



**MONTHLY AIR QUALITY REPORT FOR
FEBRUARY 2012**

AOI 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 February 2012*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

SUN		MON		TUES		WED		THU		FRI		SAT					
						1	40	22	2	38	22	3	39	11	4	45	17
							56	45		60	40		40	32		51	51
5	40	22	6	41	17	7	45	18	8	36	13	9	38	18	10	42	18
	55	57		61	55		62	47		58	49		61	51		59	33
12	41	06	13	39	06	14	38	06	15	41	07	16	41	14	17	40	07
	40	21		31	25		39	24		39	23		41	25		28	21
19	43	10	20	42	09	21	44	14	22	43	13	23	42	16	24	44	15
	38	33		46	35		52	41		54	34		56	36		55	34
26	50	16	27	41	14	28	45	07	29	47	13						
	52	37		107	40		50	25		41	39						

Calendar of High Pollution Advisories and Health Watches issued during February 2012

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

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 February 2012

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

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 FEB 2012-

Total=	1	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		2/27	107	PM-10	West Forty Third

Health Watches issued during FEB 2012-

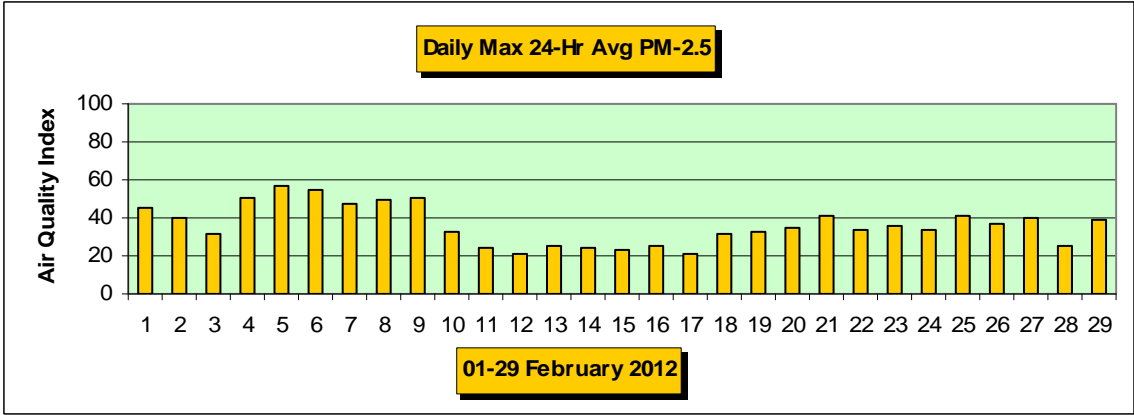
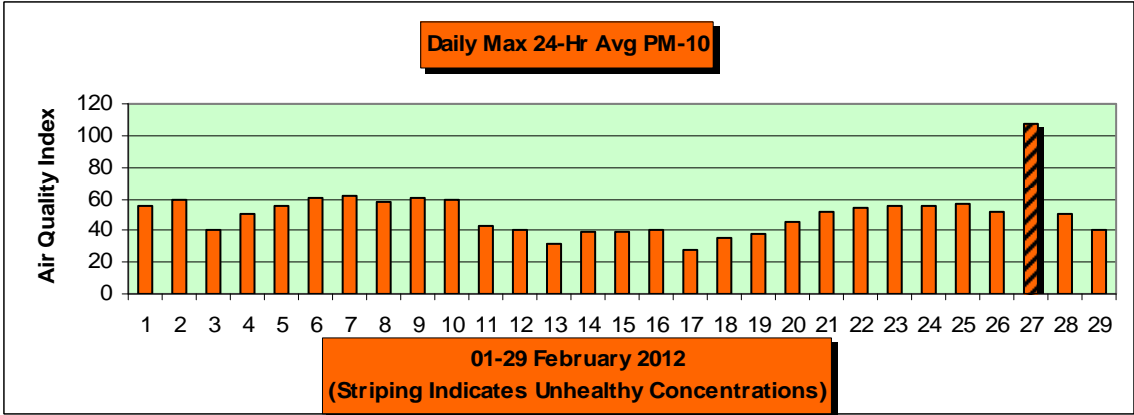
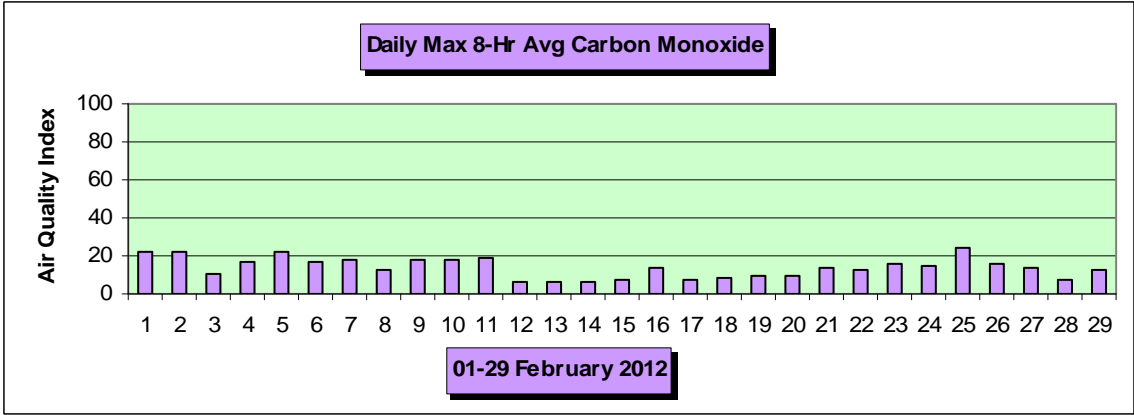
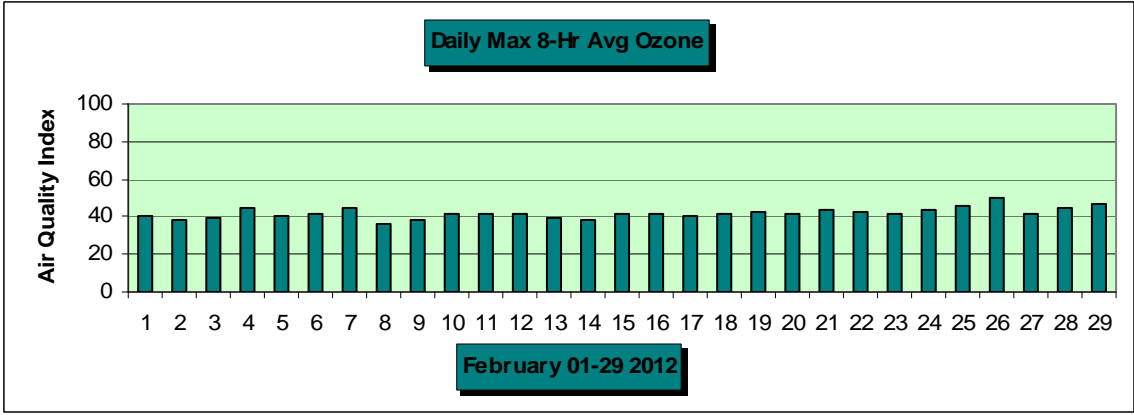
Total=	0	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
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High Pollution Advisories issued during FEB 2012-

Total=	1	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
		2/27	107	PM-10	West Forty Third

Concentration Recap:

Days in the Good category:	15
Days in the Moderate category:	13
Days in the Unhealthy for Sensitive Groups category:	1
Days in the Unhealthy category:	0
Days in the Very Unhealthy category:	0
Days in the Hazardous category:	0
Total Forecast Days:	29



