Technical Support Document
For the April 3, 2009
Pagosa Springs Exceptional Event

Prepared by the Technical Services Program
Air Pollution Control Division
Colorado Department of Public Health and Environment

May 29, 2012

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1.0 Introduction

1.1 PM_{10} Standards

In July 1987, the U.S. Environmental Protection Agency (EPA) promulgated National Ambient Air Quality Standards for Particulates with an aerodynamic diameter of 10 microns or less (PM_{10}). This is a size range that can affect the upper airways and can be inhaled into the alveolar regions of the lungs. The standard has one form, a 24-hour standard of 150 $\mu g/m^3$. The annual arithmetic mean standard of 50 $\mu g/m^3$ was revoked on October 17, 2006. The 24-hour standard is attained when the expected number of exceedances for each calendar year, averaged over three years, is less than or equal to one. The estimated number of exceedances is computed quarterly using available data and adjusting for missing sample days. A data recovery of 75 percent is needed for each calendar quarter to be considered a valid quarter of data. This standard was modified in by EPA in July 1997, but was subsequently nullified back to this form in May 1999.

1.2 Event Overview

On Friday April 3, 2009, Pagosa Springs Colorado recorded an exceedance of the twenty-four-hour PM_{10} standard with a concentration of 225 ug/m3 at the Pagosa Springs School monitor. The Colorado Department of Public Health and Environment (CDPHE), Air Pollution Control Division (APCD), has prepared this report for the U.S. Environmental Protection Agency (EPA) to demonstrate that the elevated PM_{10} concentrations in Pagosa Springs and other areas of Colorado and the exceedance of the National Ambient Air Quality Standard (NAAQS) for PM_{10} in Pagosa Springs were caused by a natural event, specifically a dust storm. It will be shown that this exceedance and the high PM_{10} readings are the consequence of a dust storm in the Four Corners area. This event meets the criteria outlined by the final "Treatment of Data Influenced by Exceptional Events" Rule (72 FR 13560). This report and the analysis and data contained within it show that this exceptional event passed the four required tests (a) through (d) under 40 CFR 50.14 (3)(iv). These tests are:

(a) The event satisfies the criteria set forth in 40 CFR 50.1(j) which requires that an exceptional event "affects air quality, is not reasonably controllable or preventable..." and that such events are "...natural event[s]".
(b) There is a clear causal relationship between the measurement under consideration and the event that is claimed to have affected the air quality in the area.
(c) The event is associated with a measured concentration in excess of normal historical fluctuations, including background; and
(d) There would have been no exceedance or violation but for the event.

Elevated 24-hour PM_{10} concentrations were recorded across Colorado on April 3, 2009. All of the noted April 3, 2009 twenty-four-hour PM_{10} concentrations were above the 95^{th} percentile concentrations for their locations. *The Pagosa Springs concentration is greater than the 99^{th} percentile, and a conservative estimate of the dust storm contribution to the total concentration is 182 – 188 $\mu g/m^3$. This is evidence that the event was associated with a measured concentration in excess of normal historical fluctuations including background. But for the dust storm to be described in detail in this report, there would have been no exceedance on this day in Pagosa Springs.*

This exceedance was the consequence of strong gusty winds ahead of a deep low pressure with a trailing cold front, in combination with dry conditions, which caused significant blowing dust across parts of Arizona, New Mexico and Colorado. These winds were partly the result of a developing low pressure centered over southwestern Utah with a cold front trailing to the south as well as a second low pressure system over south-central Wyoming. These low pressures merged and centered over Colorado on April 3, 2009. Surface weather analyses show an area of low pressure affecting the Four Corners region. *Winds in the dust source regions of northeast Arizona and in Flagstaff, Arizona were 74 mph on April 3, 2009. Surface winds of 20 to 54 mph with gusts of 25 to 91 mph were recorded across the Four Corners region on April 3, 2009. These speeds are above the thresholds for blowing dust identified in EPA draft guidance and in detailed analyses completed by the State of Colorado.*

Widespread restrictions to visibility occurred in the mountains of southwestern Colorado in the area that includes Pagosa Spring. These restrictions were not accompanied by periods of sustained high winds above the blowing dust thresholds. Such restrictions in the absence of wide-spread local sources and/or winds above blowing dust thresholds are diagnostic for blowing dust that is being transported into the region.

EPA's May 2, 2011 draft Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air Quality Data Affected by High Winds under the Exceptional Events Rule states "Empirical evidence shows that a sustained wind speed of 25 mph is typically the minimum wind speed needed to entrain particles from many stable surfaces ..." In addition, in both eastern and western Colorado it has been shown that wind speeds of 30 mph or greater and gusts of 40 mph or greater can cause blowing dust (see references for the *Natural Events Action Plan for High Wind Events – Lamar, Colorado* and the *Technical Support Document for the January 19, 2009 Lamar Exceptional Event* and Attachment A - Grand Junction, Colorado, Blowing Dust Climatology at the end of this document). For this blowing dust event, it has been assumed that sustained winds of 25 mph and higher or wind gusts of 40 mph and higher can cause blowing dust in northeast Arizona, northwest New Mexico, and southwest Colorado.

Climatological data for March and April shows that most of the Four Corners area had received less than normal precipitation for the period of interest. Soils in many areas of the Four Corners region had below normal moisture, and northeast Arizona was abnormally dry. Winslow in northeastern Arizona received only 0.05 inches of precipitation during the 30 days prior to April 8, 2009. This total is well below the approximate threshold for blowing dust conditions at Hopi identified in the analysis contained in Attachment A. Both wind speeds and soil moisture in the Four Corners area and northeastern Arizona were conducive to the generation of significant blowing dust.

Friction velocities calculated for the region also help to explain why blowing dust originated in the Four Corners region. Even undisturbed desert soils normally resistant to wind erosion will be susceptible to blowing dust when friction velocities are greater than about 1.0 to 2.0 meters per second. High values above 2.0 meters per second were present within the Little Colorado River Valley and Painted Desert region of northeast Arizona where satellite imagery shows the eruption of large plumes of blowing dust. Note that blowing dust will typically only occur where these values are high and the soils are dry and not protected by vegetation, forest cover, boulders, rocks, etc. This is why blowing dust occurred in the desert and more arid areas of northeast Arizona and northwest New Mexico on April 3, 2009. *The high friction velocities and the data on soil moisture conditions presented elsewhere in this report prove that this dust storm was a natural event that was not reasonably controllable or preventable.*

Satellite imagery shows large plumes of southwest to northeast trending blowing dust in the Painted Desert and Little Colorado River Valley region of northeastern Arizona on April 3, 2009. Satellite imagery also shows this dust moving across the Four Corners into southwest Colorado. Backward

trajectories, wind streamline analyses, and surface and upper-level wind patterns show that this dust would have been transported into Colorado on April 3, 2009. *Multiple sources of data and analyses of past dust storms in this area prove that this was a natural event and, more specifically, a significant natural dust storm originating in northeastern Arizona and northwestern New Mexico. But for the dust storm on April 3, 2009, this exceedance would not have occurred.*

The Center for Snow and Avalanche Studies (http://www.snowstudies.org/index.html) has been studying the effects of desert dust deposition on snowpack albedo and snowmelt in the San Juan Mountains of Colorado. The center's log of events lists April 3, 2009, as one of twelve Dust-on-Snow events for the 2008/2009 water year. Web cam photos from the Shamrock site in southwestern Colorado support the conclusion that widespread blowing dust was present on April 8, 2009. NOAA's Satellite Service Division also describes blowing dust moving from Arizona to southwest Colorado on April 3, 2009. *Multiple reports from professional experts at other institutions substantiate the conclusion that this was a natural event. But for the dust storm on April 3, 2009, this exceedance would not have occurred.*

2.0 Meteorological analysis of the April 3, 2009, blowing dust event and PM_{10} exceedance at Pagosa Springs.

On Friday April 3, 2009, Pagosa Springs Colorado recorded an exceedance of the twenty-four-hour PM_{10} standard with a concentration of 225 ug/m^3 at the Pagosa Springs School monitor. Elevated readings were recorded at the Alamosa Municipal monitor with a twenty-four-hour PM_{10} concentration of 107 ug/m^3, at the Alamosa Adams State College monitor with a twenty-four PM_{10} concentration of 92 ug/m^3, at the Mount Crested Butte monitor with a twenty-four-hour PM_{10} concentration of 80 ug/m^3, and at the Breckenridge monitor with a twenty-four-hour PM_{10} concentration of 79 ug/m^3 as shown in Figure 1. *All of these twenty-four-hour PM_{10} concentrations are above the 90th percentile concentrations for their locations. This is evidence that the event is associated with a measured concentration in excess of normal historical fluctuations including background.*

This exceedance and the elevated readings were the consequence of strong gusty winds ahead of a deep low pressure with a trailing cold front, in combination with dry conditions which caused significant blowing dust across parts of Arizona, New Mexico, and Colorado. The strong, prefrontal winds were partly the result of a 992 millibar low pressure centered over southwestern Utah and a 993 millibar low pressure centered over south-central Wyoming with a cold front trailing to the southwest from each low pressure as shown in the 12Z April 3, 2009 (5 AM MST) surface analysis in Figure 2. These low pressures merged and intensified into a broad 986 millibar low pressure centered over Colorado at 5 PM MST as shown in the 0Z April 4, 2009 (5 PM MST April 3) surface analysis in Figure 3. Areas north of the frontal boundary in Figures 2 and 3 did not have elevated PM_{10} readings.

These surface features were associated with a strong upper level trough digging into the western U.S. as shown in Figure 4. Figure 4 presents the 500 millibar analysis for 12Z April 3, 2009 (5 AM MST). The 500 millibar analysis shows a strong trough over the western U.S., with a wind speed maximum of 100 knots over Quillayute, Washington, (near Seattle) and strong height falls over portions of California and Nevada. Wind speed maxima and height falls of this magnitude and at this location in relation to the trough are indicators of a strong and intensifying system. Figure 5 shows the 500 millibar analysis for 00Z April 4, 2009 (5 PM MST April 3) which indicates that the trough continued to intensify during the day. Winds at 500 millibars over the dust source regions of northeast Arizona increased to 65 knots.

Figure 6 contains the afternoon sounding at Flagstaff, Arizona, at 00Z April 4, 2009 (5 PM MST April 3). It shows that there was good mixing to near the 500 millibar level or about 17,000 feet above ground level (AGL). In this mixed layer there were winds to 65 knots. Once the morning inversion had dissipated, the momentum associated with the winds above the inversion mixed down to the surface intensifying the surface winds induced by the surface pressure gradients associated with the surface low pressure system. The interaction between surface and upper level conditions caused strong gusty surface winds across portions of Arizona, New Mexico, and Colorado. The dust picked up by the strong gusty winds would have become suspended throughout the deep mixed layer. This would have allowed the dust to be transported long distances.

The Painted Desert in northeast Arizona has been shown to be a source region for dust deposited in Colorado (see Streater, 2009, and the Grand Junction, Colorado, Blowing Dust Climatology in Attachment A). Figure 7 is the surface streamline analysis for 16Z April 3, 2009 (9 AM MST). This analysis shows the winds streaming north from northeast Arizona into the areas of Colorado

that experienced elevated PM_{10} readings including Pagosa Springs. Northwestern Colorado including Grand Junction did not have elevated PM_{10} concentrations. The streamline analysis in Figure 7 shows winds from the northwest in northwestern Colorado which was on the back side of the front shown in Figures 2 and 3 and in a cleaner air mass than the air mass that was loaded with suspended dust from source regions in northeast Arizona and northwest New Mexico.

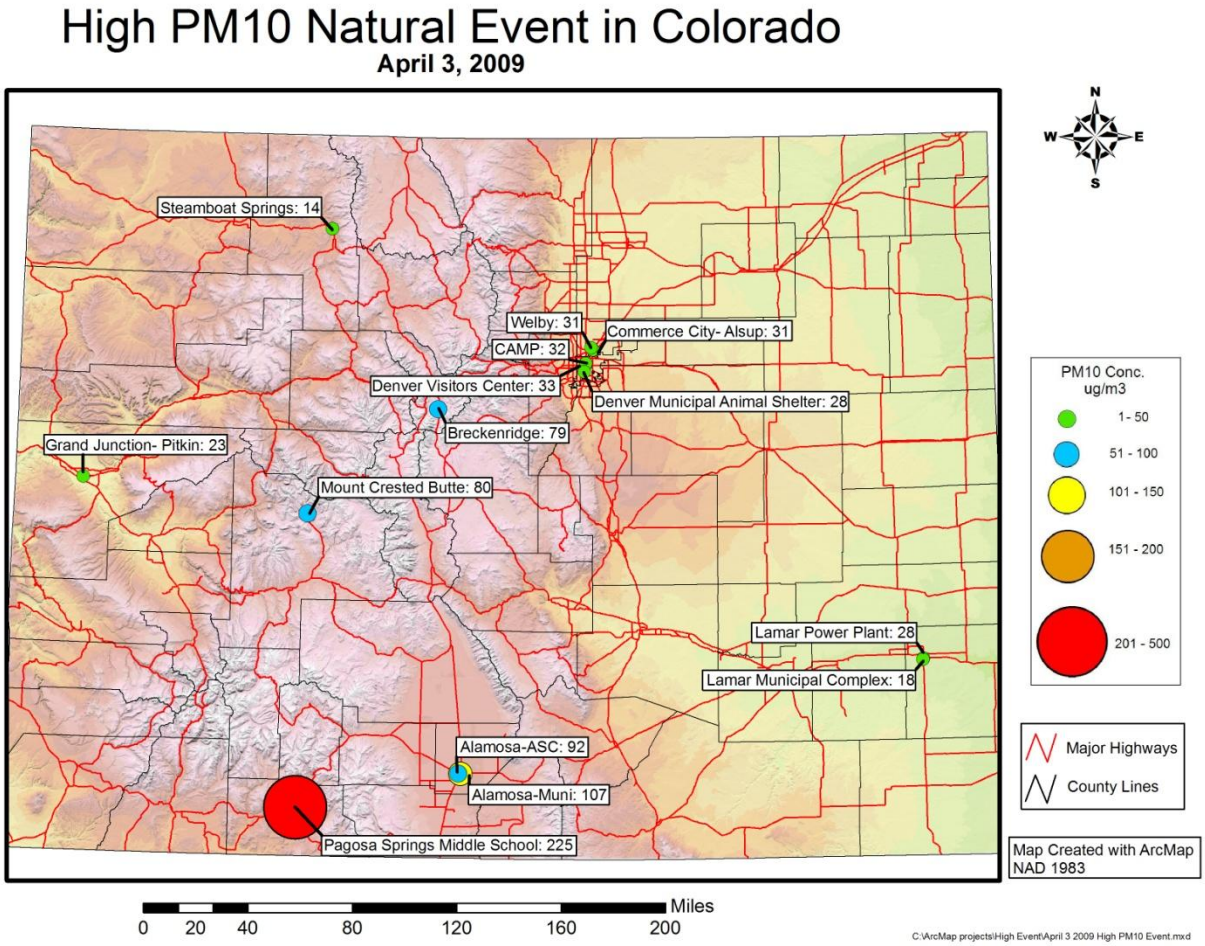


Figure 1. 24-hour PM10 readings for April 3, 2009.

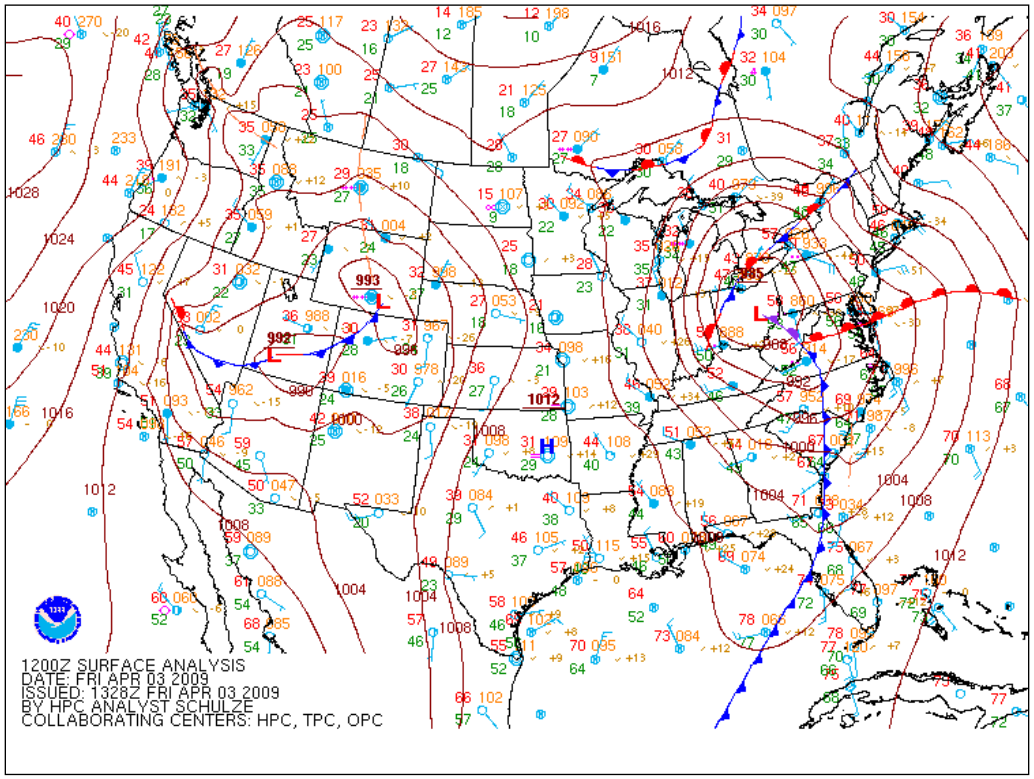


Figure 2. Surface analysis for 12Z April 3, 2009, or *5 AM MST* (from NCDC, SRRS Analysis and Forecast Charts http://nomads.ncdc.noaa.gov/ncep/NCEP).

