



MONTHLY AIR QUALITY REPORT FOR
MARCH 2011

AOI 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 March 2011*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN			MON			TUES			WED			THU			FRI			SAT		
						1	51	16	2	61	16	3	49	11	4	48	11	5	46	14
							31	56		35	62		44	48		32	33		30	35
6	47	19	7	38	09	8	47	09	9	45	15	10	51	17	11	49	15	12	45	19
	27	42		81	34		34	32		49	44		51	49		57	51		108	56
13	51	14	14	50	10	15	50	10	16	54	11	17	47	10	18	47	10	19	58	09
	34	48		40	42		42	41		46	42		45	41		55	55		54	61
20	49	08	21	42	07	22	49	09	23	51	13	24	49	10	25	47	09	26	43	09
	58	61		81	52		25	36		24	42		66	37		48	54		29	43
27	51	08	28	50	09	29	58	10	30	49	10	31	45	10						
	36	41		46	43		34	39		31	36		40	40						

Calendar of High Pollution Advisories and Health Watches issued during March 2011

SUN			MON			TUE			WED			THU			FRI			SAT		
					1			2			3			4			5			
6		7	D		8			9			10			11			12			
13		14			15			16			17			18			19			
20		21			22			23			24			25			26			
27		28			29			30			31									

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 March 2011

SUN			MON			TUE			WED			THU			FRI			SAT					
					1			2			E			3			4			E			5
6		7	D		8			9			10			11			E			E			12
13		14			15			16			17			18			19			E			
20		21	E		B C	D E		B C			23			24			E			26			
27		28			29			30			31												

LEGEND

ELECTROMETEORS

- A** = Thunderstorm

HYDROMETEORS

- B** = Rain/Drizzle/Hail/Snow
- C** = Fog

LITHOMETEORS

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

Exceedance days during MAR 2011-

Total=	1	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		03/12	108	PM-10	South Phoenix

