste return pipeline, storm drain, and fiber optic conduit. Potable water, electric and facility product water would enter/exit from Washington Avenue. All process piping outside of the building would be buried, with the exception of areas near connections for accessibility.

1.2.3 Storm Water Biofiltration Basin

An existing 54-inch storm drain is located along the east side of the site with a curb inlet close to the corner of West Washington Avenue and Rock Springs Road. The Escondido Creek concrete-lined Flood Control Channel drainage channel is also located south of the project site.

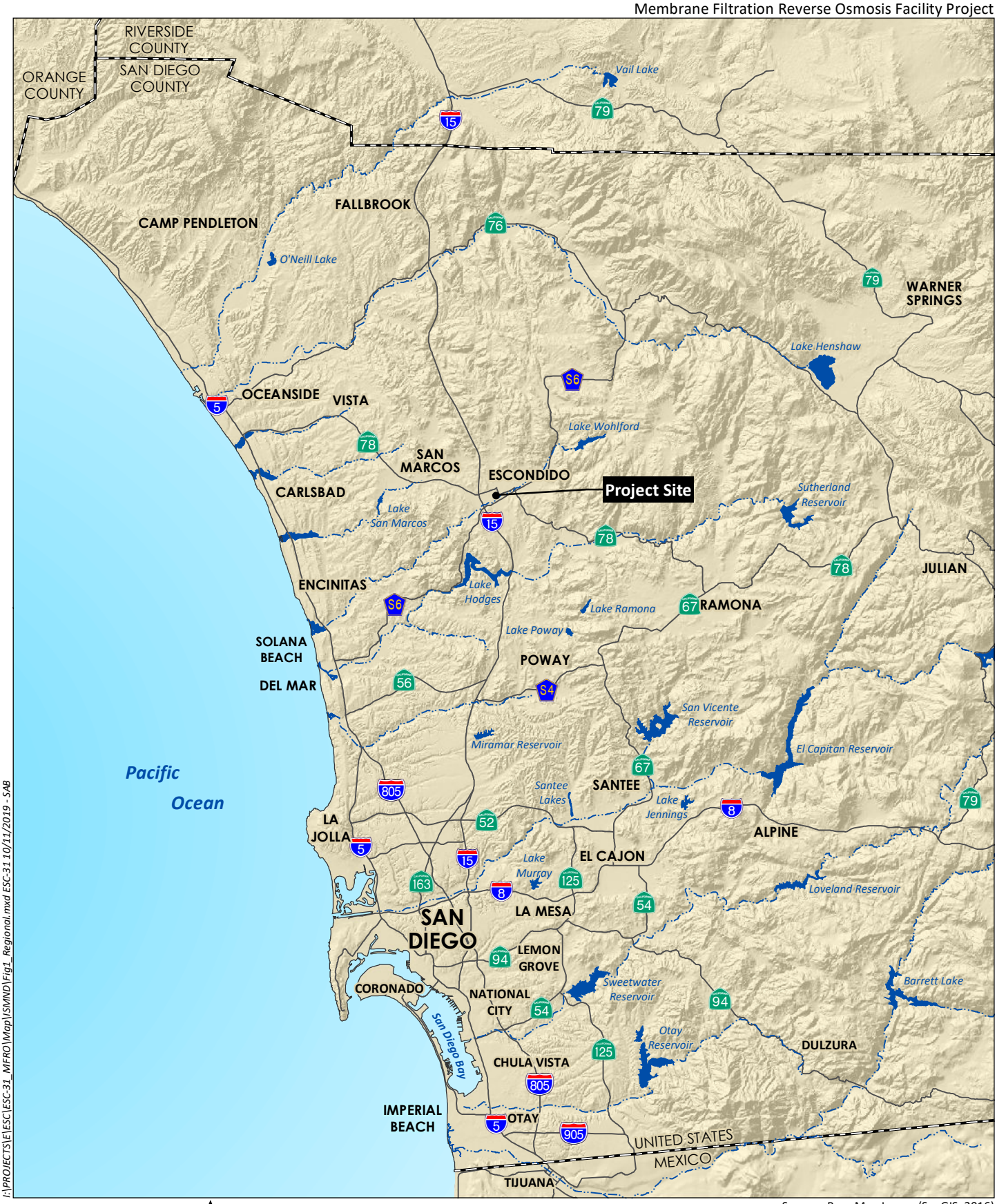
The project includes an on-site storm water biofiltration basin to capture, treat, and release the water at a controlled rate as dictated by the City's storm water requirements. The basin directs water into the existing 54-inch storm drain and then conveys the storm water to the Escondido Creek Flood Control Channel drainage channel, utilizing the existing channel outlet.

1.2.4 Standby Power Generator

The project would include a standby power generator. The generator would be a 480-volt (V), 1,750-kilowatt diesel-engine (approximately 2,400 horsepower) generator with a sound mitigating enclosure. The engine-generator package would be approximately 60 feet long, 13 feet wide, and 18 feet high. An exhaust particulate filter/silencer would be provided and sized to meet San Diego Air Pollution Control District (SDAPCD) requirements as needed. The generator would only operate during loss of utility power. However, it would be tested on a monthly basis during business hours and within SDAPCD operational limits.

1.2.5 Decanting Facility and Storage Bins

Construction of the MFRO facility would displace existing facilities used by the Escondido Public Works and Utilities/Water Departments for vactor truck decanting and material storage. These facilities would be relocated within the site, as shown on Figure 3. The decanting facility would be approximately 4,800 square feet in size, with four dump/wash bays and two concrete pads for dumpsters. The facility would be constructed to allow for drying and handling of material from vactor trucks, the contents and volumes of which are different for each Department. One bay will be reserved for cleaning of street sweeping vehicles. Decanted liquid waste from all bays would drain to a clarifier (sand/oil separator)



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Source: Base Map Layers (SanGIS, 2016)

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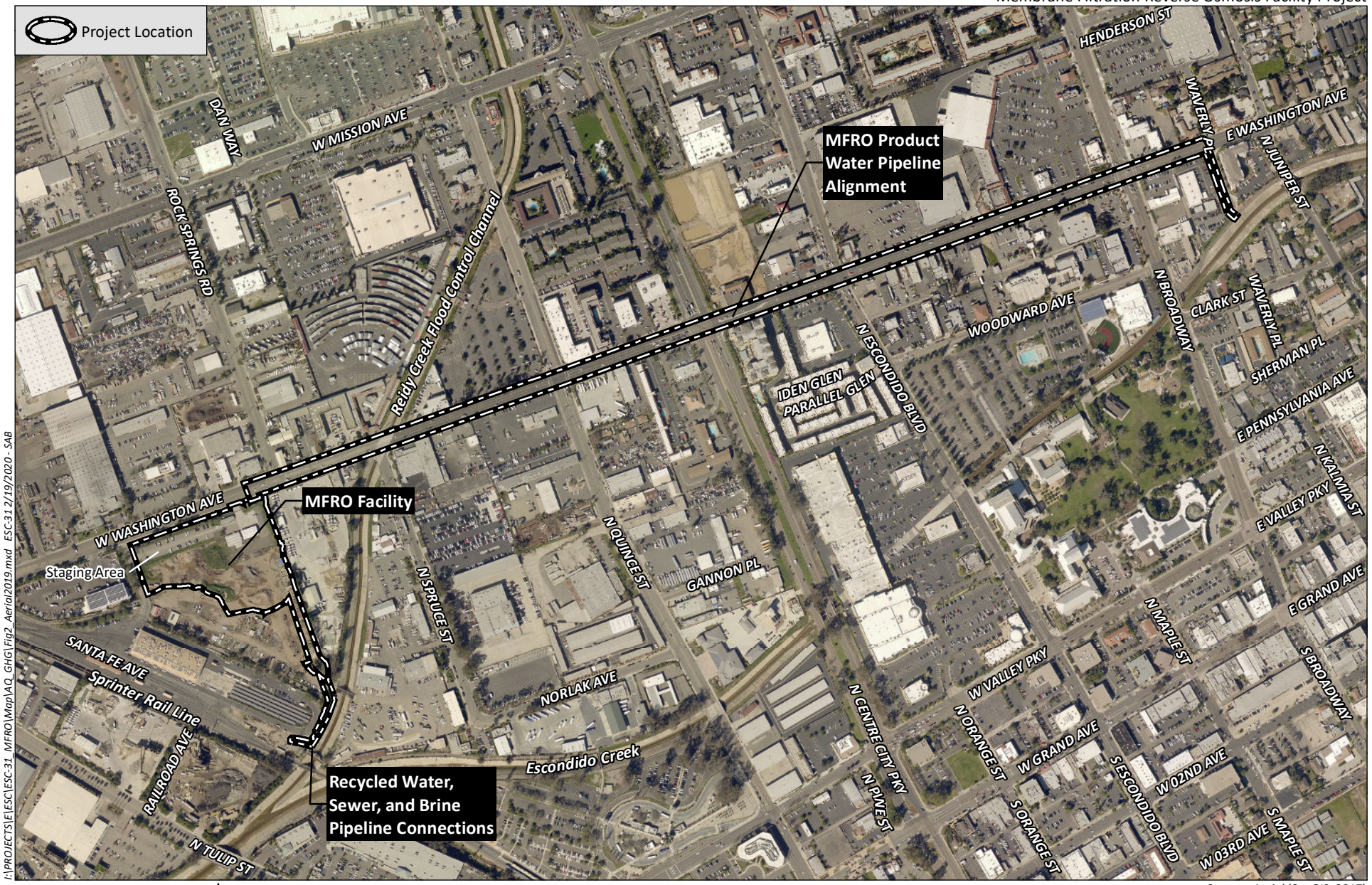
Regional Location

Figure 1



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Source: Aerial (SanGIS, 2017)

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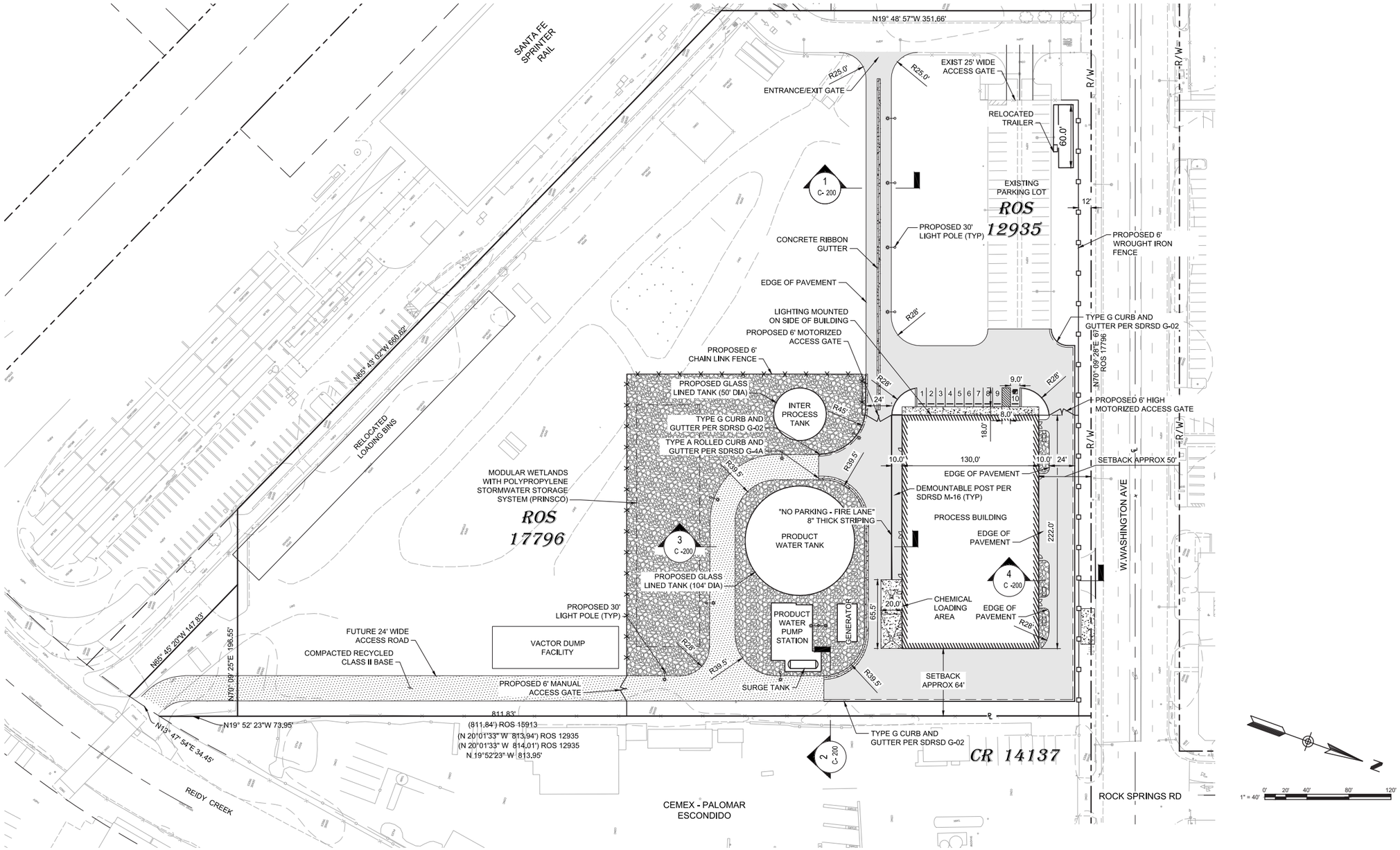
Project Location (Aerial Photograph)

Figure 2



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Source: FILANC & Brown and Caldwell (2020)

prior to discharging to the sanitary sewer system. The decanting facility would be roofed or have a rain valve, and storm water runoff would drain through a pipe to the MFRO treatment basin.

The material storage bins are open loading bins which house material used for City Public Works and Utilities Water operations. The size of the relocated concrete pad is approximately 12,250 square feet. Contents of the loading bins include raw bitumen/asphalt, mulch, greenery, gravel, class 2 base, shopping carts/large appliances, dirt, and trash. These bins are not currently covered with a roof, but the relocated bins would be designed to accommodate the future installation of a roof. Runoff from the bins would be treated either through a piped connection to the MFRO facility stormwater treatment basin (if roofed) or through a separate stormwater treatment facility (if unroofed).

1.2.6 Fencing and Landscaping

The proposed project would include security walls and fencing. The existing fence along Washington Avenue would be removed and replaced with 6-foot high wrought iron fencing. Fencing along other property lines may be spot repaired or modified but are generally considered suitable for the parcel.

New perimeter ornamental landscaping would buffer and minimize views the proposed facility components and consist of low maintenance, low demand, and fast-growing plantings including trees.

1.3 PROJECT CONSTRUCTION

Project construction is anticipated to be approximately 24 months. Construction would occur Monday through Friday; construction hours would be 7:00 a.m. to 4:30 p.m. The maximum construction crew is expected to range from four to 50 persons but would vary during the course of the proposed project construction in accordance with the means and methods of the contractor.

It is anticipated that soil import/export would be limited via a balanced grading plan for the relatively small area of this large plot of land. Soil hauling would occur over approximately one month. Any disposal of the excavated materials would be disposed of at an appropriate permitted disposal site depending on the type of material. Onsite soils are anticipated as suitable for fill.

1.3.1 Construction Equipment

Construction of the proposed new facilities would involve the use of a wide variety of heavy construction equipment onsite. The majority of the equipment and vehicles would be associated with the site preparation and grading, structural, and paving phases of construction. Large construction equipment, including backhoes, bore/drill rigs, cement mixers, industrial saws, compactors, cranes, excavator, forklifts, graders, haul trucks, loaders, pavers, rollers, sweepers, trenchers would be used during the construction phase of the proposed project.

1.3.2 Pipeline Construction

The maximum trench depth would be 8.5 feet deep. The maximum trench width would be 6 feet wide (12 inches clear on each side of a 24-inch pipe).

1.3.3 Building Foundations

Slabs on grade would be supported with a six-inch layer of untreated aggregate base overlain by a ten-millimeter thick impermeable plastic membrane. The tank and building foundations would be supported on three feet of geogrid reinforced soil (geogrid spaced at 12-inch intervals in the soil). On-site soils could be used for fill, compacted to 90 percent of its maximum dry density.

2.0 REGULATORY SETTING

2.1 AIR QUALITY

2.1.1 Air Pollutants of Concern

2.1.1.1 Criteria Pollutants

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. Criteria air pollutants include the following compounds:

- Ozone (O_3)
- Reactive organic gases (ROGs) or volatile organic compounds (VOCs)[1]
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Particulate matter (PM) which is further divided into coarse particulate matter less than 10 microns (PM_{10}) and fine particulate matter less than 2.5 microns ($PM_{2.5}$)
- Sulfur dioxide (SO_2)
- Lead (Pb)

Air pollutants are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Primary criteria pollutants are: CO; SO_2; PM_{10}; $PM_{2.5}$; and lead. Secondary pollutants are formed in the atmosphere through chemical and photochemical reactions of pollutant precursors. Secondary criteria pollutants are ozone, NO_2, PM_{10}, and $PM_{2.5}$ formed by reactions of the principal pollutant precursors ROG, nitrogen oxides (NO_X), and sulfur oxides (SO_X). Note that PM_{10} and $PM_{2.5}$ can be both primary pollutants and secondary pollutants.

