



**BAY AREA AIR QUALITY  
MANAGEMENT DISTRICT** (/)

A HEALTHY BREATHING ENVIRONMENT FOR EVERY BAY AREA RESIDENT

# Air Quality Standards and Attainment Status

Learn about state and federal standards for 11 air pollutants and see the Bay Area's attainment status for each pollutant.

Federal and state ambient air quality standards have been set to protect public health and the climate. "Attainment" status for a pollutant means that the Air District meets the standard set by the U.S. Environmental Protection Agency (federal) or California Environmental Protection Agency (<http://www.calepa.ca.gov/>) (state). Continuous air monitoring ensures that these standards are met and maintained.

Pollutant	Averaging Time	California Standards <sup>1</sup>		National Standards <sup>2</sup>	
		Concentration	Attainment Status	Concentration <sup>3</sup>	Attainment Status
Ozone	8 Hour	0.070 ppm (137µg/m <sup>3</sup> )	N <sup>9</sup>	0.070 ppm Primary same as secondary	N <sup>4</sup>
	1 Hour	0.09 ppm (180 µg/m <sup>3</sup> )	N		<i>See Note #5</i>
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m <sup>3</sup> )	A	9 ppm (10 mg/m <sup>3</sup> )	A <sup>6</sup>
	1 Hour	20 ppm (23 mg/m <sup>3</sup> )	A	35 ppm (40 mg/m <sup>3</sup> )	A

Nitrogen Dioxide	1 Hour	0.18 ppm (339 $\mu\text{g}/\text{m}^3$ )	A	0.100 ppm <i>See Note #11</i>	<i>See Footnote #11</i>
	Annual Arithmetic Mean	0.030 ppm (57 $\mu\text{g}/\text{m}^3$ )		0.053 ppm (100 $\mu\text{g}/\text{m}^3$ )	A
Sulfur Dioxide <i>See Note #12</i>	24 Hour	0.04 ppm (105 $\mu\text{g}/\text{m}^3$ )	A	0.14 ppm (365 $\mu\text{g}/\text{m}^3$ )	<i>See Footnote #12</i>
	1 Hour	0.25 ppm (655 $\mu\text{g}/\text{m}^3$ )	A	0.075 ppm (196 $\mu\text{g}/\text{m}^3$ )	<i>See Footnote #12</i>
	Annual Arithmetic Mean			0.030 ppm (80 $\mu\text{g}/\text{m}^3$ )	<i>See Footnote #12</i>
Particulate Matter (PM10)	Annual Arithmetic Mean	20 $\mu\text{g}/\text{m}^3$	N <sup>7</sup>		
	24 Hour	50 $\mu\text{g}/\text{m}^3$	N	150 $\mu\text{g}/\text{m}^3$	U
Particulate Matter - Fine (PM2.5)	Annual Arithmetic Mean	12 $\mu\text{g}/\text{m}^3$	N <sup>7</sup>	12 $\mu\text{g}/\text{m}^3$ <i>See Note #15</i>	U/A
	24 Hour			35 $\mu\text{g}/\text{m}^3$ <i>See Note #10</i>	N
Sulfates	24 Hour	25 $\mu\text{g}/\text{m}^3$	A		

Lead <a href="#">See Note #13</a>	30 day Average	1.5 µg/m <sup>3</sup>		-	A
	Calendar Quarter	-		1.5 µg/m <sup>3</sup>	A
	Rolling 3 Month Average <sup>14</sup>	-		0.15 µg/m <sup>3</sup>	<a href="#">See Note #14</a>
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m <sup>3</sup> )	U		
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m <sup>3</sup> )	No information available		
Visibility Reducing particles	8 Hour (10:00 to 18:00 PST)	<a href="#">See Note #8</a>	U		
A=Attainment N=Nonattainment U=Unclassified					
mg/m <sup>3</sup> =milligrams per cubic meter		ppm=parts per million		µg/m <sup>3</sup> =micrograms per cubic meter	

## OTES

California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM10, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 1-hour or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the state standard.

Additional standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year

erage of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150  $\mu\text{g}/\text{m}^3$ . The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 35  $\mu\text{g}/\text{m}^3$ .

Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met if the 3-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

Additional air quality standards are set by US EPA at levels determined to be protective of public health with an adequate margin of safety.

On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.12 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations by October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

In June 2002, CARB established new annual standards for PM2.5 and PM10.

statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005 and came effective on May 17, 2006.

On January 9, 2013, EPA issued a final rule

<https://www.federalregister.gov/articles/2013/01/09/2013-00170/determination-of-attainment-for-the-san-francisco-bay-area-nonattainment-area-for-the-2006-fine%20>) to determine that the Bay Area attains the 24-hour PM2.5 national standard. This EPA rule suspends key SIP requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour PM2.5 standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to EPA, and EPA approves the proposed redesignation.

To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100ppm (effective January 22, 2010). The U.S. Environmental Protection Agency (EPA) expects to make a designation for the Bay Area by the end of 2017.

On June 2, 2010, the U.S. EPA established a new 1-hour SO2 standard, effective August 23, 2010, which is based on the 3-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030 ppm annual and 0.14 ppm 24-hour SO2 NAAQS however must continue to be used until one year following U.S. EPA initial designations of the new 1-hour SO2 NAAQS. EPA expects to make designation for the Bay Area by the end of 2017.

EB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure below which there are no adverse health effects determined.

Additional lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

December 2012, EPA strengthened the annual PM 2.5 National Ambient Air Quality Standards (NAAQS) from 15.0 to 12.0 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). In December 2014, EPA issued final area designations for the 2012 primary annual PM 2.5 NAAQS. Areas designated "nonattainable/unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

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