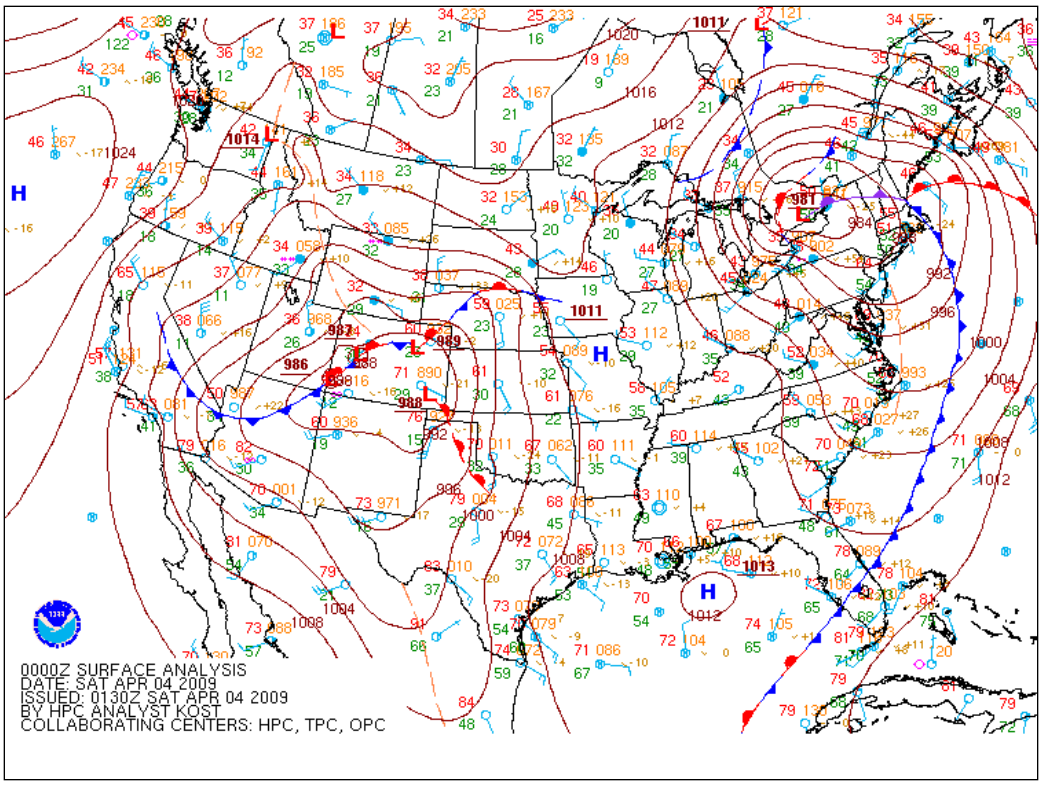


Figure 3. Surface analysis for 0Z April 4, 2009, or 5 PM MST April 3 (from NCDC, SRRS Analysis and Forecast Charts http://nomads.ncdc.noaa.gov/ncep/NCEP).

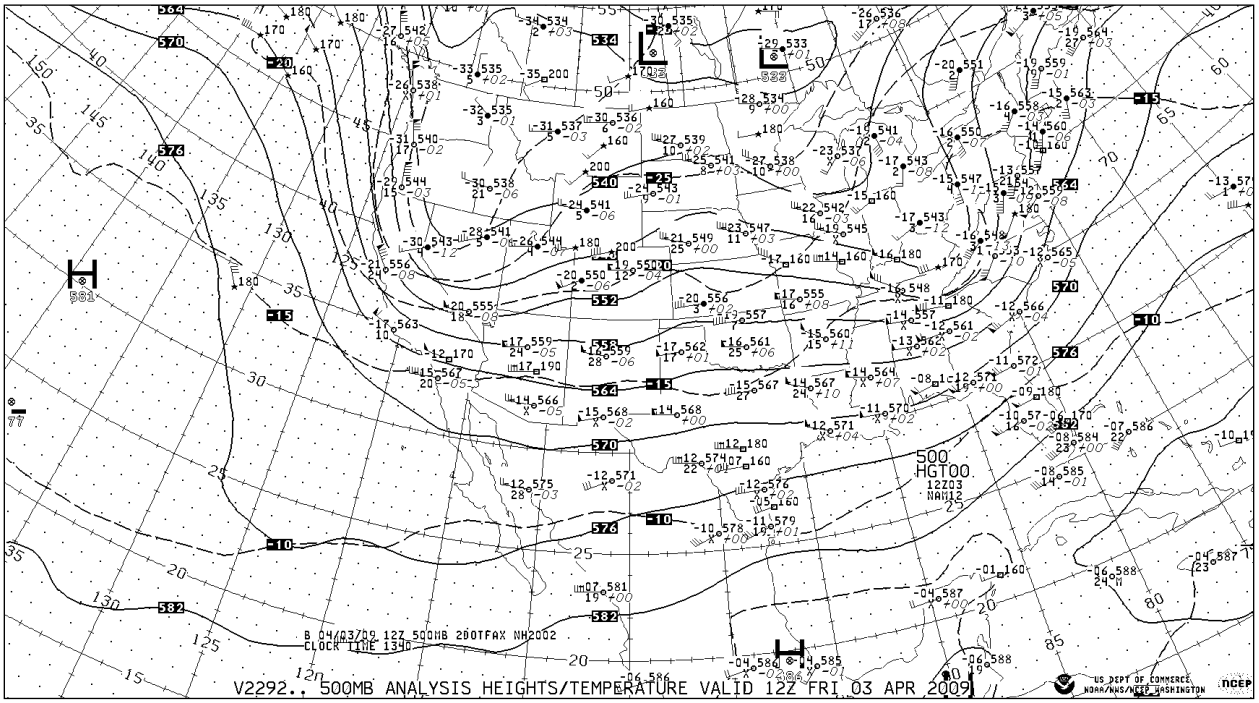


Figure 4. 500 mb analysis for 12Z April 3, 2009, or 5 AM MST April 3 (from NCDC, SRRS Analysis and Forecast Charts http://nomads.ncdc.noaa.gov/ncep/NCEP).

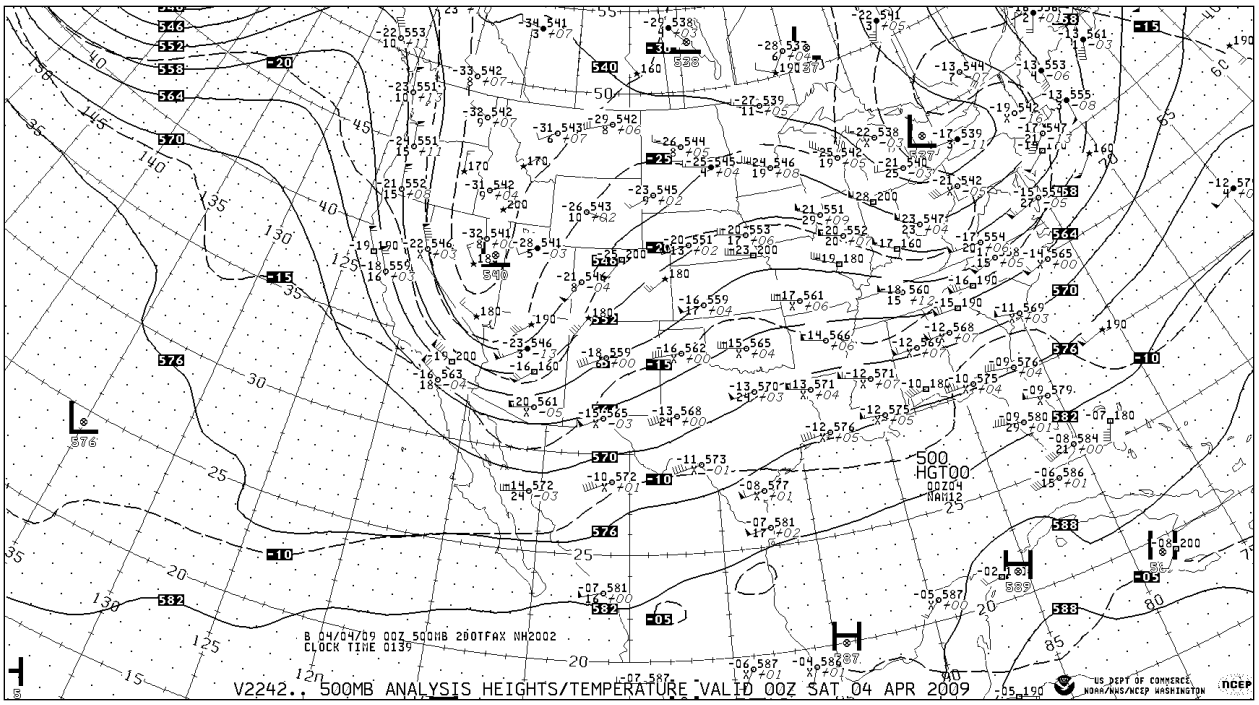


Figure 5. 500 mb analysis for 00Z April 4, 2009, or 5 PM MST April 3(from NCDC, SRRS Analysis and Forecast Charts http://nomads.ncdc.noaa.gov/ncep/NCEP).

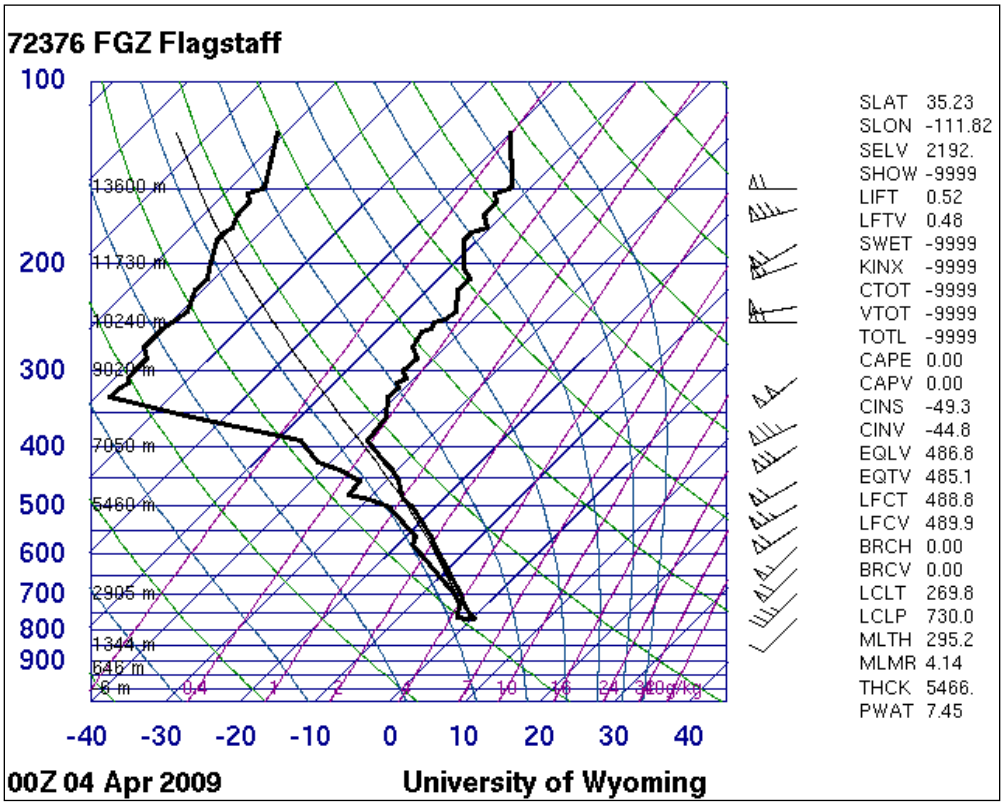


Figure 6. Flagstaff, Arizona sounding analysis for 0Z April 4, 2009, or 5 PM MST April 3 (http://weather.uwyo.edu/upperair/sounding.html).

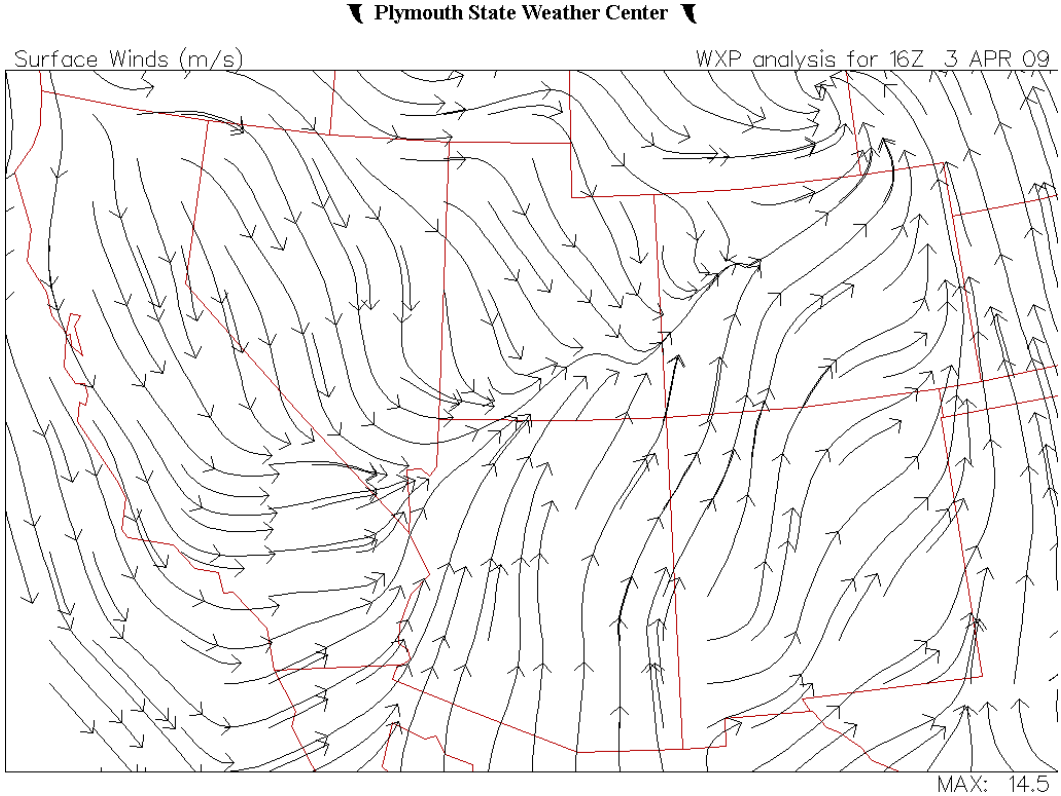


Figure 7. Surface streamlines16Z April 3, 2009, or 9 AM *MST* (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html)

EPA's May 2, 2011 draft Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air Quality Data Affected by High Winds under the Exceptional Events Rule states "Empirical evidence shows that a sustained wind speed of 25 mph is typically the minimum wind speed needed to entrain particles from many stable surfaces (i.e., undisturbed/natural surfaces with a crust or disturbed surfaces that have been restabilized) in the western U.S. where rainfall is seasonal (see Appendix A), and thus is a useful threshold for setting differential expectations for the detail to be included in a demonstration that dust from a wind event was not reasonably controllable or preventable." In Eastern Colorado it has also been shown that wind speeds of 30 mph or greater and gusts of 40 mph or greater can cause blowing dust (see references for the *Natural Events Action Plan for High Wind Events – Lamar, Colorado* and the *Technical Support Document for the January 19, 2009 Lamar Exceptional Event* and Attachment A - Grand Junction, Colorado, Blowing Dust Climatology)." Sustained winds of 25 mph and wind gusts of 40 mph will be used for blowing dust thresholds in this report.

Winslow, Arizona is near the south end of the region in northeast Arizona that includes the Painted Desert. Strong winds began around 8:30 AM MST on April 3, 2009 in Winslow with gusts of 60 mph as shown in Figure 8 (the MesoWest surface map for 15:41Z or 8:41 AM MST) and the surface observations for Winslow in Table 1. Winds strong enough to cause blowing dust in the dust source region of northeast Arizona continued into the early evening. Evidence for this is presented in the observations at Winslow, Window Rock, and Hopi, Arizona, in Tables 1 through 3 and the MesoWest Surface maps for 18:41Z April 3, 2009 (11:41 AM MST) in Figure 9 and 02:41Z April 4, 2009 (7:41 PM MST, April 3) in Figure 10. The corresponding Surface Streamline Analyses for 19Z April 3, 2009 (Noon MST) in Figure 11 and 03Z April 4, 2009 (8 PM MST April 3) in Figure 12 show that the air that flowed over the dust source region of northeast Arizona continued to stream into the portions of Colorado that experienced elevated PM_{10} concentrations. A series of MesoWest surface maps for the event are presented in Attachment B. In addition, a full series of hourly surface streamline analyses for April 3, 2009 can be found in Attachment C.

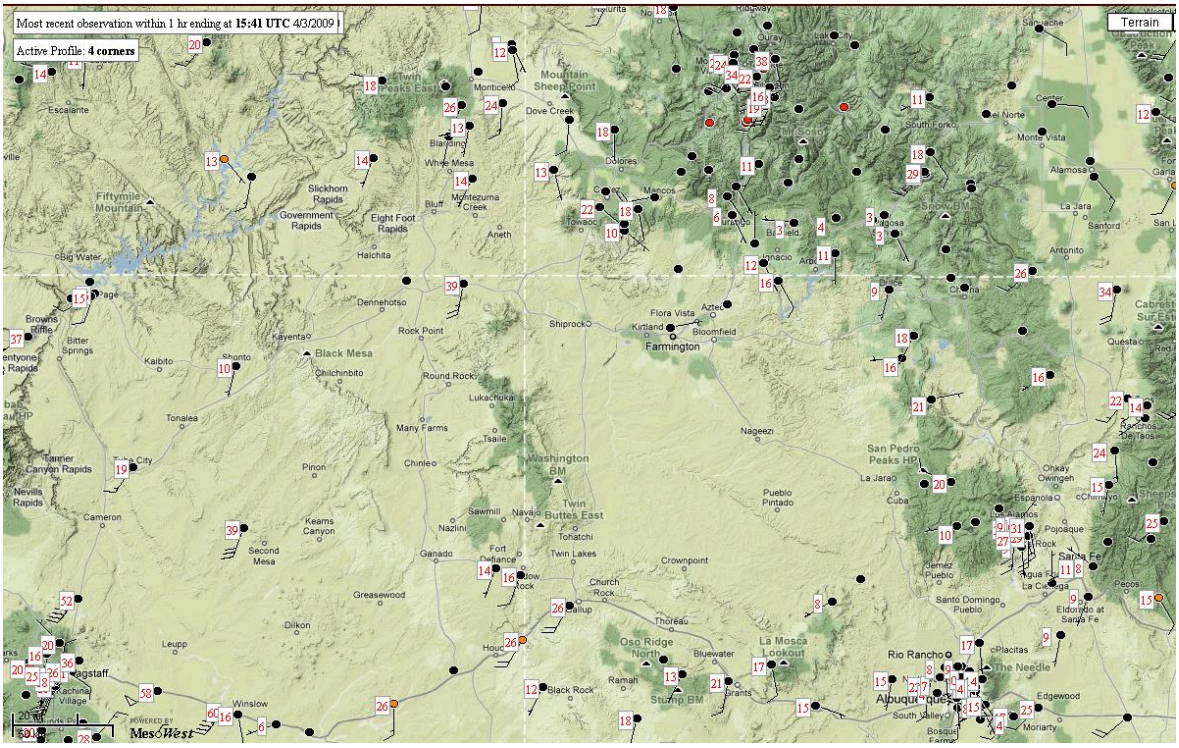


Figure 8. Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 15:41Z April 3, 2009, or 8:41 AM MST April 3 (http://www.met.utah.edu/mesowest/).