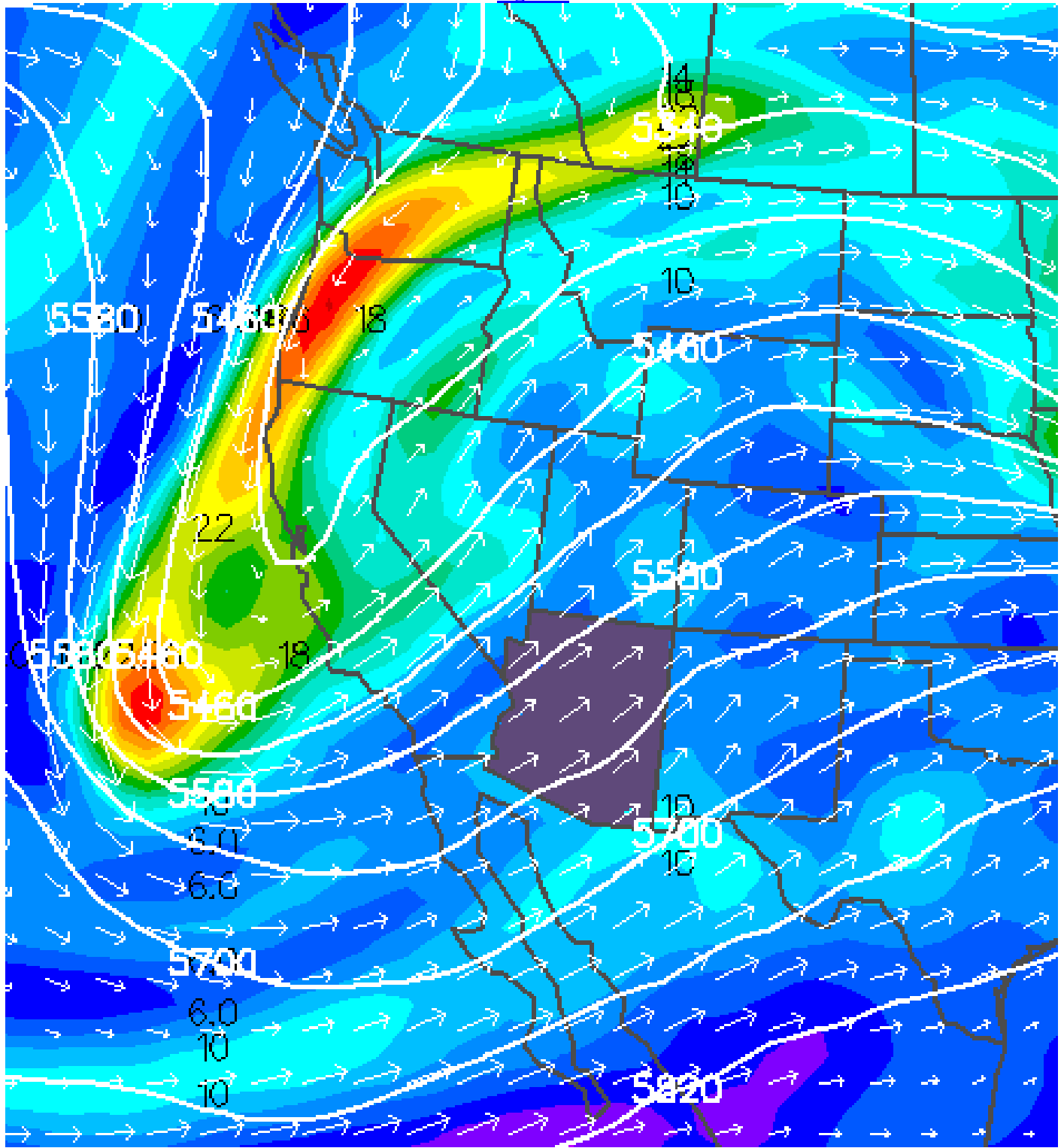
Narrative: The mid-latitude storm track was fairly inactive over Arizona during the first few weeks of February 2012. The synoptic weather pattern vacillated between an upper level ridge and several very weak trough passages that produced no rainfall and little in the way of surface winds over the Phoenix metro area. Even though the air mass over the Valley was stagnant at times thru the 7th of the month due to warm air aloft and overnight inversion formation, highest coarse (PM-10) and fine (PM-2.5) particle levels were in the low-moderate range of the Air Quality Index. A stronger trough passage occurred on the 14th that managed to produce a few light rain showers and gradient winds that gusted up to 30 mph during the afternoon hours generated some blowing dust at the Goodyear Airport where the visibility at 4:00 p.m. fell to seven miles. A strong ridge then approached and moved overhead between the 21st and 26th of the month and resulted in another stagnant period with moderate to strong surface-based radiation inversions each morning during this period. Trapped particle pollution produced hazy conditions at times over the metro area – such as that seen in [Figure 1](#) below which is a photograph taken by the local VISNET camera array on February 21.

