5.6 AIR QUALITY

Preparation of the Clean Air Act Conformity analysis for PM_{10} in response to USEPA's comment on the Draft EIR/EIS resulted in discovery that some of the calculations for the air quality impact analysis included in the Draft EIR/EIS were incorrect. A new analysis was conducted which resulted in revised downward air pollutant emissions impacts for all criteria pollutants. The new emissions estimates are included herein in order to maintain consistency with the Conformity Determination and revised supporting analysis. While most of the construction impacts remain significant when reviewed against the CEQA significance thresholds, the magnitude of the reported impacts has been substantially reduced.

5.6.1 AFFECTED ENVIRONMENT

Existing Air Quality Data

The Cadiz Project is in the Mojave Desert Air Basin (MDAB) under the jurisdiction of the Mojave Desert Air Quality Management District (MDAQMD) as shown in Figure 5.6-1. The aspects of the existing air quality in the MDAB that are discussed in this section include air quality management planning activities, ambient air quality measurements, climatic conditions, sensitive receptors and existing emissions sources.

Non-Attainment Designations and Classification Status

The United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have designated portions of the MDAQMD with respect to their attainment status for a variety of pollutants and standards, and some of those designations have an associated classification. An unclassified designation means that adequate data is not available. Table 5.6-1 shows the designations and classifications for criteria pollutants in the MDAQMD. With respect to the federal ambient air quality standards (AAQS), the Cadiz Project area is in a moderate nonattainment area for particulate matter (PM_{10}). With respect to the California AAQS, the Cadiz Project area is in a nonattainment area for both ozone and PM_{10}. The Cadiz Project area is classified in attainment or unclassified for all other pollutants.

In order to assist with air quality planning efforts, the MDAQMD has been subdivided into several special planning areas. However, the Cadiz Project is not in the Southwest Desert Modified Air Quality Management Area (AQMA), Searles Valley Planning Area or the Mojave Desert Planning Area. Therefore, the specific policies that apply to these special air quality management areas are not applicable in the Cadiz Project area.

TABLE 5.6-1
DESIGNATIONS AND CLASSIFICATIONS FOR AIR QUALITY
IN THE MOJAVE DESERT AIR BASIN

Ambient Air Quality Standard	MDAQMD
One-Hour Ozone (Federal)	Nonattainment; classified Severe-17 (the part of the MDAQMD outside the Southeast Desert Modified AQMA is attainment).
Eight-Hour Ozone (Federal)	Unclassified.
Ozone (State)	Nonattainment; classified Moderate.
PM_{10} (Federal)	Nonattainment; classified Moderate (the part of the MDAQMD in Riverside County is attainment).
New PM_{10} (Federal)	Unclassified.
PM_{25} (Federal)	Unclassified.
PM_{10} (State)	Nonattainment.
Carbon Monoxide (State and Federal)	Attainment.
Nitrogen Dioxide (State and Federal)	Attainment.
Sulfur Dioxide (State and Federal)	Attainment.
Lead (State and Federal)	Attainment
Particulate Sulfate (State)	Attainment (Searles Valley Planning Area is nonattainment).
Hydrogen Sulfide (State)	Unclassified (Searles Valley Planning Area is nonattainment).
Visibility Reducing Particles (State)	Unclassified.

Source: MDAQMD CEQA and Federal Guidelines (1998).

Measured Pollutant Levels

Table 5.6-2 shows the California and federal AAQS, the concentrations of pollutants measured at the Twentynine Palms air quality monitoring station and the number of days that state and federal AAQS were exceeded. State standards for particulate matter were exceeded for one day in 1995. State and federal standards for O_3 were exceeded for several days each in 1995, 1996 and 1997.

Topography and Climate

The Cadiz Project is in the MDAB. The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to coastal and central regions and the blocking nature of the Sierra Nevada Mountains to the north; air masses pushed onshore in Southern California by differential heating are channeled through the MDAB. The MDAB is separated from the Southern California coastal and central California Valley regions by mountains where highest elevation reaches approximately 10,000 feet and whose passes form the main channels for these air masses.

The Mojave Desert is bordered on the southwest by the San Bernardino Mountains, which are separated from the San Gabriel Mountains by the Cajon Pass (4,200 feet). A lesser channel, the Morongo Valley, lies between the San Bernardino Mountains and the Little San Bernardino Mountains.

The Palo Verde Valley part of the Mojave Desert lies in the low desert, at the east end of a series of valleys, most notably Coachella Valley, whose primary channel is the San Gorgonio Pass (2,300 feet) between the San Bernardino and San Jacinto Mountains.

