5.1 Air Quality

This section presents the assessment of potential impacts on air quality as a result of the construction and operation of the Rice Solar Energy Project (RSEP). The section includes a discussion of the existing air quality setting and the applicable laws, ordinances, regulations, and standards (LORS); the emission estimates for the facility; and the methodology used to determine the potential air quality impacts related to the construction, commissioning, and operation of the proposed facility (pursuant to LORS). A discussion of Rice Solar Energy's (RSE's) proposed mitigation measures is also included. Potential for public health risks, if any, due to emissions of toxic air contaminants associated with construction and or operation of the RSEP are addressed in Section 5.9, Public Health.

5.1.1 Existing Site Conditions

The RSEP site is in the eastern portion of unincorporated Riverside County adjacent to the southern boundary of San Bernardino County in the Mojave Desert Air Quality Management District (MDAQMD). The 3,324-acre privately owned site is immediately south of State Route (SR) 62. The nearest residences are at Vidal Junction (2000 census population 47), approximately 15 miles northeast. The nearest settlement is a cluster of residences at the Metropolitan Water District Iron Mountain Pumping Plant, 17 miles west. The nearest town with any significant population or services is Parker, Arizona (pop. ~11,000), including Parker-area residential communities on the California side of the Colorado River, approximately 32 miles east. Blythe, California (pop. ~15,000), is approximately 40 miles south. Twenty-nine Palms, California, is approximately 75 miles west.

Between 1942 and 1944, the project site served as the Rice Army Airfield, an ad-hoc airstrip and encampment that was part of the World War II Desert Training Center. After the war, the airfield was used as a private air field from 1949 until it was abandoned between 1954 and 1958.

5.1.1.1 Geography and Topography

The RSEP site is relatively flat and is at an elevation of approximately 850 feet above mean sea level. The site is located in a very sparsely settled portion of the Sonoran Desert in the Mojave Desert Air Basin (MDAB). The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes (MDAQMD, 2009). Many of the lower mountains that dot the terrain rise from 1,000 to 4,000 feet above the valley floor (MDAQMD, 2009). The Mojave Desert is bordered in the southwest by the San Bernardino Mountains, separated from the San Gabriel Mountains by the Cajon Pass (MDAQMD, 2009). The nearest Class I area is the Joshua Tree National Park, the closest boundary of which is approximately 25 miles west.

5.1.1.2 Climate and Meteorology

The RSEP is in the MDAB, which is classified as a dry-hot desert climate. The cool, moist coastal air from the South Coast Air Basin is blocked by the San Gabriel and San Bernardino mountain ranges. The area is characterized by hot, dry summers and mild winters, with annual rainfall averaging 3 to 7 inches per year. Relative humidity in the Mojave Desert is

typically 10 percent on summer afternoons and 30 percent on winter afternoons. In the summer, the MDAB is usually influenced by a Pacific subtropical high cell that sits off the coast of California, inhibiting cloud formation and encouraging daytime solar heating (MDAQMD, 2009). Most desert moisture arrives from infrequent warm, moist, and unstable air masses from the south (MDAQMD, 2009). The prevailing winds are out of the west and southwest, resulting in a general west-to-east flow across the MDAB.

Based on the climate summary for the Blythe airport, July is the warmest month of the year, with an historical average high temperature of 108 degrees Fahrenheit (°F) and an average minimum temperature of 81°F (Western Regional Climate Center [WRCC], 2009). The coldest months are December and January, with average daytime high temperatures of 67°F and an average minimum temperature of 41°F (WRCC, 2009). The annual average precipitation recorded at Blythe is approximately 3.5 inches per year, with most of the precipitation in the winter (WRCC, 2009).

5.1.2 Overview of Air Quality Standards

The U.S. Environmental Protection Agency (EPA) has established national ambient air quality standards (NAAQS) for the following seven pollutants, termed criteria pollutants: ozone, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter with aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and airborne lead. The federal Clean Air Act (CAA) requires EPA to designate areas (counties) as attainment or non-attainment with respect to each criteria pollutant, depending on whether the areas meet the NAAQS. An area that is designated non-attainment means the area is not meeting the NAAQS and is subject to planning requirements to attain the standard.

In addition to the seven pollutants listed above, the California Air Resources Board (ARB) has established state standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride. Similar to EPA, ARB designates areas in California as attainment or non-attainment with respect to the California ambient air quality standards (CAAQS). The state standards were designed to protect the most sensitive members of the population, such as children, the elderly, and people who suffer from lung or heart diseases.

State and federal air quality standards are based on two variables: maximum concentration and an averaging time over which the concentration would be measured. Maximum concentrations were based on levels that may have an adverse effect on human health. The averaging times were based on whether the damage caused by the pollutant would occur during exposures to a high concentration for a short time (e.g., 1 hour) or to a relatively lower average concentration over a longer period (8 hours, 24 hours, or 1 month). For some pollutants, there is more than one air quality standard, reflecting both short-term and long-term effects. Table 5.1-1 presents the NAAQS and CAAQS.

TABLE 5.1-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California	National
Ozone	1 hour 8 hours	0.09 ppm (180 μg/m^3) 0.070 ppm (137 μg/m^3)	— 0.075 ppm (147 μg/m^3)
CO	1 hour 8 hours	20 ppm (23 mg/m^3) 9.0 ppm (10 mg/m^3)	35 ppm (40 mg/m^3) 9 ppm (10 mg/m^3)
NO_2	1 hour Annual arithmetic mean	0.18 ppm (339 μg/m^3) 0.030 (57 μg/m^3)	— 0.053 ppm (100 μg/m^3)
SO_2	1 hour	0.25 ppm (655 μg/m^3)	—
	3 hours	—	0.5 ppm[a] (1,300 μg/m^3) (Secondary standard)
	24 hours	0.04 ppm (105 μg/m^3)	0.14 ppm (365 μg/m^3)
	Annual arithmetic mean	—	0.03 ppm (80 μg/m^3)
PM_{10}	24 hours Annual arithmetic mean	50 μg/m^3 20 μg/m^3	150 μg/m^3 —
$PM_{2.5}$	24 hours Annual arithmetic mean	— 12 μg/m^3	35 μg/m^3 [b] 15 μg/m^3 [c]
Sulfates	24 hours	25 μg/m^3	—
Lead	30-day average Calendar quarter Rolling 3-month average	1.5 μg/m^3 — —	— 1.5 μg/m^3 0.15 μg/m^3
Hydrogen sulfide (H_2S)	1 hour	0.03 ppm (42 μg/m^3)	—
Vinyl chloride	24 hours	0.010 ppm (26 μg/m^3)	—
Visibility-reducing particles	8 hours (10 a.m. to 6 p.m. PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.	—

[a]This is a national secondary standard, which is designed to protect public welfare.
[b]3-year average of 98th percentile of 24-hour concentrations.
[c]3-year average of the weighted annual mean concentrations.

Source: ARB, 2008.

μg/m^3 = micrograms per cubic meter
ppm = parts per million

5.1.3 Existing Air Quality

The federal Clean Air Act requires EPA to classify areas in the country as attainment or non-attainment, with respect to each criteria pollutant, depending on whether they meet the national standards. In addition, ARB makes area designations within California for state ambient air quality standards (AAQS). Attainment status for the NAAQS and CAAQS is listed in Table 5.1-2.

TABLE 5.1-2
State and Federal Air Quality Designations for the Project Area

Pollutant	State Designation	Federal Designation
Ozone	1-Hour: Non-attainment 8-Hour: Non-attainment	1-Hour: Not Applicable 8-Hour: Attainment*
CO	1-Hour: Attainment 8-Hour: Attainment	1-Hour: Attainment 8-Hour: Attainment
NO_2	1-Hour: Attainment	Annual: Attainment
SO_2	1-Hour: Attainment 24-Hour: Attainment	24-Hour: Attainment Annual: Attainment
PM_{10}	24-Hour: Non-attainment Annual: Non-attainment	24-Hour: Unclassified
$PM_{2.5}$	24-Hour: Unclassified Annual: Unclassified	24-Hour: Unclassified/Attainment Annual: Unclassified/Attainment
Lead, H_2S, and sulfates	Attainment, Unclassified, Attainment	Attainment, No federal standard, No federal standard

*EPA lowered the national 8-hour ozone standard from 0.080 to 0.075 ppm effective May 27, 2008. EPA will issue final designations based on the new 0.075 ppm ozone standard by March 2010. The MDAQMD expects to be designated nonattainment (MDAQMD, 2009).

Source: MDAQMD, 2009.

The California Energy Commission (CEC) requires that an Application for Certification (AFC) include ambient concentrations of all criteria pollutants for the previous 3 years as measured at the three ARB-certified monitoring stations closest to the project site, along with an analysis of whether the data are representative of conditions at the project site.[1] An applicant also may substitute an explanation as to why information from one, two, or all stations is either not available or unnecessary.

The three closest ARB-certified monitoring sites are located approximately 40 miles south of the project site in Blythe, California (Riverside County); approximately 85 miles west of the project site in Joshua Tree National Monument, California (Riverside County); and approximately 85 miles west of the project site in Indio, California (Riverside County). However, these three monitoring sites do not monitor all six criteria pollutants used to establish existing air quality for the project. Therefore, two additional monitoring sites, located approximately 100 miles west of the project site in Palm Springs, California (Riverside County), and approximately 150 miles west-northwest of the project site in Victorville, California (San Bernardino County), were used to supplement the data from the three closest stations.

Because the nearest NO_2 monitoring station is located approximately 100 miles west of the project in Palm Springs, a search for monitoring locations in the neighboring state of Arizona was conducted. Based on the search, a monitoring site was identified approximately 40 miles east-northeast of the project site at the Alamo Lake State Park near Parker, Arizona (La Paz County). The NO_2 data were collected by the State of Arizona as part of an ozone transport study (conducted from May 2005 through October 2006) and was obtained from the EPA AIRS database (Arizona Department of Environmental Quality

[1] Appendix B (g)(8)(G) of the CEC data adequacy checklist.

[ADEQ], 2007). Currently, the Alamo Lake monitor is used to seasonally monitor ozone concentrations for NAAQS compliance (ADEQ, 2009).

All ambient air quality data are based on data published by ARB (ADAM Web site) and EPA (AIRS Web site). The ARB data summaries were used as the primary source of data, and the EPA AIRS database summaries were used when data were unavailable on the ARB Web site. The maximum ambient background concentrations were combined with the modeled concentrations and used for comparison to the AAQS. A discussion of the representativeness of each individual station is included in Section 5.1.4.3.

5.1.3.1 Nitrogen Dioxide

NO_2 is a byproduct of combustion sources such as on-road and off-road motor vehicles or stationary fuel-combustion sources. The principle form of nitrogen oxide produced by combustion is nitric oxide (NO), but NO reacts quickly to form NO_2, creating a mixture of NO and NO_2 commonly called NO_x. Exposures to NO_2, along with pollutants from vehicle exhaust, are associated with respiratory symptoms, episodes of respiratory illness, and impaired lung function (ARB, 2009a). The MDAB is currently designated as attainment status for NO_2 by EPA and ARB.

As shown in Table 5.1-3, NO_2 concentrations measured at the nearest stations have not exceeded either the state or federal standards for the previous three years.

TABLE 5.1-3
Background NO_2 Concentrations (in µg/m^3)

Station	Averaging Time	CAAQS/NAAQS	2005	2006	2007	2008
Palm Springs	1-hour	339 / —	—	175	119	92
	Annual	57 / 100	—	18.8	18.8	16.9
Alamo Lake State Park*	1-hour	339 / —	21	24	NA	NA
	Annual	57 / 100	4.5	4.9	NA	NA

*In 2005, the Alamo Lake monitoring station located near Parker, Arizona, was operated from May 20, 2005, through October 31, 2005. In 2006, the station was operated from April 1 through October 31. As of 2007, the station no longer monitors NO_2 concentrations.

Source: ARB, 2009b; EPA, 2009.

