APPENDIX E

Air Quality

Memorandum prepared by Torres and Malisos,
April 2010

M E M O R A N D U M

To: Alan Ashimine, MS 455

From: Eddie Torres, INCE, REA, MS 455
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Date: April 23, 2010

Subject: Seawater Desalination Project at Huntington Beach - Air Quality Analysis

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RBF previously prepared the air quality analysis for the *Seawater Desalination Project at Huntington Beach Recirculated Environmental Impact Report (EIR)*. Project components consist of those previously considered in the *Seawater Desalination Project at Huntington Beach Recirculated EIR*. The current proposal involves orienting a portion of the facility further north on the Huntington Beach Generating Station (HBGS) site. The current proposal also includes a Collocated Operation, which would divert seawater intake from the HBGS once-through cooling water system. In contrast, the project also includes a Stand-Alone Operation, where it is assumed that the HBGS discontinues once-through cooling or permanently altered their cooling water systems historical operations. In this scenario, the proposed project would assume responsibility of the pumping and intake of seawater through HBGS infrastructure. The following analysis reviews the construction air quality impacts associated with the revised portion of the project for both the Collocated Operation and the Stand-Alone Operation.

LOCAL AMBIENT AIR QUALITY

Air Quality Monitoring Stations

The South Coast Air Quality Management District (SCAQMD) monitors air quality at 37 monitoring stations throughout the South Coast Air Basin (Basin), in which the project site is located. Each monitoring station is located within a Source Receptor Area (SRA). The communities within an SRA are expected to have similar climatology and ambient air pollutant concentrations. The proposed project is located in SRA 18 (North Coastal Orange County). The monitoring stations usually measure pollutant concentrations ten feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations.

Pollutants Measured

The following air quality information briefly describes the various types of pollutants monitored at the Costa Mesa Monitoring Station, which is located in Source Receptor Area (SRA) 18. Those pollutants not measured at the Costa Mesa Monitoring Station were taken from the Anaheim Monitoring Station (SRA 17) which is the next closest to the project site. There are no other monitoring stations within SRA 18. Air quality data from 2004 through 2008 is provided in Table AQ-1, *Local Air Quality Levels*.

Table AQ-1
Local Air Quality Levels

Pollutant	Primary Standard		Year	Maximum[1] Concentration	Number of Days State/Federal Std. Exceeded
	California	Federal			
Carbon Monoxide (CO) [2]	9 ppm for 8 hours	9 ppm for 8 hours	2004 2005 2006 2007 2008	4.07 ppm 3.16 3.01 3.13 1.97	0/0 0/0 0/0 0/0 0/0
Ozone (O_3) (1-Hour) [2]	0.09 ppm for 1 hour	NA[4]	2004 2005 2006 2007 2008	0.104 ppm 0.085 0.074 0.082 0.094	2/0 0/0 0/0 0/0 0/0
Ozone (O_3) (8-Hour) [2]	0.07ppm for 8 hours	0.075 ppm for 8 hours	2004 2005 2006 2007 2008	0.087 ppm 0.072 0.062 0.072 0.079	13/5 2/0 0/0 2/0 5/3
Nitrogen Dioxide (NO_2) [2]	0.18 ppm for 1 hour	0.053 ppm annual average	2004 2005 2006 2007 2008	0.097 ppm 0.085 0.101 0.074 0.081	0/NA 0/NA 0/NA 0/NA 0/NA
Particulate Matter (PM_{10}) [3,5,6]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	2004 2005 2006 2007 2008	74.0 µg/m^3 65.0 104.0 489.0 61.0	7/0 3/0 7/0 6/1 3/0
Fine Particulate Matter ($PM_{2.5}$) [3,6]	No Separate State Standard	35 µg/m^3 for 24 hours	2004 2005 2006 2007 2008	58.9 µg/m^3 54.7 56.2 79.4 39.4	NM/20 NM/13 NM/7 NM/14 NM/2

ppm = parts per million
µg/m^3 = micrograms per cubic meter
NM = Not Measured
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less
NA = Not Applicable

Notes:
1 – Maximum concentration is measured over the same period as the California Standard.
2 – Measurements taken at the Costa Mesa Monitoring Station (located at 2850 Mesa Verde Drive East, Costa Mesa, California 92626).
3 – Measurements taken at the Anaheim Monitoring Station (located at 1630 Pampas Lane, Anaheim, California 92802).
4 – The United States Environmental Protection Agency revoked the Federal 1-hour Standard in June of 2005.
5 – PM_{10} exceedances are based on State thresholds established prior to amendments adopted on June 20, 2002.
6 – PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

Source: California Air Resources Board, *ADAM Air Quality Data Statistics*, http://www.arb.ca.gov/adam/welcome.html, accessed on November 12, 2009.

Carbon Monoxide. Carbon monoxide (CO) is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions.

CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses, and patients with chronic hypoxemia (oxygen deficiency, as seen in high altitudes) are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of CO. Exposure to high levels of CO can slow reflexes and cause drowsiness, as well as result in death in confined spaces at very high concentrations.

Nitrogen Dioxide. Nitrogen oxides (NO_X) are a family of highly reactive gases that are a primary precursor to the formation of ground-level O_3, and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_X) is a reddish-brown gas that can cause breathing difficulties at high levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (i.e., motor vehicle engines, power plants, refineries, and other industrial operations). NO_2 can irritate and damage the lungs, and lower resistance to respiratory infections such as influenza. The health effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air, may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes as well as cause pulmonary dysfunction.

Ozone. Ozone (O_3) occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" O_3 layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays. The "Bad" O_3 is a photochemical pollutant, and needs reactive organic compounds (ROGs), NO_X, and sunlight to form; therefore, ROGs and NO_X are O_3 precursors. To reduce O_3 concentrations, it is necessary to control the emissions of these O_3 precursors. Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O_3 in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O_3 (in the troposphere) can adversely affect the human respiratory system and other tissues. O_3 is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with pre-existing lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O_3. Short-term exposure (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, increased fatigue, as well as chest pain, dry throat, headache and nausea.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003, CARB adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter ($PM_{2.5}$). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both State and Federal $PM_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with pre-existing cardiopulmonary disease. In 1997, the United States Environmental Protection Agency (EPA) announced new $PM_{2.5}$ standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the United States Supreme Court reversed this decision and upheld the EPA's new standards.

On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Basin as a nonattainment area for Federal $PM_{2.5}$ standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

REGULATORY FRAMEWORK

Regulatory oversight for air quality in the Basin rests with the SCAQMD at the regional level, the California Air Resources Board (CARB) at the State level and the United States EPA Region IX office at the Federal level.

United States Environmental Protection Agency

The EPA is responsible for implementing the Federal Clean Air Act (FCAA), which was first enacted in 1955 and amended numerous times after. The FCAA established Federal air quality standards known as the National Ambient Air Quality Standards (NAAQS). These standards identify levels of air quality for "criteria" pollutants that are considered the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety, to protect the public health and welfare. The criteria pollutants are O_3, CO, NO_2 (which is a form of nitrogen oxides [NO_X]), SO_2 (which is a form of sulfur oxides [SO_X]), particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively), and Pb; refer to Table AQ-2, *National and California Ambient Air Quality Standards*.

Table AQ-2
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[4]	Attainment Status
Ozone (O_3)	1 Hour	0.09 ppm (180 $\mu g/m^3$)	**Nonattainment**	NA[5]	NA[5]
	8 Hours	0.07 ppm (137 $\mu g/m^3$)	Unclassified	0.075 ppm (147 $\mu g/m^3$)	**Nonattainment**
Particulate Matter (PM_{10})	24 Hours	50 $\mu g/m^3$	**Nonattainment**	150 $\mu g/m^3$	**Nonattainment**
	Annual Arithmetic Mean	20 $\mu g/m^3$	**Nonattainment**	NA[6]	**Nonattainment**
Fine Particulate Matter ($PM_{2.5}$)	24 Hours	No Separate State Standard		35 $\mu g/m^3$	Unclassified
	Annual Arithmetic Mean	12 $\mu g/m^3$	**Nonattainment**	15 $\mu g/m^3$	**Nonattainment**

Table AQ-2 (continued)
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California[1]		Federal[2]	
		Standard[3]	Attainment Status	Standards[4]	Attainment Status
Carbon Monoxide (CO)	8 Hours	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment
	1 Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)[7]	Annual Arithmetic Mean	0.030 ppm (56 μg/m^3)	NA	0.053 ppm (100 μg/m^3)	Attainment
	1 Hour	0.18 ppm (338 μg/m^3)	Attainment	0.100 ppm	NA
Lead (Pb)	30 days average	1.5 μg/m^3	Attainment	N/A	NA
	Calendar Quarter	N/A	NA	1.5 μg/m^3	Attainment
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	N/A	NA	0.030 ppm (80 μg/m^3)	Attainment
	24 Hours	0.04 ppm (105 μg/m^3)	Attainment	0.14 ppm (365 μg/m^3)	Attainment
	3 Hours	N/A	NA	N/A	Attainment
	1 Hour	0.25 ppm (655 μg/m^3)	Attainment	N/A	NA
Visibility-Reducing Particles	8 Hours (10 a.m. to 6 p.m., PST)	Extinction coefficient = 0.23 km@<70% RH	Unclassified	**No Federal Standards**	
Sulfates	24 Hour	25 μg/m^3	Attainment		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Unclassified		
Vinyl Chloride	24 Hour	0.01 ppm (26 μg/m^3)	Unclassified		

μg/m^3 = micrograms per cubic meter; ppm = parts per million; km = kilometer(s); RH = relative humidity; PST = Pacific Standard Time; N/A = Not Applicable.

Notes:

1 – California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, suspended particulate matter-PM_{10} and visibility-reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations. In 1990, CARB identified vinyl chloride as a toxic air contaminant, but determined that there was not sufficient available scientific evidence to support the identification of a threshold exposure level. This action allows the implementation of health-protective control measures at levels below the 0.010 ppm ambient concentration specified in the 1978 standard.

2 – National standards (other than ozone, particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. EPA also may designate an area as *attainment/unclassifiable*, if: (1) it has monitored air quality data that show that the area has not violated the ozone standard over a three-year period; or (2) there is not enough information to determine the air quality in the area. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

3 – Concentration is expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

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

5 – The Federal 1-hour ozone standard was revoked on June 15, 2005 in all areas except the 14 8-hour ozone nonattainment Early Action Compact (EAC) areas.

6 – The Environmental Protection Agency revoked the annual PM_{10} standard in 2006 (effective December 16, 2006).

7 – To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

Source: California Air Resources Board and United States Environmental Protection Agency, February 16, 2010.

California Air Resources Board

CARB administers the air quality policy in California. The California Ambient Air Quality Standards (CAAQS) were established in 1969 pursuant to the Mulford-Carrell Act. These standards, included with the NAAQS in Table AQ-2, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility reducing particulates, hydrogen sulfide, and sulfates. The CCAA, which was approved in 1988, requires that each local air district prepare and maintain an Air Quality

Management Plan (AQMP) to achieve compliance with CAAQS. These AQMP's also serve as the basis for preparation of the State Implementation Plan (SIP) for the State of California.

Like the EPA, CARB also designates areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data show that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard, and are not used as a basis for designating areas as nonattainment.

Under the CCAA, the Basin is designated as a nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The Basin is designated as an attainment area for CO, NO_2, SO_2, and Pb; refer to Table AQ-2. Similar to the FCAA, all areas designated as nonattainment under the CCAA are required to prepare plans showing how the area would meet the CAAQs by its attainment dates.

South Coast Air Quality Management District

The SCAQMD is one of 35 air quality management districts that have prepared AQMP's to accomplish a five-percent annual reduction in emissions. The *2007 Air Quality Management Plan for the South Coast Air Basin* (*2007 Air Quality Management Plan*) relies on a multi-level partnership of governmental agencies at the Federal, State, regional, and local level. The *2007 Air Quality Management Plan* proposes policies and measures to achieve Federal and State standards for improved air quality in the Basin and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under SCAQMD jurisdiction.

The *2007 Air Quality Management Plan* includes new information on key elements such as:

- Current air quality;
- Improved emission inventories, especially significant increase in mobile source emissions;
- An overall control strategy comprised of: Stationary and Mobile Source Control Measures, SCAQMD, State and Federal Stationary and Mobile Source Control Measures, and the Southern California Association of Governments Regional Transportation Strategy and Control Measures;
- New attainment demonstration for $PM_{2.5}$ and O_3;
- Milestones to the Federal Reasonable Further Progress Plan; and
- Preliminary motor vehicle emission budgets for transportation conformity purposes.

In addition to the *2007 Air Quality Management Plan* and associated rules and regulations, the SCAQMD published the *CEQA Air Quality Handbook*. The SCAQMD *CEQA Air Quality Handbook* provides guidance to assist local government agencies and consultants in developing the environmental documents required by CEQA. With the help of the *CEQA Air Quality Handbook*, local land use planners and other consultants are able to analyze and document how proposed and existing projects affect air quality and should be able to fulfill the requirements of the CEQA review process. The SCAQMD is in the process of developing an *Air Quality Analysis Guidance Handbook* to replace the current *CEQA Air Quality Handbook* approved by the SCAQMD Governing Board in 1993.

IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

Under *CEQA*, the SCAQMD is an expert commenting agency on air quality within its jurisdiction or impacting its jurisdiction. Under the FCAA, the SCAQMD has adopted federal attainment plans for O_3 and PM_{10}. The SCAQMD reviews projects to ensure that they would not: (1) cause or contribute to any new violation of any air quality standard; (2) increase the frequency or severity of any existing violation of any air quality standard; or (3) delay timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.

The *CEQA Air Quality Handbook* also provides significance thresholds for both construction and operation of projects within the SCAQMD jurisdictional boundaries. Exceedance of the SCAQMD thresholds could result in a potentially significant impact. However, ultimately the lead agency determines the thresholds of significance for impacts. If the project proposes development in excess of the established thresholds, as illustrated in Table AQ-3, *SCAQMD Emission Thresholds*, a significant air quality impact may occur and additional analysis is warranted to fully assess the significance of impacts.

Table AQ-3
SCAQMD Emissions Thresholds

Phase	Pollutant (lbs/day)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Source: South Coast Air Quality Management District, *CEQA Air Quality Handbook,* November 1993.

Localized Thresholds of Significance

Localized Significance Thresholds (LSTs) were developed in response to the SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (revised July 2008) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with project-specific level proposed projects. The SCAQMD provides the LST lookup tables for one, two, and five acre projects emitting CO, NO_x, particulate matter less than 10 microns in aerodynamic diameter (PM_{10}), and particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$). The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over roadways. The SCAQMD recommends that any project over five acres should perform air quality dispersion modeling to assess impacts to nearby sensitive receptors. Since construction of the proposed project would disturb a maximum of four acres per day, an LST analysis was conducted.

IMPACTS AND MITIGATION MEASURES

SHORT-TERM (CONSTRUCTION) AIR EMISSIONS

- **SHORT-TERM CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROPOSED COLLOCATED OPERATION AND THE STAND-ALONE ALTERNATIVE OPERATION WOULD RESULT IN SIGNIFICANT AIR POLLUTANT EMISSION IMPACTS.**

Impact Analysis:

COLLOCATED OPERATION

Short-term air quality impacts are predicted to occur during grading and construction operations associated with implementation of the proposed project for both on- and off-site construction activities. On-site construction involves activities north of the HBGS while off-site construction involves the installation of the pipelines and pump stations. Temporary construction air emissions would result from the following activities:

- Particulate (fugitive dust) emissions from grading and building construction; and
- Exhaust emissions from the construction equipment and the motor vehicles of the construction crew.

Potential odors could arise from the diesel construction equipment, as well as from architectural coatings and asphalt off-gassing. Odors generated during construction activities would be temporary and are not considered to be a significant impact. Emissions produced during grading and construction activities are short-term, as they would exist only during construction.

On-Site Construction

Previous uses on the project site consisted of fuel oil storage tank areas. The project proposes the demolition of three fuel oil storage tanks (and associated containment berms surrounding each tank) and construction of a seawater desalination facility. Off-site demolition would mostly include pavement removal. Construction activities would include demolition, grading, trenching, paving, facility construction, and architectural coating. The project is anticipated to begin construction in 2011 and would last approximately two years. On-site construction would result in an estimated maximum of four acres of site grading per day with a maximum of 3,500 cubic yards per day of cut and fill, and a total of 73,000 cubic yards of exported soil. The analysis of daily construction emissions has been prepared utilizing the URBEMIS 2007 computer model. Refer to Attachment A, *Air Quality Data*, for the URBEMIS 2007 modeling outputs and results. Table AQ-4, *Short-Term (Construction) Emissions – With Primary Pipeline Alignment*, presents the anticipated daily short-term construction emissions.

Off-Site Construction

Primary Pipeline Alignment

The Primary Pipeline Alignment would include pipeline installation as well as construction at the Coastal Junction Pump Station and the OC-44 Pump Station. Off-site demolition would mostly include pavement removal. Overall construction activities would include demolition, grading, trenching, and paving. Building activities would occur for the construction of the pump stations. The project is anticipated to begin construction in 2011 and would last approximately three years. On-site construction would result in a maximum of 250 cubic yards per day of cut and fill, a total of 38,851 cubic yards per day of imported soil, and a total of 86,297 cubic yards of exported soil and demolition debris. Table AQ-4, presents the anticipated daily construction emissions.

Table AQ-4
Short-Term (Construction) Emissions – With Primary Pipeline Alignment

Emissions Source	Emissions (pounds per day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
YEAR 2011						
On-Site Construction						
Construction Emissions	6.18	57.04	28.55	0.03	455.78	97.11
Mitigated Emissions[2,3]	6.18	57.04	28.55	0.03	34.34	9.09
Coastal Junction Station						
Construction Emissions	4.90	40.82	22.31	0.00	31.18	7.96
Mitigated Emissions[2,3]	4.90	40.82	22.31	0.00	4.08	2.30
OC-44 Pump Station						
Construction Emissions	3.78	35.20	17.44	0.02	31.78	7.82
Mitigated Emissions[2,3]	3.78	35.20	17.44	0.02	3.81	1.97
Primary Pipeline Route						
Construction Emissions	7.14	49.09	29.27	0.02	34.60	9.45
Mitigated Emissions[2,3]	7.14	49.09	29.27	0.02	7.06	3.70
Total 2011 Mitigated Emissions	**22.00**	**182.15**	**97.57**	**0.07**	**49.29**	**17.06**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***Yes***	***No***	***No***	***No***	***No***
YEAR 2012						
On-Site Construction						
Construction Emissions	6.81	60.39	31.84	0.03	455.99	97.30
Mitigated Emissions[2,3]	6.81	60.39	31.84	0.03	34.56	9.29
Coastal Junction Station						
Construction Emissions	3.81	30.64	17.34	0.00	30.73	7.55
Mitigated Emissions[2,3]	3.81	30.64	17.34	0.00	3.63	1.89
OC-44 Pump Station						
Construction Emissions	2.72	22.00	12.42	0.00	2.95	1.38
Mitigated Emissions[2,3]	2.72	22.00	12.42	0.00	1.21	1.02
Primary Pipeline Route						
Construction Emissions	4.45	28.49	17.59	0.01	34.60	9.45
Mitigated Emissions[2,3]	4.45	28.49	17.59	0.01	5.41	2.19
Total 2012 Mitigated Emissions	**17.79**	**141.52**	**79.19**	**0.04**	**44.81**	**14.39**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***Yes***	***No***	***No***	***No***	***No***
YEAR 2013						
On-Site Construction						
Construction Emissions	3.80	23.01	16.51	0.00	1.76	1.61
Mitigated Emissions[2,3]	3.78	23.01	16.51	0.00	1.76	1.61

Table AQ-4 (Continued)
Short-Term (Construction) Emissions – With Primary Pipeline Alignment

Emissions Source	Emissions (pounds per day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Primary Pipeline Route						
Construction Emissions	3.19	15.97	11.49	0.01	2.31	1.15
Mitigated Emissions[2,3]	3.19	15.97	11.49	0.01	2.31	1.15
Total 2013 Mitigated Emissions	**6.97**	**38.98**	**28.00**	**0.01**	**4.07**	**2.76**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1 – Emissions calculated using the URBEMIS 2007 version 9.2.4 Computer Model.
2 – The reduction/credits for construction emission mitigations are based on reduction measures included in the UREBMIS 2007 version 9.2.4 computer model, as recommended by the SCAQMD.
3 – The reduction/credits for construction emission mitigations are based on mitigation included in the URBEMIS 2007 version 9.2.4 Computer Model and as typically required by the SCAQMD (Rule 403 and Rule 1113). The mitigation includes the following: replace ground cover on disturbed areas quickly, water exposed surfaces twice daily, apply soil stabilizers to inactive areas, and proper loading/unloading of mobile and other construction equipment.

Refer to Attachment A, *Air Quality Data*, for assumptions used in this analysis, including quantified emissions reduction by mitigation measures.