TABLE 5.6-2
AIR QUALITY LEVELS MEASURED AT THE TWENTYNINE PALMS AMBIENT AIR MONITORING STATION

Pollutant	Avg. Time	CA Standard	Fed. Standard	Year	Max. or Mean Level	Days Std. Exceeded
Ozone (0_3)	1 hr.	0.09 ppm	0.12 ppm	1995	0.11	3 (state)
				1996	0.121	19 (state)
				1997	0.115	15 (state)
	8 hr.	--	0.08 ppm	1995	0.0939	3 (fed.)
				1996	0.1014	22 (fed.)
				1997	0.1046	14 (fed.)
Particulate Matter (PM_{10})	AGM	30 mg/m3	--	1995	11.9	0
				1996	20.2	0
				1997	14.9	0
	24 hr.	50 mg/m3	150 mg/m3	1995	85	1 (state)
				1996	47	0
				1997	30	0
	AAM	--	50 mg/m3	1995	9.9	0
				1996	22.5	0
				1997	16.6	0
Carbon Monoxide (CO)	8 hr.	9 ppm	9 ppm	1995	2.03	0
				1996	1.31	0
				1997	1.03	0
	1 hr.	20 ppm	35 ppm	1995	5	0
				1996	1.9	0
				1997	2	0
Nitrogen Dioxide (NO_2)	AAM	--	0.053 ppm	1995	0.00653	0
				1996	0.0062	0
				1997	0.00603	0
	1 hr.	0.25 ppm	--	1995	0.073	0
				1996	0.035	0
				1997	0.037	0
Sulfur Dioxide (SO_2)	AAM	--	0.030 ppm	1995	0.002	0
				1996	0.0011	0
				1997	0.0008	0
	24 hr.	0.04 ppm	0.14 ppm	1995	0.005	0
				1996	0.0037	0
				1997	0.002	0
	3 hr.	--	0.5 ppm	1995 to 1997	--	0
	1 hr.	0.25 ppm	--	1995	0.012	0
				1996	0.005	0
				1997	0.008	0

Source: California Air Resources Board, California Ambient Air Quality Data 1980-1997, compact disc.

Notes:

AGM = annual geometric mean
AAM = annual arithmetic mean
ppm = parts per million
mg/m3 = micrograms per cubic meter

During the summer, the MDAB is generally influenced by a Pacific subtropical high cell which sits off the coast and which inhibits cloud formation and encourages daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert.

Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The MDAB averages between three and seven inches of precipitation per year with from 16 to 30 days with at least 0.01 inches of precipitation. The MDAB is classified as a dry-hot desert climate (BWh), with portions classified as dry-very hot desert (BWhh), to indicate at least three months have maximum average temperatures over 100.4^{o} Fahrenheit (F).

The average rainfall in the proposed project area is four to six inches annually. The average wind speed in the Proposed Cadiz Project area is eight miles per hour and the prevailing wind direction is from the west. Refer to Section 5.5 (Water Resources) for a more detailed description of meteorological conditions in the Cadiz Project area.

Air Quality Management Plans

The MDAQMD Triennial Revision to the 1991 Air Quality Attainment Plan (AQAP) (1996) and the Southern California Association of Governments (SCAG) Regional Comprehensive Plan and Guide (1996) apply to the Cadiz Project area. Both these plans indicate that the main source of O_3 in the MDAB is O_3 transported by the wind from the South Coast Air Basin to the MDAB.

The Mojave Desert Planning Area PM_{10} Plan (1995) is a federal PM_{10} attainment plan for the Mojave Desert Area designed to satisfy the 1990 Federal Clean Air Act planning requirements. The MDAQMD has requested that the federal government change the PM_{10} status for the Cadiz Project area from nonattainment to unclassified because there is not adequate data to support the nonattainment status. The USEPA has not approved this plan and has specified changes that must be made by the MDAQMD in order to consider the redesignation.

Sensitive Receptors

The Cadiz area, at the north end of the Cadiz Project, consists primarily of agricultural fields and a few residences farther to the north. The residences are the only sensitive receptors in the immediate vicinity of the Cadiz Project. These residences are located approximately five miles from the northwestern boundary of the project spreading basins. For this EIR, sensitive air quality receptors are defined as residences, schools, playgrounds, child care centers, convalescent homes, retirement homes, rehabilitation centers and athletic facilities.