NA = not available

5.1.3.2 Ozone

Ozone is a photochemical oxidant that is formed when volatile organic compounds (VOCs) and NO_x react in the presence of ultraviolet sunlight. The primary sources of NO_x and VOC, often termed ozone precursors, are combustion processes (including motor vehicle engines) and evaporation of solvents, paints, and fuels. Exposure to ozone can cause eye irritation, aggravate respiratory diseases, and damage lung tissue, as well as damage vegetation and reduce visibility. Elevated ozone levels also can reduce crop and timber yields and damage native plants and materials such as rubber, fabrics, and plastics (ARB, 2009a). In 2006, the NAAQS for 1-hour ozone concentrations was revoked. The entire MDAB is designated nonattainment for the 1-hour and 8-hour ozone CAAQS. The portion of Riverside County in the MDAB is designated attainment for the 8-hour federal ozone standard.

The current state regulatory 1-hour ozone concentration standards were exceeded at each of the four monitoring stations located in California (Table 5.1-4). The 1-hour concentrations monitored at the Alamo Lake station, located in Arizona, did not exceed the California 1-hour standard in the past 3 years. The measured 8-hour ozone concentrations exceeded the federal and state standards at the five monitoring stations.

TABLE 5.1-4
Background Ozone Concentrations (in µg/m^3)

Station	Averaging Time	CAAQS/NAAQS	2006	2007	2008
Blythe	1-hour	180 / —	153	181	145
	8-hour	137 / 147	116	149	139
Alamo Lake State Park	1-hour	180 / —	155	173	171
	8-hour	137 / 147	149	159	163
Joshua Tree	1-hour	180 / —	200	169	202
	8-hour	137 / 147	173	163	175
Indio	1-hour	180 / —	202	208	226
	8-hour	137 / 147	177	187	183
Palm Springs	1-hour	180 / —	247	247	220
	8-hour	137 / 147	214	200	198

Source: ARB, 2009b; EPA, 2009.

5.1.3.3 Sulfur Dioxide

Sulfur dioxide is a colorless, pungent gas formed primarily by the combustion of sulfur-containing fossil fuels. Effects from SO_2 exposures at levels near the 1-hour standard include bronchio-constriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity (ARB, 2009a). The MDAB is designated attainment status for SO_2 by EPA and ARB.

As shown in Table 5.1-5, SO_2 concentrations measured at the Victorville station have not exceeded either the state or federal standards in the past 3 years.

TABLE 5.1-5
Background SO_2 Concentrations (in µg/m^3)*

Station	Averaging Time	CAAQS/NAAQS	2006	2007	2008
Victorville	1-hour	655 / —	47.1	23.6	15.7
	3-hour	— / 1300	31.4	15.7	13.1
	24-hour	105 / 365	13.1	13.1	5.2
	Annual	— / 80	2.6	2.6	2.6

Source: EPA, 2009.

*SO_2 was not measured at the Blythe, Joshua Tree, Indio, or Palm Springs Monitoring Stations between 2006 and 2008.

5.1.3.4 Carbon Monoxide

CO is a colorless, odorless gas formed by incomplete combustion of fossil fuels. Exposure to CO near the levels of the AAQS can lead to fatigue, headaches, confusion, and dizziness

(ARB, 2009a). The MDAB is designated attainment status for the CO standards by EPA and ARB.

As shown in Table 5.1-6, CO concentrations measured at Palm Springs monitoring station have not exceeded either the state or federal standards in the past 3 years.

TABLE 5.1-6
Background CO Concentrations (in µg/m^3)

Station	Averaging Time	CAAQS/NAAQS	2006	2007	2008
Palm Springs	1-hour	23,000 / 40,000	2,634	1,718	1,145
	8-hour	10,000 / 10,000	973	905	618

Source: ARB, 2009b; EPA, 2009.

5.1.3.5 Fine Particulates (PM_{10} and $PM_{2.5}$)

Fine particulate matter (PM_{10} and $PM_{2.5}$) includes a wide range of solid or liquid particles, including smoke, dust, aerosols, and metallic oxides. There are many sources of fine particulate emissions, including combustion, industrial processes, grading and construction, and motor vehicles.

Extensive research indicates that exposures to ambient PM_{10} and $PM_{2.5}$ concentrations that exceed current air quality standards are associated with increased risk of hospitalization for lung- and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature death, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses (ARB, 2009a). The MDAB is designated as non-attainment by ARB for the state annual PM_{10} and 24-hour PM_{10}. The MDAB is designated by EPA as "unclassified" for the federal PM_{10} standard, "unclassified/attainment" for the 24-hour $PM_{2.5}$ standard, and "unclassified/attainment" for the annual $PM_{2.5}$ standard.

As shown in Table 5.1-7, PM_{10} concentrations measured at the Indio and Palm Springs monitoring stations did not exceed the 24-hour PM_{10} NAAQS, with the exception of the Indio monitoring station in 2007. However, the CAAQS PM_{10} standards (24-hour and annual) have been consistently exceeded each year during the past 3 years.

TABLE 5.1-7
Background PM_{10} Concentrations (in µg/m^3)

Station	Averaging Time	CAAQS/NAAQS	2006	2007	2008
Indio	24-hour	50 /150	97	211	129
	Annual[a]	20 / —	40	56	41
Palm Springs	24-hour	50 /150	73[b]	83	75
	Annual[a]	20 / —	28	30	22

Source: ARB, 2009b.
[a]Annual Arithmetic Mean
[b]The Palm Springs 24-hour value for 2006 represents the second high value. This was assumed to be more representative of ambient PM_{10} concentrations because ARB reported the first high value (226 µg/m^3) was due to an exceptional event (high wind).

The 24-hour $PM_{2.5}$ concentrations measured at the Indio and the Palm Springs monitoring stations have not exceeded the NAAQS in each of the past 3 years (Table 5.1-8). The annual $PM_{2.5}$ concentrations measured at the Indio and the Palm Springs monitoring stations have not exceeded the annual NAAQS or CAAQS.

TABLE 5.1-8
Background $PM_{2.5}$ Concentrations (in µg/m^3)

Station	Averaging Time	CAAQS/NAAQS	2006	2007	2008
Indio	24-hour	— / 35	26	27	22
	Annual*	12 / 15	10	9	7
Palm Springs	24-hour	— / 35	25	33	18
	Annual*	12 / 15	8	9	5

Source: ARB, 2009b.
*Annual Arithmetic Mean

5.1.3.6 Greenhouse Gases

ARB has promulgated new laws to address the potential effects of increasing atmospheric concentrations of carbon dioxide and other greenhouse gases. On September 20, 2006, California signed into law the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32, codified at Section 1, Division 25.5, Section 38500 et seq. of the California Health and Safety Code). This law requires ARB to design and implement emission limits, regulations, and other measures, such that statewide greenhouse gas emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020 (representing a 25 percent reduction), and further reduced by 2050 (an 80 percent reduction over 1990 levels).

AB 32 does not directly amend other environmental laws, such as the California Environmental Quality Act (CEQA). Instead, it provides for creation of a greenhouse gas emissions program that will involve identification of sources, prioritization of sources for regulation based on significance of source contribution to greenhouse gas emissions, and eventual regulation of those sources.

Greenhouse gases include the following pollutants:

- Carbon dioxide (CO_2) is a naturally occurring gas, as well as a byproduct of burning fossil fuels, decomposition of organic matter, land-use changes, and other natural and anthropogenic processes.
- Methane (CH_4) is a greenhouse gas with a global warming potential (GWP) most recently estimated at 23 times that of CO_2. GWP is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming and is a relative scale that compares the mass of one greenhouse gas to that same mass of carbon dioxide (e.g., CO_2 equivalent or CO_2-e). CH_4 is produced through anaerobic (without oxygen [O_2]) decomposition of waste in landfills; human and animal digestion; decomposition of human and animal wastes; and the production, distribution, and incomplete combustion of natural gas, petroleum, petroleum derivatives, and coal.

- Nitrous oxide (N_2O) is a greenhouse gas with a GWP of 296 times the equivalent of CO_2. Major sources of nitrous oxide include soil cultivation practices, especially the production and use of commercial and organic fertilizers; fossil fuel and biomass combustion; and nitric acid production, among others.
- Hydrofluorocarbons (HFCs) are compounds containing only hydrogen, fluorine, chlorine, and carbon. HFCs have been introduced as a replacement for the chlorofluorocarbons identified as ozone-depleting substances.
- Perfluorocarbons (PFCs) are compounds containing only fluorine and carbon. Similar to HFCs, PFCs have been introduced as a replacement for chlorofluorocarbons. PFCs are also used in manufacturing and are emitted as byproducts of industrial processes. PFCs are powerful greenhouse gases.
- Sulfur hexafluoride (SF_6) is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF6 has an estimated GWP 23,900 times that of CO_2 and is used primarily as an insulating gas in electrical transmission and distribution components, as well as dielectrics in electronics.

Emissions of HFCs, PFCs, or SF_6 are anticipated but these are not expected to be emitted in any significant quantities from the proposed project. Therefore, the project impact assessment focused on the impacts from emissions of CO_2, CH_4, and N_2O.

5.1.4 Environmental Analysis

This section describes the analysis conducted to assess the ambient air quality impacts from the RSEP and to demonstrate compliance with the local, state, and federal air quality requirements for criteria pollutants. Emission estimates are presented for RSEP construction, commissioning, and operation. Dispersion model selection and setup are also described (i.e., emissions scenarios, release parameters, building wake effects, meteorological data, and receptor locations). Results are presented for the dispersion modeling analysis and are compared to the applicable local, state, and federal air quality regulations.

In April 2009, the Office of Planning and Research submitted proposed amendments to the CEQA Guidelines for greenhouse gas emissions to the Natural Resources Agency. The rulemaking process for certifying and adopting the proposed amendments began in July 2009. The Natural Resources Agency must certify and adopt the CEQA Guideline amendments before January 1, 2010. Therefore, greenhouse gas emissions were calculated for informational purposes only, no conclusions regarding the significance of the greenhouse gas emissions will be made during the analysis.

5.1.4.1 Criteria Pollutant and Greenhouse Gas Emission Estimates

Hourly, daily, and annual criteria pollutant emission rates were calculated for the three phases of the project, the first two being transitional, discrete, and of limited duration and extent. The first phase is the 30-month construction period for the permanent facilities, including the heliostat field, the liquid salt tower receiver, piping and storage systems, power generating block systems, and buildings. The construction phase also encompasses the salt melting and conditioning activities. The second phase includes the power block

commissioning activities. The third and final phase is operation. The criteria pollutants evaluated include NO_x, oxides of sulfur (SO_x), VOCs, CO, PM_{10}, and $PM_{2.5}$.

Annual CO_2, CH_4, and N_2O emissions also were calculated for the three phases of the project. As previously noted, emissions of HFCs, PFCs, or SF_6 will be present, but they are not expected to be significant for the proposed project. Therefore, a quantification of HFCs, PFCs, and SF_6 is not included in the analysis.

5.1.4.1.1 Construction Phase

Short-term emissions will be generated from the installation of a 638-foot-tall solar receiving tower; the steam turbine power block; up to 17,500 heliostats; and various auxiliary equipment and ancillary structures. Approximately 1,500 acres of the total land holding of 3,324 acres will experience temporary disturbance during construction activities, which are expected to occur for approximately 27 months, resulting in 1,410 acres of permanently disturbed land area. Emissions were calculated for construction equipment exhaust, onsite and offsite motor vehicle exhaust, re-entrained road dust, fugitive dust emissions from soil disturbance, fugitive emissions from wind-erosion of stockpiles, and fugitive emission from a temporary concrete batch plant.

The salt system filling and commissioning activities also will take place during the construction phase of the project and will involve the melting, heating, and conditioning of approximately 70 million pounds of sodium nitrate and potassium nitrate salts. The sequential salt commissioning process is expected to take approximately 140 days and is planned to begin in month 18 of the construction schedule. A detailed description of each stage of the salt system commissioning process is included in Section 2.1.14 (Project Description). This section presents the analysis of the combined emissions from concurrently scheduled construction and salt commissioning activities.

Emissions Associated with Construction Activities

Onsite and offsite project emissions were divided into three categories: vehicle and construction equipment exhaust, fugitive dust generated by vehicles and construction equipment, and windblown fugitive dust. Construction equipment exhaust emissions were estimated using URBEMIS2007 (version 9.2.4) emission factors. Fugitive dust emissions from the concrete batch plant were estimated using EPA-approved emission factors published in AP-42 (EPA, 2006a). Fugitive dust emissions from paved and unpaved roads were estimated using EPA-approved emission factors and methodology published in AP-42 (EPA, 2006b). The EPA-approved emission factors were reduced by 68 percent based on the South Coast Air Quality Management District (SCAQMD) CEQA handbook (SCAQMD, 1993). Per the handbook, the reduction would be achieved by watering traveled roads twice a day. Fugitive dust emissions from soil disturbance (e.g., grading activities) were estimated based on the controlled emission factor published in URBEMIS. The controlled emission factor assumed 50 percent control of fugitive dust emissions by applying water to the disturbed surface. Fugitive dust emissions from wind-erosion of material stockpiles were estimated using the SCAQMD CEQA handbook. On-road exhaust emissions were estimated using EMFAC2007 (version 2.3) emission factors. On-road and off-road exhaust emissions also were calculated assuming construction fleets would use ultra low sulfur diesel (ULSD) fuel.

Construction emissions also will be generated during the installation of a 10.0-mile-long generator tie-line. Offsite emission sources include the exhaust emissions from construction equipment and motorized vehicles used to install the transmission poles and pull conductors, as well as the exhaust emissions from motor vehicles traveling to and from the planned work sites (e.g., delivery trucks and worker vehicles). Minor amounts of fugitive dust also will be generated by construction activities and vehicle travel on roadways. The emission calculation methodology for the offsite construction activities was similar to the methodology for estimating onsite construction emissions.

The maximum daily emissions were estimated based on the month with the projected maximum operations of construction equipment, heavy-duty truck operations, fugitive dust, and projected roundtrip workforce commuting trips, divided by the number of days of operation within that month. The maximum daily construction emissions are presented in Table 5.1-9. The detailed emission calculations for construction are provided in Appendix 5.1A.

TABLE 5.1-9
Maximum Daily Construction Emissions

	Emissions (lbs/day)					
Construction Emission Source	**NO_x**	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Onsite construction emissions	412	189	52	0.5	291	58
Offsite vehicle emissions	51	381	37	0.1	62	8
Offsite construction emissions	104	53	11	0.1	40	7

lbs/day = pounds per day

Maximum annual emissions were estimated based on the number and type of construction equipment, the number of heavy-duty trucks, fugitive dust, and the roundtrip workforce commutes projected for each month of construction. The maximum annual construction emissions were estimated as the sum of the maximum monthly emissions over a 12-month period.

The maximum annual construction emissions are presented in Table 5.1-10. The detailed emission calculations for construction are provided in Appendix 5.1A.

TABLE 5.1-10
Maximum Annual Construction Emissions

	Emissions (tons per year)					
Construction Emission Source	**NO_x**	**CO**	**VOC**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Onsite construction emissions	37.0	18.9	6.6	0.055	29.1	5.0
Offsite vehicle emissions	5.8	44.6	4.0	0.02	7.6	0.9
Offsite construction emissions	2.9	1.7	0.3	0.004	2.3	0.3

Greenhouse gas emissions from construction activities are presented in Table 5.1-11. Construction equipment emissions and fuel use were estimated using emission factors from the California Climate Action Registry (CCAR) General Reporting Protocol (GRP) (version 3.1) (CCAR, 2009) and fuel consumption rates from the OFFROAD2007 model.

Vehicle emissions and fuel use (trucks and worker commutes) were estimated using emission factors from the CCAR GRP (version 3.1) and EPA fuel economy values.

Estimated total fuel use during construction would be 2,026,116 gallons of diesel and 1,168,622 gallons of gasoline. Detailed greenhouse gas emission and fuel use calculations are included in Appendix 5.1A.

TABLE 5.1-11
Greenhouse Gas Emissions Estimates for RSEP Construction Activities

	Greenhouse Gas Emissions (metric tons)			
	CO_2	CH_4	N_2O	CO_2 Equivalent
Total	15,980	1.00	0.49	16,152

Emissions Associated with Salt Commissioning Activities

The salt melting and heating processes will produce limited emissions of criteria pollutants resulting from the combustion of gaseous fuels in two temporary gas-fired convection heaters with rating capacities of 55 million British thermal units per hour (MMBtu/hr) and 20 MMBtu/hr. Propane was chosen for the analysis but other fuels might include natural gas or liquefied natural gas (LNG) as potential alternatives (there is no pipeline connection at RSEP and only one known LNG truck terminal within a reasonable distance). Criteria and greenhouse gas emissions have been calculated using the highest emission rates among the fuel types considered. The NO_x emissions for the two heaters are calculated assuming the heaters are equipped with both ultra-low NO_x burners and flue gas recirculation. Minimal fugitive particulate emissions will be generated during the handling of the solid salts because the solid salts will be handled in an indoor environment. Furthermore, the salts are greatly hygroscopic (highly moisture absorbent) and tend to solidify and remain in solid form.

The salt conditioning process will result in NO_x emissions from the oxidation of magnesium nitrate in the salt solution; salt conditioning does not directly involve combustion of fossil fuels (combustion emissions result from the heating process described previously). Salt conditioning oxidizes the trace amounts of magnesium nitrate found in the salt mixture when the salt is heated to the normal operating temperature range (near 1050°F). The NO_x emission estimates for the salt conditioning process assume that the maximum magnesium nitrate content possible for each of the salts will be oxidized completely and released entirely from the liquid solution as NO_x gases through the duration of the conditioning period. Based on this sequential salt melting, heating, and conditioning approach, the analysis assumes a constant NO_x emission rate. However, the NO_x emission rate is expected to diminish over time during the conditioning period as the average magnesium nitrate content is likely to be somewhat lower than the maximum allowable by the product specification.

The release of NO_x from the salt heater, along with releases from the hot storage tank, will be vented through a multi-stage chemical wet scrubber. Another option being considered for reducing NO_x emissions is the use of selective catalytic reduction. However, the emissions analysis for the RSEP was conducted on the basis of the multi-stage chemical wet

scrubber for control of NO_x emissions as a preferred process, avoiding onsite storage and use of ammonia.

After salt system commissioning is completed, the two fired heaters and the NO_x scrubber system will be dismantled and removed from the project site.

The criteria pollutant emissions estimated for the salt commissioning process are presented in Table 5.1-12. The detailed emission calculations for commissioning are provided in Appendix 5.1B.

TABLE 5.1-12
RSEP Salt System Commissioning Emission Rates

	NO_x	CO	VOC	SO_2	PM_{10}	$PM_{2.5}$
Maximum hourly, lb/hr						
Melting	0.59	5.64	0.75	1.13	0.53	0.53
Heating	0.21	2.05	0.27	0.41	0.19	0.19
Conditioning*	10.9	—	—	—	—	—
Maximum daily, lb/day						
Melting	14.1	135.2	18.0	27	12.6	12.6
Heating	5.11	49.2	6.56	9.84	4.59	4.59
Conditioning*	261	—	—	—	—	—
Salt system commissioning period, lb/period						
Melting	1,282	12,327	1,644	2,465	1,151	1,151
Heating	186	1,790	239	358	167	167
Conditioning*	17,901	—	—	—	—	—
Total salt system commissioning period, tons (all phases)	**9.7**	**7.1**	**0.9**	**1.4**	**0.7**	**0.7**

*Conditioning emissions represent post-control emissions.

lb/hr = pound(s) per hour
lb/period = pound(s) per duration of the commissioning activities

The greenhouse gas emissions resulting from the salt commissioning process are presented in Table 5.1-13. Salt commissioning activities would result in direct greenhouse gas emissions associated with combustion of propane in the salt heaters and indirect greenhouse gas emissions associated with electricity necessary to maintain the hot salt tank temperature during the conditioning period. Greenhouse gas emissions from propane combustion in the salt heaters are estimated using emission factors from the ARB Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (ARB, 2007). Indirect greenhouse gas emissions from electricity used to maintain salt temperature were estimated using emission factors from the CCAR GRP (CCAR, 2009). Proposed amendments to the CEQA Guidelines for greenhouse gas emissions are under agency review. Therefore, greenhouse gas emissions are presented for informational purposes at this time, and no conclusions regarding significance are presented in this analysis for the RSEP.

TABLE 5.1-13
Greenhouse Gas Emission Estimates for RSEP Salt Commissioning Activities

	Greenhouse Gas Emissions (metric tons)			
	CO_2	CH_4	N_2O	CO_2 Equivalent
Total	12,442	0.24	0.03	12,458

5.1.4.1.2 Commissioning Phase

The power block commissioning phase of the project will involve the steam blows and steam turbine startup activities. This phase of commissioning is expected to take place during the final months of construction and will follow the salt system commissioning activities. The power block commissioning activities will not result in the combustion of fossil fuels, nor is the wet surface air cooler (WSAC) unit expected to be in operation. As a result, no emissions of air pollutants would occur during the power block commissioning phase.

5.1.4.1.3 Facility Emissions—Operational Phase

The proposed RSEP is based on concentrating solar-thermal power technology, which utilizes reflecting mirrors, called heliostats, to redirect sunlight onto a receiver erected at the top of a tower in the center of the solar field. Liquid salt will be heated as it passes through the receiver and is circulated through a series of heat exchangers to generate high-pressure superheated steam. The steam is then used to power a steam turbine generator (STG) at conventional temperatures and pressures to produce electricity. The steam from the STG will be condensed using an air-cooled condenser (ACC) and returned via feedwater pumps to the heat exchangers where the high-pressure superheated steam will be regenerated.

The plant is designed to capture the maximum available solar energy whenever the sun is not obscured by dense cloud cover or during nighttime hours. The thermal storage system is sized so that the receiver and collector systems are able to capture solar energy during the day and store the energy for use during hours with intermittent cloud cover or during evening hours when electric demand is still high. For prolonged periods of cloud cover or unplanned maintenance outages, a small amount of electricity will be back-fed from the power grid to maintain the hot salt tank temperature and to maintain balance-of-plant systems in a standby state. Therefore, an auxiliary boiler has not been included in the project design as may be expected based on other solar projects. As a result, no criteria pollutant or toxic air contaminant (TAC) emissions are generated from normal electrical generating operations or system start-up and shut down events.

Although the solar-thermal power generation will not consume fossil fuels, the project will include the limited use of two diesel-powered emergency generators and two diesel-powered emergency fire pumps. However, the fossil fuel-related combustion emissions associated with these shop-assembled and tested, skid-mounted engines are negligible in comparison to conventional power plants.

The primary function of the emergency generators will be to provide relatively instantaneous backup power needed to redirect the heliostat field flux off the solar receiver during loss of liquid salt flow emergencies. Although the emergency generators are approximately 3,600 brake-horsepower (bhp) each, it is expected the two emergency

generators would be operated only 30 minutes or less per week for maintenance and testing. Therefore, the emissions from the two emergency generator units are expected to be kept at a strict minimum as required to ensure readiness. The two 600-bhp fire pumps also would be operated approximately 30 minutes or less per week for code-recommended (e.g., National Fire Protection Agency) maintenance and testing. Emissions of NO_x, CO, PM_{10}, $PM_{2.5}$, and SO_x from the new diesel-powered emergency generators and emergency fire pumps were calculated assuming the emergency generators will meet the EPA Tier II and Tier III emission standards, respectively.

In addition to the use of an ACC unit for closed-loop, dry cooling of the STG exhaust, a WSAC will be installed to provide for equipment cooling, including the STG lubricating oil system, generator air coolers, and balance-of-plant ancillary systems. The WSAC unit will have a recirculation rate of approximately 2,736 gpm. Because the WSAC unit recirculation rate is less than 10,000 gpm and the primary function of the WSAC is not associated with rejecting STG cycle exhaust heat, the WSAC is exempt from the MDAQMD permitting requirements per Rule 219. However, for completeness, the emissions from the WSAC unit were evaluated as part of the air quality and public health risk assessments. The PM_{10} and $PM_{2.5}$ emissions from the WSAC unit were calculated based on the measured total dissolved solids concentration in the groundwater and an assumed cooling tower drift eliminator efficiency of 0.005 percent, which is consistent among industry original equipment manufacturer specifications and practical operating experience. Although the WSAC unit is expected to operate less than 3,286 hours, the emission calculations were conservatively estimated assuming a 50 percent annual capacity factor (i.e., 4,400 hours), a margin of some 33 percent over expected operation.

An estimate of the hourly, daily, and annual RSEP criteria pollutant emissions are presented in Table 5.1-14. The hourly emergency diesel engine emissions are based on 30 minutes of maintenance and testing activities each week. The daily and annual emission rates were based on non-emergency use of 30 minutes per week day and 26 hours per year of operation, respectively. The annual WSAC emissions were conservatively based on 4,400 hours of WSAC operation per year. (Table 5.1-14).

TABLE 5.1-14
RSEP Facility Emissions

	NO_x	SO_2	VOC	CO	$PM_{10}/PM_{2.5}$
Maximum Hourly Emissions, lb/hr					
Emergency Generator (Unit 1)[a]	20.1	0.018	0.40	1.63	0.14
Emergency Generator (Unit 2)	20.1	0.018	0.40	1.63	0.14
Emergency Fire Pump (Unit 1)	1.91	0.003	0.03	0.37	0.07
Emergency Fire Pump (Unit 2)	1.91	0.003	0.03	0.37	0.07
WSAC	—	—	—	—	0.15
Maximum Daily Emissions, lb/day					
Emergency Generator (Unit 1)[b]	20.1	0.018	0.40	1.63	0.14
Emergency Generator (Unit 2)	20.1	0.018	0.40	1.63	0.14

TABLE 5.1-14
RSEP Facility Emissions

	NO_x	SO_2	VOC	CO	$PM_{10}/PM_{2.5}$
Emergency Fire Pump (Unit 1)	1.91	0.0033	0.030	0.37	0.07
Emergency Fire Pump (Unit 2)	1.91	0.0033	0.030	0.37	0.07
WSAC	—	—	—	—	3.63
Total Project (lb/day)	**43.9**	**0.043**	**0.85**	**4.00**	**4.06**
Maximum Annual Emissions, lbs/year[c]					
Emergency Generator (Unit 1)	1043	0.95	20.7	84.7	7.4
Emergency Generator (Unit 2)	1043	0.95	20.7	84.7	7.4
Emergency Fire Pump (Unit 1)	99.1	0.17	1.6	19.2	3.64
Emergency Fire Pump (Unit 2)	99.1	0.17	1.6	19.2	3.64
WSAC	—	—	—	—	666
Total Project (lb/yr)	**2285**	**2.3**	**44.4**	**208**	**689**
Total Project (tpy)	**1.14**	**0.001**	**0.02**	**0.1**	**0.34**

[a]Worst-case hourly emissions were based on 30 minutes of testing per unit.
[b]Daily emissions assume one test per unit per day.
[c]Annual emissions are based on 26 hours of testing per unit. See Appendix 5.1B.

tpy = ton(s) per year

Criteria pollutant emissions from worker commutes, trucks used to wash the heliostats, and material deliveries were also calculated. The emissions are presented in Table 5.1-15. Exhaust emissions were estimated using emission factors from EMFAC2007 (version 2.3). Fugitive dust emissions from paved and unpaved roads were estimated using EPA-approved emission factors and methodology published in AP-42 (EPA, 2006b). Detailed calculations are included in Appendix 5.1B.

TABLE 5.1-15
Criteria Pollutant Emissions from Worker Commute, Heliostat Washing, and Deliveries during Operation

	Emissions (lb/yr)					
Emission Source	**VOC**	**CO**	**NO_x**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
Worker Commute	137	5,407	587	9	803	240
Trucks Used for Heliostat Washing	155	257	575	1	10,160	1,040
Material Deliveries	111	507	2,195	4	155	98
Total (lb/yr)	**403**	**6,171**	**3,357**	**13**	**11,118**	**1,378**
Total (tpy)	**0.2**	**3.1**	**1.7**	**0.01**	**5.6**	**0.7**

5.1.4.2 Greenhouse Gas Emission Estimates

Combustion of diesel fuel in the emergency fire pump engines and the emergency generators would result in emissions of CO_2, CH_4, and N_2O. Greenhouse gas emissions for normal facility operations were calculated based on the maximum fuel use predicted for the RSEP and emission factors contained in the ARB Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (ARB, 2007). The emission factors used to estimate the greenhouse gas emissions are summarized in Appendix 5.1B. Emissions of CO_2, CH_4, and N_2O resulting from operation of the proposed project are presented in Table 5.1-16.

TABLE 5.1-16
Estimated Annual Greenhouse Gas Emissions from the RSEP

	Estimated Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	CO_2 Equivalent
Emergency Generator (Unit 1)	45.7	0.039	0.008	49
Emergency Generator (Unit 2)	45.7	0.039	0.008	49
Emergency Fire Pump (Unit 1)	8.3	0.0003	0.0001	8
Emergency Fire Pump (Unit 2)	8.3	0.0003	0.0001	8
Total Emissions	**108**	**0.079**	**0.016**	**114**

Greenhouse gas emissions from worker commutes, the trucks used to wash the heliostats, and material deliveries were also calculated as part of the analysis. The greenhouse gas emissions are presented in Table 5.1-17. Emissions were estimated using emission factors from the CCAR GRP (version 3.1). Detailed calculations are included in Appendix 5.1B.

TABLE 5.1-17
Greenhouse Gas Emissions from Worker Commute, Heliostat Washing, and Deliveries during Operation

	Greenhouse Gas Emissions (metric tons/year)			
Emission Source	CO_2	CH_4	N_2O	CO_2 Equivalent
Worker Commute	635	0.019	0.01	640
Trucks Used to Wash Heliostats	16	0.0005	0.0005	16
Material Deliveries	172	0.005	0.005	172
Total Emissions	**823**	**0.025**	**0.016**	**828**

5.1.4.3 Air Quality Impact Analysis

An ambient air quality impact analysis was conducted to compare worst-case ground-level impacts resulting from the operation of the RSEP with established state and federal AAQS and applicable MDAQMD significance criteria. The analysis was conducted in accordance with the air quality impact analysis guidelines presented in the EPA's 40 CFR Part 51, Appendix W: *Guideline on Air Quality Models* (EPA, 2005).

The analysis includes an evaluation of the possible effects of simple, intermediate, and complex terrain, and aerodynamic effects (downwash) due to nearby building(s) and structures on plume dispersion and ground-level concentrations. A basic Gaussian plume model was used in this analysis. The model assumes that the concentrations of emissions within a plume can be characterized by a Gaussian distribution of gaseous concentrations about the plume centerline. Gaussian dispersion models are approved by EPA and MDAQMD for regulatory use and are based on conservative assumptions (i.e., the models tend to over-predict actual impacts by assuming steady-state conditions, no pollutant loss through conservation of mass, no chemical reactions, etc.).

The following subsections present the:

- Modeling methodology for evaluating the impacts on ambient air quality
- Modeling scenarios and source data used to evaluate the impacts on ambient air quality
- Modeling results compared to the AAQS

5.1.4.3.1 Modeling Methodology for Evaluating Impacts on Ambient Air Quality

The air dispersion modeling was conducted based on guidance presented in the *Guideline on Air Quality Models* (EPA, 2005) and the EPA-approved dispersion model, SCREEN3 (version 07026).

Model Selection

Based on regulatory guidance, if representative meteorological data are not available, a screening model would be required to demonstrate compliance with the NAAQS and CAAQS. SCREEN3 is currently the EPA-approved screening model for regulatory applications. SCREEN3 uses a screening meteorological data set that contains a matrix of 54 different combinations of wind speed and stability classes designed to evaluate a full range of possible 1-hour average meteorological conditions. The additional short-term and annual concentrations at each receptor are then calculated based on the 3-hour, 8-hour, 24-hour, and annual persistence factors outlined in EPA's *Screening Procedures for Estimating the Air Quality Impact of Stationary Sources* (EPA, 1992).

One limitation of SCREEN3 is that the dispersion algorithm is only able to model a single emission source at one time. If a facility has multiple sources, then the user is required to post-process the results manually to determine the total facility impact. To alleviate this problem, an alternative EPA model, the Industrial Source Complex, Short-Term Model (ISCST3), can be utilized with a screening meteorological data set. ISCST3 was the recommended model by EPA until December 2005 when the AERMOD modeling system replaced ISCST3 as the recommended model for regulatory applications. Although AERMOD replaced ISCST3 in 2005, EPA is developing a screening version of AERMOD, called AERSCREEN. However, AERSCREEN is not available for use at this time.

Therefore, the construction, salt commissioning, and operational air quality impacts were evaluated using the ISCST3 model (version 02035) with the SCREEN3 meteorological data set. ISCST3 is a Gaussian dispersion model capable of assessing impacts from a variety of source types in areas of simple, intermediate, and complex terrain. The model can account for point, area, line, and volume source types; downwash effects; and gradual plume rise as

a function of downwind distance. The model is capable of estimating concentrations for averaging periods from 1 hour to 1 year.

The required emission source data inputs to ISCST3 include source locations, source elevations, stack heights, stack diameters, stack exit temperatures, stack exit velocities, and pollutant emission rates. The source locations are specified for a Cartesian (x,y) coordinate system where x and y are distances east and north in meters, respectively. The Cartesian coordinate system used for these analyses is the Universal Transverse Mercator Projection (UTM), 1927 North American Datum (NAD 27).

It was assumed an evaluation of fumigation impacts would not be required for this project because the diesel-fired emergency engines will be operated only once a week for testing and maintenance activities. It was also assumed an evaluation of visibility impacts on Class I areas is not required for this analysis because the facility operational emissions are expected to be significantly below the Prevention of Significant Deterioration (PSD) thresholds.

Model Options

The following EPA-recommended default values were used for the modeling analyses:

- Rural dispersion coefficients
- Final plume rise
- Stack tip downwash
- Buoyancy-induced dispersion
- Default wind profile exponents
- Default vertical potential temperature gradients

Meteorological Data

The CEC requires a minimum of 1 year of meteorological data approved by ARB or the local air pollution control district to be used in the air dispersion modeling analysis. Based on a review of available data, it was determined that 9 months of data were collected by the National Weather Service at the Rice Army Air Field between 1943 and 1944. It was also determined the nearest active meteorological station is approximately 35 miles southeast of the project site in Blythe, California. Wind roses for the Rice Air Field and Blythe stations are presented in Appendix 5.1C.

Because of the limited amount of meteorological data available near the site, an expanded SCREEN3 screening meteorological data file was used in conjunction with ISCST3 to evaluate the potential air quality impacts. The SCREEN3 meteorological data file is a matrix of 54 combinations of wind speed and stability categories designed to evaluate a full range of possible 1-hour average meteorological conditions. However, the SCREEN3 meteorological file does not include a directional component, which is required to evaluate air quality impacts using ISCST3. Therefore, to create a meteorological data file for use with ISCST3, the SCREEN3 meteorological file was expanded to include a 360-degree directional component at 5-degree increments. The screening meteorological data used for the criteria pollutant analysis was consistent with the screening meteorological file included in the ARB Hotspots Analysis Reporting Program (HARP, version 1.4a, July 2008), including the 5-degree wind direction increments. A default ambient temperature of 293 degrees Kelvin

was used. An electronic copy of the data file has been submitted separately to the CEC staff, along with the modeling files.

Background Data

The background data need not be collected onsite, as long as the data are representative of the air quality in the subject area (40 Code of Federal Regulations [CFR] 51, Appendix W, Section 9.2). The following three criteria were used for determining whether the background data would be representative: (1) location, (2) data quality, and (3) data currentness. These criteria are defined as follows:

- **Location:** The measured data must be representative of the areas where the maximum concentration occurs for the proposed stationary source, existing sources, and a combination of the proposed and existing sources.
- **Data quality:** Data must be collected and equipment must be operated in accordance with the requirements of 40 CFR Part 58, Appendixes A and B, and Prevention of Significant Deterioration monitoring guidance.
- **Data currentness:** The data are current if they have been collected within the preceding 3 years and are representative of existing conditions.

If possible, the ambient air quality data used to demonstrate a project's compliance with the AAQS should represent the area where project impacts are expected to occur. In the case of the ambient NO_2 and ozone monitoring locations, the only available data are located in Palm Springs, Barstow, Victorville, and near Parker, Arizona. Assuming the RSEP site experiences a general easterly wind pattern, the project impacts would occur closer to the Alamo Lake State Park monitoring station (northeast of Parker, Arizona) than the California monitoring stations (located south and west of the RSEP). Although only 9 months of data are available at the Alamo Lake State Park monitoring station, the site is expected to be the most representative of the RSEP location because it is a desert location with little urban development or concentration of combustion sources nearby. As a result, the background NO_2 data from the Alamo Lake State Park monitoring station was added to the predicted concentrations and compared to the AAQS.