Table 1. Wind and weather observations for Winslow, Arizona, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow. Winds highlighted in blue are winds not likely causing or carrying dust due to precipitation and or they are in a different air mass.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:56	39	32	24	32	250	clear	10
22:56	39	39	22	29	230	mostly clear	10
21:56	38	44	22	28	240	clear	10
20:56	37	52	16	25	270	clear	10
19:56	36	79	25	45	270	lt rain	10
19:03	45	66	31	43	270	lt rain	8
18:56	46	51	32	43	270	lt rain	7
17:56	55	35	36	43	200	lt rain	10
16:56	59	20	38	54	210	clear	10
15:56	65	15	37	51	220	mostly clear	10
14:56	65	15	40	54	200	clear	10
13:56	66	17	44	49	190	clear	10
12:56	65	20	40	53	210	clear	10
11:56	64	22	39	54	220	clear	10
10:56	62	23	41	59	210	haze	4
10:34	61	25	49	62	220	haze	2
10:19	61	27	45	60	220	haze	3
10:05	61	25	54	63	210	haze	2.5
9:56	60	28	43	62	220	haze	4
9:49	61	27	48	66	210	haze	2.5
9:29	59	27	49	69	220	haze	1.75
9:22	59	29	48	60	220	haze	3
9:11	57	28	47	60	220	haze	1.75
8:56	57	31	44	56	220	haze	3
8:51	57	33	40	60	220	haze	3
8:46	55	35	45	62	220	haze	1.5
8:38	55	35	47	60	220	haze	2.5
7:56	53	38	9	17	190	clear	10
6:56	51	39	12	22	180	clear	10
5:56	47	42	5		120	clear	10
4:56	48	39	9		130	clear	10
3:56	51	35	5			clear	10
2:56	51	35	7		170	clear	10
1:56	53	31	16	28	200	clear	10
0:56	54	30	22	29	190	clear	10

Table 2. Wind and weather observations for Window Rock, Arizona, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, Weather, and Visibility (caused by or reduced by dust) have been highlighted in yellow. Winds highlighted in blue are winds not likely causing or carrying dust due to precipitation and or they are in a different air mass.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
0:00	27	80	23	41	250	unknown prcp	2
23:53	27	78	24	44	250	unknown prcp	3
23:48	27	80	21	40	250	unknown prcp	2.5
22:53	30	81	18	25	230	lt snow	7
22:51	28	93	15		230	lt snow, fog	4
22:46	28	93	15	21	250	lt snow, fog	1
22:44	28	93	14	21	260	lt snow, fog	0.75
22:08	30	93	8	24	260	mod snow, ice fog	0.5
21:53	31	92	13	21	270	mod snow, ice fog	0.5
21:43	32	86	14	21	280	lt snow, fog	0.75
21:35	32	93	10	22	290	lt snow, fog	1.25
21:24	34	86	14	33	300	lt snow, fog	0.75
21:18	34	86	24	33	260	lt snow, fog	1.75
20:53	39	59	39	60	240	lt rain	4
19:53	48	26	37	48	210	overcast	10
18:53	51	21	29	46	230	mostly clear	10
17:53	53	19	36	49	230	mostly clear	9
16:53	58	15	44	55	230	mostly clear	8
15:53	54	27	31	45	220	partly cloudy	10
14:53	58	23	32	48	230	clear	7
13:53	58	24	31	47	220	clear	9
12:53	57	24	29	46	220	mostly clear	10
11:53	55	31	26	41	210	clear	10
10:53	51	38	30	40	210	clear	10
9:53	48	44	26	39	220	clear	10
8:53	44	55	9	16	200	clear	10
7:53	39	59	6		180	clear	10
6:53	35	64	6		200	clear	10
5:53	38	57	9		160	clear	10
4:53	38	57	5		170	clear	10
3:53	39	55	7		150	clear	10
2:53	38	57	5		150	clear	10
1:53	41	48	9		240	clear	10
0:53	43	45	17	28	220	clear	10

Table 3. Wind and weather observations for Hopi, Arizona, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, Weather, and Visibility (caused by or reduced by dust) have been highlighted in yellow. Winds highlighted in blue are winds not likely causing or carrying dust due to precipitation and or they are in a different air mass.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:13	33	87	22	36	266		
22:13	31	94	24	37	258		
21:13	33	91	22	31	253		
20:13	35	84	16	26	236		
19:13	35	91	26	41	276		
18:13	34	91	21	52	287		
17:13	52	28	33	52	222		
16:13	57	23	38	52	230		
15:13	60	20	35	51	217		
14:13	60	21	38	54	215		
13:13	60	21	38	56	230		
12:13	58	25	32	43	240		
11:13	56	30	31	44	230		
10:13	55	29	31	45	212		
9:13	55	33	24	37	215		
8:13	51	37	28	39	204		
7:13	48	44	19	25	196		
6:13	45	47	15	24	193		
5:13	42	44	1	21	150		
4:13	45	43	13	19	201		
3:13	46	44	13	20	212		
2:13	45	48	6	15	213		
1:13	44	55	5	8	230		
0:13	43	47	2	14	241		

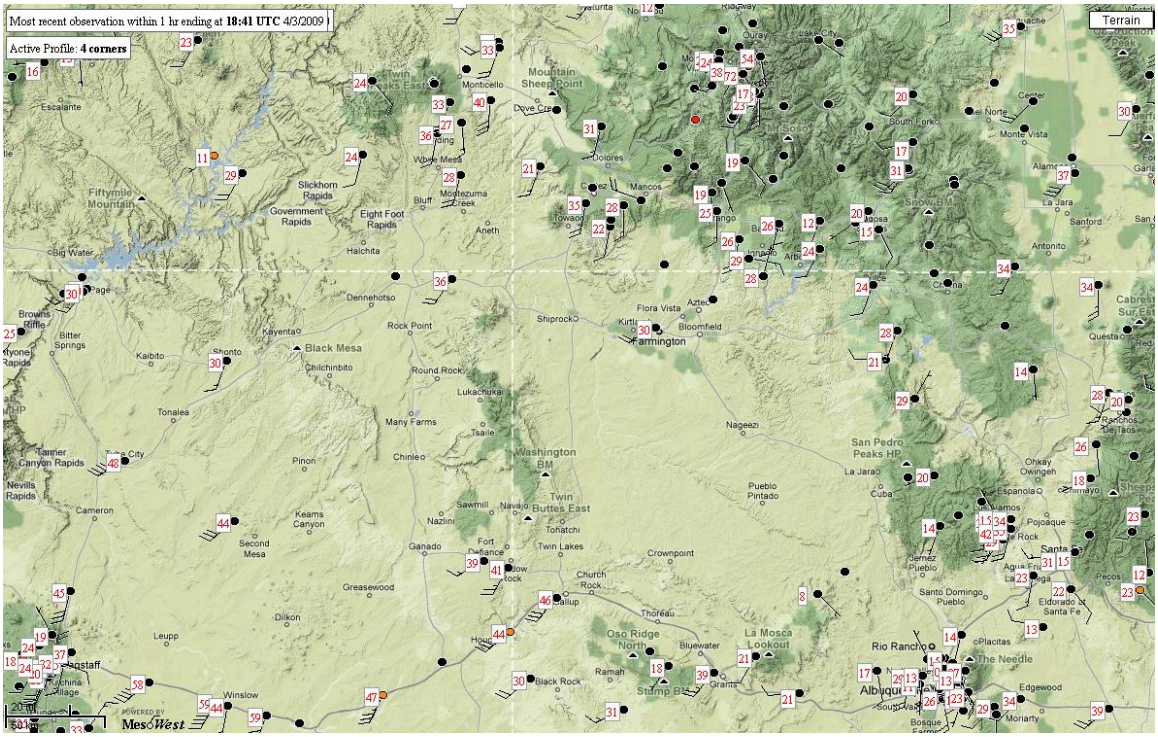


Figure 9. Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 18:41 UTC April 3, 2009 or *11:41 AM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).

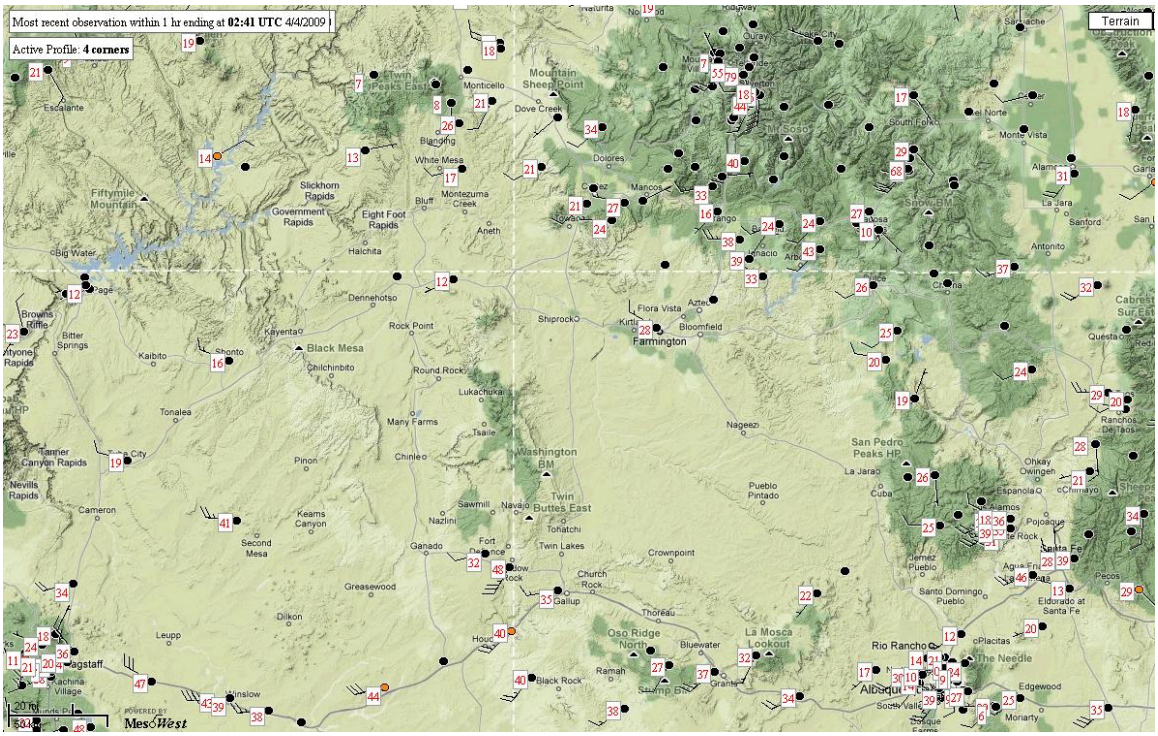


Figure 10. Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 02:41 UTC April 4, 2009 or *7:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).

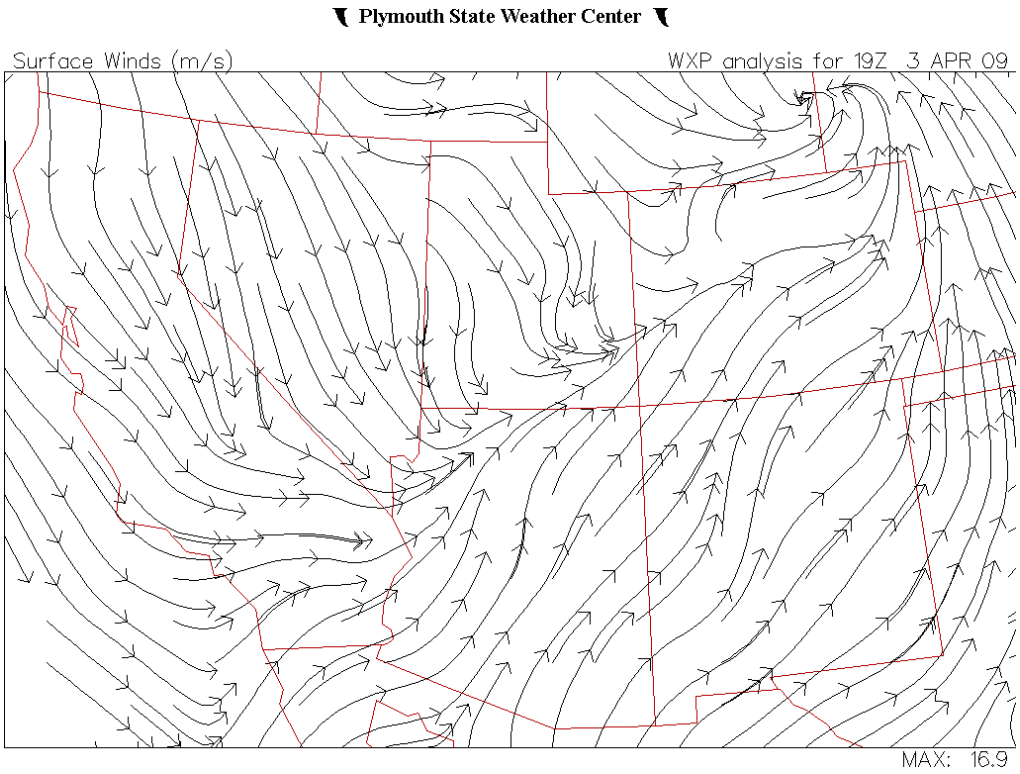


Figure 11. Surface streamlines 19Z April 3, 2009 or 12 PM MST April 3, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).

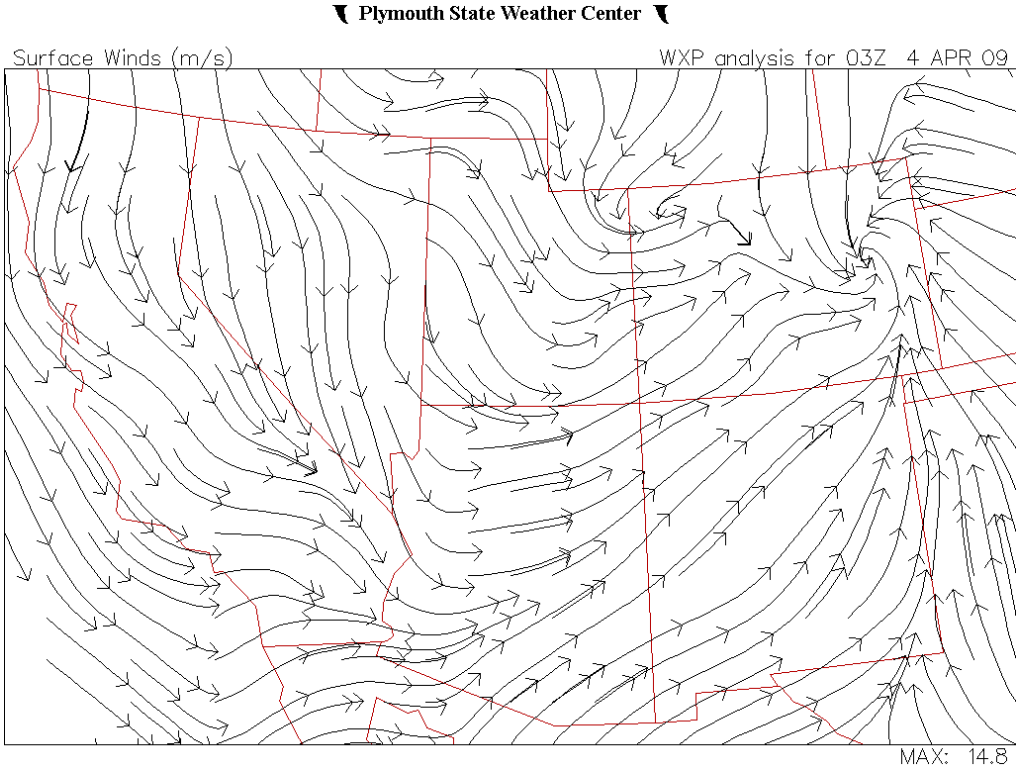


Figure 12. Surface streamlines 03Z April 4, 2009 or 8 PM MST April 3, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).

In a 1997 paper "Factors controlling threshold friction velocity in semiarid and arid areas of the United States" (Marticorena et al., 1997), the authors have characterized the erodibility of both disturbed and undisturbed desert soil types. The threshold friction velocity, which is described in detail in this paper, is a measure for conditions necessary for blowing dust and is higher for undisturbed soils and lower for disturbed soils. Friction velocities have been calculated for 0Z April 4 2009 (5 PM MST April 3) using the NARR NAM12 model (data source: http://nomads.ncdc.noaa.gov/data.php?name=access#hires_weather_datasets). These friction velocities are shown in Figure 13. According to Marticorena and coauthors (1997), even undisturbed desert soils normally resistant to wind erosion will be susceptible to blowing dust when threshold friction velocities are greater than about 1.0 to 2.0 meters per second.

Figure 13 shows that most of Arizona and New Mexico and portions of southwestern and south-central Colorado had friction velocities well above 2.0 meters per second. Some of the highest values were within the Little Colorado River Valley and Painted Desert region of northeast Arizona where the April 3, 2009, MODIS satellite imagery in Figures 14 and 15 shows the eruption of large, dense plumes of blowing dust. Note that blowing dust will typically only occur where these values are high and the soils are dry and not protected by vegetation, forest cover, boulders, rocks, etc. This is why blowing dust occurred in the desert areas of northeast Arizona and northwest New Mexico on April 3, 2009. *The friction velocities shown in Figure 13 and the data on soil moisture conditions presented elsewhere in this report prove that this dust storm was a natural event that was not reasonably controllable or preventable.*

The NOAA HYSPLIT Model (Draxler and Rolph, 2012) has a trajectory matrix option. With this option, the model can calculate a grid of forward trajectories for a user-defined matrix of source locations on a map. A matrix was created for the area shown on the satellite image in Figure 14 that has blowing dust and a portion of northwest New Mexico suspected to contribute to this event. The matrix is illustrated in Figure 16. Winslow, Arizona is in the southwest corner of the matrix.