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association (CAPCOA; 2018). Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone, NO_2, and secondary PM are the product of emissions generated by numerous sources throughout a region. Emissions of primary criteria pollutants from vehicles traveling to or from the project site (i.e., PM_{10}, and $PM_{2.5}$) are distributed nonuniformly in location and time throughout the region, wherever the vehicles may travel. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

Table 1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles and dyes.
Particulate Matter (PM_{10} & $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources. Also formed by a chemical reaction between reactive organic gases (ROGs) and sulfur oxides (SO_X).	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2018

Other pollutants known as greenhouse gases (GHGs; e.g., carbon dioxide [CO_2]), have been linked to climate change. Unlike criteria air pollutants, there are no regulated concentration limits for GHGs. The regulatory setting for GHG emissions is discussed in subsection 2.2.

2.1.1.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

2.1.2 Federal Air Quality Regulations

2.1.2.1 Federal Clean Air Act

Air quality is defined by ambient air concentrations of specific pollutants identified by the U.S. Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the public. The USEPA is responsible for enforcing the Federal Clean Air Act (CAA), first enacted in 1963 and amended numerous times in subsequent years (1965, 1967, 1970, 1977, and 1990). The CAA mandates the USEPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the USEPA established both primary and secondary standards for several criteria pollutants, which are introduced above. Table 2, *Ambient Air Quality Standards*, shows the federal and state ambient air quality standards for these pollutants.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants described in Table 1 through the California Clean Air Act of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride, and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be “nonattainment areas” for that pollutant.

Table 2
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary[1]	Secondary[2]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
SO_2	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	–	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	**No Federal Standards**	
Sulfates	24 Hour	25 µg/m^3		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)		

Source: CARB 2016

Notes:

1 National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.

2 National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

AAM: Annual Arithmetic Mean; CO: carbon monoxide; ; km: kilometer; mg/m^3: milligrams per cubic meter; NO_2 nitrogen dioxide; O_3: ozone; ppm: parts per million; PM_{10}: coarse particulate matter with an aerodynamic diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with an aerodynamic diameter of 2.5 microns or less; SO_2: sulfur dioxide; –: No Standard; µg/m^3: micrograms per cubic meter.

The USEPA has classified air basins (or portions thereof) as being in "attainment," "nonattainment," or "unclassified" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. The project site is located within the San Diego Air Basin (SDAB) and, as such, is in an area designated a nonattainment area for certain pollutants that are regulated under the CAA. Table 3, *San Diego Air Basin Attainment Status*, lists the federal and state attainment status of the SDAB for the criteria pollutants. The SDAB currently falls under a national

"maintenance plan" for CO, following a 1998 re-designation as a CO attainment area (SDAPCD 2010a). The SDAB is currently classified as a moderate nonattainment area for the 8-hour 2015 NAAQS for ozone and as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$ (CARB 2018; USEPA 2019).

Table 3
SAN DIEGO AIR BASIN ATTAINMENT STATUS

Criteria Pollutant	Federal Designation	State Designation
O_3 (1-hour)	(No federal standard)	Nonattainment
O_3 (8-hour)	Moderate Nonattainment	Nonattainment
CO	Attainment (Maintenance)	Attainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Unclassified/Attainment	Nonattainment
NO_2	Unclassified/Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Unclassified/Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassified
Visibility	(No federal standard)	Unclassified

Source: CARB 2018; USEPA 2019

The CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has the responsibility to review all SIPs to determine whether they conform to the requirements of the CAA.

2.1.3 California Air Quality Regulations

2.1.3.1 California Clean Air Act

The federal CAA allows states to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts. The state standards attainment status for the SDAB is listed in Table 3, above.

2.1.3.2 Toxic Air Contaminants

California's air toxics control program began in 1983 with the passage of the Toxic Air Contaminant Identification and Control Act, better known as Assembly Bill (AB) 1807 or the Tanner Bill. When a compound becomes listed as a TAC under the Tanner process, CARB normally establishes minimum

statewide emission control measures to be adopted by local air pollution control districts (APCDs). Later legislative amendments (AB 2728) required CARB to incorporate all 189 federal hazardous air pollutants (HAPs) into the state list of TACs.

Supplementing the Tanner process, AB 2588 (the Air Toxics "Hot Spots" Information and Assessment Act of 1987) currently regulates over 600 air compounds, including all of the Tanner-designated TACs. Under AB 2588, specified facilities must quantify emissions of regulated air toxics and report them to the local APCD. If the APCD determines that a potentially significant public health risk is posed by a given facility, the facility is required to perform a health risk assessment (HRA) and notify the public in the affected area if the calculated risks exceed specified criteria.

On August 27, 1998, CARB formally identified diesel particulate matter (DPM) emitted by diesel-fueled engines as a TAC (CARB 2010). The particles emitted by diesel engines are coated with chemicals, many of which have been identified by the USEPA as HAPs and by CARB as TACs. CARB's Scientific Advisory Committee has recommended a unit risk factor (URF) of 300 in 1 million over a 70-year exposure period for diesel particulate. In September 2000, CARB approved the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Diesel Risk Reduction Plan; CARB 2000). The Diesel Risk Reduction Plan outlined a comprehensive and ambitious program that included the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). These requirements are now enforced on a statewide basis.

2.1.4 Local Regulations

2.1.4.1 San Diego Air Pollution Control District

The project is located in San Diego County (County). Air quality in the County is regulated by the SDAPCD. As a regional agency, the SDAPCD works directly with local governments and cooperates actively with all federal and state government agencies. The SDAPCD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

2.1.4.2 Air Quality Plans

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County. The SDAPCD and San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The County's Regional Air Quality Strategies (RAQS) were initially adopted in 1991 and are updated on a triennial basis. The most recent revision of the RAQS was adopted by the SDAPCD in December 2016 (SDAPCD 2016a). The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to CARB, which develops the California SIP. The SIP relies on the same information from SANDAG to develop emission inventories and emission reduction strategies that are included in the attainment demonstration for the air basin.

2.1.4.3 Rules

The project would incorporate best management practices (BMPs) during construction to reduce emissions of fugitive dust. SDAPCD Rule 55 – Fugitive Dust Control states that no dust and/or dirt shall leave the property line, as follows (SDAPCD 2009):

1. **Airborne Dust Beyond the Property Line:** No person shall engage in construction or demolition activity subject to this rule in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.

2. **Track-Out/Carry-Out:** Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall:

   (i) be minimized by the use of any of the following or equally effective track-out/carry-out and erosion control measures that apply to the project or operation:

      (a) track-out grates or gravel beds at each egress point;

      (b) wheel-washing at each egress during muddy conditions, soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; and for outbound transport trucks;

      (c) using secured tarps or cargo covering, watering, or treating of transported material; and

   (ii) be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. If a street sweeper is used to remove any track-out/ carry-out, only respirable particulate matter (PM_{10}) -efficient street sweepers certified to meet the most current South Coast Air Quality Management District (SCAQMD) Rule 1186 requirements shall be used. The use of blowers for removal of track-out/carry-out is prohibited under any circumstances.

In addition, the proposed diesel-powered standby generator would require a permit to operate from the SDAPCD. The generator would be required to comply with applicable state Air Toxic Control Measures (ATCMs), and/or federal New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP), and applicable SDAPCD regulations, including Rule 69.4.1, *Stationary Reciprocating Internal Combustion Engines – Best Available Retrofit Control Technology*.

2.2 GREENHOUSE GAS EMISSIONS

2.2.1 Climate Change Overview

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport,

electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The temperature record shows a decades-long trend of warming, with 2018 ranked as the fourth warmest year on record with an increase of 1.5 degrees Fahrenheit compared to the 1951-1980 average. Globally, 2018's temperatures rank behind the three warmest years on record—2016, 2017 and 2015 (National Aeronautics and Space Administration [NASA] 2019). GHG emissions from human activities are the most significant driver of observed climate change since the mid-20th century (Intergovernmental Panel on Climate Change [IPCC] 2013). The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The statistical models show a "high confidence" that temperature increase caused by anthropogenic GHG emissions could be kept to less than two degrees Celsius relative to pre-industrial levels if atmospheric concentrations are stabilized at about 450 parts per million (ppm) carbon dioxide equivalent (CO_2e) by the year 2100 (IPCC 2014).

2.2.2 Types of Greenhouse Gases

The GHGs defined under California's AB 32 include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Carbon Dioxide. CO_2 is the most important and common anthropogenic GHG. CO_2 is an odorless, colorless GHG. Natural sources include the decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungi; evaporation from oceans; and volcanic outgassing. Anthropogenic sources of CO_2 include burning fuels, such as coal, oil, natural gas, and wood. Data from ice cores indicate that CO_2 concentrations remained steady prior to the current period for approximately 10,000 years. The atmospheric CO_2 concentration in 2010 was 390 ppm, 39 percent above the concentration at the start of the Industrial Revolution (approximately 280 ppm in 1750). As of May 2019, the CO_2 concentration exceeded 411 ppm, a 47 percent increase since 1750 (National Oceanic and Atmospheric Administration [NOAA], Earth System Research Laboratory 2019).

Methane. CH_4 is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

Nitrous Oxide. N_2O is produced by both natural and human-related sources. N_2O is emitted during agricultural and industrial activities, as well as during the combustion of fossil fuels and solid waste. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic (fatty) acid production, and nitric acid production.

Hydrofluorocarbons. Fluorocarbons are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. Chlorofluorocarbons (CFCs) are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the 1989 Montreal Protocol.

Sulfur Hexafluoride. SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semi-conductor manufacturing, and as a tracer gas for leak detection.

GHGs have long atmospheric lifetimes that range from one year to several thousand years. Long atmospheric lifetimes allow for GHG emissions to disperse around the globe. Because GHG emissions vary widely in the power of their climatic effects, climate scientists have established a unit called global warming potential (GWP). The GWP of a gas is a measure of both potency and lifespan in the atmosphere as compared to CO_2. For example, a gas with a GWP of 10 is 10 times more potent than CO_2 over 100 years. Because methane and N_2O are approximately 25 and 298 times more powerful than CO_2, respectively, in their ability to trap heat in the atmosphere, they have GWPs of 25 and 298, respectively (CO_2 has a GWP of 1). CO_2e is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the prevalence of that gas to produce CO_2e.

Historically, GHG emission inventories have been calculated using the GWPs from the IPCC's Second Assessment Report (SAR). In 2007, IPCC updated the GWP values based on the latest science at the time in its Fourth Assessment Report (AR4). The updated GWPs in the IPCC AR4 have begun to be used in recent GHG emissions inventories. In 2013, IPCC again updated the GWP values based on the latest science in its Fifth Assessment Report (AR5) (IPCC 2013). However, United Nations Framework Convention on Climate Change (UNFCCC) reporting guidelines for national inventories require the use of GWP values from the AR4. To comply with international reporting standards under the UNFCCC, official emission estimates for California and the U.S. are reported using AR4 GWP values. Therefore, statewide and national GHG inventories have not yet updated their GWP values to the AR5 values. By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline. The atmospheric lifetime and GWP of selected GHGs are summarized in Table 4, *Global Warming Potentials and Atmospheric Lifetimes*.

Table 4
GLOBAL WARMING POTENTIALS AND ATMOSPHERIC LIFETIMES

Greenhouse Gas	Atmospheric Lifetime (years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-134a	14	1,430
PFC: Tetraflouromethane (CF_4)	50,000	7,390
PFC: Hexafluoroethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC 2007
HFC: hydrofluorocarbon; PFC: perfluorocarbon

2.2.3 Federal Greenhouse Gas Regulations

2.2.3.1 Federal Clean Air Act

The U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO_2 is an air pollutant, as defined under the CAA, and that the USEPA has the authority to regulate emissions of GHGs. The USEPA announced that GHGs (including CO_2, CH_4, N_2O, HFC, PFC, and SF_6) threaten the public health and welfare of the American people. This action was a prerequisite to finalizing the USEPA's GHG emissions standards for light-duty vehicles, which were jointly proposed by the USEPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA). The standards were established on April 1, 2010 for 2012 through 2016 model year vehicles and on October 15, 2012 for 2017 through 2025 model year vehicles (USEPA 2017b; USEPA and NHTSA 2012).

2.2.3.2 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the NHTSA have been working together on developing a national program of regulations to reduce GHG emissions and to improve fuel economy of light-duty vehicles. The USEPA is finalizing the first-ever national GHG emissions standards under the CAA, and the NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. The rules required these vehicles to meet an estimated combined average emissions level of 250 grams per mile by 2016, decreasing to an average industry fleet-wide level of 163 grams per mile in model year 2025. The 2016 standard is equivalent to 35.5 miles per gallon (mpg), and the 2025 standard is equivalent to 54.5 mpg if the levels were achieved solely through improvements in fuel efficiency. The agencies expect, however, that a portion of these improvements will be made through improvements in air conditioning leakage and the use of alternative refrigerants that would not contribute to fuel economy. These standards would cut GHG emissions by an estimated 2 billion metric tons (MT) and 4 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2017–2025). The combined USEPA GHG emission standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards (USEPA 2017; USEPA and NHTSA 2012).

2.2.4 California Greenhouse Gas Regulations

2.2.4.1 California Code of Regulations, Title 24, Part 6

California Code of Regulations (CCR) Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Energy-efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions.

The Title 24 standards are updated approximately every three years to allow consideration and possible incorporation of new energy efficiency technologies and methods. The project would be required to

comply with the 2016 Title 24. The Energy Efficiency Standards are divided into three basic sets. First, there is a basic set of mandatory requirements that apply to all buildings. Second, there is a set of performance standards – the energy budgets – that vary by climate zone (of which there are 16 in California) and building type; thus, the Energy Efficiency Standards are tailored to local conditions. Finally, the third set constitutes an alternative to the performance standards, which is a set of prescriptive packages that comprise a checklist compliance approach.

2.2.4.2 California Green Building Standards Code

The CALGreen Building Standards Code (CCR Title 24, Part 11) is a code with mandatory requirements for new residential and nonresidential buildings throughout California. The development of CALGreen is intended to (1) cause a reduction in GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the Governor. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

CALGreen contains requirements for storm water control during construction; construction waste reduction; indoor water use reduction; material selection; natural resource conservation; site irrigation conservation; and more. The code provides for design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for the verification that all building systems, like heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

2.2.4.3 Executive Order S-3-05

On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

2.2.4.4 Assembly Bill 32 – Global Warming Solution Act of 2006

The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

2.2.4.5 Executive Order B-30-15

On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28 nation European Union. California is on track to meet or exceed the target of reducing GHGs emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions 80 percent under 1990 levels by 2050.

2.2.4.6 Senate Bill 32

Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

2.2.4.7 Assembly Bill 197

A condition of approval for SB 32 was the passage of AB 197. AB 197 requires that CARB consider the social costs of GHG emissions and prioritize direct reductions in GHG emissions at mobile sources and large stationary sources. AB 197 also gives the California legislature more oversight over CARB through the addition of two legislatively appointed members to the CARB Board and the establishment a legislative committee to make recommendations about CARB programs to the legislature.

2.2.4.8 Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

AB 1493 (Pavley) requires that CARB develop and adopt regulations that achieve "the maximum feasible reduction of GHGs emitted by passenger vehicles and light-duty truck and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State." On September 24, 2009, CARB adopted amendments to the Pavley regulations that intend to reduce GHG emissions in new passenger vehicles from 2009 through 2016. The amendments bind California's enforcement of AB 1493 (starting in 2009), while providing vehicle manufacturers with new compliance flexibility. The amendments also prepare California to merge its rules with the federal CAFE rules for passenger vehicles (CARB 2013). In January 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single packet of standards called Advanced Clean Cars (CARB 2013).

2.2.4.9 Assembly Bill 341

The state legislature enacted AB 341 (California Public Resource Code Section 42649.2), increasing the diversion target to 75 percent statewide. AB 341 requires all businesses and public entities that generate 4 cubic yards or more of waste per week to have a recycling program in place. The final regulation was approved by the Office of Administrative Law on May 7, 2012 and went into effect on July 1, 2012.

2.2.4.10 Executive Order S-01-07

This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS statewide.

2.2.4.11 Senate Bill 350

Approved by Governor Brown on October 7, 2015, SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. This will increase the use of Renewables Portfolio Standard eligible resources, including solar, wind, biomass, and geothermal. In addition, large utilities are required to develop and submit Integrated Resource Plans to detail how each entity will meet their customers resource needs, reduce GHG emissions, and increase the use of clean energy.

2.2.4.12 Senate Bill 375

SB 375 aligns regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPOs' Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy categorized as "transit priority projects" would receive incentives to streamline CEQA processing.

