MONTHLY AIR QUALITY REPORT FOR APRIL 2009

AQI COLOR SCALE

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

Calendar of maximum AQI values & their corresponding color for April 2009*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN	MON	TUES	WED	THU	FRI	SAT
			1 74 07 53 30	2 61 07 45 36	3 58 07 126 46	4 67 05 37 25
5 49 07 27 25	6 67 09 58 42	7 54 09 40 29	8 48 08 66 31	9 67 09 43 31	10 49 10 80 35	11 44 05 11 27
12 54 06 15 39	13 67 09 30 36	14 54 13 46 32	15 64 06 77 37	16 50 09 37 29	17 58 06 22 21	18 74 09 29 32
19 54 15 31 33	20 84 14 42 37	21 51 13 44 34	22 67 15 44 31	23 84 08 44 33	24 49 06 35 37	25 61 05 49 31
26 77 05 28 36	27 74 07 36 34	28 71 07 43 38	29 87 07 44 38	30 114 11 50 42		

Calendar of High Pollution Advisories and Health Watches issued during April 2009

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3 A	4
5	6	7	8 D	9	10	11
12	13	14	15 D	16	17	18
19	20 F	21 C	22	23	24 F	25 D
26	27	28	29	30 F		

LEGEND

HIGH POLLUTION ADVISORIES
A = PM-10 High Pollution Advisory
B = PM-2.5 High Pollution Advisory
C = Ozone High Pollution Advisory

HEALTH WATCHES
D = PM-10 Health Watch
E = PM-2.5 Health Watch
F = Ozone Health Watch

Calendar of Meteorological Conditions observed in Metro Phoenix during April 2009

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2 E	3 B D	4
5	6	7	8	9	10 B D	11 A B C
12 B C	13	14 D	15 D	16 F	17	18
19	20	21	22	23	24	25 D
26	27	28 E	29 E	30 E		

LEGEND

ELECTROMETEORS
A = Thunderstorm

HYDROMETEORS
B = Rain/Drizzle/Hail/Snow
C = Fog

LITHOMETEORS
D = Blowing Dust
E = Haze (vsby <10SM)
F = Smoke

Non-Ozone Exceedance days during APR 2009-

Total= 1	Date	Max AQI	Pollutant	Site/s
	05/03	126	PM-10	West Forty Third

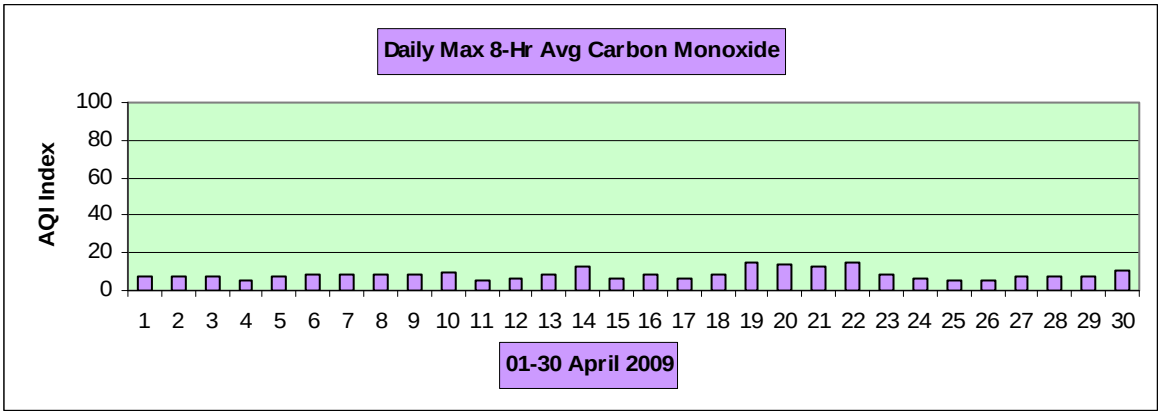
Non-Ozone Health Watches issued during APR 2009-