Longest Pipeline Alternative

The Longest Pipeline Alternative would include pipeline installation and the construction of a pump station. Off-site demolition would mostly include pavement removal. Construction activities would include demolition, grading, trenching, and paving. Building activities would occur for the construction of the pump stations. The project is anticipated to begin construction in 2011 and would last approximately three years. On-site construction would result in a maximum of 250 cubic yards per day of cut and fill, a total of 52,914 cubic yards per day of imported soil, and a total of 102,061 cubic yards of exported soil and demolition debris. Table AQ-5, *Short-Term (Construction) Emissions – With Longest Pipeline Alternative*, presents the anticipated daily construction emissions.

Table AQ-5
Short-Term (Construction) Emissions – With Longest Pipeline Alternative

Emissions Source	Emissions (pounds per day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
YEAR 2011						
On-Site Construction						
Construction Emissions	6.18	57.04	28.55	0.03	455.78	97.11
Mitigated Emissions[2,3]	6.18	57.04	28.55	0.03	34.34	9.09
Pump Station						
Construction Emissions	4.90	40.82	22.31	0.00	31.18	7.96
Mitigated Emissions[2,3]	4.90	40.82	22.31	0.00	4.08	2.30
Longest Pipeline Alternative[4]						
Construction Emissions	7.08	48.35	28.99	0.02	35.92	9.70
Mitigated Emissions[2,3]	7.08	48.35	28.99	0.02	8.11	3.95
Total 2011 Mitigated Emissions	**18.16**	**146.21**	**79.85**	**0.05**	**46.53**	**15.34**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***Yes***	***No***	***No***	***No***	***No***

Table AQ-5 (Continued)
Short-Term (Construction) Emissions – With Longest Pipeline Alternative

Emissions Source	Emissions (pounds per day)[1]					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
YEAR 2012						
On-Site Construction						
Construction Emissions	6.81	60.39	31.84	0.03	455.99	97.30
Mitigated Emissions[2,3]	6.81	60.39	31.84	0.03	34.56	9.29
Pump Station						
Construction Emissions	3.81	30.64	17.34	0.00	30.73	7.55
Mitigated Emissions[2,3]	3.81	30.64	17.34	0.00	3.63	1.89
Longest Pipeline Alternative[4]						
Construction Emissions	6.65	44.88	28.11	0.02	35.65	9.45
Mitigated Emissions[2,3]	6.65	44.88	28.11	0.02	8.11	3.70
Total 2012 Mitigated Emissions	**17.24**	**135.91**	**77.29**	**0.05**	**46.30**	**14.88**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***Yes***	***No***	***No***	***No***	***No***
YEAR 2013						
On-Site Construction						
Construction Emissions	3.80	23.01	16.51	0.00	1.76	1.61
Mitigated Emissions[2,3]	3.78	23.01	16.51	0.00	1.76	1.61
Longest Pipeline Alternative[4]						
Construction Emissions	3.19	15.97	11.49	0.01	3.69	1.15
Mitigated Emissions[2,3]	3.19	15.97	11.49	0.01	3.69	1.15
Total 2013 Mitigated Emissions	**6.97**	**38.98**	**28.00**	**0.01**	**5.45**	**2.76**
SCAQMD Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded After Mitigation?	***No***	***No***	***No***	***No***	***No***	***No***

Notes:
1 – Emissions calculated using the URBEMIS 2007 version 9.2.4 Computer Model.
2 – The reduction/credits for construction emission mitigations are based on reduction measures included in the UREBMIS 2007 version 9.2.4 computer model, as recommended by the SCAQMD.
3 – The reduction/credits for construction emission mitigations are based on mitigation included in the URBEMIS 2007 version 9.2.4 Computer Model and as typically required by the SCAQMD (Rule 403 and Rule 1113). The mitigation includes the following: replace ground cover on disturbed areas quickly, water exposed surfaces twice daily, apply soil stabilizers to inactive areas, and proper loading/unloading of mobile and other construction equipment.
4 - Although the Longest Pipeline Alternative requires more earthwork and haul truck trips, daily emissions are generally less than the Primary Pipeline Route due to the longer duration of the Longest Pipeline Alternative construction phases (i.e., the emissions are spread out over a longer period of time).

Refer to Attachment A, *Air Quality Data*, for assumptions used in this analysis, including quantified emissions reduction by mitigation measures.

Fugitive Dust Emissions

Construction activities are a source of fugitive dust (PM_{10} and $PM_{2.5}$) emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut and fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from demolition, grading, and construction is expected to be short-term and would cease upon project completion. Additionally, most of this material is inert silicates, rather than

the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} (particulate matter smaller than 10 microns) generated as a part of fugitive dust emissions. PM_{10} poses a serious health hazard alone or in combination with other pollutants. Fine Particulate Matter ($PM_{2.5}$) is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and re-suspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. $PM_{2.5}$ is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gasses such as NO_X and SO_X combining with ammonia. $PM_{2.5}$ components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

According to the modeling results in Table AQ-4 and Table AQ-5, total unmitigated PM_{10} and $PM_{2.5}$ emissions in 2011 and 2012 would exceed the SCAQMD threshold for both the Primary Pipeline Alignment and the Longest Pipeline Alternative. However, Mitigation Measures AQ-1 and AQ-2 would implement dust control techniques (i.e., daily watering), limitations on construction hours, adherence to SCAQMD Rules 402 and 403 (which require watering of inactive and perimeter areas, track out requirements, etc.) to reduce PM_{10} and $PM_{2.5}$ concentrations below the SCAQMD thresholds, and require trucks that are to haul excavated or graded material on-site to comply with State Vehicle Code Section 23114 (*Spilling Loads on Highways*). Therefore, with implementation of Mitigation Measures AQ-1 and AQ-2, PM_{10} and $PM_{2.5}$ emissions during construction of the project would be below the SCAQMD mass daily thresholds. Impacts would be less than significant in this regard.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O_3 precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving have been quantified with the URBEMIS 2007 model. In addition, architectural coatings were also quantified within the URBEMIS 2007 model.

The highest concentration of ROG emissions would be generated during the application of architectural coatings on the on-site building. As required by law, all architectural coatings for the proposed project structures would comply with SCAQMD Regulation XI, Rule 1113 – *Architectural Coating*.[1] Rule 1113 provides specifications on painting practices and regulates the ROG content of paint. In addition to Rule 1113, Mitigation Measure AQ-3 requires the use of high-pressure-low-volume (HPLV) paint applicators with a minimum transfer efficiency of at least 50 percent, using pre-painted materials, and buildings utilizing materials that do not require painting. Project construction for both the Primary Pipeline Alignment and the Longest Pipeline Alternative would not result in an exceedance of ROG emissions with implementation of AQ-3, and impacts would be reduced to less than significant levels.

[1] South Coast Air Quality Management District, http://www.aqmd.gov/rules/reg/reg11_tofc.html, accessed on June 2, 2009.

Asbestos

Naturally Occurring Asbestos

Pursuant to guidance issued by the Governor's Office of Planning and Research, State Clearinghouse, Lead Agencies are encouraged to analyze potential impacts related to naturally occurring asbestos. Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to the Department of Conservation Division of Mines and Geology, *A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos Report* (August 2000), the project site, pipeline alignments, and pump station locations are not located in an area where naturally occurring asbestos is likely to be present. Therefore, impacts are less than significant in this regard.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities for both the Primary Pipeline Alignment and the Longest Pipeline Alternative include emissions associated with the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used, and emissions from trucks transporting materials to and from the site. Emitted pollutants would include ROG, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Standard SCAQMD regulations, such as maintaining all construction equipment in proper tune, shutting down equipment when not in use for extended periods of time, and implementing SCAQMD Rule 403 would be adhered to. However, as noted within Table AQ-4 and Table AQ-5, construction equipment exhaust for both the Primary Pipeline Alignment and the Longest Pipeline Alternative would cause an exceedance of the SCAQMD's NO_X thresholds during years 2011 and 2012 of the construction period. Mitigation Measure AQ-4 would reduce ozone precursors (NO_X and ROG) by maintaining engines in good condition and proper tune. Additionally, as stipulated in Mitigation Measure AQ-5, a Diesel Fuel Reduction Plan would be implemented to reduce levels of NO_X generated by on-site construction equipment. A Diesel Fuel Reduction Plan would be prepared prior to the issuance of a grading permit and would require post-combustion controls such as particulate traps and oxidation catalysts as well as the use of low sulfur (<15) or other alternative low polluting diesel fuel formulation. Additionally, all diesel fueled construction vehicles would be required to meet the latest emissions standards. However, even with implementation of the Diesel Reduction Plan, impacts related to NO_X emissions would remain significant and unavoidable.

Total Daily Construction Emissions

In accordance with the SCAQMD Guidelines, URBEMIS 2007 was utilized to model construction emissions for ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$. Construction would occur over a 27-month period with the greatest emissions being generated during the initial stages of construction.

The URBEMIS 2007 model allows the user to input mitigation measures such as watering the construction area to limit fugitive dust and applying soil stabilizers to the project area. Mitigation measures within the URBEMIS 2007 model allow for certain reduction credits and result in a decrease of pollutant emissions. Reduction credits are based upon studies developed by CARB, SCAQMD, and other air quality management districts throughout California, and were programmed within the URBEMIS 2007 model. As indicated in Table AQ-4 and Table AQ-5, the URBEMIS 2007 model calculates the reduction associated with recommended mitigation measures for ROG.

As indicated in Table AQ-4 and Table AQ-5, impacts would be significant and unavoidable for NO_X during construction years 2011 and 2012. Despite the implementation of the recommended mitigation measures, overall aggregate emissions would exceed the SCAQMD standards for NO_X. Thus, construction related air emissions would be significant and unavoidable. Additionally, Mitigation Measure AQ-5 would also be required to reduce NO_X emissions.

Localized Significance Thresholds

On-Site Construction

As stated above, an estimated four acres of the project site would be disturbed per day for on-site construction. As a result, an LST analysis has been conducted for the project. As stated above, construction emissions would occur from 2011 to 2013. On-site construction activities and pipeline installation would occur within Source Receptor Area (SRA)18, North Coastal Orange County. The closest sensitive receptors to the project site are the residential units located approximately 87 meters (approximately 285 feet) west of the project site. This sensitive land use may be potentially affected by air pollutant emissions generated during on-site construction activities. Since the nearest sensitive receptor is approximately 87 meters away, the LST value was linearly interpolated between the 50 meter and 100 meter thresholds. Table AQ-6, *Summary of Localized Significance of Construction Emissions*, shows the construction-related emissions for NO_X, CO, PM_{10}, and $PM_{2.5}$ compared to the localized significance thresholds for each construction project and its respective SRA. On-site construction activities and pipeline installation would occur within SRA 18, North Coastal Orange County.

Primary Pipeline Alignment

The Coastal Junction Station is located within SRA 19, Saddleback Valley, and the closest sensitive receptors would be approximately 50 meters away with one acre of disturbance per day. The OC-44 pump station is located within SRA 20, Central Orange County Coastal, and the closest sensitive receptors are located within 25 meters with one acre of disturbance per day. The pipeline route would be located in SRA 18, with sensitive receptors located within 25 meters and one acre of disturbance per day. It should be noted however, that pipeline construction would occur along a linear route, and the total amount of ground disturbance in any given location that would be within 25 meters of individual sensitive receptors would be far less than one acre. However, the minimum acreage available for selection within the LST model is one acre, which therefore is used as a default, even though it overstates the impact. As shown in Table AQ-6, mitigated construction emissions would exceed the localized significance thresholds during construction of the Primary Pipeline in 2011 and 2012. As construction of the primary pipeline would exceed localized significance thresholds for PM_{10} and $PM_{2.5}$ in 2011, and PM_{10} in 2012, impacts would be significant and unavoidable.

Table AQ-6
Summary of Localized Significance of Construction Emissions

Emissions Source	Pollutant (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
YEAR 2011				
On-Site Construction				
Total Mitigated Emissions	57.04	28.55	34.34	9.09
Localized Significance Threshold[2]	190.8	2,051.4	47.9	15.5
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
Coastal Junction Station				
Total Mitigated Emissions	40.82	22.31	4.08	2.30
Localized Significance Threshold[2]	93	833	11	4
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
OC-44 Pump Station				
Total Mitigated Emissions	35.20	17.44	3.81	1.97
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
Primary Pipeline Route				
Total Mitigated Emissions	49.09	29.27	7.06	3.70
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***Yes***	***Yes***
YEAR 2012				
On-Site Construction				
Total Mitigated Emissions	60.39	31.84	34.56	9.29
Localized Significance Threshold[2]	190.8	2,051.4	47.9	15.5
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
Coastal Junction Station				
Total Mitigated Emissions	30.64	17.34	3.63	1.89
Localized Significance Threshold[2]	93	833	11	4
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
OC-44 Pump Station				
Total Mitigated Emissions	22.00	12.42	1.21	1.02
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
Primary Pipeline Route				
Total Mitigated Emissions	28.49	17.59	5.41	2.19
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***Yes***	***No***
YEAR 2013				
On-Site Construction				
Total Mitigated Emissions	23.01	16.51	1.76	1.61
Localized Significance Threshold[2]	190.8	2,051.4	47.9	15.5
Is Threshold Exceeded?	***No***	***No***	***No***	***No***

Table AQ-6 (Continued)
Summary of Localized Significance of Construction Emissions

Emissions Source	Pollutant (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Primary Pipeline Route				
Total Mitigated Emissions	15.97	11.49	2.31	1.15
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***No***	***No***

Notes:
1. Emissions calculated using the URBEMIS 2007 Version 9.2.4 Computer Model as recommended by the South Coast Air Quality Management District.
2. The Local Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold is based on the project acreage (analysis utilizes 5 acres for the on-site construction, and one acre for the pump stations and pipeline route), the source receptor area (SRA 18 for the on-site construction and pipeline route, SRA 19 for the Coastal Junction Station, and SRA 20 for the OC-44 Pump Station), and distance to nearest sensitive receptor (analysis utilized linear interpolation for 87 meters for on-site construction, 50 meters for the Coastal Junction Station, and 25 meters for pipeline and OC-44 Pump Station).

Longest Pipeline Alternative

Table AQ-7, *Summary of Localized Significance of Construction Emissions*, shows the construction-related emissions for NO_X, CO, PM_{10}, and $PM_{2.5}$ compared to the localized significance thresholds for the proposed pump station and the Longest Pipeline Alternative and its respective SRA. On-site construction activities are not included in Table AQ-7 as they have been analyzed in Table AQ-6, above. As with the Primary Pipeline Alignment, the Longest Pipeline Alternative would be located in SRA 18, with sensitive receptors located within 25 meters and one acre of disturbance per day. As noted above, pipeline construction would occur along a linear route, and the total amount of ground disturbance in any given location that would be within 25 meters of individual sensitive receptors would be far less than one acre. However, the minimum acreage available for selection within the LST model is one acre, which therefore is used as a default, even though it overstates the impact. As shown in Table AQ-7, mitigated construction emissions would exceed the localized significance thresholds during pipeline construction in 2011 and 2012. As construction of the pipeline would exceed localized significance thresholds for PM_{10} and $PM_{2.5}$ in 2011 and 2012, impacts would be significant and unavoidable.

Table AQ-7
Summary of Localized Significance of Construction Emissions

Emissions Source	Pollutant (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
YEAR 2011				
Pump Station				
Total Mitigated Emissions	40.82	22.31	4.08	2.30
Localized Significance Threshold[2]	93	833	11	4
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
Longest Pipeline Alternative[3]				
Total Mitigated Emissions	48.35	28.99	8.11	3.95
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***Yes***	***Yes***

Table AQ-7 (Continued)
Summary of Localized Significance of Construction Emissions

Emissions Source	Pollutant (pounds/day)[1]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
YEAR 2012				
Pump Station				
Total Mitigated Emissions	30.64	17.34	3.63	1.89
Localized Significance Threshold[2]	93	833	11	4
Is Threshold Exceeded?	***No***	***No***	***No***	***No***
Longest Pipeline Alternative[3]				
Total Mitigated Emissions	44.88	28.11	8.11	3.70
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***Yes***	***Yes***
YEAR 2013				
Longest Pipeline Alternative[3]				
Total Mitigated Emissions	15.97	11.49	3.69	1.15
Localized Significance Threshold[2]	92	639	4	3
Is Threshold Exceeded?	***No***	***No***	***No***	***No***

Notes:
1. Emissions calculated using the URBEMIS 2007 Version 9.2.4 Computer Model as recommended by the South Coast Air Quality Management District.
2. The Local Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The Localized Significance Threshold is based on the project acreage (analysis utilizes 1 acre), the source receptor area (SRA 18 for the pipeline and SRA 19 for the pump station), and distance to nearest sensitive receptor (25 meters).
3. Although the Longest Pipeline Alternative requires more earthwork and haul truck trips, daily emissions are generally less than the Primary Pipeline Route due to the longer duration of the Longest Pipeline Alternative construction phases (i.e., the emissions are spread out over a longer period of time).

STAND-ALONE OPERATION

Under the Stand-Alone Operation, the proposed project would assume responsibility for the intake of raw seawater through HBGS infrastructure. This scenario assumes that HBGS abandons once-through cooling operations or permanently altered their cooling water systems historical operations. However, all construction activities would be identical to what is required for the Collocated Operation. The only difference would be that the Stand-Alone Operation would require the replacement of one of the existing HBGS once-through cooling pumps. The installation of the additional intake pump would not change the construction emissions that were analyzed in the Collocated Operation. As a result, construction activities would be the same as what would occur for the Collocated Operation. Therefore, construction impacts would be significant for NO_X, PM_{10}, and $PM_{2.5}$ despite the implementation of Mitigation Measures AQ-1 through AQ-4.

Mitigation Measures:

AQ-1 Prior to issuance of any Grading Permit, the City Engineer and the Chief Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that, in compliance with SCAQMD Rule 403, excessive fugitive dust emissions shall be controlled by regular watering or other dust prevention measures, as specified in the SCAQMD's Rules and Regulations. In addition, SCAQMD Rule 402 requires implementation of dust suppression techniques to

prevent fugitive dust from creating a nuisance off-site. Implementation of the following measures would reduce short-term fugitive dust impacts on nearby sensitive receptors:

- All active portions of the construction site shall be watered twice daily to prevent excessive amounts of dust;
- On-site vehicle speed shall be limited to 15 miles per hour;
- All on-site roads shall be paved as soon as feasible, watered twice daily, or chemically stabilized;
- Visible dust beyond the property line which emanates from the project shall be prevented to the maximum extent feasible;
- All material transported off-site shall be either sufficiently watered or securely covered to prevent excessive amounts of dust prior to departing the job site;
- Track-out devices shall be used at all construction site access points; and
- All delivery truck tires shall be watered down and/or scraped down prior to departing the job site.

AQ-2 All trucks that are to haul excavated or graded material on-site shall comply with State Vehicle Code Section 23114 (*Spilling Loads on Highways*), with special attention to Sections 23114(b)(F), (e)(4) as amended, regarding the prevention of materials spilling onto public streets and roads. Prior to the issuance of grading permits, the Applicant shall demonstrate to the City Engineer how the project operations subject to that specification during hauling activities shall comply with the provisions set forth in Sections 23114(b)(F), (e)(4).

AQ-3 The following measures shall be implemented by the contractor to reduce ROG emissions resulting from application of architectural coatings:

- Use high-pressure-low-volume (HPLV) paint applicators with a minimum transfer efficiency of at least 50 percent;
- Use required coatings and solvents with a ROG content lower than required under Rule 1113;
- Utilize building materials that do not require painting to the extent feasible; and
- Use pre-painted construction materials.

AQ-4 Prior to issuance of any Grading Permit, the City Engineer and the Chief Building Official shall confirm that the Grading Plan, Building Plans, and specifications stipulate that, in compliance with SCAQMD Rule 403, O_3 precursor emissions from construction equipment vehicles shall be controlled by maintaining equipment engines in good condition and in proper tune per manufacturer's specifications, to the satisfaction of the City Engineer. Maintenance records shall be provided to the City. The City Inspector shall be responsible for ensuring that contractors comply with this measure during construction.

AQ-5 Prior to approval of the project plans and specifications, the City Engineer, or his designee, shall confirm that the construction bid packages include a separate "Diesel Fuel Reduction Plan." This plan shall identify the actions to be taken to reduce diesel fuel emissions during construction activities (inclusive of grading and excavation activities). Reductions in diesel fuel emissions can be achieved by measures including, but not limited to, the following: a) use of alternative energy sources, such as compressed natural gas or liquefied petroleum gas, in mobile equipment and vehicles; b) use of "retrofit technology," including diesel particulate traps, on existing diesel engines and vehicles; and c) other appropriate measures. Prior to the issuance of a grading permit, the Diesel Fuel Reduction Plan shall be filed with the City of Huntington Beach. The Diesel Fuel Reduction Plan shall include, at a minimum, the following provisions:

- All diesel fueled off-road construction equipment shall be California Air Resources Board certified or use post-combustion controls that reduce pollutant emissions to the same level as California Air Resources Board certified equipment. California Air Resources Board certified off-road engines are engines that are three years old or less and comply with lower emission standards. Post-combustion controls are devices that are installed downstream of the engine on the tailpipe to treat the exhaust. These devices are now widely used on construction equipment and are capable of removing over 90 percent of the PM_{10}, CO, and volatile organic compounds from engine exhaust, depending on the specific device, sulfur content of the fuel, and specific engine. The most common and widely used post-combustion control devices are particulate traps (i.e., soot filters), oxidation catalysts, and combinations thereof.
- All diesel fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible.
- The effectiveness of the latest diesel emission controls is highly dependant on the sulfur content of the fuel. Therefore, diesel fuel used by on-road and off-road construction equipment shall be low sulfur (<15 ppm) or other alternative low polluting diesel fuel formulation.