2.2.4.13 Senate Bill 100

Approved by Governor Brown on September 10, 2018, SB 100 extends the renewable electricity procurement goals and requirements of SB 350. SB 100 requires that all retail sale of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

2.2.4.14 California Air Resources Board: Climate Change Scoping Plan

On December 11, 2008, the CARB adopted the Climate Change Scoping Plan (Scoping Plan; CARB 2008) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. Measures applicable to development projects include those related to energy-efficiency building and appliance standards, the use of renewable sources for electricity generation, regional transportation targets, and green building strategy. Relative to transportation, the Scoping Plan includes nine measures or recommended actions related to reducing VMT and vehicle GHGs through fuel and efficiency measures. These measures would be implemented statewide rather than on a project-by-project basis.

In response to EO B-30-15 and SB 32, all state agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the Scoping Plan to reflect the 2030 target (CARB 2014). The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue driving down emissions. In December 2017, CARB adopted the *2017 Climate Change Scoping Plan Update, the Strategy for Achieving California's 2030 Greenhouse Gas Target,* to reflect the 2030 target set by EO B-30-15 and codified by SB 32 (CARB 2017a).

2.2.5 Local Regulations

The City adopted a Climate Action Plan (CAP) on December 4, 2013. The CAP establishes goals and policies that incorporate environmental responsibility into its daily management of residential, commercial and industrial growth, education, energy and water use, air quality, transportation, waste

reduction, economic development, and open space and natural habitats (City 2013a). The CAP includes measures to reduce GHG emissions from community-wide water use that would be applicable to the project, including R2-W2, *Water Conservation Strategies*, and R2-W3, *Increased Recycled Water Use*. The 2013 CAP is currently being updated to extend the GHG emission reduction targets to 2030 in compliance with SB 32.

3.0 EXISTING CONDITIONS

3.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

The predominant wind direction in the vicinity of the project is from the west and the average wind speed is approximately 6 miles per hour (mph; Iowa Environmental Mesonet [IEM] 2018). The annual average maximum temperature in the project area is approximately 77 degrees Fahrenheit (°F), and the average minimum temperature is approximately 52°F. Total precipitation in the project area averaged approximately 14.9 inches between 1979 and 2013. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2019).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and NO_2 react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to CO and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

3.2 EXISTING AIR QUALITY

3.2.1 Existing Criteria Pollutants

3.2.1.1 Attainment Designations

Attainment designations are discussed in subsection 2.1 and Table 3. The SDAB is classified as a moderate nonattainment area for the 8-hour NAAQS for ozone. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone, PM_{10}, and $PM_{2.5}$. The SDAB is an attainment (maintenance) area for CO, and an attainment area or unclassified for all other criteria pollutants.

3.2.1.2 Monitored Air Quality

The SDAPCD operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest monitoring station to

the project site with similar climatic conditions is the San Diego Kearny Villa Road monitoring station, approximately 19 miles south of the project site. Table 5, *Air Quality Monitoring Data*, presents a summary of the ambient pollutant concentrations monitored at the San Diego Kearny Villa Road air quality monitoring stations during the last three years (2016 through 2018).

Table 5
AIR QUALITY MONITORING DATA

Pollutant Standards	2016	2017	2018
Ozone (O_3)			
Maximum concentration 1-hour period (ppm)	0.087	0.097	0.107
Maximum concentration 8-hour period (ppm)	0.075	0.083	0.077
Days above 1-hour state standard (>0.09 ppm)	0	2	1
Days above 8-hour state/federal standard (>0.070 ppm)	3	6	5
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.053	0.054	0.045
Days above state 1-hour standard (0.18 ppm)	0	0	0
Days above federal 1-hour standard (0.100 ppm)	0	0	0
Annual average (ppm)	0.009	0.009	0.006
Exceed annual federal standard (0.053 ppm)	No	No	No
Exceed annual state standard (0.030 ppm)	No	No	No
Suspended Particulates (PM_{10})			
Maximum 24-hour concentration (µg/m^3)	35.0	47.0	38.0
Measured Days above 24-hr state standard (>50 µg/m^3)	0	0	0
Measured Days above 24-hr federal standard (>150 µg/m^3)	0	0	0
Annual average (µg/m^3)	*	17.6	18.4
Exceed state annual standard (20 µg/m^3)	*	Yes	Yes
Suspended Particulates ($PM_{2.5}$)			
Maximum 24-hour concentration (µg/m^3)	20.3	27.5	32.2
Days above 24-hour federal standard (>35 µg/m^3)	0	0	0
Annual average (µg/m^3)	7.8	8.0	8.3
Exceed state and federal annual standard (12 µg/m^3)	No	No	No

Source: CARB 2018b. Data collected at San Diego – Kearny Villa Road air quality monitoring station.
ppm = parts per million; µg/m^3 = micrograms per cubic meter; * = insufficient data

As shown in Table 5, monitoring data at the San Diego – Kearny Villa Road station showed acceptable levels of the criteria air pollutants NO_2, PM_{10}, and $PM_{2.5}$ for from 2016 to 2018. Violations of the state and federal 8-hour standards for ozone occurred on multiple days throughout the sample period. The annual average PM_{10} standard was exceed in 2017 and 2018.

3.2.2 Existing GHG Emissions

In an effort to evaluate and reduce the potential adverse impact of global climate change, international, state, and local organizations have conducted GHG inventories to estimate their levels of GHG emissions and removals. The following summarizes the results of these global, national, state, and local GHG inventories.

For 2012, total GHG emissions worldwide were estimated at 46,049 MMT CO_2e (World Resources Institute 2017). The U.S. contributed the second largest portion of GHG emissions (behind China) at 12 percent of global emissions, with 5,823 MMT CO_2e in 2012. On a national level in 2013,

approximately 27 percent of GHG emissions are associated with transportation and about 31 percent are associated with electricity generation (USEPA 2015).

CARB performs statewide GHG inventories. The inventory is divided into six broad sectors; agriculture and forestry, commercial, electricity generation, industrial, residential, and transportation. Emissions are quantified in MMT CO_2e. Table 6, *California Greenhouse Gas Emissions by Sector*, shows the estimated statewide GHG emissions for the years 1990, 2000, 2010, and 2015.

Table 6
CALIFORNIA GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	Emissions (MMT CO_2e)			
	1990	2000	2010	2015
Agriculture and Forestry	18.9 (4%)	32.0 (7%)	34.6 (8%)	34.7 (8%)
Commercial	14.4 (3%)	14.3 (3%)	20.1 (5%)	22.2 (5%)
Electricity Generation	110.5 (26%)	105.4 (23%)	90.6 (20%)	84.1 (19%)
Industrial	105.3 (24%)	104.6 (22%)	101.1 (23%)	103.0 (23%)
Residential	29.7 (7%)	31.2 (7%)	31.3 (7%)	26.9 (6%)
Transportation	150.6 (35%)	179.5 (38%)	168.1 (38%)	169.4 (38%)
Unspecified Remaining	1.3 (<1%)	0.4 (<1%)	0.3 (<1%)	0.2 (<1%)
Total	**433.3**	**467.2**	**446.1**	**440.4**

Source: CARB 2007 and CARB 2017b
MMT = million metric tons; CO_2e = carbon dioxide equivalent

As shown in Table 6, statewide GHG emissions totaled 433 MMT CO_2e in 1990, 469 MMT CO2e in 2000, 456 MMT CO_2e in 2010, and 440 MMT CO_2e in 2015. Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The City of Escondido CAP provides a community-wide GHG emissions inventory by sector for the year 2010, as shown in Table 7, *City of Escondido Greenhouse Gas Emissions by Sector* (City 2013a).

Table 7
CITY OF ESCONDIDO GREENHOUSE GAS EMISSIONS BY SECTOR

Sector	2010 (MT CO_2e)
Energy	395,565 (44.6%)
Transportation	368,622 (41.6%)
Area Sources	52,559 (5.9%)
Solid Waste	41,724 (4.7%)
Water and Wastewater	25,360 (2.9%)
Construction	2,288 (0.3%)
TOTAL	**886,118**

Source: City 2013a
MT = metric tons; CO_2e = carbon dioxide equivalent

Unlike the state inventory, energy was the largest source of GHGs in Escondido, followed by transportation sources.

3.3 SENSITIVE RECEPTORS

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005, OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptors to the project site are single-family residences approximately 2,000 feet (0.38 mile) to the south. The closest existing sensitive receptors to the proposed pipeline construction area on Washington Avenue are multi-family residential buildings at the intersection of Washington Avenue and Centre City Parkway, and multi-family residential buildings at the intersection of Washington Avenue and Waverly Place.

4.0 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.1 METHODOLOGY

Criteria pollutant and precursor and GHG emissions for project construction and operation were calculated using the California Emissions Estimator Model (CalEEMod), Version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of land use projects. The model was developed for CAPCOA in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices A, D, and E (CAPCOA 2017). The input data and subsequent construction and operation emission estimates for the proposed project are discussed below. CalEEMod output files for the project are included in Appendix A to this report.

4.1.1 Construction Emissions

As described above, construction emissions were estimated using CalEEMod. The model uses OFFROAD2011 and EMFAC2014 emission factors from CARB's models for off-road equipment and on-road vehicles, respectively. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. The model calculates emissions of CO, PM_{10}, $PM_{2.5}$, SO_2, the ozone precursors ROG and NO_X, and the GHGs CO_2, CH4 and N_2O (as well as the total CO_2e).

Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area. The analysis assessed total annual emissions from individual construction activities, including demolition, building improvements, outdoor improvements, paving, and architectural coatings.

Construction equipment estimates are based CalEEMod defaults, adjusted for anticipated project-specific site improvement activities. Table 8, *Construction Equipment Assumptions*, presents a summary of the assumed equipment that would be involved in each phase of construction.

Table 8
CONSTRUCTION EQUIPMENT ASSUMPTIONS

Construction Phase	Equipment	Number
Demolition	Concrete/Industrial Saws	1
	Excavators	1
	Rubber Tired Dozers	1
	Rubber Tired Loaders	1
Site Preparation/Grading	Graders	1
	Rubber Tired Dozers	1
	Rubber Tired Loaders	1
	Tractors/Loaders/Backhoes	3
Pipeline Excavation and Construction	Concrete/Industrial Saws	1
	Excavators	1
	Plate Compactors	1
	Tractors/Loaders/Backhoes	3
	Trenchers	1
	Welders	1
Street Paving Repair	Cement and Mortar Mixers	2
	Pavers	1
	Paving Equipment	2
	Rollers	2
	Tractors/Loaders/Backhoes	1
Building Construction	Bore/Drill Rigs	1
	Cranes	1
	Forklifts	3
	Generator Sets	1
	Plate Compactors	1
	Rollers	1
	Tractors/Loaders/Backhoes	3
	Welders	1
Paving	Cement and Mortar Mixers	2
	Pavers	1
	Paving Equipment	2
	Rollers	2
	Tractors/Loaders/Backhoes	1
Architectural Coating	Air Compressors	1

Source: CalEEMod
Note: Output data, including equipment horsepower, is provided in Appendix A

The construction schedule was based on CalEEMod default, adjusted to fit within the estimated overall construction schedule provided by the project architect. The estimated start date would be approximately July 1, 2020. As shown in Table 9, *Anticipated Construction Schedule*, project development would be complete by approximately June 28, 2022.

Table 9
ANTICIPATED CONSTRUCTION SCHEDULE

Construction Activity	Construction Period		
	Start	End	Number of Working Days
Demolition	7/1/2020	7/28/2020	20
Site Preparation/Grading	7/29/2020	9/8/2020	30
Pipeline Excavation and Construction	9/9/2020	2/9/2021	110
Architectural Coating	2/10/2021	3/5/2021	18
Building Construction	3/6/2021	4/29/2022	300
Paving	4/30/2022	5/25/2022	18
Architectural Coating	5/26/2022	6/28/2022	24

Source: CalEEMod
Note: Output data is provided in Appendix A.

The quantity, duration, and the intensity of construction activity influence the amount of construction emissions and their related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of (1) a more modern and cleaner-burning construction equipment fleet mix than assumed in the CalEEMod, and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). A complete listing of the assumptions used in the analysis and model output is provided in Appendix A of this report.

CalEEMod has the capability to calculate reductions in construction emissions from the effects of dust control, diesel-engine classifications, and other selected emissions reduction measures. Emissions calculations assume application of water on all exposed areas during construction in compliance with SDAPCD Rule 55, *Fugitive Dust Control*. Based on CalEEMod version 2016.3.2, the control efficiency for watering two times per day is 55 percent.

4.1.2 Operation Emissions

Operational impacts were estimated using CalEEMod, as discussed above. Model output data sheets are included in Appendix A. Modeled operational sources of pollutant emissions include area, energy, mobile (transportation), solid waste, stationary equipment, and water and wastewater. The sources and assumption used in the modeling are described below.

Area Sources – Operational emissions from area sources include engine emissions from landscape maintenance equipment, ROG emissions from repainting of buildings and tanks, and the use of consumer products such as degreasers. CalEEMod default values were used for area sources.

Energy Sources – Operational emissions of criteria pollutants from energy sources include the use of natural gas for hot water and office heat. The CalEEMod default values for natural gas use for the project's office spaces were used. The project use of electricity would result in off-site emissions of GHGs. Electricity use was estimated using the CalEEMod default emissions factor for wastewater treatment facilities of 1,911 kilowatt-hour (KWh) per day per million gallons of water treated, and the

CalEEMod default emissions factor for water delivery of 1,272 KWh per day per million gallons of water delivered (pumped). The electricity use would be dependent on the annual average product water production (between the minimum capacity of 0.5 mgd and maximum capacity of 2.0 mgd). Production of product water would vary throughout the year depending on the demand; however, this analysis conservatively assumes the MFRO facility would operate at 75 percent of maximum capacity (1.5 mgd), 365 days per year.

Mobile Sources – Operational emissions from mobile sources are associated with project-related vehicle trip generation and trip length. The projects trip generation was estimated assuming one full-time employee at the site (2 average daily trips [ADT]trips); five employees visiting the site for maintenance activities on 36 days per year (1.38 ADT); and nine monthly chemical deliveries (0.83 ADT). The total project trip generation would be approximately 4.21 ADT. To capture emissions from the maximum anticipated daily trips, a model was run assuming 2 trips for the fulltime employee, 10 trips for five maintenance personnel, and 2 trips for a chemical delivery, all occurring on the same day for a total of 12 one-way daily trips. The CalEEMod default trip distances were used. The fleet mix was assumed to be: 60 percent cars and 10 percent light trucks for employee commutes; 10 percent medium duty trucks for facility maintenance; and 20 percent heavy duty trucks for facility maintenance and chemical deliveries.

Solid Waste – Operational emissions of GHGs from solid waste sources are associated with emissions from the decomposition of waste in landfills. The CalEEMod default values for solid waste for the office space was used. For the MFRO facility, an estimated 5 tons per year would be generated from maintenance and cleaning activities.

Stationary Equipment – Operation emissions from stationary sources would be from the use of the proposed diesel-powered standby generator. A 1,750-kilowatt, 480-volt generator would require an engine of approximately 2,400 horsepower. The standby generator was assumed to operate monthly for maintenance and testing for a maximum of 4 hours on any one day and a total of approximately 16 hours per year.

Water and Wastewater – Operation emissions of GHGs would result from the use of water and generation of wastewater. CalEEMod defaults were utilized for the office space indoor water (assumed to become waste water) use and landscaping outdoor water use. The MFRO was assumed to require approximately 10,000 gallons per year of treated water for maintenance and cleaning.

4.2 SIGNIFICANCE CRITERIA

4.2.1 Air Quality

The following significance thresholds are based on Appendix G of the State CEQA Guidelines. A significant impact is identified if the project would result in any of the following:

(1) Conflict with or obstruct implementation of the applicable air quality plan; or

(2) 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; or

(3) Expose sensitive receptors to substantial pollutant concentrations; or

(4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

To determine whether a project would (a) result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, or (b) result in a cumulatively considerable net increase of PM_{10} or exceed quantitative thresholds for ozone precursors (i.e., NO_X and VOCs), project emissions may be evaluated based on the quantitative emission thresholds established by the City. In the City Municipal Code Chapter 33, Article 47, Section 33-924, *Coordination of CEQA, quality of life standards, and growth management provisions*, the City has adopted thresholds based on the SDAPCD adopted thresholds (City 2019).

For CEQA purposes, these screening criteria can be used as numeric methods to demonstrate that a project's total emissions would not result in a significant impact to air quality. The screening thresholds are included in Table 10, *Screening-level Thresholds for Air Quality Impact Analyses*.

