



MONTHLY AIR QUALITY REPORT FOR
OCTOBER 2007

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 October 2007*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

	SUN	MON	TUE	WED	THU	FRI	SAT
		1	30 16 64 46	2	38 08 52 37	3	45 11 54 40
7	41 11 37 19	8	42 18 65 41	9	41 18 71 48	10	36 19 69 53
14	44 13 55 36	15	44 16 71 49	16	38 18 81 50	17	40 07 85 55
21	38 15 179 46	22	35 10 69 18	23	34 13 61 30	24	34 13 110 27
28	38 26 63 53	29	35 16 68 49	30	34 17 79 65	31	38 22 76 62

Calendar of High Pollution Advisories and Health Watches issued during October 2007

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
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 October 2007

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
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 OCT 2007-

Total=	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
2	10/21	179	PM-10	Coyote Lakes
	10/24	110	PM-10	Higley

Health Watches issued during OCT 2007-

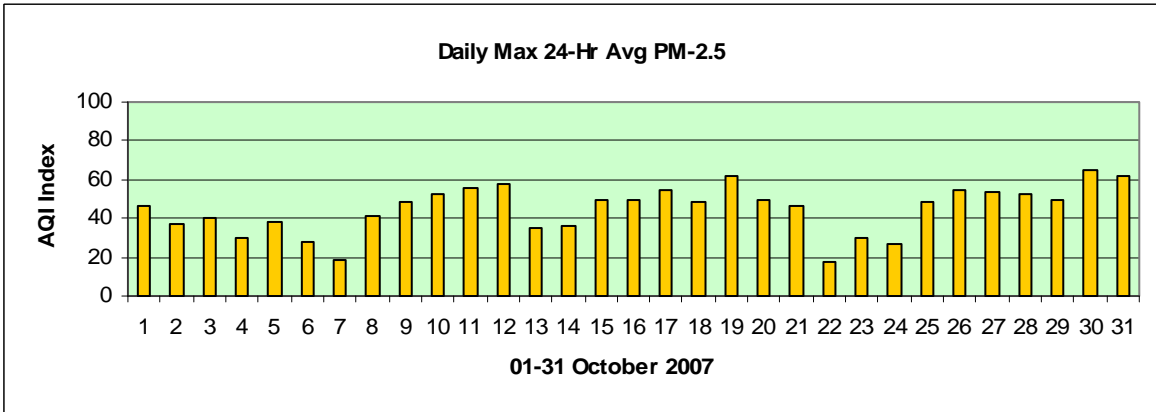
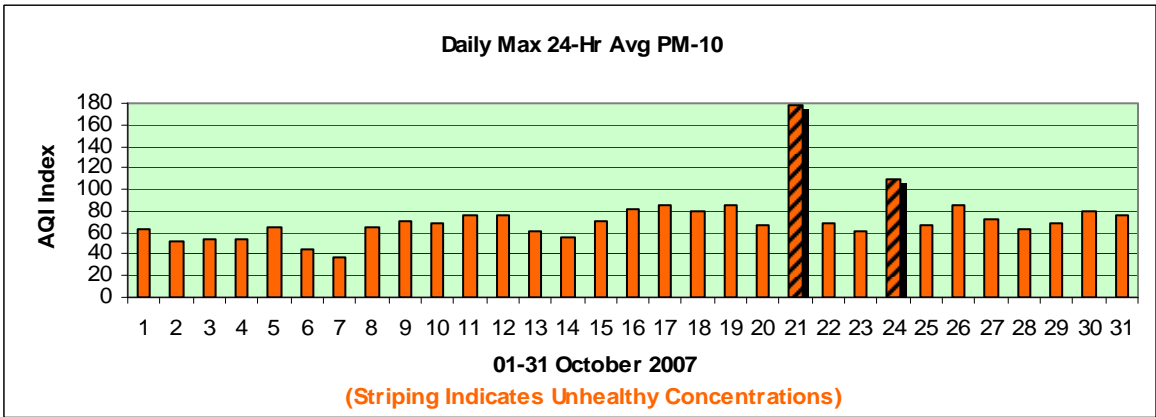
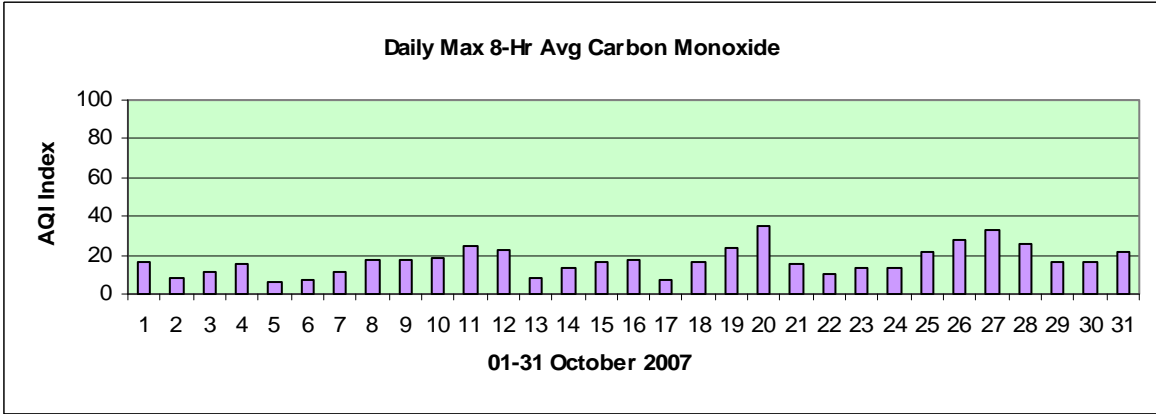
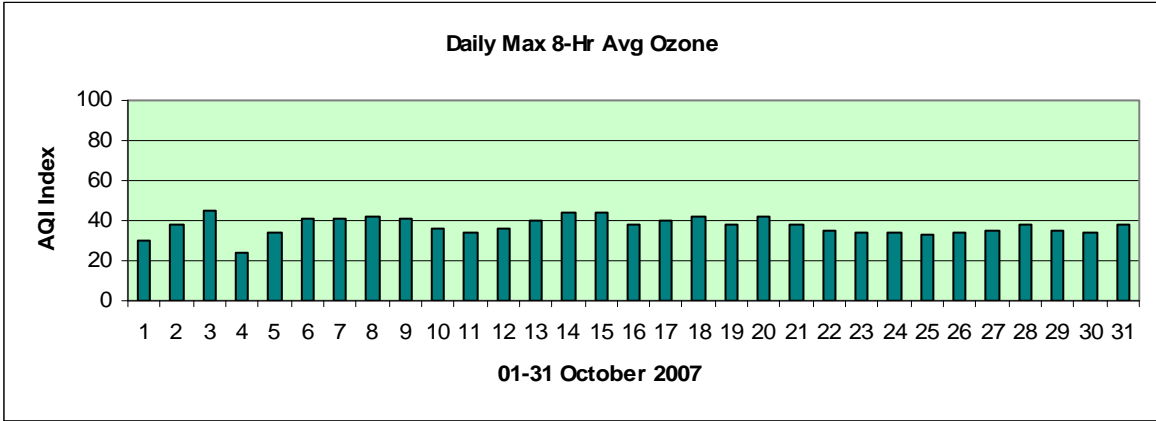
Total=	<u>Date</u>	<u>Max AQI</u>	<u>Pollutant</u>	<u>Site/s</u>
4	10/21	179	PM-10	Coyote Lakes
	10/22	69	PM-10	Higley
	10/24	110	PM-10	Higley
	10/26	85	PM-10	West Forty Third