The nearest PM_{10} and $PM_{2.5}$ monitors are located in Indio. The PM_{10} and $PM_{2.5}$ data collected at the Indio monitoring station are expected to be a conservative estimate of the background concentrations near the RSEP site because the area has a higher concentration of motorized vehicles and ground disturbance compared to the RSEP site. However, because this is the nearest monitoring site, it was conservatively used to represent the background concentrations at the RSEP site. Therefore, the three most recent years of background PM_{10} and $PM_{2.5}$ data from the Indio monitoring station were added to the predicted concentrations and compared to the AAQS.

The nearest CO monitoring station is located in Palm Springs. Therefore, the three most recent years of CO data recorded at the Palm Springs monitoring station were used. The data collected at the Palm Springs monitoring station represents a conservative estimate of the background CO concentrations in the project area because the area surrounding the Palm Springs station is developed and densely populated while the proposed project site is rural, with the nearest developed area more than 15 miles away.

The only SO_2 monitor within 150 miles of the RSEP is located in Victorville. Therefore, measurements from Victorville were used to conservatively estimate the existing SO_2 background concentrations in the vicinity of the project.

Based on the previous discussion, the background data in Table 5.1-18 would meet the three criteria for determining whether the data would be representative for the project.

TABLE 5.1-18
Background Air Concentrations (2006–2008)[a]

Pollutant	Averaging Time	2006		2007		2008		Maximum
		ppm	µg/m³	ppm	µg/m³	ppm	µg/m³	µg/m³
NO_2 [b]	1-hour	0.013	24	0.063	119	0.049	92.2	**24**[c]
	Annual	0.0026	4.9	0.010	18.8	0.0090	16.9	**4.9**[c]
SO_2 [d]	1-hour	0.018	47.1	0.009	23.6	0.006	15.7	**47.1**
	3-hour	0.012	31.4	0.006	15.7	0.005	13.1	**31.4**
	24-hour	0.005	13.1	0.005	13.1	0.002	5.2	**13.1**
	Annual	0.001	2.6	0.001	2.6	0.001	2.6	**2.6**
CO[e]	1-hour	2.3	2634	1.5	1718	1.0	1145	**2634**
	8-hour	0.85	973	0.79	905	0.54	618	**973**
PM_{10} [f]	24-hour	—	97	—	211	—	129	**211**
	Annual	—	40	—	56	—	41	**56**
$PM_{2.5}$ [f]	24-hour	—	26.4	—	26.7	—	21.5	**26.7**
	Annual	—	9.9	—	9.4	—	7.0	**9.9**

[a]Data reported for the three most recent years of data available. The annual ARB ambient air quality data summaries were used as the primary reference. The EPA AIRS database was used when ARB data were not available. Conversion from ppm to µg/m3 at 25° Celsius and 760 torr.
[b]Data from the Alamo Lake State Park (Parker, Arizona) and Palm Springs, California monitoring stations.
[c]Data from the Alamo Lake State Park were used in the dispersion modeling analysis.
[d]Data from the Victorville monitoring station.
[e]Data from the Palm Springs monitoring station.
[f]Data from the Indio-Jackson Street monitoring station.

Receptor Grid Spacing

Receptor and source base elevations were determined from the United States Geological Survey (USGS) Digital Elevation Model (DEM) data using the 7.5-minute format (30-meter spacing between grid nodes). All coordinates were referenced to UTM NAD27, Zone 11. Every effort was made to maintain receptor spacing across DEM file boundaries.

Cartesian coordinate receptor grids were used to provide adequate spatial coverage surrounding the project area for assessing ground-level pollution concentrations, to identify the extent of significant impacts, and to identify maximum impact locations. The following coarse grid was used to identify the areas of maximum concentration:

- Fenceline receptors were spaced at 50-meter intervals
- 50-meter spacing from property boundary to 1 kilometer (km) from the fenceline
- 500-meter spacing from beyond 1 km to 5 km from the origin
- 1 km spacing from 5 km to 10 km
- Concentrations within the facility fenceline were not calculated

Although RSE owns land beyond the perimeter of the heliostat field, the modeling analysis was done based on the perimeter of the heliostat field, resulting in a conservative impact assessment. The receptor grid, which includes an outline of the fenceline, is presented in Appendix 5.1C. The maximum impacts occurred within 1 km of the facility fenceline. Therefore, further modeling using a refined grid was not required.

Building Downwash and Good Engineering Practice Assessment

The EPA Building Profile Input Program (BPIP, Version 04274) was used to calculate the projected building dimensions required for the ISCST3 evaluation of impacts from building downwash. One difference between the AERMOD modeling system and ISCST3 is the ability of AERMOD to calculate point source cavity zone impacts due to building downwash using the BPIP Plume Rise Model Enhancement (BPIP-PRIME) algorithm. To evaluate whether the results of the dispersion modeling analysis for the RSEP would be sensitive to cavity zone impacts, a SCREEN3 cavity zone modeling analysis was conducted for a single proposed point source on the facility. The results of the SCREEN3 cavity analysis demonstrate that the building cavity zone impacts only extend approximately 100 meters from the source, which is well within the project fenceline; therefore, the results of the dispersion modeling analysis would not be sensitive to the BPIP-PRIME algorithm in AERMOD.

Good engineering practice (GEP), as used in the modeling analyses, is the maximum allowed stack height to ensure that emissions from the stack do not result in excessive concentrations of any air pollutant in the immediate vicinity of the source as a result of atmospheric downwash, eddies, or wakes that may be created by the source itself, nearby structures, or nearby terrain obstacles. In addition, the GEP modeling restriction ensures that any required regulatory control measure is not compromised by the effect of that portion of the stack that exceeds the GEP.

EPA's guidance for determining GEP stack height (H_g) (EPA, 1985) is based on the height of a nearby structure(s) measured from the ground-level elevation at the base of the stack (H) and the lesser dimension, height or projected width, of the nearby structure(s) (L) as follows:

$$H_g = H + 1.5L$$

The GEP modeling restriction is the greater of the calculated GEP stack height or 65 meters. Therefore, based on the onsite building dimensions as input into BPIP, the calculated GEP height for the facility stack is the greater of 65 meters or the calculated height of 245 meters. The proposed emergency diesel engine stack heights of 4.3 and 6.1 meters do not exceed GEP stack height.

5.1.4.3.2 Modeling Scenarios and Source Data Used to Evaluate Impacts on Ambient Air Quality

In evaluating the potential impacts of the RSEP on ambient air quality, modeling results for the project's worst-case ambient impacts were added to representative background concentrations, and the results were compared to the state and federal AAQS.

Thresholds of Significance

For attainment pollutants, the predicted impacts from the construction, salt commissioning, or operation of the project would be considered significant if the impacts for the project

combined with the representative background concentrations exceed the state and federal AAQS.

For non-attainment pollutants, the predicted impacts would be considered significant if the impacts for the project contribute to an existing violation of the state or federal AAQS.

Construction Impacts Analysis

The construction site was represented as a set of volume sources and an area source in the modeling analysis. The exhaust and fugitive dust emissions were modeled as two series of volume sources with plume centerline heights of 4.6 meters (15 feet) and 2.4 meters (8 feet). Approximately 75 volume sources were spaced throughout the power block, heliostat field, and the construction laydown areas. The wind-blown dust emissions were modeled as an area source assuming an average release height of 1 meter.

During the salt commissioning period, it is conservatively assumed that the individual melting, heating, and conditioning processes will be conducted concurrently and will overlap with each other. Furthermore, the salt commissioning period will overlap with the construction activities taking place during months 18 to 21. Therefore, the dispersion modeling analysis was conducted assuming all three stages of commissioning would occur simultaneously during the months (i.e., months 18 through 21) with the maximum construction emissions.

The two heaters used to melt and heat the salt were modeled as point sources. Exhaust parameters were based on information provided by the vendor. For the salt conditioning process, it was assumed a multi-stage wet scrubber will be used to limit NO_x emissions from the oxidation of magnesium nitrate content in the salt. The NO_x emissions from the multi-stage wet chemical scrubber were modeled as a point source. Exhaust parameters were based on information provided by the vendor and engineering estimates using GEP.

Because the commissioning phase is a one-time activity and is expected to be completed within a discrete, 4-month period, annual impacts analysis did not evaluate pollutant emissions from this phase. The emissions from the emergency generators and diesel fire pumps also were not included as part of the RSEP salt commissioning analysis because of limited anticipated operation of these stationary sources.

To meet the CEC requirements, modeled concentrations of NO_x, CO, PM_{10}, $PM_{2.5}$, and SO_x from the construction activities only and the salt commissioning plus construction activities were combined with the ambient background concentrations and compared to the AAQS.

The results of the construction modeling analysis are presented in Section 5.1.4.3.3. A summary of the dispersion modeling input files are presented in Appendix 5.1C.

Power Block Commissioning Impacts Analysis

As previously discussed, no emissions of air pollutants would occur during the power block commissioning phase. Therefore, no dispersion modeling analysis was conducted for the power block commissioning phase.

Facility Operation Impacts Analysis

The four diesel-fired emergency engines and the WSAC unit were modeled as point sources. Exhaust parameters were based on information provided by the vendor. The maximum modeled concentrations were added to representative background concentrations, and the

results compared to the state and federal AAQS for SO_2, NO_2, CO, PM_{10}, and $PM_{2.5}$. The highest ambient concentrations from the most recent 3 years of ambient monitoring data were used as the background concentration, with the exception of NO_2. The NO_2 concentrations from the Alamo Lake State Park were used to represent the ambient background NO_2 concentration.

A summary of the source parameters and the UTM locations of each source is given in Appendix 5.1C. The results of the modeling analysis are presented in the following section and Appendix 5.1C.

5.1.4.3.3 Modeling Results Compared to the Ambient Air Quality Standards

Construction Impacts Analysis

The results of the construction modeling analysis are presented in Table 5.1-19. The total predicted SO_2 and CO impacts combined with the background concentrations are well below the AAQS for each of the averaging periods. The NO_2 and $PM_{2.5}$ impacts combined with the background concentrations approach the AAQS but are also below standards for each of the averaging periods. As previously noted in the model setup discussion, the use of screening meteorological data and the use of the heliostat perimeter fenceline would result in a conservative estimate of the project impacts. For NO_2, the maximum NO_x impact also assumes a 100 percent conversion of NO_x to NO_2. However, based on the SCAQMD LST guidance document (SCAQMD, 2008) the conversion of NO_x to NO_2 is a function of distance from the source to the receptor. Because the maximum predicted impact is located along the fenceline, it is expected the application of the SCAQMD LST distance methodology would further reduce the predicted NO_2 concentrations. Therefore, NO_2, CO, SO_2, and $PM_{2.5}$ impacts are expected to be less than significant.

TABLE 5.1-19
Maximum Modeled Impacts from Construction and the Ambient Air Quality Standards

Pollutant	Averaging Period	Maximum Modeled Concentration ($\mu g/m^3$)	Background Concentration[a] ($\mu g/m^3$)	Total Predicted Concentration ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2[b]	1-hour	297	24	321	339	—
	Annual	13	4.9	17.9	57	100
SO_2	1-hour	0.33	47.1	47.4	655	—
	3-hour	0.29	31.4	31.7	—	1,300
	24-hour	0.14	13.1	13.2	105	365
	Annual	0.028	2.6	2.6	—	80
CO	1-hour	136	2634	2770	23,000	40,000
	8-hour	95	973	1068	10,000	10,000
PM_{10}	24-hour	28	211	239	50	150
	Annual	3.2	56	59	20	—
$PM_{2.5}$	24-hour	5.8	26.7	32.5	—	35
	Annual	0.77	9.9	10.7	12	15

[a]Background concentrations were the highest concentrations monitored during 2006 through 2008.
[b]Maximum 1-hour and annual NO_2 concentrations assume 100 percent conversion of NO_x to NO_2.

For PM_{10}, the annual and 24-hour background concentrations exceed the AAQS without adding the modeled concentrations. As a result, the predicted impacts also would be greater than the AAQS. However, the construction activity would be finite and best available fugitive dust emission control techniques would be used throughout the construction activity period, as required by MDAQMD. Construction impacts would be further reduced with the implementation of the additional construction mitigation measures presented in Section 5.1.6. Therefore, with the implementation of best available fugitive dust emission control techniques and other proposed mitigation measures, the PM_{10} impacts from construction are expected to be less than significant.

