## Assessment Under the Technical Criteria Document (TCD)

1. Properly qualify and validate the air quality measurement to be flagged. This was a filter sampling (1-in-6) date. As such data from all filter and continuous analyzers were examined. The air quality monitoring data were reviewed by the agency responsible for operation of the monitor. Data from the Rillito monitor operated by ADEQ was found to be valid. Measurements at nearby continuous monitors operated by PDEQ were examined and found to be valid, with elevated concentrations in the evening. Audits of the analyzers revealed operations were within acceptable tolerance. No local sources were reported as significantly contributing to the air quality episode. An exceedance of the NAAQS was only recorded at the Rillito monitor operated by ADEQ.

2. Review suspected contributing sources. The AzMET and NWS surface data from the Tucson and Rillito areas showed strong gusty winds in the area. The National Weather Service reported impaired visibility at Tucson International Airport the evening of July 5th, along with thunderstorms and haze in the area. Examination of the GOES-WEST Satellite images showed a very powerful thunderstorm cell forming over east central Arizona at approximately 4:00 p.m. (see Figure 1). Panoramic camera images from the camera operated by PDEQ showed clear mostly clear sky at 4:00 p.m. that quickly became cloudy as the outflow from the thunderstorm cell quickly moved into the Tucson area (see Figure 1). Wind gust over 25 miles per hour (mph) were evident over a wide area as the thunderstorm migrated. Based on wind gusts in the 30 to 50 mph range, it is assumed that the outflow from the thunderstorm generated blowing dust that contributed to the exceedance. All appropriate control measure required by the 1994 Rillito $PM_{10}$ SIP were in place at the time of the exceedance. Wind velocities were sufficiently high to transport regional sources of dust and to potentially overwhelm local dust control measures.

3. Examine all air quality monitoring information. Data from all monitors in the network were reviewed. Monitoring data from the Rillito monitor are summarized in the table in the Background section of this assessment. Hourly data for the Geronimo and Green Valley monitors operated by PDEQ were examined. These data have been included in the Event Contribution Analysis section of Figure 1. The significant event for Green Valley was during the early morning hours. The significant event for Geronimo was in the evening. The event contribution at Rillito is assumed to be in the evening, and associated with the phenomenon that caused the Geronimo elevated concentrations.

4. Examine the meteorological conditions before and during the event. The AzMET meteorological data are summarized in Figure 1, along with key NWS stations in the Tucson area. The wind data are highlighted yellow if the maximum wind speed in the hour exceeds 15 mph and orange if it exceeds 25 mph. The NWS tables include notations for the visual range (VR) in miles, and comments related to blowing dust, haze, thunderstorms, etc. (full copies of the NWS reports are attached). Strong gusty winds arrived in the Marana area by 7:00 p.m. with winds gusting to 31 mph out of the North. At 8:00 p.m., Marana winds were reported from the East with gusts to 27mph, with winds at the Tucson AzMET station reported from the northeast with gusts to 40 mph, which shifted to the northwest with gust to 51 mph by 9:00 p.m. At 8:00 p.m., the Tucson International NWS reported northeast winds gusting to 39 mph with haze and visibility reduced to 5 statute miles. Visibility remained impaired at 7 statue miles with north winds gusting to 41 mph at 9:00 p.m. The NWS observations confirm that the impact was from a regional dust source as opposed to a local source.

5. Perform a qualitative attribution to emission source(s). All evidence indicates the elevated $PM_{10}$ concentrations in the Rillito area can be attributed to soil emissions in the area north and east of Rillito that were transported over a broad area. No source specific emission allocation is possible based on the data available for analysis. The hourly concentration data does not show any significant source other than the major wind-blown dust event for the evening episode.

6. Estimation of Contribution from Sources or Events. The primary source appears to be wind-blown dust over a wide geographic region for which there is not an effective or efficient method to estimate the relative contributions from specific sources. However, it is possible to determine the net effect of the event compared to ambient conditions. Data from the Geronimo and Green Valley monitor stations operated by PDEQ are included in the Event Contribution Analysis in Figure 1. The ambient concentration for both stations was approximately 50 micrograms per cubic meter, excluding the contribution of their specific events. Based on this, the PM10 concentration at Rillito would have been expected to be approximately 50 micrograms per cubic meter. Approximately 75% of the 24-hour concentration at Rillito was contributed during the event.

7. Determination that a Natural or Exceptional Event Contributed To an Exceedance. Based on the evidence collected, the elevated concentrations in Rillito was due to a high-wind event caused by an outflow of a thunderstorm.

## Conclusion

High-wind transport of dust from soils. The elevated concentrations at Rillito were a result of long-range transport of dust and soils from high winds that suspended natural soils and soils from areas with Best Available Control Measures and should be flagged for air quality planning purposes. The "high wind" flag (A) should be applied to the monitor readings indicated in the summary table at the beginning of this report.



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*** Public Review Draft ***

# Assessment of Qualification for Treatment under the Arizona Natural and Exceptional Events Policy for the High Particulate ($PM_{10}$) Concentration Event in the Rillito Area on July 5, 2007.

## Background

ADEQ operates a particulate monitor that measures particulate matter smaller than 10 microns ($PM_{10}$) in Rillito, Arizona, near the cement plant operated by Arizona Portland Cement. In the 1994 Rillito $PM_{10}$ State Implementation Plan (SIP), a series of specific control measures were prescribed for the area to address sources of particulates and were implemented (see attached). The monitoring record at Rillito is consistent with a clean data finding to allow the area to be redesignated as attainment for particulate matter and would be eligible for a limited maintenance plan to assure the attainment status of the area is maintained.

The Arizona Department of Environmental Quality (ADEQ) issues a Dust Control Action Forecasts for Maricopa County as part of the Natural Events Action Plan for the area, and also issues a Dust Re-Entrainment Risk Wind Forecast for the Green Valley area south of Tucson. The Green Valley forecast issued on Wednesday, July 4, 2005, included a warning that the summer monsoons would begin over the next few days over much of Arizona, and that there was a moderate risk of gusty winds and dense blowing dust from thunderstorms, even distant thunderstorms (see attachments). The Maricopa County forecast included the same forecast and advisories (see attachments).

Thunderstorm cells materialized south of Green Valley on the evening of July 4th, bringing elevated $PM_{10}$ concentrations into the area in the early morning hours of July 5th. Davis-Monthan AFB reported southeast winds gusting to 34 miles per hour at 2:00 a.m. on July 5th. This influx of moisture from the south east brought sufficient moisture into the region to trigger wide spread thunderstorms on the afternoon of July 5th.

An intensive thunderstorm cell brought elevated wind speeds and blowing dust into the Tucson area on the evening of July 5th.

An elevated $PM_{10}$ concentration was measured on the Rillito monitor on July 5th. The Rillito measurement was from a Partisol 2000 filter-based Federal Reference Method (FRM) monitor that does not provide hourly values. Hourly concentration data for analysis of the episode is available from monitors operated by Pima County Department of Environmental Quality (PDEQ). The following is the key $PM_{10}$ monitor reading for the monitor examined in this report:

| Monitor (Operator/Type) | AQS/AAAD ID | 24-hr Avg $PM_{10}$ | 1-hr Max $PM_{10}$ | Time of Max 1-hr | Flag(A)*** |
|---|---|---|---|---|---|
| PIMA COUNTY | | | | | |
| Rillito (ADEQ/FRM) | 04-019-0020 | 208.4 | N/A | N/A | Yes |

* EPA Air Quality System Identification Number
** ADEQ Ambient Air Assessment Database Identification Number
*** 24-hr $PM_{10}$ concentration influenced by natural or exceptional event to be flagged.
Type Abbreviations: FRM – Federal Reference Method Monitor (filter monitor)

***This is a public review draft report.*** Based on the elevated concentration that was reported from a potential thunderstorm, this analysis was prepared to determine the applicability for treatment under the Arizona Natural and Exceptional Events Policy. A large quantity of information was assimilated and digested for this analysis. The preliminary findings of this analysis are being provided for public review and comment during a comment period that will run from April 16th to May 16th, and will be presented and discussed at a stakeholder meeting for the Rillito stakeholders scheduled for May 15, 2008. ADEQ will finalize this analysis and take the appropriate action to flag and submit this report to EPA, or elect not to flag and submit this report to EPA, based on feedback received during the comment period.

