Attachment 4
Air Quality Report

Air Quality Analysis for the Paso Robles Wastewater Treatment Plant, City of El Paso De Robles, California

Prepared for

Cornerstone Engineering

Prepared by

SWCA Environmental Consultants

February 2010

AIR QUALITY ANALYSIS
FOR THE
PASO ROBLES WASTEWATER TREATMENT PLANT, CITY OF EL PASO DE ROBLES, CALIFORNIA

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1. INTRODUCTION

This Air Quality analysis considers construction, operational, and odor emissions that would result from implementation of the Paso Robles Wastewater Treatment Plant (WWTP) upgrade project (project). The analysis also considers greenhouse gas emissions from the upgraded WWTP. One unique part of this project is that it will allow the WWTP to accept waste fats, oil and grease (FOG). FOG is currently trucked from San Luis Obispo County to the nearest accepting facility, in Bakersfield. Approximately five 30-ton trucks make weekly roundtrip deliveries of FOG to Bakersfield, approximately 130 miles each way. These trips will be avoided with this project.

2. EXISTING CONDITIONS

2.1 REGIONAL METEOROLOGY

San Luis Obispo County is part of the South Central Coast Air Basin. The climate of Paso Robles is influenced by its proximity to the Pacific Ocean. Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific high pressure system and other global weather patterns, topographical factors, and circulation patterns that result from temperature differences between the land and the sea. Data from the Paso Robles airport (2006 to 2008), about four miles east of the project site, shows temperatures ranges from a high of 114 degrees Fahrenheit (°F) to a low of 12°F. Winds range from calm to almost 90 miles per hour (mph) with an average speed of six mph. Surface winds tend to be from the south-east and east in winter months (October through March), and the southwest to northwest from April through September. These differences are a function of surface pressures relative to temperature gradients.

2.2 SAN LUIS OBISPO

San Luis Obispo County encompasses 3,316 square miles with varied vegetation, topography, and climate. From a geographical and meteorological standpoint, the county can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain. Air quality in each of these regions is characteristically different, although the physical features that divide them provide only limited barriers to the transport of pollutants between regions. The proposed project is located in the Upper Salinas River Valley.

2.3 AIR QUALITY MONITORING

The County's air quality is measured by nine total ambient air quality monitoring stations; the two nearest this proposed project are located in Atascadero and Paso Robles. Gaseous pollutant levels are measured continuously and averaged each hour, 24 hours a day. Particulate pollutants are generally sampled by filter techniques for averaging periods of three to 24 hours. PM_{10} (inhalable particulate matter ten microns or less in size) and $PM_{2.5}$ (inhalable particulate matter 2.5 microns or less in size) are sampled for 24 hours every sixth day on the same schedule nationwide. Federal and state standards for ambient air are shown in Table 1.

Table 1. State and National Criteria Air Pollutant Standards, Effects, And Sources

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour	0.09 ppm*	None (formerly 0.12 ppm)	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases and nitrogen oxides react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
	8 hour	0.070 ppm	0.075 ppm		
Carbon Monoxide	1 hour	20 ppm	35 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm		
Nitrogen Dioxide	Annual Avg.	0.030 ppm	0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	none		
Sulfur Dioxide	Annual Avg.	none	0.030 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	24 hours	0.04 ppm	0.14 ppm		
	3 hours	none	none		
	1 hour	0.25 ppm	none		
Respirable Particulate Matter (PM_{10})	24 hours	50 ug/m^3	150 ug/m^3	May irritate eyes and respiratory tract, decreased lung capacity, and increased cancer and mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	Annual Avg.	20 ug/m^3	none		
Fine Particulate Matter ($PM_{2.5}$)	24 hours	none	35 ug/m^3	Able to penetrate deeply into the lungs and acts in concert with ozone to damage health. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g. wind-raised dust and ocean sprays).
	Annual Avg.	12 ug/m^3	15 ug/m^3		
Lead	Monthly	1.5 ug/m^3	none	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Quarterly	none	1.5 ug/m^3		

*ppm = parts per million; ug/m^3 = micrograms per cubic meter.

Current as of April 1, 2008

Source: California Air Resources Board, *http://www.arb.ca.gov*

2.4 EXISTING AIR QUALITY

The significance of a given pollutant can be evaluated by comparing its atmospheric concentration to federal and state air quality standards. These standards represent allowable atmospheric contaminant concentrations at which the public health and welfare are protected, and include a factor of safety. In San Luis Obispo County, ozone and PM_{10} are the pollutants of main concern, since exceedance of state health-based standards for those are experienced here. The County has been designated as a non-attainment area for the state PM_{10} and ozone standards.

Ozone levels exceeding the state and federal standards have been measured in Paso Robles, the Carrizo Plain, and Atascadero in recent years. Over the past ten years, state PM_{10} standards have been exceeded in various locations throughout the County, including Paso Robles and Atascadero. Recent pollution measurements near the proposed project are summarized in Tables 2 and 3.

Table 2. Maximum Levels for 8-hour Ozone at Paso Robles and Atascadero (2006 through 2008)

	2006	2007	2008
Paso Robles	0.074 ppm*	0.074 ppm	0.070 ppm
Federal exceedance	1	0	1
State exceedance	4	0	3
Atascadero	0.074 ppm	0.074 ppm	0.070 ppm
Federal exceedance	0	0	0
State exceedance	7	1	0

*ppm = parts per million

Source: California Air Resources Board, 2009. http://www.arb.ca.gov/adam/

Table 3. Maximum levels of PM_{10} at Paso Robles and Atascadero (2006 through 2008)

	2006	2007	2008
Paso Robles	59 ug/m^3	48 ug/m^3	41 ug/m^3
State exceedance	2	0	1
Atascadero	59 ug/m^3	41 ug/m^3	66 ug/m^3
State exceedance	6	0	1

ug/m^3 = micrograms per cubic meter

Source: California Air Resources Board, 2009. http://www.arb.ca.gov/adam/

2.5 POLLUTANT CHARACTERISTICS

On a regional basis, ozone is the pollutant of greatest concern in San Luis Obispo County, particularly in the north and east parts of the county. Ozone is a secondary pollutant, formed in the atmosphere by complex photochemical reactions involving precursor pollutants and sunlight. The amount of ozone formed is dependant upon both the ambient concentration of chemical precursors, and the intensity and duration of sunlight. Consequently, ambient ozone concentrations tend to be highest in the summer. Reactive Organic Gases (ROG) and Nitrogen Oxides (NO_X) are the primary precursors to ozone formation.

NO_X emissions result primarily from the combustion of fossil fuels; ROG emissions are also generated by fossil fuel combustion and evaporation of petroleum products. Emissions of ROG and NO_X are fairly equally divided between mobile and stationary sources in the county. The major regional PM_{10} sources are grading, demolition, agricultural tilling, road dust, quarries, and vehicle exhaust.

