# BAY AREA AIR POLLUTION SUMMARY — 2005

—See NOTES on back of this page

| MONITORING STATIONS | OZONE | | | | | | CARBON MONOXIDE | | | NITROGEN DIOXIDE | | | SULFUR DIOXIDE | | | $PM_{10}$ | | | | $PM_{2.5}$ | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Max 1-Hr | Cal Days | Max 8-Hr | Nat Days | Cal Days | 3-Yr Avg | Max 1-Hr | Max 8-Hr | Nat/Cal Days | Max 1-Hr | Ann Avg | Nat/Cal Days | Max 24-Hr | Ann Avg | Nat/Cal Days | Ann Avg | Max 24-Hr | Nat Days | Cal Days | Max 24-Hr | Nat Days | 3-Yr Avg | Ann Avg | 3-Yr Avg |
| **North Counties** | (ppb) | | (ppb) | | | | (ppm) | | | (ppb) | | | (ppb) | | | ($\mu g/m^3$) | | | | ($\mu g/m^3$) | | | ($\mu g/m^3$) | |
| Napa | 91 | 0 | 67 | 0 | 0 | 61 | 3.2 | 2.0 | 0 | 60 | 10 | 0 | - | - | - | 18.0 | 40 | 0 | 0 | - | - | - | - | - |
| San Rafael | 81 | 0 | 59 | 0 | 0 | 51 | 3.0 | 1.7 | 0 | 54 | 13 | 0 | - | - | - | 16.5 | 39 | 0 | 0 | - | - | - | - | - |
| Santa Rosa | 72 | 0 | 51 | 0 | 0 | 49 | 2.5 | 2.0 | 0 | 47 | 11 | 0 | - | - | - | 15.9 | 39 | 0 | 0 | 33.6 | 0 | 28.2 | 7.6 | 8.2 |
| Vallejo | 90 | 0 | 70 | 0 | 0 | 60 | 3.9 | 3.1 | 0 | 70 | 11 | 0 | 5 | 1.2 | 0 | 17.3 | 52 | 0 | 1 | 43.8 | 0 | 32.5 | 9.7 | 10.0 |
| **Coast & Central Bay** | | | | | | | | | | | | | | | | | | | | | | | | |
| Oakland* | 68 | 0 | 45 | 0 | 0 | 39 | 3.4 | 2.4 | 0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Richmond | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 1.1 | 0 | - | - | - | - | - | - | - | - | - |
| San Francisco | 58 | 0 | 54 | 0 | 0 | 48 | 2.5 | 2.1 | 0 | 66 | 16 | 0 | 7 | 1.4 | 0 | 20.1 | 46 | 0 | 0 | 43.6 | 0 | 32.6 | 9.5 | 9.9 |
| San Pablo | 66 | 0 | 57 | 0 | 0 | 52 | 2.8 | 1.3 | 0 | 54 | 12 | 0 | 6 | 1.7 | 0 | 19.0 | 42 | 0 | 0 | - | - | - | - | - |
| **Eastern District** | | | | | | | | | | | | | | | | | | | | | | | | |
| Bethel Island | 89 | 0 | 77 | 0 | 2 | 72 | 1.1 | 0.9 | 0 | 38 | 7 | 0 | 6 | 2.0 | 0 | 18.5 | 64 | 0 | 1 | - | - | - | - | - |
| Concord | 98 | 1 | 80 | 0 | 2 | 73 | 2.2 | 1.5 | 0 | 55 | 12 | 0 | 7 | 1.0 | 0 | 16.4 | 42 | 0 | 0 | 48.9 | 0 | 35.1 | 9.0 | 9.8 |
| Crockett* | - | - | - | - | - | - | - | - | - | - | - | - | * | * | 0 | - | - | - | - | - | - | - | - | - |
| Fairfield | 90 | 0 | 73 | 0 | 2 | 68 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Livermore | 120 | 6 | 90 | 1 | 7 | 78 | 3.4 | 1.8 | 0 | 72 | 14 | 0 | - | - | - | 18.8 | 49 | 0 | 0 | 32.1 | 0 | 29.4 | 9.0 | 9.4 |
| Martinez | - | - | - | - | - | | - | - | - | - | - | - | 7 | 1.7 | 0 | - | - | - | - | - | - | - | - | - |
| Pittsburg | 94 | 0 | 78 | 0 | 2 | 69 | 3.3 | 1.7 | 0 | 58 | 11 | 0 | 9 | 2.4 | 0 | 20.1 | 57 | 0 | 1 | - | - | - | - | - |
| **South Central Bay** | | | | | | | | | | | | | | | | | | | | | | | | |
| Fremont | 105 | 1 | 78 | 0 | 1 | 60 | 3.2 | 2.0 | 0 | 69 | 15 | 0 | - | - | - | 17.8 | 54 | 0 | 1 | 33.4 | 0 | 27.6 | 9.0 | 9.0 |
| Hayward* | * | * | * | * | * | * | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Redwood City | 84 | 0 | 61 | 0 | 0 | 57 | 4.5 | 2.3 | 0 | 62 | 15 | 0 | - | - | - | 20.9 | 81 | 0 | 2 | 30.9 | 0 | 27.8 | 8.8 | 9.0 |
| San Leandro | 99 | 1 | 61 | 0 | 0 | 52 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Santa Clara Valley** | | | | | | | | | | | | | | | | | | | | | | | | |
| Gilroy | 87 | 0 | 67 | 0 | 0 | 71 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Los Gatos | 110 | 3 | 87 | 1 | 3 | 72 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| San Jose Central | 113 | 1 | 80 | 0 | 1 | 61 | 4.3 | 3.1 | 0 | 74 | 19 | 0 | - | - | - | 22.3 | 54 | 0 | 2 | 54.6 | 0 | 39.0 | 11.8 | 11.7 |
| San Jose East* | 110 | 1 | 83 | 0 | 1 | 59 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| San Jose, Tully Road | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 24.2 | 71 | 0 | 4 | 50.6 | 0 | 35.9 | 10.5 | 10.3 |
| San Martin | 108 | 2 | 77 | 0 | 3 | 75 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Sunnyvale | 97 | 1 | 73 | 0 | 1 | 64 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Total Bay Area Days over Standard** | | 9 | | 1 | 9 | | | | 0 | | | 0 | | | 0 | | | 0 | 6 | | 0 | | | |

*See notes of explanation on back of this page

# 2005 NOTES

The annual Bay Area Air Pollution Summary summarizes measurements for the national and California pollutant standards. Note that measurements given in parts per hundred million (pphm) in prior years are now given in parts per billion (ppb).

*Station Information (see asterisks on front page)

The Hayward station was inoperative until July 19, 2005, due to construction on site.

The Crockett station was inoperative after March 27, 2005 due to construction on site.

The Oakland and San Jose East stations were closed on November 30, 2005.

Due to roof damage at the Concord station during the fourth quarter of 2004, the $PM_{2.5}$ sampler could not be operated on some of the required sampling days. The $PM_{2.5}$ annual average and three-year average $PM_{2.5}$ statistics are based on available data.

## 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 contaminant 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 contaminant concentrations in excess of the national standard.

**CAL DAYS**
The number of days during the year for which the station recorded contaminant levels 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 (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 84 ppb at any monitoring station means that the region will be considered out of attainment by the EPA.*

**$PM_{10}$**
Particulate matter ten microns or smaller in size. ($PM_{10}$ is only sampled every sixth day. *Actual* days over standard can be estimated to be six times the number shown.)

**$PM_{2.5}$**
Particulate matter 2.5 microns or smaller in size. $PM_{2.5}$ is a sub-category of $PM_{10}$.

**$PM_{10}$ ANN AVG and MAX 24-HR**
California $PM_{10}$ Annual Average and Maximum 24-Hour concentrations are reported at local temperature and pressure conditions. National $PM_{10}$ Annual Average and Maximum 24-Hour concentrations are reported at standard temperature and pressure conditions. This table shows the California readings for $PM_{10}$ Ann Avg and Max 24-Hr, which are generally slightly higher than the national 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 65 $\mu g/m^3$ at any monitoring station means that the region will be considered out of attainment by the EPA.*

**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 $\mu g/m^3$ at any monitoring station means that the region will be considered out of attainment by the EPA.*

## HEALTH-BASED AMBIENT AIR QUALITY STANDARDS

| Pollutant | Averaging Time | California Std | National Std |
|---|---|---|---|
| Ozone | 1 Hour[1] | 0.09 ppm | |
| | 8 Hour[2] | 0.070 ppm | 0.08 ppm |
| Carbon Monoxide | 1 Hour | 20 ppm | 35 ppm |
| | 8 Hour | 9.0 ppm | 9 ppm |
| Nitrogen Dioxide | 1 Hour | 0.25 ppm | — |
| | Annual | — | 0.053 ppm |
| Sulfur Dioxide | 24 Hour | 0.04 ppm | 0.14 ppm |
| | Annual | — | 0.03 ppm |
| Particulates < 10 microns – | 24 Hour | 50 $\mu g/m^3$ | 150 $\mu g/m^3$ |
| | Annual | 20 $\mu g/m^3$ | 50 $\mu g/m^3$ |
| Particulates < 2.5 microns – | 24 Hour | — | 65 $\mu g/m^3$ |
| | Annual | 12 $\mu g/m^3$ | 15 $\mu g/m^3$ |

[1]The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005.
[2]The California 8-hour ozone standard was implemented on May 17, 2005.

**Concentrations** — **ppm** parts per million | **ppb** parts per billion | **$\mu g/m^3$** micrograms per cubic meter

## 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 | 24-Hr | | 24-Hr* | | 24-Hr** |
| | Nat | Cal | | Nat | Cal | Nat | Cal | Cal | Nat | Cal | Nat | Cal | Nat |
| 1996 | - | 34 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | - |
| 1997 | - | 8 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | - |
| 1998 | 16 | 29 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | - |
| 1999 | 9 | 20 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | - |
| 2000 | 4 | 12 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 |
| 2001 | 7 | 15 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 5 |
| 2002 | 7 | 16 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 |
| 2003 | 7 | 19 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |
| 2004 | 0 | 7 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 |
| 2005 | 1 | 9 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 |

*$PM_{10}$ is sampled every sixth day—*actual* days over standard can be estimated to be six times the numbers listed.

**2000 was the first complete year of $PM_{2.5}$ data.