Health Watches issued during MAR 2011-

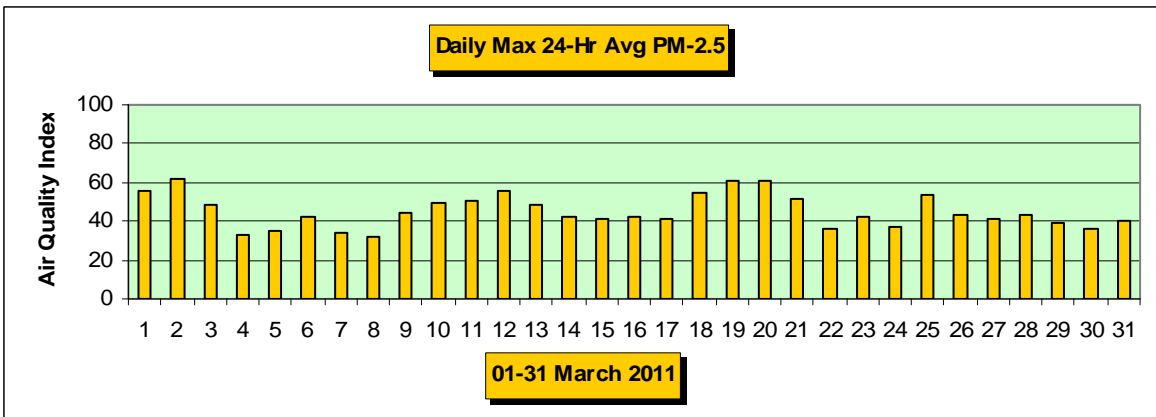
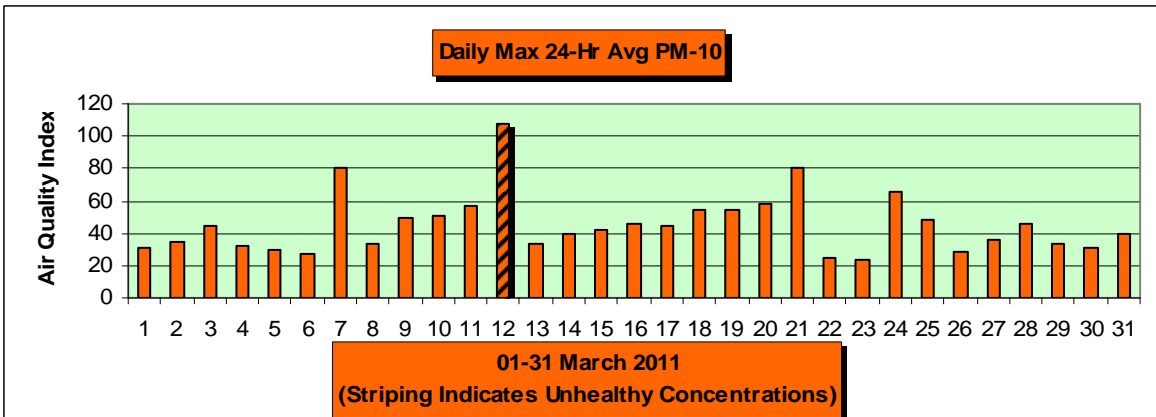
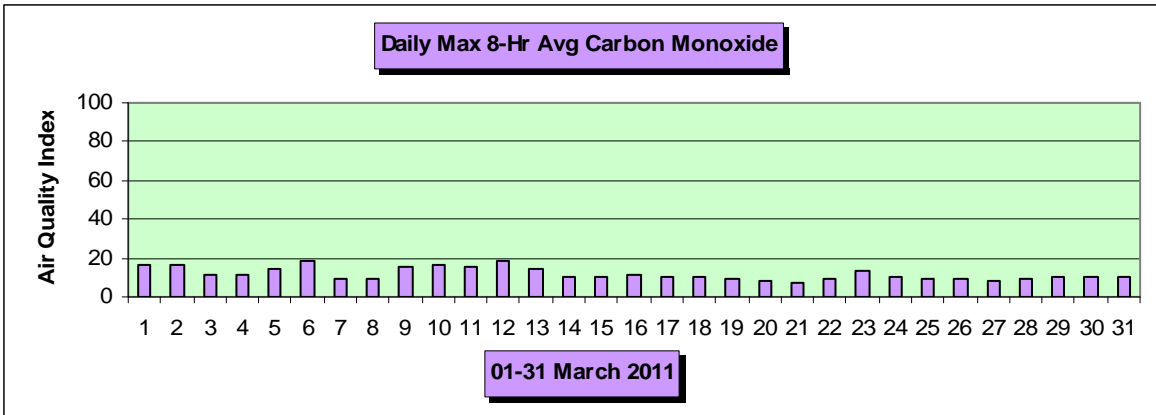
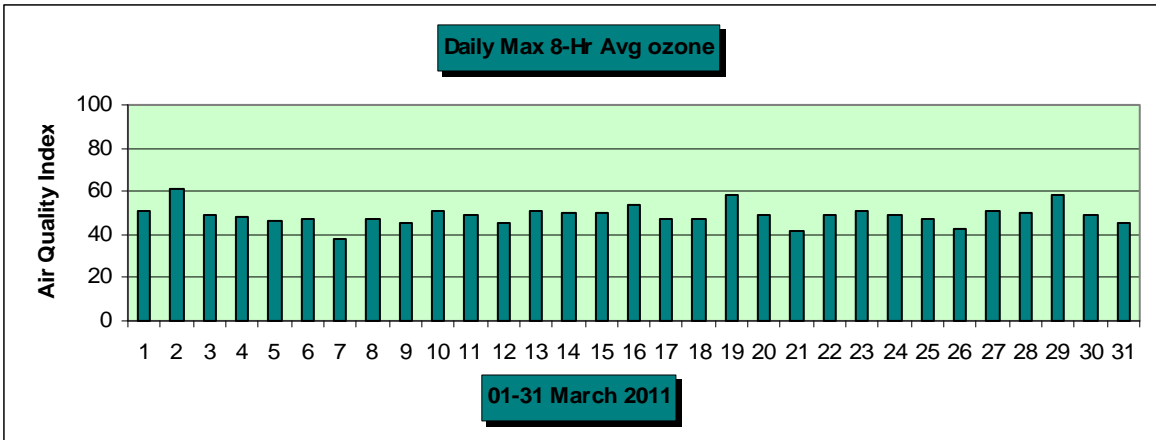
Total=	1	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		03/07	81	PM-10	West Chandler

