



MONTHLY AIR QUALITY REPORT FOR
FEBRUARY 2009

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 February 2009*

*Preliminary data

SAMPLE POLLUTANT REPORTING BOX

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

| | SUN | | | MON | | | TUES | | | WED | | | THU | | | FRI | | | SAT | |
|----|-----|----|----|-----|----|----|------|----|----|-----|----|----|-----|----|----|-----|----|----|-----|----|
| 1 | 37 | 24 | 2 | 38 | 17 | 3 | 36 | 20 | 4 | 38 | 24 | 5 | 37 | 24 | 6 | 36 | 10 | 7 | 33 | 10 |
| | 38 | 58 | | 52 | 40 | | 69 | 45 | | 54 | 44 | | 60 | 37 | | 51 | 30 | | 28 | 20 |
| 8 | 34 | 07 | 9 | 36 | 07 | 10 | 33 | 06 | 11 | 36 | 11 | 12 | 38 | 14 | 13 | 40 | 13 | 14 | 39 | 15 |
| | 06 | 12 | | 19 | 12 | | 17 | 14 | | 26 | 31 | | 29 | 44 | | 30 | 39 | | 28 | 49 |
| 15 | 37 | 15 | 16 | 35 | 11 | 17 | 36 | 09 | 18 | 38 | 13 | 19 | 39 | 16 | 20 | 39 | 17 | 21 | 38 | 18 |
| | 29 | 57 | | 46 | 51 | | 13 | 18 | | 33 | 29 | | 31 | 31 | | 50 | 42 | | 33 | 39 |
| 22 | 38 | 27 | 23 | 33 | 20 | 24 | 42 | 15 | 25 | 39 | 18 | 26 | 40 | 10 | 27 | 40 | 16 | 28 | 44 | 19 |
| | 48 | 57 | | 63 | 50 | | 61 | 54 | | 55 | 34 | | 49 | 31 | | 44 | 36 | | 43 | 49 |
| | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | |

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

****NO STATEMENTS WERE ISSUED DURING FEBRUARY****

| 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 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