2.5.1 Toxic Air Contaminants

Air toxics are substances which may cause or contribute to an increase in cancer or serious illness, such as respiratory disease. The federal Clean Air Act (as amended in 1990) set up a new, nationwide, air toxics control program. The federal program focuses on larger industrial sources that are of the highest national priority, such as chemical manufacturers. State and local air pollution control agencies adopt measures to minimize Californians' exposure to Toxic Air Contaminants (TACs).

2.5.2 Odors

An odor is any gas that produces an olfactory response or sensation when inhaled through the nose. An odor threshold is a sensory property that refers to the minimum concentration necessary to produce this response. Although an odor may be detected, it may not be offensive. Offensive odors rarely cause any physical harm but they may create annoyance. Therefore, odor generators are usually segregated away from potential receptors.

Typical industrial odor generators are wastewater treatment plants, compost facilities, feed lots and dairies, chemical and asphalt plants, landfills, painting and coating operations, and petroleum refineries. There are no federal or state regulations controlling odor emissions; however, local air districts do take enforcement action when they receive complaints from "a considerable number of persons". The state law is left intentionally vague to allow local officials leeway in responding and issuing fines and control orders.

The primary sources of odorous gas emissions at the existing WWTP occur at the headworks, where untreated septage enters the WWTP. Primary clarifiers and sludge piles constitute less significant odor sources. Generally, daytime breezy conditions combined with physical separation from residences helps dilute odors for surrounding properties. The WWTP manages the operation to minimize odorous gas generation and no odor complaints have been noted in the past two years.

2.5.3 Climate Change

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period of time (decades or longer) (Environmental Protection Agency [EPA], 2007). Climate change may result from:

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun;

- Natural processes within the climate system (e.g., changes in ocean circulation); or
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and/or the land surface (e.g., deforestation, reforestation, urbanization, desertification, etc.).

Human activities, such as fossil fuel combustion and land use changes, release carbon dioxide and other compounds, cumulatively termed greenhouse gases (GHGs). GHGs are any gases that absorb infrared radiation in the atmosphere and tend to increase the average planetary temperature (EPA 2007). GHGs, as defined in Assembly Bill 32 (AB 32), include the following:

Carbon Dioxide (CO_2). CO_2 is a naturally occurring gas, and a byproduct of combustion, land-use changes, and industrial processes (EPA 2007). Anthropogenic CO_2 constitutes approximately 80 percent of current GHG emissions that affect the Earth's radiative balance. Atmospheric CO_2 has a lifetime of about 50 to 200 years. CO_2 levels have increased by about 35 percent since 1800, to approximately 390 parts per million (ppm) in 2009, and continue to increase by about three ppm annually. (Association of Environmental Professionals [AEP] 2007; CO2Now.org May 2009).

Methane (CH_4). Methane is a hydrocarbon with a global warming potential approximately 23 times that of CO_2. In other words, one pound of methane gas creates radiative forcing equal to 23 pounds of CO_2. Methane is produced through anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion. Concentrations of methane in the atmosphere have more than doubled since the pre-industrial period, rising from around 750 parts per billion (ppb) in 1800 to the current level of about 1750 ppb. Atmospheric methane has a lifetime of approximately 12 years (AEP 2007).

Nitrous Oxide (N_2O). N_2O is a powerful GHG with a global warming potential of 310 times that of CO_2. Major sources of nitrous oxide include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning. Atmospheric N_2O has a lifetime of about 120 years (AEP 2007).

Hydrofluorocarbons (HFCs). HFCs are compounds introduced as alternatives to ozone-depleting substances that harm the stratospheric protective layer. HFCs, commonly refrigerants, are emitted as byproducts of industrial processes, and they are also released during manufacturing. HFCs are powerful GHGs with global warming potential ranging from 140 to 11,700 times that of CO_2. Depending on the HFC species, atmospheric HFCs have a lifetime of about one to 15 years (EPA 2007, AEP 2007).

Perfluorocarbons (PFCs). PFCs were introduced as alternatives to ozone-depleting substances. PFCs are used in manufacturing and emitted as byproducts of industrial processes. PFCs do not harm the stratospheric ozone layer, but they are powerful GHGs with a global warming potential ranging from 6,500 to 9,200 times that of CO_2. Atmospheric PFCs have a lifetime of about 10,000 to 50,000 years (AEP 2007). Recent relative rates of increase in concentrations for two of the most important PFCs are 1.3 percent per year for CF_4 and 3.2 percent per year for C_2F_6 (IPCC 2001).

Global Climate Change and Effect on California

A GHG inventory for Paso Robles is being prepared but not yet available for inclusion in this analysis. In California, the main sources of GHG emissions are from the transportation and energy sectors. According to the Air Resources Board (ARB) draft GHG emission inventory for the year 2004, 39 percent of GHG emissions result from transportation and 25 percent of GHG emissions result from electricity generation. California produced 497 million metric tons of CO_2 equivalents in 2004 (ARB

2007). California currently produces about two percent of the world's GHG emissions, with about 0.55 percent of the population.

A series of reports issued by the Untied Nations Intergovernmental Panel on Climate Change (UNIPCC) have synthesized recent scientific studies of climate change. Key findings of these reports include the following:

- Global atmospheric concentrations of CO_2, CH_4, and N_2O have increased markedly as a result of human activities since 1750. Global increases in carbon dioxide concentration are due primarily to fossil fuel use and land use change, and global increases in methane and nitrous oxide are due primarily to energy production and agriculture.

- Warming of the global climate due to GHGs is unequivocal, as evidenced by increases in air and water temperatures, widespread melting of snow and ice, and rising global average sea level. Most of the increase in global average temperatures since the mid-20th century is very likely due to increases in GHGs from human activities. GHG emissions increased 70 percent between 1970 and 2004.

- Numerous long-term climate changes have been observed, including changes in arctic temperatures and ice disappearance, precipitation, ocean salinity, wind pattern, and the frequency of extreme weather events such as droughts, heavy precipitation, heat waves, and tropical cyclone intensity.

- Continued GHG emissions at current rates will cause further warming and climate change during the 21st century. Current estimates are that the global temperature will increase by nine to 13°F by 2100 (UNIPCC, 2007). Sea levels are projected to rise by five to seven feet due to polar melting and marine thermal expansion. Important ocean currents, such as the Gulf Stream, are also changing due to influx of fresh water near the poles (melting polar ice).

- Climate change is showing adverse impacts on water resources, ecosystems, food and forest products, coastal systems and low-lying areas, urban areas, and public health. These impacts vary regionally, and may result in increased costs for human activities. Sea level rise may completely inundate now inhabited areas (e.g., river deltas, Pacific Islands).