High Pollution Advisories issued during MAR 2011-

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

Days in the Good category:	14
Days in the Moderate category:	16
Days in the Unhealthy for Sensitive Groups category:	1
Days in the Unhealthy category:	<u>0</u>
Total Forecast Days:	31



Narrative:

March 2011 was another dry month for the Phoenix metro area with rainfall being reported on only two days – the 21st and 22nd – in conjunction with an upper level trough and surface frontal passage. The dry conditions contributed to a pair of blowing dust events on the 7th and the 21st. Both events were triggered by gusty winds associated with the approach of upper level troughs in the mid-latitude storm track. In the case of March 7 wind gusts up to 45 mph occurred with visibilities as low as five miles. Figures 1-3 below are a times series of photographs taken from the local VISNET camera array looking east and show increasing and thickening wind-blown dust over the east Valley between 7:55 and 9:20 a.m. and then improving conditions by 11:45 a.m. Despite an hourly PM-10 (coarse particle) concentration of 601.6ug/m³ at the West Chandler monitoring site at 8:00 a.m., the 24-hour average PM-10 concentration at that location was only in the upper-moderate range of the Air Quality Index.

Figure 1



[Figure 2](#)



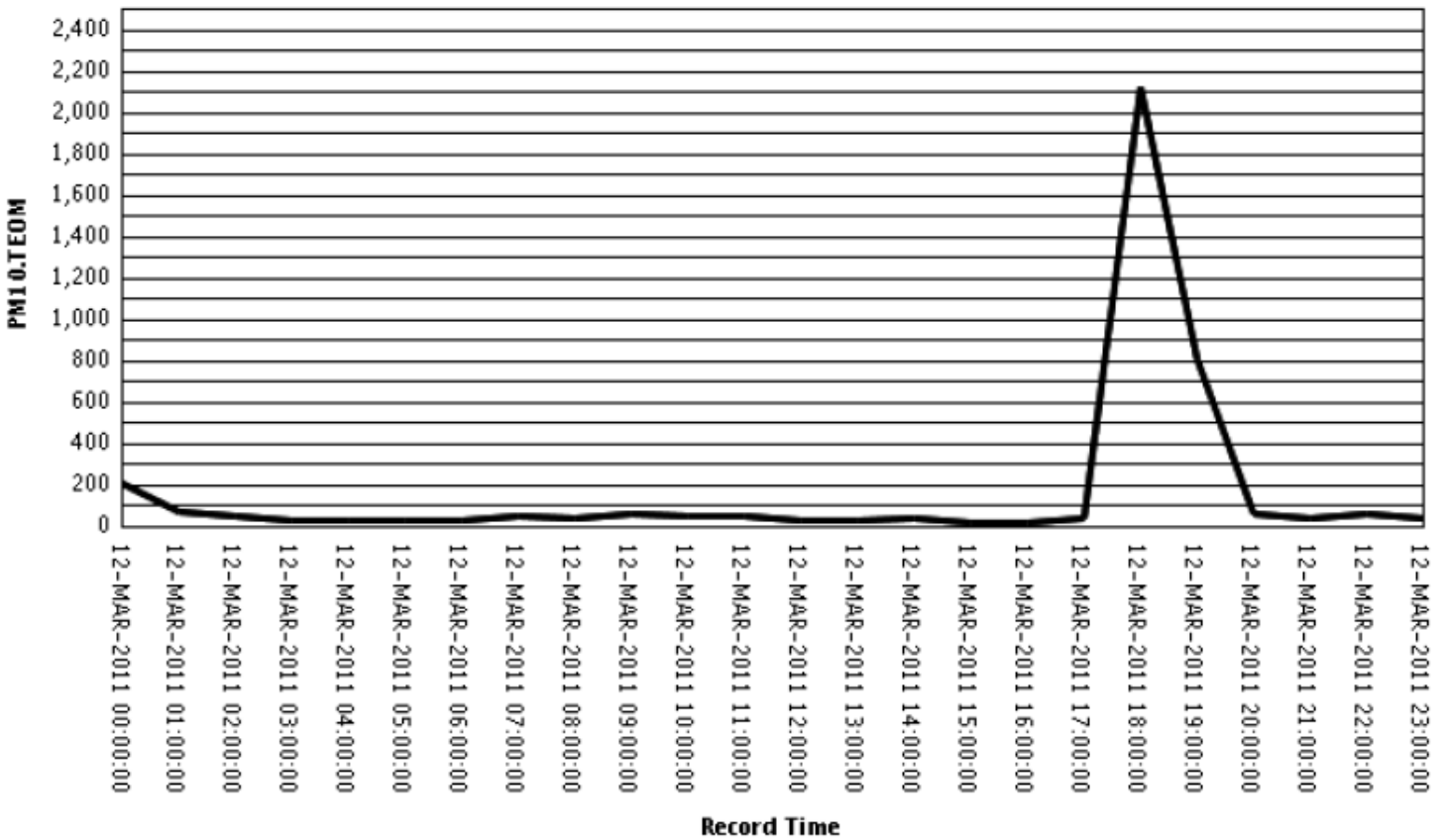
[Figure 3](#)