LONG-TERM (OPERATIONAL) AIR EMISSIONS

- **LONG-TERM EMISSIONS OF THE PROPOSED COLLOCATED OPERATION AND THE STAND-ALONE ALTERNATIVE OPERATION WOULD NOT RESULT IN SIGNIFICANT AIR POLLUTANT EMISSIONS IMPACTS.**

Impact Analysis:

COLLOCATED OPERATION

The proposed Collocated Operation involves the use of 26 pumps and seven standby pumps on-site, and one to two off-site pumps. These pumps would be used for seawater intake, reverse osmosis, product water, and membrane cleaning. The proposed project would operate continuously, 24 hours a day for 365 days per year, to produce an average annual drinking

water flow of 50 million gallons per day (MGD). The total power use for this plant and pumps along the primary pipeline route is projected to be 28.57 average megawatts (aMW) (high efficiency design), resulting in 690.25 MW per day; refer to Table AQ-8, *Baseline and Net Electricity Usage – Collocated Operation*. The Longest Pipeline Alternative would use one less off-site pump than the Primary Pipeline Route. As a result, this alternative would result in 29.68 aMW (high efficiency design), which is 717.07 MW per day. Additionally, as shown in Table AQ-8, the proposed project would avoid energy usage from transport via the State Water Project, and would further reduce energy consumption with green building design and on-site solar generation.

Table AQ-8
Baseline and Net Electricity Usage – Collocated Operation

Energy Source	Baseline Design		High Efficiency Design[1]		Additional Reduction[2] (MWh/day)	Net Energy Usage (MWh/day)
	aMW	MWh/day	aMW	MWh/day		
Primary Pipeline Route	33.07	793.74	28.57	690.25	483.72	206.53
Longest Pipeline Alternative	34.45	826.79	29.68	717.07	483.72	233.35

aMW = average megawatts; MWh/day = megawatt hours per day

Notes:
1. High efficiency design reduces electricity usage via an energy recovery system for the treatment process.
2. Additional reductions include 450 MWh/year (1.23 MWh/day) for green building; 606 MWh/year (1.66 MWh/day) for on-site solar power generation; and 175,500 MWh/year (481 MWh/day) for avoided electricity usage associated with reductions in imported water into Southern California as described in the Poseidon Resources, *Huntington Beach Desalination Plan Energy Minimization and Greenhouse Gas Reduction Plan*, revised February 23, 2010.

Mobile Source Emissions

Motor vehicles including potential employee and truck delivery trips associated with the project would constitute the primary source of pollutant emissions. It is anticipated that the project would result in an estimated worst-case scenario of 28 worker trips per day, traveling an estimated maximum distance of 10 miles each way. In addition, truck deliveries have been anticipated to generate approximately four trips per day. Project-generated vehicle emissions have been estimated with the EMFAC2007 emissions model. URBEMIS was not utilized for operational emissions due to the minimal amount of area source and vehicular-related activities associated with the project. Table AQ-9, *Mobile Source Emissions*, illustrates the minimal impacts associated with the project. The estimated long-term emissions from mobile sources would be well below the SCAQMD thresholds for CO, ROG, NO_X, PM_{10} and $PM_{2.5}$. Thus, mobile source emissions resulting from operation of the proposed desalination facility would result in less-than-significant impacts.

Carbon Monoxide

The project is not anticipated to result in air quality impacts from CO hotspots. The project does not generate enough vehicular trips to result in a degradation of the level of service (LOS) of roadways in the site vicinity. Therefore, CO hotspots are not anticipated to result from project operations.

Table AQ-9
Mobile Source Emissions

Pollutant	Mobile Source Emissions (lbs/day)	SCAQMD Thresholds (lbs/day)	Threshold Exceedance (Yes/No)
Carbon Monoxide (CO)	6.27	550	**NO**
Reactive Organic Gases (ROG)	3.22	55	**NO**
Nitrogen Oxides (NO_X)	0.77	55	**NO**
Sulfur Oxides (SO_X)	0.01	150	**NO**
Particulate Matter (PM_{10})	0.16	150	**NO**
Particulate Matter ($PM_{2.5}$)	0.12	55	**NO**

Notes:
Emissions calculated utilizing the EMFAC2007 (v2.3) model.
Operational emissions calculations can be found in Attachment A, Air Quality Data.

Emissions from a Connection to the State Electrical Grid

Emissions associated with the electricity demand of the proposed Collocated Operation are depicted in Table AQ-10, *Emissions from Electricity Usage with a Connection to the State Grid*. The power use incorporates both production of fresh drinking water, as well as conveyance and delivery of the water for the distribution systems of the public water agencies that would purchase water from the project. It should be noted that emissions from energy consumption are not typically considered part of the project's daily emissions as power generation could occur outside of the Basin and beyond. Actual project-related emissions are not possible to attribute to any one plant, since the project's electrical demand would be met by numerous power plants connected to a regional power supply grid, with some of those plants located outside Southern California. Additionally, emissions from power consumption are regulated by the SCAQMD's Regional Clean Air Incentives Market (RECLAIM) program.[2]

The RECLAIM program is California's first air pollution cap-and-trade program, and encompasses most of the Basin's largest NO_X and SO_X stationary sources. It was developed to make significant progress in cleaning up the worst air in the nation. It is a multi-industry program with each facility having annual allocations and declining balances. Developed in the early 1990s, RECLAIM was seen as an innovation compared to previous command-and-control programs. Benefits included lower costs and greater flexibility for industry participants, and secured emission reductions with better emissions monitoring for environmental and community interests.

It requires industries and businesses to cut their emissions by a specific amount each year, resulting in a 70 percent reduction for NO_X and a 60 percent reduction for SO_X within the 10-year planning period from the inception of the program. Businesses that beat their reduction targets can trade their credits on the open market. Using market forces allows pollution to be cut in the most economical way. RECLAIM encourages the use of the latest and cleanest technology and the development of more advanced processes. To monitor emissions at larger sources, RECLAIM requires use of continuous emission monitoring systems to determine actual mass emissions from these sources. These emissions are reported to the AQMD on a daily

[2] Based on telephone conversations with James Koizumi and Dan Garcia of the South Coast Air Quality Management District.

basis. Under the RECLAIM Program, future NO_X and SO_X emissions for the region, including those resulting from project implementation, would be offset through the RECLAIM program, and no significant regional air quality impacts are anticipated.

Table AQ-10
Emissions from Electricity Usage with a Connection to the State Grid

Source	Energy Use (MWh/day)	Pollutant (pounds/day)[1]					
		CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
PRIMARY PIPELINE ROUTE							
Baseline Design	793.74	158.75	7.94	214.31	95.25	71.44	47.62
High Efficiency Design	690.25	138.05	6.90	186.37	82.83	62.12	41.42
Additional Reduction[2]	206.53	41.31	2.07	55.76	24.78	18.59	12.39
Total Avoided Emissions[3]	587.21	117.44	5.87	158.55	70.47	52.85	35.23
LONGEST PIPELINE ALTERNATIVE							
Baseline Design	826.79	165.36	8.27	223.23	99.21	74.41	49.61
High Efficiency Design	717.07	143.41	7.17	193.61	86.05	64.54	43.02
Additional Reduction[2]	233.35	46.67	2.33	63.00	28.00	21.00	14.00
Total Avoided Emissions[3]	593.44	118.69	5.93	160.23	71.21	53.41	35.61

MWh/day = megawatt hours per day; CO = carbon monoxide; ROG = reactive organic gases; NO_X = nitrogen oxides; SO_X = sulfur oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns

Notes:
1. Based on emissions factors from the South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993, Table A9-11, and updated with the California Energy Commission, *Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, revised June 2009.
2. The additional reduction emissions represent the net emissions and include the high efficiency design with reductions for green building, on-site solar power generation, and State Water Project avoided electricity usage.
3. The avoided emissions are the difference between the baseline design and the additional reduction category.

Emissions from a Direct Electrical Connection to the HBGS

Emissions from a direct connection to the HBGS were also calculated based on power plant specific emissions factors from EPA eGRIDweb data[3]. Emissions from the HBGS associated with the electricity are depicted in Table AQ-11, *Emissions from Electricity Usage with a Direct Connection to the HBGS*. As discussed above, power would be supplied to the proposed project from either the HBGS or the existing power grid and no new power plant or other industrial emissions sources would be constructed. If energy for the proposed project is received from the grid, actual project-related emissions are not possible to attribute to any one plant, since the project's electrical demand would be met by numerous power plants connected to the regional power supply grid, with many of those plants located outside Southern California. However, the analysis above provides emissions from both an energy source from the grid as well as an energy source from the HBGS. In both cases, emissions would be below SCAQMD thresholds and the CAAQS. Back-up power would be drawn from the electrical grid and/or HBGS auxiliary reserve bank.

Table AQ-11
Emissions from Electricity Usage with a Direct Connection to the HBGS

[3] U.S. Environmental Protection Agency, *eGRIDweb*, accessed March 8, 2010. http://cfpub.gov/egridweb

Source	Energy Use (MWh/day)	Pollutant (pounds/day)[1]					
		CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
PRIMARY PIPELINE ROUTE							
Baseline Design	793.74	158.75	7.94	60.32	5.16	71.44	47.62
High Efficiency Design	690.25	138.05	6.90	52.46	4.49	62.12	41.42
Additional Reduction[2]	206.53	41.31	2.07	15.70	1.34	18.59	12.39
Total Avoided Emissions[3]	587.21	117.44	5.87	44.63	3.82	52.85	35.23
LONGEST PIPELINE ALTERNATIVE							
Baseline Design	826.79	165.36	8.27	62.84	5.37	74.41	49.61
High Efficiency Design	717.07	143.41	7.17	54.50	4.66	64.54	43.02
Additional Reduction[2]	233.35	46.67	2.33	17.73	1.52	21.00	14.00
Total Avoided Emissions[3]	593.44	118.69	5.93	45.10	3.86	53.41	35.61

MWh/day = megawatt hours per day; CO = carbon monoxide; ROG = reactive organic gases; NO_X = nitrogen oxides; SO_X = sulfur oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns

Notes:
1. Based on emissions factors from the South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993, Table A9-11, and updated with the California Energy Commission, *Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, revised June 2009, and the U.S. Environmental Protection Agency, *eGRIDweb*, accessed March 8, 2010 (http://cfpub.gov/egridweb).
2. The additional reduction emissions represent the net emissions and include the high efficiency design with reductions for green building, on-site solar power generation, and State Water Project avoided electricity usage.
3. The avoided emissions are the difference between the baseline design and the additional reduction category.

STAND-ALONE OPERATION

The Stand-Alone Operation involves the use of 27 pumps and seven standby pumps on-site, and one to two off-site pumps. As with the Collocated Operation, the Stand-Alone Operation would operate continuously, 24 hours a day for 365 days per year, to produce an average annual drinking water flow of 50 MGD. The total power use for the Stand-Alone Operation is projected to be 30.34 aMW (high efficiency design), resulting in 733.01 MW per day; refer to Table AQ-12, *Baseline and Net Electricity Usage – Stand Alone Operation*. The Longest Pipeline Alternative would use one less off-site pump than the Primary Pipeline Route. As a result, this alternative would result in 31.49 aMW (high efficiency design), which his 760.07 MW per day. Additionally, as shown in Table AQ-12, the proposed project would avoid energy usage from transport via the State Water Project, and would further reduce energy consumption with green building design and on-site solar generation.

Table AQ-12
Baseline and Net Electricity Usage – Stand-Alone Operation

Energy Source	Baseline Design		High Efficiency Design[1]		Additional Reduction[2] (MWh/day)	Net Energy Usage (MWh/day)
	aMW	MWh/day	aMW	MWh/day		
Primary Pipeline Route	35.01	840.22	30.34	733.01	483.72	249.29
Longest Pipeline Alternative	36.39	873.27	31.49	760.07	483.72	276.35

aMW = average megawatts; MWh/day = megawatt hours per day

Notes:
1. High efficiency design reduces electricity usage via an energy recovery system for the treatment process.
2. Additional reductions include 450 MWh/year (1.23 MWh/day) for green building; 606 MWh/year (1.66 MWh/day) for on-site solar power generation; and 175,500 MWh/year (481 MWh/day) for avoided electricity usage associated with reductions in imported water into Southern California as described in the Poseidon Resources, *Huntington Beach Desalination Plan Energy Minimization and Greenhouse Gas Reduction Plan*, revised February 23, 2010.

Emissions from a Connection to the State Electrical Grid

Emissions associated with the electricity demand of the Stand-Alone Operation are depicted in Table AQ-13, *Emissions from Electricity Usage with a Connection to the State Grid*. It should be noted that emissions from energy consumption are not typically considered part of the project's daily emissions as power generation could occur outside of the Basin and beyond. Actual project-related emissions are not possible to attribute to any one plant, since the project's electrical demand would be met by numerous power plants connected to a regional power supply grid, with some of those plants located outside Southern California. Additionally, emissions from power consumption are regulated by the SCAQMD's RECLAIM program.[4]

Table AQ-13
Emissions from Electricity Usage with a Connection to the State Grid

Source	Energy Use (MWh/day)	Pollutant (pounds/day)[1]					
		CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
PRIMARY PIPELINE ROUTE							
Baseline Design	840.22	168.04	8.40	226.86	100.83	75.62	50.41
High Efficiency Design	733.01	146.60	7.33	197.91	87.96	65.97	43.98
Additional Reduction[2]	249.29	49.86	2.49	67.31	29.91	22.44	14.96
Total Avoided Emissions[3]	590.93	118.19	5.91	159.55	70.91	53.18	35.46
LONGEST PIPELINE ALTERNATIVE							
Baseline Design	873.27	174.65	8.73	235.78	104.79	78.59	52.40
High Efficiency Design	760.07	152.01	7.60	205.22	91.21	68.41	45.60
Additional Reduction[2]	276.35	55.27	2.76	74.61	33.16	24.87	16.58
Total Avoided Emissions[3]	596.92	119.38	5.97	161.17	71.63	53.72	35.82

MWh/day = megawatt hours per day; CO = carbon monoxide; ROG = reactive organic gases; NO_X = nitrogen oxides; SO_X = sulfur oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns

Notes:
1. Based on emissions factors from the South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993, Table A9-11, and updated with the California Energy Commission, *Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, revised June 2009.
2. The additional reduction emissions represent the net emissions and include the high efficiency design with reductions for green building, on-site solar power generation, and State Water Project avoided electricity usage.
3. The avoided emissions are the difference between the baseline design and the additional reduction category.

Emissions from a Direct Electrical Connection to the HBGS

Emissions from a direct connection to the HBGS were also calculated based on power plant specific emissions factors from EPA eGRIDweb data[5]. Emissions from the HBGS associated with the electricity are depicted in Table AQ-14, *Emissions from Electricity Usage with a Direct Connection to the HBGS*.

Table AQ-14

[4] Based on telephone conversations with James Koizumi and Dan Garcia of the South Coast Air Quality Management District.
[5] U.S. Environmental Protection Agency, *eGRIDweb*, accessed March 8, 2010. http://cfpub.gov/egridweb

Emissions from Electricity Usage with a Direct Connection to the HBGS

Source	Energy Use (MWh/day)	Pollutant (pounds/day)[1]					
		CO	ROG	NO_X	SO_X	PM_{10}	$PM_{2.5}$
PRIMARY PIPELINE ROUTE							
Baseline Design	840.22	168.04	8.40	63.86	5.46	75.62	50.41
High Efficiency Design	733.01	146.60	7.33	55.71	4.76	65.97	43.98
Additional Reduction[2]	249.29	49.86	2.49	18.95	1.62	22.44	14.96
Total Avoided Emissions[3]	*590.93*	*118.19*	*5.91*	*44.91*	*3.84*	*53.18*	*35.46*
LONGEST PIPELINE ALTERNATIVE							
Baseline Design	873.27	174.65	8.73	66.37	5.68	78.59	52.40
High Efficiency Design	760.07	152.01	7.60	57.77	4.94	68.41	45.60
Additional Reduction[2]	276.35	55.27	2.76	21.00	1.80	24.87	16.58
Total Avoided Emissions[3]	*596.92*	*119.38*	*5.97*	*45.37*	*3.88*	*53.72*	*35.82*

MWh/day = megawatt hours per day; CO = carbon monoxide; ROG = reactive organic gases; NO_X = nitrogen oxides; SO_X = sulfur oxides; PM_{10} = particulate matter less than 10 microns; $PM_{2.5}$ = particulate matter less than 2.5 microns

Notes:
1. Based on emissions factors from the South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993, Table A9-11, and updated with the California Energy Commission, *Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings*, revised June 2009, and the U.S. Environmental Protection Agency, *eGRIDweb*, accessed March 8, 2010 (http://cfpub.gov/egridweb).
2. The additional reduction emissions represent the net emissions and include the high efficiency design with reductions for green building, on-site solar power generation, and State Water Project avoided electricity usage.
3. The avoided emissions are the difference between the baseline design and the additional reduction category.

CONSISTENCY WITH REGIONAL PLANS

- **DEVELOPMENT ASSOCIATED WITH THE PROPOSED PROJECT WOULD BE CONSISTENT WITH REGIONAL PLANS.**

Impact Analysis:

COLLOCATED OPERATION

As the project includes the same components on the same project site as previously analyzed in the *Seawater Desalination Project at Huntington Beach Recirculated EIR*, the project remains consistent with regional air quality management plans. The project site has a land use and zoning designation of Public (P). Project implementation would not conflict with the General Plan or Zoning Ordinance, nor would it propose to change any designations. As such, projects consistent with local general plans are considered consistent with air quality-related regional plans, including the SCAQMD's *2007 Air Quality Management Plan* (AQMP). Accordingly, air quality emissions and related impacts for the proposed desalination project have been locally and regionally accounted for.

In addition, the region (Los Angeles County, Orange County, and half of Riverside County) is regulated by the SCAQMD's RECLAIM program. The RECLAIM program controls the amount of NO_X and SO_X emissions through financial incentives and involves the trading of emissions credits. The RECLAIM program is designed to guarantee annual reductions in air pollution by requiring industrial and business uses (including power plants) emitting four tons or more per year of NO_X and SO_X to cut their emissions by a specific amount each year. As such, future

NO_X and SO_X emissions for the region, including those resulting from project implementation, would be offset through the RECLAIM program, and no significant regional air quality planning impacts are anticipated.

The proposed project would also require review by the SCAQMD under Regulation XIII (New Source Review), which establishes pre-construction requirements for new or modified facilities to ensure that operation of such facilities does not interfere with progress toward the attainment of ambient air quality standards (AAQS) without necessarily restricting economic growth. The specific air quality goal of this regulation is to achieve a no net increase from new or modified permitted sources of non-attainment air contaminants or their precursors. This standard review process administered by the SCAQMD would further ensure that the proposed project is consistent with regional air quality plans.

STAND-ALONE OPERATION

Under the Stand-Alone Operation, the proposed project would be responsible for operation and maintenance of intake and pumping systems. However, all construction activities would be identical to what is required for the Collocated Operation. The only difference would be that the Stand-Alone Operation would include the replacement of an existing HBGS pump for the intake of raw seawater. Therefore, as with the Collocated Operation, discussed above, the Stand-Alone Operation would also be consistent with regional air quality plans. Impacts would be less than significant.

Mitigation Measures: No mitigation measures are required.

SIGNIFICANT UNAVOIDABLE IMPACTS

No significant and unavoidable impacts have been identified.