Table 10
SCREENING-LEVEL THRESHOLDS FOR AIR QUALITY IMPACT ANALYSES

Pollutant	Total Emissions		
Construction Emissions (Pounds per Day)			
Respirable Particulate Matter (PM_{10})	100		
Fine Particulate Matter ($PM_{2.5}$)	55		
Oxides of Nitrogen (NO_X)	250		
Oxides of Sulfur (SO_X)	250		
Carbon Monoxide (CO)	550		
Volatile Organic Compounds (VOCs)	75		
Operational Emissions			
	Pounds per Hour	**Pounds per Day**	**Tons per Year**
Respirable Particulate Matter (PM_{10})	---	100	15
Fine Particulate Matter ($PM_{2.5}$)	---	55	10
Oxides of Nitrogen (NO_X)	25	250	40
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOC)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: City of Escondido 2019
T-BACT = Toxics-Best Available Control Technology

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibits emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within

90 days. Therefore, odor complaints from a "considerable" number of persons or businesses in the area would be considered a significant, adverse odor impact.

4.2.2 GHG Emissions

The following significance thresholds are based on Appendix G of the State CEQA Guidelines. A significant impact is identified if the project would result in any of the following:

(1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The City of Escondido Municipal Code Chapter 33, Article 47, Section 33-924, *Coordination of CEQA, quality of life standards, and growth management provisions,* has established that project's that do not generate more than 2,500 MT CO_2e per year would have GHG emissions that would not be considered significant. Projects which generate more than 2,500 MT CO_2e per year would either require an analysis of the reduction measures outlined in the Escondido CAP screening table and an achievement of 100 points, or a reduction in the project's GHG emissions below the 2,500 MT CO_2e per year threshold through mitigation and/or project design features (City 2019; City 2013b).

The City's GHG threshold established in the municipal code and the CAP was developed to meet the year 2020 statewide GHG emissions targets as mandated by AB 32 and implemented by the CARB Scoping Plan. The City has not adopted guidance or revised thresholds to account for GHG reduction targets beyond 2020. Accordingly, a threshold reduced by 4.98 percent for each year between 2020 and 2030 would meet the mandates of SB 32. The first full year of operation for the project is anticipated to be 2023. Therefore, a threshold 14.21 percent below the City's threshold of 2,500 MT CO_2e per year (or 2,145 MT CO_2e per year) is used in this analysis.

4.2.3 General Conformity

The City is seeking financing from the SWRCB Clean Water SRF Program for the project. Because the SRF Program is partially funded by the federal government, the project requires compliance not only with the CEQA, but also with the federal CAA. As such, the air quality analysis has been conducted to satisfy General Conformity requirements.

The USEPA General Conformity Rule applies to non-transportation federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and also depend on the severity of the nonattainment status for the air quality management area in question.

A conformity applicability analysis is the first step of a conformity evaluation and assesses if a federal action must be supported by a conformity determination. This is typically done by quantifying applicable direct and indirect emissions that are projected to result due to implementation of the federal action. Indirect emissions are those emissions caused by the federal action and originating in the region of interest, but which can occur at a later time or in a different location from the action itself and are

reasonably foreseeable. Reasonably foreseeable emissions are projected for future direct and indirect emissions that are identified at the time the conformity evaluation is performed. If the results of the applicability analysis indicate that the total emissions would not exceed the *de minimis* emissions thresholds, then the conformity evaluation process is completed. *De minimis* threshold emissions are presented in Table 11, *General Conformity De Minimis Levels for SDAB*. The thresholds used for the general conformity analysis for this project are 100 tons per year for VOCs, 100 tons per year for NO_X, and 100 tons per year for CO, as the SDAB is classified as a moderate nonattainment area for the 8-hour NAAQS for ozone and a maintenance area for CO.

Table 11
GENERAL CONFORMITY DE MINIMIS LEVELS FOR SDAB

Pollutant	Area Type	Tons per Year
Ozone (NO_X)	Marginal and moderate nonattainment outside an ozone transport region	100
Ozone (VOC)	Marginal and moderate nonattainment outside an ozone transport region	100
CO	Maintenance Areas	100

Source: 40 CFR 93.153(b)
NO_X = nitrogen oxides; VOC = volatile organic compound; CO = carbon monoxide

5.0 AIR QUALITY IMPACT ANALYSIS

This section evaluates potential direct impacts of the proposed project related to the air pollutant emissions. Project-level air quality modeling was completed as part of this analysis. Complete modeling results are included as Appendix A of this report.

5.1 CONSISTENCY WITH AIR QUALITY PLANS

Would the project conflict with or obstruct implementation of the applicable air quality plan?

The SDAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SDAB is in nonattainment. Strategies to achieve these emissions reductions are developed in the RAQS and SIP, prepared by the SDAPCD for the region. Both the RAQS and SIP are based on SANDAG population projections, as well as land use designations and population projections included in general plans for those communities located within the County. Population growth is typically associated with the construction of residential units or large employment centers.

A project would be inconsistent with the RAQS/SIP if it results in population and/or employment growth that exceed growth estimates for the area. The purpose of the project is to implement the City's MFRO Facility to increase treated water for agricultural uses and to reduce the City's treated water ocean outfall. Implementing the project would not result in population growth beyond estimates for the area. In addition, construction and maintenance jobs for the project would likely recruit from the local pool of labor and would not create conditions for employment growth that exceeds growth estimates for the area.

Because the project would not generate population and employment growth beyond the levels assumed for the region, the project would not conflict with population projections for the region and would,

therefore, be consistent with the RAQS/SIP. In addition, the project would comply with all existing and new rules and regulations as they are implemented by the SDAPCD, CARB, and/or USEPA related to emissions generated during construction and operation. Furthermore, as demonstrated in subsection 5.2, below, the project would not result in emissions in excess of the City's thresholds, which are designed to achieve/maintain air quality attainment for the NAAQS and CAAQS. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan and the impact would be less than significant.

5.2 CONFORMANCE TO FEDERAL AND STATE AIR QUALITY STANDARDS

Would the project 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?

The project would generate criteria pollutants in the short-term during construction and the long-term during operation. To determine whether a project would result in emissions that would violate an air quality standard or contribute substantially to an existing or projected air quality violation, a project's emissions are evaluated based on the quantitative emission thresholds established by the SDAPCD.

5.2.1 Construction

Construction of the project would result in temporary increases in air pollutant emissions. These emissions would be generated in the form of fugitive dust emissions (PM_{10} and $PM_{2.5}$) and ozone precursor emissions (NO_X and ROG). The project's construction emissions were estimated using CalEEMod as described in subsection 4.1. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

The results of the calculations for project construction are shown in Table 12, *Construction Emissions*. The data are presented as the maximum anticipated daily emissions for comparison with the thresholds.

Table 12
CONSTRUCTION EMISSIONS

Year	Maximum Daily Pollutant Emissions (pounds per day)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2020	2.9	38.4	17.2	<0.1	5.0	3.0
2021	2.4	21.6	20.1	<0.1	1.8	1.2
2022	45.8	29.0	19.7	<0.1	2.3	1.5
Maximum Daily Emissions	**45.8**	**38.4**	**19.7**	**<0.1**	**5.0**	**3.0**
Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns in diameter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter

As shown in Table 12, emissions of criteria pollutants and precursors related to project construction would be below the significance thresholds. Therefore, impacts from criteria pollutants and precursors generated during construction would be less than significant and no mitigation would be required.

5.2.2 Operation

The project's operational emissions were estimated using CalEEMod as described in subsection 4.1. Operational emission calculations and model outputs are provided in Appendix A. Table 13, *Operational Criteria Pollutant and Precursor Emissions*, presents the summary of operational emissions for the project.

Table 13
OPERATIONAL CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Category	Pollutant Emissions (pounds per day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Area	1.3	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	<0.1	0.3	0.2	<0.1	<0.1	<0.1
Stationary	3.0	47.9	16.1	<0.1	0.9	0.9
Total Daily Emissions[1]	**4.3**	**48.2**	**16.4**	**<0.1**	**1.0**	**0.9**
Threshold	*75*	*250*	*550*	*250*	*100*	*55*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
[1] Totals may not sum due to rounding.
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns in diameter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter

As shown in Table 13, emissions of criteria pollutants and precursors during long-term operation of the project would not exceed the daily thresholds. Therefore, impacts from criteria pollutants generated during project operation would be less than significant and no mitigation would be required.

5.3 IMPACTS TO SENSITIVE RECEPTORS

Would the project expose sensitive receptors to substantial pollutant concentrations?

5.3.1 Construction Activities

5.3.1.1 Toxic Air Contaminants

Project construction would generate DPM emissions from the use of off-road diesel equipment required for demolition, site grading, excavation, and other construction activities. DPM is the primary toxic air contaminant that would be emitted during construction. Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The amount to which the receptors could be exposed, which is a function of concentration and duration of exposure, is the primary factor used to determine health risk. The generation of TAC emissions during construction would be variable and sporadic due to the nature of construction activity. The most intense use of construction equipment would be during the site preparation/grading phase which is anticipated to last 30 working days and the entire project construction period is anticipated to last 24 months. As discussed in subsection 3.3, the closest sensitive receptors to the project site are approximately 2,000 feet (0.38 mile) south of the project site. Excavation for and construction of the product water pipeline would occur on Washington Avenue and Waverly Place, as shown in Figure 2. There are existing multi-family residential buildings within 40 feet of Washington Avenue. Construction

activities for the product water pipeline would proceed linearly, with heavy equipment only operating in any one location for a few days before moving on. Therefore, due to the short duration and intermittent nature of construction activities, and due to the highly dispersive properties of DPM, project-related TAC emission impacts during construction would not expose sensitive receptors to substantial pollutant concentrations and the impact would be less than significant, no mitigation is required.

5.3.2 Operational Activities

5.3.2.1 Standby Generator

The proposed diesel-powered standby generator would be a source of DPM emissions. As discussed in subsection 3.3, the closest sensitive receptors to the project site are approximately 2,000 feet (0.38 mile) south of the project site. In addition, the generator would be required to be fitted with DPM reduction technology in compliance with applicable state ATCMs, and/or federal NSPS and NESHAP, and applicable SDAPCD regulations, including Rule 69.4.1, Stationary Reciprocating Internal Combustion Engines – Best Available Retrofit Control Technology. Therefore, due to the limited use of the standby generator, the distance to the nearest sensitive receptors, and the implementation of DPM reduction technology, the proposed standby generator would not expose sensitive receptors to substantial pollutant concentrations and the impact would be less than significant, no mitigation is required.

5.3.2.2 CO Hotspots

Vehicle exhaust is the primary source of CO in California. In an urban setting, the highest CO concentrations are generally found in close proximity to congested intersections. Under typical meteorological conditions, CO concentrations tend to decrease as distance from the emissions source (i.e., congested intersection) increases. Project-generated traffic has the potential of contributing to localized "hot spots" of CO off-site. Because CO is a byproduct of incomplete combustion, exhaust emissions are worse when fossil-fueled vehicles are operated inefficiently, such as in stop-and-go traffic or through heavily congested intersections, where the level of service (LOS[2]) is severely degraded. A quantitative screening for CO hotspots would be required in two instances: (1) if a project increases the average delay at signalized intersections operating at Level of Service (LOS) E or F; or (2) if a project causes an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project.

SANDAG's Transportation Forecast Information Center website includes estimates of traffic volumes along Washington Avenue for the year 2020 (SANDAG 2013). Near the project site, the forecast volumes for Washington Avenue range from 6,800 ADT to 13,100 ADT. The peak increase in daily trips associated with daily operation of all project components would be nominal compared to these traffic volumes (approximately 12 additional trips per day on Washington Avenue). Therefore, the project would neither cause new severe congestion nor significantly worsen existing congestion. There would be no potential for a CO hotspot or exposure of sensitive receptors to substantial, project-generated, local CO emissions. The impact would be less than significant.

[2] Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of transportation infrastructure. Level of service is most commonly used to analyze intersections by categorizing traffic flow with corresponding safe driving conditions. LOS A is considered the most efficient level of service and LOS F the least efficient.

5.4 OTHER EMISSIONS

Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Implementation of the project would have the potential to generate objectionable odors through construction activities and during operation, as discussed below.

5.4.1 Construction

CARB's Air Quality and Land Use Handbook includes a list of the most common sources of odor complaints received by local air districts. Typical sources of odor complaints include facilities such as sewage treatment plants, landfills, recycling facilities, petroleum refineries, and livestock operations. Construction activities are not a typical source of nuisance odors, although construction could result in minor amounts of odorous compounds associated with diesel heavy equipment exhaust or evaporation of volatile compounds within paint or other coatings. The smell of diesel exhaust is due in most part to the presence of sulfur and the creation of hydrocarbons during combustion (Nett Technologies 2018). As shown in Table 12, construction emissions would not result in significant emissions of sulfur oxides. Additionally, construction equipment associated with the project would be operating at various locations throughout the project site and pipe installation locations and would not take place all at once. Odorous hydrocarbons emissions would dissipate beyond the emissions sources and would only affect receptors in the immediate vicinity of the construction site. Construction-related operations would also be temporary in nature and would cease at the completion of construction. Therefore, construction activities would not result in nuisance odors. Odor impacts associated with construction would be less than significant.

5.4.2 Operation

Unlike typical wastewater treatment facilities, the proposed MFRO facility would not process raw sewage. The MFRO would process Title 22 treated recycled water from the HARRF. This treated water is not a significant source of odors. The proposed standby generator would be an occasional source of diesel fumes. As discussed in subsection 3.3, the closest existing sensitive receptors to the project site are approximately 2,000 feet (0.38 mile) south of the project site. Therefore, long-term operation of the project would not result in other emissions (such as odors) adversely affecting a substantial number of people. The impact would be less than significant.

6.0 GREENHOUSE GAS IMPACT ANALYSIS

This section evaluates potential impacts of the project related to the generation of GHG emissions. Complete modeling results are included as Appendix A of this report.

6.1 GREENHOUSE GAS EMISSIONS

6.1.1 Construction Emissions

Project construction GHG emissions were estimated using CalEEMod model as described in subsection 4.1. Project-specific input was based on general information provided in Section 1.0 and

default model settings to estimate reasonably conservative conditions. Additional details of phasing, selection of construction equipment, and other input parameters, including CalEEMod data, are included in Appendix A.

Emissions of GHGs related to the construction of the project would be temporary. As shown in Table 14, *Construction GHG Emissions*, the total estimated GHG emissions associated with construction of the project would be 881.6 MT CO_2e. To be conservative in accounting for all project sources of GHG emissions, the construction period GHG emissions were amortized (i.e., averaged) over 30 years and added to operational emissions. Averaged over 30 years, the proposed construction activities would contribute approximately 29.4 MT CO_2e emissions per year.

Table 14
CONSTRUCTION GHG EMISSIONS

Year	Emissions (MT CO_2e)
2020	234.2
2021	466.8
2022	180.6
TOTAL[1]	**881.6**
Amortized Construction Emissions[2]	*29.4*

Source: CalEEMod (output data is provided in Appendix A).
[1] Totals may not sum due to rounding.
[2] Construction emissions are amortized over 30 years.
MT = metric ton; CO_2e = carbon dioxide equivalent

6.1.2 Operational Emissions

The project total operation GHG emissions, including the amortized annual construction emissions are shown in Table 15, *Operational GHG Emissions*. The CalEEMod output files are included in Appendix A to this report.

Table 15
OPERATIONAL GHG EMISSIONS

Emission Sources	Emissions (MT CO_2e)
	2021
Area	<0.1
Energy	582.5
Mobile	8.3
Stationary Sources	11.0
Solid Waste	3.0
Water and Wastewater	1.4
Operational Subtotal	**606.2**
Construction (Annualized over 30 years)	*29.4*
TOTAL OPERATIONAL EMISSIONS	**635.6**
Adjusted (2023) Screening Threshold	*2,145.0*
Exceed Threshold?	***No***

Source: CalEEMod (output data is provided in Appendix A)
Note: Totals may not sum due to rounding
MT = metric ton; CO_2e = carbon dioxide equivalent

As shown in Table 15, the project would result in annual GHG emissions of 635.6 MT CO_2e which would not exceed the 2023 adjusted City screening threshold of 2,145 MT CO_2e per year. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant, no mitigation would be required.

6.2 CONSISTENCY WITH LOCAL PLANS ADOPTED FOR THE PURPOSE OF REDUCING GHG EMISSIONS

There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32 and SB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 would require further reductions of 40 percent below 1990 levels by 2030. Statewide plans and regulations such as GHG emissions standards for vehicles (AB 1493), the LCFS, and regulations requiring an increasing proportion of electricity to be generated from renewable sources are being implemented at the statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project does not conflict with those plans and regulations.

As previously discussed, the increase in GHG emissions would be less than the City's significance threshold being applied to this analysis. In addition, by providing high-quality recycled water for agricultural uses, the project would reduce the use of potable water or pumped ground water for irrigation, consistent with the City's CAP GHG emissions reduction programs R2-W2, Water Conservation Strategies, and R2-W3, Increased Recycled Water Use (City 2013a). Therefore, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The impact would be less than significant, no mitigation would be required.