The forward trajectories in Figure 17 start at 15 UTC April 3, 2009 (8 AM MST) which is a half hour before Winslow began reporting winds of 47 mph, wind gusts of 60 mph, and 2.5 miles of visibility. These forward trajectories bring air from the matrix over Pagosa Springs, Alamosa, Mount Crested Butte, and Breckenridge Colorado, the sites that exceeded the standard or had elevated PM_{10} readings. Figure 18 shows the 17 UTC April 3, 2009 (10 AM MST) forward trajectories that start in the last hour that Winslow reported restrictions to visibility. These also bring air from the source matrix across Pagosa Springs, Alamosa, Mount Crested Butte, and Breckenridge. Figure 19 shows the forward trajectories for 23 UTC April 3, 2009 (4 PM MST) which is the hour that the frontal passage occurred in Winslow. It shows how the air flow became more westerly as the cold front moved to the south and east. This would partially explain why the PM_{10} readings were higher in Pagosa Springs and less further north in Colorado. These forward trajectories in Figures 17 through 19 also show that Pagosa Springs was under air flowing from the heart of the dust source region seen in the MODIS satellite imagery in Figure 14, while Alamosa is in air flow from the edge of the dust source region. Lamar is under air flow from the southeast corner of the matrix in the forward trajectories in Figures 17 through 19. A large portion of the southeast corner of the matrix box is tree and grass covered and is not a source area for blowing dust. This helps explain why Lamar did not have elevated PM_{10} readings.

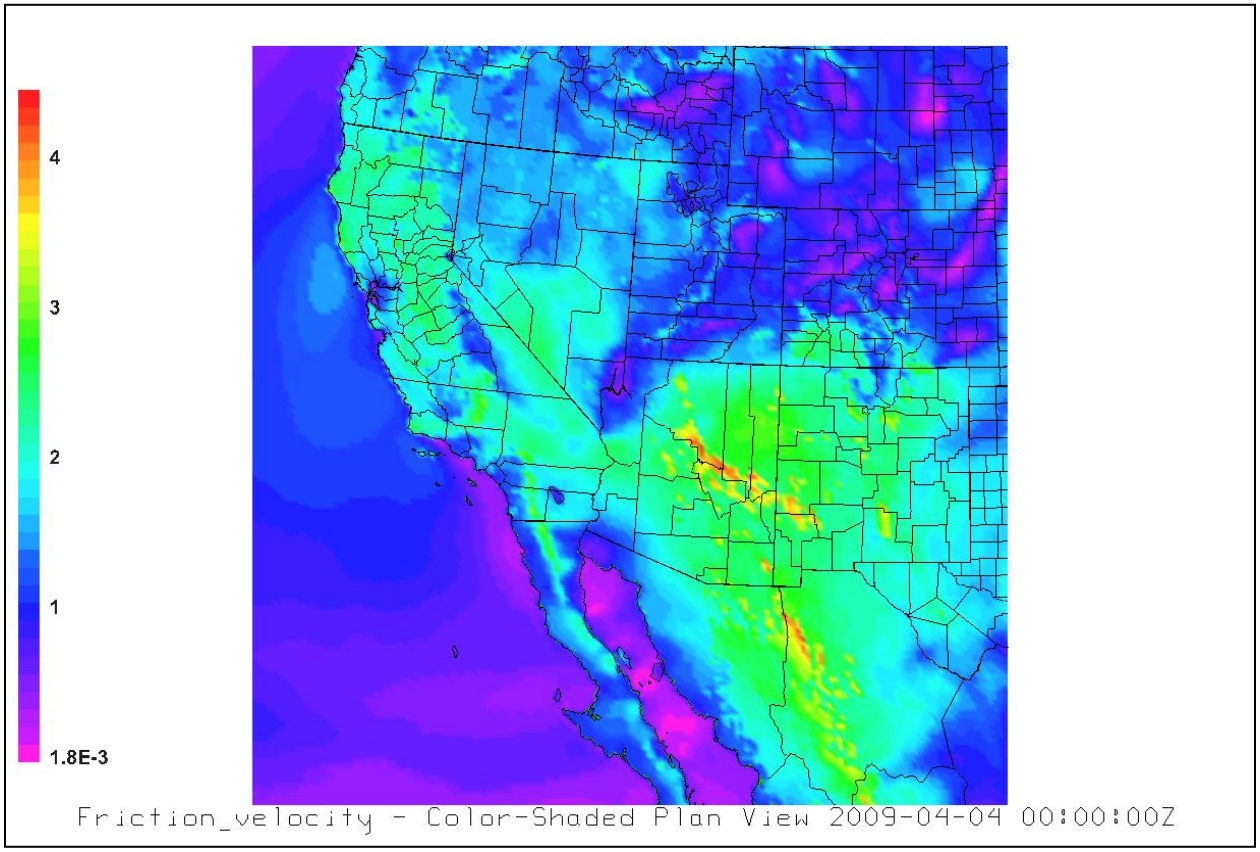


Figure 13. Friction velocities in meters/second from the NOAA NCEP North American Model with 12 kilometer grid spacing at 0Z April 4, 2009 (5 PM MST April 3).

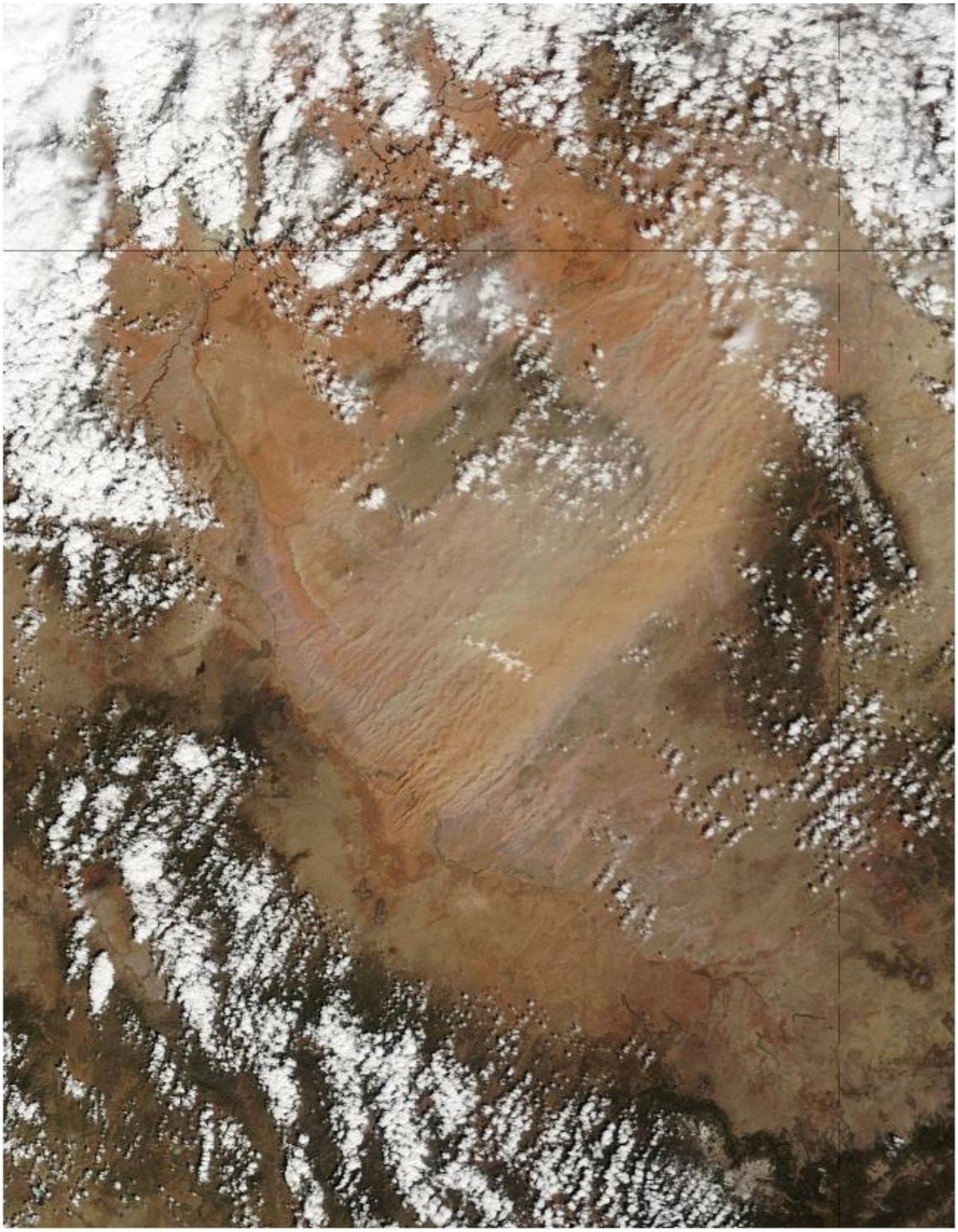


Figure 14. MODIS satellite imagery of blowing dust in northeast Arizona, southeast Utah, northwest New Mexico, and southwest Colorado on April 3, 2009 (source http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=37791&src=nha).

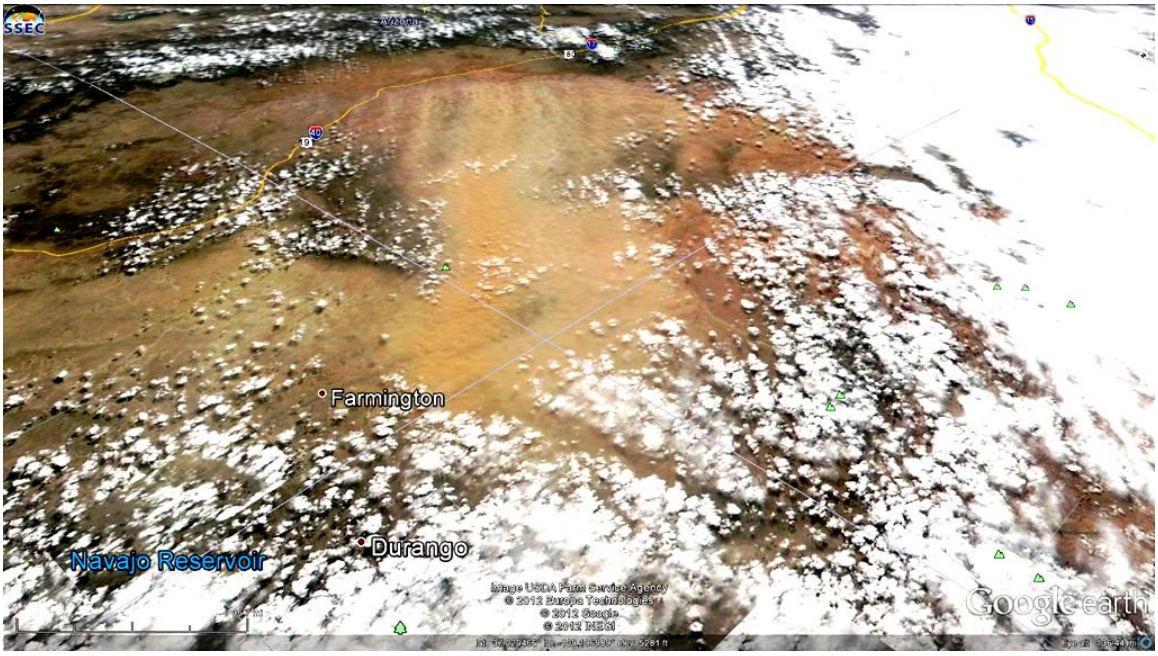


Figure 15. MODIS satellite imagery of blowing dust in northeast Arizona, southeast Utah, northwest New Mexico, and southwest Colorado on April 3, 2009, looking to the southwest across the Four Corners in the center of the image (source http://ge.ssec.wisc.edu/modis-today/index.php?satellite=a1&product=true_color&date=2009_04_03_093&overlay_sector=false&overlay_state=true&overlay_coastline=true).

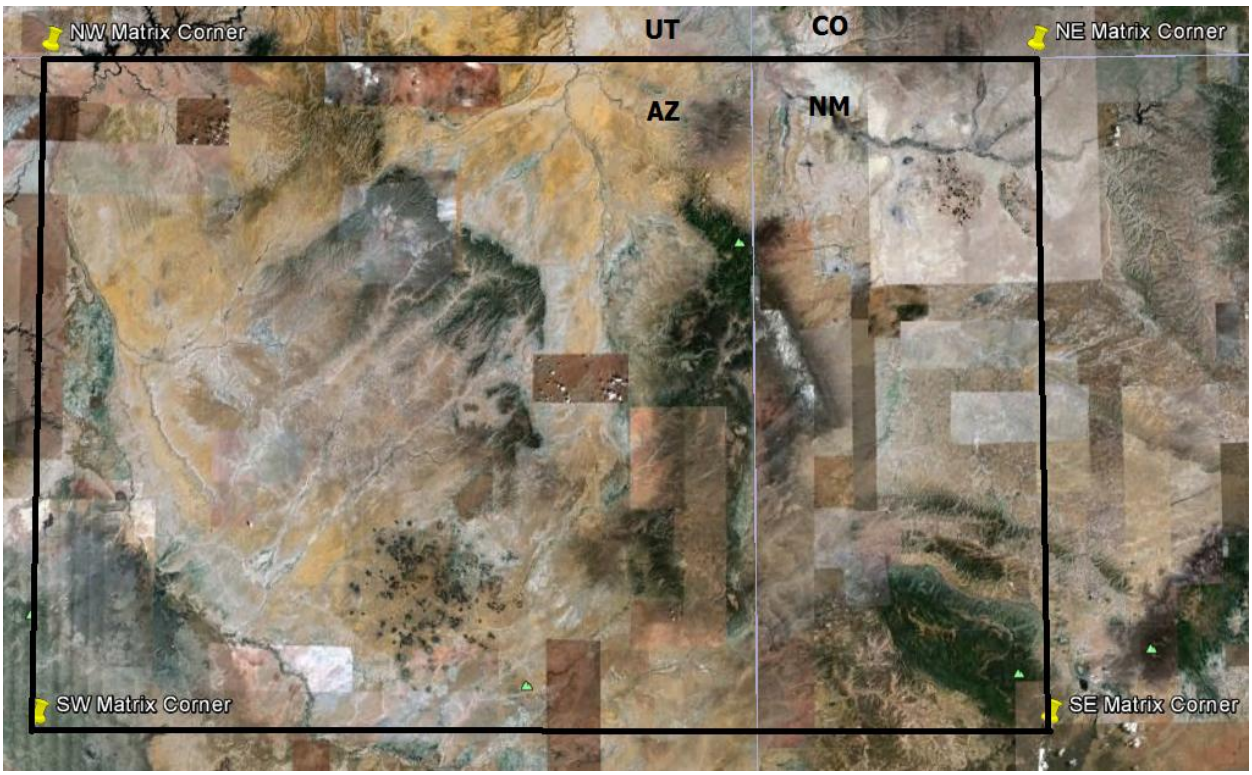


Figure 16. NOAA HYSPLIT MODEL Matrix area for HYSPLIT Matrix forward trajectories in Figures 17 through 19.

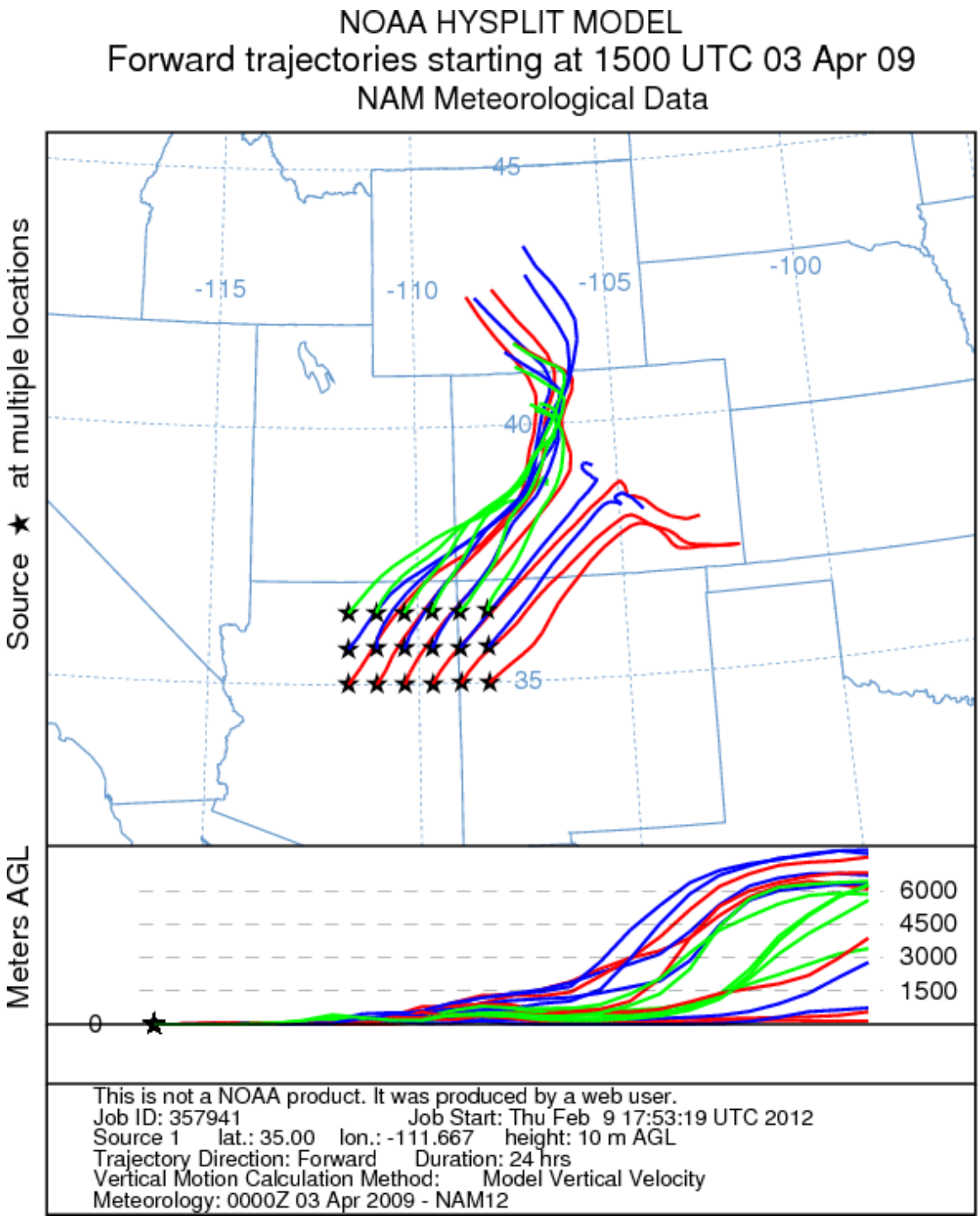


Figure 17. NOAA HYSPLIT 24-hour forward trajectories for 15 UTC April 3, 2009 (8 AM MST). The HYSPLIT model run was based on data from the high-resolution 12-kilometer grid spacing NAM numerical weather model. (source: NOAA Air Resources Laboratory at: http://ready.arl.noaa.gov/HYSPLIT.php).