Attachments:

A. Air Quality Data

Attachment A: Air Quality Data

Parenthetical URBEMIS2007 (Version 9.2.4) Assumptions
For: Huntington Beach Desalination Plant
Date: November 2009

LAND USES

Amount	Land Use Type	Unit Type	Trip Rate
1	Construction Trips	Trips	225

CONSTRUCTION SOURCES

Year	Duration (months)	Development
2011	4.25	Demolition, Mass Grading, Trenching
2012	12	Mass Grading, Fine Grading, Trenching
2013	6	Paving, Building Construction, Architectural Coating

Phase 1 - Demolition:

Year	Total Volume Demolished	Total Daily Volume Demolished	Duration (days)	Distance to Disposal Site
2011	300,000 cubic ft	3,000 cubic ft	95	75 miles

Demolition Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Tractor/Loader/Backhoe	6
1	Concrete Industrial Saw	8
1	Rubber Tire Dozer	1

Phase 2 - Site Grading:

Year	Acreage Disturbed Daily	Cut/Fill Duration (days)	Fugitive Dust	Soil Hauling (cubic yards)	Onsite cut/fill (cubic yards/day)
2012	4	250	Low	73,000	3,500

Mass Grading Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Grader	6
1	Rubber Tired Dozer	6
1	Tractor/Loaders/Backhoe	7
1	Water Trucks	8

Fine Grading Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Grader	6
1	Rubber Tired Dozer	6
1	Tractor/Loaders/Backhoe	7
1	Water Trucks	8

Phase 3 - Trenching:

Years	Duration (months)
2011, 2012	11

Trenching Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Excavators	8
1	Other General Industrial Equipment	8

Phase 3 - Paving:

Year	Duration (days)	Acres
2013	120	3.2

Paving Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
4	Cement and Mortar Mixers	6
2	Paving Equipment	6
1	Paver	7
1	Roller	7
1	Tractor/Loader/Backhoe	7

Phase 4 – Building Construction

Year	Duration (months)
2012, 2013	16

Construction Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Crane	4
2	Forklift	6
1	Tractor/Loader/Backhoe	8

Sub-Phase 4 – Architectural Coatings:

Duration – 6 Months
Low VOC coatings (Pursuant to SCQAMD Rule 1113)
(URBEMIS2007 default all phases)

Sub- Phase 4 - Worker Commute

(URBEMIS2007 default all phases)

Construction Mitigation: Refer to URBEMIS2007 file output.

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\Huntington Beach Desal. Plant.urb924

Project Name: Huntington Beach Desal. Plant

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	6.18	57.04	28.55	0.03	453.10	2.69	455.78	94.64	2.47	97.11	6,792.71
2011 TOTALS (lbs/day mitigated)	6.18	57.04	28.55	0.03	31.66	2.69	34.34	6.62	2.47	9.09	6,792.71
2012 TOTALS (lbs/day unmitigated)	6.81	60.39	31.84	0.03	453.10	2.90	455.99	94.64	2.66	97.30	7,696.06
2012 TOTALS (lbs/day mitigated)	6.81	60.39	31.84	0.03	31.66	2.90	34.56	6.62	2.66	9.29	7,696.06
2013 TOTALS (lbs/day unmitigated)	3.80	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80
2013 TOTALS (lbs/day mitigated)	3.78	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-9/23/2011 Active Days: 93	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Demolition 05/18/2011-09/23/2011	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Fugitive Dust	0.00	0.00	0.00	0.00	1.26	0.00	1.26	0.26	0.00	0.26	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.58	7.40	2.85	0.01	0.04	0.30	0.33	0.01	0.27	0.29	1,118.47
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 9/26/2011-12/30/2011 Active Days: 70	6.18	57.04	28.55	0.03	453.10	2.69	455.78	94.64	2.47	97.11	6,792.71
Mass Grading 09/24/2011-01/23/2012	4.20	40.57	19.50	0.03	453.09	1.86	454.95	94.63	1.71	96.35	4,953.70
Mass Grading Dust	0.00	0.00	0.00	0.00	453.00	0.00	453.00	94.60	0.00	94.60	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	1.34	17.07	6.57	0.02	0.09	0.69	0.77	0.03	0.63	0.66	2,582.01
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 09/25/2011-09/01/2012	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 1/2/2012-1/20/2012 Active Days: 15	5.78	52.50	27.21	0.03	453.10	2.41	455.51	94.64	2.22	96.85	6,792.66
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	453.09	1.68	454.77	94.63	1.54	96.18	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	453.00	0.00	453.00	94.60	0.00	94.60	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/23/2012-1/23/2012 Active Days: 1	**6.81**	**60.39**	**31.84**	**0.03**	**453.10**	**2.90**	**455.99**	**94.64**	**2.66**	**97.30**	**7,696.06**
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	453.09	1.68	454.77	94.63	1.54	96.18	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	453.00	0.00	453.00	94.60	0.00	94.60	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/24/2012-8/31/2012 Active Days: 159	2.87	23.18	13.55	0.00	0.01	1.22	1.23	0.00	1.12	1.13	2,742.38
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 9/3/2012-11/30/2012 Active Days: 65	4.36	37.45	19.97	0.01	40.05	1.86	41.91	8.37	1.71	10.08	4,559.42
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 09/01/2012-12/01/2012	3.33	29.56	15.34	0.01	40.05	1.37	41.42	8.37	1.26	9.63	3,656.03
Fine Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.61	7.57	2.92	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,284.36
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 12/3/2012-12/31/2012 Active Days: 21	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96

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Time Slice 1/1/2013-1/31/2013 Active Days: 23	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 2/1/2013-5/23/2013 Active Days: 80	3.80	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Coating 02/01/2013-06/30/2013	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29

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Time Slice 5/24/2013-6/28/2013 Active Days: 26	2.84	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.41
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Coating 02/01/2013-06/30/2013	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29

Phase Assumptions

Phase: Demolition 5/18/2011 - 9/23/2011 - Default Demolition Description

Building Volume Total (cubic feet): 300000

Building Volume Daily (cubic feet): 3000

On Road Truck Travel (VMT): 263.89

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/1/2012 - 12/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 11

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 303.03

Off-Road Equipment:

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1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 9/24/2011 - 1/23/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 11

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 3500 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 609.2

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 9/25/2011 - 9/1/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 2/1/2013 - 6/30/2013 - Default Paving Description

Acres to be Paved: 3.2

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/23/2012 - 5/23/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 2/1/2013 - 6/30/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-9/23/2011 Active Days: 93	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Demolition 05/18/2011-09/23/2011	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Fugitive Dust	0.00	0.00	0.00	0.00	1.26	0.00	1.26	0.26	0.00	0.26	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.58	7.40	2.85	0.01	0.04	0.30	0.33	0.01	0.27	0.29	1,118.47
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 9/26/2011-12/30/2011 Active Days: 70	6.18	57.04	28.55	0.03	31.66	2.69	34.34	6.62	2.47	9.09	6,792.71
Mass Grading 09/24/2011-01/23/2012	4.20	40.57	19.50	0.03	31.65	1.86	33.51	6.62	1.71	8.33	4,953.70
Mass Grading Dust	0.00	0.00	0.00	0.00	31.56	0.00	31.56	6.59	0.00	6.59	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	1.34	17.07	6.57	0.02	0.09	0.69	0.77	0.03	0.63	0.66	2,582.01
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 09/25/2011-09/01/2012	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 1/2/2012-1/20/2012 Active Days: 15	5.78	52.50	27.21	0.03	31.66	2.41	34.07	6.62	2.22	8.84	6,792.66
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	31.65	1.68	33.33	6.62	1.54	8.16	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	31.56	0.00	31.56	6.59	0.00	6.59	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/23/2012-1/23/2012 Active Days: 1	**6.81**	**60.39**	**31.84**	**0.03**	31.66	**2.90**	34.56	6.62	**2.66**	9.29	**7,696.06**
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	31.65	1.68	33.33	6.62	1.54	8.16	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	31.56	0.00	31.56	6.59	0.00	6.59	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/24/2012-8/31/2012 Active Days: 159	2.87	23.18	13.55	0.00	0.01	1.22	1.23	0.00	1.12	1.13	2,742.38
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 9/3/2012-11/30/2012 Active Days: 65	4.36	37.45	19.97	0.01	2.84	1.86	4.70	0.60	1.71	2.31	4,559.42
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 09/01/2012-12/01/2012	3.33	29.56	15.34	0.01	2.84	1.37	4.21	0.60	1.26	1.86	3,656.03
Fine Grading Dust	0.00	0.00	0.00	0.00	2.79	0.00	2.79	0.58	0.00	0.58	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.61	7.57	2.92	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,284.36
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 12/3/2012-12/31/2012 Active Days: 21	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 1/1/2013-1/31/2013 Active Days: 23	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96

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Time Slice 2/1/2013-5/23/2013 Active Days: 80	3.78	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Coating 02/01/2013-06/30/2013	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Time Slice 5/24/2013-6/28/2013 Active Days: 26	2.82	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.41
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Coating 02/01/2013-06/30/2013	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29

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Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 9/1/2012 - 12/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 9/24/2011 - 1/23/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 2/1/2013 - 6/30/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

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ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\Huntington Beach Desal. Plant.urb924

Project Name: Huntington Beach Desal. Plant

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	6.18	57.04	28.55	0.03	453.10	2.69	455.78	94.64	2.47	97.11	6,792.71
2011 TOTALS (lbs/day mitigated)	6.18	57.04	28.55	0.03	31.66	2.69	34.34	6.62	2.47	9.09	6,792.71
2012 TOTALS (lbs/day unmitigated)	6.81	60.39	31.84	0.03	453.10	2.90	455.99	94.64	2.66	97.30	7,696.06
2012 TOTALS (lbs/day mitigated)	6.81	60.39	31.84	0.03	31.66	2.90	34.56	6.62	2.66	9.29	7,696.06
2013 TOTALS (lbs/day unmitigated)	3.80	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80
2013 TOTALS (lbs/day mitigated)	3.78	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-9/23/2011 Active Days: 93	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Demolition 05/18/2011-09/23/2011	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Fugitive Dust	0.00	0.00	0.00	0.00	1.26	0.00	1.26	0.26	0.00	0.26	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.58	7.40	2.85	0.01	0.04	0.30	0.33	0.01	0.27	0.29	1,118.47
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 9/26/2011-12/30/2011 Active Days: 70	6.18	57.04	28.55	0.03	453.10	2.69	455.78	94.64	2.47	97.11	6,792.71
Mass Grading 09/24/2011-01/23/2012	4.20	40.57	19.50	0.03	453.09	1.86	454.95	94.63	1.71	96.35	4,953.70
Mass Grading Dust	0.00	0.00	0.00	0.00	453.00	0.00	453.00	94.60	0.00	94.60	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	1.34	17.07	6.57	0.02	0.09	0.69	0.77	0.03	0.63	0.66	2,582.01
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 09/25/2011-09/01/2012	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 1/2/2012-1/20/2012 Active Days: 15	5.78	52.50	27.21	0.03	453.10	2.41	455.51	94.64	2.22	96.85	6,792.66
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	453.09	1.68	454.77	94.63	1.54	96.18	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	453.00	0.00	453.00	94.60	0.00	94.60	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/23/2012-1/23/2012 Active Days: 1	**6.81**	**60.39**	**31.84**	**0.03**	**453.10**	**2.90**	**455.99**	**94.64**	**2.66**	**97.30**	**7,696.06**
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	453.09	1.68	454.77	94.63	1.54	96.18	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	453.00	0.00	453.00	94.60	0.00	94.60	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/24/2012-8/31/2012 Active Days: 159	2.87	23.18	13.55	0.00	0.01	1.22	1.23	0.00	1.12	1.13	2,742.38
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 9/3/2012-11/30/2012 Active Days: 65	4.36	37.45	19.97	0.01	40.05	1.86	41.91	8.37	1.71	10.08	4,559.42
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 09/01/2012-12/01/2012	3.33	29.56	15.34	0.01	40.05	1.37	41.42	8.37	1.26	9.63	3,656.03
Fine Grading Dust	0.00	0.00	0.00	0.00	40.00	0.00	40.00	8.35	0.00	8.35	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.61	7.57	2.92	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,284.36
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 12/3/2012-12/31/2012 Active Days: 21	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96

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Time Slice 1/1/2013-1/31/2013 Active Days: 23	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 2/1/2013-5/23/2013 Active Days: 80	3.80	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Coating 02/01/2013-06/30/2013	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29

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Time Slice 5/24/2013-6/28/2013 Active Days: 26	2.84	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.41
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Coating 02/01/2013-06/30/2013	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29

Phase Assumptions

Phase: Demolition 5/18/2011 - 9/23/2011 - Default Demolition Description

Building Volume Total (cubic feet): 300000

Building Volume Daily (cubic feet): 3000

On Road Truck Travel (VMT): 263.89

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/1/2012 - 12/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 11

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 303.03

Off-Road Equipment:

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1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 9/24/2011 - 1/23/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 11

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 3500 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 609.2

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 9/25/2011 - 9/1/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 2/1/2013 - 6/30/2013 - Default Paving Description

Acres to be Paved: 3.2

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/23/2012 - 5/23/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 2/1/2013 - 6/30/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-9/23/2011 Active Days: 93	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Demolition 05/18/2011-09/23/2011	1.66	14.67	8.40	0.01	1.30	0.85	2.15	0.28	0.78	1.06	1,943.13
Fugitive Dust	0.00	0.00	0.00	0.00	1.26	0.00	1.26	0.26	0.00	0.26	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.58	7.40	2.85	0.01	0.04	0.30	0.33	0.01	0.27	0.29	1,118.47
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 9/26/2011-12/30/2011 Active Days: 70	6.18	57.04	28.55	0.03	31.66	2.69	34.34	6.62	2.47	9.09	6,792.71
Mass Grading 09/24/2011-01/23/2012	4.20	40.57	19.50	0.03	31.65	1.86	33.51	6.62	1.71	8.33	4,953.70
Mass Grading Dust	0.00	0.00	0.00	0.00	31.56	0.00	31.56	6.59	0.00	6.59	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	1.34	17.07	6.57	0.02	0.09	0.69	0.77	0.03	0.63	0.66	2,582.01
Mass Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 09/25/2011-09/01/2012	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 1/2/2012-1/20/2012 Active Days: 15	5.78	52.50	27.21	0.03	31.66	2.41	34.07	6.62	2.22	8.84	6,792.66
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	31.65	1.68	33.33	6.62	1.54	8.16	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	31.56	0.00	31.56	6.59	0.00	6.59	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/23/2012-1/23/2012 Active Days: 1	**6.81**	**60.39**	**31.84**	**0.03**	31.66	**2.90**	34.56	6.62	**2.66**	9.29	**7,696.06**
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Mass Grading 09/24/2011-01/23/2012	3.94	37.21	18.29	0.03	31.65	1.68	33.33	6.62	1.54	8.16	4,953.68
Mass Grading Dust	0.00	0.00	0.00	0.00	31.56	0.00	31.56	6.59	0.00	6.59	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	1.23	15.21	5.87	0.02	0.09	0.60	0.69	0.03	0.55	0.58	2,582.01
Mass Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/24/2012-8/31/2012 Active Days: 159	2.87	23.18	13.55	0.00	0.01	1.22	1.23	0.00	1.12	1.13	2,742.38
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Trenching 09/25/2011-09/01/2012	1.83	15.29	8.92	0.00	0.01	0.74	0.74	0.00	0.68	0.68	1,838.98
Trenching Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Trenching Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 9/3/2012-11/30/2012 Active Days: 65	4.36	37.45	19.97	0.01	2.84	1.86	4.70	0.60	1.71	2.31	4,559.42
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 09/01/2012-12/01/2012	3.33	29.56	15.34	0.01	2.84	1.37	4.21	0.60	1.26	1.86	3,656.03
Fine Grading Dust	0.00	0.00	0.00	0.00	2.79	0.00	2.79	0.58	0.00	0.58	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.61	7.57	2.92	0.01	0.04	0.30	0.34	0.01	0.27	0.29	1,284.36
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 12/3/2012-12/31/2012 Active Days: 21	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 01/23/2012-05/23/2013	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 1/1/2013-1/31/2013 Active Days: 23	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96

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Time Slice 2/1/2013-5/23/2013 Active Days: 80	3.78	23.01	16.51	0.00	0.02	1.75	1.76	0.01	1.61	1.61	2,647.80
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Building 01/23/2012-05/23/2013	0.95	7.30	4.54	0.00	0.00	0.43	0.43	0.00	0.39	0.39	903.39
Building Off Road Diesel	0.95	7.29	4.48	0.00	0.00	0.43	0.43	0.00	0.39	0.39	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Coating 02/01/2013-06/30/2013	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Time Slice 5/24/2013-6/28/2013 Active Days: 26	2.82	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.41
Asphalt 02/01/2013-06/30/2013	2.64	15.71	11.97	0.00	0.01	1.32	1.33	0.01	1.21	1.22	1,744.12
Paving Off-Gas	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.36	9.98	0.00	0.00	1.30	1.30	0.00	1.20	1.20	1,418.44
Paving On Road Diesel	0.02	0.24	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	45.93
Paving Worker Trips	0.06	0.11	1.90	0.00	0.01	0.01	0.02	0.00	0.01	0.01	279.75
Coating 02/01/2013-06/30/2013	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Architectural Coating	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29

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Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 9/1/2012 - 12/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 9/24/2011 - 1/23/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 2/1/2013 - 6/30/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

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ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\Huntington Beach Desal. Plant.urb924

Project Name: Huntington Beach Desal. Plant

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.29	2.68	1.39	0.00	15.92	0.13	16.05	3.33	0.12	3.45	328.10
2011 TOTALS (tons/year mitigated)	0.29	2.68	1.39	0.00	1.17	0.13	1.30	0.24	0.12	0.37	328.10
Percent Reduction	0.00	0.00	0.00	0.00	92.66	0.00	91.89	92.64	0.00	89.34	0.00
2012 TOTALS (tons/year unmitigated)	0.43	3.57	1.99	0.00	4.93	0.18	5.11	1.03	0.17	1.20	430.48
2012 TOTALS (tons/year mitigated)	0.43	3.57	1.99	0.00	0.35	0.18	0.53	0.07	0.17	0.24	430.48
Percent Reduction	0.00	0.00	0.00	0.00	92.98	0.00	89.66	92.94	0.00	79.93	0.00
2013 TOTALS (tons/year unmitigated)	0.20	1.21	0.87	0.00	0.00	0.09	0.09	0.00	0.08	0.08	138.98
2013 TOTALS (tons/year mitigated)	0.20	1.21	0.87	0.00	0.00	0.09	0.09	0.00	0.08	0.08	138.98
Percent Reduction	0.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.29	2.68	1.39	0.00	15.92	0.13	16.05	3.33	0.12	3.45	328.10
Demolition 05/18/2011-09/23/2011	0.08	0.68	0.39	0.00	0.06	0.04	0.10	0.01	0.04	0.05	90.36
Fugitive Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.05	0.34	0.21	0.00	0.00	0.03	0.03	0.00	0.02	0.02	32.56
Demo On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	52.01
Demo Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.78
Mass Grading 09/24/2011-01/23/2012	0.15	1.42	0.68	0.00	15.86	0.07	15.92	3.31	0.06	3.37	173.38
Mass Grading Dust	0.00	0.00	0.00	0.00	15.86	0.00	15.86	3.31	0.00	3.31	0.00
Mass Grading Off Road Diesel	0.10	0.82	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	78.66
Mass Grading On Road Diesel	0.05	0.60	0.23	0.00	0.00	0.02	0.03	0.00	0.02	0.02	90.37
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35
Trenching 09/25/2011-09/01/2012	0.07	0.58	0.32	0.00	0.00	0.03	0.03	0.00	0.03	0.03	64.37
Trenching Off Road Diesel	0.07	0.57	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	60.01
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35

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2012	0.43	3.57	1.99	0.00	4.93	0.18	5.11	1.03	0.17	1.20	430.48
Mass Grading 09/24/2011-01/23/2012	0.03	0.30	0.15	0.00	3.62	0.01	3.64	0.76	0.01	0.77	39.63
Mass Grading Dust	0.00	0.00	0.00	0.00	3.62	0.00	3.62	0.76	0.00	0.76	0.00
Mass Grading Off Road Diesel	0.02	0.18	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	17.98
Mass Grading On Road Diesel	0.01	0.12	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	20.66
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Trenching 09/25/2011-09/01/2012	0.16	1.34	0.78	0.00	0.00	0.06	0.06	0.00	0.06	0.06	160.91
Trenching Off Road Diesel	0.16	1.33	0.70	0.00	0.00	0.06	0.06	0.00	0.06	0.06	150.03
Trenching Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.88
Building 01/23/2012-05/23/2013	0.13	0.97	0.57	0.00	0.00	0.06	0.06	0.00	0.05	0.05	111.12
Building Off Road Diesel	0.13	0.97	0.56	0.00	0.00	0.06	0.06	0.00	0.05	0.05	109.89
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
Fine Grading 09/01/2012-12/01/2012	0.11	0.96	0.50	0.00	1.30	0.04	1.35	0.27	0.04	0.31	118.82
Fine Grading Dust	0.00	0.00	0.00	0.00	1.30	0.00	1.30	0.27	0.00	0.27	0.00
Fine Grading Off Road Diesel	0.09	0.71	0.37	0.00	0.00	0.03	0.03	0.00	0.03	0.03	73.04
Fine Grading On Road Diesel	0.02	0.25	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	41.74
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04

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2013	0.20	1.21	0.87	0.00	0.00	0.09	0.09	0.00	0.08	0.08	138.98
Building 01/23/2012-05/23/2013	0.05	0.38	0.23	0.00	0.00	0.02	0.02	0.00	0.02	0.02	46.52
Building Off Road Diesel	0.05	0.38	0.23	0.00	0.00	0.02	0.02	0.00	0.02	0.02	46.01
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Asphalt 02/01/2013-06/30/2013	0.14	0.83	0.63	0.00	0.00	0.07	0.07	0.00	0.06	0.06	92.44
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.13	0.81	0.53	0.00	0.00	0.07	0.07	0.00	0.06	0.06	75.18
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.43
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.83
Coating 02/01/2013-06/30/2013	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