7.0 GENERAL CONFORMITY

This section evaluates potential adverse effects of the proposed project as they relate to air pollutant emissions for the purposes of conformity with federal regulations. Project construction and operational emissions were estimated using the CalEEMod model as described in Section 4.0. Table 16, *Annual Construction Emissions,* shows a conservative estimate of project construction emissions for comparison to the *de minimis* conformity thresholds. As shown in Table 16, emissions from construction of the proposed project would not exceed *de minimis* conformity thresholds.

Table 16
ANNUAL CONSTRUCTION EMISSIONS

Year	Pollutant Emissions (tons per year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2020	0.1	1.6	1.1	<0.1	0.1	<0.1
2021	0.3	2.7	2.5	<0.1	0.2	0.1
2022	0.7	0.9	1.0	<0.1	<0.1	<0.1
Maximum Annual Emissions	**0.7**	**2.7**	**2.5**	**<0.1**	**0.2**	**0.1**
De minimis Thresholds	*100*	*100*	*100*	-	-	-
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns in diameter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter

Estimated project operational emissions are compared to the *de minimis* conformity thresholds in Table 17, *Annual Operational Emissions*. As shown in Table 17, emissions from operation of the proposed project would not exceed *de minimis* conformity thresholds. Therefore, the proposed action would be in conformance with the CAA and no further conformity analysis is required.

Table 17
ANNUAL OPERATIONAL EMISSIONS

Year	Pollutant Emissions (tons per year)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	0.2	<0.1	<0.1	<0.1	<0.1	<0.1
Energy	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mobile	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Stationary	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Annual Emissions	*0.2*	*0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*
De minimis Thresholds	*100*	*100*	*100*	-	-	-
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Appendix A)
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides;
PM_{10} = particulate matter 10 microns in diameter; $PM_{2.5}$ = particulate matter 2.5 microns in diameter

8.0 LIST OF PREPARERS

Martin Rolph	Air Quality Specialist
Victor Ortiz	Senior Air Quality Specialist
Joanne M. Dramko, AICP	Project Manager, Principal Technical Specialist, QA/QC

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Appendix A

CalEEMod Output

ESC-31 Escondido MFRO Daily

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	1,000.00	0
General Heavy Industry	42.50	1000sqft	0.98	42,500.00	0
Other Asphalt Surfaces	51.00	1000sqft	1.17	51,000.00	0
Other Non-Asphalt Surfaces	22.50	1000sqft	0.52	22,500.00	0
Parking Lot	48.50	1000sqft	1.11	48,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

ESC-31 Escondido MFRO Daily - San Diego County, Winter

Project Characteristics - This model is for maximum daily emissions.

Land Use - Commercial = office area.
Industrial = remaining MFRO bldg. + outdoor tank area.
Parking Other Asphaslt = Production pipeline; Other Non-Asphalt = bioretention and burried pipes on-site.
Parking Lot = roads, parking, and paved area.

Construction Phase - Phasing adjusted to fit estimated 24 month construction schedule and material export/import requirements.

Off-road Equipment -

Off-road Equipment - Equipment for foundations, MFRO builging, and tank/pump station construction.

Off-road Equipment - Equipment adjusted for demo of a steel storage building and misc. walls and fencing.

Off-road Equipment -

Off-road Equipment - Equipment for pipeline excavation/construction.

Off-road Equipment - Site prep dozer reduced, grader and loader added.

Off-road Equipment - Equipment for street repaving.

Trips and VMT -

Demolition -

Grading - 8,500 CY soil, asphalt, concrete and debris exported during Site Prep/Grading.
7,000 CY soil and asphalt exported and 4,000 CY aggregate imported during pipeline construction.

Vehicle Trips - Maximum daily trips based on 1 full time employee; plus 5 employees for maintenance; plus 1 chemical delivery.

Energy Use - Energy use for MFRO estimated based on defualt 1,911 KWhr/Mgal for wastewater treatmentfaciliies, and default 1,272 KWhr for water delivery.
Aveerage annual production of 1.5 Mgal/day (75% of capacity) assumed.

Water And Wastewater - MFRO treated water use for maintnenance only.

Solid Waste - Minimal solid wate generation for MFRO.

Construction Off-road Equipment Mitigation - Dust mitigation per SDAPCD Rule 55.

Operational Off-Road Equipment - 1,750 KW backup generator, run 16 hrs/year, up 4 hrs/day for maintenance/testing.

Fleet Mix - Fleet mix for employee commute (LDA & LDT), miantenance vehicles (MDV), and chemical deliveries (HHD).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	24.00
tblConstructionPhase	NumDays	230.00	300.00

tblConstructionPhase	NumDays	8.00	110.00
tblConstructionPhase	NumDays	5.00	30.00
tblEnergyUse	LightingElect	2.83	0.00
tblEnergyUse	NT24E	4.27	41.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24E	1.21	0.00
tblEnergyUse	T24NG	4.31	0.00
tblFleetMix	HHD	0.02	0.20
tblFleetMix	LDA	0.60	0.60
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.10
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.4350e-003	0.00
tblFleetMix	MCY	5.9380e-003	0.00
tblFleetMix	MDV	0.10	0.10
tblFleetMix	MH	1.0560e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.9340e-003	0.00
tblFleetMix	SBUS	7.5700e-004	0.00
tblFleetMix	UBUS	1.8880e-003	0.00
tblGrading	MaterialExported	0.00	7,000.00
tblGrading	MaterialExported	0.00	8,500.00
tblGrading	MaterialImported	0.00	4,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	4.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	2,400.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblSolidWaste	SolidWasteGenerationRate	52.70	5.00
tblVehicleTrips	ST_TR	1.50	0.28
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.50	0.28
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	1.50	0.28
tblVehicleTrips	WD_TR	11.03	0.00
tblWater	IndoorWaterUseRate	9,828,125.00	0.00
tblWater	OutdoorWaterUseRate	0.00	10,000.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.9081	38.4042	17.2140	0.0592	7.3345	1.3360	8.6705	3.5759	1.2303	4.8062	0.0000	6,078.3913	6,078.3913	1.2430	0.0000	6,109.4661
2021	2.3796	21.6478	20.1169	0.0425	0.8808	1.0233	1.7729	0.2244	0.9612	1.1642	0.0000	4,147.3715	4,147.3715	0.7861	0.0000	4,167.0228
2022	45.7955	19.4247	19.7264	0.0422	0.7496	0.8635	1.6131	0.2030	0.8117	1.0147	0.0000	4,122.0493	4,122.0493	0.7789	0.0000	4,141.5223
Maximum	**45.7955**	**38.4042**	**20.1169**	**0.0592**	**7.3345**	**1.3360**	**8.6705**	**3.5759**	**1.2303**	**4.8062**	**0.0000**	**6,078.3913**	**6,078.3913**	**1.2430**	**0.0000**	**6,109.4661**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.9081	38.4042	17.2140	0.0592	3.7088	1.3360	5.0448	1.7204	1.2303	2.9508	0.0000	6,078.3913	6,078.3913	1.2430	0.0000	6,109.4661
2021	2.3796	21.6478	20.1169	0.0425	0.8730	1.0233	1.7729	0.2232	0.9612	1.1642	0.0000	4,147.3715	4,147.3715	0.7861	0.0000	4,167.0228
2022	45.7955	19.4247	19.7264	0.0422	0.7496	0.8635	1.6131	0.2030	0.8117	1.0147	0.0000	4,122.0493	4,122.0493	0.7789	0.0000	4,141.5223
Maximum	**45.7955**	**38.4042**	**20.1169**	**0.0592**	**3.7088**	**1.3360**	**5.0448**	**1.7204**	**1.2303**	**2.9508**	**0.0000**	**6,078.3913**	**6,078.3913**	**1.2430**	**0.0000**	**6,109.4661**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**40.53**	**0.00**	**30.07**	**46.38**	**0.00**	**26.56**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2751	1.5000e-004	0.0169	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0362	0.0362	9.0000e-005		0.0386
Energy	6.0000e-004	5.4200e-003	4.5600e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.5077	6.5077	1.2000e-004	1.2000e-004	6.5463
Mobile	0.0161	0.2771	0.2162	1.3100e-003	0.0753	7.0000e-004	0.0760	0.0201	6.6000e-004	0.0208		139.0054	139.0054	0.0105		139.2679
Offroad	3.0384	47.8933	16.1472	0.0783		0.9084	0.9084		0.9084	0.9084		8,900.4938	8,900.4938	0.2663		8,907.1500
Total	**4.3301**	**48.1759**	**16.3848**	**0.0797**	**0.0753**	**0.9096**	**0.9849**	**0.0201**	**0.9095**	**0.9296**		**9,046.0431**	**9,046.0431**	**0.2770**	**1.2000e-004**	**9,053.0029**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.2751	1.5000e-004	0.0169	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0362	0.0362	9.0000e-005		0.0386
Energy	6.0000e-004	5.4200e-003	4.5600e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.5077	6.5077	1.2000e-004	1.2000e-004	6.5463
Mobile	0.0161	0.2771	0.2162	1.3100e-003	0.0753	7.0000e-004	0.0760	0.0201	6.6000e-004	0.0208		139.0054	139.0054	0.0105		139.2679
Offroad	3.0384	47.8933	16.1472	0.0783		0.9084	0.9084		0.9084	0.9084		8,900.4938	8,900.4938	0.2663		8,907.1500
Total	**4.3301**	**48.1759**	**16.3848**	**0.0797**	**0.0753**	**0.9096**	**0.9849**	**0.0201**	**0.9095**	**0.9296**		**9,046.0431**	**9,046.0431**	**0.2770**	**1.2000e-004**	**9,053.0029**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

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Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2020	7/28/2020	5	20	
2	Site Preparation/Grading	Site Preparation	7/29/2020	9/8/2020	5	30	
3	Pipeline Excavation and Construction	Grading	9/9/2020	2/9/2021	5	110	
4	Street Paving Repair	Paving	2/10/2021	3/5/2021	5	18	
5	Building Construction	Building Construction	3/6/2021	4/29/2022	5	300	
6	Paving	Paving	4/30/2022	5/25/2022	5	18	
7	Architectural Coating	Architectural Coating	5/26/2022	6/28/2022	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 65,250; Non-Residential Outdoor: 21,750; Striped Parking Area: 7,320 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation/Grading	Graders	1	8.00	187	0.41
Site Preparation/Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation/Grading	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation/Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Pipeline Excavation and Construction	Concrete/Industrial Saws	1	4.00	81	0.73

Pipeline Excavation and Construction	Excavators	1	8.00	158	0.38
Pipeline Excavation and Construction	Graders	0	8.00	187	0.41
Pipeline Excavation and Construction	Plate Compactors	1	2.00	8	0.43
Pipeline Excavation and Construction	Rubber Tired Dozers	0	8.00	247	0.40
Pipeline Excavation and Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Pipeline Excavation and Construction	Trenchers	1	8.00	78	0.50
Pipeline Excavation and Construction	Welders	1	4.00	46	0.45
Street Paving Repair	Cement and Mortar Mixers	2	6.00	9	0.56
Street Paving Repair	Pavers	1	8.00	130	0.42
Street Paving Repair	Paving Equipment	2	6.00	132	0.36
Street Paving Repair	Rollers	2	6.00	80	0.38
Street Paving Repair	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Bore/Drill Rigs	1	2.00	221	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Plate Compactors	1	2.00	8	0.43
Building Construction	Rollers	1	2.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	32.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation/Grading	6	15.00	0.00	1,063.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Excavation and Construction	8	20.00	0.00	1,375.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Street Paving Repair	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	69.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3488	0.0000	0.3488	0.0528	0.0000	0.0528			0.0000			0.0000
Off-Road	2.1168	21.4531	12.7214	0.0262		1.0164	1.0164		0.9509	0.9509		2,525.2855	2,525.2855	0.6626		2,541.8503
Total	**2.1168**	**21.4531**	**12.7214**	**0.0262**	**0.3488**	**1.0164**	**1.3652**	**0.0528**	**0.9509**	**1.0037**		**2,525.2855**	**2,525.2855**	**0.6626**		**2,541.8503**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0130	0.4506	0.1080	1.2300e-003	0.0280	1.4500e-003	0.0294	7.6600e-003	1.3900e-003	9.0500e-003		134.6617	134.6617	0.0125		134.9737
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0416	0.0278	0.2673	7.9000e-004	0.0822	5.8000e-004	0.0827	0.0218	5.3000e-004	0.0223		79.1132	79.1132	2.3800e-003		79.1727
Total	**0.0546**	**0.4784**	**0.3753**	**2.0200e-003**	**0.1101**	**2.0300e-003**	**0.1121**	**0.0295**	**1.9200e-003**	**0.0314**		**213.7749**	**213.7749**	**0.0149**		**214.1465**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1570	0.0000	0.1570	0.0238	0.0000	0.0238			0.0000			0.0000
Off-Road	2.1168	21.4531	12.7214	0.0262		1.0164	1.0164		0.9509	0.9509	0.0000	2,525.2855	2,525.2855	0.6626		2,541.8503
Total	**2.1168**	**21.4531**	**12.7214**	**0.0262**	**0.1570**	**1.0164**	**1.1733**	**0.0238**	**0.9509**	**0.9747**	**0.0000**	**2,525.2855**	**2,525.2855**	**0.6626**		**2,541.8503**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0130	0.4506	0.1080	1.2300e-003	0.0280	1.4500e-003	0.0294	7.6600e-003	1.3900e-003	9.0500e-003		134.6617	134.6617	0.0125		134.9737
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0416	0.0278	0.2673	7.9000e-004	0.0822	5.8000e-004	0.0827	0.0218	5.3000e-004	0.0223		79.1132	79.1132	2.3800e-003		79.1727
Total	**0.0546**	**0.4784**	**0.3753**	**2.0200e-003**	**0.1101**	**2.0300e-003**	**0.1121**	**0.0295**	**1.9200e-003**	**0.0314**		**213.7749**	**213.7749**	**0.0149**		**214.1465**

3.3 Site Preparation/Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5922	0.0000	6.5922	3.3735	0.0000	3.3735			0.0000			0.0000
Off-Road	2.5579	28.3828	14.4206	0.0307		1.3029	1.3029		1.1987	1.1987		2,977.5266	2,977.5266	0.9630		3,001.6014
Total	**2.5579**	**28.3828**	**14.4206**	**0.0307**	**6.5922**	**1.3029**	**7.8951**	**3.3735**	**1.1987**	**4.5722**		**2,977.5266**	**2,977.5266**	**0.9630**		**3,001.6014**

3.3 Site Preparation/Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2878	9.9797	2.3926	0.0273	0.6192	0.0322	0.6513	0.1697	0.0308	0.2005		2,982.1949	2,982.1949	0.2764		2,989.1056
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0416	0.4009	1.1900e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		118.6698	118.6698	3.5700e-003		118.7591
Total	**0.3502**	**10.0214**	**2.7934**	**0.0285**	**0.7424**	**0.0331**	**0.7754**	**0.2024**	**0.0316**	**0.2340**		**3,100.8647**	**3,100.8647**	**0.2800**		**3,107.8647**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.9665	0.0000	2.9665	1.5181	0.0000	1.5181			0.0000			0.0000
Off-Road	2.5579	28.3828	14.4206	0.0307		1.3029	1.3029		1.1987	1.1987	0.0000	2,977.5266	2,977.5266	0.9630		3,001.6014
Total	**2.5579**	**28.3828**	**14.4206**	**0.0307**	**2.9665**	**1.3029**	**4.2694**	**1.5181**	**1.1987**	**2.7168**	**0.0000**	**2,977.5266**	**2,977.5266**	**0.9630**		**3,001.6014**

3.3 Site Preparation/Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2878	9.9797	2.3926	0.0273	0.6192	0.0322	0.6513	0.1697	0.0308	0.2005		2,982.1949	2,982.1949	0.2764		2,989.1056
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0623	0.0416	0.4009	1.1900e-003	0.1232	8.6000e-004	0.1241	0.0327	8.0000e-004	0.0335		118.6698	118.6698	3.5700e-003		118.7591
Total	**0.3502**	**10.0214**	**2.7934**	**0.0285**	**0.7424**	**0.0331**	**0.7754**	**0.2024**	**0.0316**	**0.2340**		**3,100.8647**	**3,100.8647**	**0.2800**		**3,107.8647**

3.4 Pipeline Excavation and Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0141	0.0000	0.0141	2.1300e-003	0.0000	2.1300e-003			0.0000			0.0000
Off-Road	1.6834	15.0224	15.5226	0.0224		0.9454	0.9454		0.8814	0.8814		2,137.9271	2,137.9271	0.5943		2,152.7838
Total	**1.6834**	**15.0224**	**15.5226**	**0.0224**	**0.0141**	**0.9454**	**0.9595**	**2.1300e-003**	**0.8814**	**0.8835**		**2,137.9271**	**2,137.9271**	**0.5943**		**2,152.7838**