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## CENTRAL PHOENIX

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 82 | 36 | - | 1 | 3 | NE |
| 2 | 82 | 34 | - | 1 | 3 | NE |
| 3 | 84 | 26 | - | 3 | 7 | E |
| 4 | 83 | 24 | - | 3 | 7 | E |
| 5 | 83 | 27 | - | 2 | 7 | E |
| 6 | 85 | 0 | - | 8 | 8 | S |
| 7 | 86 | 26 | - | 2 | 6 | E |
| 8 | 83 | 26 | - | 2 | 7 | E |
| 9 | 90 | 24 | - | 4 | 8 | SE |
| 10 | 95 | 21 | - | 9 | 10 | SE |
| 11 | 96 | 22 | - | 1 | 4 | E |
| 12 | 43 | 65 | - | 3 | 7 | E |

## NWS-DAVIS MON AFB

| Hr | T(F) | VR | Dust | Spd | Gust | Dir |
|---|---|---|---|---|---|---|
| 1 | 95 | 0 | | 23 | 32 | SE |
| 2 | 93 | 0 | | 22 | 34 | SE |
| 3 | 91 | 0 | | 18 | 18 | SE |
| 4 | 89 | 0 | | 16 | 16 | SE |
| 5 | 85 | 0 | | 6 | 6 | S |
| 6 | 85 | 0 | | 8 | 8 | S |
| 7 | 90 | 0 | | 15 | 15 | SE |
| 8 | 92 | 0 | | 15 | 23 | SE |
| 9 | 96 | 0 | | 17 | 17 | E |
| 10 | 98 | 0 | | 14 | 14 | SE |
| 11 | 101 | 0 | | 9 | 16 | E |
| 12 | 104 | 0 | | 3 | 7 | WR |
| 1 | 104 | 0 | | 10 | 10 | SE |
| 2 | 105 | 0 | | 8 | 8 | NW |
| 3 | 106 | 0 | | 8 | 8 | NW |
| 4 | 105 | 0 | | 8 | 17 | NE |
| 5 | 105 | 0 | | 2 | 2 | WR |
| 6 | 105 | 0 | | 11 | 11 | E |
| 7 | 105 | 0 | | 15 | 15 | NE |
| 8 | 98 | 0 | TS | 24 | 31 | N |
| 9 | 98 | 0 | | 17 | 26 | N |
| 10 | 96 | 0 | | 16 | 23 | E |
| 11 | 94 | 0 | | 14 | 14 | E |
| 12 | 92 | 0 | | 18 | 30 | SE |

## NWS-TUCSON INT

| Hr | T(F) | VR | Dust | Spd | Gust | Dir |
|---|---|---|---|---|---|---|
| 1 | 93 | 0 | | 9 | | S |
| 2 | 93 | 0 | | 11 | | S |
| 3 | 91 | 0 | | 14 | | SE |
| 4 | 88 | 0 | | 0 | | N |
| 5 | 87 | 0 | | 6 | 6 | SE |
| 6 | 88 | 0 | | 9 | 9 | SE |
| 7 | 89 | 0 | | 13 | 13 | SE |
| 8 | 92 | 0 | | 14 | 20 | SE |
| 9 | 96 | 0 | | 13 | 13 | E |
| 10 | 99 | 0 | | 14 | 14 | SE |
| 11 | 101 | 0 | | 9 | 16 | E |
| 12 | 103 | 0 | | 8 | 8 | E |
| 1 | 104 | 0 | | 5 | 5 | VR |
| 2 | 107 | 0 | | 7 | 7 | VR |
| 3 | 109 | 0 | | 7 | 7 | N |
| 4 | 107 | 0 | | 6 | 9 | SE |
| 5 | 106 | 0 | | 5 | 5 | VR |
| 6 | 104 | 0 | | 0 | 0 | N |
| 7 | 102 | 0 | | 0 | 0 | N |
| 8 | 101 | 0 | | 3 | 6 | SE |
| 9 | 99 | 0 | | 7 | 7 | N |
| 10 | 99 | 0 | | 13 | 13 | E |
| 11 | 94 | 0 | | 10 | 10 | E |
| 12 | 92 | 0 | | 18 | 18 | SE |

## 15-Phx Encanto

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 82 | 36 | - | 1 | 3 | E |
| 2 | 82 | 34 | - | 1 | 3 | NE |
| 3 | 84 | 26 | - | 3 | 7 | E |
| 4 | 83 | 24 | - | 3 | 7 | E |
| 5 | 83 | 27 | - | 2 | 7 | E |
| 6 | 85 | 0 | - | 6 | 6 | S |
| 7 | 86 | 26 | - | 2 | 6 | E |
| 8 | 83 | 26 | - | 2 | 7 | E |
| 9 | 90 | 24 | - | 4 | 8 | SE |
| 10 | 95 | 21 | - | 9 | 10 | SE |
| 11 | 96 | 22 | - | 1 | 4 | E |
| 12 | 43 | 65 | - | 3 | 7 | E |

## YUMA

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 78 | 38 | - | 2 | 5 | NE |
| 2 | 79 | 42 | - | 2 | 4 | NE |
| 3 | 76 | 48 | - | 1 | 3 | NE |
| 4 | 76 | 55 | - | 1 | 3 | N |
| 5 | 78 | 36 | - | 1 | 4 | S |
| 6 | 76 | 48 | - | 2 | 4 | NW |
| 7 | 78 | 45 | - | 1 | 4 | N |
| 8 | 84 | 37 | - | 2 | 6 | NE |
| 9 | 91 | 32 | - | 2 | 6 | SE |
| 10 | 94 | 27 | - | 4 | 8 | SE |
| 11 | 98 | 23 | - | 4 | 8 | SE |
| 12 | 102 | 16 | - | 6 | 11 | SE |
| 1 | 106 | 12 | - | 7 | 13 | S |
| 2 | 109 | 10 | - | 7 | 14 | S |
| 3 | 110 | 10 | - | 7 | 13 | S |
| 4 | 111 | 9 | - | 7 | 13 | S |
| 5 | 112 | 9 | - | 7 | 13 | S |
| 6 | 111 | 9 | - | 8 | 13 | S |
| 7 | 107 | 12 | - | 7 | 12 | S |
| 8 | 97 | 25 | - | 3 | 6 | SW |
| 9 | 91 | 27 | - | 10 | 13 | S |
| 10 | 84 | 39 | - | 1 | 2 | SE |
| 11 | 82 | 42 | - | 1 | 4 | NE |
| 12 | 81 | 41 | - | 1 | 3 | N |

## PALOMA

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 78 | 38 | - | 2 | 5 | SW |
| 2 | 81 | 32 | - | 3 | 7 | SW |
| 3 | 73 | 57 | - | 2 | 6 | NE |
| 4 | 71 | 60 | - | 1 | 4 | E |
| 5 | 71 | 58 | - | 3 | 6 | E |
| 6 | 71 | 57 | - | 3 | 6 | NW |
| 7 | 73 | 58 | - | 3 | 9 | SW |
| 8 | 82 | 51 | - | 3 | 5 | SW |
| 9 | 89 | 44 | - | 3 | 6 | NE |
| 10 | 96 | 25 | - | 3 | 5 | NE |
| 11 | 100 | 19 | - | 2 | 6 | N |
| 12 | 101 | 21 | - | 2 | 7 | W |
| 1 | 104 | 21 | - | 1 | 4 | W |
| 2 | 105 | 23 | - | 2 | 5 | E |
| 3 | 107 | 21 | - | 2 | 6 | E |
| 4 | 109 | 18 | - | 2 | 5 | NE |
| 5 | 111 | 14 | - | 2 | 6 | NW |
| 6 | 105 | 23 | - | 5 | 8 | W |
| 7 | 103 | 28 | - | 2 | 6 | W |
| 8 | 97 | 31 | - | 2 | 5 | W |
| 9 | 88 | 34 | - | 5 | 8 | SW |
| 10 | 83 | 41 | - | 5 | 7 | SW |
| 11 | 81 | 41 | - | 4 | 6 | SW |
| 12 | 79 | 49 | - | 3 | 7 | NW |