Probable Local Impacts

Climate Change may have the following effects on San Luis Obispo County:

- Agriculture: reduced crop yields, increased irrigation demands, plant damage from tropospheric ozone. Every two degree Fahrenheit temperature increase reduces food crop yields by about ten percent due to pollination failure (Lobell and Field 2007).

- Public health: increased smog and commensurate respiratory illness and weather-related mortality (California Climate Change Portal [CCCP] 2007).

- Water resources: reduced Sierra snow pack, reduced late-summer water supplies, increased water demands, changed flood hydrology. San Luis Obispo County is increasingly reliant on water imported from other areas of the state, which in turn, comes primarily from mountain precipitation.

- Sea level rise: According to a recent report by the California Climate Change Center (May 2009), with a 1.4 meter sea level increase, San Luis Obispo County would have an increase

risk of approximately 67 percent greater property loss during a 100 year flood, compared to current conditions. Approximately 20 miles of local roads will be at risk from erosion and 22 miles at risk for flooding.

- Loss of beach area and dunes caused by inundation: Many parts of the County can expect to lose current beach areas and dunes. For San Luis Obispo County, geologists estimate that horizontal dune erosion in the coming century will range between 450 feet and 1100 feet inland (California Climate Change Center 2009).

3. REGULATORY SETTING

3.1 FEDERAL CLEAN AIR ACT

Air quality protection at the national level is provided through the federal Clean Air Act (CAA), most recently amended through the 1990 Clean Air Act Amendments. The 1990 CAA Amendments represent the fifth major effort by the U.S. Congress to improve air quality. The federal Clean Air Act is generally less stringent than the California Clean Air Act (CCAA). However, unlike the California law, the CAA sets statutory deadlines for attaining federal standards. The 1990 Amendments added several new sections to the law, including requirements for the control of toxic air contaminants, reductions in pollutants responsible for acid deposition, development of a national strategy for stratospheric ozone and global climate protection, and requirements for a national permitting system for major pollution sources.

All projects involving an area that has been designated "non-attainment" or "maintenance" for any federal criteria pollutant must comply with the related CAA attainment plan. San Luis Obispo County is currently designated "attainment" for all federal standards and is not designated a maintenance area. Therefore, the project is exempt from further consideration under the General Conformity Rule. Additionally, the project will probably reduce emissions from both stationary and mobile sources to levels below those now occurring, thus providing a net air quality benefit to the air basin. This is discussed further in the impact section, below.

3.2 CALIFORNIA CLEAN AIR ACT OF 1988

The California Clean Air Act (CCAA) sets forth California ambient air quality standards and requires all areas of the state to achieve and maintain the air quality standards by the earliest practicable date. These standards are generally more stringent than the federal standards; thus, emission controls that comply with the state law are typically more than sufficient to achieve attainment of the federal standards. The CCAA requires that all Air Pollution Control Districts (APCDs) adopt and enforce regulations to achieve and maintain the state ambient air quality standards for the area under their jurisdiction. Pursuant to the requirements of the law, the San Luis Obispo County APCD (SLOAPCD) adopted a Clean Air Plan (CAP) for their jurisdiction in 1991, and has made subsequent updates and revisions.

The most recent San Luis Obispo County CAP is used by the SLOAPCD to address attainment of national and state fugitive dust (PM_{10}) and ozone standards for the entire county (SLOAPCD 2004). The CAP presents a detailed description of the sources and pollutants which impact the jurisdiction, future air quality impacts to be expected under current growth trends, and an appropriate control strategy for reducing ozone precursor emissions. PM_{10} emissions are expected to drop as part of the ozone control strategy as well.

3.3 2001 San Luis Obispo Clean Air Plan

The 2001 Clean Air Plan is a continuation of the efforts begun in 1991 and updated in 1995. The 2001 plan contains the following programs intended to bring the County into compliance with state air standards. The information presented below summarizes the plan.

The plan applies Best Available Control Technology, coupled with a permitting program that allows no net increase in emissions. This permitting affects new or modified stationary sources which emit, or have the potential to emit, 25 tons per year or more of nonattainment pollutants or their precursors. The plan also includes the following, as required by state law:

- Applying Best Available Retrofit Control Technology to existing sources that emit five tons or more per day, or 250 tons or more per year. The plan specifies applying Reasonably Available Control Technology for all other existing emission sources. Various federal and state regulations define these technologies.
- Implementing reasonably available transportation control measures that substantially reduce the growth rate of motor vehicle trips and miles traveled.
- Developing control programs for area and indirect emissions sources.
- Sufficient control strategies to achieve at least a five percent per year reduction in both ROG and NOx emissions countywide, averaged every consecutive three-year period, with at least a 20 percent overall reduction in both pollutants compared to 1991 emission levels.

3.4 Assembly Bill 32 and Senate Bill 375

AB 32, the Global Warming Solutions Act of 2006, sets goals for reducing GHGs sufficiently to protect future resources. Interim goals are set for 2020 with a final goal of approximately 80 percent GHG reduction by 2050. The Air Resources Board must develop state inventories and develop emission reduction programs. Local agencies must also develop inventories and develop programs to meet GHG reduction targets. Senate Bill (SB) 375 requires changes in housing programs, coordination between transportation planning and land use (to reduce car driving), and eliminates CEQA review for some transit projects.

4. THRESHOLDS OF SIGNIFICANCE

The significance of potential air quality impacts are based on thresholds identified within Appendix G of the CEQA *Guidelines*, and standards established within the SLOAPCD *CEQA Air Quality Handbook*. The specific thresholds are defined below.

4.1 CEQA Guidelines

The City's Environmental Initial Study Checklist provides the following thresholds for determining significance for air quality. Impacts would be considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; or,
- Create objectionable odors affecting a substantial number of people.

4.2 SLOAPCD CEQA AIR QUALITY HANDBOOK

According to the December 2009 *CEQA Air Quality Handbook*, project impacts may also be considered significant if one or more of the following special conditions apply:

- If the project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such that an increased cancer risk affects the population.
- If the project has the potential to emit diesel particulate matter in an area of human exposure, even if overall emissions are low.
- Remodeling or demolition operations where asbestos-containing materials will be encountered.
- If naturally occurring asbestos has been identified in the project area.
- If project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such as schools, churches, hospitals, etc.
- If the project results in a nuisance odor problem to sensitive receptors.
- If areas of four acres or more are being graded at any given time.

The *CEQA Air Quality Handbook* defines thresholds for long-term operational emissions and short-term construction related emissions. Depending on the level of exceedance of a defined threshold, the SLOAPCD has established varying levels of mitigation.