3.4 Pipeline Excavation and Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1015	3.5206	0.8440	9.6200e-003	0.2749	0.0114	0.2862	0.0737	0.0109	0.0846		1,052.0443	1,052.0443	0.0975		1,054.4822
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455
Total	**0.1847**	**3.5761**	**1.3785**	**0.0112**	**0.4392**	**0.0125**	**0.4517**	**0.1173**	**0.0119**	**0.1292**		**1,210.2707**	**1,210.2707**	**0.1023**		**1,212.8277**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3200e-003	0.0000	6.3200e-003	9.6000e-004	0.0000	9.6000e-004			0.0000			0.0000
Off-Road	1.6834	15.0224	15.5226	0.0224		0.9454	0.9454		0.8814	0.8814	0.0000	2,137.9271	2,137.9271	0.5943		2,152.7838
Total	**1.6834**	**15.0224**	**15.5226**	**0.0224**	**6.3200e-003**	**0.9454**	**0.9518**	**9.6000e-004**	**0.8814**	**0.8824**	**0.0000**	**2,137.9271**	**2,137.9271**	**0.5943**		**2,152.7838**

3.4 Pipeline Excavation and Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1015	3.5206	0.8440	9.6200e-003	0.2749	0.0114	0.2862	0.0737	0.0109	0.0846		1,052.0443	1,052.0443	0.0975		1,054.4822
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0831	0.0555	0.5345	1.5900e-003	0.1643	1.1500e-003	0.1655	0.0436	1.0600e-003	0.0446		158.2264	158.2264	4.7600e-003		158.3455
Total	**0.1847**	**3.5761**	**1.3785**	**0.0112**	**0.4392**	**0.0125**	**0.4517**	**0.1173**	**0.0119**	**0.1292**		**1,210.2707**	**1,210.2707**	**0.1023**		**1,212.8277**

3.4 Pipeline Excavation and Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0141	0.0000	0.0141	2.1300e-003	0.0000	2.1300e-003			0.0000			0.0000
Off-Road	1.5272	13.6891	15.4079	0.0224		0.8208	0.8208		0.7653	0.7653		2,138.5057	2,138.5057	0.5911		2,153.2824
Total	**1.5272**	**13.6891**	**15.4079**	**0.0224**	**0.0141**	**0.8208**	**0.8349**	**2.1300e-003**	**0.7653**	**0.7674**		**2,138.5057**	**2,138.5057**	**0.5911**		**2,153.2824**

3.4 Pipeline Excavation and Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0954	3.2318	0.8332	9.4700e-003	0.7024	9.9800e-003	0.7124	0.1787	9.5500e-003	0.1882		1,038.8365	1,038.8365	0.0965		1,041.2477
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**0.1738**	**3.2823**	**1.3319**	**0.0110**	**0.8667**	**0.0111**	**0.8778**	**0.2222**	**0.0106**	**0.2328**		**1,191.7460**	**1,191.7460**	**0.1008**		**1,194.2671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.3200e-003	0.0000	6.3200e-003	9.6000e-004	0.0000	9.6000e-004			0.0000			0.0000
Off-Road	1.5272	13.6891	15.4079	0.0224		0.8208	0.8208		0.7653	0.7653	0.0000	2,138.5057	2,138.5057	0.5911		2,153.2824
Total	**1.5272**	**13.6891**	**15.4079**	**0.0224**	**6.3200e-003**	**0.8208**	**0.8272**	**9.6000e-004**	**0.7653**	**0.7662**	**0.0000**	**2,138.5057**	**2,138.5057**	**0.5911**		**2,153.2824**

3.4 Pipeline Excavation and Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0954	3.2318	0.8332	9.4700e-003	0.7024	9.9800e-003	0.7124	0.1787	9.5500e-003	0.1882		1,038.8365	1,038.8365	0.0965		1,041.2477
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**0.1738**	**3.2823**	**1.3319**	**0.0110**	**0.8667**	**0.0111**	**0.8778**	**0.2222**	**0.0106**	**0.2328**		**1,191.7460**	**1,191.7460**	**0.1008**		**1,194.2671**

3.5 Street Paving Repair - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0940	10.8399	12.2603	0.0189		0.5788	0.5788		0.5342	0.5342		1,804.5523	1,804.5523	0.5670		1,818.7270
Paving	0.3319					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4258**	**10.8399**	**12.2603**	**0.0189**		**0.5788**	**0.5788**		**0.5342**	**0.5342**		**1,804.5523**	**1,804.5523**	**0.5670**		**1,818.7270**

3.5 Street Paving Repair - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**0.0785**	**0.0505**	**0.4987**	**1.5300e-003**	**0.1643**	**1.1300e-003**	**0.1654**	**0.0436**	**1.0500e-003**	**0.0446**		**152.9095**	**152.9095**	**4.3900e-003**		**153.0193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0940	10.8399	12.2603	0.0189		0.5788	0.5788		0.5342	0.5342	0.0000	1,804.5523	1,804.5523	0.5670		1,818.7270
Paving	0.3319					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4258**	**10.8399**	**12.2603**	**0.0189**		**0.5788**	**0.5788**		**0.5342**	**0.5342**	**0.0000**	**1,804.5523**	**1,804.5523**	**0.5670**		**1,818.7270**

3.5 Street Paving Repair - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0785	0.0505	0.4987	1.5300e-003	0.1643	1.1300e-003	0.1654	0.0436	1.0500e-003	0.0446		152.9095	152.9095	4.3900e-003		153.0193
Total	**0.0785**	**0.0505**	**0.4987**	**1.5300e-003**	**0.1643**	**1.1300e-003**	**0.1654**	**0.0436**	**1.0500e-003**	**0.0446**		**152.9095**	**152.9095**	**4.3900e-003**		**153.0193**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0229	18.7317	17.6164	0.0301		1.0134	1.0134		0.9519	0.9519		2,853.5216	2,853.5216	0.7112		2,871.3015
Total	**2.0229**	**18.7317**	**17.6164**	**0.0301**		**1.0134**	**1.0134**		**0.9519**	**0.9519**		**2,853.5216**	**2,853.5216**	**0.7112**		**2,871.3015**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0861	2.7421	0.7802	7.1300e-003	0.1828	6.0100e-003	0.1888	0.0526	5.7500e-003	0.0584		766.3121	766.3121	0.0597		767.8046
Worker	0.2707	0.1741	1.7203	5.2900e-003	0.5668	3.9200e-003	0.5707	0.1504	3.6100e-003	0.1540		527.5378	527.5378	0.0152		527.9167
Total	**0.3567**	**2.9161**	**2.5005**	**0.0124**	**0.7496**	**9.9300e-003**	**0.7595**	**0.2030**	**9.3600e-003**	**0.2123**		**1,293.8499**	**1,293.8499**	**0.0749**		**1,295.7213**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0229	18.7317	17.6164	0.0301		1.0134	1.0134		0.9519	0.9519	0.0000	2,853.5216	2,853.5216	0.7112		2,871.3015
Total	**2.0229**	**18.7317**	**17.6164**	**0.0301**		**1.0134**	**1.0134**		**0.9519**	**0.9519**	**0.0000**	**2,853.5216**	**2,853.5216**	**0.7112**		**2,871.3015**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0861	2.7421	0.7802	7.1300e-003	0.1828	6.0100e-003	0.1888	0.0526	5.7500e-003	0.0584		766.3121	766.3121	0.0597		767.8046
Worker	0.2707	0.1741	1.7203	5.2900e-003	0.5668	3.9200e-003	0.5707	0.1504	3.6100e-003	0.1540		527.5378	527.5378	0.0152		527.9167
Total	**0.3567**	**2.9161**	**2.5005**	**0.0124**	**0.7496**	**9.9300e-003**	**0.7595**	**0.2030**	**9.3600e-003**	**0.2123**		**1,293.8499**	**1,293.8499**	**0.0749**		**1,295.7213**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8139	16.6765	17.3914	0.0301		0.8545	0.8545		0.8032	0.8032		2,854.8696	2,854.8696	0.7073		2,872.5509
Total	**1.8139**	**16.6765**	**17.3914**	**0.0301**		**0.8545**	**0.8545**		**0.8032**	**0.8032**		**2,854.8696**	**2,854.8696**	**0.7073**		**2,872.5509**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0801	2.5895	0.7387	7.0500e-003	0.1828	5.1800e-003	0.1880	0.0526	4.9500e-003	0.0576		758.9771	758.9771	0.0578		760.4219
Worker	0.2565	0.1587	1.5963	5.1000e-003	0.5668	3.8300e-003	0.5707	0.1504	3.5300e-003	0.1539		508.2027	508.2027	0.0139		508.5495
Total	**0.3365**	**2.7482**	**2.3350**	**0.0122**	**0.7496**	**9.0100e-003**	**0.7586**	**0.2030**	**8.4800e-003**	**0.2114**		**1,267.1797**	**1,267.1797**	**0.0717**		**1,268.9714**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8139	16.6765	17.3914	0.0301		0.8545	0.8545		0.8032	0.8032	0.0000	2,854.8696	2,854.8696	0.7073		2,872.5509
Total	**1.8139**	**16.6765**	**17.3914**	**0.0301**		**0.8545**	**0.8545**		**0.8032**	**0.8032**	**0.0000**	**2,854.8696**	**2,854.8696**	**0.7073**		**2,872.5509**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0801	2.5895	0.7387	7.0500e-003	0.1828	5.1800e-003	0.1880	0.0526	4.9500e-003	0.0576		758.9771	758.9771	0.0578		760.4219
Worker	0.2565	0.1587	1.5963	5.1000e-003	0.5668	3.8300e-003	0.5707	0.1504	3.5300e-003	0.1539		508.2027	508.2027	0.0139		508.5495
Total	**0.3365**	**2.7482**	**2.3350**	**0.0122**	**0.7496**	**9.0100e-003**	**0.7586**	**0.2030**	**8.4800e-003**	**0.2114**		**1,267.1797**	**1,267.1797**	**0.0717**		**1,268.9714**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.3319					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3084**	**9.5221**	**12.1940**	**0.0189**		**0.4877**	**0.4877**		**0.4504**	**0.4504**		**1,805.1297**	**1,805.1297**	**0.5672**		**1,819.3091**

3.7 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0743	0.0460	0.4627	1.4800e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		147.3051	147.3051	4.0200e-003		147.4057
Total	**0.0743**	**0.0460**	**0.4627**	**1.4800e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**147.3051**	**147.3051**	**4.0200e-003**		**147.4057**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504	0.0000	1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.3319					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3084**	**9.5221**	**12.1940**	**0.0189**		**0.4877**	**0.4877**		**0.4504**	**0.4504**	**0.0000**	**1,805.1297**	**1,805.1297**	**0.5672**		**1,819.3091**

3.7 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0743	0.0460	0.4627	1.4800e-003	0.1643	1.1100e-003	0.1654	0.0436	1.0200e-003	0.0446		147.3051	147.3051	4.0200e-003		147.4057
Total	**0.0743**	**0.0460**	**0.4627**	**1.4800e-003**	**0.1643**	**1.1100e-003**	**0.1654**	**0.0436**	**1.0200e-003**	**0.0446**		**147.3051**	**147.3051**	**4.0200e-003**		**147.4057**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**45.7434**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.8 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0520	0.0322	0.3239	1.0300e-003	0.1150	7.8000e-004	0.1158	0.0305	7.2000e-004	0.0312		103.1136	103.1136	2.8200e-003		103.1840
Total	**0.0520**	**0.0322**	**0.3239**	**1.0300e-003**	**0.1150**	**7.8000e-004**	**0.1158**	**0.0305**	**7.2000e-004**	**0.0312**		**103.1136**	**103.1136**	**2.8200e-003**		**103.1840**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	45.5389					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**45.7434**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.8 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0520	0.0322	0.3239	1.0300e-003	0.1150	7.8000e-004	0.1158	0.0305	7.2000e-004	0.0312		103.1136	103.1136	2.8200e-003		103.1840
Total	**0.0520**	**0.0322**	**0.3239**	**1.0300e-003**	**0.1150**	**7.8000e-004**	**0.1158**	**0.0305**	**7.2000e-004**	**0.0312**		**103.1136**	**103.1136**	**2.8200e-003**		**103.1840**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0161	0.2771	0.2162	1.3100e-003	0.0753	7.0000e-004	0.0760	0.0201	6.6000e-004	0.0208		139.0054	139.0054	0.0105		139.2679
Unmitigated	0.0161	0.2771	0.2162	1.3100e-003	0.0753	7.0000e-004	0.0760	0.0201	6.6000e-004	0.0208		139.0054	139.0054	0.0105		139.2679

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	12.00	12.00	12.00	35,040	35,040
General Office Building	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	12.00	12.00	12.00	35,040	35,040

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.600000	0.000000	0.100000	0.100000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Other Asphalt Surfaces	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Other Non-Asphalt Surfaces	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Parking Lot	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	6.0000e-004	5.4200e-003	4.5600e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.5077	6.5077	1.2000e-004	1.2000e-004	6.5463
NaturalGas Unmitigated	6.0000e-004	5.4200e-003	4.5600e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.5077	6.5077	1.2000e-004	1.2000e-004	6.5463

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	55.3151	6.0000e-004	5.4200e-003	4.5600e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.5077	6.5077	1.2000e-004	1.2000e-004	6.5463
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**6.0000e-004**	**5.4200e-003**	**4.5600e-003**	**3.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**		**6.5077**	**6.5077**	**1.2000e-004**	**1.2000e-004**	**6.5463**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	0.0553151	6.0000e-004	5.4200e-003	4.5600e-003	3.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004		6.5077	6.5077	1.2000e-004	1.2000e-004	6.5463
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**6.0000e-004**	**5.4200e-003**	**4.5600e-003**	**3.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**		**6.5077**	**6.5077**	**1.2000e-004**	**1.2000e-004**	**6.5463**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.2751	1.5000e-004	0.0169	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0362	0.0362	9.0000e-005		0.0386
Unmitigated	1.2751	1.5000e-004	0.0169	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0362	0.0362	9.0000e-005		0.0386

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2994					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9741					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5600e-003	1.5000e-004	0.0169	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0362	0.0362	9.0000e-005		0.0386
Total	**1.2751**	**1.5000e-004**	**0.0169**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0362**	**0.0362**	**9.0000e-005**		**0.0386**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.2994					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.9741					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.5600e-003	1.5000e-004	0.0169	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0362	0.0362	9.0000e-005		0.0386
Total	**1.2751**	**1.5000e-004**	**0.0169**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0362**	**0.0362**	**9.0000e-005**		**0.0386**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	4.00	4	2400	0.74	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Generator Sets	3.0384	47.8933	16.1472	0.0783		0.9084	0.9084		0.9084	0.9084		8,900.4938	8,900.4938	0.2663		8,907.1500
Total	**3.0384**	**47.8933**	**16.1472**	**0.0783**		**0.9084**	**0.9084**		**0.9084**	**0.9084**		**8,900.4938**	**8,900.4938**	**0.2663**		**8,907.1500**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EC-31 Escondido MFRO Annual

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	1.00	1000sqft	0.02	1,000.00	0
General Heavy Industry	42.50	1000sqft	0.98	42,500.00	0
Other Asphalt Surfaces	51.00	1000sqft	1.17	51,000.00	0
Other Non-Asphalt Surfaces	22.50	1000sqft	0.52	22,500.00	0
Parking Lot	48.50	1000sqft	1.11	48,500.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2023
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

EC-31 Escondido MFRO Annual - San Diego County, Annual

Project Characteristics - This model is for annual emissions.

Land Use - Commercial = office area.
Industrial = remaining MFRO bldg. + outdoor tank area.
Parking Other Asphaslt = Production pipeline; Other Non-Asphalt = bioretention and burried pipes on-site.
Parking Lot = roads, parking, and paved area.

Construction Phase - Phasing adjusted to fit estimated 24 month construction schedule and material export/import requirements.

Off-road Equipment -

Off-road Equipment - Equipment for foundations, MFRO builging, and tank/pump station construction.

Off-road Equipment - Equipment adjusted for demo of a steel storage building and misc. walls and fencing.

Off-road Equipment -

Off-road Equipment - Equipment for pipeline excavation/construction.

Off-road Equipment - Site prep dozer reduced, grader and loader added.

Off-road Equipment - Equipment for street repaving.

Trips and VMT -

Demolition -

Grading - 8,500 CY soil, asphalt, concrete and debris exported during Site Prep/Grading.
7,000 CY soil and asphalt exported and 4,000 CY aggregate imported during pipeline construction.

Vehicle Trips - Trips based on 1 full time employee; plus 5 employees for maintenance 36 days per year, plus 9 monthly chemical deliveries.

Energy Use - Energy use for MFRO estimated based on defualt 1,911 KWhr/Mgal for wastewater treatmentfaciliies, and default 1,272 KWhr for water delivery.
Aveerage annual production of 1.5 Mgal/day (75% of capacity) assumed.

Water And Wastewater - MFRO treated water use for maintnenance only.

Solid Waste - Minimal solid wate generation for MFRO.

Construction Off-road Equipment Mitigation - Dust mitigation per SDAPCD Rule 55.