Figure 1



This lengthy period of relatively benign weather came to a rapid end on the 27th with the approach of a strong upper level trough and surface cold front in the mid-latitude storm track (Figure 2).

Figure 2



The intensity of this system was punctuated by the National Weather Service office in Phoenix by the issuance of a Wind Advisory followed by a Blowing Dust Advisory and a Dust Storm Warning – a copy of all which can be seen below:

URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE PHOENIX AZ
108 PM MST MON FEB 27 2012

GREATER PHOENIX AREA-NORTHWEST AND NORTH CENTRAL PINAL COUNTY-
INCLUDING THE CITIES OF...BUCKEYE...MESA...PHOENIX...
APACHE JUNCTION...CASA GRANDE...FLORENCE

...DUST STORM WARNING IN EFFECT UNTIL 3 PM MST THIS AFTERNOON...
...WIND ADVISORY REMAINS IN EFFECT UNTIL 11 PM MST THIS EVENING...

...BLOWING DUST ADVISORY IN EFFECT FROM 3 PM UNTIL 11 PM MST THIS EVENING...

THE NATIONAL WEATHER SERVICE IN PHOENIX HAS ISSUED A DUST STORM
WARNING...WHICH IS IN EFFECT UNTIL 3 PM MST THIS AFTERNOON. A
BLOWING DUST ADVISORY HAS ALSO BEEN ISSUED. THIS BLOWING DUST
ADVISORY IS IN EFFECT UNTIL 11 PM MST THIS EVENING. A WIND ADVISORY
REMAINS IN EFFECT UNTIL 11 PM MST THIS EVENING.

* AFFECTED AREA...THE GREATER PHOENIX AREA AS WELL AS NORTHWEST PINAL COUNTY.

* TIMING...SOUTHWEST WINDS WILL CONTINUE TO INCREASE THIS
AFTERNOON... PEAKING DURING THE EVENING HOURS.

* WINDS...SOUTHWEST TO WEST WINDS 25 TO 35 MPH...WITH GUSTS UP TO 45 MPH.

* VISIBILITY...DECREASING TO BETWEEN A QUARTER AND HALF A MILE AT
TIMES IN AREAS OF BLOWING DUST. LOCALIZED AREAS OF LESS THAN A
QUARTER MILE VISIBILITIES ARE EXPECTED THROUGH 3 PM.

* IMPACTS...TRAVEL DIFFICULTIES FOR HIGH PROFILE VEHICLES...AND
THE POTENTIAL FOR AREAS OF REDUCED VISIBILITIES DUE TO BLOWING
DUST ACROSS THE LOWER DESERT ELEVATIONS...ESPECIALLY ALONG
SECTIONS OF INTERSTATE 8 AND 10 NEAR CASA GRANDE SOUTH OF
PHOENIX. NORMALLY DUST PRONE AREAS WILL LIKELY SEE WIDESPREAD
BLOWING DUST THIS AFTERNOON WITH REDUCED VISIBILITIES AROUND A
HALF MILE.

