4.0 ENVIRONMENTAL IMPACT ANALYSIS
4.4 AIR QUALITY

ENVIRONMENTAL SETTING

Regulatory Environment

Air quality in the United States is governed by the Federal Clean Air Act (CAA)[1]. In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). At the Federal level, the CAA is administered by the United States Environmental Protection Agency (USEPA). In California, the CCAA is administered by the California Air Resources Board (CARB) at the State level and by the Air Quality Management Districts at the regional and local levels. The South Coast Air Quality Management District (SCAQMD) is the agency responsible for coordinating air quality planning and regulatory efforts throughout Southern California.

United States Environmental Protection Agency

The USEPA is responsible for enforcing the Federal CAA. The USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

California Air Resources Board

In California, the CARB, which became part of the California Environmental Protection Agency (CalEPA) in 1991, is responsible for meeting the State requirements of the Federal CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, as amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. The CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. The CARB established passenger vehicle fuel

[1] *42 USC 7401 et seq., with 1990 Amendments.*

specifications, which became effective on March 1996. The CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional and county level.

South Coast Air Quality Management District (SCAQMD)

The SCAQMD monitors air quality within the project area. The 1977 Lewis Air Quality Management Act created the SCAQMD to coordinate air quality planning efforts throughout Southern California. This Act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in Southern California. Under the Act, renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the South Coast Air Basin (SCAB). Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain State and Federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations that regulate stationary source, area source, point source, and certain mobile source emissions. The SCAQMD is also responsible for establishing permitting requirements for stationary sources and ensuring that new, modified or relocated stationary sources do not create net emission increases and, therefore, is consistent with the region's air quality goals.

The SCAQMD has jurisdiction over an approximately 10,743 square mile area of the Basin. This area includes all of Orange County, Los Angeles County (except for Antelope Valley), the western urbanized portions of San Bernardino County, and the western and Coachella Valley portions of Riverside County. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east; and the San Diego County line to the south (Figure 4.4-1).

Air Quality Management

National and State Ambient Air Quality Standards

As required by the Federal CAA, the NAAQS have been established for six major air pollutants: carbon monoxide, nitrogen oxides, ozone, particulate matter, sulfur oxides, and lead. Pollutants for which ambient standards have been set are referred to as "criteria pollutants". Pursuant to the CCAA, the State of California has also established ambient air quality standards, known as the CAAQS. These standards are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility reducing particles.

Figure 4.4-1, SCAB Boundary Map

Both State and Federal standards are summarized in Table 4.4-1. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare and account for air pollutant effects on soil, water, visibility, materials, vegetation and other aspects of the general welfare.

Attainment Status

The fundamental method by which the USEPA tracks compliance with the NAAQS is through the designation of areas as either in attainment, nonattainment, maintenance or unclassifiable. Areas are given the status of nonattainment due to violations of one or more of the established NAAQS and must then comply with more stringent standards until NAAQS are satisfied.

The CCAA requires the CARB to designate areas within California as either attainment or non-attainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as non-attainment for a pollutant if air quality data shows that a State standard for a 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 non-attainment. The attainment status for the South Coast Air Basin with regard to the NAAQS and CAAQS is shown in Table 4.4-2.

State Implementation Plan

Federal clean air laws require areas with unhealthy levels of ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, and inhalable particulate matter to develop plans, known as State Implementation Plans (SIPs), describing how they would attain the NAAQS. The 1990 amendments to the Federal Clean Air Act set new deadlines for attainment based on the severity of the pollution problem and launched a comprehensive planning process for attaining the NAAQS. SIPs are not single documents; rather, they are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations, and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies, such as the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to USEPA for approval and publication in the Federal Register. The Code of Federal Regulations (CFR) Title 40, Chapter 1, Part 52, Subpart F, lists all of the items that are included in the California SIP. Many California submittals are pending USEPA approval.

Table 4.4-1
State and National Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard	Federal Standards	
			Primary	Secondary
Ozone (O_3)	1 hour	0.09 ppm (180 µg/m^3)	0.12 ppm (235 µg/m^3)	Same as Primary Standard
	8 hour	0.07 ppm (137 µg/m^3)*	0.08 ppm (157 µg/m^3)	
Respirable Particulate Matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	50 µg/m^3	
Fine Particulate Matter ($PM_{2.5}$)	24 hour	No Separate State Standard	65 µg/m^3 (1)	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	15 µg/m^3 (1)	
Carbon Monoxide(CO)	8 hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)	None
	1 hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	None	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1 hour	0.25 ppm (470 µg/m^3)	None	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	None	0.03 ppm (80 µg/m^3)	None
	24 hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	None
	3 hour	None	None	0.5 ppm (1300 µg/m^3)
	1 hour	0.25 ppm (655 µg/m^3)	None	None

Source: California Air Resources Board, Federal and State Air Quality Standards (5/6/05).

None means that no standard has been established for the category.

** This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.*

Table 4.4-2
Attainment Status for the South Coast Air Basin (Los Angeles County Portion)

Pollutant	Attainment Status	
	NAAQS	CAAQS
Carbon Monoxide	Serious Non-Attainment	Non-attainment[1]
Nitrogen Dioxide	Attainment	Attainment
Ozone	Extreme Non-attainment	Non-attainment
PM_{10}	Non-Attainment	Non-attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment

Source: California Air Resources Board: State Area Designation Maps found at http: www.arb.ca.gov/desig/adm, January 2004.

1. *The CO attainment demonstration developed for the South Coast Air Basin in 1997 has lapsed. A revised CO attainment demonstration developed for the SCAB indicates that the standard was attained in 2002 and will be maintained into the future. The SCAQMD has requested re-designation, however, the SCAB is still designated as a non-attainment area for CO.*

Air Quality Management Plan (AQMP)

All areas designated as non-attainment under the CCAA are required to prepare plans showing how the area would meet the State air quality standards by its attainment dates. The Air Quality Management Plan (AQMP) is the region's plan for improving air quality in the region. In response to Federal and State Clean Air Act requirements to bring air emissions within healthful levels, the SCAQMD has prepared a series of AQMPs, the most recent of which was adopted by SCAQMD's Governing Board in August 2003 (2003 AQMP). The 2003 AQMP employs up-to-date science and analytical tools and incorporates a comprehensive strategy aimed at controlling pollution from all sources including stationary sources, on-road and off-road mobile sources and area sources.

The 2003 AQMP is an update to the 1997 AQMP, which was amended in 1999. The 1997 AQMP was designed to accommodate growth, to reduce the high levels of pollutants within the areas under the jurisdiction of the SCAQMD, to return clean air to the region by 2010, and to minimize the impact on the economy. The 2003 AQMP is generally similar to the structure of the 1997 AQMP. The key improvements incorporated into the AQMP are summarized as follows:

1. Revised emissions inventory projections using 1997 as the base year, the CARB on-road motor vehicle emissions model EMFAC2002, and SCAG 2001 Regional Transportation Plan (RTP) forecast assumptions;

2. Revised control strategy that updates remaining control measures from the 1997/1999 SIP and incorporation of new control measures based on current technology assessments;

3. Reliance on 1997 ozone episodes and updated modeling tools for attainment demonstration relative to ozone and PM_{10}; and

4. An initial assessment of progress toward the new federal 8-hour ozone and $PM_{2.5}$ standards.[2]

Environmental review of individual projects within the SCAB must demonstrate whether daily construction and operational emissions thresholds, as established by the SCAQMD, would be exceeded. The environmental review must also evaluate the potential for individual projects to increase the number or severity of existing air quality violations.

In addition to the AQMP and its rules and regulations, SCAQMD has published a handbook (CEQA Air Quality Handbook, November 1993) intended to provide local governments and CEQA practitioners with guidance for analyzing and mitigating air quality impacts of projects. This handbook provides standards, methodologies, and procedures for conducting air quality analyses in EIRs.

Local Regulatory Requirements/Permit Conditions Applicable to the Existing Landfill Operation

City of Los Angeles Zone Variance No. 94-0792(ZV)(PAD) includes the following conditions of approval related to air quality for the existing BLRC operation:

14. Compliance with permit conditions pertaining to landfill development operation and maintenance, including installation of leachate and gas migration control systems, shall be maintained in accordance with the City of Los Angeles Environmental Affairs Department, Regional Water Quality Control Board and South Coast Air Quality Management District.

21. All requirements of the South Coast Air Quality Management District, State Water Resources Control Board, the State Regional Water Quality Control Board, the County Health Department and the City Departments of Water and Power and Fire and other concerned public agencies shall be strictly complied with in connection with the use of the property for the purposes herein approved.

27. Proper dust abatement procedures shall be employed in connection with the operations in accordance with SCAQMD Rule 403 to prevent creating a dust nuisance.

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[2] *In 1997, USEPA promulgated a new Federal 8-hour standard for ozone and a 24-hour and an annual average standard for fine particulate matter ($PM_{2.5}$). The implementation guidelines for the new standards have not yet been finalized, and the SIP to demonstrate attainment with these new standards is expected to be due in 2007.*

BLRC currently holds SCAQMD permits related to equipment and systems that are presently operated on-site:

Landfill Gas Collection and Treatment

The landfill gas system at BLRC consists of the following components that are permitted by SCAQMD:

- Landfill Gas Collection System (Permit No. R-D91136, June 20, 1995), consisting of blower, up to 286 vertical landfill gas collection wells, horizontal gas collector sets located in Sump 6, Sump 5, and Sump 5/6.

- Landfill Gas Treatment System (Permit D22942, April 11, 1990), consisting of inlet gas scrubber, compressor, four heat exchangers, and two condenser vessels.

- Landfill Gas Condensate Collection System (Permit No. D88455, February 14, 1995), consisting of condensate pumps, hydrocarbon/water phase separator (vented to the landfill gas collection system, hydrocarbon storage tanks, and water treatment tank.