## 19-Paloma

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 78 | 38 | - | 2 | 5 | SW |
| 2 | 81 | 32 | - | 3 | 7 | SW |
| 3 | 73 | 57 | - | 2 | 6 | NE |
| 4 | 71 | 60 | - | 1 | 4 | E |
| 5 | 71 | 58 | - | 3 | 6 | E |
| 6 | 71 | 57 | - | 3 | 6 | NW |
| 7 | 73 | 58 | - | 3 | 9 | SW |
| 8 | 82 | 51 | - | 3 | 5 | SW |
| 9 | 89 | 44 | - | 3 | 6 | NE |
| 10 | 96 | 25 | - | 3 | 5 | NE |
| 11 | 100 | 19 | - | 2 | 6 | N |
| 12 | 101 | 21 | - | 2 | 7 | W |
| 1 | 104 | 21 | - | 1 | 4 | W |
| 2 | 105 | 23 | - | 2 | 5 | E |
| 3 | 107 | 21 | - | 2 | 6 | E |
| 4 | 109 | 18 | - | 2 | 5 | NE |
| 5 | 111 | 14 | - | 2 | 6 | NW |
| 6 | 105 | 23 | - | 5 | 8 | W |
| 7 | 103 | 28 | - | 2 | 6 | W |
| 8 | 97 | 31 | - | 2 | 5 | W |
| 9 | 88 | 34 | - | 5 | 8 | SW |
| 10 | 83 | 41 | - | 5 | 7 | SW |
| 11 | 81 | 41 | - | 4 | 6 | SW |
| 12 | 79 | 49 | - | 3 | 7 | NW |

## TUCSON

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 85 | 26 | - | 1 | 3 | SE |
| 2 | 87 | 23 | - | 4 | 18 | SE |
| 3 | 94 | 18 | - | 10 | 18 | SE |
| 4 | 91 | 19 | - | 7 | 13 | SE |
| 5 | 90 | 21 | - | 6 | 13 | E |
| 6 | 85 | 25 | - | 3 | 4 | E |
| 7 | 86 | 27 | - | 4 | 8 | SE |
| 8 | 90 | 24 | - | 5 | 10 | E |
| 9 | 94 | 22 | - | 7 | 12 | SE |
| 10 | 98 | 19 | - | 6 | 12 | E |
| 11 | 100 | 18 | - | 6 | 12 | SE |
| 12 | 102 | 15 | - | 5 | 11 | S |
| 1 | 103 | 13 | - | 4 | 11 | S |
| 2 | 105 | 12 | - | 4 | 13 | W |
| 3 | 107 | 12 | - | 4 | 10 | W |
| 4 | 107 | 11 | - | 4 | 9 | NE |
| 5 | 106 | 12 | - | 3 | 8 | E |
| 6 | 106 | 12 | - | 4 | 10 | E |
| 7 | 104 | 12 | - | 7 | 19 | E |
| 8 | 97 | 19 | - | 16 | 40 | NE |
| 9 | 95 | 17 | - | 16 | 51 | NW |
| 10 | 97 | 15 | - | 8 | 15 | E |
| 11 | 96 | 16 | - | 11 | 19 | E |
| 12 | 94 | 17 | - | 15 | 25 | E |

## 01-Tucson

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 89 | 18 | - | 2 | 5 | E |
| 2 | 88 | 20 | - | 6 | 18 | SE |
| 3 | 96 | 15 | - | 15 | 24 | SE |
| 4 | 95 | 16 | - | 13 | 19 | SE |
| 5 | 92 | 18 | - | 7 | 17 | S |
| 6 | 88 | 22 | - | 3 | 6 | SE |
| 7 | 90 | 21 | - | 6 | 9 | SE |
| 8 | 94 | 19 | - | 9 | 17 | SE |
| 9 | 97 | 18 | - | 12 | 19 | SE |
| 10 | 101 | 16 | - | 11 | 17 | SE |
| 11 | 103 | 14 | - | 8 | 15 | SE |
| 12 | 104 | 13 | - | 4 | 11 | SE |
| 1 | 107 | 12 | - | 4 | 10 | SW |
| 2 | 108 | 11 | - | 6 | 12 | NW |
| 3 | 110 | 9 | - | 4 | 8 | NW |
| 4 | 110 | 8 | - | 4 | 11 | NW |
| 5 | 110 | 9 | - | 4 | 8 | NW |
| 6 | 108 | 9 | - | 3 | 8 | NW |
| 7 | 107 | 10 | - | 7 | 31 | N |
| 8 | 102 | 13 | - | 17 | 27 | E |
| 9 | 98 | 15 | - | 13 | 21 | E |
| 10 | 98 | 14 | - | 9 | 15 | E |
| 11 | 98 | 13 | - | 10 | 18 | SE |
| 12 | 98 | 14 | - | 10 | 22 | S |

## 13-Marana

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 87 | 18 | - | 6 | 12 | S |
| 2 | 86 | 17 | - | 7 | 12 | S |
| 3 | 85 | 16 | - | 8 | 11 | S |
| 4 | 84 | 16 | - | 6 | 9 | S |
| 5 | 81 | 22 | - | 4 | 6 | E |
| 6 | 80 | 26 | - | 4 | 7 | SE |
| 7 | 81 | 32 | - | 4 | 7 | E |
| 8 | 90 | 22 | - | 6 | 10 | S |
| 9 | 96 | 18 | - | 5 | 9 | S |
| 10 | 101 | 13 | - | 8 | 12 | S |
| 11 | 103 | 12 | - | 6 | 11 | S |
| 12 | 106 | 11 | - | 6 | 13 | S |
| 1 | 108 | 11 | - | 8 | 13 | W |
| 2 | 109 | 10 | - | 6 | 11 | SW |
| 3 | 110 | 10 | - | 4 | 11 | SW |
| 4 | 112 | 8 | - | 4 | 11 | W |
| 5 | 112 | 8 | - | 4 | 7 | SE |
| 6 | 109 | 12 | - | 4 | 6 | E |
| 7 | 107 | 14 | - | 2 | 5 | NE |
| 8 | 105 | 16 | - | 4 | 11 | N |
| 9 | 99 | 16 | - | 5 | 16 | E |
| 10 | 96 | 18 | - | 4 | 11 | E |
| 11 | 92 | 24 | - | 4 | 9 | SW |
| 12 | 91 | 25 | - | 3 | 5 | S |

## MARANA

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 89 | 18 | - | 2 | 5 | E |
| 2 | 88 | 20 | - | 6 | 18 | SE |
| 3 | 96 | 15 | - | 15 | 24 | SE |
| 4 | 95 | 16 | - | 13 | 19 | SE |
| 5 | 92 | 18 | - | 7 | 17 | S |
| 6 | 88 | 22 | - | 3 | 6 | SE |
| 7 | 90 | 21 | - | 6 | 9 | SE |
| 8 | 94 | 19 | - | 9 | 17 | SE |
| 9 | 97 | 18 | - | 12 | 19 | SE |
| 10 | 101 | 16 | - | 11 | 17 | SE |
| 11 | 103 | 14 | - | 8 | 15 | SE |
| 12 | 104 | 13 | - | 4 | 11 | SE |
| 1 | 107 | 12 | - | 4 | 10 | SW |
| 2 | 108 | 11 | - | 6 | 12 | NW |
| 3 | 110 | 9 | - | 4 | 8 | NW |
| 4 | 110 | 8 | - | 4 | 11 | NW |
| 5 | 110 | 9 | - | 4 | 8 | NW |
| 6 | 108 | 9 | - | 3 | 8 | NW |
| 7 | 107 | 10 | - | 7 | 31 | N |
| 8 | 102 | 13 | - | 17 | 27 | E |
| 9 | 98 | 15 | - | 13 | 21 | E |
| 10 | 98 | 14 | - | 9 | 15 | E |
| 11 | 98 | 13 | - | 10 | 18 | SE |
| 12 | 98 | 14 | - | 10 | 22 | S |