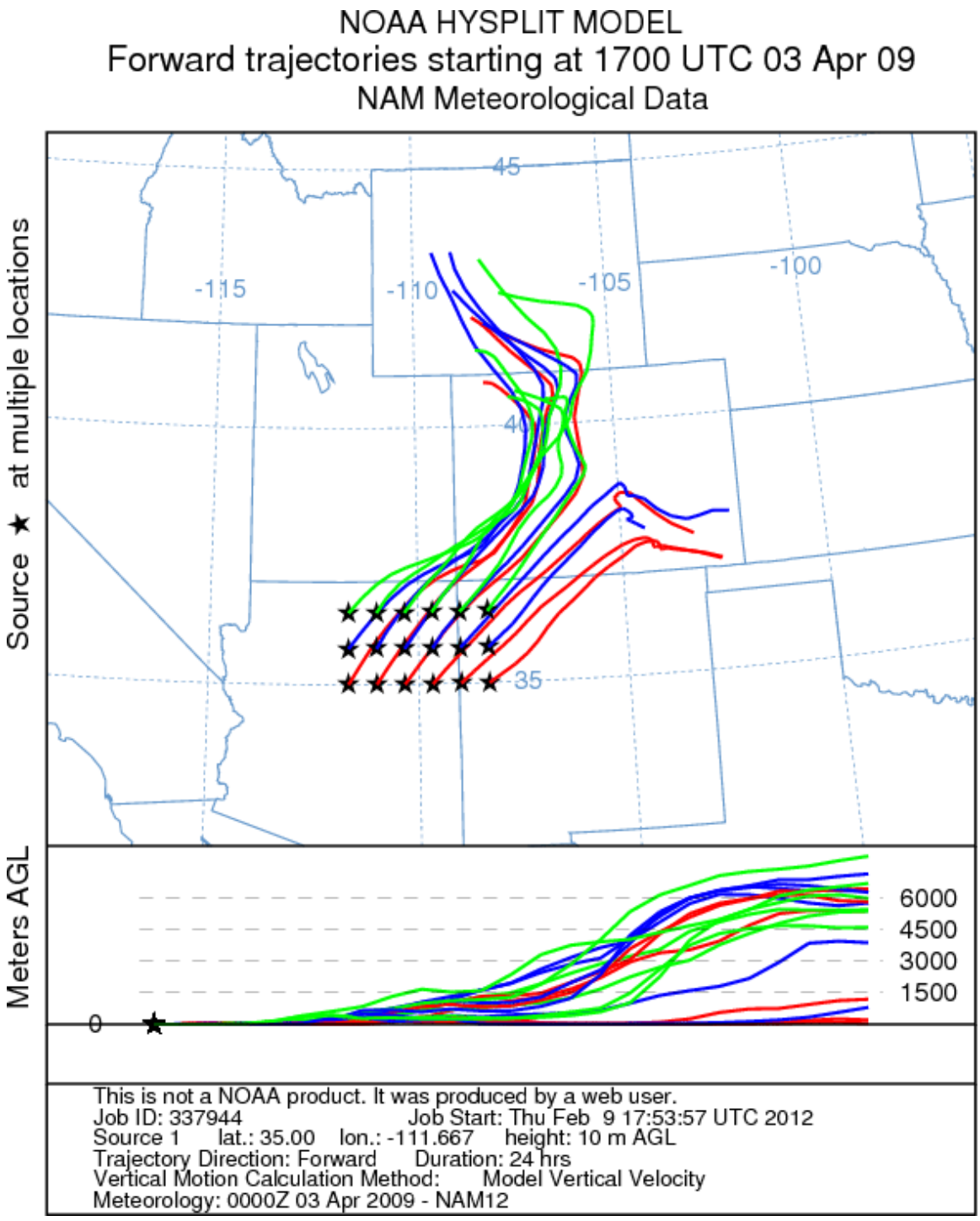


Figure 18. NOAA HYSPLIT 24-hour forward trajectories for 17 UTC April 3, 2009 (10 AM MST). The HYSPLIT model run was based on data from the high-resolution 12-kilometer grid spacing NAM numerical weather model. (source: NOAA Air Resources Laboratory at: http://ready.arl.noaa.gov/HYSPLIT.php).

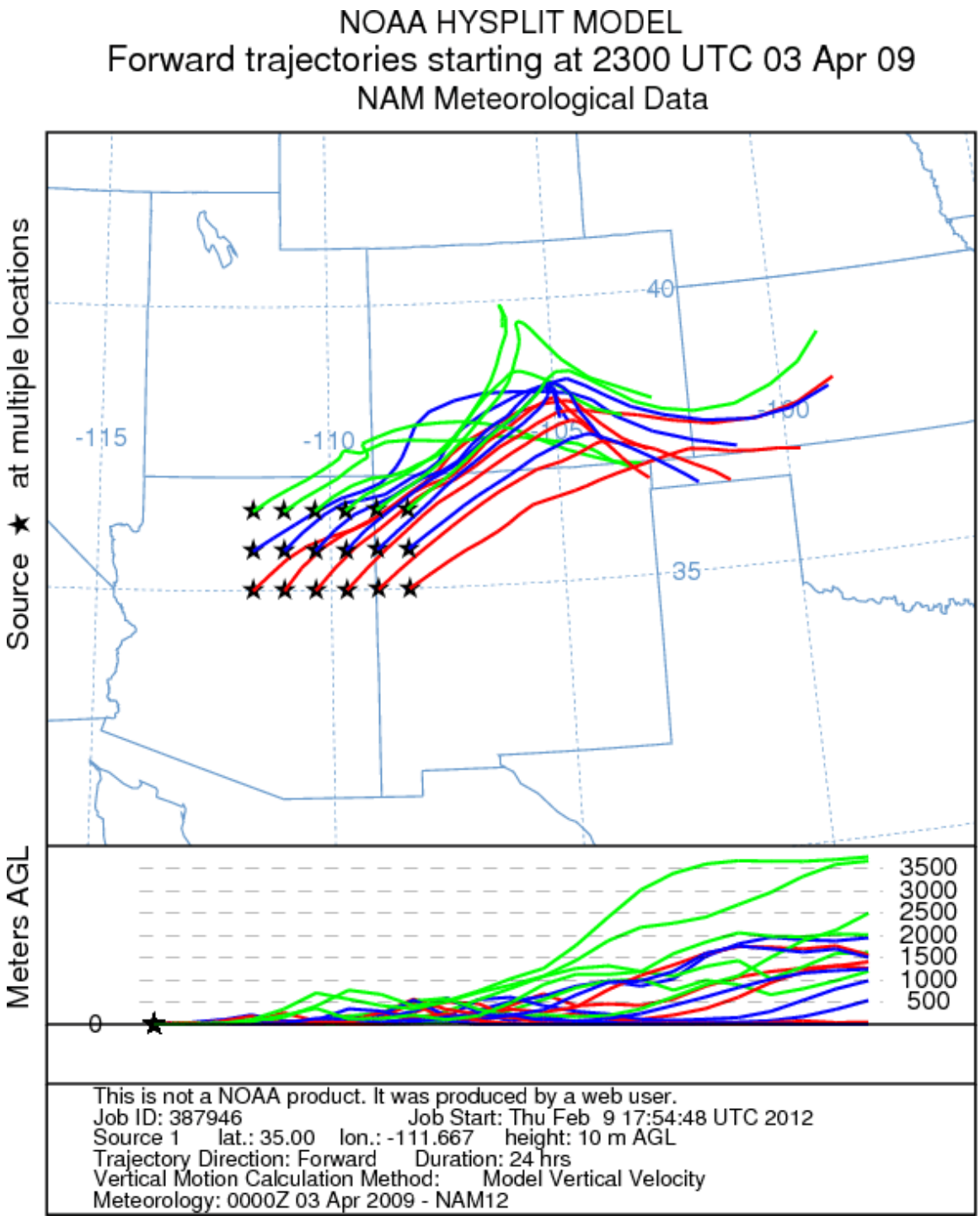


Figure 19. NOAA HYSPLIT 24-hour forward trajectories for 23 UTC April 3, 2009 (4 PM MST). The HYSPLIT model run was based on data from the high-resolution 12-kilometer grid spacing NAM numerical weather model. (source: NOAA Air Resources Laboratory at: http://ready.arl.noaa.gov/HYSPLIT.php).

For blowing dust to occur, soils must be dry. Figure 20 maps the Percent of Normal Precipitation for the western U.S. during March 2009. It shows the majority of the source region for the forward trajectories in Figures 17 through 19 experienced 50 percent of normal precipitation or less for the month of March 2009, with much of the suspected source area at less than 25% of normal for March. Figure 21 shows the amount of precipitation for the month of March 2009. It shows that the source region for the forward trajectories in Figures 17 through 19 had a half of an inch or less of precipitation. *This amount of precipitation is below the general threshold for conditions conducive for blowing dust identified for Hopi, Arizona, in the analysis in Attachment A.* Figures 22 and 23 are the Record of River and Climatological Observations for March and April 2009 for Winslow. They show that Winslow had 0.04 inches of precipitation in the 30 days before April 3 – *which is significantly below the general threshold for conditions conducive for blowing dust identified for Hopi*. Figure 24 is the Drought Monitor map of drought conditions across the western U.S. It shows normal to abnormally dry conditions prevailed in the source region for the forward trajectories in Figures 17 through 19 during the week ending on April 7, 2009.

Figure 25 is the output for dust from the NAAPS (Navy Aerosol Analysis and Prediction System) Global Aerosol Model for 18Z April 3, 2009, (11AM MST), 00Z April 4, 2009, (5 PM, MST), and 06Z April 4, 2009, (11 PM, MST). It shows a large area of predicted dust over northeast Arizona at 11 AM. This area grows to cover most of Arizona, New Mexico, and central Colorado by 11 PM. The NAAPS model output is based on actual soil moisture content, soil erodibility factors, and modeled meteorological factors conducive to blowing dust (for a description of NAAPS see: http://www.nrlmry.navy.mil/aerosol_web/Docs/globaer_model.html). Consequently, NAAPS forecast products provide an independent calculation of the potential for blowing dust and the spatial extent of blowing dust for this event. All of the products discussed here point to a widespread, regional-scale dust storm that originated in portions of Arizona and spread to much of Colorado.

Figure 14 presented earlier in the report contains the April 3, 2009, MODIS satellite image posted on April 11, 2009, on NASA's Earth Observatory web site (http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=37791). It shows extensive blowing dust in northeast Arizona with the upper right corner of the picture showing dust being transported into Colorado. Figure 26 lists the posted description for this image. It describes how visibility was reduced to the point that Interstate 40 was closed near Flagstaff Arizona due to the blowing dust. Flagstaff is in the very southwest corner of the source region used in the forward trajectories in Figures 17 through 19. Figure 27 is the Smoke Text Product from NOAA's Satellite and Information Service (Descriptive Text Narrative for Smoke/Dust observed in satellite imagery through 0115Z April 4, 2009, Smoke Text Product - Satellite Services Division). It describes blowing dust in northeast Arizona, northwest New Mexico, and southwest Colorado.

Figure 28 is the April 3, 2009, 3 PM image from the U.S. Forest Service Weminuche Wilderness Area Shamrock site east of Durango, Colorado. The view in this image is towards the southwest. Figure 29 is the baseline image for this site. The reduced visibility in Figure 28 is due to the transport of dust into the area. It is unlikely that there was any significant local dust contribution at this site since local vegetation would limit the exposed surfaces available for suspension of dust and reduce surface friction velocities to levels below blowing dust thresholds. The Weminuche Wilderness Area Vista is about 24 miles west of Pagosa Springs.

Figure 30is the "Dust-on-Snow Deposition Events Log" from the Center for Snow and Avalanche Studies (http://www.snowstudies.org/index.html) in Silverton Colorado. It lists April 3, 2009, as one of twelve Dust-on-Snow events for the 2008/2009 water year.

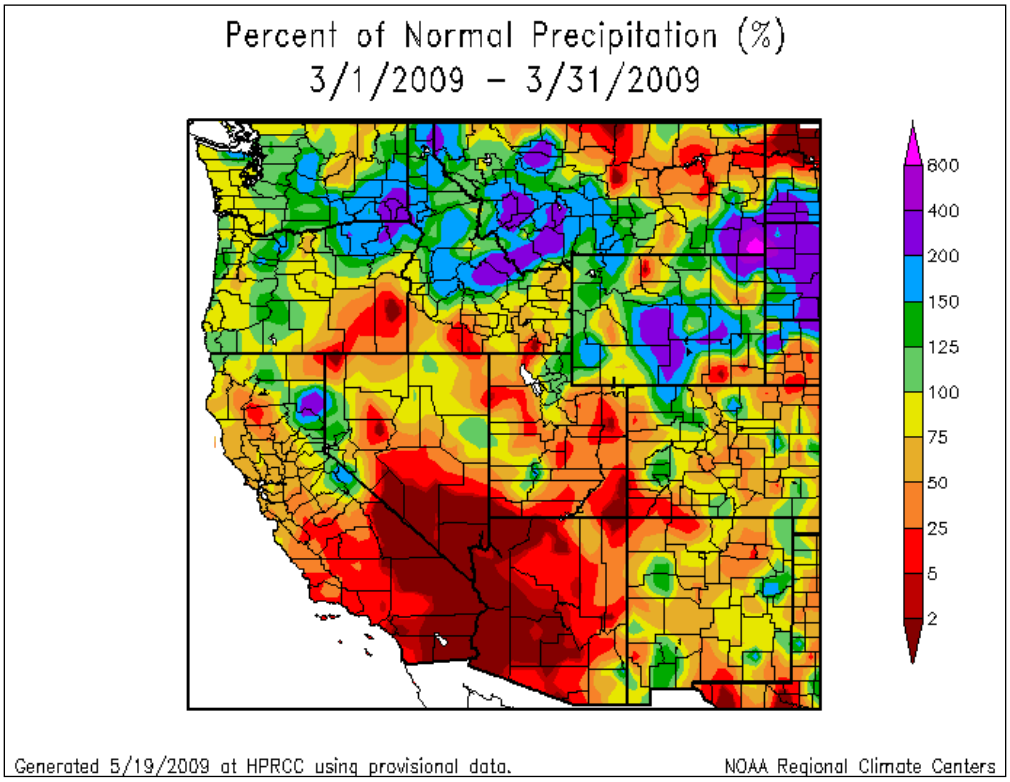


Figure 20. Percent of Normal Precipitation 3/1/2009 – 3/31/2009 (from http://www.hprcc.unl.edu/maps/current/index.php?action=update_product&product=TDept).

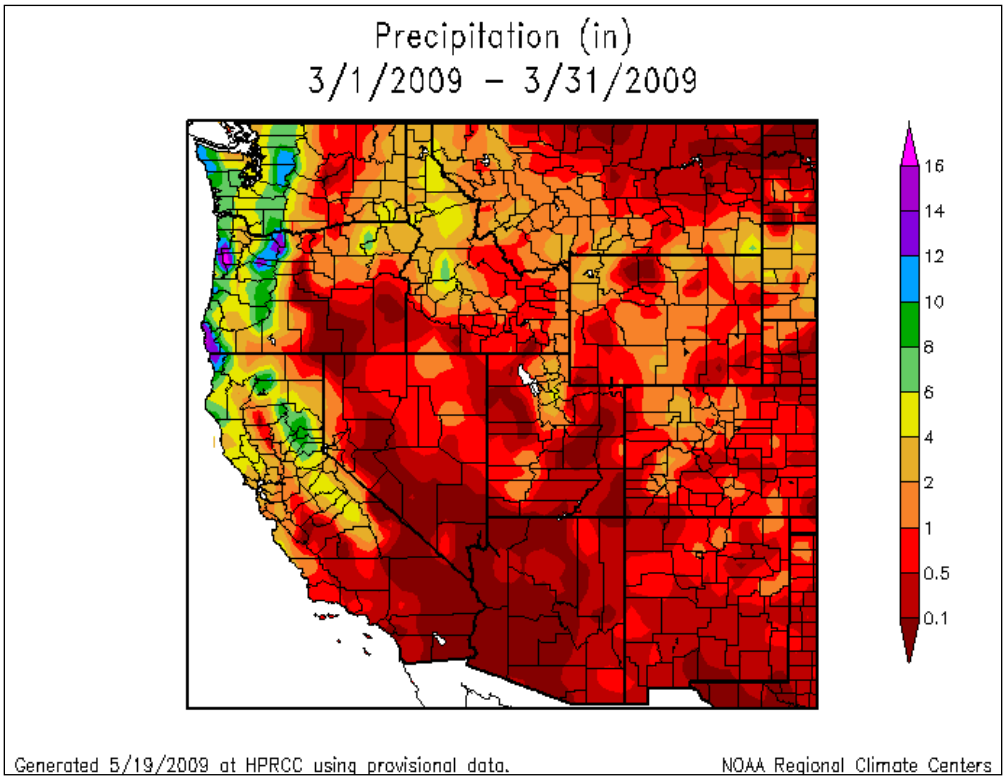


Figure 21. Precipitation 3/1/2009 – 3/31/2009 (from http://www.hprcc.unl.edu/maps/current/index.php?action=update_product&product=TDept).

