

BAY AREA AIR POLLUTION SUMMARY – 2012

MONITORING STATIONS	OZONE						CARBON MONOXIDE			NITROGEN DIOXIDE				SULFUR DIOXIDE				PM ₁₀				PM _{2.5}						
	Max 1-Hr	Cal 1-Hr Days	Max 8-Hr	Nat 8-Hr Days	Cal 8-Hr Days	3-Yr Avg	Max 1-Hr	Max 8-Hr	Nat/Cal Days	Max 1-Hr	Ann Avg	Nat 1-Hr Days	Cal 1-Hr Days	Max 1-Hr	Max 24-Hr	Nat 1-Hr Days	Cal 24-Hr Days	Ann Avg	Max 24-Hr	Nat 24-Hr Days	Cal 24-Hr Days	Max 24-Hr	Nat 24-Hr Days	3-yr Avg	Ann Avg	3-yr Avg		
North Counties	(ppb)						(ppm)			(ppb)				(ppb)				(µg/m ³)				(µg/m ³)						
Napa*	81	0	64	0	0	63	2.2	1.5	0	50	8	0	0	-	-	-	-	16.1	38	0	0	*	*	*	*	*		
San Rafael*	76	0	57	0	0	51	2.3	1.1	0	52	11	0	0	-	-	-	-	13.2	37	0	0	26.5	0	*	8.0	*		
Santa Rosa	64	0	51	0	0	47	2.2	1.5	0	43	9	0	0	-	-	-	-	-	-	-	-	25.7	0	22	8.2	8.0		
Vallejo	85	0	62	0	0	59	2.8	2.2	0	52	9	0	0	14.2	2.5	0	0	-	-	-	-	36.8	1	25	9.0	8.8		
Coast & Central Bay																												
Oakland	72	0	45	0	0	44	2.9	1.6	0	65	12	0	0	-	-	-	-	-	-	-	-	33.6	0	24	9.5	9.1		
Oakland-West*	61	0	48	0	0	*	2.8	2.4	0	53	15	0	0	68.1	8.0	0	0	-	-	-	-	*	*	*	*	*		
Richmond	-	-	-	-	-	-	-	-	-	-	-	-	-	13.3	2.3	0	0	-	-	-	-	-	-	-	-	-		
San Francisco	69	0	48	0	0	47	2.0	1.2	0	124	13	1	0	-	-	-	-	17.4	51	0	1	35.7	1	24	8.2	9.4		
San Pablo*	86	0	59	0	0	51	1.6	0.9	0	55	9	0	0	14.8	6.4	0	0	15.6	47	0	0	*	*	*	*	*		
Eastern District																												
Bethel Island	98	1	87	2	4	73	1.5	0.9	0	32	7	0	0	19.7	2.5	0	0	14.1	52	0	1	-	-	-	-	-		
Concord	93	0	85	2	3	72	1.2	0.8	0	40	8	0	0	8.7	2.5	0	0	12.6	35	0	0	32.2	0	24	6.5	7.2		
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	-	19.2	5.9	0	0	-	-	-	-	-	-	-	-	-		
Fairfield	88	0	77	1	2	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Livermore	102	2	90	3	4	73	-	-	-	53	11	0	0	-	-	-	-	-	-	-	-	31.1	0	25	6.5	7.3		
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	-	16.5	4.1	0	0	-	-	-	-	-	-	-	-	-		
Patterson Pass	-	-	-	-	-	-	-	-	-	45	4	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
San Ramon*	99	1	86	3	3	*	-	-	-	44	8	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-		
South Central Bay																												
Hayward*	94	0	65	0	0	*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Redwood City	63	0	54	0	0	53	4.0	1.8	0	60	11	0	0	-	-	-	-	-	-	-	-	33.3	0	23	8.5	8.5		
Santa Clara Valley																												
Cupertino*	83	0	66	0	0	*	1.9	0.8	0	45	8	0	0	28.2	3.0	0	0	13.5	42	0	0	-	-	-	-	-		
Gilroy	92	0	73	0	2	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.3	0	20	7.4	7.9		
Los Gatos	85	0	72	0	1	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
San Jose	101	1	62	0	0	61	2.6	1.9	0	67	13	0	0	7.9	2.8	0	0	18.8	60	0	1	38.4	2	28	9.1	9.3		
San Martin	92	0	77	1	4	72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Total Bay Area	3		4		8		0			1		0		0		0		0		2		3						
Days over Standard	*See NOTES on second page. Dash (-) indicates pollutant is not monitored at the site.																											

2012 NOTES

The annual Bay Area Air Pollution Summary summarizes pollutant concentrations for comparison to the national and California air pollution standards.

***Station Information (see asterisks on front page)**

The PM_{2.5} instrument at San Rafael was out of commission during July-August, 2010. Therefore, 3-year average PM_{2.5} statistics are not available.

PM_{2.5} monitoring using federally accepted method began at Oakland West, Napa and San Pablo in December 2012. Therefore, PM_{2.5} statistics are not available.

The Hayward site was temporarily closed during 2010 due to a major construction project adjacent to the site. Therefore, 3-year average ozone statistics are not available.

A new site was opened in Cupertino on September 1, 2010 for an air monitoring study. Therefore, 3-year average statistics for ozone are not available.