Existing Emissions Sources

Existing emissions sources in the vicinity of the proposed Cadiz Project include: diesel fuel burning emissions for operation of generators to run wells at Cadiz Ranch; emissions from vehicles traveling on paved roads (I-66, SR 62 and Iron Mountain Road); dust and vehicle emissions from vehicles traveling on unpaved roads (between SR 62 to Cadiz Dry Lake, between the north end of Iron Mountain Road to the AT&SF railroad alignment to the community of Cadiz); AT&SF railroad train emissions; and dust from high winds in the undeveloped desert, fallow agricultural fields near the community of Cadiz, salt mining operations on Bristol and Cadiz dry lakes, and the Cadiz, Bristol and Danby dry lake beds.

The major existing energy consumers in the Cadiz Project area are the Iron Mountain Pumping Plant and the wells used to irrigate Cadiz Inc. agricultural operations. There are seven irrigation wells which are currently powered by diesel engines. The pumps operating these wells use approximately 191,500 gallons per year of diesel fuel to power the irrigation wells. Refer to Section 5.9 (Energy and Mineral Resources) for a more detailed discussion of current energy use.

5.6.2 CEQA THRESHOLDS OF SIGNIFICANCE

A project will normally have a significant adverse environmental impact on air quality if it results in:

- Air emissions that exceed any of the following MDAQMD standards or result in a substantial contribution to an existing or projected air quality violation:

  548 pounds daily of Carbon Monoxide (CO).
  137 pounds daily of Oxides of Nitrogen (NO_x.)
  137 pounds daily of Sulfur Dioxide (SO_2)
  137 pounds daily of Volatile Organic Compounds (VOC).
  82 pounds daily of PM_{10}.

  100 tons annually of CO.
  25 tons annually of NO_x.
  25 tons annually of SO_2.
  25 tons annually of VOC.
  15 tons annually of PM_{10}.

- A conflict with or obstruction of the implementation of the applicable Air Quality Management Plan.
- A cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state AAQS (including releasing emissions which exceed quantitative thresholds for ozone precursors).
- Delay in the timely attainment of any air quality standard or any required interim emission reductions or other milestones of any federal attainment plan.
- Exposure of sensitive receptors to substantial pollutant concentrations.
- The creation of objectionable odors affecting a substantial number of people.

5.6.3 METHODOLOGY

The proposed Cadiz Project and each of the build alternatives will result in both direct and indirect emissions during the construction and operational phases. Sources of emissions during construction include (1) CO, VOC, NO_x, SO_x and PM_{10} from construction equipment and motor vehicle exhaust; and (2) fugitive PM_{10} emissions from entrained dust from vehicle travel on paved roads, from vehicle and equipment travel on unpaved roads and surfaces, from dust generated during earthmoving and handling activities, and from wind erosion of disturbed construction areas. Sources of emissions during project operations include (1) CO, VOC, NO_x, SO_x and PM_{10} from inspection and maintenance crew vehicle exhaust and from spreading basin maintenance equipment exhaust; and (2) fugitive PM_{10} emissions from inspection and maintenance crew travel on unpaved roads and from spreading basin maintenance activities. Emissions associated with these sources were estimated.

The emission estimates were based on emission factors from the USEPA's Compilation of Air Pollutant Emission Factors (AP-42), the South Coast Air Quality Management District's (SCAQMD)

California Environmental Quality Act (CEQA) Air Quality Handbook (1993), the MDAQMD's Emission Inventory Guidance, Material Handling and Processing Industries (2000), and the California Air Resources Board's (CARB) Motor Vehicle Emission Factor Model (2000).

The Triennial Revision to the 1991 AQAP and the SCAG Regional Comprehensive Plan and Guide were reviewed for consistency with the proposed project. General Plan consistency of the proposed project is discussed in detail in Section 5.2 (Land Use).

5.6.4 IMPACTS

Construction Impacts

Emissions associated with the following sources and activities during construction were estimated:

- Construction equipment engine exhaust
- Motor vehicle exhaust, brake and tire wear
- Entrained dust from material delivery trucks traveling on unpaved roads
- Entrained dust from cement trucks traveling on unpaved roads
- Entrained dust from construction worker buses while traveling on unpaved roads during construction of the conveyance and power transmission facilities
- Entrained dust from vehicles travelling on paved roads
- Entrained dust from construction equipment traveling on unpaved surfaces in construction areas
- Fugitive dust from bulldozing, grading and scraping
- Fugitive dust from handling of excavated material, such as dropping material into haul trucks
- Fugitive dust from wind erosion of disturbed areas

Construction of each project component will include several different activities, such as site clearing, excavation, concrete work, etc. The types and number of equipment, construction workers, and material delivery and haul truck trips will vary from one activity to another. In order to estimate emissions associated with these construction activities, estimates were made of:

- The number of each type of construction equipment anticipated to be used for each construction activity during the construction of each component
- The peak daily hours of use of each piece of construction equipment during each month of construction
- The number of days each piece of construction equipment is anticipated to be used during each month
- The peak daily number of construction workers associated with each construction activity during each month
- The peak daily number of material delivery trips associated with construction of each component
- The total number of material delivery trips associated with construction of each project component (see Appendix B)

These estimates were used to estimate peak daily and annual emissions associated with construction.