- Landfill Gas Flaring System (Permit Nos. AN370136, September 12, 2000; F27480, April 11, 2000; F27481, April 11, 2002) consisting of particulate scrubbers, inlet separators, landfill gas flow element with automatic shutoff valve and flame arrestor for three flares)

Electricity Generating Units

- Five landfill gas-fired electricity generating units with one permit for each unit (Permit Nos. R-395061, R-395063, R-395064, R-395065, R-407403, all dated June 24, 2003)

Landfill Gas Monitoring

- Rule 1150.1 Compliance Plan (June 19, 2002) requires perimeter probe sampling, integrated surface sampling, instantaneous surface monitoring, ambient air sampling and landfill gas sampling. The plan specifies monitoring and sampling locations and frequencies and reporting requirements to ensure that landfill gas is not emitted to the atmosphere.

Fugitive Dust

- Rule 403 Fugitive Dust Emissions Control Plan (March 8, 1995) identifies measures required to be implemented to meet the requirements of Rule 403 that prohibit visible dust emissions beyond a property boundary. Specific measures are identified for construction-related earth movement, landfill operations earth movement, unpaved roads - haul routes, unpaved roads – access roads, storage piles, vehicular track out, disturbed surface areas, and woodwaste processing and storage.

Contaminated Soil

- Rule 1166 Contaminated Soil Mitigation Plan (March 27, 1995) requires monitoring of soil with VOC contamination using an on-site organic vapor analyzer and specifies conditions under which VOC contaminated soil can be accepted for landfilling. Only soils with VOC concentration of 50 ppm or less are permitted to be disposed in the landfill. No more than 5,000 tons of such soils are permitted to be stockpiled on site at any given time and shall be managed in compliance with Title 27 Section 20660.

Green and Wood Waste Processing

- Portable Screening System (Permit No. D96164, February 1, 1996) to include wood green waste trommel screen and four belt conveyors.

- Material Screening System Permit No. F33181, May 30, 2002.

Existing Air Quality Conditions

Pollutants and Effects

Carbon Monoxide

Carbon monoxide, a colorless and odorless gas, interferes with the transfer of oxygen to the brain. It can cause dizziness and fatigue, and can impair central nervous system functions. CO is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, CO is emitted by motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In the SCAB, the primary source of CO emissions is motor vehicles. CO is a non-reactive air pollutant that dissipates relatively quickly, so ambient carbon monoxide concentrations generally follows the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, a typical situation at dusk in urban areas between November and February. The highest CO concentrations measured in the SCAB are typically recorded during the winter.

Ozone

The most widespread air quality problem in the state, ozone is a colorless gas with a pungent, irritating odor. Ozone is not emitted directly into the atmosphere; it is formed primarily when reactive organic compounds (ROCs) and nitrogen oxides (NO_X) react in the presence of sunlight. Ozone is present in relatively high concentrations in the South Coast Air Basin, and the damaging effects of photochemical smog generally are related to the concentrations of ozone. Ozone may pose its worst health threat to those who already suffer from respiratory diseases; however, it also hurts healthy people. The health effects of ozone can include reduced lung function; aggravated existing respiratory illness; and irritated eye, nose, and throat tissues. Chronic exposure can cause permanent damage to the alveoli of the lungs. The South Coast Air Basin has peak ozone levels 2.5 times higher than the federal health standard, and 3 times higher than the more stringent state standard.

Nitrogen Dioxide

Nitrogen dioxide is a brownish gas that irritates the lungs. It can cause breathing difficulties at high concentrations. Like O_3, NO_2 is not directly emitted, but it forms through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as nitrogen oxides (NO_x) and are major contributors to ozone formation. NO_2 also contributes to the formation of PM_{10} (see discussion of PM_{10} below). At atmospheric concentration, NO_2 is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility. Some increase in bronchitis in children (two and three years old) has also been observed at concentrations below 0.3 ppm. Local conditions in the project area related to NO_2 are shown in Table 4.4-3 below.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a product of high-sulfur fuel combustion. Main sources of SO_2 are coal and oil used in power stations, in industries, and for domestic heating. Industrial chemical manufacturing is another source of SO_2. SO_2 is an irritant gas that attacks the throat and lungs. It can cause acute respiratory symptoms and diminished ventilator function in children. SO_2 can also cause plant leaves to turn yellow, as well as erode iron and steel. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels. SO_2 concentrations have been reduced to levels below the state and national standards, but further reductions in emissions are needed to attain compliance with standards for sulfates and PM_{10}, of which SO_2 is a contributor. Local conditions in the project area related to SO_2 are shown in Table 4.4-3 below.

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$)

PM_{10} and $PM_{2.5}$ consist of extremely small suspended particles or droplets that are 10 and 2.5 micrometers (a.k.a. microns) or smaller, respectively, in diameter that can lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from such sources as road dust, diesel soot, combustion

products, abrasion of tires and brakes, construction operations, and windstorms. They also are formed in the atmosphere from NO_2 and SO_2 reactions with ammonia. PM_{10} and $PM_{2.5}$ scatter light and significantly reduce visibility. Some species of $PM_{2.5}$ are classified as toxic air contaminants. PM_{10} and $PM_{2.5}$ pose a serious health hazard, alone or in combination with other pollutants[3]. More than half of the smallest particles inhaled will be deposited in the lungs and can cause permanent lung damage. Fine particulates also can have a damaging effect on health by interfering with the body's mechanism for clearing the respiratory tract or by acting as a carrier of an absorbed toxic substance.

Toxic Air Contaminants

Toxic air contaminants consist of a variety of compounds, including metals, minerals, soot, and hydrocarbon-based chemicals. Toxic air contaminants are a concern in the South Coast Air Basin because of the large number of mobile sources and industrial facilities throughout the basin.

To date, the most comprehensive study on air toxics in the South Coast Air Basin is the Multiple Air Toxics Exposure Study (MATES-II), conducted by the SCAQMD. The monitoring program measured more than 30 air pollutants, including both gas and particulates. Ten fixed sites within the SCAB were selected to monitor toxic air contaminants, including Burbank (which is the closest location to the BLRC). Toxic air contaminants were monitored at these fixed locations once every six days for a year (April 1998 through March 1999). The monitoring study was accompanied by a computer modeling study in which SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region, based on emissions and weather data. MATES-II found that the average cancer risk in the region from carcinogenic air pollutants ranges from about 1,100 in a million to 1,750 in a million, with an average regional risk of about 1,400 in a million. The higher risk levels were found in the urban core areas in south central Los Angeles County, in Wilmington adjacent to the Port of Los Angeles, and near freeways.

Carcinogenic risk refers to the increased probability that an individual exposed to an average air concentration of a chemical will develop cancer when exposed over 70 years. Cancer risks are often expressed on a per million basis for comparative purposes. Risk numbers are derived by using SCAQMD- and state-mandated air quality models and toxicity data. Additional conservative underlying assumptions must be incorporated such as the assumption that residential exposure occurs in the same location for 70 years. These resulting risk numbers are used to compare one project's risk to another's.

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[3] *USEPA designated non-attainment boundaries for $PM_{2.5}$ in December 2004. The non-attainment designations for $PM_{2.5}$ took effect in March 2005. The South Coast Air Basin has been designated a non-attainment area for $PM_{2.5}$; however the exact attainment date has not been established by USEPA. Final guidance on the implementation of the $PM_{2.5}$ ambient air quality standards has not been issued. The SIP to demonstrate attainment is expected in 2007. In addition, the SCAQMD has not defined significant emission thresholds for $PM_{2.5}$.*

The Burbank Monitoring Station for MATES-II was located at 228 West Palm Avenue in the City of Burbank. The cancer risk associated with this station is as follows: 200 in one million from stationary sources; slightly over 300 in one million from mobile sources with a combined risk of approximately 500 in one million. Pollutants measured to determine risk include poly-aromatic hydrocarbons, particulate matter, volatile organic compounds, perchloroethylene, para-dichlorobenzene, carbon tetrachloride, carbonyls, benzene, and 1,3 butadiene. Risk measured above does not include diesel particulates from mobile sources. The ambient background risk in the Burbank area when diesel particulates are included is 1,500 people in one million.[4]

Overall, the study showed that airborne diesel particulate matter contributes about 70 percent of the cancer risk. Mobile sources account for about 90 percent of the cancer risk, and industries and other stationary sources account for the remaining 10 percent.

Existing Air Monitoring Data

The SCAQMD monitors air quality conditions at 37 locations throughout the SCAB. The project site is located in the SCAQMD's East San Fernando Valley Air Monitoring Area (No. 7), which is served by the Burbank Monitoring Station, located at 228 West Palm Avenue, in the City of Burbank, approximately 6 miles southeast of the Proposed Project site. Historical data from the Burbank Monitoring Station was used to characterize existing conditions within the vicinity of the Proposed Project area and to establish a baseline for estimating future conditions with and without the Proposed Project. Meteorological data from the Burbank Monitoring Station was used in the models used to analyze the potential air quality impacts of the Proposed Project, including average wind speed and direction.

Criteria pollutants monitored at the Burbank Monitoring Station include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and respirable particulate matter (PM_{10}). The Burbank Monitoring Station does not currently monitor $PM_{2.5}$. Table 4.4-3 shows the number of violations recorded at the Burbank Monitoring Station during the 2002-2004 period, the most recent data available. The NAAQS and CAAQS for the criteria pollutants are also shown in the table. As Table 4.4-3 indicates, criteria pollutants CO and SO_2 did not exceed the CAAQS or the NAAQS during

[4] *South Coast Air Quality Management District, MATES-II Study, Final Report, March 2000.*

Table 4.4-3
2002-2004 Criteria Pollutant Violations – Burbank Monitoring Station

Pollutant	State and Federal Standards	Number of Days Above State and Federal Standard		
		2002	2003	2004
Ozone	Maximum 1-Hour Concentration	0.128	0.134	0.137
	Maximum 8-Hour Concentration	0.095	0.106	0.109
	Days > 0.09 ppm (State 1-hour standard)	17	37	27
	Days > 0.12 ppm (Federal 1-hour standard)	1	4	2
	Days > 0.08 ppm (Federal 8-hour standard)	5	21	7
Carbon Monoxide	Maximum 8-Hour Concentration	4.54	4.54	3.89
	Days > 9.0 ppm (State 8-hour standard)	0	0	0
	Days > 9.0 ppm (Federal 8-hour standard)	0	0	0
Nitrogen Dioxide	Maximum 1-Hour Concentration	0.262	0.140	0.122
	Days > 0.25 ppm (State 1-hour standard)	1	0	0
Sulfur Dioxide	Maximum 24-Hour Concentration	0.007	0.005	0.009
	Days > 0.04 ppm (State 24-hour standard)	0	0	0
	Days > 0.14 ppm (Federal 24-hour standard)	0	0	0
PM10	Maximum 24-Hour Concentration	71.0	81	74.0
	Calculated Days > 50 $\mu g/m^3$ (State 24-hour standard)	38.7	NA	38.2
	Calculated Days > 150 $\mu g/m^3$ (Federal 24-hour standard)	0	0	0
PM2.5	Maximum 24-Hour Concentration	63.0	120.6	60.1
	Days > 65 $\mu g/m^3$ (Federal 24-hour standard)	0	1	0

Source: California Air Resources Board, see Appendix B. NA = Not available.

the 2002-2004 period at the Burbank Monitoring Station. Ozone levels, however, exceeded the Federal 1-hour standard a maximum of four times in one year (2003) and the State 1-hour standard a maximum of 37 times in one year (2003). Nitrogen dioxide levels exceeded the State standard one time during the three year period (2002) and PM_{10} exceeded the State standard approximately 38 times per year.

