



Janet Napolitano, Governor
 Stephen A. Owens, ADEQ Director

MONTHLY AIR QUALITY REPORT FOR
JUN 2005

AQI COLOR SCALE

GOOD 0-50	MODERATE 51-100	UNHEALTHY FOR SENSITIVE GROUPS 101-150	UNHEALTHY 151-200
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Calendar of maximum AQI values & their corresponding color for Jun 2005*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

1 (day of month)	O3	CO
	PM10	PM2.5

SUN			MON			TUES			WED			THU			FRI			SAT		
									1	95	13	2	41	11	3	48	09	4	85	08
										59	33		77	32		43	28		44	29
5	44	07	6	72	11	7	69	09	8	90	10	9	48	10	10	77	10	11	51	10
	39	27		55	29		79	32		57	36		59	33		52	26		55	32
12	56	07	13	101	08	14	92	13	15	92	10	16	59	14	17	54	11	18	50	16
	37	22		67	28		69	35		54	31		52	29		58	32		56	51
19	87	27	20	100	17	21	87	11	22	77	09	23	97	16	24	79	15	25	45	10
	51	47		78	56		102	53		80	40		68	57		52	44		47	33
26	51	09	27	54	16	28	48	11	29	79	17	30	106	25						
	49	25		68	39		73	29		76	53		82	55						

PM Exceedance days during JUN 2005-

Total=	1	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		21st	102	PM-10	Buckeye