## 02-YumaValley

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 78 | 38 | - | 2 | 5 | NE |
| 2 | 79 | 42 | - | 2 | 4 | NE |
| 3 | 76 | 48 | - | 1 | 3 | NE |
| 4 | 76 | 55 | - | 1 | 3 | N |
| 5 | 78 | 36 | - | 1 | 4 | S |
| 6 | 76 | 48 | - | 2 | 4 | NW |
| 7 | 78 | 45 | - | 1 | 4 | N |
| 8 | 84 | 37 | - | 2 | 6 | NE |
| 9 | 91 | 32 | - | 2 | 6 | SE |
| 10 | 94 | 27 | - | 4 | 8 | SE |
| 11 | 98 | 23 | - | 4 | 8 | SE |
| 12 | 102 | 16 | - | 6 | 11 | SE |
| 1 | 106 | 12 | - | 7 | 13 | S |
| 2 | 109 | 10 | - | 7 | 14 | S |
| 3 | 110 | 10 | - | 7 | 13 | S |
| 4 | 111 | 9 | - | 7 | 13 | S |
| 5 | 112 | 9 | - | 7 | 13 | S |
| 6 | 111 | 9 | - | 8 | 13 | S |
| 7 | 107 | 12 | - | 7 | 12 | S |
| 8 | 97 | 25 | - | 3 | 6 | SW |
| 9 | 91 | 27 | - | 10 | 13 | S |
| 10 | 84 | 39 | - | 1 | 2 | SE |
| 11 | 82 | 42 | - | 1 | 4 | NE |
| 12 | 81 | 41 | - | 1 | 3 | N |

## BUCKEYE

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 87 | 18 | - | 3 | 7 | NE |
| 2 | 82 | 25 | - | 2 | 6 | NE |
| 3 | 83 | 20 | - | 3 | 5 | N |
| 4 | 81 | 27 | - | 3 | 6 | NE |
| 5 | 79 | 27 | - | 4 | 7 | E |
| 6 | 78 | 27 | - | 3 | 6 | N |
| 7 | 83 | 22 | - | 4 | 8 | N |
| 8 | 90 | 29 | - | 1 | 4 | SE |
| 9 | 97 | 31 | - | 2 | 5 | W |
| 10 | 103 | 28 | - | 2 | 6 | W |
| 11 | 105 | 23 | - | 5 | 8 | W |
| 12 | 111 | 14 | - | 2 | 6 | NW |
| 1 | 109 | 18 | - | 2 | 5 | NE |
| 2 | 107 | 21 | - | 2 | 6 | E |
| 3 | 109 | 23 | - | 2 | 5 | E |
| 4 | 104 | 21 | - | 1 | 4 | W |
| 5 | 101 | 28 | - | 2 | 7 | W |
| 6 | 100 | 19 | - | 2 | 6 | N |
| 7 | 96 | 25 | - | 3 | 5 | NE |
| 8 | 89 | 44 | - | 3 | 6 | NE |
| 9 | 82 | 51 | - | 3 | 5 | SW |
| 10 | 73 | 58 | - | 3 | 9 | SW |
| 11 | 71 | 57 | - | 3 | 6 | NW |
| 12 | 71 | 58 | - | 3 | 6 | E |
| 1 | 71 | 60 | - | 1 | 4 | E |
| 2 | 81 | 32 | - | 3 | 7 | SW |
| 3 | 73 | 57 | - | 2 | 6 | NE |
| 4 | 71 | 60 | - | 1 | 4 | E |
| 5 | 71 | 58 | - | 3 | 6 | E |
| 6 | 71 | 57 | - | 3 | 6 | NW |
| 7 | 73 | 58 | - | 3 | 9 | SW |
| 8 | 82 | 51 | - | 3 | 5 | SW |
| 9 | 89 | 44 | - | 3 | 6 | NE |
| 10 | 96 | 25 | - | 3 | 5 | NE |
| 11 | 100 | 19 | - | 2 | 6 | N |
| 12 | 101 | 21 | - | 2 | 7 | W |
| 1 | 104 | 21 | - | 1 | 4 | W |
| 2 | 105 | 23 | - | 2 | 5 | E |
| 3 | 107 | 21 | - | 2 | 6 | E |
| 4 | 109 | 18 | - | 2 | 5 | NE |
| 5 | 111 | 14 | - | 2 | 6 | NW |
| 6 | 105 | 23 | - | 5 | 8 | W |
| 7 | 103 | 28 | - | 2 | 6 | W |
| 8 | 97 | 31 | - | 2 | 5 | W |
| 9 | 88 | 34 | - | 5 | 8 | SW |
| 10 | 83 | 41 | - | 5 | 7 | SW |
| 11 | 81 | 41 | - | 4 | 6 | SW |
| 12 | 79 | 49 | - | 3 | 7 | NW |

## 19-Paloma

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 87 | 18 | - | 3 | 7 | NE |
| 2 | 82 | 25 | - | 2 | 6 | NE |
| 3 | 81 | 34 | - | 2 | 7 | S |
| 4 | 73 | 60 | - | 2 | 4 | NE |
| 5 | 75 | 49 | - | 2 | 4 | SW |
| 6 | 78 | 48 | - | 3 | 6 | W |
| 7 | 77 | 48 | - | 1 | 5 | NW |
| 8 | 84 | 40 | - | 5 | 11 | S |
| 9 | 91 | 27 | - | 10 | 13 | S |
| 10 | 98 | 21 | - | 4 | 7 | SE |
| 11 | 96 | 22 | - | 1 | 4 | E |
| 12 | 85 | 33 | - | 9 | 12 | S |
| 1 | 88 | 32 | - | 10 | 13 | S |
| 2 | 87 | 34 | - | 10 | 13 | S |
| 3 | 90 | 34 | - | 8 | 10 | S |
| 4 | 91 | 41 | - | 6 | 8 | S |
| 5 | 101 | 28 | - | 6 | 7 | S |
| 6 | 107 | 22 | - | 6 | 8 | S |
| 7 | 109 | 22 | - | 6 | 9 | S |
| 8 | 111 | 17 | - | 7 | 11 | S |
| 9 | 111 | 14 | - | 7 | 10 | S |
| 10 | 108 | 18 | - | 8 | 11 | S |
| 11 | 104 | 19 | - | 9 | 12 | S |
| 12 | 97 | 21 | - | 10 | 15 | S |
| 1 | 97 | 18 | - | 11 | 17 | S |
| 2 | 97 | 21 | - | 11 | 16 | S |
| 3 | 100 | 21 | - | 10 | 15 | S |
| 4 | 94 | 19 | - | 10 | 13 | S |
| 5 | 96 | 18 | - | 2 | 5 | SW |
| 6 | 96 | 35 | - | 2 | 3 | SE |
| 7 | 107 | 21 | - | 2 | 4 | SE |
| 8 | 110 | 16 | - | 2 | 7 | S |
| 9 | 110 | 17 | - | 3 | 5 | E |
| 10 | 111 | 13 | - | 3 | 5 | E |
| 11 | 109 | 15 | - | 2 | 6 | W |
| 12 | 107 | 17 | - | 2 | 6 | SE |
| 1 | 104 | 18 | - | 4 | 7 | SE |
| 2 | 96 | 35 | - | 4 | 7 | SE |
| 3 | 101 | 29 | - | 3 | 6 | SE |
| 4 | 94 | 34 | - | 3 | 4 | SW |
| 5 | 90 | 41 | - | 3 | 6 | SW |
| 6 | 90 | 29 | - | 1 | 4 | SE |
| 7 | 83 | 22 | - | 4 | 8 | N |
| 8 | 78 | 27 | - | 3 | 6 | N |
| 9 | 79 | 27 | - | 4 | 7 | E |
| 10 | 81 | 27 | - | 3 | 6 | NE |
| 11 | 82 | 20 | - | 3 | 5 | N |
| 12 | 82 | 25 | - | 2 | 6 | NE |
| 1 | 87 | 18 | - | 3 | 7 | NE |

## 26-Buckeye

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 83 | 26 | - | 2 | 7 | E |
| 2 | 86 | 26 | - | 2 | 6 | E |
| 3 | 90 | 24 | - | 4 | 8 | SE |
| 4 | 95 | 21 | - | 9 | 10 | SE |
| 5 | 96 | 17 | - | 7 | 14 | SE |
| 6 | 99 | 16 | - | 3 | 7 | SW |
| 7 | 101 | 14 | - | 2 | 4 | SE |
| 8 | 104 | 11 | - | 2 | 7 | S |
| 9 | 106 | 10 | - | 4 | 10 | S |
| 10 | 108 | 9 | - | 3 | 6 | S |
| 11 | 110 | 8 | - | 3 | 6 | S |
| 12 | 110 | 8 | - | 2 | 5 | SE |
| 1 | 108 | 8 | - | 2 | 5 | SW |
| 2 | 107 | 8 | - | 2 | 5 | SW |
| 3 | 106 | 8 | - | 2 | 5 | NW |
| 4 | 105 | 8 | - | 8 | 17 | NE |
| 5 | 105 | 2 | - | 2 | 2 | VR |
| 6 | 105 | 11 | - | 11 | 11 | E |
| 7 | 105 | 15 | - | 15 | 15 | NE |
| 8 | 98 | 24 | TS | 31 | 31 | N |
| 9 | 98 | 17 | - | 26 | 26 | N |
| 10 | 96 | 16 | - | 23 | 23 | E |
| 11 | 94 | 14 | - | 14 | 14 | E |
| 12 | 92 | 18 | - | 30 | 30 | SE |