After the 7th but before the 21st the only air pollution exceedance of the month occurred on the 12th. On that day despite the presence of a strong ridge aloft overhead and an absence of strong winds, a PM-10 exceedance occurred at the South Phoenix monitoring site (Figure 4 shows the PM-10 time-series from that site). As can be seen, a spike of 2,118.8ug/m³ occurred at 6:00 p.m. with a secondary peak of 812.3ug/m³ an hour later. Since weather conditions did not appear to be a factor, an investigation was conducted that revealed that unidentified persons had been operating off-road vehicles on a dirt lot adjacent to the monitoring site. The volume of dust generated from this activity was evidently sufficient to cause the extremely high levels of PM-10 and the subsequent exceedance.

Figure 4

Place ID: 16377
Name: SOUTH PHOENIX



On March 21 wind gusts up to 44 mph occurred in advance of a cold front that delivered up to 1/4" of rainfall to the Phoenix metro area by day's end. Before the precipitation began however, a period of blowing dust occurred with visibilities as low as five miles. Figure 5 is a table that shows to good effect what local winds and hourly PM-10 levels were doing before the onset of significant rainfall. Once again the West Chandler monitoring site had the highest hourly PM-10 reading and once again the 24-hour average PM-10 concentration was in the upper-moderate range of the Air Quality Index. Figures 6-8 are images from the local VISNET camera array that show the blowing dust.

Figure 5
ADEQ WIND/BLOWING DUST EVENT TRACKER
DATE OF EVENT: MARCH 21 2011
 *preliminary data

HOUR	0600	0700	0800	0900	1000	1100
SITE/PM-10 READING	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
WEST CHANDLER	127.7	707.1	309.1	209.1	177.2	343.5
HIGLEY	243.7	264.1	105.9	77.0	184.5	146.7
WEST FORTY THIRD	427.6	98.8	78.6	90.0	146.5	59.8
DURANGO	454.6	215.2	91.1	122.8	153.8	61.2
SOUTH PHOENIX	252.4	296.3	126.1	87.8	76.6	47.4
BUCKEYE	352.4	126.4	351.3	164.9	87.6	23.3
GREENWOOD	231.7	166.3	103.4	83.0	Misg	Misg
CENTRAL PHOENIX	-----	312.7	281.8	133.5	139.3	68.0
ZUNI HILLS	-----	254.7	Misg	150.6	76.1	43.7
DYSART	-----	198.8	123.6	135.5	Misg	49.9
GLENDALE	-----	-----	178.4	185.9	123.4	88.3
WEST PHOENIX	-----	-----	121.5	124.2	127.8	128.1
PK WIND GUST (mph)	S 25	S-SW 39	S-SW 37	S-W 39	S-W 44	S-W 28
LOW VISIBILITY (mi)	8	10	6	5	5	10

Figure 6



[Figure 7](#)