PM Health Watches issued during JUN 2005-

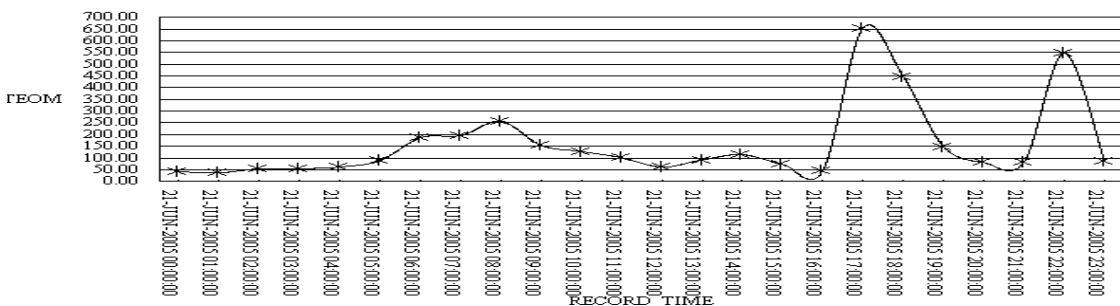
Total=	0	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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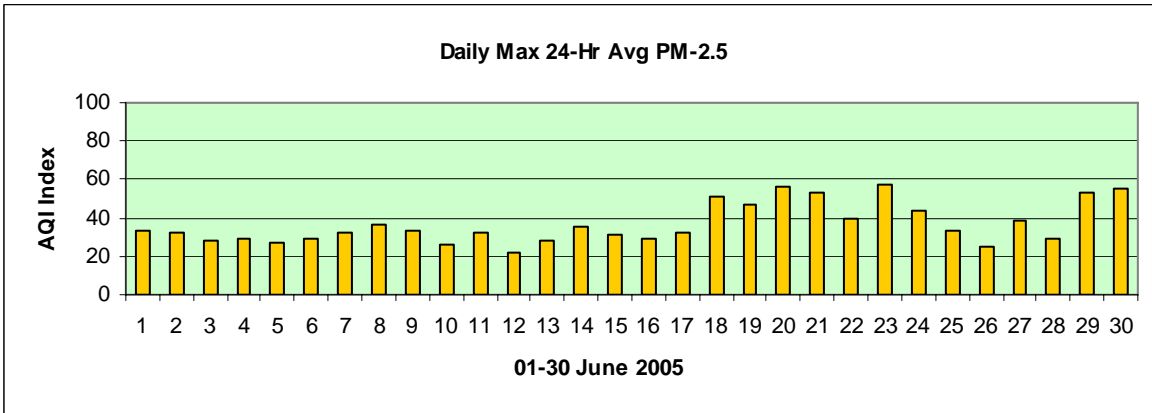
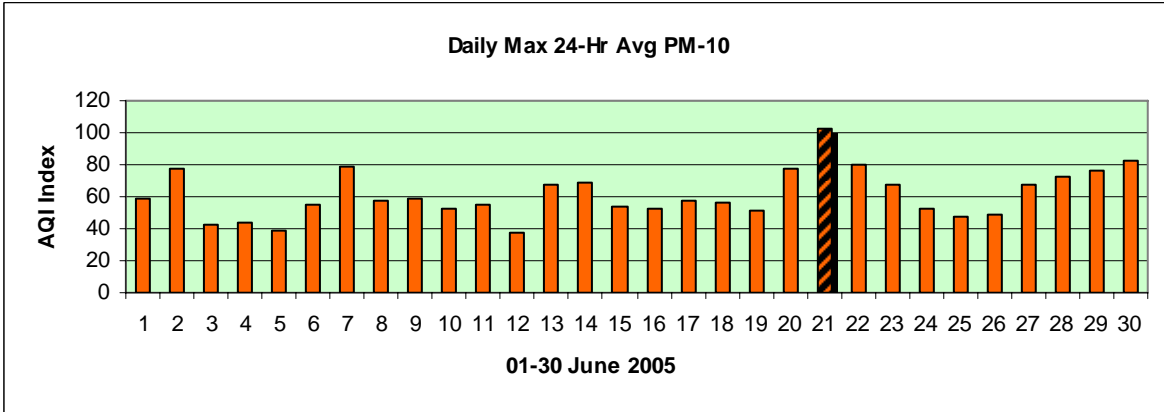
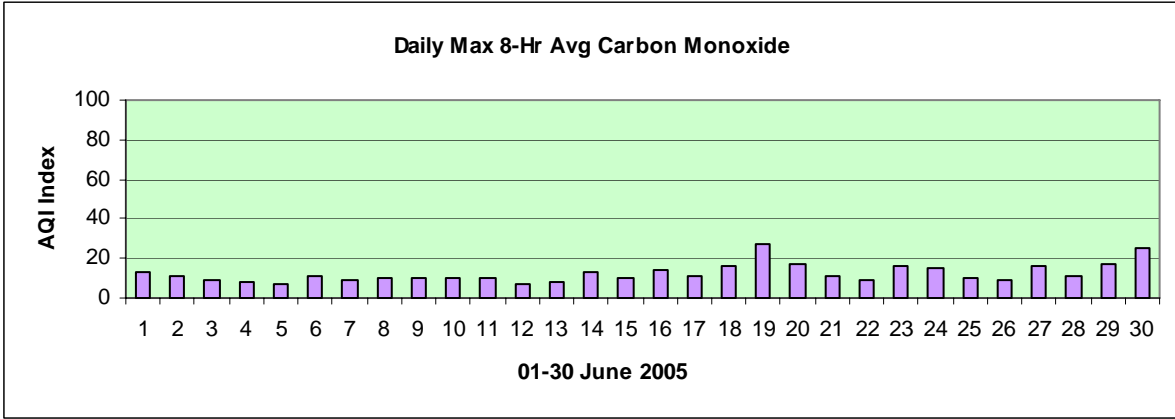
PM High Pollution Advisories issued during JUN 2005-

Total=	0	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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Narrative:

Carbon monoxide levels were typically low during June 2005 but PM levels were elevated most of the month, especially during the last 10 days or so. From the 1st thru the 12th maximum daytime temperatures were only in the 90's on all but two days, and average dew pts were in the 30's and 40's due to a series of dry late-season mid-latitude trough passages that brought breezy to gusty winds during the afternoon hours. Similar dry and windy conditions prevailed over much of Arizona and quickly desiccated the vegetation, especially non-native grasses in the desert areas. Maximum temperatures then soared to as high as 114 deg on the 21st and several High Heat Warnings and Advisories were issued. By mid-month the first in a string of wild fires that lasted through the rest of the month was ignited within proximity of the Phoenix area, and at times the smoke from it and subsequent fires heavily impacted PM-10 and PM-2.5 air quality as well as local visibility. In addition, during this period outflow boundaries from pre-monsoon thunderstorms generated thick blowing dust on several occasions, but no widespread rainfall occurred the entire month. One such late afternoon/evening event contributed to a PM-10 exceedance on the 21st at the Buckeye site, where morning PM-10 levels had also been high due to smoke and other emissions being trapped under an inversion. Several outflow boundaries were over the metro area around 5:00 p.m. that caused gusty winds and blowing dust. At 5:00 p.m. the Buckeye monitoring equipment registered an hourly PM-10 concentration of over 654ug/m³. A larger outflow boundary from dissipating thunderstorms to the east of the valley then arrived around 8:00 p.m. and wind gusts over 30 mph caused a dust cloud that lowered visibility to as low as four miles at some locations. The dust then remained aloft over the valley since no rainfall followed its arrival. This event caused another PM-10 spike – this time in excess of 546ug/m³ – at 10:00 p.m. at the Buckeye site; the 24-hour average ultimately reached 158ug/m³. Below is a graph of the Buckeye PM-10 monitor's measurements:





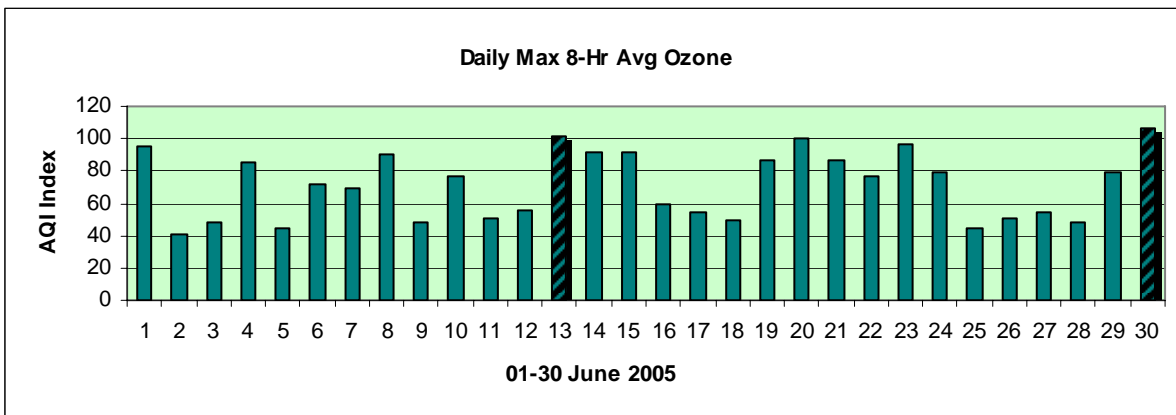
DETAILED OZONE SECTION

GOOD	MODERATE	UNHEALTHY FOR SENSITIVE GROUPS	UNHEALTHY
0-50	51-100	101-150	151-200

SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR JUN 2005*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
						1	95	2	41	3	48	4	85
5	44	6	72	7	69	8	90	9	48	10	77	11	51
12	56	13	101	14	92	15	92	16	59	17	54	18	50
19	87	20	100	21	87	22	77	23	97	24	79	25	45
26	51	27	54	28	48	29	79	30	106				



<u>8-hr Ozone exceedance days in JUN:</u>	Total= 2	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		6/13	85/101	Queen Valley
		6/30	87/106	Humboldt

Total number of exceedance days since APR 01: 6
Total number of exceedance sites since APR 01: 6

<u>Ozone Health Watches in JUN:</u> (Forecast max value 80-84 ppb)	Total= 2	<u>Date</u>	<u>Max ppb/AQI</u>	<u>Site/s</u>
		6/20	84/100	North Phoenix
			84/100	Queen Valley
		6/23	83/97	North Phoenix

Ozone Health Watches since APR 01: Total= 9

<u>High Pollution Advisories in JUN:</u> (Forecast max value 85+ppb)	Total= 4	6/15	81/92	Rio Verde
		6/16	68/59	Rio Verde
		6/21	79/87	North Phoenix
		6/22	75/77	Pinal Air Park

High Pollution Advisories since APR 01: Total= 6

Concentration Recap: Days in the **Good** AQI category: 7
Days in the **Moderate** AQI category: 21
Days in the **Unhealthy for Sensitive Groups** AQI category: 2
Days in the **Unhealthy** AQI category: 0
Total Forecast Days: 30

Maximum 8-Hr value: Date Hour Site ppb/AQI DOW
6/30 1000 Humboldt 87/106 Thu

Maximum 1-Hr value: Date Hour Site ppb/AQI DOW
6/23 1300 South Phoenix 108/90 Thu