## 06-Maricopa

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 86 | 20 | - | 6 | 12 | S |
| 2 | 86 | 17 | - | 7 | 12 | S |
| 3 | 85 | 16 | - | 8 | 11 | S |
| 4 | 84 | 16 | - | 6 | 9 | S |
| 5 | 81 | 22 | - | 4 | 6 | E |
| 6 | 80 | 26 | - | 4 | 7 | SE |
| 7 | 81 | 32 | - | 4 | 7 | E |
| 8 | 90 | 22 | - | 6 | 10 | S |
| 9 | 96 | 18 | - | 5 | 9 | S |
| 10 | 101 | 13 | - | 8 | 12 | S |
| 11 | 103 | 12 | - | 6 | 11 | S |
| 12 | 106 | 11 | - | 6 | 13 | S |
| 1 | 108 | 11 | - | 8 | 13 | W |
| 2 | 109 | 10 | - | 6 | 11 | SW |
| 3 | 110 | 10 | - | 4 | 11 | SW |
| 4 | 112 | 8 | - | 4 | 11 | W |
| 5 | 112 | 8 | - | 4 | 7 | SE |
| 6 | 109 | 12 | - | 4 | 6 | E |
| 7 | 107 | 14 | - | 2 | 5 | NE |
| 8 | 105 | 16 | - | 4 | 11 | N |
| 9 | 99 | 16 | - | 5 | 16 | E |
| 10 | 96 | 18 | - | 4 | 11 | E |
| 11 | 92 | 24 | - | 4 | 9 | SW |
| 12 | 91 | 25 | - | 3 | 5 | S |

## MARICOPA

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 87 | 18 | - | 3 | 7 | NE |
| 2 | 82 | 25 | - | 2 | 6 | NE |
| 3 | 81 | 34 | - | 2 | 7 | S |
| 4 | 73 | 60 | - | 2 | 4 | NE |
| 5 | 75 | 49 | - | 2 | 4 | SW |
| 6 | 78 | 48 | - | 3 | 6 | W |
| 7 | 77 | 48 | - | 1 | 5 | NW |
| 8 | 84 | 40 | - | 5 | 11 | S |
| 9 | 91 | 27 | - | 10 | 13 | S |
| 10 | 98 | 21 | - | 4 | 7 | SE |
| 11 | 96 | 22 | - | 1 | 4 | E |
| 12 | 85 | 33 | - | 9 | 12 | S |
| 1 | 88 | 32 | - | 10 | 13 | S |
| 2 | 87 | 34 | - | 10 | 13 | S |
| 3 | 90 | 34 | - | 8 | 10 | S |
| 4 | 91 | 41 | - | 6 | 8 | S |
| 5 | 101 | 28 | - | 6 | 7 | S |
| 6 | 107 | 22 | - | 6 | 8 | S |
| 7 | 109 | 22 | - | 6 | 9 | S |
| 8 | 111 | 17 | - | 7 | 11 | S |
| 9 | 111 | 14 | - | 7 | 10 | S |
| 10 | 108 | 18 | - | 8 | 11 | S |
| 11 | 104 | 19 | - | 9 | 12 | S |
| 12 | 97 | 21 | - | 10 | 15 | S |
| 1 | 97 | 18 | - | 11 | 17 | S |
| 2 | 97 | 21 | - | 11 | 16 | S |
| 3 | 100 | 21 | - | 10 | 15 | S |
| 4 | 94 | 19 | - | 10 | 13 | S |
| 5 | 96 | 18 | - | 2 | 5 | SW |
| 6 | 96 | 35 | - | 2 | 3 | SE |
| 7 | 107 | 21 | - | 2 | 4 | SE |
| 8 | 110 | 16 | - | 2 | 7 | S |
| 9 | 110 | 17 | - | 3 | 5 | E |
| 10 | 111 | 13 | - | 3 | 5 | E |
| 11 | 109 | 15 | - | 2 | 6 | W |
| 12 | 107 | 17 | - | 2 | 6 | SE |
| 1 | 104 | 18 | - | 4 | 7 | SE |
| 2 | 96 | 35 | - | 4 | 7 | SE |
| 3 | 101 | 29 | - | 3 | 6 | SE |
| 4 | 94 | 34 | - | 3 | 4 | SW |
| 5 | 90 | 41 | - | 3 | 6 | SW |
| 6 | 90 | 29 | - | 1 | 4 | SE |
| 7 | 83 | 22 | - | 4 | 8 | N |
| 8 | 78 | 27 | - | 3 | 6 | N |
| 9 | 79 | 27 | - | 4 | 7 | E |
| 10 | 81 | 27 | - | 3 | 6 | NE |
| 11 | 82 | 20 | - | 3 | 5 | N |
| 12 | 82 | 25 | - | 2 | 6 | NE |
| 1 | 87 | 18 | - | 3 | 7 | NE |

## 08-Parker

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 83 | 26 | - | 2 | 5 | SE |
| 2 | 83 | 29 | - | 7 | 11 | S |
| 3 | 81 | 34 | - | 2 | 7 | S |
| 4 | 73 | 60 | - | 2 | 4 | NE |
| 5 | 75 | 49 | - | 2 | 4 | SW |
| 6 | 78 | 48 | - | 3 | 6 | W |
| 7 | 77 | 48 | - | 1 | 5 | NW |
| 8 | 84 | 40 | - | 5 | 11 | S |
| 9 | 91 | 27 | - | 10 | 13 | S |
| 10 | 98 | 21 | - | 4 | 7 | SE |
| 11 | 96 | 22 | - | 1 | 4 | E |
| 12 | 85 | 33 | - | 9 | 12 | S |
| 1 | 88 | 32 | - | 10 | 13 | S |
| 2 | 87 | 34 | - | 10 | 13 | S |
| 3 | 90 | 34 | - | 8 | 10 | S |
| 4 | 91 | 41 | - | 6 | 8 | S |
| 5 | 101 | 28 | - | 6 | 7 | S |
| 6 | 107 | 22 | - | 6 | 8 | S |
| 7 | 109 | 22 | - | 6 | 9 | S |
| 8 | 111 | 17 | - | 7 | 11 | S |
| 9 | 111 | 14 | - | 7 | 10 | S |
| 10 | 108 | 18 | - | 8 | 11 | S |
| 11 | 104 | 19 | - | 9 | 12 | S |
| 12 | 97 | 21 | - | 10 | 15 | S |
| 1 | 97 | 18 | - | 11 | 17 | S |
| 2 | 97 | 21 | - | 11 | 16 | S |
| 3 | 100 | 21 | - | 10 | 15 | S |
| 4 | 94 | 19 | - | 10 | 13 | S |
| 5 | 96 | 18 | - | 2 | 5 | SW |
| 6 | 96 | 35 | - | 2 | 3 | SE |
| 7 | 107 | 21 | - | 2 | 4 | SE |
| 8 | 110 | 16 | - | 2 | 7 | S |
| 9 | 110 | 17 | - | 3 | 5 | E |
| 10 | 111 | 13 | - | 3 | 5 | E |
| 11 | 109 | 15 | - | 2 | 6 | W |
| 12 | 107 | 17 | - | 2 | 6 | SE |
| 1 | 104 | 18 | - | 4 | 7 | SE |
| 2 | 96 | 35 | - | 4 | 7 | SE |
| 3 | 101 | 29 | - | 3 | 6 | SE |
| 4 | 94 | 34 | - | 3 | 4 | SW |
| 5 | 90 | 41 | - | 3 | 6 | SW |
| 6 | 90 | 29 | - | 1 | 4 | SE |
| 7 | 83 | 22 | - | 4 | 8 | N |
| 8 | 78 | 27 | - | 3 | 6 | N |
| 9 | 79 | 27 | - | 4 | 7 | E |
| 10 | 81 | 27 | - | 3 | 6 | NE |
| 11 | 82 | 20 | - | 3 | 5 | N |
| 12 | 82 | 25 | - | 2 | 6 | NE |
| 1 | 87 | 18 | - | 3 | 7 | NE |