Operational Off-Road Equipment - 1,750 KW backup generator, run 16 hrs/year, up 4 hrs/day for maintenance/testing.

Fleet Mix - Fleet mix for employee commute (LDA & LDT), miantenance vehicles (MDV), and chemical deliveries (HHD).

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	24.00
tblConstructionPhase	NumDays	230.00	300.00

tblConstructionPhase	NumDays	8.00	110.00
tblConstructionPhase	NumDays	5.00	30.00
tblEnergyUse	LightingElect	2.83	0.00
tblEnergyUse	NT24E	4.27	41.00
tblEnergyUse	NT24NG	7.25	0.00
tblEnergyUse	T24E	1.21	0.00
tblEnergyUse	T24NG	4.31	0.00
tblFleetMix	HHD	0.02	0.20
tblFleetMix	LDA	0.60	0.60
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.18	0.10
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.4350e-003	0.00
tblFleetMix	MCY	5.9380e-003	0.00
tblFleetMix	MDV	0.10	0.10
tblFleetMix	MH	1.0560e-003	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	1.9340e-003	0.00
tblFleetMix	SBUS	7.5700e-004	0.00
tblFleetMix	UBUS	1.8880e-003	0.00
tblGrading	MaterialExported	0.00	7,000.00
tblGrading	MaterialExported	0.00	8,500.00
tblGrading	MaterialImported	0.00	4,000.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	4.00
tblOperationalOffRoadEquipment	OperHorsePower	84.00	2,400.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	4.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblSolidWaste	SolidWasteGenerationRate	52.70	5.00
tblVehicleTrips	ST_TR	1.50	0.10
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	SU_TR	1.50	0.10
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	WD_TR	1.50	0.10
tblVehicleTrips	WD_TR	11.03	0.00
tblWater	IndoorWaterUseRate	9,828,125.00	0.00
tblWater	OutdoorWaterUseRate	0.00	10,000.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1413	1.5608	1.0797	2.5600e-003	0.1327	0.0695	0.2022	0.0592	0.0646	0.1238	0.0000	232.9980	232.9980	0.0488	0.0000	234.2187
2021	0.2893	2.6664	2.5074	5.2400e-003	0.0928	0.1269	0.2197	0.0249	0.1190	0.1439	0.0000	464.5710	464.5710	0.0899	0.0000	466.8188
2022	0.6519	0.9301	0.9765	2.0300e-003	0.0339	0.0421	0.0760	9.1900e-003	0.0395	0.0487	0.0000	179.7271	179.7271	0.0349	0.0000	180.5985
Maximum	**0.6519**	**2.6664**	**2.5074**	**5.2400e-003**	**0.1327**	**0.1269**	**0.2197**	**0.0592**	**0.1190**	**0.1439**	**0.0000**	**464.5710**	**464.5710**	**0.0899**	**0.0000**	**466.8188**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1413	1.5608	1.0797	2.5600e-003	0.0760	0.0695	0.1455	0.0310	0.0646	0.0956	0.0000	232.9978	232.9978	0.0488	0.0000	234.2186
2021	0.2893	2.6664	2.5074	5.2400e-003	0.0924	0.1269	0.2192	0.0248	0.1190	0.1438	0.0000	464.5706	464.5706	0.0899	0.0000	466.8184
2022	0.6519	0.9301	0.9765	2.0300e-003	0.0339	0.0421	0.0760	9.1900e-003	0.0395	0.0487	0.0000	179.7269	179.7269	0.0349	0.0000	180.5984
Maximum	**0.6519**	**2.6664**	**2.5074**	**5.2400e-003**	**0.0924**	**0.1269**	**0.2192**	**0.0310**	**0.1190**	**0.1438**	**0.0000**	**464.5706**	**464.5706**	**0.0899**	**0.0000**	**466.8184**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**22.03**	**0.00**	**11.48**	**30.27**	**0.00**	**8.93**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2020**	**9-30-2020**	1.0193	1.0193
2	**10-1-2020**	**12-31-2020**	0.6725	0.6725
3	**1-1-2021**	**3-31-2021**	0.5961	0.5961
4	**4-1-2021**	**6-30-2021**	0.7793	0.7793
5	**7-1-2021**	**9-30-2021**	0.7879	0.7879
6	**10-1-2021**	**12-31-2021**	0.7895	0.7895
7	**1-1-2022**	**3-31-2022**	0.6935	0.6935
8	**4-1-2022**	**6-30-2022**	0.8980	0.8980
		Highest	1.0193	1.0193

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2326	1.0000e-005	1.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9600e-003	2.9600e-003	1.0000e-005	0.0000	3.1500e-003
Energy	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	580.4816	580.4816	0.0233	4.8400e-003	582.5089
Mobile	1.0100e-003	0.0181	0.0137	9.0000e-005	4.7400e-003	4.0000e-005	4.7900e-003	1.2700e-003	4.0000e-005	1.3100e-003	0.0000	8.2607	8.2607	6.0000e-004	0.0000	8.2757
Offroad	6.0800e-003	0.0958	0.0323	1.6000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	16.1488	16.1488	4.8000e-004	0.0000	16.1609
Waste						0.0000	0.0000		0.0000	0.0000	1.2037	0.0000	1.2037	0.0711	0.0000	2.9822
Water						0.0000	0.0000		0.0000	0.0000	0.0564	1.1882	1.2445	5.8400e-003	1.5000e-004	1.4342
Total	**0.2398**	**0.1149**	**0.0483**	**2.6000e-004**	**4.7400e-003**	**1.9500e-003**	**6.7000e-003**	**1.2700e-003**	**1.9500e-003**	**3.2200e-003**	**1.2601**	**606.0822**	**607.3423**	**0.1014**	**4.9900e-003**	**611.3650**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2326	1.0000e-005	1.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9600e-003	2.9600e-003	1.0000e-005	0.0000	3.1500e-003
Energy	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	580.4816	580.4816	0.0233	4.8400e-003	582.5089
Mobile	1.0100e-003	0.0181	0.0137	9.0000e-005	4.7400e-003	4.0000e-005	4.7900e-003	1.2700e-003	4.0000e-005	1.3100e-003	0.0000	8.2607	8.2607	6.0000e-004	0.0000	8.2757
Offroad	6.0800e-003	0.0958	0.0323	1.6000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	16.1488	16.1488	4.8000e-004	0.0000	16.1609
Waste						0.0000	0.0000		0.0000	0.0000	1.2037	0.0000	1.2037	0.0711	0.0000	2.9822
Water						0.0000	0.0000		0.0000	0.0000	0.0564	1.1882	1.2445	5.8400e-003	1.5000e-004	1.4342
Total	**0.2398**	**0.1149**	**0.0483**	**2.6000e-004**	**4.7400e-003**	**1.9500e-003**	**6.7000e-003**	**1.2700e-003**	**1.9500e-003**	**3.2200e-003**	**1.2601**	**606.0822**	**607.3423**	**0.1014**	**4.9900e-003**	**611.3650**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2020	7/28/2020	5	20	
2	Site Preparation/Grading	Site Preparation	7/29/2020	9/8/2020	5	30	
3	Pipeline Excavation and Construction	Grading	9/9/2020	2/9/2021	5	110	
4	Street Paving Repair	Paving	2/10/2021	3/5/2021	5	18	
5	Building Construction	Building Construction	3/6/2021	4/29/2022	5	300	
6	Paving	Paving	4/30/2022	5/25/2022	5	18	
7	Architectural Coating	Architectural Coating	5/26/2022	6/28/2022	5	24	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.8

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 65,250; Non-Residential Outdoor: 21,750; Striped Parking Area: 7,320 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	1	8.00	158	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation/Grading	Graders	1	8.00	187	0.41
Site Preparation/Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation/Grading	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation/Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Pipeline Excavation and Construction	Concrete/Industrial Saws	1	4.00	81	0.73

Pipeline Excavation and Construction	Excavators	1	8.00	158	0.38
Pipeline Excavation and Construction	Graders	0	8.00	187	0.41
Pipeline Excavation and Construction	Plate Compactors	1	2.00	8	0.43
Pipeline Excavation and Construction	Rubber Tired Dozers	0	8.00	247	0.40
Pipeline Excavation and Construction	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Pipeline Excavation and Construction	Trenchers	1	8.00	78	0.50
Pipeline Excavation and Construction	Welders	1	4.00	46	0.45
Street Paving Repair	Cement and Mortar Mixers	2	6.00	9	0.56
Street Paving Repair	Pavers	1	8.00	130	0.42
Street Paving Repair	Paving Equipment	2	6.00	132	0.36
Street Paving Repair	Rollers	2	6.00	80	0.38
Street Paving Repair	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Bore/Drill Rigs	1	2.00	221	0.50
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Plate Compactors	1	2.00	8	0.43
Building Construction	Rollers	1	2.00	80	0.38
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	32.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation/Grading	6	15.00	0.00	1,063.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline Excavation and Construction	8	20.00	0.00	1,375.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Street Paving Repair	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	69.00	27.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	14.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.4900e-003	0.0000	3.4900e-003	5.3000e-004	0.0000	5.3000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0212	0.2145	0.1272	2.6000e-004		0.0102	0.0102		9.5100e-003	9.5100e-003	0.0000	22.9090	22.9090	6.0100e-003	0.0000	23.0593
Total	**0.0212**	**0.2145**	**0.1272**	**2.6000e-004**	**3.4900e-003**	**0.0102**	**0.0137**	**5.3000e-004**	**9.5100e-003**	**0.0100**	**0.0000**	**22.9090**	**22.9090**	**6.0100e-003**	**0.0000**	**23.0593**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.5500e-003	1.0400e-003	1.0000e-005	2.7000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.2340	1.2340	1.1000e-004	0.0000	1.2368
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.7000e-004	2.6800e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.1000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7249	0.7249	2.0000e-005	0.0000	0.7254
Total	**5.0000e-004**	**4.8200e-003**	**3.7200e-003**	**2.0000e-005**	**1.0700e-003**	**2.0000e-005**	**1.1000e-003**	**2.9000e-004**	**2.0000e-005**	**3.1000e-004**	**0.0000**	**1.9589**	**1.9589**	**1.3000e-004**	**0.0000**	**1.9622**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5700e-003	0.0000	1.5700e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0212	0.2145	0.1272	2.6000e-004		0.0102	0.0102		9.5100e-003	9.5100e-003	0.0000	22.9090	22.9090	6.0100e-003	0.0000	23.0593
Total	**0.0212**	**0.2145**	**0.1272**	**2.6000e-004**	**1.5700e-003**	**0.0102**	**0.0117**	**2.4000e-004**	**9.5100e-003**	**9.7500e-003**	**0.0000**	**22.9090**	**22.9090**	**6.0100e-003**	**0.0000**	**23.0593**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3000e-004	4.5500e-003	1.0400e-003	1.0000e-005	2.7000e-004	1.0000e-005	2.9000e-004	8.0000e-005	1.0000e-005	9.0000e-005	0.0000	1.2340	1.2340	1.1000e-004	0.0000	1.2368
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.7000e-004	2.6800e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.1000e-004	2.1000e-004	1.0000e-005	2.2000e-004	0.0000	0.7249	0.7249	2.0000e-005	0.0000	0.7254
Total	**5.0000e-004**	**4.8200e-003**	**3.7200e-003**	**2.0000e-005**	**1.0700e-003**	**2.0000e-005**	**1.1000e-003**	**2.9000e-004**	**2.0000e-005**	**3.1000e-004**	**0.0000**	**1.9589**	**1.9589**	**1.3000e-004**	**0.0000**	**1.9622**

3.3 Site Preparation/Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0989	0.0000	0.0989	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0384	0.4257	0.2163	4.6000e-004		0.0195	0.0195		0.0180	0.0180	0.0000	40.5175	40.5175	0.0131	0.0000	40.8451
Total	**0.0384**	**0.4257**	**0.2163**	**4.6000e-004**	**0.0989**	**0.0195**	**0.1184**	**0.0506**	**0.0180**	**0.0686**	**0.0000**	**40.5175**	**40.5175**	**0.0131**	**0.0000**	**40.8451**

3.3 Site Preparation/Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.2500e-003	0.1512	0.0346	4.1000e-004	9.0900e-003	4.8000e-004	9.5700e-003	2.5000e-003	4.6000e-004	2.9500e-003	0.0000	40.9919	40.9919	3.6900e-003	0.0000	41.0842
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	6.1000e-004	6.0200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6310	1.6310	5.0000e-005	0.0000	1.6322
Total	**5.0800e-003**	**0.1518**	**0.0407**	**4.3000e-004**	**0.0109**	**4.9000e-004**	**0.0114**	**2.9800e-003**	**4.7000e-004**	**3.4400e-003**	**0.0000**	**42.6229**	**42.6229**	**3.7400e-003**	**0.0000**	**42.7164**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0445	0.0000	0.0445	0.0228	0.0000	0.0228	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0384	0.4257	0.2163	4.6000e-004		0.0195	0.0195		0.0180	0.0180	0.0000	40.5175	40.5175	0.0131	0.0000	40.8451
Total	**0.0384**	**0.4257**	**0.2163**	**4.6000e-004**	**0.0445**	**0.0195**	**0.0640**	**0.0228**	**0.0180**	**0.0408**	**0.0000**	**40.5175**	**40.5175**	**0.0131**	**0.0000**	**40.8451**

3.3 Site Preparation/Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.2500e-003	0.1512	0.0346	4.1000e-004	9.0900e-003	4.8000e-004	9.5700e-003	2.5000e-003	4.6000e-004	2.9500e-003	0.0000	40.9919	40.9919	3.6900e-003	0.0000	41.0842
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3000e-004	6.1000e-004	6.0200e-003	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.6310	1.6310	5.0000e-005	0.0000	1.6322
Total	**5.0800e-003**	**0.1518**	**0.0407**	**4.3000e-004**	**0.0109**	**4.9000e-004**	**0.0114**	**2.9800e-003**	**4.7000e-004**	**3.4400e-003**	**0.0000**	**42.6229**	**42.6229**	**3.7400e-003**	**0.0000**	**42.7164**

3.4 Pipeline Excavation and Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.7000e-004	0.0000	7.7000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0690	0.6159	0.6364	9.2000e-004		0.0388	0.0388		0.0361	0.0361	0.0000	79.5193	79.5193	0.0221	0.0000	80.0719
Total	**0.0690**	**0.6159**	**0.6364**	**9.2000e-004**	**7.7000e-004**	**0.0388**	**0.0395**	**1.2000e-004**	**0.0361**	**0.0363**	**0.0000**	**79.5193**	**79.5193**	**0.0221**	**0.0000**	**80.0719**

3.4 Pipeline Excavation and Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-003	0.1458	0.0334	4.0000e-004	0.0110	4.6000e-004	0.0115	2.9600e-003	4.4000e-004	3.4000e-003	0.0000	39.5265	39.5265	3.5600e-003	0.0000	39.6155
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0200e-003	2.2400e-003	0.0219	7.0000e-005	6.5800e-003	5.0000e-005	6.6200e-003	1.7500e-003	4.0000e-005	1.7900e-003	0.0000	5.9440	5.9440	1.8000e-004	0.0000	5.9484
Total	**7.1200e-003**	**0.1480**	**0.0553**	**4.7000e-004**	**0.0176**	**5.1000e-004**	**0.0181**	**4.7100e-003**	**4.8000e-004**	**5.1900e-003**	**0.0000**	**45.4705**	**45.4705**	**3.7400e-003**	**0.0000**	**45.5639**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5000e-004	0.0000	3.5000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0690	0.6159	0.6364	9.2000e-004		0.0388	0.0388		0.0361	0.0361	0.0000	79.5192	79.5192	0.0221	0.0000	80.0718
Total	**0.0690**	**0.6159**	**0.6364**	**9.2000e-004**	**3.5000e-004**	**0.0388**	**0.0391**	**5.0000e-005**	**0.0361**	**0.0362**	**0.0000**	**79.5192**	**79.5192**	**0.0221**	**0.0000**	**80.0718**

3.4 Pipeline Excavation and Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	4.1000e-003	0.1458	0.0334	4.0000e-004	0.0110	4.6000e-004	0.0115	2.9600e-003	4.4000e-004	3.4000e-003	0.0000	39.5265	39.5265	3.5600e-003	0.0000	39.6155
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0200e-003	2.2400e-003	0.0219	7.0000e-005	6.5800e-003	5.0000e-005	6.6200e-003	1.7500e-003	4.0000e-005	1.7900e-003	0.0000	5.9440	5.9440	1.8000e-004	0.0000	5.9484
Total	**7.1200e-003**	**0.1480**	**0.0553**	**4.7000e-004**	**0.0176**	**5.1000e-004**	**0.0181**	**4.7100e-003**	**4.8000e-004**	**5.1900e-003**	**0.0000**	**45.4705**	**45.4705**	**3.7400e-003**	**0.0000**	**45.5639**