The potential impacts on ambient air quality associated with simultaneous construction and salt commissioning activities were assessed based on engineering estimates of schedule and emissions. Table 5.1-20 presents the maximum modeled salt commissioning impacts reflected in Table 5.1-12 combined with the maximum predicted impacts from construction activities during months 18 through 21. The analysis excluded a comparison to the annual averaging period standards or thresholds because salt commissioning activities will occur only once during the project lifetime and are expected to be completed within a discrete 4-month period. The maximum hourly NO_2 concentration also assumed a 100 percent conversion of NO_x to NO_2.

TABLE 5.1-20
Salt Commissioning Impact Analysis—Maximum Modeled Impacts Compared to Ambient Air Quality Standards[a]

Pollutant	Averaging Time	Maximum Modeled Concentration (µg/m³)	Background Concentration (µg/m³)[b]	Total Predicted Concentration (µg/m³)	State Standard (µg/m³)	Federal Standard (µg/m³)
NO_2	1-hour[c]	307	24	331	339	—
SO_2	1-hour	32	47.1	79.1	655	—
	3-hour	29	31.4	60.4	—	1,300
	24-hour	13	13.1	26.1	105	365
CO	1-hour	217	2634	2851	23,000	40,000
	8-hour	152	973	1125	10,000	10,000
PM_{10}	24-hour	23.2	211	234.2	50	150
$PM_{2.5}$	24-hour	8.0	26.7	34.7	—	35

[a]Salt commissioning impacts include the maximum construction impacts during months 18 through 21.
[b]Background concentrations were the highest concentrations monitored during 2006–2008
[c]Maximum 1-hour and annual NO_2 concentrations assume 100 percent conversion of NO_x to NO_2.

The maximum predicted NO_2, CO, SO_2, and $PM_{2.5}$ concentrations combined with the background concentration are less than the AAQS. Therefore, NO_2, CO, SO_2, and $PM_{2.5}$ impacts from commissioning will be less than significant.

For PM_{10}, the 24-hour background concentration exceeds the AAQS without adding the modeled concentrations. As a result, the predicted impacts also would be greater than the AAQS. However, the salt commissioning activity would be finite and the use of clean-burning fuels (natural gas, propane, or LNG) would meet the best available control technology requirements for particulate emissions from the two heater units. Additionally, the analysis assumes no contribution from the WSAC, which is not yet operational at this phase. Therefore,

the salt commissioning of the proposed project would result in minimal PM_{10} impacts that are not expected to significantly contribute to existing violations of the PM_{10} AAQS. With implementation of best available fugitive dust emission control techniques and other proposed mitigation measures to minimize construction impacts, the combined PM_{10} impacts from the construction and salt commissioning activities are not expected to be significant.

Power Block Commissioning Impacts Analysis

As previously discussed, no emissions of air pollutants would occur during the power block commissioning phase. Therefore, no dispersion modeling analysis was conducted for the power block commissioning phase.

Facility Operation Impacts Analysis

The highest modeled concentrations were used to demonstrate compliance with the AAQS. Table 5.1-21 presents a comparison of the maximum RSEP operational impacts to the AAQS. The maximum modeled concentrations represent an operating scenario assuming only one of the emergency generators would be tested simultaneously with the two fire pumps. Based on this operating scenario, the CO and SO_2 concentrations combined with the background concentrations are well below the AAQS. The NO_2 and $PM_{2.5}$ impacts combined with the background concentrations approach the AAQS but are also below standards for each of the averaging periods. As previously noted in the model setup discussion, the use of screening meteorological data and the use of the heliostat perimeter fenceline would result in a conservative estimate of the project impacts. For NO_2, the maximum NO_x impact also assumes a 100 percent conversion of NO_x to NO_2. However, application of the ozone limiting principles would further reduce the predicted NO_2 concentrations for each of the individual plumes. For instance, the EPA's AERMOD-OLM (ozone limiting method) algorithm would offer a more realistic method of calculating concentrations of NO_2 by assuming approximately 10 percent of the combustion stack emissions are emitted as NO_2 and the remaining stack gas released as NO_x would be converted to NO_2 based on the quantity of ozone available. Therefore, the RSEP would not cause or contribute to the violation of a standard, and the NO_2, CO, SO_2, and $PM_{2.5}$ impacts from operation would be less than significant.

For PM_{10}, the background concentration exceeds the AAQS without the proposed project. As a result, the predicted project impact plus background also exceeds the AAQS. However, the operation of the proposed project will result in minimal PM_{10} impacts that are not expected to significantly contribute to existing violations of the PM_{10} AAQS. Therefore, the PM_{10} impacts from operation are not expected to be significant.

5.1.5 Cumulative Effects

The CEC requires that a cumulative air quality modeling impacts analysis for the project's typical operating mode be conducted as part of the AFC process. In this analysis, impacts from the project would be combined with other stationary emission sources within a 6-mile radius that have received construction permits but are not yet operational, or are in the permitting process (such as, the New Source Review [NSR] or CEQA permitting process). However, based on discussions with MDAQMD, it was confirmed that no facilities have currently requested an authority to construct or have been recently issued permits within 6 miles of the project site (De Salvio, 2009). Therefore, a cumulative impact assessment cannot be conducted.

TABLE 5.1-21
Operation Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards

Pollutant	Averaging Time	Maximum Modeled Concentration[a] ($\mu g/m^3$)	Background Concentration[b] ($\mu g/m^3$)	Total Predicted Concentration ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2[c]	1-hour	311	24	335	339	—
	Annual	0.27	4.9	5.2	57	100
SO_2	1-hour	0.3	47.1	47.4	655	—
	3-hour	0.02	31.4	31.4	—	1,300
	24-hour	0.009	13.1	13.1	105	365
	Annual	0.0003	2.6	2.6	—	80
CO	1-hour	31	2634	2665	23,000	40,000
	8-hour	4.5	973	978	10,000	10,000
PM_{10}	24-hour	1.1	211	212	50	150
	Annual	0.10	56	56.1	20	—
$PM_{2.5}$	24-hour	1.1	26.7	27.8	—	35
	Annual	0.10	9.9	10.0	12	15

[a]The maximum modeled 1-hour concentrations were estimated assuming only one of the emergency generators would be tested simultaneously with the fire pumps. The 3-hour, 8-hour, 24-hour, and annual concentrations were estimated assuming the emergency generators, fire pumps, and WSAC unit would all operate within the averaging period.

[b]Background concentrations were the highest concentrations monitored during 2006 through 2008.

[c]Maximum 1-hour and annual NO_2 concentrations assume 100 percent conversion of NO_x to NO_2.

5.1.6 Mitigation Measures

5.1.6.1 Construction Mitigation

Construction impacts will be further reduced with the implementation of a construction fugitive dust and diesel-fueled engine control plan. This plan will focus on reducing construction air quality impacts and could include the following construction mitigation measures:

- Increased frequency of watering unpaved roads and disturbed or denuded areas
- Limiting onsite vehicle speeds to under 10 mph and enforcement of the speed limit
- Frequent watering during period of high winds when excavation/grading is occurring; minimize grading activities during peak wind periods
- Sweeping onsite paved roads and entrance roads on an as-needed basis
- Replacing ground cover in disturbed areas as soon as practical
- Covering truck loads when hauling material that could be entrained during transit
- Applying dust suppressants or covers to soil stockpiles and disturbed areas when inactive for more than 2 weeks
- Maintaining all diesel-fueled equipment per manufacturer's recommendations to reduce tailpipe emissions
- Limiting diesel heavy equipment idling to less than 5 minutes, to the extent practical

- Construction equipment and off-road vehicles will include the use of propane, compressed natural gas, and electric power to the extent practical based on regional availability of equipment and alternative fueling means

5.1.6.2 Operational Mitigation

During operations, the appropriate mitigation measure is to reduce potential air emissions before they are emitted. This is accomplished by the careful design of the project, including the use of ARB certified engines and the installation of the best available control technology (BACT) to minimize air emissions. The remainder of this section describes the BACT analysis and the details of the emission offset requirements.

5.1.6.2.1 BACT Analysis

MDAQMD requires the project to apply BACT for emission increases of non-attainment pollutants that are greater than 25 lb/day per new or modified emissions unit. Emission increases are calculated based on the potential to emit for each unit. Per MDAQMD Regulation 13, Rule 1301, a unit's potential to emit is defined as "the maximum capacity of a Facility or Emissions Unit(s) to emit any Regulated Air Pollutant under its physical and operational design." A restriction on the hours of operation would be considered an operational design limit if the limit on emissions would be federally enforceable.

RSE proposes the use of Tier II diesel engines for the 3,600-bhp emergency generators and Tier III diesel engines for the 600-bhp fire pump engines. RSE also proposes a limitation on the hours of operation per week for each of the emergency generators and fire pumps for maintenance and testing activities. As a result, the potential to emit for each of the emergency diesel generators and fire pumps would be less than 25 pounds per day for all non-attainment pollutants. Therefore, the facility operations would not be subject to further BACT requirements (Table 5.1-22). The calculation of unit and facility emissions is discussed in Section 5.1.6.1.

TABLE 5.1-22
Best Available Control Technology Requirements*

Pollutant	Emergency Generator lb/day (each)	Fire Pump lb/day (each)	Applicability Level	BACT Required?
VOC	0.40	0.03	25 lb/day/source	No
NO_x	20.1	1.9	25 lb/day/source	No
SO_2	0.018	0.003	25 lb/day/source	No
PM_{10}	0.14	0.07	25 lb/day/source	No

*MDAQMD Rule 1303

5.1.6.2.2 Emission Offsets

Table 5.1-23 presents a summary of the MDAQMD emission offset applicability requirements for the RSEP. The estimated annual emissions are compared with MDAQMD Regulation 13, Rule 1303 emission offset thresholds. Because emissions from the RSEP do not exceed the MDAQMD offset thresholds, there is no MDAQMD requirement that the project emissions for these pollutants be offset. However, the area is non-attainment for ozone and PM_{10}. Therefore, if additional mitigation of ozone precursors (i.e., NO_x and VOC), and particulate PM_{10}, $PM_{2.5}$, and SO_2 impacts are required by the CEC under CEQA, RSE

will develop a mitigation strategy to limit potential impacts. Mitigation measures may include participation in locally administered emission reduction programs such as the Carl Moyer Program or other MDAQMD emission reduction programs at a 1:1 ratio.

TABLE 5.1-23
RSEP Emission Offset Applicability Analysis

Pollutant	Annual Emission Estimate (tpy)	MDAQMD ERC Threshold* (tpy)	ERCs Required (yes/no)
NO_x	1.1	25	No
VOC	<0.1	25	No
CO	0.1	100	No
SO_2	<0.1	25	No
$PM_{10/2.5}$	0.34	15	No

*MDAQMD Regulation 13, Rule 1303.

ERC = Emission Reduction Credit

5.1.7 Laws, Ordinances, Regulations, and Standards

The CAA, implemented by EPA, requires major new and modified stationary sources of air pollution to obtain a construction permit prior to commencing construction through a program known as the federal NSR program. The requirements of the NSR program are dependent on whether the air quality in the area where the new source (or modified source) is being located attains the NAAQS. The program that applies in areas that are in attainment of the NAAQS is the PSD. The program that applies to areas where the air does not meet the NAAQS (termed non-attainment areas) is the non-attainment NSR.

EPA implements the NSR program through regional offices. Arizona, California, Hawaii, Nevada, and specific Pacific trust territories are administered from the EPA Region IX office in San Francisco. EPA typically delegates its NSR, Title V, and Title IV authority to local air quality agencies that have sufficient regulatory structure to implement these programs consistent with requirements of the CAA and implementing regulations. MDAQMD has been delegated several of these programs. However, EPA retains authority for administering the PSD program in MDAQMD.

ARB was established by the state legislature in 1967 with the purpose of attaining and maintaining healthy air quality, conducting research into causes and solutions to air pollution, and addressing the impacts that motor vehicles have on air quality. To this end, ARB implements the following programs:

- Establish and enforce motor vehicle emission standards, including fuel standards.
- Monitor, evaluate, and set health-based air quality standards.
- Conduct research to solve air pollution problems.
- Establish TAC control measures.
- Oversee and assist local air quality districts.