Existing CO Concentrations

Background CO Conditions

Carbon monoxide concentrations are typically used as an indicator of conformity with the CAAQS because: (1) CO levels are directly related to vehicular traffic volumes, the main source of air pollutants and (2) localized CO concentrations and characteristics can be modeled using USEPA and SCAQMD methods. In other words, the operational air quality impacts associated with vehicular traffic volumes of a project are generally best reflected through the estimated changes in related CO concentrations.

For purposes of this assessment, the ambient, or background, concentration of CO is first established. The background level is typically defined as the highest of the second-maximum eight-hour readings over

the past two years.[5] The average eight-hour background concentration for the Burbank Monitoring Station is approximately 4.5 ppm.[6] Assuming a typical persistence factor of 0.7, the estimated one-hour background concentration is approximately 6.0 ppm. The existing eight- and one-hour background concentrations do not exceed the State CO standard of 9.0 ppm (8-hour) and 20.0 ppm (1-hour), respectively.

Existing CO Concentrations at Project Area Intersections

There is a direct relationship between traffic/circulation congestion and CO impacts since exhaust fumes from vehicular traffic are the primary source of CO. Carbon monoxide is a localized gas that dissipates very quickly under normal meteorological conditions. Therefore, CO concentrations decrease substantially as distance from the source (intersection) increases. The highest CO concentrations are typically found along sidewalk locations directly adjacent to congested roadway intersections.

To provide a worst-case simulation of CO concentrations within the area that might be affected by the Proposed Project, CO concentrations at sidewalks adjacent to six study intersections were modeled. These intersections represent the intersections which would experience the highest volumes of project related traffic and would experience levels of congestion (based on traffic volume and capacity (V/C) and traffic levels of service (LOS)) which present the highest potential for localized impacts related to CO concentrations. The selected intersections were:

- San Fernando Road/Sheldon Street
- Glenoaks Boulevard/Peoria Street
- San Fernando Road/Tuxford Street
- Bradley Avenue/Tuxford Street
- Glenoaks Boulevard/Tuxford Street
- Bradley Avenue/Penrose Street

At each intersection, CO contributions from existing traffic were added to the background CO conditions, as discussed above. Traffic CO contributions were estimated using the CALINE4 dispersion model[7], which utilizes traffic volume inputs and EMFAC 2002 emissions factors, and is approved for this use by

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[5] *Garza, Vicente J., Peter Graney, Daniel Sperling. Transportation Project-Level Carbon Monoxide Protocol. Institute of Transportation Studies, University of California, Davis. May 1996.*

[6] *See Appendix D.*

[7] *Simplified CALINE4 Carbon Monoxide Analysis Using EMFAC 2002 Emission Factors, Bay Area AQMD.*

SCAQMD. Existing conditions at the study intersections are shown in Table 4.4-4. Depending upon the distance from the intersection, one-hour CO concentrations range from approximately 6.4 ppm to 7.4 ppm. Eight-hour CO concentrations range from approximately 3.7 ppm to 4.4 ppm. Presently, none of the study intersections exceed the State one-hour CO standard of 20.0 ppm or the State eight-hour CO standard of 9.0 ppm.

Table 4.4-4
Existing Carbon Monoxide (CO) Concentrations (parts per million)

Intersection	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
San Fernando Rd & Sheldon St.	7.4	4.4	7.1	4.2	6.8	3.9
Glenoaks Blvd & Peoria St.	7.1	4.1	6.8	4.0	6.6	3.8
San Fernando Rd & Tuxford St.	7.4	4.4	7.1	4.2	6.8	4.0
Bradley Ave. & Tuxford St.	7.3	4.3	7.0	4.1	6.7	3.9
Glenoaks Blvd. & Tuxford St.	7.4	4.4	7.1	4.2	6.8	4.0
Bradley Ave. & Penrose St.	6.7	3.9	6.5	3.8	6.4	3.7

1. Federal 1-hour standard is 35.0 ppm. State 1-hour standard is 20.0 ppm.
2. Federal and state 8-hour standard is 9 ppm.
Source: Christopher A. Joseph and Associates 2004. Calculation print out sheets are provided in Appendix F-1.

Odors

Sources of Odors

Odors may be generated at the Bradley Landfill from the following types of sources:

- Greenwaste area – potential odors from aerobic and anaerobic decomposition of greenwaste during processing and transfer
- The working face of the landfill – potential odors from decomposing waste prior to application of cover
- Landfill gas – potential odors from trace fugitive emissions from the landfill surface, including hydrogen sulfide (H_2S) and volatile organic compounds (VOCs)
- Landfill Gas Condensate – potential odors from fugitive emissions from the landfill gas condensate collection and processing system, including H_2S and VOCs.

Odor Suppressant Systems

The following odor suppressant systems are currently utilized in various locations around the BLRC.

- Greenwaste Area: A high pressure odor neutralizer spray misting system including 1,080 feet of hose with nozzles 10 feet apart, completely surrounds the greenwaste operation. The sprayer lines are strung atop posts that extend 13 feet above a 5-foot berm located at the perimeter of the greenwaste slab. The fence and concrete slab also have mitigation benefits. The slab allows for a more thorough cleanup of greenwaste, preventing odors from leftover accumulation of material. The fence is covered with a screen material which reduces wind entrained odor and dust leaving the site and acts as a visual screen. Both odor neutralizers and deodorizers are sprayed as mitigation. Odor neutralizers eliminate odors through chemical interactions while deodorizers mask odors by adding a specific scent to the air.

- Perimeter Odor Sprayer System: 2,000 feet of low-pressure sprayer lines are located along the top edge of Bradley East fronting Glenoaks Blvd and along the fence line paralleling the railroad tracks and San Fernando Rd. Odor neutralizer is injected directly into a two inch water supply line with a metering pump.

- Two portable high pressure odor neutralizer misting systems with 300 feet of mister lines each are positioned in key locations as needed.

- Tractor mounted orchard-type sprayer for dispersing odor neutralizer around the working face or as needed at other identified locations.

- Odor eating enzymes are added to the water truck for use within and around the green waste operations area.

Operational Odor Best Management Practices (BMPs)

- The green waste material processing facility rejects any objectionably odorous loads and redirects them to be landfilled directly. In the event of extremely odorous loads, the loads will be refused.

- In order to minimize residence time and potential odors, the goal at the curbside greenwaste material processing facility is to clean, grind, and ship out all incoming material each day. Unexpected breakdowns of equipment such as grinders, trommels, sortline equipment or transportation problems involving subcontract haulers can result in carryover of material from one day to the next. Greenwaste piles can be sprayed directly by the tractor mounted sprayer in this case to limit odors overnight. However, carryover material is processed first and shipped out within 48 hours of its arrival.

- When filling on outside slopes of the landfill face, a full soil cover is used each day in place of tarp usage. This eliminates odors which could be emitted when removing the tarp the next morning.

- A Gas Well Drilling Odor Mitigation Plan was developed for use during gas well drilling operations. The plan requires an odor survey be conducted during drilling operations and shutting down drilling activities if odors are detected at the property boundary. It also requires the use of odor neutralizer application to the drill tailings and a vacuum shroud around the hole to collect gas and pass it through an activated carbon drum.

- Odorous waste streams have been excluded from the landfill (e.g., certain hospital loads and greenwaste fines from an offsite customer). Should odors loads be accepted, they will be immediately covered with other waste to minimize odors.

- In the event Gas Recovery personnel plan to open a vessel containing odorous material such as condensate or hydrocarbons from the LFG system, they are required to contact site operations management/supervision before beginning such work to obtain permission to proceed. Site operations management will assess conditions such as wind direction and speed and the availability of odor neutralizer spray equipment before permitting the work to proceed. If in the opinion of site management, there is a chance of odors reaching neighbors, the work will be rescheduled for a time when conditions are more favorable.

- Odor Surveys – Waste Management staff conducts daily offsite patrols to check for odors. Any odors that are detected are identified as to the source and immediate corrective action is taken. Upon receipt of a report of offsite odors and the source is identified as the green waste area, the percentage of deodorant in the mister solution is increase from 25% to 45% until the load is transported.

- All surrounding neighbors have been supplied with a phone number to call to report any offsite odors.

ENVIRONMENTAL IMPACT

Thresholds of Significance

Background

A project's air quality impacts can be separated into short-term impacts due to construction and long-term permanent impacts from project operations. Determination of significant impacts is the responsibility of the lead agency, the City of Los Angeles Department of City Planning.

The City prepared the Draft L.A. CEQA Thresholds Guide in 1998[8]. For air quality, the City has not adopted specific citywide significance thresholds but instead relies on significance thresholds identified by the SCAQMD in its CEQA Air Quality Handbook (SCAQMD CEQA Handbook), as revised in November 1993 and approved by the SCAQMD's Board of Directors.

In addition, the SCAQMD CEQA Handbook and Appendix G of the State CEQA Guidelines identify indicators of potential air quality impacts, including:

- 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 release in emissions which exceed quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

Thresholds

Within this context, the following thresholds of significance were applied to determine whether or not air quality impacts resulting from the Proposed Project would be significant. These thresholds are summarized in Table 4.4-5.