4.2.1 Significance of Short-term Construction Emissions

Heavy equipment and earth-moving operations generate fugitive dust and combustion emissions. These may have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary roads at the WWTP. Combustion emissions, such as NO_X and PM_{10}, are most significant when using large diesel fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators, and other types of equipment. Because specific construction equipment information is often not available during the environmental review process, the SLOAPCD has developed an alternative method for calculating construction emissions based on the amount of earthwork involved for a particular project. This is shown in Table 4.

4.2.2 Significance of Long-term Operational Emissions

The threshold criteria established by the SLOAPCD to determine the significance and appropriate mitigation level for long-term operational emissions (i.e., vehicular and area source emissions) from a project are presented in Table 5. Emissions that equal or exceed the designated threshold levels are considered potentially significant and should be mitigated. As shown in Table 5, the level of analysis and mitigation recommended follows a tiered approach, based on the overall amount of emissions generated by the project. For projects requiring air quality mitigation, the SLOAPCD has developed a list of both standard and discretionary mitigation strategies tailored to the type of project being proposed: residential, commercial, or industrial. The level of mitigation is shown in Table 6.

4.2.3 Odors

An odor characteristically has three significance thresholds. The first threshold is the detection threshold, which is the minimum amount of odor-free dilution air needed to prevent an individual from detecting the odor. The detection threshold is the point where an individual detects an odor. This threshold varies for each individual. The second threshold, the recognition threshold, occurs at lower dilutions (higher concentrations). At the recognition threshold, other odor parameters such as odor character and relative pleasantness are noticeable. The third threshold is called the annoyance threshold. The annoyance threshold is at or above the recognition threshold. At the annoyance threshold, people complain about an odor. This can even occur when the odor is pleasant. For example, a person passing by an industrial bakery or chocolate factory may experience the odor as pleasant. However, individuals living near these facilities and constantly subjected to the odor may consider it a nuisance.

5. IMPACT ASSESSMENT AND METHODOLOGY

The SLOAPCD has established four separate categories of evaluation for determining the significance of air quality emissions. Full disclosure of the potential air pollutant and/or toxic air emissions from a project is needed for these evaluations, as required by CEQA. The evaluation categories include:

- Comparison of calculated project emissions to APCD emission thresholds;
- Consistency with the most recent CAP for the County;
- Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable; and,
- The evaluation of special conditions that apply to certain projects.

The following documents have been used in preparing this section:

- Consultation with the SLOAPCD;
- SLOAPCD *CEQA Air Quality Handbook* (April 2003 and December 2009);
- Use of the SLOAPCD CAP (December 2001);
- The Black & Veatch project engineers report; and
- Consultation with Cornerstone Engineering (the wastewater program manager).

6. PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

6.1 SHORT-TERM CONSTRUCTION EMISSIONS

A schedule for construction equipment activity was not available during the preparation of this document (Cornerstone Engineering July 2009). This is, therefore, a generic emission discussion based on available information. Short-term construction emissions would result from the following:

6.1.1 Demolition

All trickling filters, clarifiers, and the existing headworks will be demolished. This work will use excavators, bulldozers, large trucks, and possibly a crane to demolish and remove the concrete structures. Presumably this material will be hauled to a recycling facility where it will be ground up and reused for aggregate or other building materials.

6.1.2 Grading

There will be no mass grading. Site grading will occur at the southeast corner of the site where the road will need realignment for the chlorine contact basin. A small amount of grading may also be necessary to prepare for the new administration building.

6.1.3 Combustion Emissions (ROG, NOx, and DPM)

Combustion emissions are most significant when using large diesel-fueled scrapers, loaders, bulldozers, haul trucks, compressors, generators, and other heavy equipment. Emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation. ROG and NO_X are the critical pollutants caused by construction work because of the high output of these pollutants by heavy diesel equipment normally used in grading operations. Diesel particulate matter (DPM) is seldom emitted from individual projects in quantities which lead to local or regional air quality attainment violations. DPM is, however, a toxic air contaminant and carcinogen, and exposure DPM may lead to increased cancer risk and respiratory problems. Certain industrial and commercial projects may emit substantial quantities of DPM through the use of stationary and mobile on-site diesel-powered equipment as well diesel trucks and other vehicles that serve the project.

In July 1999, the ARB listed diesel exhaust as a toxic air contaminant, identifying both chronic and carcinogenic public health risks. There is no threshold below which there are no significant health risks. Therefore, mitigation requirements and the need for health risk assessments are evaluated by the SLOAPCD on a case-by-case basis, based on emission estimates and the potential risk for human exposure and effects. The proposed project would occur in a developed area, with existing single-family residences located to the immediate east, and there would be potential exposure to humans from diesel particulate matter. Components of the proposed project that result in short-term construction emissions are described below.

The project schedule has not been defined and no offers have been put out for bid. Lacking information, this document cannot estimate the timing, schedule, and extent of construction activity. Therefore the worst case scenario is assumed and mitigations proposed on that basis. Construction emissions would not exceed APCD thresholds for ROG, NOx, or DPM; however, sensitive receptors located just over 1,000 feet from the construction site may be affected by emissions.

Table 4. Level of Construction Activity Requiring Mitigation

Pollutant	Threshold			Emission Estimate
	Daily	Quarterly Tier 1	Quarterly Tier 2	
ROG + NO_X (combined)	137 lbs	2.5 tons	6.3 tons	37.47 lbs/day
Diesel Particulate Matter (DPM)	7 lbs	0.13 tons	0.32 tons	3.53 lbs/day
Fugitive Particulate Matter (PM_{10}), Dust*	n/a	2.5 tons	n/a	0.29 tons/year
Greenhouse Gases (CO_2, CH_4)	Not Yet Established			7,452 lbs

*Any project with a grading area greater than 4.0 acres of worked area can exceed the 2.5 ton PM_{10} quarterly threshold

Source: County of San Luis Obispo APCD CEQA Air Quality Handbook, 2009

AQ Impact 1 **Construction emissions may result in an sensitive receptor exposure to toxic emissions, including ROG, NO_X, and DPM.**

AQ/mm-1 Prior to commencement of grading, demolition, and construction activities, the City shall include the following Best Available Control Technology measures for diesel-fueled construction equipment on final grading and construction plans. These measures will reduce nitrogen oxides (NOx), reactive organic gases (ROG), and diesel particulate matter (DPM) emissions from construction equipment:

a. Maintain all construction equipment in proper tune according to manufacturer's specifications;
b. Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for off-road);
c. Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-road Regulation;
d. Use on-road heavy-duty trucks that meet the ARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
e. Construction or trucking companies with fleets that that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance;
f. All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or job sites to remind drivers and operators of the 5 minute idling limit;
g. Diesel idling within 1,000 feet of sensitive receptors is not permitted;

h. Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
i. Electrify equipment when feasible;
j. Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and,
k. Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

Residual Impact

With implementation of these standard measures, the impact would be mitigated to a *level of insignificance (Class II)*. No additional mitigation is required.