Air pollution control districts were established shortly after ARB, based on meteorological and topographical factors. The districts were established to enforce air pollution regulations

for the purpose of attaining and maintaining all state and federal AAQS. The districts regulate air emissions by issuing air permits to stationary sources of air pollution in compliance with approved regulatory programs. Each district promulgates rules and regulations specific to air quality issues within its jurisdiction. The air emission sources regulated by each district vary. The types of air pollution sources that might be regulated include manufacturers, power plants, refineries, gasoline service stations, and auto body shops.

The applicable LORS and compliance with these requirements are discussed in more detail in the following sections. Applicable Authority to Construct (ATC) permit forms have been prepared in conjunction with this AFC and are included in Appendix 5.1D.

5.1.7.1 Federal LORS

EPA promulgates and enforces federal air quality regulations, with Region IX administering the federal air programs in California. The federal CAA provides the legal authority to regulate air pollution from stationary sources. The applicable federal regulations are summarized in Table 5.1-24, along with the agency responsible for administration of the regulation.

5.1.7.2 State LORS

ARB's primary responsibilities are to develop, adopt, implement, and enforce the state's motor vehicle pollution control program; to administer and coordinate the state's air pollution research program; to adopt and update, as necessary, the state's AAQS; to review the operations of the local air pollution control districts; and to review and coordinate preparation of the State Implementation Plan for achievement of the federal AAQS.

The California Health and Safety Code, Section 41700 prohibits the discharge from a facility of air pollutants that cause injury, detriment, nuisance, or annoyance to the public; that endanger the comfort, repose, health, or safety of the public; or that damage business or property.

The state has promulgated numerous laws and regulations at the state level (i.e., Toxic Air Contaminants and Air Toxic Hot Spots) that are implemented at the local level by the air districts. A discussion of these state and local LORS is presented in Tables 5.1-25 and 5.1-26, respectively. A discussion of the public health risks posed by emissions of toxic air contaminants is presented in Section 5.9, Public Health.

TABLE 5.1-24
Applicable Federal Laws, Ordinances, Regulations, and Standards for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Strategy
Title 40 CFR Part 50	Establishes AAQS for criteria pollutants.	EPA Region IX	RSE will conduct a dispersion modeling analysis to determine if the project will exceed the state or federal AAQS. Dispersion modeling indicates the RSEP will not exceed the state or federal AAQS for the attainment pollutants.
Title 40 CFR Parts 51, NSR (MDAQMD Regulation XIII)	Requires pre-construction review and permitting of new or modified stationary sources of air pollution to allow industrial growth without interfering with the attainment and maintenance of AAQS.	MDAQMD with EPA Region IX oversight	Requires NSR facility permitting for construction or modification of specified stationary sources. NSR applies to pollutants for which ambient concentration levels are higher than NAAQS. The NSR requirements are implemented at the local level with EPA oversight (MDAQMD Regulation XIII). An ATC and Permit to Operate (PTO) application will be obtained from MDAQMD prior to construction of the project. As a result, the compliance requirements of 40 CFR, Part 51 will be met.
Title 40 CFR Parts 52, PSD	The PSD program allows new sources of air pollution to be constructed, or existing sources to be modified in areas classified as attainment, while preserving the existing ambient air quality levels, protecting public health and welfare, and protecting Class I Areas (e.g., national parks and wilderness areas).	EPA Region IX	The PSD requirements apply on a pollutant-specific basis to any project that is a new major stationary source or a major modification to an existing major stationary source. The EPA classifies an unlisted source (which is not in the specified 28 source categories) that emits or has the potential to emit 250 tpy of any pollutant regulated by the Act as a major stationary source. For listed sources, the threshold is 100 tpy. The RSEP is not considered one of the 28 source categories. Therefore, the emission rates were compared to the 250 ton per year threshold. As shown in Table 5.1-14, the emission increase in NO_x, CO, PM_{10}, SO_2, and VOC would be significantly less than 250 tpy per pollutant. Therefore, the RSEP would not be subject to PSD analysis requirements.

TABLE 5.1-24
Applicable Federal Laws, Ordinances, Regulations, and Standards for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Strategy
Title 40 CFR, Part 60	Establishes national standards of performance for new or modified facilities in specific source categories.	MDAQMD with EPA Region IX oversight	**Emergency Fire Pump:** 40 CFR Part 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) would apply to the diesel fire pump. The nonmethane hydrocarbon (NMHC)+NO_x emission limit for a model year 2010 fire pump between 600 and 750 hp would be 3.0 g/bhp, the CO emission limit would be 2.6 g/bhp, and the PM_{10} emission limit would be 0.15 g/bhp. The proposed compression ignition internal combustion engine used to operate the emergency fire pump would be Tier III, 600 bhp. Therefore, the engine would meet the NMHC+NO_x, CO, and PM_{10} emission standards.
Title 40 CFR, Part 60	Establishes national standards of performance for new or modified facilities in specific source categories.	MDAQMD with EPA Region IX oversight	**Emergency ICE:** 40 CFR Part 60 Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines) would apply to the emergency generator. The NO_x emission limit for a model year 2010 generator greater than 3000 hp with a displacement of less than 10 liter per cylinder would be 6.9 g/bhp, the hydrocarbon limit would be 1.0 g/bhp, the CO emission limit would be 8.5 g/bhp, and the PM_{10} emission limit would be 0.40 g/bhp. The proposed engine would be a Tier II, 3,600 bhp. Therefore, the engine would meet the NO_x, HC, CO, and PM_{10} emission standards.

TABLE 5.1-24
Applicable Federal Laws, Ordinances, Regulations, and Standards for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Strategy
Title 40 CFR, Part 63 (Regulation IX, Rule 900)	Establishes national emission standards to limit emissions of hazardous air pollutants (HAPs, or air pollutants identified by EPA as causing or contributing to the adverse health effects of air pollution but for which NAAQS have not been established) from facilities in specific categories.	MDAQMD with EPA Region IX oversight	Title 40, Code of Federal Regulations, Part 63—National Emission Standards for Hazardous Air Pollutants for Source Categories, establishes emission standards to limit emissions of hazardous air pollutants from specific source categories for Major HAP sources. Sources subject to Part 63 requirements must either use the maximum achievable control technology (MACT), be exempted under Part 63, or comply with published emission limitations. Projects would be subject to the Title 40 CFR, Part 63 requirements if the HAP Potential to Emit (PTE) is greater or equal to 25 tpy for combined HAPs and 10 tpy for individual HAPs. As discussed in Section 5.9 (Public Health), the RSEP would not exceed the major source thresholds for HAPs (10 tpy for any one pollutant or 25 tpy for all HAPs combined). Therefore, the RSEP would not be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations.
Title 40 CFR Part 64 (CAM Rule)	Establishes onsite monitoring requirements for emission control systems.	MDAQMD with EPA Region IX oversight	Title 40, Code of Federal Regulations, Part 64—Compliance Assurance Monitoring (CAM), requires facilities to monitor the operation and maintenance of emissions control systems and report any control system malfunctions to the appropriate regulatory agency. If an emission control system is not working properly, the CAM rule also requires a facility to take action to correct the control system malfunction. The CAM rule applies to emissions units with uncontrolled potential to emit levels greater than applicable major source thresholds. Using an annual estimate of 500 hours of operations to calculate the PTE for the emergency fired diesel powered generators (EPA, 1995), the potential to emit for the RSEP would be less than 250 tpy. Therefore, the RSEP would not be considered a major source and would not be subject to the CAM provisions.

TABLE 5.1-24
Applicable Federal Laws, Ordinances, Regulations, and Standards for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Strategy
Title 40 CRF part 70 (MDAQMD Regulation XII)	CAA Title V Operating Permit Program	MDAQMD with EPA Region IX oversight	Title 40, Code of Federal Regulations, Part 70—Title V Operating Permits Program, requires the issuance of operating permits that identify all applicable federal performance, operating, monitoring, recordkeeping, and reporting requirements. The requirements of 40 CFR, Part 70 are implemented at the local level through MDAQMD Reg XII. According to Reg XII, a facility would be subject to the rule if the facility had a potential to emit greater than 100 tpy on a pollutant specific basis, the HAP PTE is greater or equal to 25 tpy for combined HAPs and 10 tpy for individual HAPs, or the facility is classified as an Acid Rain facility. Using an annual estimate of 500 hours of operations to calculate the PTE for the emergency fired diesel powered generators (EPA, 1995), the potential to emit for the RSEP would be less than 100 tpy. Furthermore, per the discussion under Title 40 CFR Part 72, the facility would not be classified as an Acid Rain facility. Therefore, the project would not be required to submit a Title V application.
Title 40 CFR part 72) (MDAQMD Regulation XII, Rule 1210)	CAA Acid Rain Program	MDAQMD with EPA Region IX oversight	Title 40, Code of Federal Regulations, Part 72—Acid Rain Program, establishes emission standards for SO_2 and NO_x emissions from electric generating units through the use of market incentives, requires sources to monitor and report acid gas emissions, and requires the acquisition of SO_2 allowances sufficient to offset SO_2 emissions on an annual basis. This program is implemented by EPA. The solar-thermal power generation at the RSEP will not consume fossil fuels with the exception of the limited use of two diesel-powered emergency generators and two diesel-powered emergency fire pumps. While the diesel engines would be classified as “units” under Rule 72.2, the engines would not be classified as “utility units” because no electricity from the emergency units would be sold. Furthermore, the total SO_2 emissions from stationary sources are expected to be less than 3 lbs/yr for the RSEP. Therefore, the project would not be subject to the Title IV requirements.

g/bhp = grams/brake-horsepower

TABLE 5.1-25
Applicable State Laws, Ordinances, Regulations, and Standards for the Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Strategy
California Code of Regulations, Section 41700	Prohibits emissions in quantities that adversely affect public health, other businesses, or property.	MDAQMD with ARB oversight	The CEC conditions of certification and the air quality management district ATC processes are developed to ensure no adverse public health affects or public nuisances result from operation of the project.
California Code of Regulations Sections 93115 (Diesel ATCM)	The purpose of the airborne toxics control measure (ATCM) is to reduce diesel particulate emissions from stationary diesel fired compression engines.	MDAQMD with ARB oversight	The diesel ATCM applies to stationary compression engines with a rating of greater than 50 bhp and requires the use of ARB-certified diesel fuel or equivalent, and limits emissions from the operation of compression engines. The proposed emergency generators and fire pumps would be greater than 50 bhp. However, the emergency generators and fire pumps would meet the Tier II and Tier III emission standards, respectively. The non-emergency hours of operation for all engines would also be limited to 26 hours or less per year for each engine. Therefore, the project would comply with the diesel ATCM.
California AB 32 - Global Warming Solutions Act of 2006	The purpose is to reduce carbon emissions in the state by approximately 25 percent by the year 2020.	MDAQMD with ARB oversight	There are currently no applicable facility-specific greenhouse gas emission limits or caps. Therefore, greenhouse gas emissions have been estimated for informational purposes at this time.

TABLE 5.1-26
Applicable Local Laws, Ordinances, Regulations, Standards, and Permits for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Assessment
MDAQMD Reg II, Rule 201 (Authority to Construct)	Establishes the need to obtain an ATC to build, erect, install, alter, or replace any equipment which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants.	MDAQMD	A permit to construct application will be submitted to the MDAQMD at the time the AFC is submitted to the CEC. Upon CEC approval of the MDAQMD Final Determination of Compliance, the determination will serve as the ATC.
MDAQMD Reg IV, Rule 401 (Particulate Matter and Visible Emissions)	Purpose of this regulation is to limit the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.	MDAQMD	Exhaust emissions shall not be darker than No. 1 when compared to the Ringleman Chart for any period(s) aggregating 3 minutes in any hour. The use of propane or natural gas in the heaters precludes the possibility of visible emissions. The proposed emergency diesel engines and fire pumps will meet EPA Tier II and III emission standards, respectively. Therefore, the diesel engines are not expected to exceed the visible emission standard.
MDAQMD Reg IV, Rule 402 (Public Nuisance)	Prohibits the emissions of air contaminants or other material that create a public nuisance.	MDAQMD	The RSEP will not emit odorous pollutants and the CEC conditions of certification and the MDAQMD ATC process is designed to ensure that the operation of the project will not cause a public nuisance.
MDAQMD Reg IV, Rule 403	Purpose of this rule is to limit the transport of dust emissions offsite from transport, handling, construction, or storage activities.	MDAQMD	As noted in Section 5.1.6, RSE will prepare and implement a fugitive dust and diesel-fueled engine control plan prior to construction. Fugitive dust mitigation strategies will be employed to reduce the potential for offsite fugitive dust transport.