Peak daily emissions anticipated during each construction activity each month were estimated first. The emissions associated with each activity were then added together to estimate total peak daily construction emissions each month, and the months with the highest anticipated peak daily emissions of each pollutants was then identified to estimate overall peak daily construction emissions.

Annual emissions during construction were estimated by using the information to estimate construction activity levels during the first 12 months of construction required by the emission factors. Details of the emission estimation are provided in Appendix C.

Table 5.6-3 summarizes the estimated temporary emissions for the construction of the build alternatives for the Cadiz Project. Note that fugitive PM_{10} emissions from unpaved roads and surfaces will be controlled through surface compaction and the application of soil stabilizers, which are estimated to reduce uncontrolled emissions by 50 percent. This reduction is incorporated in the emission estimates in the table. Table 5.6-3 also shows the thresholds of significance for each pollutant and shows whether or not the Cadiz Project construction emissions exceed these thresholds. Based on the identified significance thresholds, and due to the overall magnitude of the Cadiz Project, all short term temporary air emissions levels, except the annual SO_x emission levels, are anticipated to exceed the significance thresholds for all the build alternatives.

Operations Impacts

Operations related air emissions from the build alternatives for the Cadiz Project are anticipated to result from the following activities: energy use by the pumping facility for pumping water in the spreading and withdrawal modes of operation, energy used by the control room, and emissions associated with conveyance facility inspections, power transmission facility maintenance and spreading basin maintenance, and wind erosion PM_{10} emissions from the spreading basins and access roads.

The potential for the Cadiz Project to indirectly increase the amount of dust mobilized from the surfaces of Bristol and Cadiz dry lake beds resulting from project groundwater operations has been analyzed. The groundwater (brine water) beneath the lakebeds is sufficiently near the ground surface to moisten the surface materials through the capillary rise of moisture off the water table. This process reduces the amount of dust generated on the dry lakes because the surface moisture holds the soil together. Because the brine beneath the lakebeds is hydraulically connected to the freshwater aquifer outside the dry lakes, excessive lowering of the groundwater surface at the margins of the dry lakes could lower brine levels beneath the dry lakes to the point that the capillary rise does not reach the ground surface. If this were to happen, the surface materials could dry out, resulting in an increased potential for dust mobilization during wind storms. One of the purposes of the Management Plan is to implement monitoring and mitigation programs to prevent this potential adverse impact to air quality.

Energy

As discussed in Section 5.9 (Energy and Mineral Resources) and shown in Table 5.9-2, the peak demand for electricity for the operation of the Cadiz Project will be in the withdrawal mode. The Cadiz Project will use Metropolitan's existing power supply from the Colorado River Aqueduct. Pumps will be shut down along the Colorado River Aqueduct, simultaneously providing Colorado River Aqueduct, capacity and power supply for the Cadiz Project. Given this transfer of energy use from one Metropolitan operation to another, the Cadiz Project is not anticipated to result in a net increase in energy use for the operation of pumps and extraction wells. Therefore, the Cadiz Project will not result in significant air quality impacts related to pump and extraction well energy use during operation.

The existing Colorado River Aqueduct power supply will also be used to provide power to the pumping facility control room. The amount of electricity that will be used by the pumping facility control room is 411 kWh/day. This is a relatively small amount of electricity compared to the energy