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 2009

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

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 2009-

Total= 0 Date Max AQI Pollutant Site/s

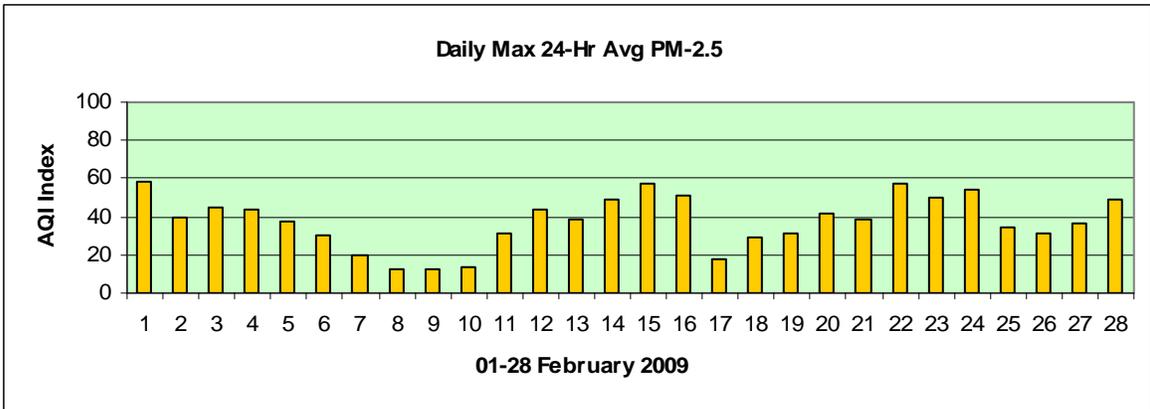
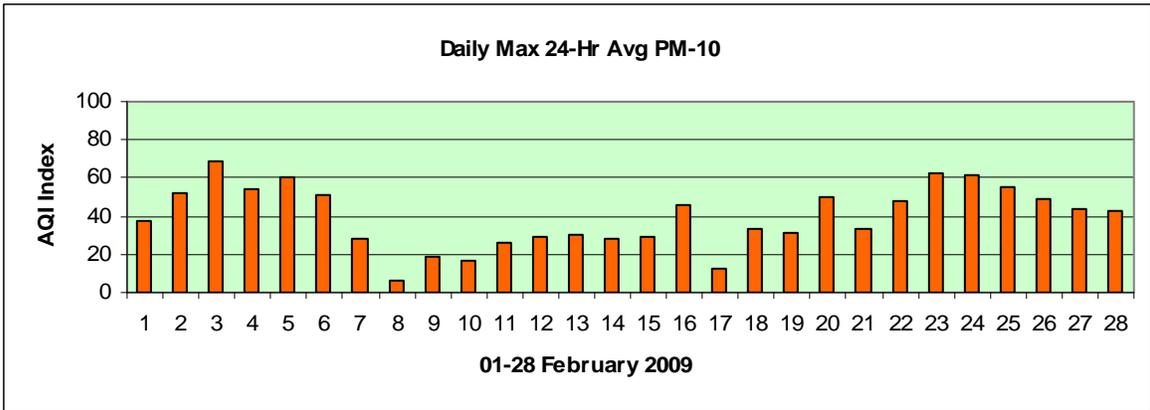
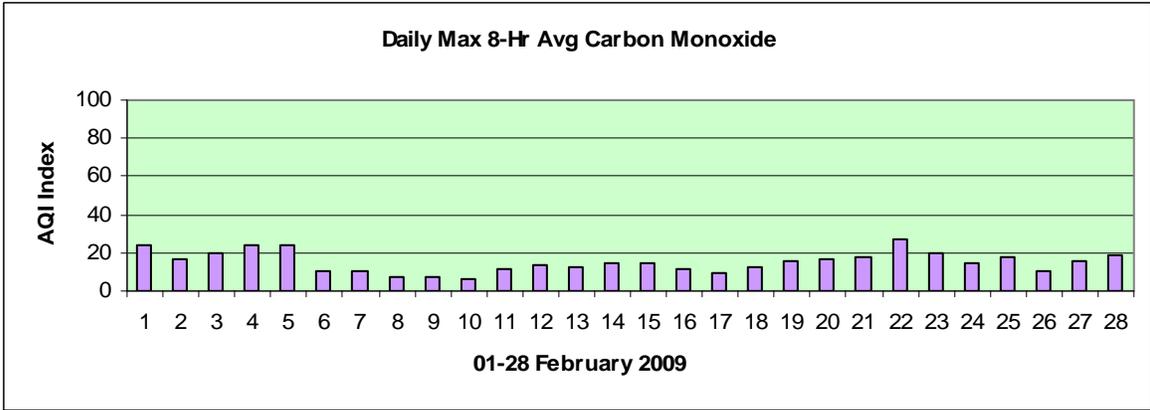
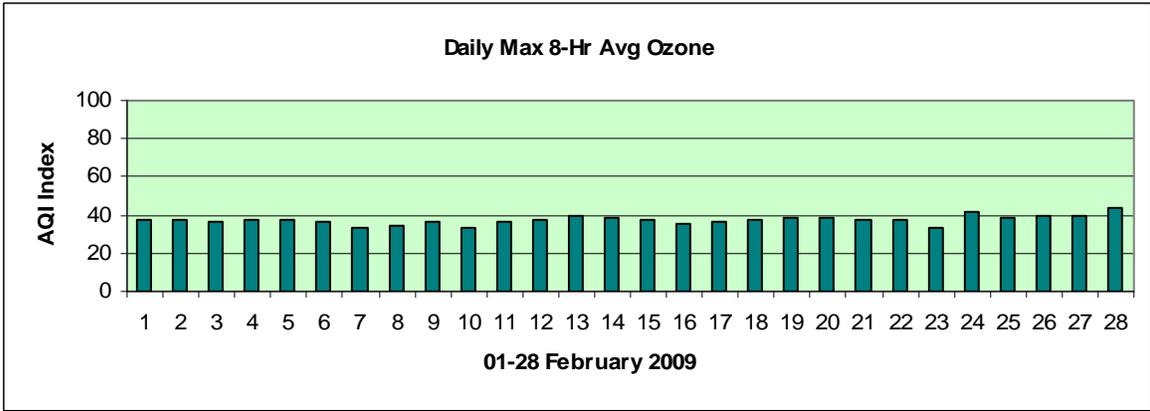
Health Watches issued during FEB 2009-