TABLE 5.1-26
Applicable Local Laws, Ordinances, Regulations, Standards, and Permits for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Assessment
MDAQMD Reg IV, Rule 404	Purpose of this rule is to limit the particulate emissions from combustion sources based on the volumetric flow of exhaust gases.	MDAQMD	The PM concentration limits for the diesel-fired fire pump and emergency generator engines are approximately 0.16 and 0.085 grains per dry standard cubic foot (dscf), respectively (i.e., the diesel engine exhaust flow rates are approximately 1,500 standard cubic feet per minute [scfm] and 7,300 scfm) The most prohibitive PM concentration for all flow rates is 0.01 grains per dscf. The PM concentration for the diesel-fired fire pump and emergency generator are 0.011 and 0.052 grains per dscf, respectively. The PM emissions from the heaters are predicted to be less than 0.01 grains per dscf. Therefore, the diesel engines and the heaters would meet the requirements of Rule 404.
MDAQMD Reg IV, Rule 406	Purpose of this rule is to limit the sulfur emissions from combustion sources.	MDAQMD	Sulfur compounds, which would exist as a liquid or gas at standard conditions, calculated as SO_2 shall not exceed 500 ppm by volume. The salt melting/conditioning heaters will be low sulfur gaseous fuel fired (natural gas, propane, or LNG) and the diesel engines will burn ultra low sulfur diesel fuel (i.e., 15 ppm sulfur). Therefore, the emission units for the RSEP will not exceed 500 ppm SO_2.
MDAQMD Reg IV, Rule 407	Purpose of this rule is to limit the CO emissions from combustion sources.	MDAQMD	CO emissions shall not exceed 2,000 ppm by volume. CO emissions from the gaseous fuel fired salt melting/conditioning heaters will be approximately 100 ppm and the diesel engines will be approximately 250 ppm CO. Therefore, the heaters and diesel engines will be well below the 2,000 ppm limit.
MDAQMD Reg IV, Rule 431	A person shall not burn any gaseous fuel containing sulfur compounds in excess of 800 ppm calculated as hydrogen sulfide at standard conditions, or any liquid or solid fuel having a sulfur content in excess of 0.5 percent by weight.	MDAQMD	The salt melting/conditioning heaters will be low sulfur gaseous fuel fired (natural gas, propane, or LNG) and the diesel engines will burn ultra low sulfur diesel fuel (i.e., 15 ppm sulfur). Therefore, it is expected the project will meet the requirements of Rule 431.

TABLE 5.1-26
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LORS	Purpose	Regulating Agency	Applicability/Compliance Assessment
MDAQMD Reg IV, Rule 475	The purpose of this rule is to limit emissions of NO_x and particulate matter from non-mobile, electric power generating equipment.	MDAQMD	**Applicability:** The rule applies to non-mobile electric power generating equipment having a maximum rated heat input of more than 50 MMBtu/hr. The emergency generators would be subject to this rule. The NO_x and particulate emission limits for the emergency generators are 160 ppmv NO_x and 0.01 gr/dscf or 11 lb/hr particulate, respectively. **Compliance:** The emergency generators will meet the EPA Tier II standards and limit testing and maintenance operation to 30 minutes per week. Therefore, the emergency generators will meet the requirements of Rule 475.
MDAQMD Reg IX, Rule 1157	The purpose of this rule is to limit NO_x emissions from industrial, institutional, and commercial boilers, steam generators, and process heaters.	MDAQMD	**Applicability:** This rule applies to new and existing boilers, steam generators, and process heaters located within the federal ozone non-attainment area with rated heat inputs of greater than or equal to 5 MMBtu/hr, which are used in all industrial, institutional, and commercial operations, including permit units used by independent power producers and cogeneration projects. **Compliance:** The RSEP is not located in a federal ozone non-attainment area. Therefore, it would not be subject to the requirements of Rule 1157.
MDAQMD Reg XI, Rule 1160	The purpose of this rule is to establish limits for emissions associated with emergency, portable, standby, or stationary internal combustion engines.	MDAQMD	**Applicability:** This rule is applicable to any stationary internal combustion engine rated at 500 or more bhp, when located within the federal ozone non-attainment area. **Compliance:** The RSEP is not located in a Federal ozone non-attainment area. Therefore, it would not be subject to the requirements of Rule 1160.
MDAQMD Reg XII (Permits – Title V)	The purpose of this rule is to implement the operating permit requirements of Title V of the CAA as amended in 1990.	MDAQMD with EPA Oversight	See Federal, Title 40 CFR, Part 70 to review applicability and the compliance assessment.
MDAQMD Reg XII, Rule 1210 (Permits – Acid Rain)	The purpose of this rule is to incorporate by reference the provisions of 40 CFR Part 72 for purposes of implementing an acid rain program that meets the requirements of Title IV of the CAA.	MDAQMD with EPA Oversight	See Federal, Title 40 CFR, Part 72 to review applicability and the compliance assessment.

TABLE 5.1-26
Applicable Local Laws, Ordinances, Regulations, Standards, and Permits for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Assessment
MDAQMD Regulation XIII (Permits – NSR)	Purpose of this rule is to provide for the review of new and modified sources and provide mechanisms, including the use of BACT, Best Available Control Technology for Toxics (TBACT), and emission offsets, by which authorities to construct such sources may be granted.	MDAQMD	**Applicability**: As part of the NSR permit approval process, an air quality dispersion analysis must be conducted using a mass emissions-based analysis contained in the rule or an approved dispersion model, to evaluate impacts of increased criteria pollutant emissions from any new or modified facility on ambient air quality. **Compliance**: An air quality dispersion analysis was conducted, using a mass emissions-based analysis contained in the rule and the ISCST3-SCREEN3 dispersion model. **Applicability:** The PSD requirements apply on a pollutant-specific basis to any project that is a new major stationary source or a major modification to an existing major stationary source. (See Title 40 CFR Part 51 and Part 52 discussion for thresholds). **Compliance**: The RSEP emissions are below the PSD Significant Emission Rate (SER) criteria for regulated pollutants. Therefore, RSEP is not subject to the PSD analysis requirements. **Applicability**: BACT shall be applied to all new and modified sources with a potential to emit 25 pounds or more of any of the following: VOC, NO_x, SO_2, or PM_{10}. (MDAQMD Rule 1303). **Compliance:** Based on the BACT thresholds, a BACT analysis was not required. **Applicability**: A source shall be exempt from MACT requirements if the combined potential to emit from all related sources in a proposed modification is less than 10 tpy of any HAP and less than 25 tpy of any combination of HAPs. (MDAQMD Rule 1320). **Compliance:** The RSEP does not exceed the major source thresholds for HAPs (10 tpy for any single HAP or 25 tpy for all HAPs combined). Therefore, NESHAP regulations are not expected to apply.

TABLE 5.1-26
Applicable Local Laws, Ordinances, Regulations, Standards, and Permits for Protection of Air Quality

LORS	Purpose	Regulating Agency	Applicability/Compliance Assessment
			Applicability: Offsets for NO_2, VOC, CO, SO_2, and PM_{10} are required at a 1.0 to 1.0 ratio for emission totals in excess of 25, 25, 100, 25, and 15 tons per year, respectively (MDAQMD Rule 1303 and 1304). **Compliance:** RSEP emissions will be below the offset thresholds. Therefore, emission offsets will not be required.
MDAQMD Reg XIII, Rule 1306 (CEC Review)	The purpose of this rule is to establish a procedure for coordinating MDAQMD review of power plant projects with the CEC AFC and Small Power Plant Exemption processes.	MDAQMD	Under this rule the MDAQMD will review the CEC AFC application and issue a determination of compliance for the proposed project. Upon approval of the project by the CEC, the determination will become the project's ATC. RSE will notify the MDAQMD at the time of the AFC submittal to the CEC.
MDAQMD Reg XIII, Rule 1320 (Permits – Toxics NSR)	The purpose of this rule is to provide for the review of new and modified sources of TAC emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced.	MDAQMD	TBACT shall be applied to any new or modified source of TACs where the facility or individual source cancer risk is greater than 1.0 in a million (10^{-6}). An ATC or PTO will be denied if the facility cancer risk exceeds 10 in a million, or the chronic hazard index exceeds 1.0, or the acute hazard index exceeds 1.0. The predicted cancer risk at the point of maximum impact (PMI) for the project is 0.60 in a million. The maximum predicted chronic and acute hazard indices at the PMI are 0.013 and 0.07, respectively. The values are below the ATC or PTO facility thresholds for cancer risk of 1 in a million and the chronic and acute hazard index of 1.0.

In August 2006, the California legislature passed AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California resource agencies to establish a comprehensive program of regulatory and market mechanisms to achieve reductions in greenhouse gas emissions (ARB, 2006). The RSEP will be subject to AB 32 and will be required to comply with all final rules, regulations, emissions limitations, emission reduction measures, or market-based compliance mechanisms adopted under AB 32. However, there are currently no applicable facility-specific greenhouse gas emission limits or caps. Therefore, greenhouse gas emissions have been estimated for the RSEP for information purposes at this time.

5.1.7.3 Local LORS

When the state's air pollution statutes were reorganized in the mid-1960s, local districts were required to be established in each county of the state. There are three different types of districts: county, regional, and unified. In addition, special air quality management districts, with more comprehensive authority over non-vehicular sources as well as transportation and other regional planning responsibilities, have been established by the Legislature for several regions in California, including MDAQMD. Air quality management districts have principal responsibility for developing plans for meeting the NAAQS and CAAQS; for developing control measures for non-vehicular sources of air pollution necessary to achieve and maintain both state and federal air quality standards; for implementing permit programs established for the construction, modification, and operation of sources of air pollution; and for enforcing air pollution statutes and regulations governing non-vehicular sources.

The MDAQMD plans define the proposed strategies, including stationary source control measures and NSR rules, whose implementation will attain the state AAQS. The relevant stationary source control measures and NSR requirements are presented in Table 5.1-26.

5.1.8 Agencies and Agency Contacts

Each level of government has adopted specific regulations that limit emissions from stationary combustion sources, several of which are applicable to the RSEP. The agencies having permitting authority for the RSEP, and their contact information, are shown in Table 5.1-27.

TABLE 5.1-27
Agency Contacts for Air Quality

Issue	Agency	Contact
Regulatory oversight	EPA Region IX	Gerardo Rios EPA Region IX 75 Hawthorne Street San Francisco, CA 94105 (415) 947-3974
Regulatory oversight	ARB	Michael Tollstrup Project Assessment Branch California Air Resources Board 2020 L Street Sacramento, CA 95814 (916) 322-6026

TABLE 5.1-27
Agency Contacts for Air Quality

Issue	Agency	Contact
Permit issuance, enforcement	MDAQMD	Alan De Salvio Mojave Desert Air Quality Management District 14306 Park Avenue Victorville, CA 92392 (760) 245-1661

5.1.9 Permits and Permit Schedule

MDAQMD is responsible for issuing the required operating permits related to air quality. MDAQMD is required to issue a preliminary determination of compliance within 180 days after issuing the application completeness determination letter. If all requirements of the MDAQMD rules have been satisfied, MDAQMD is required to issue a determination of compliance to the CEC within 240 days after the acceptance of the application as complete. Upon approval of the project by the CEC, a determination of compliance serves as the MDAQMD ATC. A PTO shall be issued by MDAQMD after construction and prior to commencement of operation. Appendix 5.1D contains copies of the requisite MDAQMD ATC forms.

5.1.10 References

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U.S. Environmental Protection Agency (EPA). 1985. Guideline for Determination of Good Engineering Practice Stack Height. EPA-450/4-80-023R. June.

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U.S. Environmental Protection Agency (EPA). 2009. AIRS Air Quality Data Summaries. http://www.epa.gov/air/data/monvals.html. Accessed Third Quarter 2009.

Western Regional Climatic Center (WRCC). 2009. Historical Climate Data Summaries for the Blythe Airport, CA Station. Website Accessed August.