Phase Assumptions

Phase: Demolition 5/18/2011 - 9/23/2011 - Default Demolition Description

Building Volume Total (cubic feet): 300000

Building Volume Daily (cubic feet): 3000

On Road Truck Travel (VMT): 263.89

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 9/1/2012 - 12/1/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 11

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Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 0 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 303.03

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 9/24/2011 - 1/23/2012 - Default Mass Site Grading/Excavation Description

Total Acres Disturbed: 11

Maximum Daily Acreage Disturbed: 4

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 3500 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 609.2

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 9/25/2011 - 9/1/2012 - Default Trenching Description

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 2/1/2013 - 6/30/2013 - Default Paving Description

Acres to be Paved: 3.2

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Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/23/2012 - 5/23/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Phase: Architectural Coating 2/1/2013 - 6/30/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 100

Rule: Residential Interior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 50

Rule: Residential Exterior Coatings begins 1/1/2005 ends 6/30/2008 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 7/1/2008 ends 12/31/2040 specifies a VOC of 100

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2011	0.29	2.68	1.39	0.00	1.17	0.13	1.30	0.24	0.12	0.37	328.10
Demolition 05/18/2011-09/23/2011	0.08	0.68	0.39	0.00	0.06	0.04	0.10	0.01	0.04	0.05	90.36
Fugitive Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.05	0.34	0.21	0.00	0.00	0.03	0.03	0.00	0.02	0.02	32.56
Demo On Road Diesel	0.03	0.34	0.13	0.00	0.00	0.01	0.02	0.00	0.01	0.01	52.01
Demo Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.78
Mass Grading 09/24/2011-01/23/2012	0.15	1.42	0.68	0.00	1.11	0.07	1.17	0.23	0.06	0.29	173.38
Mass Grading Dust	0.00	0.00	0.00	0.00	1.10	0.00	1.10	0.23	0.00	0.23	0.00
Mass Grading Off Road Diesel	0.10	0.82	0.42	0.00	0.00	0.04	0.04	0.00	0.04	0.04	78.66
Mass Grading On Road Diesel	0.05	0.60	0.23	0.00	0.00	0.02	0.03	0.00	0.02	0.02	90.37
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35
Trenching 09/25/2011-09/01/2012	0.07	0.58	0.32	0.00	0.00	0.03	0.03	0.00	0.03	0.03	64.37
Trenching Off Road Diesel	0.07	0.57	0.28	0.00	0.00	0.03	0.03	0.00	0.03	0.03	60.01
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.35

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2012	0.43	3.57	1.99	0.00	0.35	0.18	0.53	0.07	0.17	0.24	430.48
Mass Grading 09/24/2011-01/23/2012	0.03	0.30	0.15	0.00	0.25	0.01	0.27	0.05	0.01	0.07	39.63
Mass Grading Dust	0.00	0.00	0.00	0.00	0.25	0.00	0.25	0.05	0.00	0.05	0.00
Mass Grading Off Road Diesel	0.02	0.18	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	17.98
Mass Grading On Road Diesel	0.01	0.12	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	20.66
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99
Trenching 09/25/2011-09/01/2012	0.16	1.34	0.78	0.00	0.00	0.06	0.06	0.00	0.06	0.06	160.91
Trenching Off Road Diesel	0.16	1.33	0.70	0.00	0.00	0.06	0.06	0.00	0.06	0.06	150.03
Trenching Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.88
Building 01/23/2012-05/23/2013	0.13	0.97	0.57	0.00	0.00	0.06	0.06	0.00	0.05	0.05	111.12
Building Off Road Diesel	0.13	0.97	0.56	0.00	0.00	0.06	0.06	0.00	0.05	0.05	109.89
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Building Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
Fine Grading 09/01/2012-12/01/2012	0.11	0.96	0.50	0.00	0.09	0.04	0.14	0.02	0.04	0.06	118.82
Fine Grading Dust	0.00	0.00	0.00	0.00	0.09	0.00	0.09	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.09	0.71	0.37	0.00	0.00	0.03	0.03	0.00	0.03	0.03	73.04
Fine Grading On Road Diesel	0.02	0.25	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	41.74
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04

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2013	0.20	1.21	0.87	0.00	0.00	0.09	0.09	0.00	0.08	0.08	138.98
Building 01/23/2012-05/23/2013	0.05	0.38	0.23	0.00	0.00	0.02	0.02	0.00	0.02	0.02	46.52
Building Off Road Diesel	0.05	0.38	0.23	0.00	0.00	0.02	0.02	0.00	0.02	0.02	46.01
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Asphalt 02/01/2013-06/30/2013	0.14	0.83	0.63	0.00	0.00	0.07	0.07	0.00	0.06	0.06	92.44
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.13	0.81	0.53	0.00	0.00	0.07	0.07	0.00	0.06	0.06	75.18
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.43
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.83
Coating 02/01/2013-06/30/2013	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 9/1/2012 - 12/1/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

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For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Mass Grading 9/24/2011 - 1/23/2012 - Default Mass Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Architectural Coating 2/1/2013 - 6/30/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 10%

Parenthetical URBEMIS2007 (Version 9.2.4) Assumptions
For: Coastal Junction Station
Date: March 2010

LAND USES

Amount	Land Use Type	Unit Type	Trip Rate
10	Construction Trips	Trips	4.0

CONSTRUCTION SOURCES

Year	Duration (months)	Development
2011	6.5	Demolition, Excavation, Building Construction
2012	11	Building Construction, Fine Grading, Paving, and Landscaping

Phase 1 - Demolition:

Year	Total Volume Demolished	Total Daily Volume Demolished	Duration (days)	Distance to Disposal Site
2011	521 cubic yds	24 cubic yds	22	10 miles

Demolition Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Tractor/Loader/Backhoe	6
1	Concrete Industrial Saw	8
1	Rubber Tire Dozer	1

Phase 2 - Excavation:

Years	Duration (months)
2011	3

Excavation Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Excavators	8
1	Other General Industrial Equipment	8

Phase 3 - Site Grading:

Year	Acreage Disturbed Daily	Cut/Fill Duration (days)	Fugitive Dust	Soil Hauling (cubic yards)	Onsite cut/fill (cubic yards/day)
2011-2012	4	132	Low	9,498	246

Fine Grading Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Grader	6
1	Rubber Tired Dozer	6
1	Tractor/Loaders/Backhoe	7
1	Water Trucks	8

Phase 4 – Building Construction

Year	Duration (months)
2011, 2011	15

Construction Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Crane	4
2	Forklift	6
1	Tractor/Loader/Backhoe	8

Phase 5 - Paving:

Year	Duration (days)	Acres
2012	2	0.36

Paving Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
4	Cement and Mortar Mixers	6
1	Paver	7
1	Roller	7
1	Tractor/Loader/Backhoe	7

Sub- Phase 4 - Worker Commute

(URBEMIS2007 default all phases)

Construction Mitigation: Refer to URBEMIS2007 file output.

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_coastal junction.urb924

Project Name: Huntington Beach Coastal Junction Station

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	4.90	40.82	22.31	0.00	29.14	2.03	31.18	6.09	1.87	7.96	4,339.64
2011 TOTALS (lbs/day mitigated)	4.90	40.82	22.31	0.00	2.05	2.03	4.08	0.43	1.87	2.30	4,339.64
2012 TOTALS (lbs/day unmitigated)	3.81	30.64	17.34	0.00	29.14	1.59	30.73	6.09	1.46	7.55	3,404.01
2012 TOTALS (lbs/day mitigated)	3.81	30.64	17.34	0.00	2.04	1.59	3.63	0.43	1.46	1.89	3,404.01

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/18/2011-6/17/2011 Active Days: 23	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Demolition 05/18/2011- 06/18/2011	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Fugitive Dust	0.00	0.00	0.00	0.00	0.27	0.00	0.27	0.06	0.00	0.06	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.13	1.60	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	241.48
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/20/2011-8/17/2011 Active Days: 43	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 8/18/2011-9/16/2011 Active Days: 22	**4.90**	**40.82**	**22.31**	0.00	**29.14**	**2.03**	**31.18**	**6.09**	**1.87**	**7.96**	**4,339.64**
Fine Grading 08/18/2011- 11/14/2012	2.92	24.35	13.26	0.00	29.14	1.21	30.35	6.09	1.11	7.20	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 9/19/2011-12/30/2011 Active Days: 75	4.04	32.87	18.01	0.00	29.14	1.75	30.89	6.09	1.61	7.70	3,404.03
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011- 11/14/2012	2.92	24.35	13.26	0.00	29.14	1.21	30.35	6.09	1.11	7.20	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 1/2/2012-8/17/2012 Active Days: 165	3.81	30.64	17.34	0.00	29.14	1.59	30.73	6.09	1.46	7.55	3,404.01
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011- 11/14/2012	2.78	22.76	12.71	0.00	29.14	1.11	30.24	6.09	1.02	7.10	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 8/20/2012-11/14/2012 Active Days: 63	2.78	22.76	12.71	0.00	29.14	1.11	30.24	6.09	1.02	7.10	2,500.62
Fine Grading 08/18/2011-11/14/2012	2.78	22.76	12.71	0.00	29.14	1.11	30.24	6.09	1.02	7.10	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 11/15/2012-11/16/2012 Active Days: 2	2.37	12.34	9.06	**0.00**	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Asphalt 11/15/2012-11/18/2012	2.37	12.34	9.06	0.00	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.13	1.61	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	273.86
Paving Worker Trips	0.05	0.09	1.59	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.61

Phase Assumptions

Phase: Demolition 5/18/2011 - 6/18/2011 - Default Demolition Description

Building Volume Total (cubic feet): 1400

Building Volume Daily (cubic feet): 647.7

On Road Truck Travel (VMT): 56.97

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 8/18/2011 - 11/14/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

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Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 246 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 30.42

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/19/2011 - 9/18/2011 - Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 11/15/2012 - 11/18/2012 - Default Paving Description

Acres to be Paved: 0.36

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/18/2011 - 8/18/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Demolition 05/18/2011-06/18/2011	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Fugitive Dust	0.00	0.00	0.00	0.00	0.27	0.00	0.27	0.06	0.00	0.06	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.13	1.60	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	241.48
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/20/2011-8/17/2011 Active Days: 43	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 8/18/2011-9/16/2011 Active Days: 22	**4.90**	**40.82**	**22.31**	0.00	2.05	**2.03**	4.08	0.43	**1.87**	2.30	**4,339.64**
Fine Grading 08/18/2011-11/14/2012	2.92	24.35	13.26	0.00	2.04	1.21	3.25	0.43	1.11	1.54	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 9/19/2011-12/30/2011 Active Days: 75	4.04	32.87	18.01	0.00	2.04	1.75	3.79	0.43	1.61	2.04	3,404.03
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011-11/14/2012	2.92	24.35	13.26	0.00	2.04	1.21	3.25	0.43	1.11	1.54	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 1/2/2012-8/17/2012 Active Days: 165	3.81	30.64	17.34	0.00	2.04	1.59	3.63	0.43	1.46	1.89	3,404.01
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011-11/14/2012	2.78	22.76	12.71	0.00	2.04	1.11	3.14	0.43	1.02	1.44	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 8/20/2012-11/14/2012 Active Days: 63	2.78	22.76	12.71	0.00	2.04	1.11	3.14	0.43	1.02	1.44	2,500.62
Fine Grading 08/18/2011-11/14/2012	2.78	22.76	12.71	0.00	2.04	1.11	3.14	0.43	1.02	1.44	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 11/15/2012-11/16/2012 Active Days: 2	2.37	12.34	9.06	**0.00**	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Asphalt 11/15/2012-11/18/2012	2.37	12.34	9.06	0.00	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.13	1.61	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	273.86
Paving Worker Trips	0.05	0.09	1.59	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.61

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/18/2011 - 11/14/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

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PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_coastal junction.urb924

Project Name: Huntington Beach Coastal Junction Station

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	4.90	40.82	22.31	0.00	29.14	2.03	31.18	6.09	1.87	7.96	4,339.64
2011 TOTALS (lbs/day mitigated)	4.90	40.82	22.31	0.00	2.05	2.03	4.08	0.43	1.87	2.30	4,339.64
2012 TOTALS (lbs/day unmitigated)	3.81	30.64	17.34	0.00	29.14	1.59	30.73	6.09	1.46	7.55	3,404.01
2012 TOTALS (lbs/day mitigated)	3.81	30.64	17.34	0.00	2.04	1.59	3.63	0.43	1.46	1.89	3,404.01

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/18/2011-6/17/2011 Active Days: 23	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Demolition 05/18/2011- 06/18/2011	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Fugitive Dust	0.00	0.00	0.00	0.00	0.27	0.00	0.27	0.06	0.00	0.06	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.13	1.60	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	241.48
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/20/2011-8/17/2011 Active Days: 43	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 8/18/2011-9/16/2011 Active Days: 22	**4.90**	**40.82**	**22.31**	0.00	**29.14**	**2.03**	**31.18**	**6.09**	**1.87**	**7.96**	**4,339.64**
Fine Grading 08/18/2011- 11/14/2012	2.92	24.35	13.26	0.00	29.14	1.21	30.35	6.09	1.11	7.20	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 9/19/2011-12/30/2011 Active Days: 75	4.04	32.87	18.01	0.00	29.14	1.75	30.89	6.09	1.61	7.70	3,404.03
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011- 11/14/2012	2.92	24.35	13.26	0.00	29.14	1.21	30.35	6.09	1.11	7.20	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 1/2/2012-8/17/2012 Active Days: 165	3.81	30.64	17.34	0.00	29.14	1.59	30.73	6.09	1.46	7.55	3,404.01
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011- 11/14/2012	2.78	22.76	12.71	0.00	29.14	1.11	30.24	6.09	1.02	7.10	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 8/20/2012-11/14/2012 Active Days: 63	2.78	22.76	12.71	0.00	29.14	1.11	30.24	6.09	1.02	7.10	2,500.62
Fine Grading 08/18/2011-11/14/2012	2.78	22.76	12.71	0.00	29.14	1.11	30.24	6.09	1.02	7.10	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	29.13	0.00	29.13	6.08	0.00	6.08	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 11/15/2012-11/16/2012 Active Days: 2	2.37	12.34	9.06	**0.00**	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Asphalt 11/15/2012-11/18/2012	2.37	12.34	9.06	0.00	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.13	1.61	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	273.86
Paving Worker Trips	0.05	0.09	1.59	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.61

Phase Assumptions

Phase: Demolition 5/18/2011 - 6/18/2011 - Default Demolition Description

Building Volume Total (cubic feet): 1400

Building Volume Daily (cubic feet): 647.7

On Road Truck Travel (VMT): 56.97

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 8/18/2011 - 11/14/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

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Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 246 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 30.42

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/19/2011 - 9/18/2011 - Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 11/15/2012 - 11/18/2012 - Default Paving Description

Acres to be Paved: 0.36

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/18/2011 - 8/18/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

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Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Demolition 05/18/2011-06/18/2011	1.21	8.87	6.17	0.00	0.29	0.62	0.90	0.06	0.57	0.63	1,066.14
Fugitive Dust	0.00	0.00	0.00	0.00	0.27	0.00	0.27	0.06	0.00	0.06	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.13	1.60	0.61	0.00	0.01	0.06	0.07	0.00	0.06	0.06	241.48
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/20/2011-8/17/2011 Active Days: 43	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 8/18/2011-9/16/2011 Active Days: 22	**4.90**	**40.82**	**22.31**	0.00	2.05	**2.03**	4.08	0.43	**1.87**	2.30	**4,339.64**
Fine Grading 08/18/2011-11/14/2012	2.92	24.35	13.26	0.00	2.04	1.21	3.25	0.43	1.11	1.54	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 9/19/2011-12/30/2011 Active Days: 75	4.04	32.87	18.01	0.00	2.04	1.75	3.79	0.43	1.61	2.04	3,404.03
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011-11/14/2012	2.92	24.35	13.26	0.00	2.04	1.21	3.25	0.43	1.11	1.54	2,500.64
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.07	0.85	0.33	0.00	0.00	0.03	0.04	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 1/2/2012-8/17/2012 Active Days: 165	3.81	30.64	17.34	0.00	2.04	1.59	3.63	0.43	1.46	1.89	3,404.01
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Fine Grading 08/18/2011-11/14/2012	2.78	22.76	12.71	0.00	2.04	1.11	3.14	0.43	1.02	1.44	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 8/20/2012-11/14/2012 Active Days: 63	2.78	22.76	12.71	0.00	2.04	1.11	3.14	0.43	1.02	1.44	2,500.62
Fine Grading 08/18/2011-11/14/2012	2.78	22.76	12.71	0.00	2.04	1.11	3.14	0.43	1.02	1.44	2,500.62
Fine Grading Dust	0.00	0.00	0.00	0.00	2.03	0.00	2.03	0.42	0.00	0.42	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.06	0.76	0.29	0.00	0.00	0.03	0.03	0.00	0.03	0.03	128.95
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 11/15/2012-11/16/2012 Active Days: 2	2.37	12.34	9.06	**0.00**	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Asphalt 11/15/2012-11/18/2012	2.37	12.34	9.06	0.00	0.02	0.98	1.00	0.01	0.90	0.91	1,470.69
Paving Off-Gas	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.72	10.64	6.84	0.00	0.00	0.91	0.91	0.00	0.84	0.84	979.23
Paving On Road Diesel	0.13	1.61	0.62	0.00	0.01	0.06	0.07	0.00	0.06	0.06	273.86
Paving Worker Trips	0.05	0.09	1.59	0.00	0.01	0.01	0.02	0.00	0.00	0.01	217.61

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/18/2011 - 11/14/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

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PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_coastal junction.urb924

Project Name: Huntington Beach Coastal Junction Station

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.26	2.14	1.19	0.00	1.42	0.11	1.53	0.30	0.10	0.40	227.19
2011 TOTALS (tons/year mitigated)	0.26	2.14	1.19	0.00	0.10	0.11	0.22	0.02	0.10	0.13	227.19
Percent Reduction	0.00	0.00	0.00	0.00	92.77	0.00	85.92	92.73	0.00	68.64	0.00
2012 TOTALS (tons/year unmitigated)	0.40	3.26	1.84	0.00	3.32	0.17	3.49	0.69	0.15	0.85	361.07
2012 TOTALS (tons/year mitigated)	0.40	3.26	1.84	0.00	0.23	0.17	0.40	0.05	0.15	0.20	361.07
Percent Reduction	0.00	0.00	0.00	0.00	93.00	0.00	88.55	92.98	0.00	76.12	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2011	0.26	2.14	1.19	0.00	1.42	0.11	1.53	0.30	0.10	0.40	227.19
Demolition 05/18/2011-06/18/2011	0.01	0.10	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.26
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.08	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	8.05
Demo On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.78
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43
Trenching 06/19/2011-09/18/2011	0.06	0.54	0.29	0.00	0.00	0.03	0.03	0.00	0.02	0.02	59.77
Trenching Off Road Diesel	0.06	0.53	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.02	55.73
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04
Fine Grading 08/18/2011-11/14/2012	0.14	1.18	0.64	0.00	1.41	0.06	1.47	0.30	0.05	0.35	121.28
Fine Grading Dust	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.30	0.00	0.30	0.00
Fine Grading Off Road Diesel	0.14	1.14	0.58	0.00	0.00	0.06	0.06	0.00	0.05	0.05	108.99
Fine Grading On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.25
Fine Grading Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.03
Building 09/18/2011-08/18/2012	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.88
Building Off Road Diesel	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.50
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30

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2012	0.40	3.26	1.84	0.00	3.32	0.17	3.49	0.69	0.15	0.85	361.07
Building 09/18/2011-08/18/2012	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	74.53
Building Off Road Diesel	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	73.70
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Fine Grading 08/18/2011-11/14/2012	0.32	2.59	1.45	0.00	3.32	0.13	3.45	0.69	0.12	0.81	285.07
Fine Grading Dust	0.00	0.00	0.00	0.00	3.32	0.00	3.32	0.69	0.00	0.69	0.00
Fine Grading Off Road Diesel	0.31	2.50	1.31	0.00	0.00	0.12	0.12	0.00	0.11	0.11	256.19
Fine Grading On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.70
Fine Grading Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.18
Asphalt 11/15/2012-11/18/2012	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22

Phase Assumptions

Phase: Demolition 5/18/2011 - 6/18/2011 - Default Demolition Description

Building Volume Total (cubic feet): 1400

Building Volume Daily (cubic feet): 647.7

On Road Truck Travel (VMT): 56.97

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

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Phase: Fine Grading 8/18/2011 - 11/14/2012 - Default Fine Site Grading/Excavation Description

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 246 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 30.42

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/19/2011 - 9/18/2011 - Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Paving 11/15/2012 - 11/18/2012 - Default Paving Description