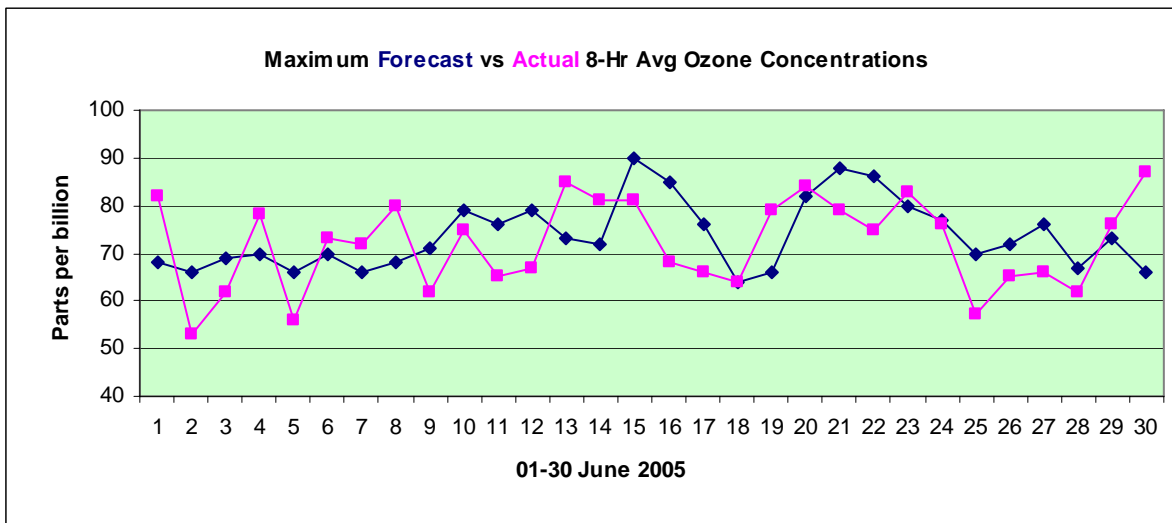
Average daily max 8-Hr concentration (ppb): 72.0
Deviation from 1996-2004 average (ppb): 0.0

JUN Climatology:
(1996-2004)

Average number of 8-Hr exceedances:	3.3
Maximum number of 8-Hr exceedances:	9 in 1998 and 2002
Minimum number of 8-Hr exceedances:	0 in 2003 and 2004
Average daily max 8-Hr concentration (ppb):	72.0
Record high max 8-Hr concentration (ppb):	102 on the 1st, 1996
Record low max 8-Hr concentration (ppb):	45 on the 10th, 2003

Forecast Verification:

# of days maximum concentrations were over-forecast:	17
# of days maximum concentrations were under-forecast:	12
# of days maximum concentrations were correctly forecast:	1
Jun average forecast accuracy (ppb):	+/-8.7
Jun average forecast bias (ppb):	+1.6



Narrative:

For the first time in three years, an exceedance of the 8-hr average ozone standard occurred in the Phoenix forecast domain during the month of June. On the 13th the maximum local 8-hr ozone concentration rose 18 parts per billion above that on the 12th (from 67 to 85 ppb) and the weather played a significant role. On the 13th an upper level ridge was building overhead and a rapid rise in temperatures in the 850-700mb layer was underway. Winds at 10K' were from the northeast and there was a northeasterly transport wind per ACARS sounding data, a feature that more times than not coincides with rapid rises in ozone levels. In addition, the 13th was a Monday and the usual jump in weekday vehicle emissions undoubtedly played a role. The exceedance on the 30th saw an increase in 11 ppb from the day before and the weather picture on that day included light winds aloft to 6900', mostly light surface winds thru 2:00 p.m., a rather strong (7.7 deg C) morning inversion, and a maximum daytime temperature over 110 degrees. Also present was a great deal of smoke that had been transported overhead from Arizona wild fires that reduced the visibility at times to six miles in the metro area. Forecaster accuracy suffered this month; during the first ten days there were five episodes during which the highest measured ozone reading of a given day was 16 to 22 ppb higher or lower than the day prior to it, with four more episodes after mid-month between 14 and 19 ppb. This vacillation was hard to predict and contributed to an average daily forecast error of almost nine parts per billion, which was much above normal. -Reith