3.4 Pipeline Excavation and Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.7000e-004	0.0000	7.7000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.1917	0.2157	3.1000e-004		0.0115	0.0115		0.0107	0.0107	0.0000	27.1603	27.1603	7.5100e-003	0.0000	27.3480
Total	**0.0214**	**0.1917**	**0.2157**	**3.1000e-004**	**7.7000e-004**	**0.0115**	**0.0123**	**1.2000e-004**	**0.0107**	**0.0108**	**0.0000**	**27.1603**	**27.1603**	**7.5100e-003**	**0.0000**	**27.3480**

3.4 Pipeline Excavation and Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3100e-003	0.0457	0.0113	1.3000e-004	9.5800e-003	1.4000e-004	9.7200e-003	2.4400e-003	1.3000e-004	2.5700e-003	0.0000	13.3284	13.3284	1.2000e-003	0.0000	13.3584
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.7000e-004	6.9000e-004	7.0000e-003	2.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.9615	1.9615	6.0000e-005	0.0000	1.9629
Total	**2.2800e-003**	**0.0464**	**0.0183**	**1.5000e-004**	**0.0118**	**1.6000e-004**	**0.0120**	**3.0400e-003**	**1.4000e-004**	**3.1800e-003**	**0.0000**	**15.2898**	**15.2898**	**1.2600e-003**	**0.0000**	**15.3213**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5000e-004	0.0000	3.5000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0214	0.1917	0.2157	3.1000e-004		0.0115	0.0115		0.0107	0.0107	0.0000	27.1602	27.1602	7.5100e-003	0.0000	27.3479
Total	**0.0214**	**0.1917**	**0.2157**	**3.1000e-004**	**3.5000e-004**	**0.0115**	**0.0118**	**5.0000e-005**	**0.0107**	**0.0108**	**0.0000**	**27.1602**	**27.1602**	**7.5100e-003**	**0.0000**	**27.3479**

3.4 Pipeline Excavation and Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.3100e-003	0.0457	0.0113	1.3000e-004	9.5800e-003	1.4000e-004	9.7200e-003	2.4400e-003	1.3000e-004	2.5700e-003	0.0000	13.3284	13.3284	1.2000e-003	0.0000	13.3584
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.7000e-004	6.9000e-004	7.0000e-003	2.0000e-005	2.2500e-003	2.0000e-005	2.2600e-003	6.0000e-004	1.0000e-005	6.1000e-004	0.0000	1.9615	1.9615	6.0000e-005	0.0000	1.9629
Total	**2.2800e-003**	**0.0464**	**0.0183**	**1.5000e-004**	**0.0118**	**1.6000e-004**	**0.0120**	**3.0400e-003**	**1.4000e-004**	**3.1800e-003**	**0.0000**	**15.2898**	**15.2898**	**1.2600e-003**	**0.0000**	**15.3213**

3.5 Street Paving Repair - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7336	14.7336	4.6300e-003	0.0000	14.8493
Paving	2.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0128**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7336**	**14.7336**	**4.6300e-003**	**0.0000**	**14.8493**

3.5 Street Paving Repair - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.5000e-004	4.5000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2609	1.2609	4.0000e-005	0.0000	1.2618
Total	**6.3000e-004**	**4.5000e-004**	**4.5000e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2609**	**1.2609**	**4.0000e-005**	**0.0000**	**1.2618**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.8500e-003	0.0976	0.1103	1.7000e-004		5.2100e-003	5.2100e-003		4.8100e-003	4.8100e-003	0.0000	14.7335	14.7335	4.6300e-003	0.0000	14.8493
Paving	2.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0128**	**0.0976**	**0.1103**	**1.7000e-004**		**5.2100e-003**	**5.2100e-003**		**4.8100e-003**	**4.8100e-003**	**0.0000**	**14.7335**	**14.7335**	**4.6300e-003**	**0.0000**	**14.8493**

3.5 Street Paving Repair - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.5000e-004	4.5000e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2609	1.2609	4.0000e-005	0.0000	1.2618
Total	**6.3000e-004**	**4.5000e-004**	**4.5000e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2609**	**1.2609**	**4.0000e-005**	**0.0000**	**1.2618**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2175	2.0137	1.8938	3.2300e-003		0.1089	0.1089		0.1023	0.1023	0.0000	278.2822	278.2822	0.0694	0.0000	280.0161
Total	**0.2175**	**2.0137**	**1.8938**	**3.2300e-003**		**0.1089**	**0.1089**		**0.1023**	**0.1023**	**0.0000**	**278.2822**	**278.2822**	**0.0694**	**0.0000**	**280.0161**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.9700e-003	0.2983	0.0796	7.8000e-004	0.0193	6.3000e-004	0.0199	5.5600e-003	6.0000e-004	6.1700e-003	0.0000	75.8830	75.8830	5.6300e-003	0.0000	76.0238
Worker	0.0258	0.0184	0.1853	5.7000e-004	0.0595	4.2000e-004	0.0599	0.0158	3.9000e-004	0.0162	0.0000	51.9613	51.9613	1.4900e-003	0.0000	51.9985
Total	**0.0348**	**0.3167**	**0.2649**	**1.3500e-003**	**0.0788**	**1.0500e-003**	**0.0798**	**0.0214**	**9.9000e-004**	**0.0224**	**0.0000**	**127.8442**	**127.8442**	**7.1200e-003**	**0.0000**	**128.0223**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2175	2.0137	1.8938	3.2300e-003		0.1089	0.1089		0.1023	0.1023	0.0000	278.2818	278.2818	0.0694	0.0000	280.0158
Total	**0.2175**	**2.0137**	**1.8938**	**3.2300e-003**		**0.1089**	**0.1089**		**0.1023**	**0.1023**	**0.0000**	**278.2818**	**278.2818**	**0.0694**	**0.0000**	**280.0158**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.9700e-003	0.2983	0.0796	7.8000e-004	0.0193	6.3000e-004	0.0199	5.5600e-003	6.0000e-004	6.1700e-003	0.0000	75.8830	75.8830	5.6300e-003	0.0000	76.0238
Worker	0.0258	0.0184	0.1853	5.7000e-004	0.0595	4.2000e-004	0.0599	0.0158	3.9000e-004	0.0162	0.0000	51.9613	51.9613	1.4900e-003	0.0000	51.9985
Total	**0.0348**	**0.3167**	**0.2649**	**1.3500e-003**	**0.0788**	**1.0500e-003**	**0.0798**	**0.0214**	**9.9000e-004**	**0.0224**	**0.0000**	**127.8442**	**127.8442**	**7.1200e-003**	**0.0000**	**128.0223**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0771	0.7088	0.7391	1.2800e-003		0.0363	0.0363		0.0341	0.0341	0.0000	110.0705	110.0705	0.0273	0.0000	110.7522
Total	**0.0771**	**0.7088**	**0.7391**	**1.2800e-003**		**0.0363**	**0.0363**		**0.0341**	**0.0341**	**0.0000**	**110.0705**	**110.0705**	**0.0273**	**0.0000**	**110.7522**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-003	0.1114	0.0298	3.0000e-004	7.6200e-003	2.1000e-004	7.8300e-003	2.2000e-003	2.1000e-004	2.4000e-003	0.0000	29.7161	29.7161	2.1600e-003	0.0000	29.7701
Worker	9.6500e-003	6.6300e-003	0.0680	2.2000e-004	0.0235	1.6000e-004	0.0237	6.2500e-003	1.5000e-004	6.4000e-003	0.0000	19.7898	19.7898	5.4000e-004	0.0000	19.8033
Total	**0.0130**	**0.1180**	**0.0978**	**5.2000e-004**	**0.0311**	**3.7000e-004**	**0.0315**	**8.4500e-003**	**3.6000e-004**	**8.8000e-003**	**0.0000**	**49.5059**	**49.5059**	**2.7000e-003**	**0.0000**	**49.5733**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0771	0.7088	0.7391	1.2800e-003		0.0363	0.0363		0.0341	0.0341	0.0000	110.0704	110.0704	0.0273	0.0000	110.7521
Total	**0.0771**	**0.7088**	**0.7391**	**1.2800e-003**		**0.0363**	**0.0363**		**0.0341**	**0.0341**	**0.0000**	**110.0704**	**110.0704**	**0.0273**	**0.0000**	**110.7521**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.3000e-003	0.1114	0.0298	3.0000e-004	7.6200e-003	2.1000e-004	7.8300e-003	2.2000e-003	2.1000e-004	2.4000e-003	0.0000	29.7161	29.7161	2.1600e-003	0.0000	29.7701
Worker	9.6500e-003	6.6300e-003	0.0680	2.2000e-004	0.0235	1.6000e-004	0.0237	6.2500e-003	1.5000e-004	6.4000e-003	0.0000	19.7898	19.7898	5.4000e-004	0.0000	19.8033
Total	**0.0130**	**0.1180**	**0.0978**	**5.2000e-004**	**0.0311**	**3.7000e-004**	**0.0315**	**8.4500e-003**	**3.6000e-004**	**8.8000e-003**	**0.0000**	**49.5059**	**49.5059**	**2.7000e-003**	**0.0000**	**49.5733**

3.7 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	2.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0118**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

3.7 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.1000e-004	4.1700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2147	1.2147	3.0000e-005	0.0000	1.2155
Total	**5.9000e-004**	**4.1000e-004**	**4.1700e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2147**	**1.2147**	**3.0000e-005**	**0.0000**	**1.2155**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	2.9900e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0118**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

3.7 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.1000e-004	4.1700e-003	1.0000e-005	1.4400e-003	1.0000e-005	1.4500e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.2147	1.2147	3.0000e-005	0.0000	1.2155
Total	**5.9000e-004**	**4.1000e-004**	**4.1700e-003**	**1.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4500e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2147**	**1.2147**	**3.0000e-005**	**0.0000**	**1.2155**

3.8 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5465					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4500e-003	0.0169	0.0218	4.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	3.0639	3.0639	2.0000e-004	0.0000	3.0689
Total	**0.5489**	**0.0169**	**0.0218**	**4.0000e-005**		**9.8000e-004**	**9.8000e-004**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**3.0639**	**3.0639**	**2.0000e-004**	**0.0000**	**3.0689**

3.8 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.8000e-004	3.9000e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1337	1.1337	3.0000e-005	0.0000	1.1345
Total	**5.5000e-004**	**3.8000e-004**	**3.9000e-003**	**1.0000e-005**	**1.3500e-003**	**1.0000e-005**	**1.3600e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1337**	**1.1337**	**3.0000e-005**	**0.0000**	**1.1345**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5465					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.4500e-003	0.0169	0.0218	4.0000e-005		9.8000e-004	9.8000e-004		9.8000e-004	9.8000e-004	0.0000	3.0639	3.0639	2.0000e-004	0.0000	3.0689
Total	**0.5489**	**0.0169**	**0.0218**	**4.0000e-005**		**9.8000e-004**	**9.8000e-004**		**9.8000e-004**	**9.8000e-004**	**0.0000**	**3.0639**	**3.0639**	**2.0000e-004**	**0.0000**	**3.0689**

3.8 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5000e-004	3.8000e-004	3.9000e-003	1.0000e-005	1.3500e-003	1.0000e-005	1.3600e-003	3.6000e-004	1.0000e-005	3.7000e-004	0.0000	1.1337	1.1337	3.0000e-005	0.0000	1.1345
Total	**5.5000e-004**	**3.8000e-004**	**3.9000e-003**	**1.0000e-005**	**1.3500e-003**	**1.0000e-005**	**1.3600e-003**	**3.6000e-004**	**1.0000e-005**	**3.7000e-004**	**0.0000**	**1.1337**	**1.1337**	**3.0000e-005**	**0.0000**	**1.1345**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	1.0100e-003	0.0181	0.0137	9.0000e-005	4.7400e-003	4.0000e-005	4.7900e-003	1.2700e-003	4.0000e-005	1.3100e-003	0.0000	8.2607	8.2607	6.0000e-004	0.0000	8.2757
Unmitigated	1.0100e-003	0.0181	0.0137	9.0000e-005	4.7400e-003	4.0000e-005	4.7900e-003	1.2700e-003	4.0000e-005	1.3100e-003	0.0000	8.2607	8.2607	6.0000e-004	0.0000	8.2757

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	4.25	4.25	4.25	12,408	12,408
General Office Building	0.00	0.00	0.00		
Other Asphalt Surfaces	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	4.25	4.25	4.25	12,408	12,408

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Other Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.600000	0.000000	0.100000	0.100000	0.000000	0.000000	0.000000	0.200000	0.000000	0.000000	0.000000	0.000000	0.000000
General Office Building	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Other Asphalt Surfaces	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Other Non-Asphalt Surfaces	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056
Parking Lot	0.602700	0.040134	0.179939	0.104242	0.014985	0.005435	0.016642	0.024350	0.001934	0.001888	0.005938	0.000757	0.001056

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	579.4042	579.4042	0.0233	4.8300e-003	581.4251
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	579.4042	579.4042	0.0233	4.8300e-003	581.4251
NaturalGas Mitigated	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0774	1.0774	2.0000e-005	2.0000e-005	1.0838
NaturalGas Unmitigated	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0774	1.0774	2.0000e-005	2.0000e-005	1.0838

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	20190	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0774	1.0774	2.0000e-005	2.0000e-005	1.0838
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.1000e-004**	**9.9000e-004**	**8.3000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**1.0774**	**1.0774**	**2.0000e-005**	**2.0000e-005**	**1.0838**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	20190	1.1000e-004	9.9000e-004	8.3000e-004	1.0000e-005		8.0000e-005	8.0000e-005		8.0000e-005	8.0000e-005	0.0000	1.0774	1.0774	2.0000e-005	2.0000e-005	1.0838
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**1.1000e-004**	**9.9000e-004**	**8.3000e-004**	**1.0000e-005**		**8.0000e-005**	**8.0000e-005**		**8.0000e-005**	**8.0000e-005**	**0.0000**	**1.0774**	**1.0774**	**2.0000e-005**	**2.0000e-005**	**1.0838**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	1.7425e+006	569.4643	0.0229	4.7400e-003	571.4505
General Office Building	13440	4.3923	1.8000e-004	4.0000e-005	4.4076
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	16975	5.5476	2.2000e-004	5.0000e-005	5.5669
Total		**579.4042**	**0.0233**	**4.8300e-003**	**581.4251**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	1.7425e+006	569.4643	0.0229	4.7400e-003	571.4505
General Office Building	13440	4.3923	1.8000e-004	4.0000e-005	4.4076
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	16975	5.5476	2.2000e-004	5.0000e-005	5.5669
Total		**579.4042**	**0.0233**	**4.8300e-003**	**581.4251**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2326	1.0000e-005	1.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9600e-003	2.9600e-003	1.0000e-005	0.0000	3.1500e-003
Unmitigated	0.2326	1.0000e-005	1.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9600e-003	2.9600e-003	1.0000e-005	0.0000	3.1500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9600e-003	2.9600e-003	1.0000e-005	0.0000	3.1500e-003
Total	**0.2326**	**1.0000e-005**	**1.5200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.9600e-003**	**2.9600e-003**	**1.0000e-005**	**0.0000**	**3.1500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0547					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1778					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.4000e-004	1.0000e-005	1.5200e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9600e-003	2.9600e-003	1.0000e-005	0.0000	3.1500e-003
Total	**0.2326**	**1.0000e-005**	**1.5200e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.9600e-003**	**2.9600e-003**	**1.0000e-005**	**0.0000**	**3.1500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.2445	5.8400e-003	1.5000e-004	1.4342
Unmitigated	1.2445	5.8400e-003	1.5000e-004	1.4342

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0.01	0.0363	0.0000	0.0000	0.0364
General Office Building	0.177734 / 0.108934	1.2082	5.8400e-003	1.5000e-004	1.3978
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.2445**	**5.8400e-003**	**1.5000e-004**	**1.4342**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0.01	0.0363	0.0000	0.0000	0.0364
General Office Building	0.177734 / 0.108934	1.2082	5.8400e-003	1.5000e-004	1.3978
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.2445**	**5.8400e-003**	**1.5000e-004**	**1.4342**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1.2037	0.0711	0.0000	2.9822
Unmitigated	1.2037	0.0711	0.0000	2.9822

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	5	1.0150	0.0600	0.0000	2.5145
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.2037**	**0.0711**	**0.0000**	**2.9822**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	5	1.0150	0.0600	0.0000	2.5145
General Office Building	0.93	0.1888	0.0112	0.0000	0.4677
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**1.2037**	**0.0711**	**0.0000**	**2.9822**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Generator Sets	1	4.00	4	2400	0.74	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Generator Sets	6.0800e-003	0.0958	0.0323	1.6000e-004		1.8200e-003	1.8200e-003		1.8200e-003	1.8200e-003	0.0000	16.1488	16.1488	4.8000e-004	0.0000	16.1609
Total	**6.0800e-003**	**0.0958**	**0.0323**	**1.6000e-004**		**1.8200e-003**	**1.8200e-003**		**1.8200e-003**	**1.8200e-003**	**0.0000**	**16.1488**	**16.1488**	**4.8000e-004**	**0.0000**	**16.1609**

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation