BAY AREA AIR POLLUTION SUMMARY – 2019

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)		(ppb)			(ppb)	(ppm)			(ppb)				(ppb)				($\mu g/m^3$)				($\mu g/m^3$)		($\mu g/m3$)	($\mu g/m^3$)	
Napa Valley College*	95	1	76	2	2	*	1.3	1.0	0	37	5	0	0	-	-	-	-	14.2	39	0	0	21.5	0	*	5.9	*
San Rafael	96	1	80	1	1	55	1.4	0.9	0	50	8	0	0	-	-	-	-	14.3	33	0	0	19.5	0	42	6.4	9.0
Sebastopol*	70	0	59	0	0	*	1.4	1.0	0	32	4	0	0	-	-	-	-	-	-	-	-	28.0	0	35	5.7	7.4
Vallejo	92	0	76	1	1	56	2.0	1.5	0	53	7	0	0	10.9	1.9	0	0	-	-	-	-	30.5	0	48	8.6	11.2
Coast & Central Bay																										
Berkeley Aquatic Park	50	0	42	0	0	40	5.6	1.3	0	50	13	0	0	-	-	-	-	-	-	-	-	28.8	0	42	9.4	10.1
Laney College Freeway	-	-	-	-	-	-	1.5	1.0	0	58	15	0	0	-	-	-	-	-	-	-	-	28.5	0	45	7.4	11.1
Oakland	98	1	73	2	2	49	3.3	1.1	0	62	9	0	0	-	-	-	-	-	-	-	-	24.7	0	44	6.7	9.3
Oakland-West	101	1	72	1	1	48	2.4	1.7	0	50	12	0	0	19.2	2.7	0	0	-	-	-	-	29.3	0	45	7.8	11.7
Richmond	-	-	-	-	-	-	-	-	-	-	-	-	-	16.0	3.7	0	0	-	-	-	-	-	-	-	-	-
San Francisco	91	0	73	1	1	49	1.2	1.0	0	61	10	0	0	-	-	-	-	14.7	42	0	0	25.4	0	44	7.7	9.7
San Pablo	103	1	79	2	2	52	1.8	0.9	0	42	7	0	0	17.6	1.9	0	0	16.5	36	0	0	35.9	1	44	7.8	10.4
Eastern District																										
Bethel Island	82	0	72	1	1	65	1.8	1.0	0	30	4	0	0	9.8	2.2	0	0	15.4	57	0	2	-	-	-	-	-
Concord	92	0	74	2	2	62	3.3	0.8	0	41	6	0	0	8.4	2.1	0	0	11.4	36	0	0	28.2	0	40	6.8	10.8
Crockett	-	-	-	-	-	-	-	-	-	-	-	-	-	17.9	4.6	0	0	-	-	-	-	-	-	-	-	-
Fairfield	80	0	68	0	0	57	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livermore	105	4	78	7	7	73	-	-	-	48	8	0	0	-	-	-	-	-	-	-	-	28.8	0	40	6.4	8.7
Martinez	-	-	-	-	-	-	-	-	-	-	-	-	-	22.4	4.2	0	0	-	-	-	-	-	-	-	-	-
Pleasanton*	-	-	-	-	-	-	1.3	1.0	0	64	13	0	0	-	-	-	-	-	-	-	-	29.1	0	*	6.3	*
San Ramon	95	1	72	1	1	67	-	-	-	45	6	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-
South Central Bay																										
Hayward	106	2	85	2	2	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redwood City	83	0	77	2	2	52	2.0	1.1	0	55	9	0	0	-	-	-	-	-	-	-	-	29.5	0	36	7.0	8.9
Santa Clara Valley																										
Gilroy	79	0	67	0	0	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.3	0	27	5.8	6.3
Los Gatos	87	0	78	2	2	63	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
San Jose	95	1	81	2	2	62	1.7	1.3	0	60	11	0	0	14.5	1.5	0	0	19.2	77	0	4	27.6	0	43	9.1	10.5
San Jose Freeway	-	-	-	-	-	-	2.0	1.6	0	65	14	0	0	-	-	-	-	-	-	-	-	32.8	0	43	7.4	10.1
San Martin	90	0	78	2	2	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Bay Area Days over Standard		6		9	9				0			0	0			0	0			0	5		1			

*See NOTES on second page.

Dash (-) indicates pollutant is not monitored at the site.

2019 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)**

Air monitoring at Napa Valley College began on April 1, 2018. Therefore, 3-year averages for ozone and $PM_{2.5}$ are not available.

Near-road air monitoring at Pleasanton began on April 1, 2018. Therefore, 3-year averages for $PM_{2.5}$ are not available.

Ozone data at Sebastopol had poor quality assurance results from July 17, 2019 through October 16, 2019 due to a failed California Air Resources Board audit. Therefore, the 3-year average for ozone is not available.

Explanation of Terms

State and national exceedances occur when pollutant concentrations exceed 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 exceeding the national standard.

CAL DAYS
The number of days during the year for which the station recorded pollutant concentrations exceeding the California standard.

TOTAL BAY AREA DAYS OVER STANDARD
is not a sum of exceedances at individual stations, but rather the number of days where at least one site recorded an exceedance.

3-YR AVG (Nat. 8-hr ozone standard)
The 3-year average of the fourth highest 8-hour average ozone concentrations for each monitoring station. A 3-year average greater than 70 ppb at any monitoring station means that the region does not meet the standard and may be designated non-attainment by the EPA.

PM_{10}
Particulate matter ten microns or smaller in size. PM_{10} is sampled every third day at San Jose and every sixth or twelfth 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 PM_{10}.

PM_{10} ANN AVG and MAX 24-HR
This table shows PM_{10} data reported at local temperature and pressure conditions, according to the California standards. National PM_{10} 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.

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 12.0 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 Standard	National Standard
Ozone*	1 Hour	0.09 ppm	–
	8 Hour	0.070 ppm	0.070 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/m³	150 µg/m³
	Annual	20 µg/m³	–
Particulates ≤ 2.5 microns	24 Hour	–	35 µg/m³
	Annual	12 µg/m³	12.0 µg/m³

* In October 2015, the U.S. EPA implemented a new 8-hour ozone standard of 70 ppb. Exceedances are based on this standard (note that national and state numbers can differ due to data-handling conventions).

Concentrations | **ppm** parts per million | **ppb** parts per billion | **µg/m3** micrograms per cubic meter

TEN-YEAR BAY AREA AIR QUALITY SUMMARY

DAYS OVER CURRENT STANDARDS

	OZONE			CARBON MONOXIDE				NITROGEN DIOXIDE		SULFUR DIOXIDE		PM_{10}		$PM_{2.5}$
YEAR	8-Hr	1-Hr	8-Hr	1-Hr		8-Hr		1-Hr		1-Hr	24-Hr	24-Hr		24-Hr
	Nat	Cal		Nat	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat	Cal	Nat
2010	11	8	11	0	0	0	0	0	0	0	0	0	2	6
2011	9	5	10	0	0	0	0	0	0	0	0	0	3	8
2012	8	3	8	0	0	0	0	1	0	0	0	0	2	3
2013	3	3	3	0	0	0	0	0	0	0	0	0	6	13
2014	9	3	10	0	0	0	0	0	0	0	0	0	2	3
2015	12	7	12	0	0	0	0	0	0	0	0	0	1	9
2016	15	6	15	0	0	0	0	0	0	0	0	0	0	0
2017	6	6	6	0	0	0	0	1	0	0	0	0	6	18
2018	3	2	3	0	0	0	0	0	0	0	0	1	6	18
2019	9	6	9	0	0	0	0	0	0	0	0	0	5	1