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[8] *The CEQA Thresholds Guide has not been formally adopted by the City Council. However, on August 14, 2001, the City Council authorized City departments to use the CEQA Thresholds Guide for administrative guidance in the preparation and review of environmental documentation.*

Mass Daily Emissions

The SCAQMD's emission thresholds apply to all federally regulated air pollutants except lead, which is not exceeded in the SCAB. The SCAQMD thresholds provide a basis for making significance determinations for construction activity based on the maximum daily emissions during the construction period, which provides a "worst-case" analysis of the construction emissions. Similarly, significance determinations for operational emissions were based on the maximum daily emissions during the operational phase. Because overlap of construction and operational activities would be reasonably foreseeable under both phases of the project, potential impacts under that scenario were also considered. As such, daily construction and operational emissions associated with the Proposed Project would be significant if they exceed the thresholds shown in Table 4.4-5 under "Mass Daily Thresholds". Emissions exceeding these thresholds would be deemed to constitute a cumulatively considerable net increase of criteria pollutant(s) for which the project region is in non attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Local Carbon Monoxide Concentrations

Under the SCAQMD significance criteria, carbon monoxide emissions from the Proposed Project would be significant if they cause CO concentrations at impacted locations to exceed the Federal or State standard as shown in Table 4.4-5 under "Ambient Air Quality for Criteria Pollutants" or, in an area that already exceeds a standard, to increase CO concentrations by more than one part per million (ppm) averaged over one hour or 0.45 ppm averaged over eight hours. CO concentrations exceeding the standards identified in Table 4.4-5 would be deemed to constitute violation of an air quality standard or substantial contribution to an existing or projected air quality violation.

Toxic Air Contaminants

SCAQMD Rule 1401 establishes allowable risk thresholds for new, modified or relocated stationary sources (i.e., pieces of equipment) whose operation emits toxic air contaminants. The rule requires a permit applicant to complete a health risk assessment for emissions of a specified list of toxic air contaminants. Emissions with resulting cancer risks of up to 10 in one million are allowed when issuing SCAQMD permits as long as the equipment includes the Best Available Control Technology (T-BACT) for reducing those emissions. New projects with a health risk greater than 10 in one million would be denied an SCAQMD permit. SCAQMD also has a rule (Rule 1402) that addresses toxic emissions from existing sources. Rule 1402 requires existing facilities with cancer risk numbers greater than 25 in one million to install BACT and reduce emissions. For purposes of the analysis presented in this EIR, the more conservative standard set forth in SCAQMD Rule 1401 (additional cancer risk of 10 in one million) was used to identify significant health risk impacts, as shown in Table 4.4-5 under "Toxic Air Contaminants and Odor Thresholds".

A risk assessment in the South Coast Air Basin is also required to include determining the level of risk from a source for potential effects of acute illnesses (short-term), and chronic illnesses (long-term). Non-carcinogenic effects are expressed using the Acute Hazard Index (HI) for short term exposure and the Chronic HI (for long term exposures). The State of California provides a Reference Exposure Level (REL) which is required to be used as an indicator of potential adverse non-cancer health effects. An REL is a concentration level ($\mu g/m^3$) or dose (mg/kg-day) at which no adverse health effects are anticipated. The HI is the ratio of the chemical concentrations from the proposed project, determined from modeling, to the REL. The Chronic HI is based upon an annual average emissions per year whereas the Acute HI is based upon a maximum one-hour emission level. When emissions of several toxic air contaminants are quantified from a specific activity, and they affect the same organ system in the body (e.g., respiratory system, nervous system, reproductive system, etc.), there could be a cumulative effect on the target organ. In these cases, the cumulative hazard index is evaluated. For both acute and chronic exposures, a total HI of 1 or greater (that is, the exposure from the project exceeds the concentration or dose at which no adverse health effects would be anticipated) at any target organ would represent a significant health risk, as shown in Table 4.4-5 under "Toxic Air Contaminants and Odor Thresholds".

Calculated health risks associated with the proposed project that exceed the cancer and non-cancer risk thresholds described above would be deemed to expose sensitive receptors to substantial pollutant concentrations.

Odors

SCAQMD Rule 402 – Nuisance states, among other things, that a person shall not discharge from any source such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public.. There are no established objective thresholds or approved models for determining the significance of odor impacts. The rule is enforced both through inspections by SCAQMD enforcement staff as well as citizen complaints. Citizens can complain of nuisance odors and visible emissions to SCAQMD staff and inspectors will be sent to investigate. For purposes of this analysis, a significant impact would occur if the proposed project were to result in a substantial increase in the likelihood that odors would be generated that would cause a nuisance affecting a considerable number of persons or the public, as set forth in SCAQMD Rule 402. Exceedance of this threshold would be deemed to constitute creation of objectionable odors affecting a substantial number of people.

All feasible mitigation measures have been identified and implemented to reduce significant impacts to the maximum extent feasible.

Consistency with the Air Quality Management Plan

The AQMP is the region's blueprint for achieving federal and state air quality standards in the South Coast Air Basin (SCAB). The AQMP addresses both current and future activities within the SCAB. In order to achieve the standards, future development projects and activities within the SCAB must be consistent with the AQMP. Criteria for determining consistency with the AQMP are defined in Chapter 12, Section 12.2 and Section 12.3 of the SCAQMD's CEQA Air Quality Handbook.

Consistency Criterion No. 1: The Proposed Project will not result in an increase in the frequency or severity of existing air quality violations (i.e., exceedances of NAAQS or CAAQS) or cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emissions reductions specified in the AQMP.

Consistency Criterion No. 2: The Proposed Project will not exceed the assumptions in the AQMP in 2010 or increments based on the year of project build-out phase.

Projects not meeting the criteria set forth in the AQMD CEQA Air Quality Handbook would be deemed to conflict with or obstruct implementation of the applicable air quality plan.

Table 4.4-5
Air Quality Significance Thresholds

Mass Daily Thresholds		
Pollutant	**Construction**	**Operation**
NO_x	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
SO_x	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs) and Odor Thresholds		
TACs (including carcinogens and non-carcinogens)	Cumulative Maximum Incremental Cancer Risk ≥ 10 in 1 million if T-BACT is installed Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality for Criteria Pollutants[a]		
CO 1-hour average 8-hour average	In attainment; significant if project causes or contributes to an exceedance of any standard: 35 ppm (federal); 20 ppm (state) 9.0 ppm (state/federal)	

$\mu g/m^3$ = microgram per cubic meter; mg/m3 = milligram per cubic meter; ppm = parts per million
lbs/day = pounds per day; ≥ = greater than or equal to
a. Corresponds to National and State Ambient Air Quality Standard for CO as shown in Table 4.4-1.
Source: SCAQMD CEQA Air Quality Handbook, 1993; SCAQMD Rule 1401; SCAQMD Rule 402

Project Impacts and Mitigations

BLRC Transition Master Plan Phase I

The proposed 43-foot transitional vertical landfill expansion would give Bradley Landfill a remaining capacity of approximately 3.5 million tons (4.7 million cy). During Phase I, the landfill will continue to use and modify, as necessary, existing facilities and all environmental controls. As part of Phase I, the BLRC is voluntarily proposing to reduce the maximum permitted daily tonnage at the landfill from 10,000 tpd to 7,000 tpd. Actual rates of acceptance, however, will increase from approximately 1,500 tpd to a maximum of 7,000 tpd. This level of operation and the associated levels of emissions in the following analysis will ease on April 14, 2007, when Phase II begins.

The construction of the 4,000 tpd TS and 1,000 tpd MRF would also occur during Phase I. Operation of these facilities would not occur until Phase II.

Phase I also includes an increase in the existing green and wood waste operation on Bradley East by 1,240 tpd over the existing level of operation (e.g., from 1,260 to 2,500 tpd). This increase would begin in Phase I and continue through Phase II of the Proposed Project to provide additional capacity to process green and wood waste materials that are currently processed at another facility in the Sun Valley area. Existing odor and dust controls measures would continue to be implemented. The additional wood grinder would be electrically-powered. Thus, the increase in operation will have no diesel emissions or related air quality concerns other than the emissions generated by the delivery and export of the green and wood waste materials.

Impact 4.4-1: Phase I activities would generate emissions from the use of construction equipment as part of the construction of the proposed TS/MRF facility. (Significant)

Phase I construction activities would result in emissions of CO, VOC, NO_x, SO_x, $PM_{2.5}$ and PM_{10}. Construction emissions are expected from the following equipment and processes:

- Construction equipment (dump trucks, backhoes, graders, etc.);
- Equipment delivery/on-site travel (including travel on unpaved roads);
- Heavy diesel trucks (importing fill material);
- Construction workers trips; and
- Fugitive dust associated with site construction activities.

The following components were factored into the air quality construction analysis for Phase I of the Proposed Project. Emissions from construction activities would be temporary in nature.

Construction Workers' Trips

Construction emissions also include emissions from construction worker vehicles traveling to and from the work site. Each worker commute vehicle is assumed to travel 30 miles to and from work each day. Emissions from employee vehicles were considered using the EMFAC2002 emission factors developed by CARB.

Fugitive Dust Associated with Site Construction Activities

Fugitive dust sources include grading, trenching, wind erosion and truck filling/dumping at the site. During construction activities, water used as a dust suppressant will be applied in compliance with SCAQMD Rule 403 in the construction area during grading, trenching, and earth-moving activities to control and reduce fugitive dust emissions. Application of water reduces emissions by a factor of approximately 34 to 68 percent (SCAQMD, 1993). It is assumed herein that one water application per day reduces emissions by 34 percent and two applications reduce emissions by 50 percent. Fugitive dust suppression, often using water, is a standard operating practice and is one method of complying with SCAQMD Rule 403. The detailed emission calculations are provided in Appendix F-2.