## PARKER

| Hr | T(F) | RH | Rn | Spd | Max | Dir |
|---|---|---|---|---|---|---|
| 1 | 87 | 18 | - | 3 | 7 | NE |
| 2 | 82 | 25 | - | 2 | 6 | NE |
| 3 | 81 | 34 | - | 2 | 7 | S |
| 4 | 73 | 60 | - | 2 | 4 | NE |
| 5 | 75 | 49 | - | 2 | 4 | SW |
| 6 | 78 | 48 | - | 3 | 6 | W |
| 7 | 77 | 48 | - | 1 | 5 | NW |
| 8 | 84 | 40 | - | 5 | 11 | S |
| 9 | 91 | 27 | - | 10 | 13 | S |
| 10 | 98 | 21 | - | 4 | 7 | SE |
| 11 | 96 | 22 | - | 1 | 4 | E |
| 12 | 85 | 33 | - | 9 | 12 | S |
| 1 | 88 | 32 | - | 10 | 13 | S |
| 2 | 87 | 34 | - | 10 | 13 | S |
| 3 | 90 | 34 | - | 8 | 10 | S |
| 4 | 91 | 41 | - | 6 | 8 | S |
| 5 | 101 | 28 | - | 6 | 7 | S |
| 6 | 107 | 22 | - | 6 | 8 | S |
| 7 | 109 | 22 | - | 6 | 9 | S |
| 8 | 111 | 17 | - | 7 | 11 | S |
| 9 | 111 | 14 | - | 7 | 10 | S |
| 10 | 108 | 18 | - | 8 | 11 | S |
| 11 | 104 | 19 | - | 9 | 12 | S |
| 12 | 97 | 21 | - | 10 | 15 | S |
| 1 | 97 | 18 | - | 11 | 17 | S |
| 2 | 97 | 21 | - | 11 | 16 | S |
| 3 | 100 | 21 | - | 10 | 15 | S |
| 4 | 94 | 19 | - | 10 | 13 | S |
| 5 | 96 | 18 | - | 2 | 5 | SW |
| 6 | 96 | 35 | - | 2 | 3 | SE |
| 7 | 107 | 21 | - | 2 | 4 | SE |
| 8 | 110 | 16 | - | 2 | 7 | S |
| 9 | 110 | 17 | - | 3 | 5 | E |
| 10 | 111 | 13 | - | 3 | 5 | E |
| 11 | 109 | 15 | - | 2 | 6 | W |
| 12 | 107 | 17 | - | 2 | 6 | SE |
| 1 | 104 | 18 | - | 4 | 7 | SE |
| 2 | 96 | 35 | - | 4 | 7 | SE |
| 3 | 101 | 29 | - | 3 | 6 | SE |
| 4 | 94 | 34 | - | 3 | 4 | SW |
| 5 | 90 | 41 | - | 3 | 6 | SW |
| 6 | 90 | 29 | - | 1 | 4 | SE |
| 7 | 83 | 22 | - | 4 | 8 | N |
| 8 | 78 | 27 | - | 3 | 6 | N |
| 9 | 79 | 27 | - | 4 | 7 | E |
| 10 | 81 | 27 | - | 3 | 6 | NE |
| 11 | 82 | 20 | - | 3 | 5 | N |
| 12 | 82 | 25 | - | 2 | 6 | NE |
| 1 | 87 | 18 | - | 3 | 7 | NE |

## Event Contrib. Analysis

Hourly $PM_{10}$ Conc. (ug/m$^3$)

| Hr | 1 | 2 | MONITORS: | | | |
|---|---|---|---|---|---|---|
| 1 | 102 | 287 | 1-PC Geronimo | | | |
| 2 | 84 | 293 | 2-PC Green Valley | | | |
| 3 | 135 | 224 | | | | |
| 4 | 96 | 208 | | | | |
| 5 | 36 | 89 | 24-Hr. Avg $PM_{10}$ Conc | | | |
| 6 | 46 | 39 | Monitor: | with Event | w/o Event | |
| 7 | 60 | 31 | 1-PC Geor. | 81.0 | 52.4 | |
| 8 | 60 | 31 | 2-Gr. Vly | 86.7 |

## RILLITO PM10 STATE IMPLEMENTATION PLAN CONTROL MEASURES

### Control Measures

The following control measures have been in place in the Rillito Nonattainment Area (RNA) since the submittal of the 1994 $PM_{10}$ SIP.

- The operating permit for the Arizona Portland Cement Company (APC), issued by the Arizona Department of Environmental Quality, requires roadways and unpaved parking areas within the company's facilities to undergo stabilization on a routine basis and require the company to keep detailed maintenance records. APC has implemented reasonably available control measures and technologies to mitigate $PM_{10}$ emissions. These measures include baghouses, dust collectors, spray bars, hoods, shrouds, and a continuously operating monitor system.
- Public roadways within the RNA are maintained by Pima County with $PM_{10}$ certified street sweepers.
- Pima County stabilizes road shoulders within the RNA on an as-needed basis.
- Pima County enforces a grading ordinance which requires a permit for earth moving activities. The permits call for the use of dust suppressants during and following grading projects. Additionally, public roadways and sidewalks are to be kept free of dirt and debris resulting from permitted earth moving activities at all times.

This series of control measures was responsible for bringing the RNA into attainment of the 24-hour $PM_{10}$ NAAQS.

| **Creditable Control Measures from the 1994 Rillito $PM_{10}$ SIP** | | |
|---|---|---|
| **Control Measure** | **Details** | **Status** |
| APC Plant and Quarry Operations | Comprehensive road stabilization plan to mitigate emissions. | In effect, included in the APC operating permit. |
| Pima County Grading Ordinance | Permits for earth moving require stabilization to mitigate fugitive emissions. | In effect. |
| Bank Stabilization of Santa Cruz River | One time control measure. | Complete. |
| Reduced Tillage Program | United States Department of Agriculture pilot program was discontinued. | Discontinued. |
| Dust Stabilization – Rillito Community | Dirt roads within the community are now paved. | Complete. |
| Avra Valley Road Shoulder Dust Stabilization | 2.5 miles will undergo blading and rolling followed by application of MC once per year. | In effect on an as needed basis. |

ADEQ
Arizona Department of Environmental Quality
Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

# GREEN VALLEY AND VICINITY
# DUST RE-ENTRAINMENT RISK WIND FORECAST
## ISSUED WEDNESDAY, JULY 04, 2007
Three-day weather outlook:

**NOTE: During active summer monsoon episodes, outflows from even distant thunderstorms have the potential to cause periods of gusty winds and dense blowing dust.**

It appears that the summer monsoon will begin by this weekend over much of Arizona. For the Green Valley area this means an increasing potential for erratic and strong outflow winds from showers and thunderstorms. Since such winds have and can generate areas of blowing dust, the risk level has been raised to moderate.

| | WINDS | RE-ENTRAINMENT RISK |
|---|---|---|
| **Day #1: Thu 07/05/2007** | No significant winds expected except strong and gusty due to outflow from thunderstorms. | **MODERATE** |
| **Day #2: Fri 07/06/2007** | No significant winds expected except strong and gusty due to outflow from thunderstorms. | **MODERATE** |
| **Day #3: Sat 07/07/2007** | No significant winds expected except strong and gusty due to outflow from thunderstorms. | **MODERATE** |

**CKR 09/07/2006**

ADEQ
Arizona Department of Environmental Quality
Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

# MARICOPA COUNTY
# DUST CONTROL ACTION FORECAST
## ISSUED WEDNESDAY, JULY 04 2007
Three-day weather outlook:

**NOTE: During active summer monsoon episodes, outflows from even distant thunderstorms have the potential to cause periods of gusty winds and dense blowing dust.**

It appears that the summer monsoon will begin by this weekend over much of Arizona. For the local forecast area this means an increasing potential for erratic and strong outflow winds from showers and thunderstorms. Since such winds have and can generate areas of blowing dust, the risk level has been raised to moderate.