6.1.4 Fugitive Dust Emissions (PM_{10})

Heavy equipment performing construction activities would create dust resulting in substantial temporary impacts. Fugitive dust emissions would result from land clearing; excavation, and equipment traffic over temporary dirt roads. Impacts from fugitive dust emissions would be significant because they potentially could cause a public nuisance or would exacerbate the existing PM_{10} non-attainment status in the northern areas of the County, including the City of Paso Robles.

AQ Impact 2 **Construction dust would result in direct short-term impacts on air quality, potentially contributing to a violation of state PM_{10}standards.**

AQ/mm-2 Prior to commencement of grading, demolition, and construction activities, the City shall include the following measures to control fugitive dust on final grading and construction plans. These measures will reduce fugitive dust (PM10) emissions:

a. Prohibit dust opacity greater than ten percent from any project source beyond the property line;
c. Prohibit visible fugitive dust onsite that equals or exceeds 20 percent opacity for three minutes or more in any one hour;
d. Provide for monitoring dust and construction debris during construction;
e. Designate a person or persons to monitor the dust control program and to order increased watering or other measures as necessary to prevent transport of dust off-site. Duties should include holiday and weekend periods when work may not be in progress (but strong winds are forecast);
f. Provide the name and telephone number of such persons to the APCD prior to construction commencement;
g. Identify complaint handling procedures;
h. Fill out a daily dust observation log; and,
i. Provide a list of all heavy-duty construction equipment operating at the site. The list shall include the make, model, engine size, and year of each piece of equipment.

Dust Control measures shall contain the following items or equivalent measures:

a. Reduce the amount of the disturbed area where possible.
b. Water trucks or sprinkler systems shall be used in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency shall be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water shall be used whenever possible.
c. All dirt stockpile areas shall be sprayed daily as needed.

d. Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast-germinating native grass seed and watered until vegetation is established.
e. All disturbed soil areas not subject to re-vegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the APCD.
f. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible after initial site grading. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
g. Vehicle speed for all construction vehicles shall be posted to not exceed 15 mph on any unpaved surface at the construction site.
h. All trucks hauling dirt, sand, or other loose materials are to be covered or shall maintain at least two feet of free board (minimum vertical distance between top of load and top of trailer) in accordance with California Vehicle Code Section 23114.
i. Wheel washers shall be installed where vehicles enter and exit unpaved roads onto streets, or, trucks and equipment leaving the site shall be washed off.
j. Streets shall be swept at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used when feasible.
k. Permanent dust control measures shall be implemented as soon as possible following completion of any soil disturbing activities.

Residual Impact

With implementation of these measures, the impact would be mitigated to a *level of insignificance (Class II)*. No additional mitigation is required.

6.1.5 Hazardous Air Pollutant Emissions

Rebuilding the existing WWTP would involve the demolition of several older buildings and facilities. The possibility exists that these structures could include asbestos-containing building materials or other hazardous building materials. Demolition and remodeling activities are subject to the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants.

AQ Impact 3	**Demolition and relocation activities have the potential to result in adverse air quality impacts associated with hazardous building materials.**
AQ/mm-3	The applicant shall comply with SLOAPCD Rule 701, which implements the National Emission Standard for Hazardous Air Pollutants.

Residual Impact

With implementation of this measure, the impact would be mitigated to a *level of insignificance (Class II)*. No additional mitigation is required.

6.2 Long-Term Project Operational Emissions

New vehicle traffic and changes in the WWTP operation may create emissions greater than those occurring now. As shown in Tables 5 and 6, operation of the project would not exceed APCD-identified thresholds for operational emissions.

Table 5. Mitigation Threshold Guide

Combined ROG +NOx, or PM10 Emissions (lbs/day)	Mitigation Measures Recommended	
	Residential, Commercial or Industrial	Off-site Mitigation
< 25	None	None
25 – 29	Yes	Depends on other factors
30 – 34	Yes	Depends on other factors
35 – 50	Yes	Depends on other factors
≥ 50 lbs/day	Yes	Depends on other factors
≥ 25 tons/yr	Yes	Yes

Source: County of San Luis Obispo, APCD CEQA Air Quality Handbook, 2009

Table 6. APCD Thresholds of Significance for Operational Emissions Impacts

Pollutant	Threshold		Emission Estimate
	Daily	Annual	
Ozone Precursors (ROG + NO_X)	25 lbs/day	25 tons/year	1.02 lbs/day
Diesel Particulate Matter (DPM)	1.25 lbs/day	n/a	0.02 lbs/day
Fugitive Particulate Matter (PM10), Dust	25 lbs/day	25 tons/year	0.01 lbs/day
Greenhouse Gases (CO2, CH4)	Not Yet Established		892.12 tons/year

Source: County of San Luis Obispo, APCD CEQA Air Quality Handbook, 2009

6.2.1 Traffic Emissions

The WWTP will allow about one truck per day of FOG to be delivered to the WWTP. Black and Veatch, the designers of the Paso Robles Wastewater Treatment Facility, report the following information about using FOG:

> FOG is highly digestible in the anaerobic digestion process so it will significantly increase gas production. Many municipal wastewater treatment plants accept FOG for anaerobic digestion, often coupled with gas utilization equipment such as cogeneration engines, turbines, or micro turbines.

> FOG has a high volatile solids (VS) destruction rate, reported to range from 70 to 80 percent in mesophilic processes. FOG also has a high rate of biogas generation, with reported values up to 21 cubic feet per pound of VS (ft^3/lb VS) (1.3 m^3/kg VS), as compared to a typical biosolids gas generation rate of 16 ft^3/lb VS (1.0 m^3/kg VS). Recent research has indicated that the addition of FOG has a symbiotic effect on the digestion process, with higher biogas yield than will be expected by the sum of separate biosolids and FOG digestion. Existing co-digestion facilities have varying FOG to sewage sludge feed rates; however, digester operation appears to remain stable with FOG volumetric feed rates of up to 30 percent of the total digester feed volatile solids" (page 75, Facility Plan).

Transporting FOG to the Paso Robles WWTP will reduce approximately 260 miles of heavy truck traffic on local roads daily (five weekly roundtrip deliveries to Bakersfield avoided). There will be no new worker traffic or other substantial changes in motor vehicle use. Therefore, the WWTP will provide a small benefit to local air quality in allowing local acceptance of FOG. As shown in Table 6, implementation of the project would reduce operational emissions due to the current transport of FOG from San Luis Obispo County to Bakersfield. No significant impacts were identified; therefore, no mitigation is required.