Fugitive Dust Associated with Travel on Paved and Unpaved Roads

Vehicles and trucks traveling on paved and unpaved roads are also a source of fugitive emissions during the construction period. Fugitive dust emissions were also calculated for on-site cars, light duty trucks and buses. The fugitive emissions for trucks assume delivery trucks will travel on paved roads and water trucks will water unpaved roads twice a day. Emissions of dust caused by travel on paved roads were calculated using the U.S. EPA's, AP-42, Section 13.2.1 emission factor for travel on paved roads and using the CARB's Methodology 7.9 to determining the appropriate silt loading. Emissions of dust caused by travel on unpaved roads were calculated using the U.S. EPA's AP-42 Section 13.2.2 methodology.

Daily construction emissions were calculated for the peak construction day activities in Phase I. Peak day emissions are the sum of the highest daily emissions from employee vehicles, fugitive dust sources, construction equipment and transport activities for the construction period of the TS/MRF. The peak emissions were determined for each pollutant and are shown in Table 4.4-6. Emission factors for construction equipment were taken from the CEQA Air Quality Handbook using site-specific information where available. As shown in Table 4.4-6, emissions of NO_x and PM_{10} would exceed SCAQMD thresholds and would be significant. Emissions of all other criteria pollutants would be below SCAQMD thresholds and would be less than significant.

Table 4.4-6
Phase I Peak Day Construction Emissions (lbs/day)

Activity	VOC	CO	NO_x	SO_x	PM_{10}[a]
Soil Import/Pad Construction	8	45	69	0.9	366
Building Construction	1	14	1	---	4
Paving	9	48	67	---	22
Max Daily Construction Emissions	**18**	**107**	**137**	**0.9**	**392**
SCAQMD Threshold Level	75	550	100	150	150
Significant?	No	No	**Yes**	No	**Yes**

[a] *Includes twice daily watering required by SCAQMD Rule 403.*
Please see Appendix F-2 for a complete discussion and breakdown of the equipment, assumptions, hours of operation, etc., associated with these calculations. These calculations are primarily based on construction equipment, delivery trucks/trips, heavy-duty diesel trucks, construction workers' commuting and fugitive dust. The figures presented above are prior to the implementation of mitigation.
Source: Environmental Compliance Solutions, 2005

Mitigation: The following feasible mitigation measures have been identified to avoid or reduce emissions associated with construction activities. Measures designed to reduce PM_{10} will also reduce $PM_{2.5}$.

On-Road Mobile Sources

4.4-1 Prior to beginning Phase I construction activities, the project applicant shall develop a Construction Emission Management Plan for the Proposed Project. The Plan shall include measures to minimize emissions from vehicles including, but not limited to: scheduling truck deliveries to avoid peak hour traffic conditions, consolidating truck deliveries, etc.

Off-Road Mobile Sources

4.4-2 Use electricity or alternative fuel for on-site equipment to the extent feasible; for all other equipment use ultra low sulfur diesel fuel.

4.4-3 Maintain construction equipment tuned up and with two to four degree retard diesel engine timing.

4.4-4 Use on-site electricity rather than temporary power generators in portions of the landfill where electricity is available.

4.4-5 Use ultra low sulfur diesel (as defined in SCAQMD Rule 431.2).

4.4-6 Use construction equipment that meets EPA Tier I, II or III emission requirements.

4.4-7 Use CARB-verified particulate filter traps.

PM_{10} Emissions from Grading, Open Storage Piles, and Unpaved Roads

4.4-8 Pursuant to SCAQMD Rule 403, a Fugitive Dust Control Plan will be developed and implemented for the Proposed Project.

Impact 4.4-2: Phase I activities would generate additional criteria pollutant emissions from operational activities associated with the proposed transitional vertical expansion, and increase in green and wood waste processing capacity and expanded MRF operations on Bradley East. (Significant)

Phase I of the Proposed Project would include a transitional increase in the maximum height of the landfill from 1,010 to 1,053 feet above msl. This height increase will create approximately 4.7 million cubic yards (cy) of additional disposal capacity and allow the landfill to operate at up to 7,000 tpd until the established closure date of April 14, 2007. The anticipated operational changes at the facility include the addition of nine more personnel as well as one additional bulldozer and one additional compactor. The additional trips generated associated with these operational changes have been evaluated for criteria pollutants.

Phase I would also include an increase in the permitted operation to 2,500 tpd, an increase of 1,240 tpd over the existing level of operation. The proposed expansion of the wood and green waste operation would commence in Phase I and continue through Phase II and beyond. The proposed Phase I MRF operation on Bradley East would add a maximum of 40,000 square feet in processing of recyclable materials at an increase of 7 tpd (92 to 99 tpd). Incoming trucks will discharge separated and non-source separated recyclable materials to the tipping floor where recyclables are removed and processed. Both manual and mechanical sorting and processing equipment will be utilized. The proposed sort line and modified MRF operations would operate in the same general location of Bradley East as the existing MRF operations, with the same type of equipment, and as generally reflected in the plot plans submitted to the Zoning Administrator in 1995 and 1996.

The total additional operational emissions projected to result from the Phase I project are identified in Table 4.4-7. Most of the emissions are associated with additional trips to the facility due to the additional landfill capacity. Other emissions are associated with the additional equipment associated with the expanded green and wood waste operations (including an additional electric grinder) and MRF. As shown in Table 4.4-7, emissions of VOC, NO_x and PM_{10} would exceed SCAQMD thresholds and would be significant. Emissions of all other criteria pollutants would be below SCAQMD thresholds and would be less than significant.

Table 4.4-7
Phase I Operational Emissions (lbs/day)

Sources	VOC	CO	NO_x	SO_x	PM_{10}
Transitional Vertical Landfill Expansion, Expansion of Green and Wood Waste Processing, Expansion of Existing MRF	74	314	954	4	187
SCAQMD Significance Threshold	**55**	**550**	**55**	**150**	**150**
Significant?	**Yes**	No	**Yes**	No	**Yes**

The numbers shown reflect the increased emissions associated with Phase I activities. See Appendix F-3 for a complete discussion of the processes involved in Phase I operations. All figures presented above are prior to mitigation.
Source: Environmental Compliance Solutions, 2005

Mitigation: The following mitigation measures have been identified to reduce operational impacts associated with the Proposed Project.

4.4-9 Use electricity or alternate fuels or low-sulfur diesel fuel for on-site mobile equipment to the extent feasible.

4.4-10 Investigate the technological feasibility of using a diesel oxidation catalyst or PM filter trap on an off-road device (i.e. construction equipment). Although most of these devices are not CARB-verified for off-road applications, the Applicant will conduct a technological feasibility analysis on one piece of equipment. If successful, the Applicant will consider extending the program to 2008.

4.4-11 Conduct a pilot study using a CARB-verified Diesel Particulate Filter that is also verified to reduce NOx emissions on one refuse hauling truck.

4.4-12 Maintain construction equipment tuned up and with two to four degree retard diesel engine timing during landfill operation and closure activities.

4.4-13 Purchase and use an electric wood grinder in lieu of a traditional diesel grinder.

Impact 4.4-3: During Phase I, construction activities and operational activities occurring concurrently would generate additional criteria pollutant emissions. (Significant)

During Phase I, when construction of the TS/MRF is taking place, concurrent emissions from construction activity and operational activity would occur. The maximum emission levels projected to occur during Phase I, when all activities (construction and operational) are taking place simultaneously are shown in Table 4.4-8. As shown in Table 4.4-8, the maximum Phase I emissions of VOC, NO_x and PM_{10} would exceed SCAQMD thresholds and would be significant. Emissions of all other criteria pollutants would be below SCAQMD thresholds and would be less than significant.

Table 4.4-8
Phase I Peak Day Emissions (lbs/day)

Activity	VOC	CO	NO_x	SO_x	PM_{10}
Construction	18	107	137	0.9	392
Operation	74	314	954	4	187
Max Daily Emissions	**92**	**441**	**1,091**	**4.9**	**579**
SCAQMD Threshold Level	55	550	55	150	150
Significant?	**Yes**	No	**Yes**	No	**Yes**
Source: Environmental Compliance Solutions, 2005					

Mitigation: Mitigation measures 4.4-1 through 4.4-13 would be applicable to emissions associated with the Proposed Project in Phase I.

Impact 4.4-4: As a result of additional waste disposal during Phase I, additional landfill gas would be generated which would need to be accommodated by the landfill gas collection and control system presently operated at the landfill. (Less Than Significant)

The permitted acceptance of additional municipal solid waste could generate additional landfill gas (LFG) emissions. The landfill is equipped with a landfill gas collection and control system that is constructed and operated in compliance with all applicable California Code of Regulations. The LFG system consists of a network of wells and collection piping and appurtenances (i.e., condensate management). The LFG destruction/utilization system consists of three flares, five on-site engine-generator sets and a gas compression plant, used to pump collected LFG off-site for use at the Penrose Gas Conversion, LLC (formerly known as Ogden Power Pacific) power plant.

A study projecting the additional amount of landfill gas recovery that could occur with implementation of the proposed transitional vertical expansion has been prepared by SCS Engineers (see Appendix I-3 to this EIR). The projection was prepared using USEPA's LandGEM model, which predicts gas generation based on characteristics of the landfill calibrated to the actual and historical results of the operation of the current system. The analysis demonstrates that the total destruction capacity of the existing LFG system (excluding the gas compressor plant) is 12,222 standard cubic feet per minute (scfm). Under the proposed transitional vertical expansion, the projected peak "most likely" recovery rate for LFG is 8,263 scfm in 2007 compared to 7,985 scfm in 2002 under the current permitted capacity, a modest 3.5% increase in gas generation (see Appendix I-1 to this EIR). Even more conservative estimates have concluded that the highest "likely" recovery rate would be 9,641 scfm in 2007, which is also within the total destruction capacity of the system. Therefore, increased generation of LFG associated with the proposed transitional vertical expansion would be well within the capacity of the existing LFG collection and control system and impacts would be less than significant.

Further, the SCAQMD sets permitting limits on both the flares and engines and restricts the amount of the gas that can be routed to any of these devices. BLRC is well within permitted limits for these devices and the Proposed Project is not expected to result in any exceedances of these permit conditions. Therefore,

impacts related to the generation of additional landfill gas under the proposed transitional vertical expansion would be less than significant.

Mitigation: No mitigation measures are required.