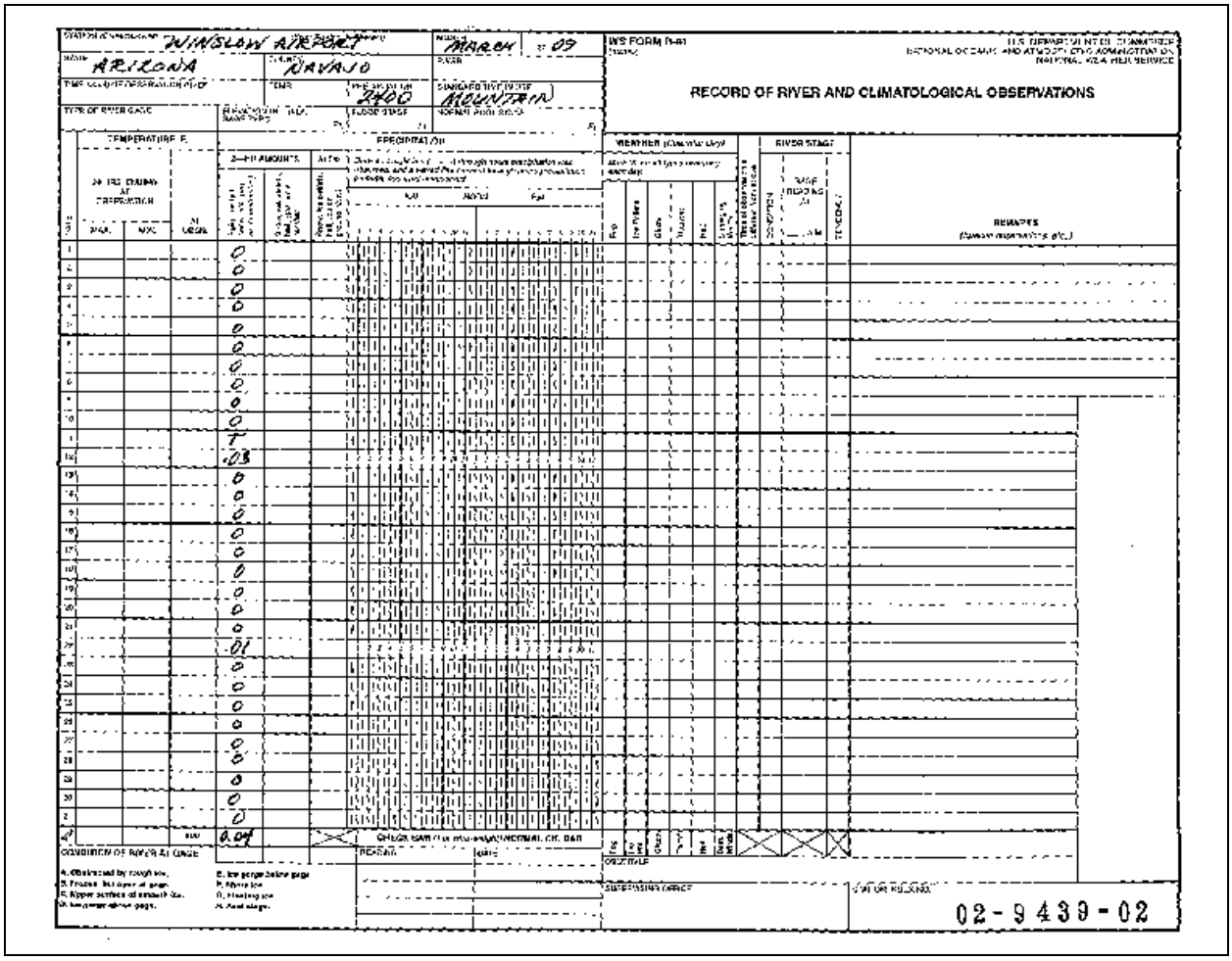


Figure 22. Winslow, Arizona March 2009 Record of River and Climatological Observations (http://cdo.ncdc.noaa.gov/dly/DLY).

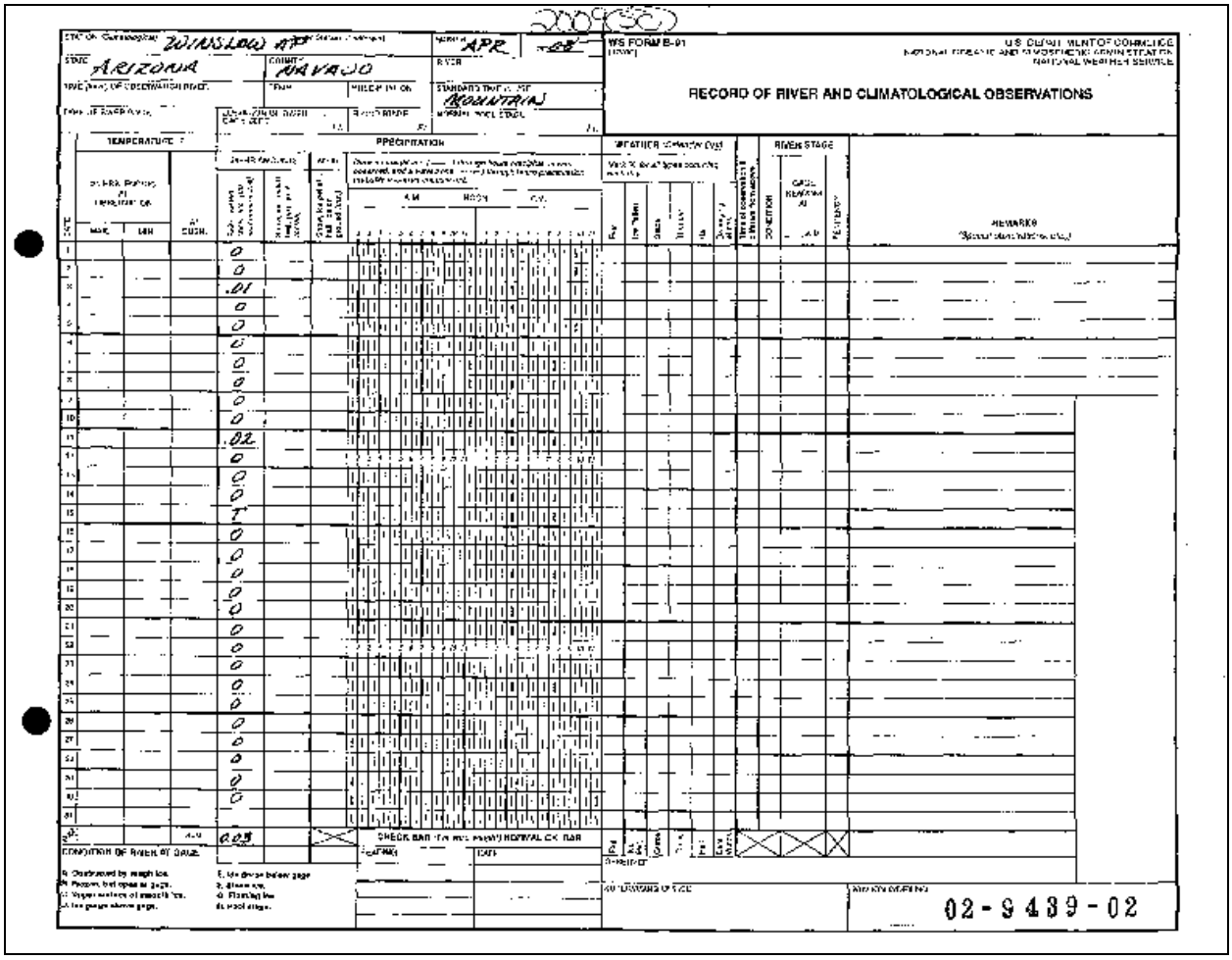


Figure 23. Winslow, Arizona April 2009 Record of River and Climatological Observations (http://cdo.ncdc.noaa.gov/dly/DLY).

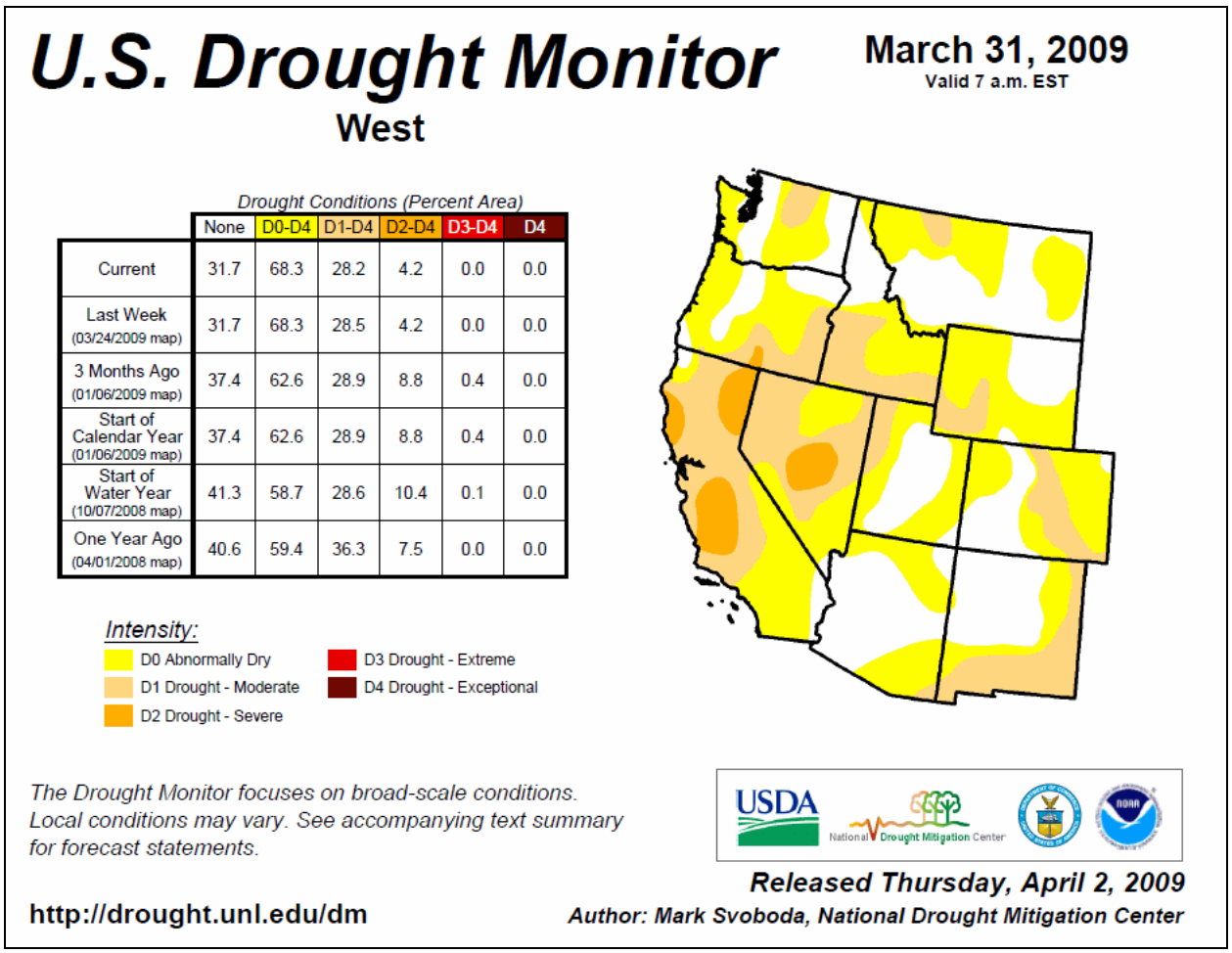


Figure 24. Drought status for the western U.S. on March 31, 2009 (source: the USDA, NOAA, and the National Drought Mitigation Center at: http://drought.unl.edu/dm/archive.html).

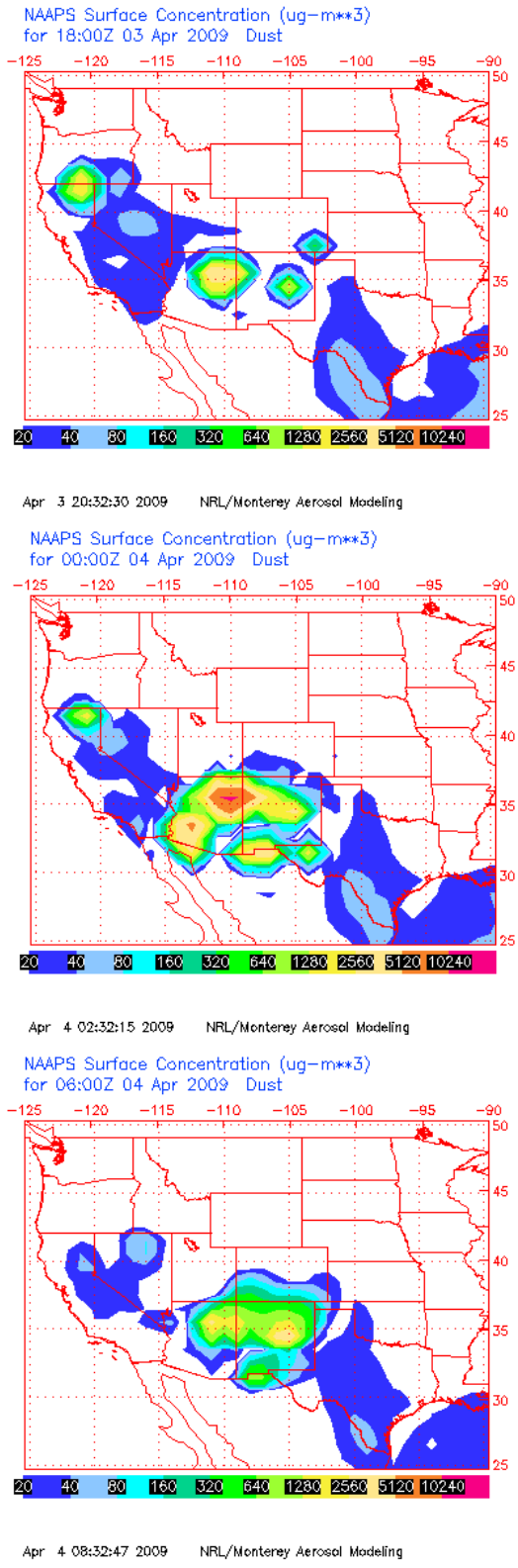


Figure 25. NAAPS forecasted dust concentrations for 11 AM, 5 PM, and 11 PM MST, April 3, 2009 (source http://www.nrlmry.navy.mil/flambe-bin/aerosol/display_directory_aer2?DIR=/web/aerosol/public_html/globaer/ops_01/wus/).

⊞ **Recommend this image**

A dust storm struck northeastern Arizona on April 3, 2009. With winds over 145 kilometers (90 miles) per hour reported near Meteor Crater, east of Flagstaff, the storm reduced visibility and forced the temporary closure of part of Interstate 40, according to *The Arizona Republic*.

The Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite captured this image on April 3, 2009. Clear skies allow a view of multiple source points of this dust storm. The source points occur along an arc that runs from northwest to southeast.

This dust storm occurred in the area known as Arizona's Painted Desert, and the dust plumes show why. Whereas many dust plumes are uniform in color, these plumes resemble a band of multicolored ribbons, ranging from pale beige to red-brown, reflecting the varied soils from which the plumes arise. The landscapes of the Painted Desert are comprised mostly of Chinle Formation rocks—remains of sediments laid down during the time of the first dinosaurs, over 200 million years ago.

References

Engelbart, D. (2009, April 3). I-40 near Flagstaff reopened after winds cut visibility. *The Arizona Republic.* **Accessed April 6, 2009.**

U.S. National Park Service. (2009, March 17). Petrified Forest National Park. Accessed April 10, 2009.

NASA image by Jeff Schmaltz, MODIS Rapid Response Team, Goddard Space Flight Center. Caption by Michon Scott.

Instrument: Terra · MODIS

Figure 26. NASA descriptive text for image in Figure 14 (source http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=37791&src=nha).

FRIDAY APRIL 3, 2009

DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH

Blowing dust/sand is currently blowing through extreme northeast Arizona, into northwest New Mexico and southwest Colorado. Also, blowing dust/sand is currently extending to the east in south-central New Mexico.

Numerous agricultural burns in Kansas and Oklahoma produced light smoke plumes this afternoon and evening whereas a few fires in Texas produced moderately dense to dense smoke plumes. Most of these plumes were observed moving to the northwest.

THE FORMAT OF THIS TEXT PRODUCT IS BEING MODIFIED. IT WILL NO LONGER DESCRIBE THE VARIOUS PLUMES THAT ARE ASSOCIATED WITH ACTIVE FIRES. THESE
PLUMES ARE DEPICTED IN VARIOUS GRAPHIC FORMATS ON OUR WEB SITE:

JPEG: http://www.ssd.noaa.gov/PS/FIRE/hms.html
GIS: http://www.firedetect.noaa.gov/viewer.htm
KML: http://www.ssd.noaa.gov/PS/FIRE/kml.html

THIS TEXT PRODUCT WILL CONTINUE TO DESCRIBE SIGNIFICANT AREAS OF SMOKE WHICH HAVE BECOME DETACHED FROM AND DRIFTED SOME DISTANCE AWAY FROM THE SOURCE FIRE, TYPICALLY OVER THE COURSE OF ONE OR MORE DAYS. IT WILL ALSO
STILL INCLUDE DESCRIPTIONS OF BLOWING DUST.

ANY QUESTIONS OR COMMENTS REGARDING THESE CHANGES OR THE SMOKE TEXT PRODUCT IN GENERAL SHOULD BE SENT TO SSDFireTeam@noaa.gov

Figure 27. Smoke Text Product from the Satellite Services Division - Descriptive Text Narrative for Smoke/Dust Observed in Satellite Imagery through 0045Z April 3, 2009 (Smoke Text Product - Satellite Services Division).

Figure 28. U.S. Forest Service, April 3, 2009, 3 PM Weminuche Wilderness Area image looking southwest from the Shamrock site east of Durango, Colorado.
(http://www.fsvisimages.com/search.aspx?site=SHAM1)

Figure 29. U.S. Forest Service, Weminuche Wilderness Area Baseline Image looking southwest from the Shamrock site east of Durango, Colorado.
(http://www.fsvisimages.com/search.aspx?site=SHAM1)

Colorado Dust-on-Snow (CODOS)

Dust-on-Snow Deposition Events Log

Thanks to our original National Science Foundation research grants for collaborative research (grants ATM-0432327 to Painter at National Snow and Ice Data Center and ATM-0431955 to Landry at Center for Snow and Avalanche Studies), and to the subsequent support of the Colorado Dust-on-Snow program by Colorado water districts the State of Colorado, the U.S. Bureau of Reclamation, and others, this program has accumulated several seasons of dust-on-snow observations at our Senator Beck Basin Study Area (SBBSA) at Red Mountain Pass, summarized in the table below. It is reasonable to assume that our skill at detecting dust-on-snow events has improved and that we may have failed to observe very small events during the early years of this work. Therefore the table represents an absence of events in grey for the first two years of observation but thereafter indicates an absence of observed events as "0" (zero).