## R I S K  F A C T O R S

| | WINDS | | STAGNATION | | RISK LEVEL |
|---|---|---|---|---|---|
| **Day #1: Thu 07/05/2007** | Variable to 10 mph except strong and gusty due to outflow from late afternoon and evening thunderstorms. | + | Rather stagnant during the morning hours with improvement by afternoon. | = | **MODERATE** |
| **Day #2: Fri 07/06/2007** | Variable to 10 mph except strong and gusty due to outflow from late afternoon and evening thunderstorms. | + | Rather stagnant during the morning hours with improvement by afternoon. | = | **MODERATE** |
| **Day #3: Sat 07/07/2007** | West to northwesterly 5-15 mph except strong and gusty due to outflow from late afternoon and evening thunderstorms. | + | Rather stagnant during the morning hours with improvement by afternoon. | = | **MODERATE** |

The Maricopa County Dust Control Action Forecast is issued to assist in the planning of work activities to help reduce dust pollution. To review the complete air quality forecast for the Phoenix metropolitan area and the health effects of air pollution, please see ADEQ's Air Quality Forecast at http://www.azdeq.gov/environ/air/ozone/ensemble.pdf, or call 602-771-2367 for recorded forecast information.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

# QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA
# (final)
# HOURLY OBSERVATIONS TABLE
# TUCSON INTERNATIONAL AIRPORT (23160)
# TUCSON , AZ
# (07/2007)

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: 2549 ft. above sea level
Latitude: 32.131
Longitude: -110.955
Data Version: VER3

| Date | Time (LST) | Station Type | Sky Conditions | Visibility (SM) | Weather Type | Dry Bulb Temp | | Wet Bulb Temp | | Dew Point Temp | | Rel Humd % | Wind Speed (MPH) | Wind Dir | Wind Gusts (MPH) | Station Pressure (in. hg) | Press Tend | Net 3-hr Chg (mb) | Sea Level Pressure (in. hg) | Report Type | Precip. Total (in) | Alti-meter (in. hg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (F) | (C) | (F) | (C) | (F) | (C) | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 05 | 0053 | 11 | CLR | 10.00 | | 93 | 33.9 | 64 | 17.7 | 44 | 6.7 | 18 | 9 | 160 | | 27.27 | | | 29.75 | AA | | 29.94 |
| 05 | 0153 | 11 | CLR | 10.00 | | 93 | 33.9 | 64 | 17.7 | 44 | 6.7 | 18 | 11 | 120 | | 27.30 | 3 | 013 | M | AA | | 29.97 |
| 05 | 0253 | 11 | CLR | 10.00 | | 91 | 32.8 | 64 | 17.5 | 45 | 7.2 | 20 | 14 | 120 | | 27.29 | | | 29.77 | AA | | 29.96 |
| 05 | 0353 | 11 | CLR | 10.00 | | 88 | 31.1 | 63 | 17.0 | 45 | 7.2 | 22 | 0 | 000 | | 27.29 | | | 29.78 | AA | | 29.96 |
| 05 | 0453 | 11 | CLR | 10.00 | | 87 | 30.6 | 62 | 16.6 | 44 | 6.7 | 22 | 6 | 130 | | 27.31 | 3 | 003 | 29.80 | AA | | 29.98 |
| 05 | 0553 | 11 | CLR | 10.00 | | 88 | 31.1 | 63 | 17.0 | 45 | 7.2 | 22 | 9 | 130 | | 27.31 | | | 29.80 | AA | | 29.98 |
| 05 | 0653 | 11 | CLR | 10.00 | | 89 | 31.7 | 63 | 17.2 | 45 | 7.2 | 22 | 13 | 120 | | 27.32 | | | 29.81 | AA | | 29.99 |
| 05 | 0753 | 11 | CLR | 10.00 | | 92 | 33.3 | 66 | 18.6 | 49 | 9.4 | 23 | 14 | 130 | 20 | 27.33 | 1 | 006 | 29.82 | AA | | 30.00 |
| 05 | 0853 | 11 | CLR | 10.00 | | 96 | 35.6 | 67 | 19.3 | 49 | 9.4 | 20 | 13 | 100 | | 27.32 | | | 29.81 | AA | | 29.99 |
| 05 | 0953 | 11 | CLR | 10.00 | | 99 | 37.2 | 68 | 19.8 | 49 | 9.4 | 18 | 14 | 130 | | 27.32 | | | 29.80 | AA | | 29.99 |
| 05 | 1053 | 11 | CLR | 10.00 | | 101 | 38.3 | 68 | 19.9 | 48 | 8.9 | 17 | 9 | 100 | 16 | 27.32 | 8 | 003 | 29.80 | AA | | 29.99 |
| 05 | 1153 | 11 | CLR | 10.00 | | 103 | 39.4 | 67 | 19.6 | 45 | 7.2 | 14 | 8 | 110 | | 27.31 | | | 29.79 | AA | | 29.98 |
| 05 | 1253 | 11 | CLR | 10.00 | | 104 | 40.0 | 67 | 19.2 | 42 | 5.6 | 12 | 0 | 000 | | 27.29 | | | 29.77 | AA | | 29.96 |
| 05 | 1353 | 11 | CLR | 10.00 | | 107 | 41.7 | 67 | 19.3 | 40 | 4.4 | 10 | 5 | VR | | 27.27 | 8 | 016 | 29.75 | AA | | 29.94 |
| 05 | 1453 | 11 | CLR | 10.00 | | 109 | 42.8 | 67 | 19.3 | 38 | 3.3 | 9 | 7 | VR | | 27.25 | | | 29.72 | AA | | 29.91 |
| 05 | 1553 | 11 | CLR | 10.00 | | 107 | 41.7 | 67 | 19.3 | 40 | 4.4 | 10 | 7 | 020 | | 27.22 | | | 29.70 | AA | | 29.88 |
| 05 | 1653 | 11 | CLR | 10.00 | | 106 | 41.1 | 67 | 19.3 | 41 | 5.0 | 11 | 0 | 000 | | 27.20 | 6 | 023 | 29.68 | AA | | 29.86 |
| 05 | 1753 | 11 | CLR | 10.00 | | 108 | 42.2 | 67 | 19.5 | 40 | 4.4 | 10 | 3 | 020 | | 27.20 | | | 29.67 | AA | | 29.86 |
| 05 | 1853 | 11 | CLR | 10.00 | | 106 | 41.1 | 67 | 19.3 | 41 | 5.0 | 11 | 9 | 040 | 17 | 27.22 | | | 29.69 | AA | | 29.88 |
| 05 | 1924 | 11 | CLR | 5.00 | VCTS HZ | 100 | 38.0 | 66 | 19.1 | 45 | 7.0 | 15 | 23 | 080 | 39 | 27.24 | | | M | SP | | 29.90 |
| 05 | 1948 | 11 | CLR | 10.00 | | 99 | 37.0 | 66 | 18.9 | 45 | 7.0 | 16 | 15 | 050 | 24 | 27.26 | | | M | SP | | 29.92 |
| 05 | 1953 | 11 | CLR | 10.00 | | 99 | 37.2 | 66 | 18.7 | 44 | 6.7 | 15 | 14 | 040 | 25 | 27.27 | 1 | 022 | 29.75 | AA | | 29.93 |
| 05 | 2016 | 11 | CLR | 8.00 | VCTS | 97 | 36.0 | 66 | 18.6 | 45 | 7.0 | 17 | 14 | 030 | 24 | 27.27 | | | M | SP | | 29.94 |
| 05 | 2031 | 11 | CLR | 7.00 | | 99 | 37.0 | 65 | 18.1 | 41 | 5.0 | 14 | 21 | 010 | 32 | 27.27 | | | M | SP | | 29.94 |
| 05 | 2045 | 11 | CLR | 9.00 | VCTS | 99 | 37.0 | 64 | 17.8 | 39 | 4.0 | 12 | 25 | 030 | 34 | 27.28 | | | M | SP | | 29.95 |
| 05 | 2053 | 11 | CLR | 9.00 | VCTS | 99 | 37.2 | 65 | 18.1 | 41 | 5.0 | 14 | 26 | 010 | 32 | 27.29 | | | 29.78 | AA | | 29.96 |
| 05 | 2102 | 11 | CLR | 10.00 | | 99 | 37.0 | 64 | 17.8 | 39 | 4.0 | 12 | 22 | 330 | 41 | 27.29 | | | M | SP | | 29.96 |
| 05 | 2153 | 11 | FEW095 | 10.00 | | 99 | 37.0 | 64 | 17.8 | 39 | 3.9 | 12 | 13 | 100 | | 27.30 | | | 29.79 | AA | | 29.97 |
| 05 | 2253 | 11 | CLR | 10.00 | | 94 | 34.4 | 65 | 18.3 | 46 | 7.8 | 19 | 10 | 130 | | 27.31 | 1 | 017 | 29.80 | AA | | 29.98 |
| 05 | 2353 | 11 | CLR | 10.00 | | 92 | 33.3 | 65 | 18.4 | 48 | 8.9 | 22 | 18 | 150 | | 27.35 | | | 29.83 | AA | | 30.02 |