Table 5.6-3
Summary of Estimated Construction Emissions

Alternative/Emission Source										
	CO		VOC		NO_X		SO_X		PM_{10}	
	(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)	(lbs/day)	(tons/yr)
Eastern Alternative										
Construction Equipment Exhaust	2,094.6	177.5	702.2	65.9	1,473.7	99.7	132.5	9.1	80.9	6.7
Motor Vehicles	1,687.9	66.3	177.4	6.1	1,887.2	33.9	12.5	0.2	88.3	1.1
Fugitive PM_{10}	--	--	--	--	--	--	--	--	16,244.1	914.5
Totals	**3,782.4**	**243.7**	**879.6**	**72.0**	**3,360.8**	**133.6**	**145.0**	**9.3**	**16,413.3**	**922.3**
Thresholds of Significance	548	100	137	25	137	25	137	25	82	15
Level of Significance	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Insignificant	Significant	Significant
Western Alternative										
Construction Equipment Exhaust	2,171.7	177.5	716.3	65.9	1,624.7	99.7	143.9	9.1	85.7	6.7
Motor Vehicles	1,780.3	67.5	192.9	6.3	1,962.1	35.3	13.1	0.2	92.4	1.2
Fugitive PM_{10}	--	--	--	--	--	--	--	--	20,687.4	1,040.4
Totals	**3,952.0**	**245.0**	**909.2**	**72.2**	**3,586.9**	**135.0**	**157.0**	**9.3**	**20,865.5**	**1,048.3**
Thresholds of Significance	548	100	137	25	137	25	137	25	82	15
Level of Significance	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Insignificant	Significant	Significant
Combination Alternative										
Construction Equipment Exhaust	2,166.8	177.5	715.3	65.9	1,617.5	99.7	143.2	9.1	85.7	6.7
Motor Vehicles	1,770.2	67.5	192.0	6.3	1,959.0	35.3	13.1	0.2	92.4	1.2
Fugitive PM_{10}	--	--	--	--	--	--	--	--	20,687.4	994.0
Totals	**3,937.0**	**245.0**	**907.3**	**72.2**	**3,576.4**	**135.0**	**156.3**	**9.3**	**20,865.5**	**1,001.9**
Thresholds of Significance	548	100	137	25	137	25	137	25	82	15
Level of Significance	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Significant
Eastern/Canal Alternative										
Construction Equipment Exhaust	2,448.8	81.9	807.3	24.7	1,737.1	79.6	154.8	7.6	92.7	5.0
Motor Vehicles	1,953.6	66.3	180.5	6.3	2,167.3	39.2	14.6	0.2	102.7	0.6
Fugitive PM_{10}	--	--	--	--	--	--	--	--	22,149.5	1,056.5
Totals	**4,402.4**	**148.2**	**987.8**	**31.0**	**3,904.4**	**118.7**	**169.4**	**7.9**	**22,344.9**	**1,062.1**
Thresholds of Significance	548	100	137	25	137	25	137	25	82	15
Level of Significance	Significant	Significant	Significant	Significant	Significant	Significant	Significant	Insignificant	Significant	Significant

demand of the pumps. The control room energy use is estimated to generate 0.08 lbs. of CO per day, 0.004 lbs. per day of VOC, 0.5 lbs. per day of NO_x and SO_x and 0.02 lbs. per day of PM_{10}. These levels of pollutants are far below the daily and annual thresholds of significance. Therefore, the Cadiz Project will not result in a significant impact related to control room energy consumption during operations.

Facility Inspection and Maintenance

The conveyance facility inspection crew is anticipated to be two persons in one vehicle travelling from the Cadiz pumping facility to the spreading basins once each week. Emission sources include vehicle exhaust, brake and tire wear, and entrained unpaved road dust. Each inspection round trip is anticipated to take place during a single day.

The transmission facility maintenance is anticipated to consist of cleaning of the power line insulators once each year. A water truck and pickup truck will be used for this maintenance. These vehicles will travel from the Cadiz pumping facility to the spreading basins. Emission sources include vehicle exhaust, brake and tire wear, and entrained unpaved road dust. Each maintenance round trip is anticipated to take place over two days.

Spreading Basins. Sediments and algae are anticipated to accumulate on the spreading basins while they contain water. This deposited particulate matter will remain on the surface of the basins when they empty through percolation of the water. Experience with pilot tests has shown that this sediment forms a crust on the surface because of the presence of algae and other materials. This accumulated sediment and algae reduces the percolation rate, so it must be removed prior to refilling of the basins.

The sediments will be removed by laser fine grading by a scraper to a depth of approximately 0.5 inches just prior to refilling of the basin. The removed material will be loaded into haul trucks by a front-end loader for transport and spreading at the Cadiz agricultural holdings. Emissions during these operations include:

- Scraper exhaust
- Fugitive emissions from the scraper operation
- Front-end loader exhaust
- Fugitive PM_{10} emissions from dumping material into the haul trucks
- Haul truck exhaust, brake and tire wear
- Fugitive PM_{10} emissions from entrained unpaved road dust during haul truck travel
- Fugitive PM_{10} emissions when the material is unloaded from the haul trucks

Watering will be used to reduce PM_{10} emissions by an estimated 50 percent of uncontrolled emissions during sediment removal by the scraper. Additionally, the unpaved roads used by the haul trucks will be watered once each hour during truck travel to reduce fugitive PM_{10} emissions by an estimated 73 percent from uncontrolled emissions. The haul trucks will be covered when they transport material, so PM_{10} emissions from loss of material are not anticipated to occur.