Total= 0 Date Max AQI Pollutant Site/s

High Pollution Advisories issued during FEB 2009-

Total= 0 Date Max AQI Pollutant Site/s

Concentration Recap: Days in the **Good** category: 16
Days in the **Moderate** category: 12
Days in the **Unhealthy for Sensitive Groups** category: 0
Days in the **Unhealthy** category: 0
Total Forecast Days: 28



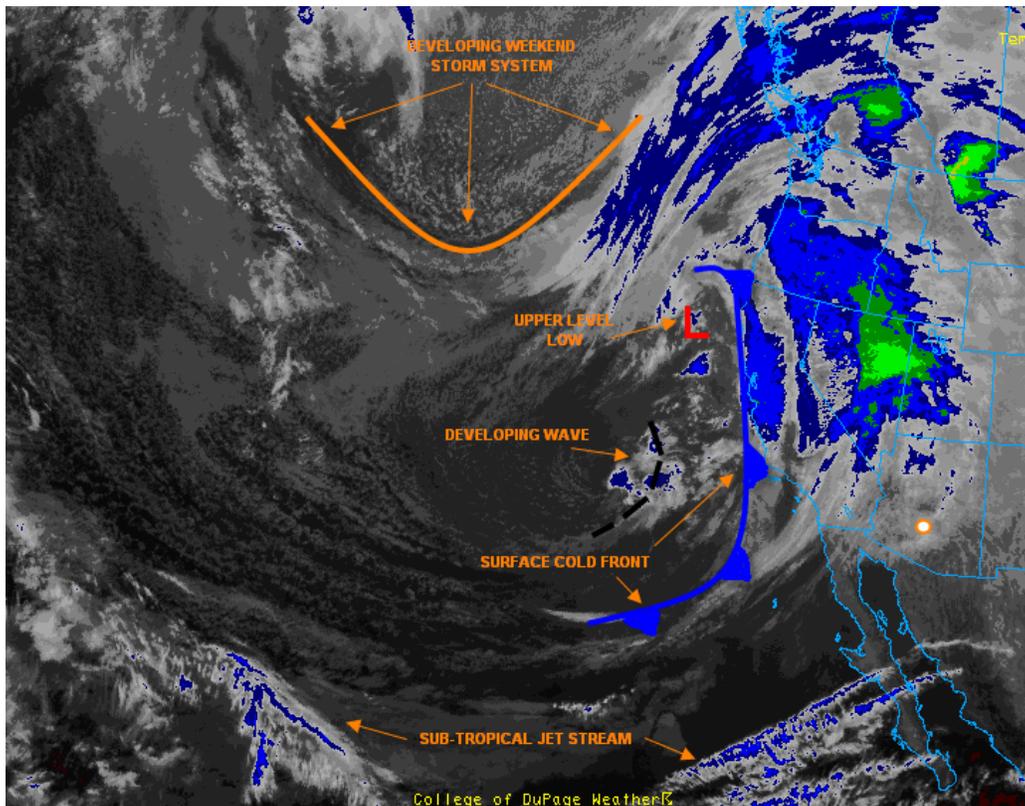
Narrative:

Valley residents enjoyed a welcome break from serious air pollution during the month of February. It was the first month since September 2006 during which no health watches or high pollution advisories were issued and no exceedances of the federal health standards occurred. Some of the credit for the conspicuously low air pollution levels – 16 days had Air Quality Index readings that were all in the “Good” range – goes to the synoptic weather pattern that featured a rather active mid-latitude storm track. Seven trough or frontal passages occurred during February, two of which combined to bring substantial precipitation to the Phoenix area from the 7th thru the 10th. The graphics below illustrate how these systems evolved:

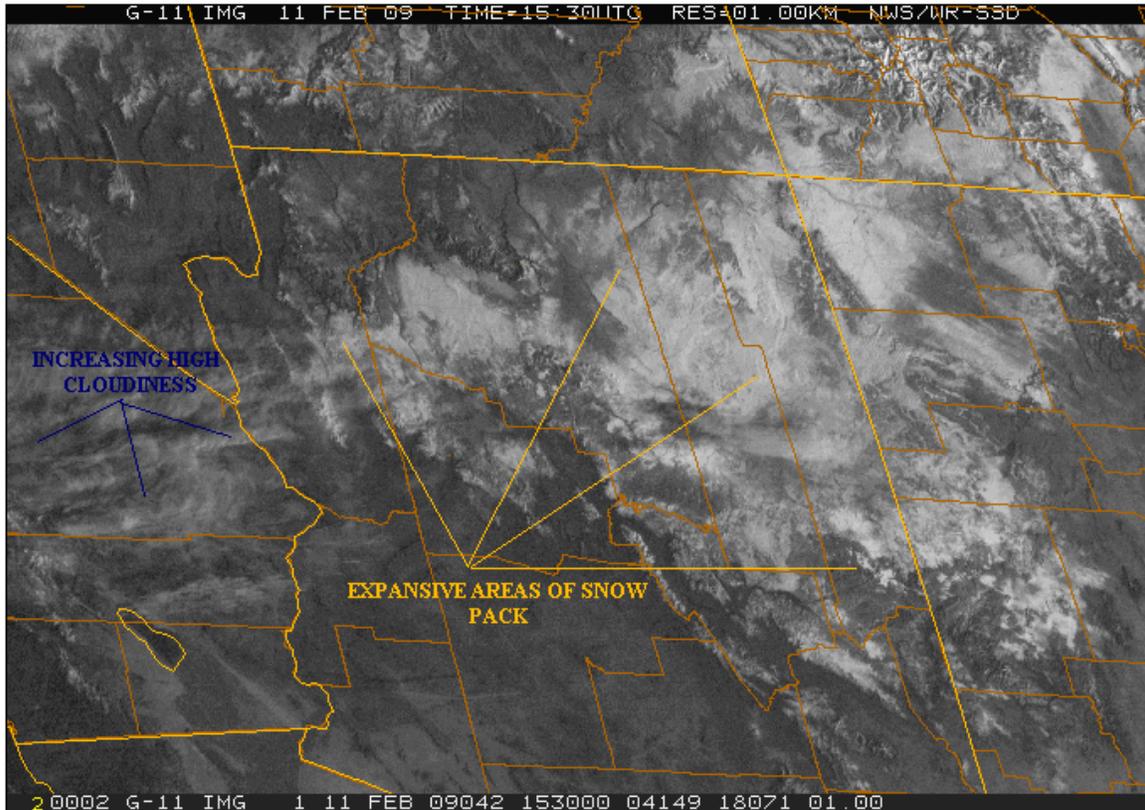
Polar Front Jet Stream Track – February 02 & February 05



Thursday FEB 05 Satellite Image w/Synoptic Pattern Overlay



Metro area 24-hour rainfall totals reached 0.20" on the 7th, 1.08" on the 8th, 0.87" on the 9th, and 0.35" on the 10th. This much rainfall effectively put an end to the threat of significant fugitive dust emissions (PM-10) for the remainder of the month. Outside the desert areas of Arizona, snowfall was plentiful as the satellite image below clearly shows:



Also contributing to the dearth of air pollution was the fact that the atmospheric boundary layer was much less conducive to particle pollutant accumulation. The average daily mixing depth during the month was in excess of 5800' – the highest being 9000' – and most days had morning inversions that were no stronger than five degrees C. Fourteen days had good to excellent dispersion, and only seven days had marginal dispersion. Of course, air pollution was not absent entirely as evidenced by visibility-reducing haze on a number of days between weather disturbances. One of those days occurred on the 18th when elevated PM-2.5 (fine particle) concentrations during the morning hours were exacerbated by rather high near-surface moisture levels and a weak surface-based inversion. The following photographs from a local VISNET camera provide solid evidence of this event:



AS THE SURFACE-BASED INVERSION (ABOVE) BREAKS, THE MIXING DEPTH EXPANDS
UPWARD HELPING TO "DILUTE" THE TRAPPED PARTICLE POLLUTION (BELOW):



By late in the month another active weather pattern was underway (see graphic below). However, the associated trough passage that eventually took place on the 25th did not produce any additional rainfall within the local forecast area. -Reith

Monday FEB 23 Satellite Image w/Synoptic Pattern Overlay