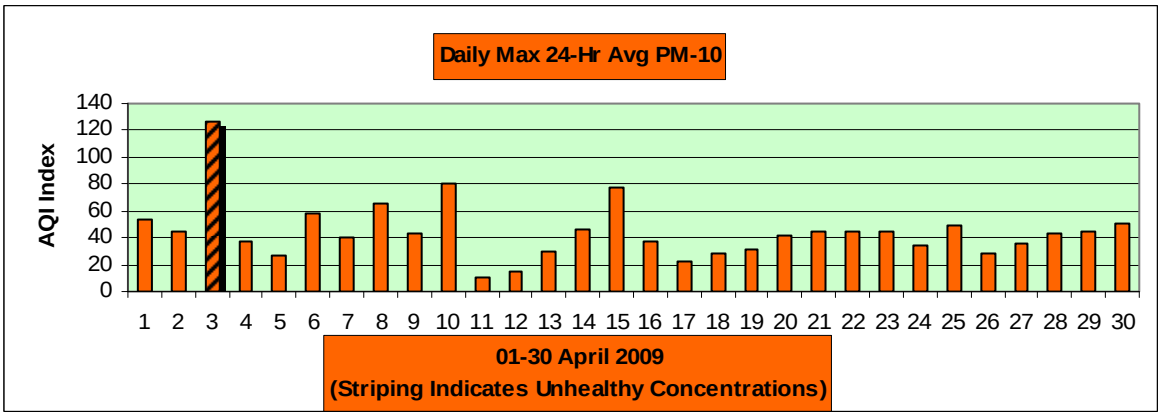
Total= 3	Date	Max AQI	Pollutant	Site/s
	05/08	66	PM-10	West Forty Third
	05/15	77	PM-10	West Forty Third
	05/25	49	PM-10	West Forty Third

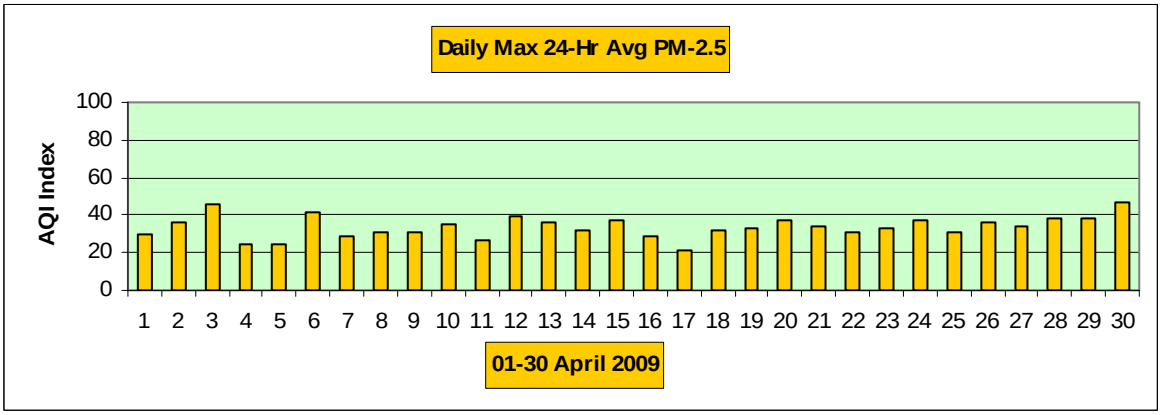
Non-Ozone High Pollution Advisories issued during APR 2009-

Total= 1	Date	Max AQI	Pollutant	Site/s
	05/03	126	PM-10	West Forty Third

Concentration Recap:		
	Days in the Good category:	4
	Days in the Moderate category:	24
	Days in the Unhealthy for Sensitive Groups category:	2
	Days in the Unhealthy category:	0
	Total Forecast Days:	30