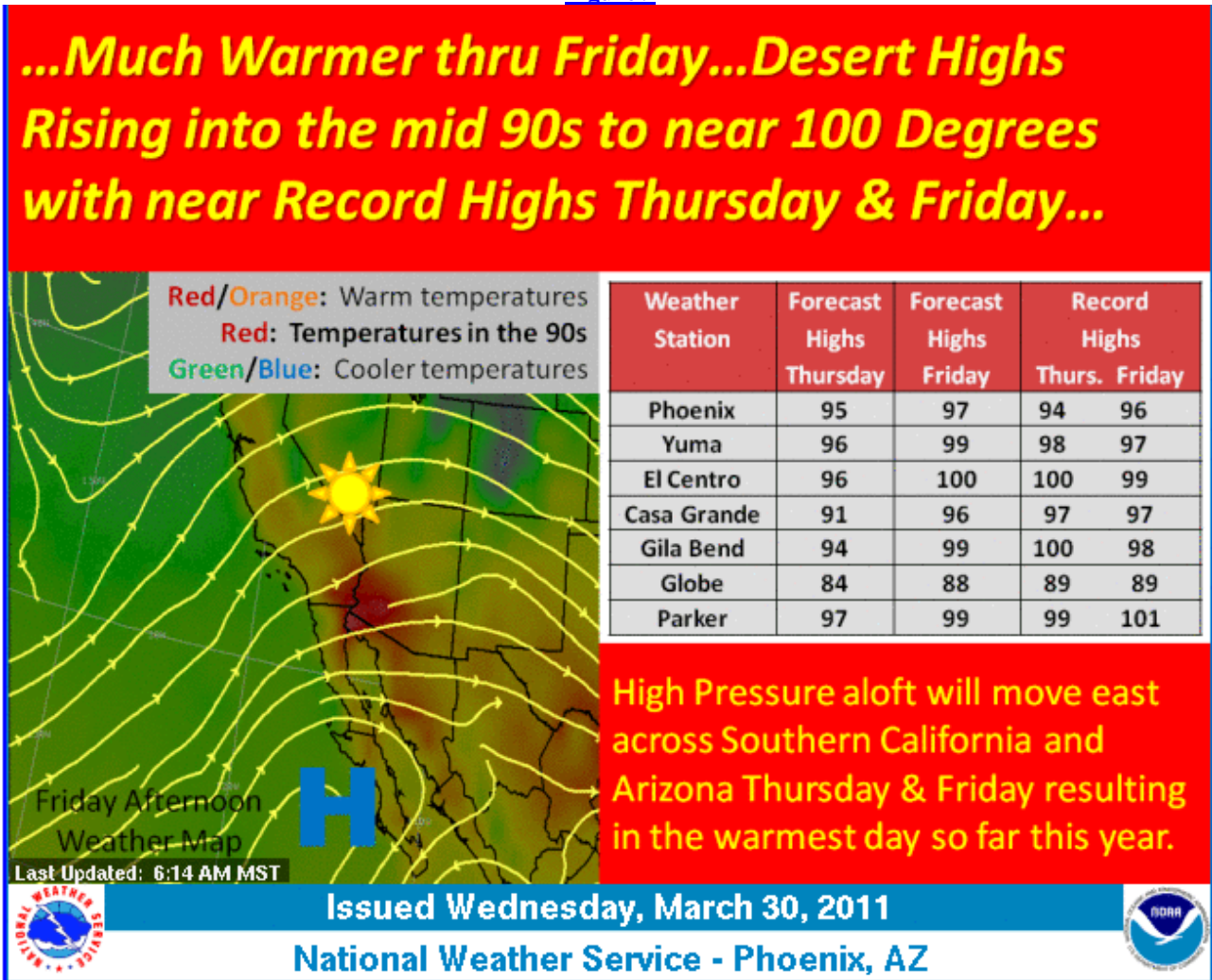


[Figure 8](#)



Following the rain event of March 21-22 Valley air quality was very good the remainder of the month with the vast majority of AQI values for all pollutants in the good range. However, the month ended with the specter of hot and dry weather conditions to come as indicated by the graphic below (Figure 9) that was issued by the National Weather Service office in Phoenix. -Reith

Figure 9



High pressure aloft from the Pacific will result in a significant warming trend today through Friday. Desert highs are forecast to rise into the mid 90s to near 100 degrees Friday making that the warmest day so far this year. Mostly clear nights and sunny days are expected through Friday. A low pressure system from the north Pacific is expected to result in partly cloudy and breezy to windy weather this weekend...especially Sunday when a significant drop in temperatures is expected. However, temperatures will still be above average for early April and that is expected to continue early next week.