Impact 4.4-5: As a result of additional waste disposal during Phase I, additional landfill gas would be generated that could impact the ability of the LFG collection and control system to control surface gas emissions. (Less Than Significant)

Not all LFG generated within a landfill is captured by the LFG collection system. The percentage of gas which is not captured is conventionally estimated at between 60% and 85% of the gas generated (this range has been adopted by USEPA in its methodology to predict "fugitive" LFG emissions.) Gas that vents to the atmosphere without treatment can contribute to the production of photochemical smog. In order to minimize this venting, SCAQMD Rule 1150.1 requires monitoring of emissions through the surface and sets limits (methane concentrations cannot exceed 500 parts per million by volume (ppmv) at any single location nor average 50 ppmv over any specified grid (roughly 50,000 square feet)).

The increase in landfill height will enhance the ability of the LFG collection system to capture generated gas. As refuse is placed and compacted in roughly horizontal layers, gas moves more easily in a horizontal/lateral direction than vertically. This results in an enhancement of the "radius of influence" of vertical extraction wells and higher vacuums can be applied at each of the wells without allowing air to intrude. SCS reviewed the year 2004 surface emissions monitoring results. As is typical with landfills, there were some exceedances of the 500 ppmv instantaneous surface monitoring standards. In all but one case, adjustments were made to nearby wells and/or the nearby surface soils were reworked and the exceedance was corrected. This is the normal detection/modification cycle of instantaneous monitoring. In the remaining case, the exceedance continued until additional vertical wells were installed and then the exceedance ceased. No integrated samples through the year exceeded the 50 ppmv standard within a grid. This suggests that the control system is capable of successfully limiting surface emissions.

Since the LFG collection system has the capacity to handle the modest amount of additional gas generated by the additional waste that would be deposited under the proposed transitional vertical expansion, as discussed above, and since additional refuse height enhances the capability of the system to collect gas, the analysis concluded[9] that the additional waste permitted under the proposed transitional vertical expansion would not adversely impact the ability of the existing LFG collection system to control surface emissions. Impacts related to surface gas emissions would be less than significant.

Mitigation: No mitigation measures are required.

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[9] *SCS Engineers, see Appendix I-3.*

Impact 4.4-6: Phase I activities would generate additional traffic, which would have the potential to increase localized CO concentrations at intersections near the project site. (Less Than Significant)

Project-related traffic during Phase I could also cause increased CO concentrations at area intersections as a result of increased traffic congestion. Table 4.4-8 shows the resulting CO concentrations at the six study intersections with and without the project. As shown, none of the intersections would experience CO concentrations that exceed the State 1-hour CO standard or Federal and State 8-hour CO standard. Impacts related to local CO concentrations would be less than significant.

Table 4.4-9
Phase I (2007) Carbon Monoxide (CO) Concentrations (parts per million)

Intersection	25 Feet		50 Feet		100 Feet	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
San Fernando Rd & Sheldon St.	7.6	4.5	7.3	4.3	6.9	4.0
Glenoaks Blvd & Peoria St.	7.2	4.2	6.9	4.0	6.6	3.8
San Fernando Rd & Tuxford St.	7.7	4.6	7.4	4.3	7.0	4.1
Bradley Ave. & Tuxford St.	8.2	4.9	7.7	4.6	7.2	4.2
Glenoaks Blvd. & Tuxford St.	7.7	4.6	7.4	4.3	7.0	4.1
Bradley Ave. & Penrose St.	6.7	3.9	6.6	3.8	6.4	3.7

1. Federal 1-hour standard is 35.0 ppm. State 1-hour standard is 20.0 ppm.
2. Federal and State 8-hour standard is 9 ppm.
Source: Christopher A. Joseph and Associates 2004. Calculation print out sheets are provided in Appendix F-1.

Mitigation: No mitigation measures are required.

Impact 4.4-7: Phase I would include additional waste disposal in the landfill and an increase in green and wood waste processing which would have the potential to generate odors. (Less Than Significant)

The proposed increase in landfilling and increase in green and wood waste processing that would occur under the proposed transitional vertical expansion (Phase I) would not be expected to generate any additional odors at the facility. The landfill comes equipped with odor prevention devices and maintenance practices, as discussed above. These systems and practices would continue to be operated under the proposed transitional vertical expansion. Other factors that will reduce the potential for odors include the location of disposal activities within the landfill prior to its closure. Landfilling would not occur on the slopes of the landfill, the area closest to off-site sensitive receptors. Landfill operations taking place under the proposed transitional vertical expansion will be confined to the highest top deck area. In addition, the odor Best Management Practices for the green and wood waste operation would continue to be implemented in conjunction with the increased green and wood waste processing capacity. Because of these factors, the proposed project would not substantially increase the likelihood that odors would be generated that would cause a nuisance affecting a considerable number of persons or the public

and impacts of the proposed transitional vertical expansion and increase in green and wood waste processing with respect to odors would be less than significant.

Mitigation: No mitigation measures are required.

BLRC Transition Master Plan Phase II

Phase II includes the following activities: (1) Landfill closure and installation of final cover (April 2007-April, 2008); (2) TS/MRF operation; and (3) continued operation of expanded green and wood waste processing facilities.

Impact 4.4-8: Phase II activities would generate emissions from the use of construction equipment to complete final closure of the landfill. (Significant)

Landfill closure activities are included in Phase II. These would include the installation of a final cover using construction equipment. Upon completion of the final dirt cover, vegetation will be planted on all slopes as well as landfill cap; surface water control structures will be built, as well as the final transition of the landfill to an end use. Table 4.4-10 provides the peak day construction emissions associated with landfill closure activities that would occur under Phase II of the Proposed Project. As shown in Table 4.4-10, emissions of NO_x resulting from this activity would exceed SCAQMD thresholds and would be significant. Emissions of all other criteria pollutants would be below SCAQMD thresholds and would be less than significant. Emissions from construction activities would be temporary in nature, occurring only during time frames when landfill closure activities are actively taking place (April 2007-April 2008).

Table 4.4-10
Phase II Peak Day Construction Emissions (lbs/day)

Activity	VOC	CO	NO_x	SO_x	PM_{10}
Landfill Closure/Temp. Construction Activities	18	93	215	---	140
Total Construction Emissions Phase II	**18**	**93**	**215**	**---**	**140**
SCAQMD Threshold Level	75	550	100	150	150
Significant?	No	No	**Yes**	No	No

Please see Appendix F-2 for a complete discussion of the processes involved in Phase II construction. These calculations are based on the activity associated with closure of the landfill. All figures presented above are prior to mitigation.
Source: Environmental Compliance Solutions, 2005

Mitigation: Mitigation measures 4.4-1 through 4.4-8 would apply to landfill closure activities.

Impact 4.4-9: During Phase II, additional criteria pollutant emissions would be generated from operational activities, including continuing the expanded green and wood waste operation and operating the new TS/MRF. (Significant)

The bulk of operational emissions at the facility result from increased truck travel. The California Air Resources Board (CARB) established a law in 2004 that targeted emissions from refuse-carrying trucks. The CARB regulation requires trucks to be retrofitted based on make and model year. Mandated reductions are either 25% or 80% for PM_{10} depending upon the model year of the engine[10]. As such, emissions will continue to decline from this source category as these fleets are turned over and replaced with newer, cleaner models.

The proposed TS/MRF that would become operational in Phase II will operate with incoming trucks discharging to the tipping floor where waste is consolidated and re-loaded into transfer trucks for transport to other regional landfills. The TS will be a maximum of 55,000 square feet and operate Monday through Saturday, 6 a.m. to 8 p.m. There will be three truck-loading wells for outgoing transfer trucks.

In addition to operation of the TS/MRF, Phase II operational activities include continuation of the expanded green and wood waste operation that would begin in Phase I.

Emissions would be associated with the additional equipment as well as the associated trips after April 2007, when the landfill would close. The total additional operations emissions projected to result from Phase II are identified in Table 4.4-11. As shown in Table 4.4-11, emissions of NO_x would exceed

Table 4.4-11
Phase II Operational Emissions (lbs/day)

Sources	VOC	CO	NO_x	SO_x	PM_{10}
TS/MRF, Expanded Green and Wood Waste	46	287	567	3	114
SCAQMD Significance Threshold	**55**	**550**	**55**	**150**	**150**
Significant?	No	No	**Yes**	No	No
The numbers shown reflect the increased emissions associated with Phase II activities. Please see Appendix F-3 for a complete discussion of the processes involved in Phase II operations. These calculations are primarily based on the operation of a 4,000 tpd TS, a production increase for wood grinding operations and 1,000 tpd MRF to replace the landfill activities. All figures presented above are prior to mitigation.					

SCAQMD thresholds and would be significant. Emissions of all other criteria pollutants would be below SCAQMD thresholds and would be less than significant.

Minimal fugitive dust is anticipated from the materials being delivered to the MRF as the road will be paved. The MRF is expected to handle primarily recyclables such as cardboard, paper, glass, and aluminum. The characteristics of these materials do not lend themselves to the contribution or formation of fugitive dust.

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[10] *California Air Resources Board, Solid Waste Collection Vehicle Rule, passed September, 2003.*

Mitigation: Mitigation measures 4.4-9 through 4.4-13 would apply to Phase II operational emissions.

Impact 4.4-10: During Phase II, landfill closure activities and operational activities occurring concurrently would generate additional criteria pollutant emissions. (Significant)

During Phase II (April 2007-April 2008), when construction activity associated with landfill closure is taking place, concurrent emissions from construction activity and operational activity would occur. The maximum emission levels projected to occur during Phase II, when all activities (construction and operational) are taking place simultaneously are shown in Table 4.4-12. As shown in Table 4.4-12, the maximum Phase II emissions of VOC, NO_x and PM_{10} would exceed SCAQMD thresholds and would be significant. Emissions of all other criteria pollutants would be below SCAQMD thresholds and would be less than significant. These peak emission levels would occur only during the time frame when landfill closure activities are taking place (April 2007-April 2008). After landfill closure is complete, emissions would be within the levels shown in Table 4.4-11 above.