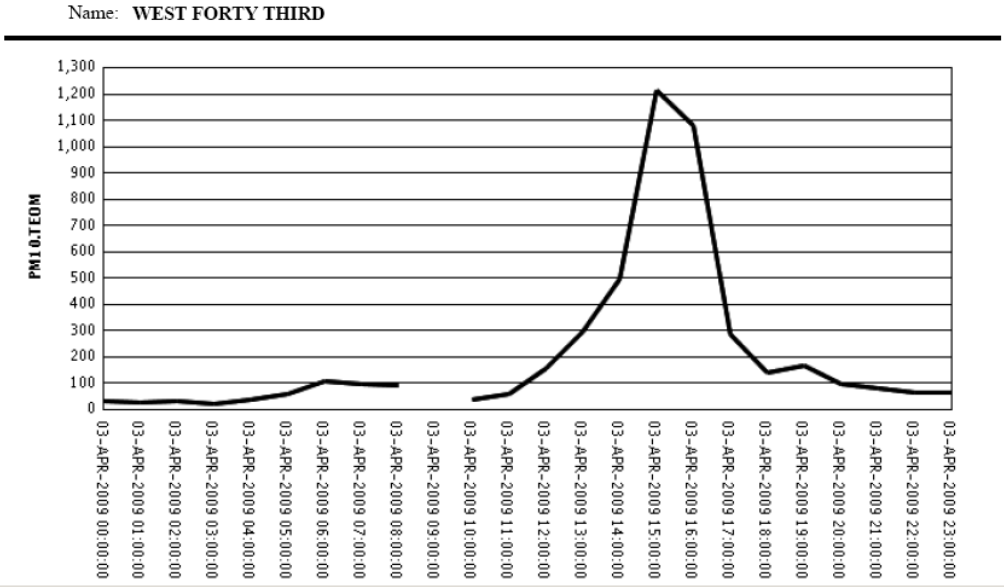




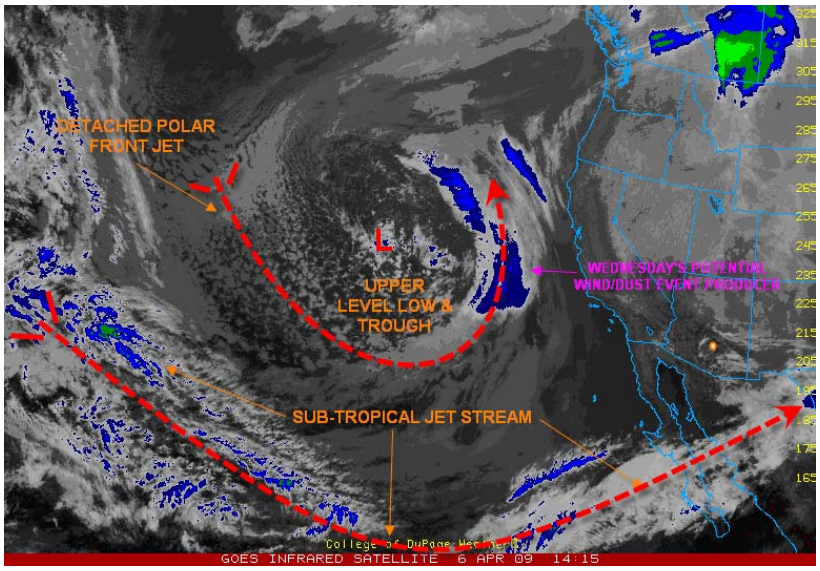


Narrative: The mid-latitude storm track remained active at this latitude all month long, punctuated by a series of trough and frontal passages. The good news was that one of these systems managed to produce an episode of much-needed rainfall on the 11th – the only significant precipitation since early February. The bad news was that it came too late to prevent yet another PM-10 (coarse particle) exceedance event due to high winds and blowing dust associated with a mostly dry trough and frontal passage on the 3rd. Winds gusted between 30 and 50 mph locally between 1100 and 2100 hrs and visibilities fell to as low as six miles at times. The local VISNET cameras managed to capture several afternoon images of said lowered visibilities as follows:

The PM-10 monitor at the West Forty Site indicated a preliminary hourly concentration of 1,212.1ug/m3 at 1500 hrs and its time series is shown below:



Local blowing dust was produced by several of the other trough passages that occurred during April, but highest PM-10 levels reached no higher than 80 on the Air Quality Index scale for those events. As can be seen below, the weather system that impacted the metro area on the 8th was fairly impressive-looking on satellite imagery a few days out:



Although not noticeably impacting air quality much, an early morning warehouse fire that occurred on the downtown periphery on the 16th produced a significant amount of smoke that became trapped for a time beneath a 3.5 deg C surface-based radiation inversion that reached to near 1500'. Several photos of this phenomenon were obtained by VISNET cameras and can be seen below: -Reith


04/16/2009 07:00 AM


04/16/2009 09:00 AM

DETAILED OZONE SECTION

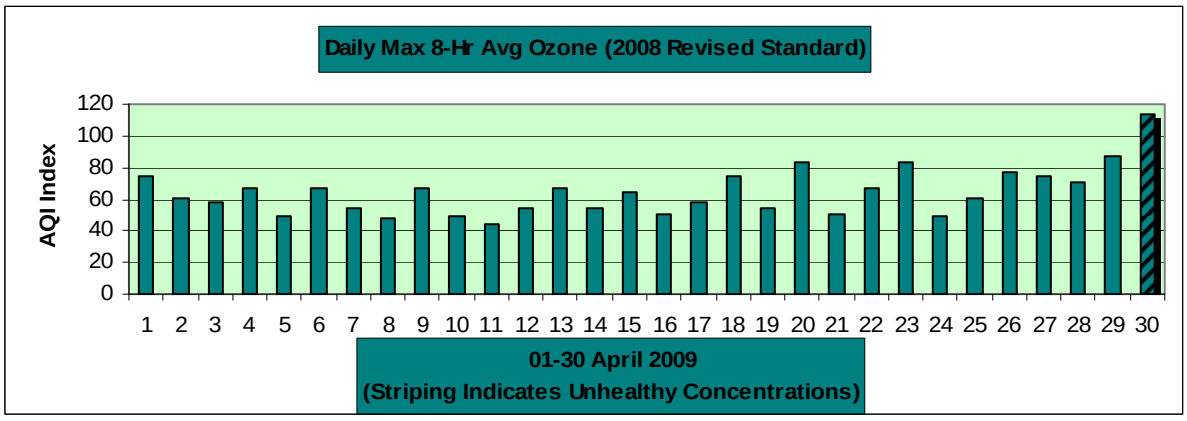
(Based on the 2008 EPA Revised 8-Hour Ozone Standard)

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

SUMMARY OF MAXIMUM 8-HR OZONE AQI VALUES FOR APRIL 2009*

*Preliminary data

SUN		MON		TUES		WED		THU		FRI		SAT	
						1	74	2	61	3	58	4	67
5	49	6	67	7	54	8	48	9	67	10	49	11	44
12	54	13	67	14	54	15	64	16	50	17	58	18	74
19	54	20	84	21	51	22	67	23	84	24	49	25	61
26	77	27	74	28	71	29	87	30	114				



8-hr Ozone exceedance days in APR:	Total=	1	Date	Max ppb/AQI	Site/s
			4/30	81/114	Tonto Nat'l Mon
				76/101	Fountain Hills

Total number of exceedance days since APR 01: 1
Total number of exceedance sites since APR 01: 1

Ozone Health Watches in APR:	Total=	3	Date	Max ppb/AQI	Site/s
(Forecast max value 72-75 ppb)			4/20	70/84	W. Chandler
			4/23	70/84	Tonto Nat'l Mon
			4/30	81/114	Tonto Nat'l Mon
Ozone Health Watches since APR 01:	Total=	3			
High Pollution Advisories in APR:	Total=	1	4/21	60/51	Cave Creek
(Forecast max value 76+ppb)					Glendale
					North Phoenix
High Pollution Advisories since APR 01:	Total=	1			