The PM_{10} emission reduction resulting from hourly watering of the roads used by the haul trucks was estimated to be 73 percent based on an equation provided in Section K of the MDAQMD's Emission Inventory Guidance, Material Handling and Processing Industries (2000).

It is anticipated that sediment would not be removed from the spreading basins every year, although sediment will be removed from all of the basins prior to spreading operations. A significant increase in PM_{10} emissions from current levels is not anticipated to occur through wind erosion of the spreading basins, because of the formation of the crust on the surface when the basins dry out after emptying. Current operation of the pilot spreading basins has not resulted in a noticeable increase in dust generation in the area. The PM_{10} emissions from the project spreading basins are estimated to be minimal because disturbance will be infrequent and the emissions from the undisturbed project spreading basins are estimated to be similar to the surrounding undeveloped landscape. Should the crust prove ineffective at controlling the potential for significant wind blown dust emissions from the spreading basins, a soil binder would be applied following water spreading operations.

Wind erosion from the unpaved access roads on the Cadiz Project site are also anticipated to be similar to the existing wind erosion emissions from the surrounding undeveloped, sparsely vegetated landscape. Therefore, the Cadiz Project is anticipated to result in air quality impacts related to wind erosion of project spreading basins and access roads during operations that are below a level of significance.

Facility Inspection and Maintenance Emissions Summary

Estimated emissions during operations are summarized in Table 5.6-4. Table 5.6-4 also shows the thresholds of significance for each pollutant and shows whether or not the Cadiz Project operations are anticipated to result in a significant adverse air quality impact. Because these activities will not occur on a daily basis, the standard for measuring emissions is the annual standard. The inspection activities will occur once per week, and maintenance activities will occur once per year or less. Additionally, the PM_{10} emissions associated with the conveyance inspection and transmission line maintenance will occur over a distance of approximately 35 miles and will not be focused on a particular location. All emissions are below the thresholds of significance.

Odors

During operations of the project spreading basins, odor is unlikely to be created due to the rapid percolation of the Colorado River Aqueduct water.

Summary of Impacts Related to CEQA Air Quality Emissions Significance Thresholds

Emissions of CO, VOC, NO_X, SO_X and PM_{10} during construction of the Eastern, Western, Combination and Eastern/Canal Alternatives are anticipated to exceed the emission significance thresholds. Mitigation measures provided later in this section will reduce this impact, but impacts will remain significant during construction.

Emissions during Cadiz Project operations are anticipated to be below all of the significance thresholds, so no adverse significant impacts to air quality are anticipated to occur.

Consistency with the AQAP and SCAG Regional Comprehensive Plan and Guide

SCAG participates in the approval process of the MDAQMD's air plans such as the Triennial Revision to the AQAP. However, the SCAG Regional Comprehensive Plan and Guide does not include any additional requirements to the MDAQMD's air plan. Therefore, the Cadiz Project will not result in a significant adverse air quality impact related to consistency with the SCAG Regional Comprehensive Plan and Guide.

Table 5.6-4
Estimated Pollutant Emissions for Project Operations
(tons/yr)

Activity/Emission Source	CO	VOC	NO_x	SO_x	PM_{10}
Conveyance Facility Inspection					
Construction Equipment Exhaust	0	0	0	0	0
Motor Vehicles	0.02	<0.005	<0.005	<0.005	<0.005
Fugitive PM_{10}	--	--	--	--	4.15
Subtotals	**0.02**	**<0.005**	**<0.005**	**<0.005**	**4.15**
Power Transmission Facility Maintenance					
Construction Equipment Exhaust	0	0	0	0	0
Motor Vehicles	<0.005	<0.005	<0.005	<0.005	<0.005
Fugitive PM_{10}	--	--	--	--	0.41
Subtotals	**<0.005**	**<0.005**	**<0.005**	**<0.005**	**0.41**
Spreading Basin Maintenance					
Construction Equipment Exhaust	0.16	0.02	0.31	0.003	0.02
Motor Vehicles	0.04	0.01	0.04	<0.005	<0.005
Fugitive PM_{10}	--	--	--	--	4.81
Subtotals	**0.20**	**0.03**	**0.35**	**0.03**	**4.83**
Totals	**0.21**	**0.03**	**0.36**	**0.03**	**9.39**
Thresholds of Significance	100	25	25	25	15
Level of Significance	Insignificant	Insignificant	Insignificant	Insignificant	Insignificant