Table 7. Reduction in Operational Emissions Due to FOG Transport

	ROG	NOx	PM_{10} Dust	PM_{10} Exhaust	$PM_{2.5}$ Dust	$PM_{2.5}$ Exhaust	CO
Emissions per round trip	0.33 lbs/day	5.13 lbs/day	0.04 lbs/day	0.17 lbs/day	0.01 lbs/day	0.16 lbs/day	1.61 lbs/day

6.2.2 Odors

With the new treatment equipment and active odor minimization plan, the City anticipates that no odor complaints would arise. No significant impacts were identified; therefore, no mitigation is required.

7. CUMULATIVE IMPACTS

Greenhouse Gas emissions (GHGs) are not a local impact but of global concern. They are typically evaluated under an international standard protocol using the following definitions or Scopes:

- Scope 1 – "Direct" emissions are defined as greenhouse gases emitted from a source that is under the financial or operational control of the reporting organization. Direct greenhouse gas emissions are a required component of any carbon inventory assessment. Scope 1 emissions include organization-owned process equipment and vehicles. The project's direct sources include the equipment and vehicles associated with plant operations and service vehicles.

- Scope 2 – "Energy Indirect" emissions are from the generation by an energy source that is imported by the reporting organization. The most common energy indirect emission source is for

the generation of electricity purchased by the reporting organization. The plant does and will be purchasing electricity from PG&E.

- Scope 3 – "Other Indirect" emissions are emitted as a result of the reporting organization's activities, but emitted from sources that are not owned or controlled by the reporting organization. This might include air travel by consultants and other actions not directly controlled by the City.

Scope 1 emissions would not change with the project, and Scope 3 emissions would only occur during construction phase. Activities that create Scope 3 emissions cannot be calculated now since there is no information about travel or other activities by persons who may visit the plant in the future. Scope 2 emissions presented below focus on electricity generation emissions, since that is a known quantity as reported in the project's engineering report.

The WWTP currently uses 1,452 megawatts (MW) of electric power annually. This grid power is purchased from PG&E. Electricity use will increase to 4,464 MW at build-out, resulting in a gross increase of 3012 MW. This increase will be offset by approximately 2,000 MW power produced by the FOG/cogeneration system. The net increase will be about 2,464 MW initially, with power consumption increasing 2.4% annually over the 20 year life of the project. (Cornerstone Engineering, October 2009). The 2,000 MW production of cogeneration power represents approximately 45% reduction in purchased power below business as usual. Table 8, below, shows the estimated CO_2e emissions from three alternatives: No Project, Preferred Alternative, and Preferred Alternative with Co-generation.

Table 8. Estimated CO2e Emissions

Scenario	CO2e – Carbon dioxide equivalent which includes methane and N20	Change from No Project Alternative in percent
No Project (Business as usual)	479 tonnes	0%
Preferred Alternative (No co-generation)	1467 tonnes	307%
Preferred Alternative (With Co-Generation)	810 tonnes	170%

There are currently few adopted significance thresholds for GHGs. The ARB has proposed a threshold of 7,000 metric tonnes CO_2e for non-transportation sources. The South Coast Air Quality Management District has proposed a threshold of 10,000 metric tonnes.

Through local use of FOG, the WWTP will produce substantially more electricity and heat. This will reduce the amount of natural gas and grid electricity purchased. Since combusting FOG is essentially carbon neutral, CO_2 emission levels will be lower than those created by burning fossil fuels to produce grid power or combusting natural gas on site.

As mitigated, the proposed project will not substantially increase criteria pollutants, GHGs, or increase the possibility of odor complaints. As a result, cumulative air quality impacts are considered *less than significant (Class III).*

8. REFERENCES

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ATTACHMENT A:

URBEMIS Calculation Sheets

Paso WWTP **Scope 2 Electricity Emissions**
D Morrow 10/9/2009

Annual emissions for purchased power Existing Plant

	CO2	CH4 as CO2e	N2O as CO2e	NO	SO2	CO2e sum	CO2e sum (metric tonnes)
Lbs/year	1051422.4	966.0	3637.0	900.2	769.6	1056025.3	
Tons/year	525.7111926	0.48299328	1.8184848	0.45012	0.38478	528.01267	479.1
tons/day						1.4466101	1.3

Annual emissions for purchased power Alt 1 - No Cogeneration

	CO2	CH4 as CO2e	N2O as CO2e	NO	SO2	CO2e sum	CO2e sum (metric tonnes)
Lbs/year	3232472.1	135.0	36.1	2767.7	2365.9	3232643.2	
Tons/year	1616.236063	0.06749568	0.01803456	1.38384	1.18296	528.01267	1466.7
tons/day						1.4466101	4.0

Annual emissions for purchased power Alt 1 with Cogeneration

	CO2	CH4 as CO2e	N2O as CO2e	NO	SO2	CO2e sum	CO2e sum (metric tonnes)
Lbs/year	1784231.9	43.9	11.7	900.2	769.6	1784287.6	
Tons/year	892.1159632	0.02195424	0.00586608	0.45012	0.38478	528.01267	809.6
tons/day						1.4466101	1.3

Assumptions:	Current Use	Pref Alt	W/ FOG&cogen
Annual purchase in MW	1,452	4464	2464
% diff w/ Alt&FOG/cogen	-69.70%	307.44%	169.70%

current elec use is 70% less than pref alt with cogen
pref alt with cogen is 45% less than pref alt with no cogen

emission factors - lb/mw

CO2	CH4	N2O	NO	SO2
724.1201	0.03024	0.00808	0.62	0.53

CH4 - CO2e conversion factor =	21
N2O - CO2e conversion factor =	310

Lbs/metric tonne=	2204
Lbs/short ton=	2000
Factor to convert to CO2e	
N2O =	310
CH4 =	22

Sources:
eGrid CAMX - PG&E California 2005 for CO2, CH4 and N2O
EPA 2009 for NO and SO2

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Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name:

Project Name: WWTP Mileage Reduction

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 6/28/2013-6/28/2013	**0.33**	**5.13**	**1.61**	**0.01**	**0.04**	**0.17**	**0.21**	**0.01**	**0.16**	**0.17**	**1,046.76**
Fine Grading 06/28/2013-	0.33	5.13	1.61	0.01	0.04	0.17	0.21	0.01	0.16	0.17	1,046.76
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading On Road Diesel	0.33	5.13	1.61	0.01	0.04	0.17	0.21	0.01	0.16	0.17	1,046.76
Fine Grading Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Phase Assumptions

Phase: Fine Grading 6/28/2013 - 6/29/2013 - Hauling Reduction

Total Acres Disturbed: 0

Maximum Daily Acreage Disturbed: 0

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): 260

Off-Road Equipment:

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Urbemis 2007 Version 9.2.4

Detail Report for Annual Construction Unmitigated Emissions (Tons/Year)

File Name:

Project Name: Paso WWTP Upgrade

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Annual Tons Per Year, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
2010	0.01	0.07	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	6.34
Demolition 12/28/2010-01/31/2011	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62
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	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.40
Demo 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
Demo Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
Fine Grading 12/28/2010-08/11/2011	0.01	0.05	0.03	0.00	0.01	0.00	0.01	0.00	0.00	0.00	4.72
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	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.49
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
2011	0.31	2.45	1.54	0.00	0.29	0.13	0.42	0.06	0.12	0.18	261.97
Demolition 12/28/2010-01/31/2011	0.01	0.08	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	8.52
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	7.35
Demo 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
Demo Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16
Fine Grading 12/28/2010-08/11/2011	0.23	1.87	1.07	0.00	0.29	0.09	0.39	0.06	0.09	0.15	187.47
Fine Grading Dust	0.00	0.00	0.00	0.00	0.29	0.00	0.29	0.06	0.00	0.06	0.00
Fine Grading Off Road Diesel	0.22	1.86	0.95	0.00	0.00	0.09	0.09	0.00	0.09	0.09	178.66
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	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.80
Building 08/11/2011-02/22/2012	0.07	0.50	0.41	0.00	0.00	0.03	0.03	0.00	0.03	0.03	65.99
Building Off Road Diesel	0.06	0.43	0.24	0.00	0.00	0.03	0.03	0.00	0.03	0.03	45.56
Building Vendor Trips	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.10
Building Worker Trips	0.01	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.33
2012	0.26	0.17	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.89
Building 08/11/2011-02/22/2012	0.02	0.17	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.59
Building Off Road Diesel	0.02	0.15	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	16.97
Building Vendor Trips	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.76
Building Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.85
Coating 02/08/2012-03/05/2012	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30

Architectural Coating	0.23	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	0.30

Phase Assumptions

Phase: Demolition 12/28/2010 - 1/31/2011 - Demolition of headworks, clarifiers, headworks
Building Volume Total (cubic feet): 0
Building Volume Daily (cubic feet): 0
On Road Truck Travel (VMT): 0
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 12/28/2010 - 8/11/2011 - Fine grading for polishing channel, lab, cogen
Total Acres Disturbed: 1
Maximum Daily Acreage Disturbed: 0.25
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 10 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: Building Construction 8/11/2011 - 2/22/2012 - Construct cogen and lab facilities
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 2/8/2012 - 3/5/2012 - Arch coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150
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

Urbemis 2007 Version 9.2.4

Detail Report for Summer Construction Unmitigated Emissions (Pounds/Day)

File Name:

Project Name: Paso WWTP Upgrade

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Summer Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 12/28/2010-12/31/2010	4.27	32.91	20.28	0.00	3.69	1.84	5.53	0.77	1.69	2.47	3,169.15
Demolition 12/28/2010-01/31/2011	1.20	7.50	6.25	0.00	0.01	0.58	0.59	0.00	0.54	0.54	811.06
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	1.14	7.58	4.58	0.00	0.03	0.59	0.59	0.00	0.54	0.54	709.30
Demo 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
Demo Worker Trips	0.06	0.12	1.67	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.75
Fine Grading 12/28/2010-08/11/2011	3.97	25.11	14.03	0.00	3.69	1.25	4.94	0.77	1.15	1.92	2,356.09
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	0.00
Fine Grading Off Road Diesel	3.90	24.99	12.46	0.00	0.00	1.25	1.25	0.00	1.15	1.15	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	0.06	0.12	1.57	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.76
Time Slice 1/3/2011-1/31/2011 Active	3.99	30.88	19.45	0.00	3.69	1.73	5.42	0.77	1.59	2.36	3,169.09
Demolition 12/28/2010-01/31/2011	1.11	7.33	6.04	0.00	0.01	0.55	0.55	0.00	0.51	0.51	811.04
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	1.05	7.22	4.58	0.00	0.00	0.55	0.55	0.00	0.50	0.50	709.30
Demo 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
Demo Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Fine Grading 12/28/2010-08/11/2011	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.06
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Time Slice 2/1/2011-8/10/2011 Active	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.06
Fine Grading 12/28/2010-08/11/2011	2.83	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.06
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Time Slice 8/11/2011-8/11/2011 Active	4.18	33.29	21.51	0.00	3.70	1.76	5.46	0.78	1.62	2.39	3,552.04
Building 08/11/2011-02/22/2012	1.29	9.74	8.10	0.00	0.02	0.58	0.60	0.01	0.54	0.54	1,293.98
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	0.08	1.03	0.76	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.02
Building Worker Trips	0.10	0.20	2.65	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.60
Fine Grading 12/28/2010-08/11/2011	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.06
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Time Slice 8/12/2011-12/30/2011	1.29	9.74	8.10	0.00	0.02	0.58	0.60	0.01	0.54	0.54	1,293.98
Building 08/11/2011-02/22/2012	1.29	9.74	8.10	0.00	0.02	0.58	0.60	0.01	0.54	0.54	1,293.98
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	0.08	1.03	0.76	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.02
Building Worker Trips	0.10	0.20	2.65	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.60
Time Slice 1/2/2012-2/7/2012 Active	1.20	8.97	7.72	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,293.95
Building 08/11/2011-02/22/2012	1.20	8.97	7.72	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,293.95

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Building Off Road Diesel	1.08	7.87	4.56	0.00	0.00	0.49	0.49	0.00	0.45	0.45	893.39
Building Vendor Trips	0.07	0.91	0.70	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.00
Building Worker Trips	0.09	0.19	2.45	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.56
Time Slice 2/6/2012-2/22/2012 Active	25.77	8.99	8.10	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,325.65
Building 08/11/2011-02/22/2012	1.20	8.97	7.72	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,293.95
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	0.07	0.91	0.70	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.00
Building Worker Trips	0.09	0.19	2.45	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.56
Coating 02/06/2012-03/05/2012	24.57	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Architectural Coating	24.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Time Slice 2/23/2012-3/5/2012 Active	24.57	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Coating 02/06/2012-03/05/2012	24.57	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Architectural Coating	24.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73

Phase Assumptions

Phase: Demolition 12/28/2010 - 1/31/2011 - Demolition of headworks, clarifiers, headworks
Building Volume Total (cubic feet): 0
Building Volume Daily (cubic feet): 0
On Road Truck Travel (VMT): 0
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 12/28/2010 - 8/11/2011 - Fine grading for polishing channel, lab, cogen
Total Acres Disturbed: 1
Maximum Daily Acreage Disturbed: 0.25
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 10 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: Building Construction 8/11/2011 - 2/22/2012 - Construct cogen and lab facilities
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 2/6/2012 - 3/5/2012 - Arch coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150
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