Acres to be Paved: 0.36

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 9/18/2011 - 8/18/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2011	0.26	2.14	1.19	0.00	0.10	0.11	0.22	0.02	0.10	0.13	227.19
Demolition 05/18/2011-06/18/2011	0.01	0.10	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.26
Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.08	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	8.05
Demo On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.78
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43
Trenching 06/19/2011-09/18/2011	0.06	0.54	0.29	0.00	0.00	0.03	0.03	0.00	0.02	0.02	59.77
Trenching Off Road Diesel	0.06	0.53	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.02	55.73
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04
Fine Grading 08/18/2011-11/14/2012	0.14	1.18	0.64	0.00	0.10	0.06	0.16	0.02	0.05	0.07	121.28
Fine Grading Dust	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.14	1.14	0.58	0.00	0.00	0.06	0.06	0.00	0.05	0.05	108.99
Fine Grading On Road Diesel	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.25
Fine Grading Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.03
Building 09/18/2011-08/18/2012	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.88
Building Off Road Diesel	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.50
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30

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2012	0.40	3.26	1.84	0.00	0.23	0.17	0.40	0.05	0.15	0.20	361.07
Building 09/18/2011-08/18/2012	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	74.53
Building Off Road Diesel	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	73.70
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Fine Grading 08/18/2011-11/14/2012	0.32	2.59	1.45	0.00	0.23	0.13	0.36	0.05	0.12	0.16	285.07
Fine Grading Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Fine Grading Off Road Diesel	0.31	2.50	1.31	0.00	0.00	0.12	0.12	0.00	0.11	0.11	256.19
Fine Grading On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.70
Fine Grading Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.18
Asphalt 11/15/2012-11/18/2012	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.27
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 8/18/2011 - 11/14/2012 - Default Fine Site Grading/Excavation Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

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For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Parenthetical URBEMIS2007 (Version 9.2.4) Assumptions
For: OC-44 Pump Station
Date: March 2010

LAND USES

Amount	Land Use Type	Unit Type	Trip Rate
12	Construction Trips	Trips	4.0

CONSTRUCTION SOURCES

Year	Duration (months)	Development
2011	6.5	Initial Grading, Excavation, Building Construction
2012	11	Building Construction, Final Grading, and Landscaping

Phase 1 – Initial Grading:

Year	Acreage Disturbed Daily	Cut/Fill Duration (days)	Fugitive Dust	Soil Hauling (cubic yards)	Onsite cut/fill (cubic yards/day)
2011	4	154	Low	9,606	18

Fine Grading Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Grader	6
1	Rubber Tired Dozer	6
1	Tractor/Loaders/Backhoe	7
1	Water Trucks	8

Phase 2 - Excavation:

Years	Duration (months)	Onsite cut/fill (cubic yards/day)
2011	3	236

Excavation Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Excavators	8
1	Other General Industrial Equipment	8

Phase 3 – Building Construction

Year	Duration (months)
2011, 2011	11

Construction Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Tractor/Loader/Backhoe	8

Phase 4 - Site Grading:

Year	Acreage Disturbed Daily	Cut/Fill Duration (days)	Fugitive Dust	Soil Hauling (cubic yards)	Onsite cut/fill (cubic yards/day)
2012	4	66	Low	0	15

Fine Grading Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
1	Grader	6
1	Rubber Tired Dozer	6
1	Tractor/Loaders/Backhoe	7
1	Water Trucks	8

Sub- Phase 4 - Worker Commute

(URBEMIS2007 default all phases)

Construction Mitigation: Refer to URBEMIS2007 file output.

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_OC-44.urb924

Project Name: Huntington Beach OC-44 Pump Station

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	3.78	35.20	17.44	0.02	30.14	1.65	31.78	6.30	1.51	7.82	4,141.86
2011 TOTALS (lbs/day mitigated)	3.78	35.20	17.44	0.02	2.16	1.65	3.81	0.46	1.51	1.97	4,141.86
2012 TOTALS (lbs/day unmitigated)	2.72	22.00	12.42	0.00	1.88	1.08	2.95	0.39	0.99	1.38	2,371.66
2012 TOTALS (lbs/day mitigated)	2.72	22.00	12.42	0.00	0.14	1.08	1.21	0.03	0.99	1.02	2,371.66

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/18/2011-6/17/2011 Active Days: 23	**3.78**	**35.20**	**17.44**	**0.02**	**30.14**	**1.65**	**31.78**	**6.30**	**1.51**	**7.82**	**4,141.86**
Fine Grading 05/18/2011-06/18/2011	3.78	35.20	17.44	0.02	30.14	1.65	31.78	6.30	1.51	7.82	4,141.86
Fine Grading Dust	0.00	0.00	0.00	0.00	30.07	0.00	30.07	6.28	0.00	6.28	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.92	11.70	4.50	0.02	0.06	0.47	0.53	0.02	0.43	0.45	1,770.18
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/20/2011-9/16/2011 Active Days: 65	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 9/19/2011-12/30/2011 Active Days: 75	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 1/2/2012-8/17/2012 Active Days: 165	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96

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Time Slice 8/20/2012-11/16/2012 Active Days: 65	2.72	22.00	12.42	0.00	1.88	1.08	2.95	0.39	0.99	1.38	2,371.66
Fine Grading 08/18/2012-11/18/2012	2.72	22.00	12.42	0.00	1.88	1.08	2.95	0.39	0.99	1.38	2,371.66
Fine Grading Dust	0.00	0.00	0.00	0.00	1.87	0.00	1.87	0.39	0.00	0.39	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

Phase Assumptions

Phase: Fine Grading 5/18/2011 - 6/18/2011 - Initial Grading

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 254 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 417.65

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 8/18/2012 - 11/18/2012 - Final Grading and Landscaping

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 15 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

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1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/19/2011 - 9/18/2011 - Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Building Construction 9/18/2011 - 8/18/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	**3.78**	**35.20**	**17.44**	**0.02**	2.16	**1.65**	3.81	0.46	**1.51**	1.97	**4,141.86**
Fine Grading 05/18/2011-06/18/2011	3.78	35.20	17.44	0.02	2.16	1.65	3.81	0.46	1.51	1.97	4,141.86
Fine Grading Dust	0.00	0.00	0.00	0.00	2.10	0.00	2.10	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.92	11.70	4.50	0.02	0.06	0.47	0.53	0.02	0.43	0.45	1,770.18
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 6/20/2011-9/16/2011 Active Days: 65	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 9/19/2011-12/30/2011 Active Days: 75	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 1/2/2012-8/17/2012 Active Days: 165	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 8/20/2012-11/16/2012 Active Days: 65	2.72	22.00	12.42	0.00	0.14	1.08	1.21	0.03	0.99	1.02	2,371.66
Fine Grading 08/18/2012- 11/18/2012	2.72	22.00	12.42	0.00	0.14	1.08	1.21	0.03	0.99	1.02	2,371.66
Fine Grading Dust	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 6/18/2011 - Initial Grading

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For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 8/18/2012 - 11/18/2012 - Final Grading and Landscaping

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_OC-44.urb924

Project Name: Huntington Beach OC-44 Pump Station

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	3.78	35.20	17.44	0.02	30.14	1.65	31.78	6.30	1.51	7.82	4,141.86
2011 TOTALS (lbs/day mitigated)	3.78	35.20	17.44	0.02	2.16	1.65	3.81	0.46	1.51	1.97	4,141.86
2012 TOTALS (lbs/day unmitigated)	2.72	22.00	12.42	0.00	1.88	1.08	2.95	0.39	0.99	1.38	2,371.66
2012 TOTALS (lbs/day mitigated)	2.72	22.00	12.42	0.00	0.14	1.08	1.21	0.03	0.99	1.02	2,371.66

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/18/2011-6/17/2011 Active Days: 23	**3.78**	**35.20**	**17.44**	**0.02**	**30.14**	**1.65**	**31.78**	**6.30**	**1.51**	**7.82**	**4,141.86**
Fine Grading 05/18/2011-06/18/2011	3.78	35.20	17.44	0.02	30.14	1.65	31.78	6.30	1.51	7.82	4,141.86
Fine Grading Dust	0.00	0.00	0.00	0.00	30.07	0.00	30.07	6.28	0.00	6.28	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.92	11.70	4.50	0.02	0.06	0.47	0.53	0.02	0.43	0.45	1,770.18
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 6/20/2011-9/16/2011 Active Days: 65	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 9/19/2011-12/30/2011 Active Days: 75	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 1/2/2012-8/17/2012 Active Days: 165	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96

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Time Slice 8/20/2012-11/16/2012 Active Days: 65	2.72	22.00	12.42	0.00	1.88	1.08	2.95	0.39	0.99	1.38	2,371.66
Fine Grading 08/18/2012-11/18/2012	2.72	22.00	12.42	0.00	1.88	1.08	2.95	0.39	0.99	1.38	2,371.66
Fine Grading Dust	0.00	0.00	0.00	0.00	1.87	0.00	1.87	0.39	0.00	0.39	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

Phase Assumptions

Phase: Fine Grading 5/18/2011 - 6/18/2011 - Initial Grading

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 254 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 417.65

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 8/18/2012 - 11/18/2012 - Final Grading and Landscaping

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 15 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

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1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/19/2011 - 9/18/2011 - Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Building Construction 9/18/2011 - 8/18/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	**3.78**	**35.20**	**17.44**	**0.02**	2.16	**1.65**	3.81	0.46	**1.51**	1.97	**4,141.86**
Fine Grading 05/18/2011-06/18/2011	3.78	35.20	17.44	0.02	2.16	1.65	3.81	0.46	1.51	1.97	4,141.86
Fine Grading Dust	0.00	0.00	0.00	0.00	2.10	0.00	2.10	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Fine Grading On Road Diesel	0.92	11.70	4.50	0.02	0.06	0.47	0.53	0.02	0.43	0.45	1,770.18
Fine Grading Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37

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Time Slice 6/20/2011-9/16/2011 Active Days: 65	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching 06/19/2011-09/18/2011	1.98	16.48	9.05	0.00	0.01	0.82	0.83	0.00	0.76	0.76	1,839.01
Trenching Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Trenching Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Time Slice 9/19/2011-12/30/2011 Active Days: 75	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building 09/18/2011-08/18/2012	1.12	8.52	4.75	0.00	0.00	0.54	0.54	0.00	0.50	0.50	903.40
Building Off Road Diesel	1.11	8.51	4.68	0.00	0.00	0.54	0.54	0.00	0.50	0.50	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 1/2/2012-8/17/2012 Active Days: 165	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building 09/18/2011-08/18/2012	1.04	7.89	4.63	0.00	0.00	0.49	0.49	0.00	0.45	0.45	903.39
Building Off Road Diesel	1.03	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.05
Building Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.96
Time Slice 8/20/2012-11/16/2012 Active Days: 65	2.72	22.00	12.42	0.00	0.14	1.08	1.21	0.03	0.99	1.02	2,371.66
Fine Grading 08/18/2012- 11/18/2012	2.72	22.00	12.42	0.00	0.14	1.08	1.21	0.03	0.99	1.02	2,371.66
Fine Grading Dust	0.00	0.00	0.00	0.00	0.13	0.00	0.13	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 6/18/2011 - Initial Grading

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For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 8/18/2012 - 11/18/2012 - Final Grading and Landscaping

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_OC-44.urb924

Project Name: Huntington Beach OC-44 Pump Station

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.15	1.26	0.67	0.00	0.35	0.07	0.41	0.07	0.06	0.13	141.28
2011 TOTALS (tons/year mitigated)	0.15	1.26	0.67	0.00	0.03	0.07	0.09	0.01	0.06	0.07	141.28
Percent Reduction	0.00	0.00	0.00	0.00	92.78	0.00	77.92	92.62	0.00	50.38	0.00
2012 TOTALS (tons/year unmitigated)	0.17	1.37	0.79	0.00	0.06	0.08	0.14	0.01	0.07	0.08	151.61
2012 TOTALS (tons/year mitigated)	0.17	1.37	0.79	0.00	0.00	0.08	0.08	0.00	0.07	0.07	151.61
Percent Reduction	0.00	0.00	0.00	0.00	92.69	0.00	41.57	92.43	0.00	14.44	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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2011	0.15	1.26	0.67	0.00	0.35	0.07	0.41	0.07	0.06	0.13	141.28
Fine Grading 05/18/2011-06/18/2011	0.04	0.40	0.20	0.00	0.35	0.02	0.37	0.07	0.02	0.09	47.63
Fine Grading Dust	0.00	0.00	0.00	0.00	0.35	0.00	0.35	0.07	0.00	0.07	0.00
Fine Grading Off Road Diesel	0.03	0.27	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	25.84
Fine Grading On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	20.36
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43
Trenching 06/19/2011-09/18/2011	0.06	0.54	0.29	0.00	0.00	0.03	0.03	0.00	0.02	0.02	59.77
Trenching Off Road Diesel	0.06	0.53	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.02	55.73
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04
Building 09/18/2011-08/18/2012	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.88
Building Off Road Diesel	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.50
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30
2012	0.17	1.37	0.79	0.00	0.06	0.08	0.14	0.01	0.07	0.08	151.61
Building 09/18/2011-08/18/2012	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	74.53
Building Off Road Diesel	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	73.70
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Fine Grading 08/18/2012-11/18/2012	0.09	0.71	0.40	0.00	0.06	0.03	0.10	0.01	0.03	0.04	77.08
Fine Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.09	0.71	0.37	0.00	0.00	0.03	0.03	0.00	0.03	0.03	73.04
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04

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Phase Assumptions

Phase: Fine Grading 5/18/2011 - 6/18/2011 - Initial Grading

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 254 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 417.65

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Fine Grading 8/18/2012 - 11/18/2012 - Final Grading and Landscaping

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 15 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Trenching 6/19/2011 - 9/18/2011 - Excavation

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 0 hours per day

Phase: Building Construction 9/18/2011 - 8/18/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 4 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.15	1.26	0.67	0.00	0.03	0.07	0.09	0.01	0.06	0.07	141.28
Fine Grading 05/18/2011-06/18/2011	0.04	0.40	0.20	0.00	0.02	0.02	0.04	0.01	0.02	0.02	47.63
Fine Grading Dust	0.00	0.00	0.00	0.00	0.02	0.00	0.02	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.03	0.27	0.14	0.00	0.00	0.01	0.01	0.00	0.01	0.01	25.84
Fine Grading On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.01	20.36
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43
Trenching 06/19/2011-09/18/2011	0.06	0.54	0.29	0.00	0.00	0.03	0.03	0.00	0.02	0.02	59.77
Trenching Off Road Diesel	0.06	0.53	0.26	0.00	0.00	0.03	0.03	0.00	0.02	0.02	55.73
Trenching Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04
Building 09/18/2011-08/18/2012	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.88
Building Off Road Diesel	0.04	0.32	0.18	0.00	0.00	0.02	0.02	0.00	0.02	0.02	33.50
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30

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2012	0.17	1.37	0.79	0.00	0.00	0.08	0.08	0.00	0.07	0.07	151.61
Building 09/18/2011-08/18/2012	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	74.53
Building Off Road Diesel	0.09	0.65	0.38	0.00	0.00	0.04	0.04	0.00	0.04	0.04	73.70
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66
Fine Grading 08/18/2012-11/18/2012	0.09	0.71	0.40	0.00	0.00	0.03	0.04	0.00	0.03	0.03	77.08
Fine Grading Dust	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.09	0.71	0.37	0.00	0.00	0.03	0.03	0.00	0.03	0.03	73.04
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.04

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 6/18/2011 - Initial Grading

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

The following mitigation measures apply to Phase: Fine Grading 8/18/2012 - 11/18/2012 - Final Grading and Landscaping

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

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PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Parenthetical URBEMIS2007 (Version 9.2.4) Assumptions
For: Primary Pipeline Route
Date: March 2010

LAND USES

Amount	Land Use Type	Unit Type	Trip Rate
12	Construction Trips	Trips	4.0

CONSTRUCTION SOURCES

Year	Duration (months)	Development
2011	6.5	Demolition, Trenching, Paving
2012	12	Demolition, Trenching, Paving
2013	2	Demolition, Paving

Phase 1 - Demolition:

Year	Total Volume Demolished	Total Daily Volume Demolished	Duration (days)	Distance to Disposal Site
2011-2013	1,811,268 cubic ft	4,333 cubic ft	418	10 miles

Demolition Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Tractor/Loader/Backhoe	6
1	Concrete Industrial Saw	8
1	Rubber Tire Dozer	1

Phase 2 – Trenching/Earthwork:

Years	Duration (months)	Onsite cut/fill (cubic yards/day)
2011	15	250

Excavation Equipment:

Quantity	Type	Hours of Daily Operation
2	Excavators	8
1	Other General Industrial Equipment	8

Phase 3 - Paving:

Year	Duration (days)	Acres
2011-2013	22	8.19

Paving Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
4	Cement and Mortar Mixers	6
1	Paver	7
1	Paving Equipment	8
1	Roller	7
1	Tractor/Loader/Backhoe	7

Sub- Phase 4 - Worker Commute

(URBEMIS2007 default all phases)

Construction Mitigation: Refer to URBEMIS2007 file output.

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_primary pipeline.urb924

Project Name: Huntington Beach Primary Pipeline Route

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	7.14	49.09	29.27	0.02	31.49	3.11	34.60	6.58	2.86	9.45	5,677.98
2011 TOTALS (lbs/day mitigated)	7.14	49.09	29.27	0.02	3.95	3.11	7.06	0.83	2.86	3.70	5,677.98
2012 TOTALS (lbs/day unmitigated)	4.45	28.49	17.59	0.01	31.46	1.89	32.95	6.57	1.73	7.94	3,718.49
2012 TOTALS (lbs/day mitigated)	4.45	28.49	17.59	0.01	3.92	1.89	5.41	0.82	1.73	2.19	3,718.49
2013 TOTALS (lbs/day unmitigated)	3.19	15.97	11.49	0.01	1.83	1.24	2.31	0.38	1.14	1.15	1,959.38
2013 TOTALS (lbs/day mitigated)	3.19	15.97	11.49	0.01	1.83	1.24	2.31	0.38	1.14	1.15	1,959.38

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.62	30.92	17.13	0.01	31.46	1.66	33.13	6.57	1.53	8.10	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	29.63	1.07	30.70	6.19	0.98	7.17	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.14**	**49.09**	**29.27**	**0.02**	**31.49**	**3.11**	**34.60**	**6.58**	**2.86**	**9.45**	**5,677.98**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	29.63	1.07	30.70	6.19	0.98	7.17	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.62	30.92	17.13	0.01	31.46	1.66	33.13	6.57	1.53	8.10	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	29.63	1.07	30.70	6.19	0.98	7.17	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-1/18/2012 Active Days: 13	3.35	28.49	16.56	0.01	31.46	1.49	32.95	6.57	1.37	7.94	3,718.49
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-01/18/2012	2.26	20.68	10.78	0.01	29.63	0.95	30.58	6.19	0.87	7.07	2,724.19
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.43	5.40	2.08	0.01	0.03	0.21	0.24	0.01	0.20	0.21	916.29
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 1/19/2012-7/10/2012 Active Days: 124	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 7/11/2012-7/18/2012 Active Days: 6	4.45	24.85	17.59	0.01	1.85	1.89	3.74	0.39	1.73	2.13	2,953.71
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 7/19/2012-12/31/2012 Active Days: 118	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/1/2013-1/18/2013 Active Days: 14	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Demolition 05/18/2011-01/18/2013	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.07	0.88	0.34	0.00	0.01	0.03	0.04	0.00	0.03	0.03	169.65
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Phase Assumptions

Phase: Demolition 5/18/2011 - 1/18/2013 - Demolition

Building Volume Total (cubic feet): 1811716

Building Volume Daily (cubic feet): 4323

On Road Truck Travel (VMT): 40.03

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Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 5/18/2011 - 1/18/2012 - Trenching and Earthwork

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 250 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 216.19

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Phase: Paving 6/18/2011 - 6/25/2011 - Default Building Construction Description

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/11/2012 - 7/18/2012 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

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1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 9/11/2013 - 9/18/2013 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.62	30.92	17.13	0.01	3.92	1.66	5.59	0.82	1.53	2.35	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	2.10	1.07	3.16	0.44	0.98	1.42	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.14**	**49.09**	**29.27**	**0.02**	3.95	**3.11**	7.06	0.83	**2.86**	3.70	**5,677.98**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	2.10	1.07	3.16	0.44	0.98	1.42	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.62	30.92	17.13	0.01	3.92	1.66	5.59	0.82	1.53	2.35	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	2.10	1.07	3.16	0.44	0.98	1.42	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-1/18/2012 Active Days: 13	3.35	28.49	16.56	0.01	3.92	1.49	5.41	0.82	1.37	2.19	3,718.49
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-01/18/2012	2.26	20.68	10.78	0.01	2.10	0.95	3.05	0.44	0.87	1.31	2,724.19
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.43	5.40	2.08	0.01	0.03	0.21	0.24	0.01	0.20	0.21	916.29
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 1/19/2012-7/10/2012 Active Days: 124	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 7/11/2012-7/18/2012 Active Days: 6	4.45	24.85	17.59	0.01	1.85	1.89	3.74	0.39	1.73	2.13	2,953.71
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 7/19/2012-12/31/2012 Active Days: 118	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/1/2013-1/18/2013 Active Days: 14	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Demolition 05/18/2011-01/18/2013	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.07	0.88	0.34	0.00	0.01	0.03	0.04	0.00	0.03	0.03	169.65
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 1/18/2012 - Trenching and Earthwork