Dust-on-Snow Events Documented per Month, by Winter
Senator Beck Basin Study Area at Red Mountain Pass – San Juan Mountains

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	**Total**
2002/2003					2		1			**3**
2003/2004							2	1		**3**
2004/2005	0	0	0	0	0	1	2	1	0	**4**
2005/2006	0	0	1	0	1	1	3	2	0	**8**
2006/2007	0	0	1	0	1	1	3	1	1	**8**
2007/2008	0	0	0	0	0	3	3	1	0	**7**
2008/2009	1	0	1	0	1	4	5	0	0	**12**
2009/2010	1	0	0	0	0	1	4	3	0	**9**

Dates of the events, by winter/spring season, were as follows (WY = Water Year):

2002/2003 (WY2003): Feb 3, Feb 22, Apr 2-3

2003/2004 (WY 2004): Apr 17, Apr 28, May 11

2004/2005 (WY 2005): Mar 23, Apr 4, Apr 8, May 9

2005/2006 (WY 2006): Dec 23, Feb 15, Mar 26, Apr 5, Apr 15, Apr 17, May 22, May 27

2006/2007 (WY 2007): Dec 17, Feb 27, Mar 27, Apr 15, Apr 18, Apr 24, May 4, Jun 6

2007/2008 (WY 2008): Mar 16, Mar 26-27, Mar 30-31, Apr 15, Apr 21, Apr 30, May 12

2008/2009 (WY 2009): Oct 11, Dec 13, Feb 27, Mar 6, Mar 9, Mar 22, Mar 29, Apr 3, Apr 8, Apr 15, Apr 24, Apr 25

2009/2010 (WY 2010): Oct 27, March 30, April 3, April 5, April 12, April 28, May 9, May 11, May 22

Figure 30. Center for Snow and Avalanche Studies in Silverton, Colorado, log of events that deposited dust on the snow pack in the San Juan Mountains.

Surface observations for Winslow, Window Rock, and Hopi, Arizona, presented in Tables 1- 3 earlier in this report and Farmington, New Mexico, in Table 4 are for locations within or near the area with blowing dust in the MODIS image in Figure 14. All four sites had extended periods with winds equaling or exceeding 25 mph and wind gusts equaling or exceeding 40 mph. The three recording visual weather conditions reported visibility restrictions due to blowing dust. Observation from the portion of Colorado that had elevated PM_{10} concentrations including Cortez, Alamosa, Telluride, Montrose, Gunnison, and Pagosa Springs, are listed in Tables 5 - 10. Things to note from these observations include.

- Telluride, Gunnison, and Pagosa Springs had no sustained occurrences of wind speeds or gust speeds above the thresholds needed to cause blowing dust from local sources.
- Telluride and Gunnison had restrictions to visibility for several hours. The Shamrock vista image taken not too away far from Pagosa Springs showed significant blowing dust.
- These widespread restrictions to visibility in the absence of widespread local sources and/or winds above blowing dust thresholds are diagnostic for blowing dust that is being transported into the region.

The observations for Grand Junction are listed in Table 11 and show that it was on the back side of the front, that the winds were below blowing dust thresholds, and that there were not any restrictions to visibility due to dust. The High Wind Advisories, High Wind Watches, and High Wind Warnings in Attachment D show that the National Weather Service expected winds strong enough to cause blowing dust across much of western Colorado, New Mexico, and northeast Arizona. The National Weather Service Forecast office for northeast Arizona is in Flagstaff, Arizona. The Flagstaff storm reports for April 3, 2009, are in Table 12. They show wind gusts of 58 to 91 mph across the region where the MODIS satellite picture in Figure 14 shows blowing dust.

Table 4. Wind and weather observations for Farmington, New Mexico, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow. Winds highlighted in blue are winds not likely causing or carrying dust due to precipitation and or they are in a different air mass.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:53	36	79	12		200	overcast	10
23:01	36	93	10		250	overcast	10
22:53	34	96	12		270	lt snow	8
22:19	34	100	20	30	280	lt rain	9
22:09	36	93	24	32	280	lt rain	7
22:02	36	93	24	47	290	lt rain, fog	5
21:53	37	89	35	44	280	hvy rain, fog	2.5
21:11	46	49	20	25	280	overcast	9
20:53	51	32	21	25	250	haze	6
20:00	50	43	14	28	300	haze	5
19:53	52	35	17	33	300	haze	5
19:25	57	13	21	30	230	haze	5
18:53	60	12	30	44	220	mostly clear	7
18:00	63	11	30	46	230	haze	6
17:53	62	11	32	46	220	haze	6

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
17:30	64	12	29	38	230	haze	4
17:06	63	15	30	40	210	haze	5
16:53	63	12	32	39	220	haze	4
16:04	66	12	32	45	220	haze	4
15:53	66	12	28	45	230	haze	4
14:53	66	13	28	46	220	mostly clear	7
14:49	66	12	33	46	220	haze	5
13:53	65	15	26	39	230	clear	10
12:53	65	15	31	38	230	mostly clear	9
11:53	62	20	21	30	240	mostly clear	10
10:53	59	23	12		210	clear	10
9:53	57	25	13	21	200	clear	10
8:53	49	39	7		80	mostly clear	7
8:29	48	40	9		100	haze	6
7:53	44	45	0			haze	6
6:53	42	49	3			mostly cloudy	8
6:48	43	49	0			mostly cloudy	8
5:53	41	51	5		70	partly cloudy	10
4:53	41	48	5		50	mostly cloudy	10
3:53	46	42	5			overcast	10
2:53	47	40	0			overcast	10
1:53	45	36	3			mostly cloudy	10
0:53	43	30	0			clear	10

Table 5. Wind and weather observations for Cortez, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:53	33	92	3		30	mostly cloudy	10
23:05	34	86	0			overcast	10
22:53	33	92	5		160	overcast	9
22:42	34	86	3		190	lt snow	7
22:26	34	86	3		180	lt snow	7
22:22	34	86	6		180	lt snow, fog	3
22:19	34	86	6		160	lt snow, fog	1.5
22:14	34	86	8		150	lt snow, fog	0.75

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
22:07	34	86	8		180	lt snow, fog	1.25
22:03	34	93	12		200	lt snow, fog	2
21:53	33	92	12		240	lt snow, fog	1.5
21:38	34	86	16	28	290	mod snow, fog	0.5
21:29	34	86	23	33	290	lt snow, fog	1.25
21:26	34	86	23	33	290	lt snow, fog	2
21:18	37	81	23	32	290	lt rain	10
20:53	43	57	0			overcast	10
19:53	45	51	8	21	230	overcast	10
19:27	45	57	7	29		overcast	8
18:53	48	42	20	40	270	haze	4
18:39	52	32	31	45	270	haze	4
18:31	54	26	35	44	270	haze	3
18:13	57	15	23	46	230	haze	2
17:53	58	15	28	39	230	haze	2.5
17:45	57	14	29	46	220	haze	2.5
17:19	59	14	32	40	220	haze	2
16:53	60	15	33	44	210	haze	1.75
16:19	61	16	30	44	210	haze	1.5
16:11	61	17	33	46	210	haze	1.25
16:03	61	17	36	44	210	haze	1.5
15:53	60	18	28	41	210	haze	1.25
15:36	61	18	35	45	210	haze	1.5
14:53	60	18	28	38	230	haze	2
14:48	61	17	26	38	230	haze	2
14:37	61	18	29	41	200	haze	1.75
14:20	61	17	28	40	220	haze	2
14:12	61	18	30	40	220	haze	2.5
13:53	61	18	24	39	220	haze	3
12:53	58	22	21	35	210		10
11:53	59	24	23	35	190		10
10:53	57	27	18	26	170	mostly clear	10
9:53	54	31	14		190	clear	10
9:14	52	35	15	22	130		10
8:53	50	36	10		190		10
7:53	43	51	6		240	clear	10
6:53	44	49	8		180	mostly cloudy	10
5:53	47	44	13		180	overcast	10
4:53	42	53	0			overcast	10
3:53	45	47	3		230	overcast	10
2:53	47	40	8		230	overcast	10
1:53	47	37	12	17	220	mostly cloudy	10
0:53	47	42	8		250	overcast	10

Table 6. Wind and weather observations for Alamosa, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow. Winds highlighted in blue are winds not likely causing or carrying dust due to precipitation and or they are in a different air mass.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:56	39	32	24	32	250	clear	10
22:56	39	39	22	29	230	mostly clear	10
21:56	38	44	22	28	240	clear	10
20:56	37	52	16	25	270	clear	10
19:56	36	79	25	45	270	lt rain	10
19:03	45	66	31	43	270	lt rain	8
18:56	46	51	32	43	270	lt rain	7
17:56	55	35	36	43	200	lt rain	10
16:56	59	20	38	54	210	clear	10
15:56	65	15	37	51	220	mostly clear	10
14:56	65	15	40	54	200	clear	10
13:56	66	17	44	49	190	clear	10
12:56	65	20	40	53	210	clear	10
11:56	64	22	39	54	220	clear	10
10:56	62	23	41	59	210	haze	4
10:34	61	25	49	62	220	haze	2
10:19	61	27	45	60	220	haze	3
10:05	61	25	54	63	210	haze	2.5
9:56	60	28	43	62	220	haze	4
9:49	61	27	48	66	210	haze	2.5
9:29	59	27	49	69	220	haze	1.75
9:22	59	29	48	60	220	haze	3
9:11	57	28	47	60	220	haze	1.75
8:56	57	31	44	56	220	haze	3
8:51	57	33	40	60	220	haze	3
8:46	55	35	45	62	220	haze	1.5
8:38	55	35	47	60	220	haze	2.5
7:56	53	38	9	17	190	clear	10
6:56	51	39	12	22	180	clear	10
5:56	47	42	5		120	clear	10
4:56	48	39	9		130	clear	10
3:56	51	35	5			clear	10
2:56	51	35	7		170	clear	10
1:56	53	31	16	28	200	clear	10
0:56	54	30	22	29	190	clear	10

Table 7. Wind and weather observations for Telluride, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:50	27	93	0			lt snow	1.75
23:30	27	93	9		300	lt snow	1
23:10	28	93	13	28	290	hvy snow	0.5
22:50	30	93	0			lt snow	1.75
22:30	32	80	3	20	160	lt snow	1.5
22:10	32	80	3		150	lt snow	10
21:50	32	80	3		80	lt snow	5
21:30	32	93	3		80	lt snow	3
21:10	32	93	6		110	lt snow	1.75
20:50	30	100	0			lt snow	2
20:30	32	93	0			lt snow	1
20:10	32	86	7	17	240	mod snow	1
19:50	34	69	8		240	lt snow	4
19:30	37	48	12	38	250	lt snow	2.5
19:10	41	30	26	35	240	haze	3
18:50	41	30	23	38	220	haze	3
18:30	41	28	6	22	180	haze	3
18:10	43	24	13	25	220	haze	3
17:50	43	26	12	26	190	haze	3
17:30	43	28	15	35	190	haze	3
17:10	43	28	5	20	190	haze	3
16:50	43	28	8	24	220	haze	3
16:30	43	36	14	29	180	haze	5
16:10	43	36	8	18	150	haze	5
15:50	41	41	10	23	210	overcast	7
15:30	41	41	12	23	190	overcast	7
15:10	41	41	16	29	140	overcast	10
14:50	41	41	9	33	160	mostly cloudy	10
14:30	41	38	18	31	200	partly cloudy	10
14:10	41	41	10	45	170	overcast	10
13:50	39	44	9	29	200	overcast	10
13:30	37	48	14	32	210	overcast	10
13:10	37	52	9	25	170	overcast	10
12:50	37	52	12	21	180	overcast	10
12:30	37	48	15	24	150	overcast	10
12:10	39	44	12	20	140	overcast	10
11:50	37	52	9	17	140	mostly cloudy	10
11:30	37	48	12	22	140	mostly cloudy	10
11:10	37	48	8		150	mostly	10

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
						cloudy	
10:50	37	52	5		170	mostly cloudy	10
10:30	36	55	9	17	210	mostly cloudy	10
10:10	34	64	12	22	170	overcast	10
9:50	34	69	12	17	190	lt snow	10
9:30	34	64	15	26	160	overcast	10
9:10	36	60	15	23	170	overcast	10
8:50	36	60	7		140	mostly cloudy	10
8:30	34	64	9		110	partly cloudy	10
8:10	32	74	0			mostly cloudy	10
7:50	32	80	5		80	partly cloudy	10
7:30	32	80	3		130	partly cloudy	10
7:10	32	80	5		180	clear	10
6:50	32	80	7		200	clear	10
6:30	34	64	12	18	230	partly cloudy	10
6:10	34	64	7		250	mostly cloudy	10
5:50	36	60	13	23	230	mostly cloudy	10
5:30	34	69	7	17	240	mostly cloudy	10
5:10	34	75	6	22	220	overcast	10
4:50	32	93	5		120	overcast	10
4:30	32	93	3		80	overcast	10
4:10	32	93	0			lt snow	10
3:50	32	93	3		60	lt snow	1.75
3:30	32	93	5	18	330	mod snow	0.75
3:10	32	86	8		280	mod snow	4
2:50	32	80	6		360	overcast	10
2:30	32	86	0			overcast	10
2:10	32	86	5		90	lt snow	10
1:50	32	86	8		120	overcast	10
1:30	32	86	8		80	overcast	10
1:10	32	86	5		40	lt snow	7
0:50	32	93	7		90	lt snow	1.75
0:30	32	86	13	16	120	lt snow	3
0:10	32	93	0			lt snow	4

Table 8. Wind and weather observations for Montrose, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:53	35	92	10		110	overcast	9
23:40	36	87	3			lt snow, fog	5
23:18	36	93	6		310	lt rain	8
23:03	36	100	14		280	lt rain	7
22:53	37	92	14		300	lt rain	10
21:53	44	65	5		200	mostly cloudy	10
20:53	44	65	0			lt rain	10
19:53	45	63	3			mostly cloudy	10
19:38	46	61	16	30	250	lt rain	8
18:53	47	56	17	29	280	haze	3
18:49	46	57	22	31	290	haze	3
18:35	48	50	20	32	260	haze	2.5
18:26	50	43	26	40	260	haze	1.75
18:08	52	37	23	44	260	haze	2
17:57	52	37	33	52	240	haze	1.5
17:53	52	36	23	30	240	haze	2
17:09	52	37	23	39	270	haze	2
17:02	54	32	29	36	270	haze	2
16:53	56	26	16	23	260	haze	3
16:33	57	24	15	23	180	haze	3
15:53	58	23	22	39	220	haze	4
14:53	59	25	20	39	190	mostly clear	10
13:53	60	24	20	25	220	mostly clear	10
12:53	58	26	29	41	240	clear	9
11:53	56	33	16	25	210	mostly clear	10
10:53	54	35	20	32	210	clear	10
9:53	50	50	29	37	210	clear	10
8:53	47	58	0			clear	10
7:53	46	53	9		190	clear	10
6:53	42	70	0			clear	10
5:53	43	70	8		170	overcast	10
4:53	43	70	0			overcast	10
3:53	43	70	3		70	overcast	10
2:53	42	79	17	30	220	lt rain	10
1:53	45	58	16	25	140	clear	10
0:53	42	70	23	32	180	mostly clear	10

Table 9. Wind and weather observations for Gunnison, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, weather, and visibility (caused by or reduced by dust) have been highlighted in yellow.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:50	27	93	0			lt snow	1.75
23:30	27	93	9		300	lt snow	1
23:10	28	93	13	28	290	hvy snow	0.5
22:50	30	93	0			lt snow	1.75
22:30	32	80	3	20	160	lt snow	1.5
22:10	32	80	3		150	lt snow	10
21:50	32	80	3		80	lt snow	5
21:30	32	93	3		80	lt snow	3
21:10	32	93	6		110	lt snow	1.75
20:50	30	100	0			lt snow	2
20:30	32	93	0			lt snow	1
20:10	32	86	7	17	240	mod snow	1
19:50	34	69	8		240	lt snow	4
19:30	37	48	12	38	250	lt snow	2.5
19:10	41	30	26	35	240	haze	3
18:50	41	30	23	38	220	haze	3
18:30	41	28	6	22	180	haze	3
18:10	43	24	13	25	220	haze	3
17:50	43	26	12	26	190	haze	3
17:30	43	28	15	35	190	haze	3
17:10	43	28	5	20	190	haze	3
16:50	43	28	8	24	220	haze	3
16:30	43	36	14	29	180	haze	5
16:10	43	36	8	18	150	haze	5
15:50	41	41	10	23	210	overcast	7
15:30	41	41	12	23	190	overcast	7
15:10	41	41	16	29	140	overcast	10
14:50	41	41	9	33	160	mostly cloudy	10
14:30	41	38	18	31	200	partly cloudy	10
14:10	41	41	10	45	170	overcast	10
13:50	39	44	9	29	200	overcast	10
13:30	37	48	14	32	210	overcast	10
13:10	37	52	9	25	170	overcast	10
12:50	37	52	12	21	180	overcast	10
12:30	37	48	15	24	150	overcast	10
12:10	39	44	12	20	140	overcast	10
11:50	37	52	9	17	140	mostly cloudy	10
11:30	37	48	12	22	140	mostly cloudy	10
11:10	37	48	8		150	mostly	10

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
						cloudy	
10:50	37	52	5		170	mostly cloudy	10
10:30	36	55	9	17	210	mostly cloudy	10
10:10	34	64	12	22	170	overcast	10
9:50	34	69	12	17	190	lt snow	10
9:30	34	64	15	26	160	overcast	10
9:10	36	60	15	23	170	overcast	10
8:50	36	60	7		140	mostly cloudy	10
8:30	34	64	9		110	partly cloudy	10
8:10	32	74	0			mostly cloudy	10
7:50	32	80	5		80	partly cloudy	10
7:30	32	80	3		130	partly cloudy	10
7:10	32	80	5		180	clear	10
6:50	32	80	7		200	clear	10
6:30	34	64	12	18	230	partly cloudy	10
6:10	34	64	7		250	mostly cloudy	10
5:50	36	60	13	23	230	mostly cloudy	10
5:30	34	69	7	17	240	mostly cloudy	10
5:10	34	75	6	22	220	overcast	10
4:50	32	93	5		120	overcast	10
4:30	32	93	3		80	overcast	10
4:10	32	93	0			lt snow	10
3:50	32	93	3		60	lt snow	1.75
3:30	32	93	5	18	330	mod snow	0.75
3:10	32	86	8		280	mod snow	4
2:50	32	80	6		360	overcast	10
2:30	32	86	0			overcast	10
2:10	32	86	5		90	lt snow	10
1:50	32	86	8		120	overcast	10
1:30	32	86	8		80	overcast	10
1:10	32	86	5		40	lt snow	7
0:50	32	93	7		90	lt snow	1.75
0:30	32	86	13	16	120	lt snow	3
0:10	32	93	0			lt snow	4