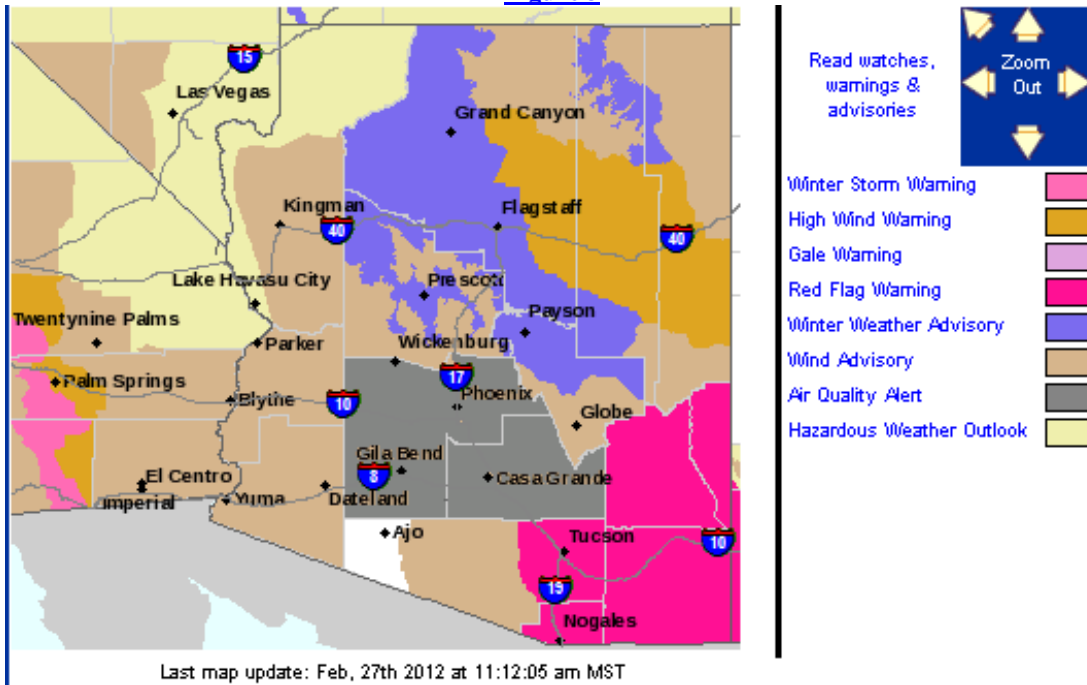
PRECAUTIONARY/PREPAREDNESS ACTIONS...

A DUST STORM WARNING IS ISSUED WHEN WINDS HAVE GENERATED LARGE
AREAS OF BLOWING DUST OR BLOWING SAND THAT HAVE SUBSTANTIALLY
REDUCED VISIBILITIES...TO 1/4 MILE OR LESS...RESULTING IN
HAZARDOUS DRIVING CONDITIONS IN SOME AREAS. BE READY FOR A SUDDEN
DROP IN VISIBILITY TO NEAR ZERO. USE EXTRA CAUTION AND SLOW DOWN
WHILE DRIVING...AS OBJECTS ON AND NEAR ROADWAYS WILL BE SEEN ONLY
AT CLOSE RANGE. IF YOU ENCOUNTER BLOWING DUST OR BLOWING SAND ON
THE ROADWAY OR SEE IT APPROACHING...PULL OFF THE ROAD AS FAR AS
POSSIBLE AND PUT YOUR VEHICLE IN PARK. TURN THE LIGHTS ALL THE
WAY OFF AND KEEP YOUR FOOT OFF THE BRAKE PEDAL. A BLOWING DUST
ADVISORY MEANS THAT BLOWING DUST WILL RESTRICT VISIBILITIES.
TRAVELERS ARE URGED TO USE EXTRA CAUTION.

A WIND ADVISORY MEANS THAT SUSTAINED WIND SPEEDS OF BETWEEN
30 AND 40 MPH ARE EXPECTED...OR WIND GUSTS OF BETWEEN 40 AND
58 MPH. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY
FOR HIGH PROFILE VEHICLES. IN ADDITION...STRONG WINDS OVER DESERT
AREAS COULD RESULT IN BRIEFLY LOWERED VISIBILITIES TO WELL UNDER
A MILE AT TIMES IN BLOWING DUST OR BLOWING SAND. USE EXTRA CAUTION.

The Arizona Department of Environmental Quality issued a PM-10 High Pollution Advisory since there was a high potential for unhealthy levels of coarse particles. The graphic represented in [Figure 3](#) shows the regional wind impact of this significant weather disturbance and the images in Figures 4-7 show the extent of this local blowing dust event during the afternoon hours. Blowing dust was reported between 11:00 a.m. and midnight along with wind gusts up to 45 mph and visibilities as low as four miles.

[Figure 3](#)



[Figure 4](#)



[Figure 5](#)



[Figure 6](#)



Figure 7



This wind and dust episode ultimately contributed to a PM-10 exceedance at the West Forty Third monitoring site. The highest hourly concentration there was 690.5ug/mg at 11:00 p.m. and the PM-10 time-series trace can be seen in [Figure 8](#). -Reith

Figure 8

Name: WEST FORTY THIRD