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

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PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_primary pipeline.urb924

Project Name: Huntington Beach Primary Pipeline Route

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	7.14	49.09	29.27	0.02	31.49	3.11	34.60	6.58	2.86	9.45	5,677.98
2011 TOTALS (lbs/day mitigated)	7.14	49.09	29.27	0.02	3.95	3.11	7.06	0.83	2.86	3.70	5,677.98
2012 TOTALS (lbs/day unmitigated)	4.45	28.49	17.59	0.01	31.46	1.89	32.95	6.57	1.73	7.94	3,718.49
2012 TOTALS (lbs/day mitigated)	4.45	28.49	17.59	0.01	3.92	1.89	5.41	0.82	1.73	2.19	3,718.49
2013 TOTALS (lbs/day unmitigated)	3.19	15.97	11.49	0.01	1.83	1.24	2.31	0.38	1.14	1.15	1,959.38
2013 TOTALS (lbs/day mitigated)	3.19	15.97	11.49	0.01	1.83	1.24	2.31	0.38	1.14	1.15	1,959.38

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.62	30.92	17.13	0.01	31.46	1.66	33.13	6.57	1.53	8.10	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	29.63	1.07	30.70	6.19	0.98	7.17	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.14**	**49.09**	**29.27**	**0.02**	**31.49**	**3.11**	**34.60**	**6.58**	**2.86**	**9.45**	**5,677.98**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	29.63	1.07	30.70	6.19	0.98	7.17	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.62	30.92	17.13	0.01	31.46	1.66	33.13	6.57	1.53	8.10	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	29.63	1.07	30.70	6.19	0.98	7.17	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-1/18/2012 Active Days: 13	3.35	28.49	16.56	0.01	31.46	1.49	32.95	6.57	1.37	7.94	3,718.49
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-01/18/2012	2.26	20.68	10.78	0.01	29.63	0.95	30.58	6.19	0.87	7.07	2,724.19
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.43	5.40	2.08	0.01	0.03	0.21	0.24	0.01	0.20	0.21	916.29
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 1/19/2012-7/10/2012 Active Days: 124	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 7/11/2012-7/18/2012 Active Days: 6	4.45	24.85	17.59	0.01	1.85	1.89	3.74	0.39	1.73	2.13	2,953.71
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 7/19/2012-12/31/2012 Active Days: 118	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/1/2013-1/18/2013 Active Days: 14	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Demolition 05/18/2011-01/18/2013	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.07	0.88	0.34	0.00	0.01	0.03	0.04	0.00	0.03	0.03	169.65
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Phase Assumptions

Phase: Demolition 5/18/2011 - 1/18/2013 - Demolition

Building Volume Total (cubic feet): 1811716

Building Volume Daily (cubic feet): 4323

On Road Truck Travel (VMT): 40.03

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Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 5/18/2011 - 1/18/2012 - Trenching and Earthwork

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 250 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 216.19

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Phase: Paving 6/18/2011 - 6/25/2011 - Default Building Construction Description

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/11/2012 - 7/18/2012 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

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1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 9/11/2013 - 9/18/2013 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

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Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.62	30.92	17.13	0.01	3.92	1.66	5.59	0.82	1.53	2.35	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	2.10	1.07	3.16	0.44	0.98	1.42	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.14**	**49.09**	**29.27**	**0.02**	3.95	**3.11**	7.06	0.83	**2.86**	3.70	**5,677.98**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	2.10	1.07	3.16	0.44	0.98	1.42	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.62	30.92	17.13	0.01	3.92	1.66	5.59	0.82	1.53	2.35	3,718.53
Demolition 05/18/2011-01/18/2013	1.17	8.40	5.99	0.00	1.83	0.60	2.42	0.38	0.55	0.93	994.32
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.09	1.12	0.43	0.00	0.01	0.05	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-01/18/2012	2.45	22.52	11.14	0.01	2.10	1.07	3.16	0.44	0.98	1.42	2,724.20
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.48	6.06	2.33	0.01	0.03	0.24	0.27	0.01	0.22	0.23	916.29
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-1/18/2012 Active Days: 13	3.35	28.49	16.56	0.01	3.92	1.49	5.41	0.82	1.37	2.19	3,718.49
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-01/18/2012	2.26	20.68	10.78	0.01	2.10	0.95	3.05	0.44	0.87	1.31	2,724.19
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.43	5.40	2.08	0.01	0.03	0.21	0.24	0.01	0.20	0.21	916.29
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 1/19/2012-7/10/2012 Active Days: 124	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 7/11/2012-7/18/2012 Active Days: 6	4.45	24.85	17.59	0.01	1.85	1.89	3.74	0.39	1.73	2.13	2,953.71
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 7/19/2012-12/31/2012 Active Days: 118	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Demolition 05/18/2011-01/18/2013	1.09	7.82	5.78	0.00	1.83	0.54	2.36	0.38	0.49	0.88	994.30
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.08	1.00	0.39	0.00	0.01	0.04	0.05	0.00	0.04	0.04	169.65
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Time Slice 1/1/2013-1/18/2013 Active Days: 14	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Demolition 05/18/2011-01/18/2013	1.01	7.28	5.58	0.00	1.83	0.48	2.31	0.38	0.44	0.82	994.29
Fugitive Dust	0.00	0.00	0.00	0.00	1.82	0.00	1.82	0.38	0.00	0.38	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.07	0.88	0.34	0.00	0.01	0.03	0.04	0.00	0.03	0.03	169.65
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 1/18/2012 - Trenching and Earthwork

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

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PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_primary pipeline.urb924

Project Name: Huntington Beach Primary Pipeline Route

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.30	2.57	1.43	0.00	2.56	0.14	2.70	0.54	0.13	0.66	307.96
2011 TOTALS (tons/year mitigated)	0.30	2.57	1.43	0.00	0.32	0.14	0.46	0.07	0.13	0.20	307.96
Percent Reduction	0.00	0.00	0.00	0.00	87.52	0.00	83.02	87.47	0.00	70.60	0.00
2012 TOTALS (tons/year unmitigated)	0.17	1.21	0.86	0.00	0.43	0.08	0.51	0.09	0.07	0.16	153.34
2012 TOTALS (tons/year mitigated)	0.17	1.21	0.86	0.00	0.25	0.08	0.33	0.05	0.07	0.13	153.34
Percent Reduction	0.00	0.00	0.00	0.00	41.52	0.00	35.00	41.50	0.00	22.80	0.00
2013 TOTALS (tons/year unmitigated)	0.02	0.10	0.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01	12.84
2013 TOTALS (tons/year mitigated)	0.02	0.10	0.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01	12.84
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.30	2.57	1.43	0.00	2.56	0.14	2.70	0.54	0.13	0.66	307.96
Demolition 05/18/2011-01/18/2013	0.10	0.68	0.49	0.00	0.15	0.05	0.20	0.03	0.04	0.08	81.04
Fugitive Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Demo Off Road Diesel	0.09	0.59	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	57.07
Demo On Road Diesel	0.01	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.83
Demo Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.14
Fine Grading 05/18/2011-01/18/2012	0.20	1.84	0.91	0.00	2.42	0.09	2.50	0.50	0.08	0.58	222.02
Fine Grading Dust	0.00	0.00	0.00	0.00	2.41	0.00	2.41	0.50	0.00	0.50	0.00
Fine Grading Off Road Diesel	0.16	1.34	0.66	0.00	0.00	0.07	0.07	0.00	0.06	0.06	139.74
Fine Grading On Road Diesel	0.04	0.49	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	74.68
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60
Asphalt 06/18/2011-06/25/2011	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62

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2012	0.17	1.21	0.86	0.00	0.43	0.08	0.51	0.09	0.07	0.16	153.34
Demolition 05/18/2011-01/18/2013	0.14	1.02	0.75	0.00	0.24	0.07	0.31	0.05	0.06	0.11	129.76
Fugitive Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Demo Off Road Diesel	0.13	0.88	0.59	0.00	0.00	0.06	0.06	0.00	0.06	0.06	91.39
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	22.14
Demo Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.23
Fine Grading 05/18/2011-01/18/2012	0.01	0.13	0.07	0.00	0.19	0.01	0.20	0.04	0.01	0.05	17.71
Fine Grading Dust	0.00	0.00	0.00	0.00	0.19	0.00	0.19	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.01	0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.15
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.96
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Asphalt 07/11/2012-07/18/2012	0.01	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

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2013	0.02	0.10	0.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01	12.84
Demolition 05/18/2011-01/18/2013	0.01	0.05	0.04	0.00	0.01	0.00	0.02	0.00	0.00	0.01	6.96
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
Asphalt 09/11/2013-09/18/2013	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

Phase Assumptions

Phase: Demolition 5/18/2011 - 1/18/2013 - Demolition

Building Volume Total (cubic feet): 1811716

Building Volume Daily (cubic feet): 4323

On Road Truck Travel (VMT): 40.03

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 5/18/2011 - 1/18/2012 - Trenching and Earthwork

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 250 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

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On Road Truck Travel (VMT): 216.19

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Phase: Paving 6/18/2011 - 6/25/2011 - Default Building Construction Description

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/11/2012 - 7/18/2012 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 9/11/2013 - 9/18/2013 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.30	2.57	1.43	0.00	0.32	0.14	0.46	0.07	0.13	0.20	307.96
Demolition 05/18/2011-01/18/2013	0.10	0.68	0.49	0.00	0.15	0.05	0.20	0.03	0.04	0.08	81.04
Fugitive Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Demo Off Road Diesel	0.09	0.59	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	57.07
Demo On Road Diesel	0.01	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.83
Demo Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.14
Fine Grading 05/18/2011-01/18/2012	0.20	1.84	0.91	0.00	0.17	0.09	0.26	0.04	0.08	0.12	222.02
Fine Grading Dust	0.00	0.00	0.00	0.00	0.17	0.00	0.17	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.16	1.34	0.66	0.00	0.00	0.07	0.07	0.00	0.06	0.06	139.74
Fine Grading On Road Diesel	0.04	0.49	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	74.68
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60
Asphalt 06/18/2011-06/25/2011	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62

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2012	0.17	1.21	0.86	0.00	0.25	0.08	0.33	0.05	0.07	0.13	153.34
Demolition 05/18/2011-01/18/2013	0.14	1.02	0.75	0.00	0.24	0.07	0.31	0.05	0.06	0.11	129.76
Fugitive Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Demo Off Road Diesel	0.13	0.88	0.59	0.00	0.00	0.06	0.06	0.00	0.06	0.06	91.39
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.01	0.01	0.00	0.00	0.00	22.14
Demo Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.23
Fine Grading 05/18/2011-01/18/2012	0.01	0.13	0.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01	17.71
Fine Grading Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Fine Grading Off Road Diesel	0.01	0.10	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.15
Fine Grading On Road Diesel	0.00	0.04	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.96
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61
Asphalt 07/11/2012-07/18/2012	0.01	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

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2013	0.02	0.10	0.07	0.00	0.01	0.01	0.02	0.00	0.01	0.01	12.84
Demolition 05/18/2011-01/18/2013	0.01	0.05	0.04	0.00	0.01	0.00	0.02	0.00	0.00	0.01	6.96
Fugitive Dust	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00
Demo Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90
Demo On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Demo Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87
Asphalt 09/11/2013-09/18/2013	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 1/18/2012 - Trenching and Earthwork

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

Parenthetical URBEMIS2007 (Version 9.2.4) Assumptions
For: Longest Pipeline Alternative
Date: March 2010

LAND USES

Amount	Land Use Type	Unit Type	Trip Rate
12	Construction Trips	Trips	4.0

CONSTRUCTION SOURCES

Year	Duration (months)	Development
2011	6.5	Demolition, Trenching, Paving
2012	12	Demolition, Paving
2013	9	Demolition, Trenching, Paving

Phase 1 - Demolition:

Year	Total Volume Demolished	Total Daily Volume Demolished	Duration (days)	Distance to Disposal Site
2011-2013	2,485,134 cubic ft	7,560 cubic ft	594	10 miles

Demolition Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
2	Tractor/Loader/Backhoe	6
1	Concrete Industrial Saw	8
1	Rubber Tire Dozer	1

Phase 2 – Trenching/Earthwork:

Years	Duration (months)	Onsite cut/fill (cubic yards/day)
2011	15	250

Excavation Equipment:

Quantity	Type	Hours of Daily Operation
2	Excavators	8
1	Other General Industrial Equipment	8

Phase 3 - Paving:

Year	Duration (days)	Acres
2011-2013	22	8.19

Paving Equipment (URBEMIS2007 Default):

Quantity	Type	Hours of Daily Operation
4	Cement and Mortar Mixers	6
1	Paver	7
1	Paving Equipment	8
1	Roller	7
1	Tractor/Loader/Backhoe	7

Sub- Phase 4 - Worker Commute

(URBEMIS2007 default all phases)

Construction Mitigation: Refer to URBEMIS2007 file output.

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_longest alt.urb924

Project Name: Huntington Beach Longest Pipeline Alternative

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	7.08	48.35	28.99	0.02	32.84	3.08	35.92	6.86	2.84	9.70	5,566.77
2011 TOTALS (lbs/day mitigated)	7.08	48.35	28.99	0.02	5.30	3.08	8.38	1.11	2.84	3.95	5,566.77
2012 TOTALS (lbs/day unmitigated)	6.65	44.88	28.11	0.02	32.84	2.81	35.65	6.86	2.58	9.45	5,566.69
2012 TOTALS (lbs/day mitigated)	6.65	44.88	28.11	0.02	5.30	2.81	8.11	1.11	2.58	3.70	5,566.69
2013 TOTALS (lbs/day unmitigated)	3.19	15.97	11.49	0.01	3.18	1.24	3.69	0.66	1.14	1.15	1,959.38
2013 TOTALS (lbs/day mitigated)	3.19	15.97	11.49	0.01	3.18	1.24	3.69	0.66	1.14	1.15	1,959.38

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.56	30.19	16.84	0.01	32.81	1.63	34.44	6.85	1.50	8.36	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	29.63	1.00	30.63	6.19	0.92	7.11	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.08**	**48.35**	**28.99**	**0.02**	**32.84**	**3.08**	**35.92**	**6.86**	**2.84**	**9.70**	**5,566.77**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	29.63	1.00	30.63	6.19	0.92	7.11	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.56	30.19	16.84	0.01	32.81	1.63	34.44	6.85	1.50	8.36	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	29.63	1.00	30.63	6.19	0.92	7.11	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-7/10/2012 Active Days: 137	3.30	27.84	16.31	0.01	32.81	1.46	34.27	6.85	1.34	8.20	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	29.63	0.89	30.52	6.19	0.82	7.01	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/11/2012-7/18/2012 Active Days: 6	6.65	44.88	28.11	**0.02**	**32.84**	2.81	35.65	**6.86**	2.58	9.45	5,566.69
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011- 08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011- 08/18/2012	2.15	19.28	10.23	0.01	29.63	0.89	30.52	6.19	0.82	7.01	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/19/2012-8/17/2012 Active Days: 22	3.30	27.84	16.31	0.01	32.81	1.46	34.27	6.85	1.34	8.20	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	29.63	0.89	30.52	6.19	0.82	7.01	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26
Time Slice 8/20/2012-12/31/2012 Active Days: 96	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/1/2013-8/16/2013 Active Days: 164	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Demolition 05/18/2011- 08/18/2013	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.13	1.54	0.60	0.00	0.01	0.06	0.07	0.00	0.05	0.06	296.02
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Phase Assumptions

Phase: Demolition 5/18/2011 - 8/18/2013 - Demolition

Building Volume Total (cubic feet): 2485310

Building Volume Daily (cubic feet): 7542.9

On Road Truck Travel (VMT): 69.84

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 5/18/2011 - 8/18/2012 - Trenching and Earthwork

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

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Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 250 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 160.13

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Phase: Paving 6/18/2011 - 6/25/2011 - Default Building Construction Description

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/11/2012 - 7/18/2012 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 9/11/2013 - 9/18/2013 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

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1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.56	30.19	16.84	0.01	5.27	1.63	6.91	1.10	1.50	2.61	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	2.09	1.00	3.09	0.44	0.92	1.36	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.08**	**48.35**	**28.99**	**0.02**	5.30	**3.08**	8.38	1.11	**2.84**	3.95	**5,566.77**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	2.09	1.00	3.09	0.44	0.92	1.36	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.56	30.19	16.84	0.01	5.27	1.63	6.91	1.10	1.50	2.61	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	2.09	1.00	3.09	0.44	0.92	1.36	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-7/10/2012 Active Days: 137	3.30	27.84	16.31	0.01	5.27	1.46	6.73	1.10	1.34	2.45	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	2.09	0.89	2.98	0.44	0.82	1.26	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/11/2012-7/18/2012 Active Days: 6	6.65	44.88	28.11	**0.02**	5.30	2.81	8.11	1.11	2.58	3.70	5,566.69
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	2.09	0.89	2.98	0.44	0.82	1.26	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/19/2012-8/17/2012 Active Days: 22	3.30	27.84	16.31	0.01	5.27	1.46	6.73	1.10	1.34	2.45	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	2.09	0.89	2.98	0.44	0.82	1.26	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26
Time Slice 8/20/2012-12/31/2012 Active Days: 96	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/1/2013-8/16/2013 Active Days: 164	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Demolition 05/18/2011-08/18/2013	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.13	1.54	0.60	0.00	0.01	0.06	0.07	0.00	0.05	0.06	296.02
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 8/18/2012 - Trenching and Earthwork

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

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PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_longest alt.urb924

Project Name: Huntington Beach Longest Pipeline Alternative

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	7.08	48.35	28.99	0.02	32.84	3.08	35.92	6.86	2.84	9.70	5,566.77
2011 TOTALS (lbs/day mitigated)	7.08	48.35	28.99	0.02	5.30	3.08	8.38	1.11	2.84	3.95	5,566.77
2012 TOTALS (lbs/day unmitigated)	6.65	44.88	28.11	0.02	32.84	2.81	35.65	6.86	2.58	9.45	5,566.69
2012 TOTALS (lbs/day mitigated)	6.65	44.88	28.11	0.02	5.30	2.81	8.11	1.11	2.58	3.70	5,566.69
2013 TOTALS (lbs/day unmitigated)	3.19	15.97	11.49	0.01	3.18	1.24	3.69	0.66	1.14	1.15	1,959.38
2013 TOTALS (lbs/day mitigated)	3.19	15.97	11.49	0.01	3.18	1.24	3.69	0.66	1.14	1.15	1,959.38

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

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	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.56	30.19	16.84	0.01	32.81	1.63	34.44	6.85	1.50	8.36	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	29.63	1.00	30.63	6.19	0.92	7.11	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.08**	**48.35**	**28.99**	**0.02**	**32.84**	**3.08**	**35.92**	**6.86**	**2.84**	**9.70**	**5,566.77**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	29.63	1.00	30.63	6.19	0.92	7.11	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.56	30.19	16.84	0.01	32.81	1.63	34.44	6.85	1.50	8.36	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	29.63	1.00	30.63	6.19	0.92	7.11	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-7/10/2012 Active Days: 137	3.30	27.84	16.31	0.01	32.81	1.46	34.27	6.85	1.34	8.20	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	29.63	0.89	30.52	6.19	0.82	7.01	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/11/2012-7/18/2012 Active Days: 6	6.65	44.88	28.11	**0.02**	**32.84**	2.81	35.65	**6.86**	2.58	9.45	5,566.69
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	29.63	0.89	30.52	6.19	0.82	7.01	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/19/2012-8/17/2012 Active Days: 22	3.30	27.84	16.31	0.01	32.81	1.46	34.27	6.85	1.34	8.20	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	29.63	0.89	30.52	6.19	0.82	7.01	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	29.60	0.00	29.60	6.18	0.00	6.18	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26
Time Slice 8/20/2012-12/31/2012 Active Days: 96	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/1/2013-8/16/2013 Active Days: 164	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Demolition 05/18/2011-08/18/2013	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.13	1.54	0.60	0.00	0.01	0.06	0.07	0.00	0.05	0.06	296.02
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Phase Assumptions

Phase: Demolition 5/18/2011 - 8/18/2013 - Demolition

Building Volume Total (cubic feet): 2485310

Building Volume Daily (cubic feet): 7542.9

On Road Truck Travel (VMT): 69.84

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 5/18/2011 - 8/18/2012 - Trenching and Earthwork

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

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Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 250 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 160.13

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Phase: Paving 6/18/2011 - 6/25/2011 - Default Building Construction Description

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/11/2012 - 7/18/2012 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 9/11/2013 - 9/18/2013 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