Because the Cadiz Project is a new program, the Eastern, Western, Combination or Eastern/Canal Alternatives were not included in the Emissions Source Groups in the Triennial Revision to the AQAP. The Eastern, Western, Combination or Eastern/Canal Alternatives would result in emissions of CO, VOC, NO_x, SO_x and PM_{10} during construction, in excess of the levels estimated in the Triennial Revision to the AQAP. However, as mentioned previously, emissions of ozone precursors (VOC and NO_X) during construction are not anticipated to conflict with attainment of the state ozone ambient air quality standard in the Cadiz Project area, because construction impacts are temporary in nature. Additionally, as described below, a Draft Clean Air Act General Conformity Analysis and has been conducted to assess the potential impacts of PM_{10} emissions on attainment of PM_{10} ambient air quality standards. This analysis concluded that these emissions will not cause or contribute to new violations of any national ambient air quality standards in the affected area, nor increase the frequency or severity of an existing violation. Therefore, none of the Alternatives is anticipated to result in a significant adverse air quality impact related to a conflict with the Triennial Revision to the AQAP during construction.

Emissions during project operation are below the established significance thresholds. Therefore, these emissions are not anticipated to conflict with the AQAP.

Clean Air Act General Conformity

The Clean Air Act (CAA) Amendments of 1990 require Federal agencies to ensure their actions conform to the appropriate State Implementation Plan (SIP). The SIP is a plan which provides for implementation, maintenance, and enforcement of the federal AAQS, and includes emission limitations and control measures to attain and maintain the AAQS. Conformity to a SIP, as defined

in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the AAQS to achieve attainment of such standards.

On October 26, 1994, the MDAQMD adopted Rule 2002 - *General Federal Actions Conformity*, which implements the requirements of the CAA and regulations under 40 CFR 51, subpart W, with respect to the conformity of general federal actions to the applicable SIP. This rule sets forth policy, criteria, and procedures for demonstrating and assuring conformity of such actions to the applicable SIP. The rule has been incorporated into the California SIP, which has been approved by the USEPA. Therefore, the BLM (2001) has made a draft conformity determination according to the provisions of 40 CFR 93, MDAQMD Rule 2002 and 40 CFR 51, Subpart W.

MDAQMD Rule 2002 states that a conformity determination is required for those pollutants for which the area affected by a federal action is designated as nonattainment or maintenance. Therefore, the draft conformity determination addressed PM_{10}, because the Cadiz Project is in an area designated as moderate nonattainment for PM_{10}.

MDAQMD Rule 2002 does not require a conformity determination for federal actions that result in PM_{10} emissions below a 100 ton per year *de minimis* level. As shown above, emissions associated with construction for the build alternatives exceed this level, while emissions associated with Cadiz Project operations are below it. Therefore, the draft conformity determination address emissions associated with the construction phase.

The MDAQMD determined that an area wide air quality modeling analysis is appropriate for the project, given the relatively remote location of the proposed project and the nature of the activity primarily generating emissions (short-term construction activity employing all feasible control measures). Section 2002(H)(1)(d)(ii) allows for the use of a numeric inventory calculation as an area-wide air quality modeling analysis, pursuant to 2002(H)(1)(e)(iv) in the absence of a USEPA-approved attainment or maintenance plan.

This calculation compares projected emissions without the project during the years the project will be active, plus total direct and indirect emissions from the project, to a "future baseline" inventory. The "future baseline" emissions used for this comparison are the emissions calculated using 1990 activity levels with emission factors appropriate for the future years. In particular, the "future baseline" emissions account for reductions from the implementation of control measures after 1990. Conformity is demonstrated if the projected future emissions without the project plus the direct and indirect emissions from the project are below the "future baseline" emissions.

The MDAQMD estimated the future and "future baseline" emissions for this comparison. PM_{10} emissions projected during 2002 (the year that construction is anticipated to occur) with the Federal action are below the baseline emissions by 15,139 tons/year.

The draft conformity determination concluded that:

> "The federal action positively conforms to the applicable SIP for the Mojave Desert Air Basin. The BLM is supporting an activity that has been demonstrated by USEPA and MDAQMD standards not to cause or contribute to new violations of any national ambient air quality standards in the affected area, nor increase the frequency or severity of an existing violation. Implementation of the federal action will not delay timely attainment of the PM_{10} standards in the Mojave Desert Air Basin, nor any required interim emission reductions or other milestones. This conclusion of a positive conformity determination for the federal action planned for

the Cadiz Groundwater Storage and Dry-Year Supply Program fulfills the Bureau of Land Management's obligation and responsibility under 40 CFR 93, MDAQMD Rule 2002 and 40 CFR 51, Subpart W."