Table 4.4-12
Phase II Peak Day Emissions (lbs/day)

Activity	VOC	CO	NO_x	SO_x	PM_{10}
Construction	18	93	215	---	140
Operation	46	287	567	3	114
Max Daily Emissions	**64**	**380**	**782**	**3**	**254**
SCAQMD Threshold Level	55	550	55	150	150
Significant?	**Yes**	No	**Yes**	No	**Yes**
Source: Environmental Compliance Solutions, 2005					

Mitigation: Mitigation measures 4.4-1 through 4.4-13 would be applicable to emissions associated with the Proposed Project in Phase II.

Impact 4.4-11: Phase II activities would have the potential to generate toxic air contaminants from the operation of diesel trucks. (Less Than Significant)

Refuse Hauling Truck Emissions Background

In 1998, the California Air Resources Board (ARB) identified particulate matter from diesel-fueled engines (DPM) as a toxic air contaminant. In order to partially address health effects associated with the emissions of DPM, all solid waste collection vehicles are now required to comply with ARB's *Control Measure for Diesel Particulate Matter from On-Road Heavy Duty Residential and Commercial Solid Waste Collection Vehicles,* effective July 20, 2004. ARB's control measure requires:

- Engine certified to 0.01 gram particulate matter per bhp-hr (equivalent of a 2007 truck engine); or
- Engine certified to 0.1 gram particulate matter per bhp-hr, and use of the highest level of control verified for the specific engine; or
- Use of an alternative fuel.

The above standards must be met in a phased approach through December 31, 2010. As part of this air quality analysis, a Health Risk Assessment (HRA) was prepared to identify potential air toxic impacts to the community from operation of diesel-fueled solid waste collection vehicles (SWCV) at the proposed Bradley Transfer Station and Material Recovery Facility (TS/MRF). The complete study is contained in Appendix F to this EIR. A risk assessment in the South Coast Air Basin includes determining the level of risk from a source for potential effects of 1) cancer, 2) acute illnesses (short-term), and 3) chronic illnesses (long-term). The most concentrated source of long term emissions would be from trucks entering the site, idling at the scales and then idling at either the TS/MRF or greenwaste processing areas within the BLRC site.

Analysis Assumptions

Conservative assumptions were used in the analysis in order to provide for a substantial margin of safety in assessing the potential health risks associated with diesel truck operations at the project site. This HRA follows the South Coast Air Quality Management District (SCAQMD) guidance *Risk Assessment Procedures for Rules 1401 and 212 (Version 7.0, July 1, 2005).*

The number of additional SWCV projected to utilize the TS/MRF was calculated assuming the maximum amount of tons per day (TPD) is received every day at the Transfer Station (4,000 TPD), MRF (1,000 TPD) and greenwaste processing area (1,260 TPD). This would result in 876 additional diesel-powered trucks[11] per day, 6 days per week spread out over a 12 hour day, 608 of which are SWCVs bringing materials inbound and 268 of which are transfer trucks taking materials outbound (see Appendix B to Technical Appendix E to this EIR). Other key assumptions include:

- The fuel consumption estimates are based on a 275 bhp engine.
- The emission estimates assume that the 608 SWCV trucks idle for 2.5 minutes at the entrance scales (burning 0.042 gallons of diesel fuel), travel for 4.5 minutes along an internal road to and from the TS/MRF (burning 0.493 gallons diesel at 50 percent load factor), and 4.0 minutes idling to unload the waste (burning 0.066 gallons diesel at 50 percent load factor), for a total of 11 minutes.
- The remaining 268 trucks are transfer trucks that travel to and from the TS/MRF or greenwaste area for 4.5 minutes, idle for 4.0 minutes awaiting entry and then shut off their engines during loading.

Emission estimates are based on Ventura County AB 2588 emission factors for diesel internal combustion engines.[12] SCAQMD's Rule 1401 Guidance Document requires the use of these factors for calculating fuel combustion in health risk assessments. Actual operational emissions are expected to be lower than reflected in the health risk assessment as the maximum number of trucks is not expected to be processed through the TS/MRF and greenwaste processing facilities every day.

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[11] *Includes SWCV bringing municipal solid waste and recyclables to the BLRC site and transfer trucks removing materials from the site. Additional vehicles that would transport greenwaste to the site would be City of Los Angeles natural-gas fueled vehicles that do not emit DPM. Trucks hauling dirt to the site are also not included because this activity would occur for only a limited period of time and the health risk assessment evaluates the effects of long-term exposures.*

[12] *http://www.vcapcd.org/pubs/Engineering/AirToxics/combem.pdf. Emission factors are based on source test data collected by the Ventura County APCD. The SCAQMD web page that addresses procedures for conducting risk assessments (http://www.aqmd.gov/prdas/Risk%20Assessment/RiskAssessment.html), when referencing "Toxic Emission Factors from Combustion Process" links to the Ventura County APCD emission factors report.*

The HRA assumes that 80% of the engines of SWCV trucks that will deliver refuse and recyclables to the TS/MRF would be controlled with 85 percent control efficiency for particulate matter. This reflects the assumption that 80% of all SWCVs will be in compliance with the CARB regulation by 2007 (as required by the CARB regulation). Conservatively, it is assumed that 20% of the remaining SWCVs delivering to the TS/MRF would not be retrofitted. None of the transfer trucks are assumed to be retrofitted as they are not included in the current CARB regulation for SWCVs. In other words, the HRA conservatively assumes that 20% of the additional trucks delivering refuse and recyclables to the TS/MRF and all of the transfer trucks removing materials from the TS/MRF and greenwaste processing operation will not experience any improvement in emissions performance over the course of the HRA's time frame. As the HRA assumes a 70-year exposure, this assumption provides an extremely conservative estimate of future emissions of toxic air components in diesel exhaust from trucks using the BLRC facility. Truck emission factors are summarized in Table 4.4-13 below and in Appendix F to this EIR. Transfer trucks operated by public entities are expected to be regulated by a new CARB rule in the near future. This would further reduce PM and diesel exposures.

Table 4.4-13
Modeling Information

Required Source Information	
Facility Address	9081 Tujunga Avenue Sun Valley, CA 91352
Facility Location (UTM)	372.5 km E, 3789.5 km N
Local Land Use	Urban
Local Topography	Landfill – Modeled as Flat Terrain
Facility Plot Plan	See Figure 1 in Appendix F-5
Operating Schedule	6 a.m. to 6 p.m., 6 days per week
Mobile Source Information	
Emission Rate (80% of vehicles are controlled with an 85% control efficiency)	Ventura County APCD Emission Factors for Internal Combustion Engines[1]
Source Locations	See Figure 1 in Appendix F-5
Volume Dimensions Gate: Road: Landfill:	 1 Source 15 m L x 15 m W x 4.39 m H 8 Sources 15 m L x 15 m W x 4.77 m H 22 Sources 50 m L x 50 m W x 6.67 m H
Vehicle Trips	608 SWCV per day, 6 days per week 268 transfer trucks per day
Trip Duration/Emission Configuration	2.5 min at entrance (idling) 4.5 min travel to and from TS/MRF 4.0 min to unload at TS/MRF (idling) 11 min total for 608 inbound material trucks Note: the 268 transfer trucks were modeled for 8.5 minutes (11 – 2.5 at gate), assuming engine shut off during loading at the TS/MRF
Dispersion Modeling	
Air Dispersion Model	ISCST3
Model Options	URBAN, NON-DEFAULT (NOCALM)
Meteorological Data	Burbank, Calendar Year 1981 UTM: 379.5 km E, 3783.0 km N
Receptor Grid	50 m along property boundary 100 m grid within 500 m of boundary 500 m grid beyond 500 m from boundary

1. VCAPCD toxic factors from diesel combustion are widely accepted and are posted for use on the SCAQMD website. See www.aqmd.gov/pdras/pdf/COMBEM2001.pdf or www.aqmd.gov – Business/getting permits/toxics/toxic emission factors from combustion processes.
2. Fuel consumption value for idling from California Air Resources Board document, *Staff Report Initial Statement of Reasons Public Hearing to Consider the Adoption of Heavy Duty Vehicle Idling Emission Reduction Requirements, December 5, 2003.*
3. *Fuel consumption value for Road and Landfill was based on 50% load factor – based on CARB's non-road engine emission inventory – and fuel consumption data on the specification sheet for a 275 Volvo engine (engine commonly used in side loader refuse trucks).*

Modeling Approach

Modeling was performed using the Industrial Source Complex – Short Term (ISCST-3) air dispersion model as required by SCAQMD[13]. To calculate air concentrations for the HRA analyses, air dispersion modeling was completed using one year of SCAQMD pre-processed meteorological data from the Burbank Station and the ISCST3 model.

A fine receptor grid extending out approximately 500 meters in all directions from the property boundary with 100-meter spacing was used to locate the region of maximum impact(s). A receptor spacing of 500 meters was used beyond 500 meters from the property boundary. Additionally, discrete receptors were placed along the property line with 50 meter spacing including the property line corners.

Emissions from the vehicles were modeled as volume sources with parameters, assuming 15 meters by 15 meters at Gate A and at 8 locations along the interior road, and assuming 50 meters by 50 meters at 22 locations along the active disposal area. In order to determine volume height, stack parameters (3.5 meter high, 4 inch diameter, 150 C, and 3.19 meters/sec based on Volvo Model VE V7 engine at idle to 50 percent load factor) were in put in EPA's SCREEN3 model to determine plume height at 7.5 meter and 25 meter distances. This resulted in a volume height of 4.39 meters for sources at Gate A, 4.77 meters for sources along the interior road, and 6.67 meters for sources in the active disposal area.

Health Risk Assessment Analysis and Results

Maximum hourly and annual average air concentrations were calculated for each receptor using a nominal emission rate of 1 gram per second. The isopleths are provided in Figures 2 and 3 of Appendix F-5. The resulting concentrations at the maximum offsite location, maximum offsite worker, and maximum residential receptor were then entered into a spreadsheet to calculate the health risks, using SCAQMD's Rule 1401 methodology.