Urbemis 2007 Version 9.2.4

Detail Report for Winter Construction Unmitigated Emissions (Pounds/Day)

File Name:

Project Name: Paso WWTP Upgrade

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES (Winter Pounds Per Day, Unmitigated)

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10 Total	PM2.5 Dust	PM2.5 Exhaust	PM2.5 Total	CO2
Time Slice 12/28/2010-12/31/2010	4.27	32.91	20.28	0.02	3.69	1.84	5.53	0.77	1.69	2.47	3,169.15
Demolition 12/28/2010-01/31/2011	1.20	7.80	6.25	0.02	0.01	0.59	0.60	0.00	0.54	0.54	811.06
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	1.14	7.68	4.68	0.00	0.00	0.59	0.59	0.00	0.54	0.54	700.30
Demo 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
Demo Worker Trips	0.06	0.12	1.57	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.76
Fine Grading 12/28/2010-08/11/2011	3.07	25.11	14.03	0.00	3.69	1.25	4.94	0.77	1.15	1.92	2,358.08
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	0.00
Fine Grading Off Road Diesel	3.00	24.99	12.45	0.00	0.00	1.25	1.25	0.00	1.15	1.15	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	0.06	0.12	1.57	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.76
Time Slice 1/3/2011-1/31/2011 Active	3.99	30.88	19.45	0.00	3.69	1.73	5.42	0.77	1.59	2.35	3,169.09
Demolition 12/28/2010-01/31/2011	1.11	7.33	6.04	0.00	0.01	0.55	0.56	0.00	0.51	0.51	811.04
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	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demo Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Fine Grading 12/28/2010-08/11/2011	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.05
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Time Slice 2/1/2011-8/10/2011 Active	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.05
Fine Grading 12/28/2010-08/11/2011	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.05
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Time Slice 8/11/2011-8/11/2011 Active	4.18	33.29	21.51	0.00	3.70	1.76	5.46	0.78	1.62	2.39	3,552.04
Building 08/11/2011-02/22/2012	1.29	9.74	8.10	0.00	0.02	0.58	0.60	0.01	0.54	0.54	1,293.98
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	0.08	1.03	0.76	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.03
Building Worker Trips	0.10	0.20	2.66	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.56
Fine Grading 12/28/2010-08/11/2011	2.88	23.55	13.41	0.00	3.69	1.18	4.86	0.77	1.08	1.85	2,358.05
Fine Grading Dust	0.00	0.00	0.00	0.00	3.68	0.00	3.68	0.77	0.00	0.77	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.06	0.11	1.45	0.00	0.01	0.00	0.01	0.00	0.00	0.00	110.74
Time Slice 8/12/2011-12/30/2011	1.29	9.74	8.10	0.00	0.02	0.58	0.60	0.01	0.54	0.54	1,293.98
Building 08/11/2011-02/22/2012	1.29	9.74	8.10	0.00	0.02	0.58	0.60	0.01	0.54	0.54	1,293.98
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	0.08	1.03	0.76	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.03
Building Worker Trips	0.10	0.20	2.66	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.56
Time Slice 1/2/2012-2/7/2012 Active	1.20	8.97	7.72	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,293.95
Building 08/11/2011-02/22/2012	1.20	8.97	7.72	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,293.95

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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	0.07	0.91	0.70	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.00
Building Worker Trips	0.09	0.19	2.45	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.56
Time Slice 2/8/2012-2/22/2012 Active	25.77	8.99	8.10	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,325.68
Building 08/11/2011-02/22/2012	1.20	8.97	7.72	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,293.95
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	0.07	0.91	0.70	0.00	0.01	0.03	0.04	0.00	0.03	0.03	198.00
Building Worker Trips	0.09	0.19	2.45	0.00	0.01	0.01	0.02	0.00	0.01	0.01	202.56
Coating 02/08/2012-03/05/2012	24.57	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Architectural Coating	24.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Time Slice 2/23/2012-3/5/2012 Active	24.57	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Coating 02/08/2012-03/05/2012	24.57	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73
Architectural Coating	24.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.03	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.73

Phase Assumptions

Phase: Demolition 12/28/2010 - 1/31/2011 - Demolition of headworks, clarifiers, headworks
Building Volume Total (cubic feet): 0
Building Volume Daily (cubic feet): 0
On Road Truck Travel (VMT): 0
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 8 hours per day
2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 6 hours per day

Phase: Fine Grading 12/28/2010 - 8/11/2011 - Fine grading for polishing channel, lab, cogen
Total Acres Disturbed: 1
Maximum Daily Acreage Disturbed: 0.25
Fugitive Dust Level of Detail: Low
Onsite Cut/Fill: 10 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: Building Construction 8/11/2011 - 2/22/2012 - Construct cogen and lab facilities
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 2/8/2012 - 3/5/2012 - Arch coatings
Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150
Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 150
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

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name:

Project Name: Paso WWTP Upgrade

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (tons/year unmitigated)	0.61	0.07	0.04	0.00	0.01	0.00	0.01	0.00	0.00	0.00	5.34
2011 TOTALS (tons/year unmitigated)	0.31	2.45	1.54	0.00	0.29	0.13	0.42	0.06	0.12	0.18	261.97
2012 TOTALS (tons/year unmitigated)	0.26	0.17	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	24.89

Urbemis 2007 Version 9.2.4

Summary Report for Summer Emissions (Pounds/Day)

File Name:

Project Name: Paso WWTP Upgrade

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	4.27	32.91	26.28	0.00	3.68	1.84	5.53	0.77	1.69	2.47	3,169.15
2011 TOTALS (lbs/day unmitigated)	4.18	33.29	21.51	0.00	3.70	1.76	5.46	0.78	1.62	2.39	3,652.04
2012 TOTALS (lbs/day unmitigated)	25.77	8.99	8.10	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,325.68

Urbemis 2007 Version 9.2.4

Summary Report for Winter Emissions (Pounds/Day)

File Name:

Project Name: Paso WWTP Upgrade

Project Location: San Luis Obispo County APCD

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

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2010 TOTALS (lbs/day unmitigated)	4.27	32.91	20.28	0.00	3.69	1.84	5.53	0.77	1.69	2.47	3,189.15
2011 TOTALS (lbs/day unmitigated)	4.18	33.29	21.51	0.00	3.70	1.76	5.46	0.78	1.62	2.39	3,652.04
2012 TOTALS (lbs/day unmitigated)	25.77	8.99	8.19	0.00	0.02	0.52	0.54	0.01	0.48	0.49	1,325.68