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1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 5/18/2011-6/17/2011 Active Days: 23	3.56	30.19	16.84	0.01	5.27	1.63	6.91	1.10	1.50	2.61	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	2.09	1.00	3.09	0.44	0.92	1.36	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/20/2011-6/24/2011 Active Days: 5	**7.08**	**48.35**	**28.99**	**0.02**	5.30	**3.08**	8.38	1.11	**2.84**	3.95	**5,566.77**
Asphalt 06/18/2011-06/25/2011	3.52	18.16	12.14	0.01	0.03	1.45	1.48	0.01	1.33	1.34	1,959.46
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.48	15.15	9.07	0.00	0.00	1.33	1.33	0.00	1.22	1.22	1,272.04
Paving On Road Diesel	0.23	2.90	1.12	0.00	0.01	0.12	0.13	0.00	0.11	0.11	438.68
Paving Worker Trips	0.06	0.11	1.95	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.74
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	2.09	1.00	3.09	0.44	0.92	1.36	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28

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Time Slice 6/27/2011-12/30/2011 Active Days: 135	3.56	30.19	16.84	0.01	5.27	1.63	6.91	1.10	1.50	2.61	3,607.31
Demolition 05/18/2011-08/18/2013	1.24	9.23	6.31	0.00	3.18	0.63	3.81	0.66	0.58	1.24	1,120.68
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	700.30
Demo On Road Diesel	0.15	1.96	0.75	0.00	0.01	0.08	0.09	0.00	0.07	0.08	296.02
Demo Worker Trips	0.03	0.06	0.98	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.37
Fine Grading 05/18/2011-08/18/2012	2.32	20.95	10.53	0.01	2.09	1.00	3.09	0.44	0.92	1.36	2,486.63
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.95	16.42	8.07	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,714.64
Fine Grading On Road Diesel	0.35	4.49	1.73	0.01	0.02	0.18	0.20	0.01	0.17	0.17	678.71
Fine Grading Worker Trips	0.02	0.04	0.73	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.28
Time Slice 1/2/2012-7/10/2012 Active Days: 137	3.30	27.84	16.31	0.01	5.27	1.46	6.73	1.10	1.34	2.45	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	2.09	0.89	2.98	0.44	0.82	1.26	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/11/2012-7/18/2012 Active Days: 6	6.65	44.88	28.11	**0.02**	5.30	2.81	8.11	1.11	2.58	3.70	5,566.69
Asphalt 07/11/2012-07/18/2012	3.36	17.04	11.80	0.01	0.03	1.35	1.38	0.01	1.24	1.25	1,959.41
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.34	14.35	8.99	0.00	0.00	1.24	1.24	0.00	1.14	1.14	1,272.04
Paving On Road Diesel	0.21	2.58	1.00	0.00	0.01	0.10	0.12	0.00	0.09	0.10	438.68
Paving Worker Trips	0.05	0.10	1.82	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.69
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	2.09	0.89	2.98	0.44	0.82	1.26	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26

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Time Slice 7/19/2012-8/17/2012 Active Days: 22	3.30	27.84	16.31	0.01	5.27	1.46	6.73	1.10	1.34	2.45	3,607.27
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35
Fine Grading 05/18/2011-08/18/2012	2.15	19.28	10.23	0.01	2.09	0.89	2.98	0.44	0.82	1.26	2,486.61
Fine Grading Dust	0.00	0.00	0.00	0.00	2.06	0.00	2.06	0.43	0.00	0.43	0.00
Fine Grading Off Road Diesel	1.80	15.24	8.01	0.00	0.00	0.73	0.73	0.00	0.67	0.67	1,714.64
Fine Grading On Road Diesel	0.32	4.00	1.54	0.01	0.02	0.16	0.18	0.01	0.15	0.15	678.71
Fine Grading Worker Trips	0.02	0.04	0.68	0.00	0.00	0.00	0.01	0.00	0.00	0.00	93.26
Time Slice 8/20/2012-12/31/2012 Active Days: 96	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Demolition 05/18/2011-08/18/2013	1.15	8.56	6.07	0.00	3.18	0.57	3.75	0.66	0.52	1.19	1,120.66
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.98	6.77	4.49	0.00	0.00	0.49	0.49	0.00	0.45	0.45	700.30
Demo On Road Diesel	0.14	1.74	0.67	0.00	0.01	0.07	0.08	0.00	0.06	0.07	296.02
Demo Worker Trips	0.03	0.05	0.91	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.35

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Time Slice 1/1/2013-8/16/2013 Active Days: 164	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Demolition 05/18/2011-08/18/2013	1.07	7.93	5.84	0.00	3.18	0.50	3.69	0.66	0.46	1.13	1,120.65
Fugitive Dust	0.00	0.00	0.00	0.00	3.17	0.00	3.17	0.66	0.00	0.66	0.00
Demo Off Road Diesel	0.91	6.35	4.40	0.00	0.00	0.44	0.44	0.00	0.41	0.41	700.30
Demo On Road Diesel	0.13	1.54	0.60	0.00	0.01	0.06	0.07	0.00	0.05	0.06	296.02
Demo Worker Trips	0.02	0.05	0.84	0.00	0.01	0.00	0.01	0.00	0.00	0.00	124.33
Time Slice 9/11/2013-9/18/2013 Active Days: 6	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Asphalt 09/11/2013-09/18/2013	3.19	15.97	11.49	0.01	0.03	1.24	1.27	0.01	1.14	1.15	1,959.38
Paving Off-Gas	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.19	13.60	8.91	0.00	0.00	1.15	1.15	0.00	1.05	1.05	1,272.04
Paving On Road Diesel	0.19	2.28	0.88	0.00	0.01	0.09	0.10	0.00	0.08	0.09	438.68
Paving Worker Trips	0.05	0.09	1.69	0.00	0.01	0.01	0.02	0.00	0.01	0.01	248.66

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 8/18/2012 - Trenching and Earthwork

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

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PM10: 55% PM25: 55%

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: I:\pdata\00000100\10P\WPWIN\EddieT\Programs\Air\URBEMIS\URBEMIS2007\HB_offsite_longest alt.urb924

Project Name: Huntington Beach Longest Pipeline Alternative

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.30	2.51	1.40	0.00	2.67	0.14	2.81	0.56	0.13	0.68	298.89
2011 TOTALS (tons/year mitigated)	0.30	2.51	1.40	0.00	0.43	0.14	0.57	0.09	0.13	0.22	298.89
Percent Reduction	0.00	0.00	0.00	0.00	83.93	0.00	79.84	83.89	0.00	68.48	0.00
2012 TOTALS (tons/year unmitigated)	0.34	2.76	1.67	0.00	2.86	0.15	3.01	0.60	0.14	0.74	357.27
2012 TOTALS (tons/year mitigated)	0.34	2.76	1.67	0.00	0.59	0.15	0.74	0.12	0.14	0.26	357.27
Percent Reduction	0.00	0.00	0.00	0.00	79.44	0.00	75.44	79.41	0.00	64.38	0.00
2013 TOTALS (tons/year unmitigated)	0.10	0.70	0.51	0.00	0.26	0.05	0.31	0.05	0.04	0.10	97.77
2013 TOTALS (tons/year mitigated)	0.10	0.70	0.51	0.00	0.26	0.05	0.31	0.05	0.04	0.10	97.77
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.30	2.51	1.40	0.00	2.67	0.14	2.81	0.56	0.13	0.68	298.89
Demolition 05/18/2011-08/18/2013	0.10	0.75	0.51	0.00	0.26	0.05	0.31	0.05	0.05	0.10	91.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Demo Off Road Diesel	0.09	0.59	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	57.07
Demo On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.13
Demo Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.14
Fine Grading 05/18/2011-08/18/2012	0.19	1.71	0.86	0.00	2.41	0.08	2.50	0.50	0.08	0.58	202.66
Fine Grading Dust	0.00	0.00	0.00	0.00	2.41	0.00	2.41	0.50	0.00	0.50	0.00
Fine Grading Off Road Diesel	0.16	1.34	0.66	0.00	0.00	0.07	0.07	0.00	0.06	0.06	139.74
Fine Grading On Road Diesel	0.03	0.37	0.14	0.00	0.00	0.01	0.02	0.00	0.01	0.01	55.32
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60
Asphalt 06/18/2011-06/25/2011	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62

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2012	0.34	2.76	1.67	0.00	2.86	0.15	3.01	0.60	0.14	0.74	357.27
Demolition 05/18/2011-08/18/2013	0.15	1.12	0.79	0.00	0.42	0.07	0.49	0.09	0.07	0.15	146.25
Fugitive Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Demo Off Road Diesel	0.13	0.88	0.59	0.00	0.00	0.06	0.06	0.00	0.06	0.06	91.39
Demo On Road Diesel	0.02	0.23	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.63
Demo Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.23
Fine Grading 05/18/2011-08/18/2012	0.18	1.59	0.84	0.00	2.44	0.07	2.52	0.51	0.07	0.58	205.15
Fine Grading Dust	0.00	0.00	0.00	0.00	2.44	0.00	2.44	0.51	0.00	0.51	0.00
Fine Grading Off Road Diesel	0.15	1.26	0.66	0.00	0.00	0.06	0.06	0.00	0.06	0.06	141.46
Fine Grading On Road Diesel	0.03	0.33	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	55.99
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.69
Asphalt 07/11/2012-07/18/2012	0.01	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

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2013	0.10	0.70	0.51	0.00	0.26	0.05	0.31	0.05	0.04	0.10	97.77
Demolition 05/18/2011-08/18/2013	0.09	0.65	0.48	0.00	0.26	0.04	0.30	0.05	0.04	0.09	91.89
Fugitive Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Demo Off Road Diesel	0.07	0.52	0.36	0.00	0.00	0.04	0.04	0.00	0.03	0.03	57.42
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.27
Demo Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.20
Asphalt 09/11/2013-09/18/2013	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

Phase Assumptions

Phase: Demolition 5/18/2011 - 8/18/2013 - Demolition

Building Volume Total (cubic feet): 2485310

Building Volume Daily (cubic feet): 7542.9

On Road Truck Travel (VMT): 69.84

Off-Road Equipment:

1 Concrete/Industrial Saws (10 hp) operating at a 0.73 load factor for 8 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 1 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 5/18/2011 - 8/18/2012 - Trenching and Earthwork

Total Acres Disturbed: 0.05

Maximum Daily Acreage Disturbed: 0.01

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 250 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

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On Road Truck Travel (VMT): 160.13

Off-Road Equipment:

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

1 Other General Industrial Equipment (238 hp) operating at a 0.51 load factor for 8 hours per day

Phase: Paving 6/18/2011 - 6/25/2011 - Default Building Construction Description

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 7/11/2012 - 7/18/2012 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Paving 9/11/2013 - 9/18/2013 - Type Your Description Here

Acres to be Paved: 1.73

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.30	2.51	1.40	0.00	0.43	0.14	0.57	0.09	0.13	0.22	298.89
Demolition 05/18/2011-08/18/2013	0.10	0.75	0.51	0.00	0.26	0.05	0.31	0.05	0.05	0.10	91.34
Fugitive Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Demo Off Road Diesel	0.09	0.59	0.37	0.00	0.00	0.04	0.04	0.00	0.04	0.04	57.07
Demo On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.13
Demo Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.14
Fine Grading 05/18/2011-08/18/2012	0.19	1.71	0.86	0.00	0.17	0.08	0.25	0.04	0.08	0.11	202.66
Fine Grading Dust	0.00	0.00	0.00	0.00	0.17	0.00	0.17	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.16	1.34	0.66	0.00	0.00	0.07	0.07	0.00	0.06	0.06	139.74
Fine Grading On Road Diesel	0.03	0.37	0.14	0.00	0.00	0.01	0.02	0.00	0.01	0.01	55.32
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.60
Asphalt 06/18/2011-06/25/2011	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.90
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Paving Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62

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2012	0.34	2.76	1.67	0.00	0.59	0.15	0.74	0.12	0.14	0.26	357.27
Demolition 05/18/2011-08/18/2013	0.15	1.12	0.79	0.00	0.42	0.07	0.49	0.09	0.07	0.15	146.25
Fugitive Dust	0.00	0.00	0.00	0.00	0.23	0.00	0.23	0.05	0.00	0.05	0.00
Demo Off Road Diesel	0.13	0.88	0.59	0.00	0.00	0.06	0.06	0.00	0.06	0.06	91.39
Demo On Road Diesel	0.02	0.23	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.63
Demo Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.23
Fine Grading 05/18/2011-08/18/2012	0.18	1.59	0.84	0.00	0.17	0.07	0.25	0.04	0.07	0.10	205.15
Fine Grading Dust	0.00	0.00	0.00	0.00	0.17	0.00	0.17	0.04	0.00	0.04	0.00
Fine Grading Off Road Diesel	0.15	1.26	0.66	0.00	0.00	0.06	0.06	0.00	0.06	0.06	141.46
Fine Grading On Road Diesel	0.03	0.33	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	55.99
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.69
Asphalt 07/11/2012-07/18/2012	0.01	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

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2013	0.10	0.70	0.51	0.00	0.26	0.05	0.31	0.05	0.04	0.10	97.77
Demolition 05/18/2011-08/18/2013	0.09	0.65	0.48	0.00	0.26	0.04	0.30	0.05	0.04	0.09	91.89
Fugitive Dust	0.00	0.00	0.00	0.00	0.14	0.00	0.14	0.03	0.00	0.03	0.00
Demo Off Road Diesel	0.07	0.52	0.36	0.00	0.00	0.04	0.04	0.00	0.03	0.03	57.42
Demo On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	24.27
Demo Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.20
Asphalt 09/11/2013-09/18/2013	0.01	0.05	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.88
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.04	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.82
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.32
Paving Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/18/2011 - 8/18/2012 - Trenching and Earthwork

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

MOBILE SOURCE EMISSIONS

EMFAC2007 (version2.3) Emission Factors for On-Road Vehicles Assumptions

Emissions (lbs/day) = N x TL x EF

N=number of trips
TL=trip length (miles/day)
EF=Emissions Factor

Passenger Vehicles	(pounds/mile)	Delivery Trucks	(pounds/mile)
CO	0.006604	CO	0.012843
NO_X	0.000655	NO_X	0.014252
ROG	0.000702	ROG	0.001896
SO_X	0.000011	SO_X	0.000028
PM_{10}	0.000092	PM_{10}	0.000549
$PM_{2.5}$	0.000059	$PM_{2.5}$	0.000455

Assumptions:

Passenger Vehicles:
28 worker trips per day
10 miles maximum trip (based on the "Method for Calculating Default Trip Lengths from Travel Survey Data" as described in the URBEMIS 2007 *Users Manual Appendix*, November 2007)

Delivery Trucks:
4 trips per day
25 miles maximum trip

Project Operational Mobile Source Emissions

Passenger Vehicles:

CO = 28 x 20 x 0.006604 = 3.70 lbs/day
NO_X = 28 x 20 x 0.000655 = 0.37 lbs/day
ROG = 28 x 20 x 0.000702 = 0.39 lbs/day
SO_X = 28 x 20 x 0.000011 = 0.01 lbs/day
PM_{10} = 28 x 20 x 0.000092 = 0.05 lbs/day
$PM_{2.5}$ = 28 x 20 x 0.000059 = 0.03 lbs/day

Delivery Trucks (pounds/mile):

CO = 4 x 50 x 0.012843 = 2.57 lbs/day
NO_X = 4 x 50 x 0.014252 = 2.85 lbs/day
ROG = 4 x 50 x 0.001896 = 0.38 lbs/day
SO_X = 4 x 50 x 0.000028 = 0.01 lbs/day
PM_{10} = 4 x 50 x 0.000549 = 0.11 lbs/day
$PM_{2.5}$ = 4 x 50 x 0.000455 = 0.09 lbs/day

Totals

CO = 6.27 lbs/day
NO_X = 3.22 lbs/day
ROG = 0.77 lbs/day
SO_X = 0.01 lbs/day
PM_{10} = 0.16 lbs/day
$PM_{2.5}$ = 0.12 lbs/day

Connection to the State Grid

Pounds per Megawatt-Hours

Use	*Energy Use (MWh/day)*	*CO* 0.20	*ROG* 0.01	*NO_X* 0.27	*SO_X* 0.12	*PM_{10}* 0.09	*$PM_{2.5}$* 0.06
Collocated Operation - Primary							
Baseline Design	793.74	158.75	7.94	214.31	95.25	71.44	47.62
High Efficiency Design	690.25	138.05	6.90	186.37	82.83	62.12	41.42
Additional Reduction	206.53	41.31	2.07	55.76	24.78	18.59	12.39
Percent Reduction	73.98%	73.98%	73.98%	73.98%	73.98%	73.98%	73.98%
Avoided Emissions	587.21	117.44	5.87	158.55	70.47	52.85	35.23
Collocated Operation - Alternative							
Baseline Design	826.79	165.36	8.27	223.23	99.21	74.41	49.61
High Efficiency Design	717.07	143.41	7.17	193.61	86.05	64.54	43.02
Additional Reduction	233.35	46.67	2.33	63.00	28.00	21.00	14.00
Percent Reduction	71.78%	71.78%	71.78%	71.78%	71.78%	71.78%	71.78%
Avoided Emissions	593.44	118.69	5.93	160.23	71.21	53.41	35.61
Stand-Alone Operation - Primary							
Baseline Design	840.22	168.04	8.40	226.86	100.83	75.62	50.41
High Efficiency Design	733.01	146.60	7.33	197.91	87.96	65.97	43.98
Additional Reduction	249.29	49.86	2.49	67.31	29.91	22.44	14.96
Percent Reduction	70.33%	70.33%	70.33%	70.33%	70.33%	70.33%	70.33%
Avoided Emissions	590.93	118.19	5.91	159.55	70.91	53.18	35.46
Stand-Alone Operation - Alternative							
Baseline Design	873.27	174.65	8.73	235.78	104.79	78.59	52.40
High Efficiency Design	760.07	152.01	7.60	205.22	91.21	68.41	45.60
Additional Reduction	276.35	55.27	2.76	74.61	33.16	24.87	16.58
Percent Reduction	68.35%	68.35%	68.35%	68.35%	68.35%	68.35%	68.35%
Avoided Emissions	596.92	119.38	5.97	161.17	71.63	53.72	35.82

Note: The high efficiency design includes reductions for green building, on-site solar power generation, and avoided electricty usage.

Based on emissions factors from the South Coast Air Quality Management District, *CEQA Air Quality Handbook* , November 1993, Table A9-11, and updated with the California Energy Commission, *Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings* , revised June 2009.

Direct Connection to the HBGS

Pounds per Megawatt-Hours

Use	*Energy Use (MWh/day)*	*CO* 0.20	*ROG* 0.01	*NO_X* 0.08	*SO_X* 0.01	*PM_{10}* 0.09	*$PM_{2.5}$* 0.06
Collocated Operation - Primary							
Baseline Design	793.74	158.75	7.94	60.32	5.16	71.44	47.62
High Efficiency Design	690.25	138.05	6.90	52.46	4.49	62.12	41.42
Additional Reduction	206.53	41.31	2.07	15.70	1.34	18.59	12.39
Percent Reduction	73.98%	73.98%	73.98%	73.98%	73.98%	73.98%	73.98%
Avoided Emissions	587.21	117.44	5.87	44.63	3.82	52.85	35.23
Collocated Operation - Alternative							
Baseline Design	826.79	165.36	8.27	62.84	5.37	74.41	49.61
High Efficiency Design	717.07	143.41	7.17	54.50	4.66	64.54	43.02
Additional Reduction	233.35	46.67	2.33	17.73	1.52	21.00	14.00
Percent Reduction	71.78%	71.78%	71.78%	71.78%	71.78%	71.78%	71.78%
Avoided Emissions	593.44	118.69	5.93	45.10	3.86	53.41	35.61
Stand-Alone Operation - Primary							
Baseline Design	840.22	168.04	8.40	63.86	5.46	75.62	50.41
High Efficiency Design	733.01	146.60	7.33	55.71	4.76	65.97	43.98
Additional Reduction	249.29	49.86	2.49	18.95	1.62	22.44	14.96
Percent Reduction	70.33%	70.33%	70.33%	70.33%	70.33%	70.33%	70.33%
Avoided Emissions	590.93	118.19	5.91	44.91	3.84	53.18	35.46
Stand-Alone Operation - Alternative							
Baseline Design	873.27	174.65	8.73	66.37	5.68	78.59	52.40
High Efficiency Design	760.07	152.01	7.60	57.77	4.94	68.41	45.60
Additional Reduction	276.35	55.27	2.76	21.00	1.80	24.87	16.58
Percent Reduction	68.35%	68.35%	68.35%	68.35%	68.35%	68.35%	68.35%
Avoided Emissions	596.92	119.38	5.97	45.37	3.88	53.72	35.82

Note: The high efficiency design includes reductions for green building, on-site solar power generation, and avoided electricty usage.

Based on emissions factors from the South Coast Air Quality Management District, *CEQA Air Quality Handbook* , November 1993, Table A9-11, and updated with the California Energy Commission, *Reference Appendices for the 2008 Building Energy Efficiency Standards for Residential and Nonresidential Buildings* , revised June 2009.