High Pollution Advisories issued during OCT 2007-

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

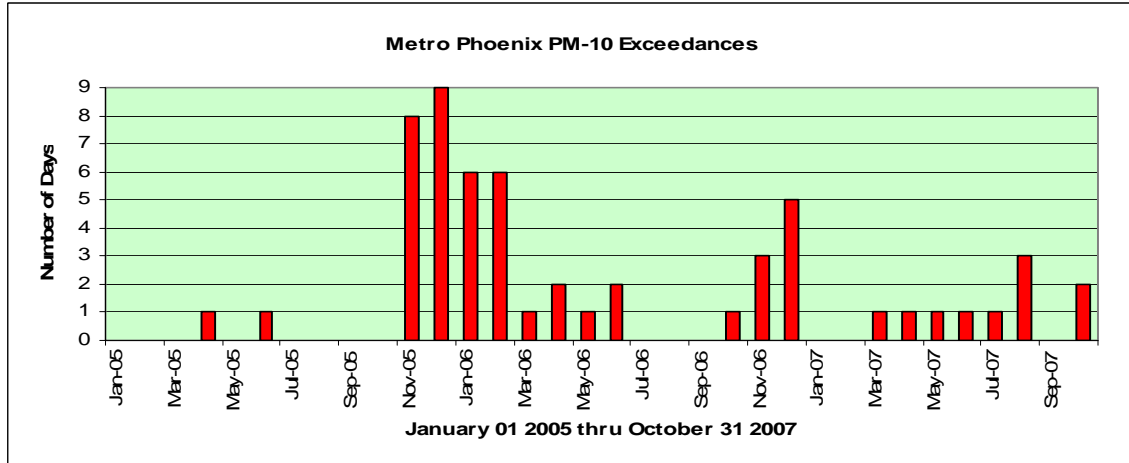
Concentration Recap:

Days in the Good category:	2
Days in the Moderate category:	27
Days in the Unhealthy for Sensitive Groups category:	1
Days in the Unhealthy category:	<u>1</u>
Total Forecast Days:	31



Narrative:

In the Phoenix area October 1 marks the end of the ozone pollution season and the start of the particle pollution season. This has almost entirely to do with local and regional weather conditions rather than sudden variations in precursor or primary pollutant emissions. Ozone production drops off sharply as daytime temperatures fall and sun angles and day-lengths decrease. These same conditions – in combination with warming aloft associated with upper level ridging – can contribute to the creation of a persistently stagnant air mass over the Valley, compounded by a subsidence inversion aloft and surface-based radiation inversions. ACARS sounding data over the years has shown that there is a direct correlation between mixing depths & dispersion and subsequent PM-10 and PM-2.5 concentrations. Stagnant weather conditions contributed to a sharp increase in PM-10 exceedances during the 2005 and 2006 seasons as can be seen from the graph below:



The two PM-10 exceedances that occurred during October 2007 were the indirect result of strong winds rather than stagnation, however. On the 21st a dry surface cold frontal passage occurred; the associated very tight pressure gradient generated north to northeasterly winds that gusted between 25-40 mph from 0200 thru 2200 hrs. These winds contributed to periods of thick blowing and suspended dust between 0300 and 1700 hrs that reduced visibilities to as low as 3/4 of a mile. The Coyote Lakes PM-10 monitor registered an hourly concentration of 1569.2ug/m3 at 0700 hrs. On the 24th another tight pressure gradient evolved – this time associated with a strong surface high pressure system. Over the southeast and southwest quadrants of the metro area east to southeasterly wind gusts between 25 and 40 mph occurred between 0900 and 1600 hrs with blowing dust from 1000-1400 hrs and visibilities as low as three miles. -Reith