*Dynamically generated Fri Feb 08 15:36:49 EST 2008 via http://cdo.ncdc.noaa.gov/qclcd/QCLCD*

U.S. Department of Commerce
National Oceanic & Atmospheric Administration

# QUALITY CONTROLLED LOCAL CLIMATOLOGICAL DATA
# (final)
# HOURLY OBSERVATIONS TABLE
# DAVIS-MONTHAN AFB AIRPORT (23109)
# TUCSON , AZ
# (07/2007)

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801

Elevation: 0 ft. above sea level
Latitude: 32.166
Longitude: -110.883
Data Version: VER2

| Date | Time (LST) | Station Type | Sky Conditions | Visibility (SM) | Weather Type | Dry Bulb Temp | | Wet Bulb Temp | | Dew Point Temp | | Rel Humd % | Wind Speed (MPH) | Wind Dir | Wind Gusts (MPH) | Station Pressure (in. hg) | Press Tend | Net 3-hr Chg (mb) | Sea Level Pressure (in. hg) | Report Type | Precip. Total (in) | Alti-meter (in. hg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (F) | (C) | (F) | (C) | (F) | (C) | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 05 | 0055 | 0 | CLR | 10.00 | | 95 | 35.0 | 66 | 18.6 | 47 | 8.5 | 19 | 23 | 120 | | 27.11 | | | 29.65 | AA | | 29.92 |
| 05 | 0155 | 0 | CLR | 10.00 | | 93 | 34.0 | 65 | 18.5 | 48 | 8.7 | 21 | 22 | 120 | 34 | 27.14 | 3 | 009 | 29.69 | AA | | 29.95 |
| 05 | 0255 | 0 | CLR | 10.00 | | 91 | 32.7 | 65 | 18.2 | 48 | 8.7 | 23 | 18 | 120 | | 27.13 | | | 29.68 | AA | | 29.94 |
| 05 | 0355 | 0 | CLR | 10.00 | | 89 | 31.6 | 64 | 17.8 | 48 | 8.9 | 24 | 16 | 120 | | 27.14 | | | 29.69 | AA | | 29.95 |
| 05 | 0455 | 0 | CLR | 10.00 | | 85 | 29.7 | 62 | 16.9 | 47 | 8.6 | 27 | 6 | 170 | | 27.15 | 3 | 004 | 29.71 | AA | | 29.96 |
| 05 | 0555 | 0 | CLR | 10.00 | | 85 | 29.5 | 62 | 16.9 | 47 | 8.4 | 27 | 8 | 180 | | 27.16 | | | 29.72 | AA | | 29.98 |
| 05 | 0655 | 0 | CLR | 10.00 | | 90 | 32.3 | 64 | 18.0 | 48 | 9.0 | 24 | 15 | 130 | | 27.16 | | | 29.73 | AA | | 29.98 |
| 05 | 0755 | 0 | CLR | 10.00 | | 92 | 33.3 | 67 | 19.5 | 53 | 11.4 | 27 | 15 | 140 | 23 | 27.17 | 1 | 006 | 29.74 | AA | | 29.99 |
| 05 | 0855 | 0 | CLR | 10.00 | | 96 | 35.3 | 68 | 20.0 | 52 | 10.9 | 23 | 17 | 110 | | 27.16 | | | 29.73 | AA | | 29.98 |
| 05 | 0955 | 0 | CLR | 10.00 | | 98 | 36.4 | 68 | 20.0 | 51 | 10.7 | 20 | 14 | 120 | | 27.16 | | | 29.72 | AA | | 29.98 |
| 05 | 1055 | 0 | CLR | 10.00 | | 101 | 38.1 | 68 | 20.1 | 49 | 9.6 | 17 | 6 | 180 | | 27.16 | 8 | 001 | 29.72 | AA | | 29.98 |
| 05 | 1155 | 0 | CLR | 10.00 | | 104 | 39.8 | 67 | 19.5 | 44 | 6.9 | 13 | 3 | VR | | 27.15 | | | 29.70 | AA | | 29.96 |
| 05 | 1255 | 0 | CLR | 10.00 | | 104 | 39.8 | 67 | 19.5 | 44 | 6.9 | 13 | 10 | 130 | | 27.13 | | | 29.68 | AA | | 29.94 |
| 05 | 1355 | 0 | CLR | 10.00 | | 105 | 40.3 | 67 | 19.7 | 44 | 6.4 | 13 | 0 | 000 | | 27.11 | 8 | 017 | 29.66 | AA | | 29.92 |
| 05 | 1455 | 0 | CLR | 10.00 | | 106 | 41.2 | 68 | 19.8 | 44 | 6.4 | 12 | 8 | 300 | | 27.09 | | | 29.64 | AA | | 29.90 |
| 05 | 1555 | 0 | CLR | 10.00 | | 105 | 40.5 | 68 | 20.0 | 46 | 7.5 | 14 | 8 | 040 | 17 | 27.06 | | | 29.62 | AA | | 29.87 |
| 05 | 1655 | 0 | CLR | 10.00 | | 105 | 40.4 | 68 | 19.8 | 45 | 7.4 | 13 | 2 | VR | | 27.04 | 6 | 021 | 29.61 | AA | | 29.85 |
| 05 | 1755 | 0 | CLR | 10.00 | | 106 | 41.1 | 68 | 19.8 | 44 | 6.8 | 12 | 11 | 080 | | 27.04 | | | 29.61 | AA | | 29.85 |
| 05 | 1855 | 0 | CLR | 10.00 | | 105 | 40.3 | 67 | 19.7 | 44 | 6.4 | 13 | 15 | 060 | | 27.06 | | | 29.61 | AA | | 29.87 |
| 05 | 1918 | 0 | CLR | 10.00 | VCTS | 99 | 37.0 | 67 | 19.5 | 48 | 9.0 | 18 | 23 | 040 | 32 | 27.07 | | | 29.64 | AA | 0.02 | 29.88 |
| 05 | 1934 | 0 | CLR | 10.00 | | 99 | 37.0 | 67 | 19.5 | 48 | 9.0 | 18 | 16 | 060 | | 27.09 | | | 29.65 | AA | 0.02 | 29.90 |
| 05 | 1955 | 0 | FEW160 | 10.00 | | 98 | 36.7 | 67 | 19.1 | 47 | 8.3 | 18 | 24 | 020 | 31 | 27.11 | 3 | 019 | 29.67 | AA | 0.02 | 29.92 |
| 05 | 2055 | 0 | SCT160 | 10.00 | | 98 | 36.5 | 66 | 18.7 | 45 | 7.3 | 16 | 17 | 350 | 26 | 27.15 | | | 29.70 | AA | | 29.96 |
| 05 | 2116 | 0 | FEW140 | 10.00 | | 100 | 38.0 | 66 | 18.7 | 43 | 6.0 | 14 | 11 | 060 | 23 | 27.15 | | | 29.69 | AA | | 29.96 |
| 05 | 2124 | 0 | FEW140 | 10.00 | | 99 | 37.0 | 66 | 18.9 | 45 | 7.0 | 16 | 14 | 110 | | 27.15 | | | 29.70 | AA | | 29.96 |
| 05 | 2155 | 0 | FEW170 | 10.00 | | 96 | 35.7 | 66 | 18.8 | 47 | 8.3 | 19 | 16 | 100 | | 27.16 | | | 29.71 | AA | | 29.97 |
| 05 | 2255 | 0 | FEW180 | 10.00 | | 94 | 34.5 | 65 | 18.2 | 46 | 8.0 | 19 | 14 | 100 | | 27.16 | 1 | 016 | 29.71 | AA | | 29.97 |
| 05 | 2355 | 0 | CLR | 10.00 | | 92 | 33.6 | 66 | 18.6 | 49 | 9.5 | 23 | 18 | 130 | 30 | 27.18 | | | 29.74 | AA | | 30.00 |

*Dynamically generated Tue Feb 12 10:28:35 EST 2008 via [http://cdo.ncdc.noaa.gov/qclcd/QCLCD](http://cdo.ncdc.noaa.gov/qclcd/QCLCD)*