Clean Air Attainment Delays

The Cadiz Project is in an area currently designated as non-attainment for O_3 (state standard) and particulate matter (state and federal standards). During construction, each of the build alternatives is anticipated to result in levels of NO_x and VOC (O_3 precursors) and PM_{10} emissions which are significant based on the MDAQMD thresholds. However, the Draft Clean Air Act General Conformity Analysis and Determination concluded that these emissions will not cause or contribute to new violations of any national ambient air quality standards in the affected area, nor increase the frequency or severity of an existing violation. Implementation of the project will not delay timely attainment of the PM_{10} standards in the Mojave Desert Air Basin, nor any required interim emission reductions or other milestones.

As stated previously, emissions during project operations are below the significance thresholds. Therefore, project operations are not anticipated to contribute to new violations of any ambient air quality standards or increase the severity of any existing violations, or to delay timely attainment of air quality standards.

Cumulative Non-Attainment Criteria Pollutants

The Cadiz Project is in an area currently designated as non-attainment for O_3 (state standard) and particulate matter (state and federal standards). During construction, the Eastern, Western, Combination and Eastern/Canal Alternatives would result in levels of NO_x and VOC (O_3 precursors) and PM_{10} which are significant based on the MDAQMD thresholds. However, the Project area is sparsely populated and does not include other substantial emissions of NO_X, VOC or PM_{10}. Therefore, since the Eastern, Western, Combination and Eastern/Canal Alternatives are not anticipated to result in significant adverse impacts during construction related to the non-attainment pollutants O_3 and particulate matter in the MDAB, significant adverse cumulative impacts are not anticipated.

Emissions during project operations are below the significance thresholds. Therefore, project operations are not anticipated to have any significant adverse cumulative impacts on air quality.

Sensitive Receptors

The project features under the Eastern, Western, Combination and Eastern/Canal Alternatives are not adjacent to any sensitive receptors. Therefore the Eastern, Western, Combination and Eastern/Canal Alternatives would not result in a significant air quality impact on sensitive receptors.

Odors

The Eastern, Western, Combination and Eastern/Canal Alternatives would not result in significant objectionable odors during construction or operation because no odor causing activities will occur.

No Project Alternative

The No Project Alternative does not result in construction and operations emissions and therefore does not exceed emission criteria, affect attainment of pollution standards or affect sensitive receptors. The No Project Alternative is consistent with attainment plans.

5.6.5 MITIGATION MEASURES

AQ-1 Construction activities shall be conducted in a manner that minimizes the amounts of exposed excavated soil during and at the end of work periods.

AQ-2 During construction and spreading basin maintenance, surplus excavated material will be disposed of in accordance with local ordinances and sound engineering practices.

AQ-3 During construction and spreading basin maintenance, water will be used on equipment in the morning and evening, as necessary, to prevent the transport of silt onto public roads.

AQ-4 During construction, soil binders or other dust control methods will be used on the site, unpaved haul roads and unpaved parking areas. Implementation of this measure is anticipated to result in a 50% reduction in PM_{10} emissions from graded areas. This reduction has been incorporated into the estimates of emissions associated with Cadiz Project construction.

AQ-5 During construction, all application of non-toxic soil stabilizers will be conducted in accordance with manufacturer's specification to all inactive construction areas (previously graded areas inactive for ten days or more).

AQ-6 Construction equipment shall be maintained and properly tuned and operated in a manner so as to reduce peak emission levels.

AQ-7 Construction contractors shall provide rideshare or transit incentives for construction employees.

AQ-8 During spreading basin maintenance, watering will be used on the site and on unpaved haul roads. Implementation of this measure is anticipated to result in a 50% reduction in PM_{10} emissions from sediment removal and in a 73% reduction in PM_{10} emissions from transport of removed material on haul roads. These reductions have been incorporated into the estimates of emissions associated with Cadiz Project operations.

AQ-9 Based on periodic visual inspection, soil binders will be applied to the spreading basins following water spreading operations to control wind-blown dust emissions.

5.6.6 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The Eastern, Western, Combination and Eastern/Canal Alternatives are each anticipated to result in significant adverse air quality impacts during construction related to air quality emissions that cannot be mitigated to below a CEQA threshold level of significance. The implementation of the mitigation measures shown above is not anticipated to reduce any of the emissions totals shown in Table 5-6.3 to below a CEQA threshold level of significance. There will be no significant adverse impacts from either construction or operations related to cumulative non-attainment criteria pollutants, and attainment plans and delays.

Because electric power for project operations comes from Metropolitan's existing supply and is available due to a shift in use, impacts to air quality from energy use are not significant.

Other emissions associated with operation of the project, such as impacts of facility inspection and maintenance, are below the annual thresholds of significance for all pollutants.