Concentration Recap:

Days in the Good category:	6
Days in the Moderate category:	23
Days in the Unhealthy for Sensitive Groups category:	1
Days in the Unhealthy category:	0
Total Forecast Days:	30

	Date	Hour	Site	ppb/AQI	DOW
Maximum 8-Hr value:	4/30	1500	Tonto Nat'l Mon	81/114	Thu
Maximum 1-Hr value:	4/30	1700	Fountain Hills	89/74	Thu
		1900	Tonto Nat'l Mon		

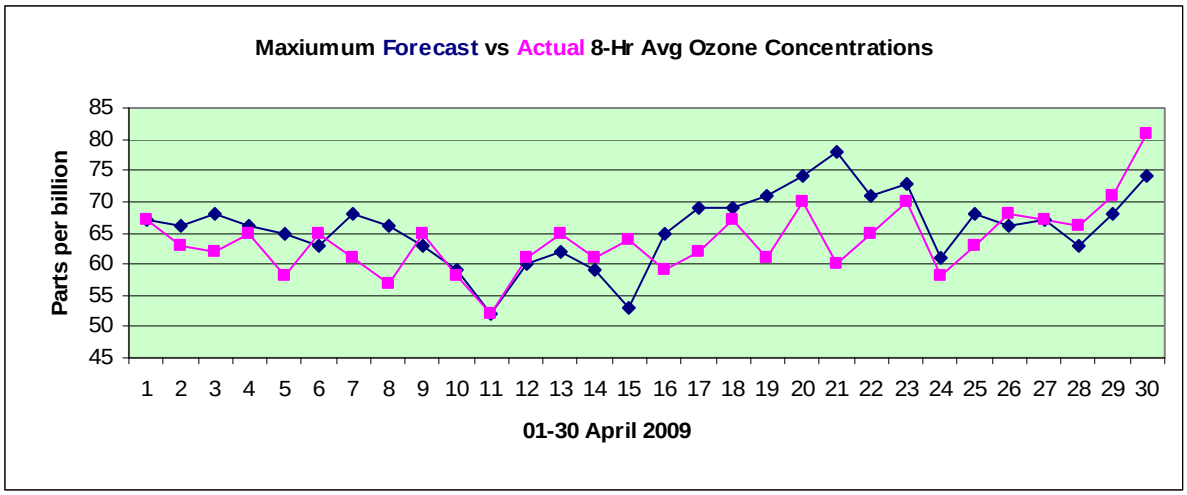
Average daily max 8-Hr concentration (ppb):	63.7
Deviation from the 1996-2008 average (ppb):	-2.5

APR Climatology:
(Period 1996-2007 using 1997 85ppb standard & 2008 using 76ppb standard)

Average number of 8-Hr exceedance days:	0.5
Maximum number of 8-Hr exceedance days:	3 in 2008
Minimum number of 8-Hr exceedance days:	0 in 1997, 2001-2007
Average daily max 8-Hr concentration (ppb):	66.2
Record high max 8-Hr concentration (ppb):	99 on the 29th, 1996
Record low max 8-Hr concentration (ppb):	40 on the 14th, 2003

Forecast Verification:

# of days maximum concentrations were over-forecast:	17
# of days maximum concentrations were under-forecast:	10
# of days maximum concentrations were correctly forecast:	3
Apr average forecast accuracy (ppb):	+/-4.5
Apr average forecast bias (ppb):	+2.1