Ozone monitoring at Oakland West began in December 2010. Therefore, 3-year average ozone statistics are not available.

A new site was opened in San Ramon on January 1, 2012 for an air monitoring study. Therefore, 3-year average statistics for ozone are not available.

Explanation of Terms

State and national excesses occur when pollutant concentrations surpass the indicated standards. For comparison, values in ppb must be converted to ppm and rounded to the same number of decimal places as the original standard.

MAX HR / MAX 8-HR / MAX 24-HR

The highest average pollutant concentration over a one-hour period, an eight-hour period (on any given day), or a 24-hour period (from midnight to midnight).

ANN AVG

The yearly average (arithmetic mean) of the readings taken at a given monitoring station.

NAT DAYS

The number of days during the year for which the monitoring station recorded pollutant concentrations in excess of the national standard.

CAL DAYS

The number of days during the year for which the station recorded pollutant concentrations in excess of the California standard.

TOTAL BAY AREA DAYS OVER STANDARD

is not a sum of excesses at individual stations, but rather a sum of the number of days for which excesses occurred at any one or more stations.

3-YR AVG (Nat. 8-hr ozone standard)

The 3-year average of the fourth highest 8-hour average ozone concentration for each monitoring station. A 3-year average greater than 75 ppb at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA.

PM₁₀

Particulate matter ten microns or smaller in size. PM₁₀ is sampled every third day at San Jose and every sixth day at all other sites.

PM_{2.5}

Particulate matter 2.5 microns or smaller in size. PM_{2.5} is a sub-category of PM₁₀.

PM₁₀ ANN AVG and MAX 24-HR

This table shows PM₁₀ data reported at local temperature and pressure conditions, according to the California standards. National PM₁₀ data are converted to standard temperature and pressure conditions, which generally results in slightly lower readings.

3-YR AVG (PM_{2.5} 24-hour standard)

The 3-year average of the annual 98th percentiles of the individual 24-hour concentrations of PM_{2.5}. A 3-year average greater than 35 µg/m³ at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA. The method for calculating the 98th percentile was changed by the EPA effective March 18, 2013 but is not reflected in the 2012 pollution summary.

3-YR AVG (PM_{2.5} annual standard)

The 3-year average of the quarterly averages of PM_{2.5}. A 3-year average greater than 15.0 µg/m³ at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA.

HEALTH-BASED AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Std	National Std
Ozone	1 Hour	0.09 ppm	-
	8 Hour	0.070 ppm	0.075 ppm
Carbon Monoxide	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Nitrogen Dioxide*	1 Hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur Dioxide*	1 Hour	-	0.075 ppm
	24 Hour	0.04 ppm	-
Particulates ≤ 10 microns	24 Hour	50 µg/m ³	150 µg/m ³
	Annual	20 µg/m ³	-
Particulates ≤ 2.5 microns*	24 Hour	-	35 µg/m ³
	Annual	12 µg/m ³	15.0 µg/m ³

* In 2010 the U.S. EPA implemented a new 1-hour nitrogen dioxide standard of 100 ppb, and a new 1-hour sulfur dioxide standard of 75 ppb. The previous 24-hour and annual sulfur dioxide standards were revoked. On March 18, 2013, the U.S. EPA implemented a new annual PM_{2.5} standard of 12.0 µg/m³. However, it is not reflected in the 2012 pollution summary.

Concentrations	ppm parts per million	ppb parts per billion	µg/m³ micrograms per cubic meter
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TEN-YEAR BAY AREA AIR QUALITY SUMMARY DAYS OVER STANDARDS

YEAR	OZONE			CARBON MONOXIDE		NITROGEN DIOXIDE		SULFUR DIOXIDE		PM ₁₀		PM _{2.5}
	8-Hr*	1-Hr	8-Hr	1-Hr	8-Hr	1-Hr	1-Hr	24-Hr	24-Hr	24-Hr	24-Hr***	
	Nat	Cal	Cal	Nat	Cal	Nat**	Cal	Nat**	Cal	Nat	Cal	Nat
2003	7	19	-	0	0	0	0	-	0	0	6	0
2004	0	7	-	0	0	0	0	-	0	0	7	1
2005	1	9	9	0	0	0	0	-	0	0	6	0
2006	12	18	22	0	0	0	0	-	0	0	15	10
2007	1	4	9	0	0	0	0	-	0	0	4	14
2008	12	9	20	0	0	0	0	-	0	0	5	12
2009	8	11	13	0	0	0	0	-	0	0	1	11
2010	9	8	11	0	0	0	0	0	0	0	2	6
2011	4	5	10	0	0	0	0	0	0	0	3	8
2012	4	3	8	0	0	0	0	1	0	0	2	3

*In 2008, the U.S. EPA revised the 8-hour ozone standard from 0.08 ppm to 0.075 ppm. Starting in 2008, ozone exceedance days reflect the new standard.

**In 2010, the U.S. EPA implemented a new national 1-hour nitrogen dioxide standard of 100 ppb and a new national 1-hour sulfur dioxide standard of 75 ppb.

***In 2006, the U.S. EPA revised the national 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³. Starting in 2006, PM_{2.5} exceedance days reflect the new standard.