Cancer Risk Results

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[13] *An alternative model available to perform this type of analysis is the ARB's Hot Spots Analysis Reporting Program (HARP). HARP is a tool that assists with the programmatic requirements of the Air Toxics "Hot Spots" Program. However, the HARP software incorporates the same air dispersion model (ISCST-3) as used in the analysis presented in this EIR. In addition, both SCAQMD Rule 1401 and HARP analyses incorporate the same toxicity factors derived by the State Office of Environmental Health Hazard Assessment (OEHHA). The results of the HRA presented in this EIR are therefore anticipated to demonstrate similar results as those derived from running the HARP program as the underlying science in each model is the same*

SCAQMD has not established a specific risk threshold for mobile sources (i.e., trucks). SCAQMD Rule 1401 regulates permitting of new stationary source emission sources. This rule allows permits for cancer risk up to 10 in one million as long as the equipment has Best Available Control Technology for Toxics (T-BACT). Refuse trucks are currently regulated by CARB and CARB requires retrofits over time to reduce PM_{10} emissions by at least 85%. SCAQMD recently adopted a rule requiring rail yards to notify the public if the risk from facility emissions exceeds 10 in one million. Taking all of these factors into account, the HRA utilized the SCAQMD standard of 10 in one million for new sources as a conservative threshold for identifying significant impacts.

Based on the conservative estimate of the maximum emissions generated by trucks utilizing the TS/MRF, as described above, the potential impacts to the nearest offsite worker and nearest residence were calculated (see Table 4.4-14). The maximum impact for an offsite worker occurred at UTM coordinates (372849 E, 3789029 N), immediately east of Gate A on the property line, with a predicted cancer risk of 3.02 in one million. This cancer risk value was determined by using three different factors: 1) Daily Breathing Rate (DBR) Worker = 149 L/kg-day; 2) Annual Concentration Adjustment Factor (AF) Worker = 2.3; and 3) Exposure Value Factor worker = 0.38. The maximum impact at a residence occurred at UTM coordinates (372170 E, 3789300 N), at the southwest border of the facility, with a predicted cancer risk of 3.20 in one million. This cancer risk value was determined by using three different factors: 1) Daily Breathing Rate (DBR) Resident = 302 L/kg-day; 2) Annual Concentration Adjustment Factor (AF) Resident = 1; and Exposure Value Factor Resident = 0.96.

Table 4.4-14
Health Risk Assessment Results

Maximum Offsite Impact (Worker) Immediately East of Gate A	Maximum Cancer Risk: 3.02 in one million Acute Hazard Index: 0.134 Chronic Hazard Index: 0.017 UTM: 372.8 km E, 3789.0 km N
Maximum Offsite Impact (Residential) Residence at Southwest Border of Facility	Maximum Cancer Risk: 3.20 in one million Acute Hazard Index: 0.029 Chronic Hazard Index: 0.0043 UTM: 372.2 km E, 3789.3 km N

Non-Cancer Risk Results

Non-carcinogenic effects are expressed via an Acute Hazard Index and a Chronic Hazard Index. The State of California provides a Reference Exposure Level (REL) which must be used as an indicator of potential adverse non-cancer health effects. An REL is a concentration level ($\mu g/m^3$) or dose (mg/kg-day) at which no adverse health effects are anticipated.

When emissions of several TACs are quantified from a specific activity, and they affect the same organ system in the body (e.g., respiratory system, nervous system, reproductive system, etc.), there could be a cumulative effect on the target organ. In these cases, the cumulative hazard index is evaluated. The

chronic HI is based upon an annual average emission per year whereas the acute HI is based upon a maximum one-hour emission level.

For both acute and chronic exposures, a total HI of 1 (i.e., the concentrations/dosage of TACs exceed the concentration/dosage at which no adverse health effects are anticipated) at any target organ is considered a significance threshold. Chemical concentrations, determined from modeling, are evaluated relative to their respective RELs for each organ and compared to a HI of 1.

Based on the analysis of diesel truck emissions, the maximum HI for the nearest resident is 0.029 and the maximum HI for the nearest offsite worker is 0.017, both of which are well below the significance threshold of 1.0. As such, impacts related to non-cancer risks resulting from the Proposed Project would be less than significant.

Mitigation: No mitigation measures are required.

Impact 4.4-12: Phase II activities would generate additional traffic, which would have the potential to increase localized CO concentrations at intersections near the project site. (Less Than Significant)

Project-related traffic during Phase II could also cause increased CO concentrations at area intersections as a result of increased traffic congestion. However, the amount of traffic generated by the project during Phase II (see Section 4.3 of this EIR) would be less than the traffic generated during Phase I. As a result, the CO concentrations anticipated during Phase II (during landfill closure and after completion of landfill closure activities) would be less than Phase I. As shown in Table 4.4-8, the CO concentrations during Phase I would not exceed the State or Federal standards. Therefore, impacts related to CO concentrations during Phase II would be less than significant.

Mitigation: No mitigation measures are required.

Impact 4.4-13: Phase II would include handling of solid waste in the TS/MRF which would have the potential to generate odors. (Less Than Significant)

The proposed TS/MRF is not expected to generate any additional odors because all transfer activities which could generate potential odors would take place within an enclosed building designed to mitigate odors. The MRF is expected to handle curbside recyclables such as paper, glass and aluminum. The general characteristics of these materials do not lend themselves to generation of odors. The TS/MRF building will be equipped with exhaust fans to provide six air exchanges every hour. The air leaving the building at the roof exhaust fans will be treated by an odor neutralizing misting system to mitigate any odors. Negative pressure will be maintained at the building entrance so no untreated air will leave the building. An odor neutralizer may be mixed with dust control water in the ceiling mounted misting systems for extra odor mitigation as needed. As such, because of the design of the facility, no substantial increase in the likelihood that odors would be generated that would cause a nuisance affecting a

considerable number of persons or the public would occur and impacts of the proposed TS/MRF with respect to odors would be less than significant.

Mitigation: No mitigation measures are required.

AQMP Consistency

As noted above, the SCAQMD has identified two criteria for determining a project's consistency with the AQMP.

Consistency Criterion No. 1

The SCAQMD has identified CO as the indicator pollutant for determining whether air quality violations would occur since it is most directly related to automobile traffic. The CO concentration analysis, above, shows that the Proposed Project would not cause a new violation or exacerbate existing violations of the State and national one- and eight-hour CO concentration standard and no significant impacts are anticipated, during all phases. Therefore, the Proposed Project complies with Consistency Criterion 1.

Consistency Criterion No. 2

Projects that are considered to be consistent with the AQMP growth projections should not interfere with attainment and should not contribute to the exceedance of an existing federal or State air quality standard because such growth is included in the projections utilized in the formulation of the AQMP. Therefore, projects, uses, and activities that are consistent with the applicable assumptions used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP, even if they exceed the SCAQMD's recommended thresholds at the project level. The AQMP control strategy is based on projections from local general plans and population growth projections identified by the SCAG in the Growth Management Chapter of the Regional Comprehensive Plan and Guide (RCPG). The AQMP also assumes that general development projects will implement strategies (mitigation measures) to reduce emissions during construction and operational phases of development. For this reason, projects that are consistent with, or are within the development levels identified in local general plans are considered consistent with air quality related regional plans, such as the 2003 AQMP.

The Proposed Project is located in an area of the City of Los Angeles that is designated for medium and heavy industrial development in the Sun Valley-La Tuna Canyon Community Plan. The intensity of development that would be permitted under the Proposed Project would be consistent with the General Plan land use designation and zoning presently applicable to the project site. For these reasons, the Proposed Project would comply with Consistency Criterion 2.

The Proposed Project complies with Consistency Criteria 1 and 2. Therefore, the Proposed Project would be consistent with the AQMP.

CUMULATIVE IMPACTS

Cumulative air quality and health risk impacts would occur to the extent that criteria and toxic pollutant emissions generated by the Proposed Project combine with emissions from other new and/or ongoing sources in the vicinity. A total of 29 related projects are included in this EIR (see Section II, Table 2-4). As discussed in Section 4.4 of this EIR, the SCAB is presently designated non-attainment of state and Federal standards for CO, ozone and PM_{10}. Total daily air emissions from activities occurring on the project site during Phase I and Phase II of the Proposed Project would exceed SCAQMD thresholds for VOCs, NO_x and PM_{10} and would be significant. The 29 related projects would also contribute VOC, NO_x and PM_{10} emissions into the SCAB. Therefore, the Proposed Project and the related projects would contribute to significant cumulative air quality impacts.

While individual project emissions exceed the SCAQMD thresholds on a localized level, overall the project has the potential to reduce emissions across the SCAB. Materials no longer transported to Bradley, must be disposed of at other municipal and private landfill sites throughout Southern California. Potential disposal sites are as much as 120 miles away from Bradley therefore, contributing to emissions across the Basin. As such, the additional disposal capacity that would be provided under Phase I of the Proposed Project would result in reduced regional emissions by offering the potential to reduce these trip lengths. In addition, the additional transfer capacity that would be provided in Phase II of the Proposed Project would potentially reduce trip lengths by allowing loads to be consolidated for transfer to outlying landfills. Finally, continued compliance with CARB regulations requiring reduction in emissions from trash vehicles and the applicant's programs to convert its fleet to low emissions fuels and alternative fuels (e.g., natural gas) would result in long-range benefits to regional air quality over the course of the Proposed Project.

The analysis of local CO concentration impacts associated with implementation of the Proposed Project considers the effects of growth in traffic associated with the Proposed Project and the related projects listed in Section 2.0. Consequently, impacts of cumulative growth are already incorporated into the projections utilized to model the future CO concentrations shown in the tables above. As indicated, impacts of the Proposed Project, in conjunction with related project and other regional growth with respect to CO concentrations would not exceed state or federal standards and would therefore be less than significant.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the above-listed mitigation measures, emissions of the following pollutants will remain significant and unavoidable for at least one of the project's phases discussed above. See Appendices F-2 and F-3 to this EIR for all calculations and assumptions regarding post mitigation emissions.

- Volatile Organic Compounds – Phase I Operational, Phase I Total Construction and Operational; Phase II Total Construction and Operational

- Oxides of Nitrogen – Phase I Construction, Phase I Operational, Phase I Total Construction and Operational, Phase II Construction, Phase II Operational, and Phase II Total Construction and Operational

- Particulate Matter – Phase I Construction; Phase I Operational, Phase I Total Construction and Operational.

Impacts related to landfill gas generation, local carbon monoxide concentrations, surface emissions of landfill gas, and toxic air contaminants would be less than significant.