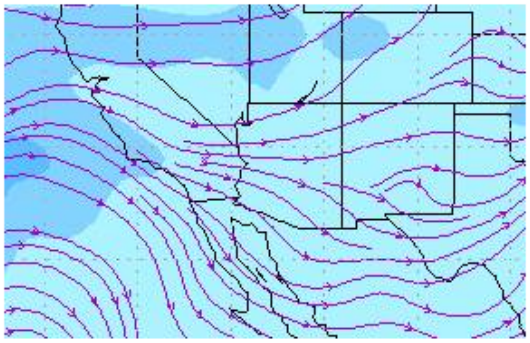
Narrative:

For the purposes of review, please recall that on March 12, 2008, the EPA significantly strengthened its national ambient air quality standards (NAAQS) for ground-level ozone, the primary component of smog. As a result, the current 8-hr ozone AQI ranges for each health impact category and their breakpoint concentrations are as follows:

Category	AQI Value	1997 8-hour (ppm)	2008 8-hour (ppm)
Good	0-50	0.000-0.064	0.000-0.059
Moderate	51-100	0.065-0.084	0.060-0.075
Unhealthy for Sensitive Groups	101-150	0.085-0.104	0.076-0.095
Unhealthy	151-200	0.105-0.124	0.096-0.115
Very Unhealthy	201-300	0.125-0.374	0.116-0.374
Hazardous	301-400	No Change	No Change
	401-500	No Change	No Change

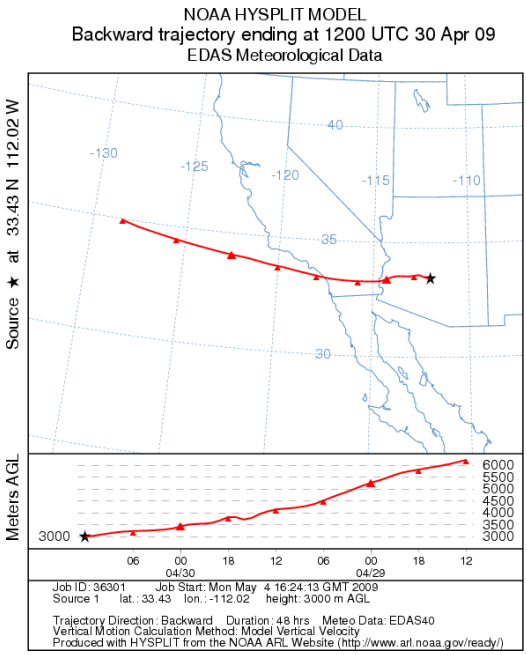
During April 2008 there were eight local monitoring sites that exceeded the new ozone standard over a three day period, but 2009 appears to be destined to have lower overall ozone values. During the month of April any ozone exceedances that do occur in the Phoenix metro area are usually contributed to by influxes of additional ozone and/or its precursors – NOx & VOCs – from California in the wake of trough and frontal passages. Despite a half-dozen such passages during April 2009, local ozone levels did not react upward in any significant way until the last two days of the month – culminating in two site exceedances on the 30th. Recognizing that a significant CA transport event was possible, ADEQ forecasters issued an Ozone Health Watch for the 30th. This decision was based on several indicators, the most significant of which was the forecast 700mb

(10K') streamline chart seen below, which clearly shows the upwind air shed source regions to be that of the L.A. Basin and Mohave Desert.



10K' Level Flow Valid April 30 11:00 a.m.

Subsequent to the exceedance event, a back-trajectory analysis was performed using the NOAA HYSPLIT Model to confirm the source region suggested by the streamline analysis. The model output can be seen below:



It should be pointed out that this readily apparent influx of ozone and/or its precursors was not only experienced in the Phoenix area. As can be seen from the table below, monitors over western, northern and southern portions of Arizona were also impacted – each location logging their highest readings of the week on the 30th – seemingly ample proof of a truly regional ozone transport event. –Reith

Date	Alamo	Yuma	Flag	Prescott	Tucson
4/26	62	77	54	50	74
4/27	66	48	67	58	61
4/28	65	71	71	48	58
4/29	66	71	67	48	51
4/30	74	90	84	71	80