Table 10. Wind and weather observations for Pagosa Springs, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds (caused by or reduced by dust) have been highlighted in yellow. No visual weather records are made for this site.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
0:00	32	91	12	25	230		
23:45	33	88	1	5	140		
23:30	33	87	2	8	95		
23:00	35	76	6	19	210		
22:30	41	39	9	24	215		
22:15	41	37	19	37	250		
22:00	44	32	7	24	250		
21:45	44	31	12	21	250		
21:30	46	28	9	23	265		
21:15	47	27	11	24	225		
21:00	48	27	12	31	220		
20:45	48	27	5	23	190		
20:30	49	26	13	27	160		
20:15	50	26	6	17	190		
20:00	50	26	7	24	195		
19:45	50	26	9	16	210		
19:30	51	26	12	29	180		
19:15	51	26	14	29	200		
19:00	51	27	16	25	155		
18:45	50	27	14	34	205		
18:30	50	27	13	32	210		
18:15	52	26	14	29	220		
18:00	53	26	16	33	230		
17:45	52	27	14	26	255		
17:30	51	28	22	41	200		
17:15	52	28	14	35	235		
17:00	51	29	11	24	175		
16:45	52	29	12	29	190		
16:30	53	29	10	21	190		
16:15	52	29	12	23	205		
16:00	50	30	10	27	265		
15:45	52	29	12	24	195		
15:30	52	29	12	23	145		
15:15	51	30	11	26	230		
15:00	50	32	7	19	215		
14:45	49	33	7	22	260		
14:30	49	33	9	30	210		
14:15	51	32	9	26	180		
14:00	50	30	7	23	235		
13:45	51	30	9	24	200		
13:30	50	30	7	26	200		
13:15	51	30	14	32	200		

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
13:00	52	31	12	31	160		
12:45	50	33	9	25	235		
12:30	51	34	9	20	195		
12:15	49	35	12	23	215		
12:00	47	36	9	22	235		
11:45	48	36	9	20	180		
11:30	47	38	12	22	190		
11:15	49	39	6	15	145		
11:01	46	42	9	14	130		
10:45	46	44	6	11	205		
10:30	45	49	4	9	130		
10:15	43	56	1	4	20		
10:00	40	61	0	4	165		
9:45	38	65	3	4	250		
9:30	38	67	1	3	190		
9:15	37	70	1	2	235		
9:00	37	76	0	1	275		
8:45	36	80	2	3	5		
8:30	35	84	1	4	330		
8:15	35	89	1	2	30		
8:00	33	91	0	1	270		
7:45	32	91	0	1	270		
7:30	32	91	2	4	280		
7:15	31	90	2	4	285		
7:00	32	90	2	3	280		
6:45	32	89	2	5	285		
6:30	32	87	0	2	0		
6:15	33	85	0	4	345		
6:00	33	83	2	4	5		
5:45	34	79	2	4	345		
5:30	34	76	0	2	310		
5:15	35	75	0	3	285		
5:00	35	72	2	4	335		
4:45	35	71	1	3	300		
4:30	36	69	1	6	295		
4:15	35	69	6	10	285		
4:00	35	71	1	1	270		
3:45	35	72	1	6	285		
3:30	35	72	0	4	200		
3:15	35	72	0	2	285		
3:00	35	72	0	1	265		
2:45	35	72	2	4	275		
2:30	35	71	0	2	130		
2:15	35	69	0	5	310		
2:00	35	65	3	7	0		
1:45	36	56	4	13	340		

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
1:30	39	46	3	14	290		
1:15	38	44	1	7	105		
1:00	37	43	0	4	295		
0:45	37	44	1	2	180		
0:30	36	44	2	4	310		
0:15	36	44	2	3	15		

Table 11. Wind and weather observations for Grand Junction, Colorado, reported by the University of Utah MesoWest site (http://www.met.utah.edu/mesowest/) for April 3, 2009. Speeds at or above the blowing dust thresholds, Weather, and Visibility (caused by or reduced by dust) have been highlighted in yellow.

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
23:53	38	85	8		10	overcast	10
23:28	37	87	6		340	overcast	10
23:00	37	87	8		320	overcast	10
22:53	38	85	7		330	overcast	10
22:00	37	87	5		290	overcast	10
21:53	38	85	6		300	overcast	10
21:24	39	81	3			lt rain	10
20:53	39	86	9		310	lt rain	10
19:53	38	89	14		320	lt rain	10
19:45	37	87	15		310	lt rain	10
19:35	39	87	18		290	lt rain	7
19:27	39	87	16	25	310	lt rain	8
19:01	39	87	18		320	overcast	10
18:53	39	89	20	33	300	lt rain	10
18:12	48	71	3		220	overcast	10
17:53	49	71	8		240	mostly cloudy	10
17:21	50	62	7		60	mostly cloudy	10
17:07	48	66	3		340	mostly cloudy	10
16:53	50	66	8		10	partly cloudy	10
16:25	50	66	6		340	mostly cloudy	10
16:08	48	66	5			mostly cloudy	10
15:53	48	71	6		360	lt rain	10
14:53	47	71	7		290	mostly cloudy	10
14:48	46	71	7		280	mostly cloudy	10

Time in MDT (April 3)	Temperature Degrees F	Relative Humidity in %	Wind Speed in mph	Wind Gust in mph	Wind Direction in Degrees	Weather	Visibility in miles
14:34	48	71	8		290	mostly cloudy	10
13:53	45	74	3		60	partly cloudy	10
13:31	45	76	8		340	mostly cloudy	10
12:53	43	79	10		310	mostly cloudy	10
12:23	41	81	0			lt rain	10
11:53	40	86	3		40	lt rain	7
11:48	39	87	3		60	lt rain	7
11:05	39	87	7		10	lt rain, fog	4
10:53	39	89	8		360	mod rain, fog	2.5
10:45	39	87	8		10	mod rain, fog	4
9:53	39	86	6		340	mod rain	7
9:29	39	87	8		320	lt rain, fog	4
9:19	37	87	10	22	310	hvy rain, fog	2.5
8:53	43	82	9		10	lt rain	10
8:02	41	87	3		60	lt rain	7
7:55	41	87	0			hvy rain	7
7:53	41	87	0			hvy rain	8
6:53	43	82	14		220	lt rain	10
5:53	44	76	12		160	overcast	10
4:53	46	60	9		150	overcast	10
3:53	43	65	7		90	mostly cloudy	10
2:53	48	49	20	35	150	overcast	10
1:53	49	48	13		160	overcast	10
0:53	50	29	8		190	mostly cloudy	10

Table 12. Storm Reports for the National Weather Service Flagstaff Forecast Office on April 3, 2009 (reported by Iowa State University Department of Agronomy http://mesonet.agron.iastate.edu/vtec/#2009-O-NEW-KGJT-HW-W-0002.)

Office	Report Time	County	Location	ST	Event Type	Mag.	Source
Flagstaff	Fri Apr 03 2009 15:25:00 GMT-8:25 MST	Coconino	7 Wnw Winslow	AZ	NON-TSTM WND GST	68	public
Flagstaff	Fri Apr 03 2009 15:25:00 GMT-8:25 MST	Coconino	7 Wnw Winslow	AZ	NON-TSTM WND GST	68	public
Flagstaff	Fri Apr 03 2009 16:26:00 GMT-9:26 MST	Navajo	Winslow	AZ	NON-TSTM WND GST	69	asos
Flagstaff	Fri Apr 03 2009 17:05:00 GMT-10:05 MST	Yavapai	Prescott	AZ	NON-TSTM WND GST	60	asos
Flagstaff	Fri Apr 03 2009 17:55:00 GMT-10:55 MST	Coconino	Meteor Crater	AZ	NON-TSTM WND GST	91	public
Flagstaff	Fri Apr 03 2009 17:55:00 GMT-10:55 MST	Coconino	Meteor Crater	AZ	NON-TSTM WND GST	91	public
Flagstaff	Fri Apr 03 2009 17:55:00 GMT-10:55 MST	Apache	Petrifed Forest N.P. He	AZ	NON-TSTM WND GST	60	park/forest srvc
Flagstaff	Fri Apr 03 2009 18:39:00 GMT-11:39 MST	Apache	St. Johns	AZ	NON-TSTM WND GST	61	asos

Office	Report Time	County	Location	ST	Event Type	Mag.	Source
Flagstaff	Fri Apr 03 2009 20:05:00 GMT-0600 13:05 MST	Apache	Petrifed Forest N.P. He	AZ	NON-TSTM WND GST	60	park/forest srvc
Flagstaff	Fri Apr 03 2009 20:05:00 GMT-13:05 MST	Apache	Petrifed Forest N.P. He	AZ	NON-TSTM WND GST	60	park/forest srvc
Flagstaff	Fri Apr 03 2009 20:50:00 GMT-0600 (Mountain Daylight Time)	Apache	Sanders	AZ	NON-TSTM WND GST	68	public
Flagstaff	Fri Apr 03 2009 20:50:00 GMT-13:50 MST	Apache	Sanders	AZ	NON-TSTM WND GST	68	public
Flagstaff	Fri Apr 03 2009 22:15:00 GMT-15:15 MST	Coconino	Fraziers Well	AZ	NON-TSTM WND GST	58	mesonet
Flagstaff	Fri Apr 03 2009 22:18:00 GMT-15:18 MST	Coconino	Tuba City	AZ	NON-TSTM WND GST	61	mesonet
Flagstaff	Fri Apr 03 2009 23:14:00 GMT-16:14 MST	Yavapai	Seligman	AZ	NON-TSTM WND GST	71	awos
Flagstaff	Sat Apr 04 2009 00:44:00 GMT-17:44 MST	Yavapai	2 Sse Milepost 340 On H	AZ	NON-TSTM WND GST	58	mesonet
Flagstaff	Sat Apr 04 2009 00:55:00 GMT-17:55 MST	Navajo	1 Wnw Milepost 310 On S	AZ	NON-TSTM WND GST	64	mesonet

Office	Report Time	County	Location	ST	Event Type	Mag.	Source
Flagstaff	Sat Apr 04 2009 01:52:00 GMT-18:52 MST	Coconino	Doney Park	AZ	NON-TSTM WND GST	61	mesonet
Flagstaff	Sat Apr 04 2009 01:53:00 GMT-18:53 MST	Yavapai	2 Se Bumble Bee	AZ	NON-TSTM WND GST	58	mesonet
Flagstaff	Sat Apr 04 2009 02:34:00 GMT-19:34 MST	Apache	Window Rock	AZ	NON-TSTM WND GST	66	asos
Flagstaff	Sat Apr 04 2009 03:50:00 GMT-20:50 MST	Navajo	Show Low	AZ	NON-TSTM WND GST	60	awos

3.0 Ambient Monitoring Data and Statistics

A PM_{10} concentration that exceeded the level of the twenty-four-hour NAAQS was monitored in Pagosa Springs, Colorado on Friday April 3, 2009. The exceedance of 225 $\mu g/m^3$ was recorded at the Pagosa Springs Middle School monitoring site. This exceedance was caused by nature; a regional dust storm that was not preventable or reasonably controllable. The spatial extent of this dust storm was from the deserts of northern Arizona and northwestern New Mexico through the southern and central portions of Colorado (see Section 2). The brunt of this storm traveled through the south central portion of the Colorado Rocky Mountains hitting Pagosa Springs and Alamosa the hardest then traveled north to Mount Crested Butte and Breckenridge. This weather system adversely affected the air quality in Pagosa Springs and had a negative impact on PM_{10} concentrations at several other monitoring stations in Colorado, including Alamosa-Municipal, Alamosa-Adams State College, Breckenridge, and Mount Crested Butte. Unfortunately, this was not a once every third-day scheduled sampling day; thus, the high PM_{10} was only captured by the daily monitoring sites, which make up less than one third of the PM_{10} network. See Figure 1 for a map of all the valid PM_{10} concentrations recorded in Colorado on April 3, 2009.

The 225 $\mu g/m^3$ at Pagosa Springs was the only site greater than the 24-hour PM_{10} NAAQS of 150 $\mu g/m^3$. Monitored PM_{10} levels before and after the April 3, 2009 episode were low as can be seen in Table 13 and Figure 31. The APCD reviewed PM_{10} monitoring data in Pagosa Springs and the surrounding areas in the path of the dust storm and statistically analyzed the Pagosa Springs data in section 3.1 below. The PM_{10} concentrations in Pagosa Springs on April 3, 2009 were compared to the concentrations on the day before and the day after the regional dust storm. Figure 31 showing PM_{10} data for the months of March and April 2009 and Figure 32 showing PM_{10} data for 2009 in Pagosa Springs, clearly shows that the regional blowing dust storm adversely affected the air quality in Pagosa Springs on April 3, 2009. The days before and after the event were quite low with concentrations that are typical for winter in Pagosa Springs (see Table 13 and section 3.1, the Historical Fluctuations of PM_{10} Concentrations in Pagosa Springs). In the Pagosa Springs 2009 time series graph, most of the days had PM_{10} concentrations well below 50 $\mu g/m^3$, except for the four exceedances in March and April, which were all due to high wind blowing dust events similar to this one.

Other PM_{10} monitoring sites in Colorado had elevated PM_{10} concentrations that were also above their typical seasonal and historical concentrations on April 3, 2009 as explained in Section 3.1 below, but these sites did not exceed the 24-hour NAAQS. The remaining Colorado sites recorded concentrations between 28 - 32 $\mu g/m^3$ on April 3, 2009 (see map in Figure 1) at Denver area sites, which usually have low concentrations during these southwestern regional dust storm events, and 107 $\mu g/m^3$ at the Alamosa-Municipal Building site on April 3, 2009. Also, the Alamosa-Adams State College site was significantly elevated at 92 $\mu g/m^3$.

Table 13. Pagosa Springs PM_{10} Concentrations Before and After April 3, 2009 Regional Dust Storm.

Date	**Pagosa Springs**	**Alamosa Adams State College**	**Alamosa Municipal**	**Breckenridge**	**Mount Crested Butte**
4/02/2009	14	10	16	11	19
4/03/2009	**225**	**92**	**107**	**79**	**80**
4/03/2009	19	8	16	39	25

The April 3, 2009 regional dust storm had a large spatial extent covering most of northeast Arizona, northwest New Mexico, and it moved into southern and central mountains area of Colorado and was captured at the daily PM_{10} sites from Pagosa Springs to Breckenridge. Since only daily PM_{10} sites were operating on April 3, 2009 it is not possible to see many high PM_{10} concentrations across the state. For example, Durango and Telluride were likely in the path of the dust storm but were not monitoring on April 3, 2009. A more robust network of PM_{10} monitors on a daily frequency would have shown more exceedances or elevated concentrations from this natural blowing dust event. Section 2 provides the meteorological evidence for the spatial extent of this regional blowing dust event including the dust on snow data from the Colorado Dust-on-Snow (CODOS) network. The CODOS network clearly show that the spatial extent of this dust storm was quite large, covering thousands of square miles (see http://www.snowstudies.org/CODOS/Compiled%20WY%202010%20CODOS%20Updates.pdf).

There are also many weather stations across the path of the dust storm that recorded high winds, visibilities less than 10 miles, and haze, which is blowing dust when there is no precipitation present for that hour. Many of these weather stations are located in areas that do not have PM_{10} monitoring sites. These meteorological stations can act as surrogates and help demonstrate the extent of the blowing dust in towns where there are no daily PM_{10} monitoring sites. See section 2 for the full meteorological details and extent of the regional dust storm.

Other data that shows the extent of the regional dust storm includes the Colorado Dust-on-Snow (CODOS) stations and news accounts and e-mails from credible eye witnesses. These sites record the date and other data when dust reached the high altitude monitoring stations (see Section 2 for details). April 3, 2009 was a dust on snow event according to the CODOS records (http://www.snowstudies.org/CODOS/CSAS%20Dust-on-Snow%20Log.pdf).

The time series graph in Figure 31 shows the seasonal PM_{10} concentrations at the Pagosa Springs site during the months of March and April, 2009. The graph shows five regional blowing dust events that occurred that spring and impacted the town of Pagosa Springs. The PM_{10} concentrations on the days before and after the April 3, 2009 blowing dust event were quite low and this chart shows that event to be concentrated on that single day in Pagosa Springs. The other blowing dust events in March and April showed similar results; low PM_{10} concentrations before and after the blowing dust days. The town of Pagosa Springs at 7,103 ft. (2165 m) is located in a mountain valley topographic setting surrounded by mostly coniferous forests. There are very few anthropogenic local sources of geologic PM_{10} sized dust in the area as most of the area is covered in coniferous forest vegetation. Also, the anthropogenic sources are well controlled due to a State Implementation Plan (SIP) / PM_{10} Maintenance Plan. See section 5.0 Local Dust Controls for a comprehensive list of PM_{10} control measures employed in Pagosa Springs through the PM_{10} SIP / Maintenance Plan.

From the limited PM_{10} data (daily sites only) on April 3, 2009 in Pagosa Springs, Alamosa, Breckenridge, and Mount Crested Butte before and after the high wind blowing dust event clearly shows that April 3, 2009 was a high PM_{10} event. Furthermore, the regional blowing dust event on that day caused a PM_{10} concentration that was much higher than normal for the two month (March and April) seasonal spring period of interest. Even though the PM_{10} data for Pagosa Springs during the months of March and April shows three additional PM_{10} exceedances, these were also caused by large naturally occurring regional blowing dust events that were not preventable or reasonably controllable. The March and April, 2009 period was exceptional in that it contains one of the most frequent regional blowing dust periods in the history of PM_{10} monitoring in Colorado and was well documented by numerous sources. There were six regional blowing dust events in the two month period that covered large spatial areas of Colorado, Arizona and New Mexico that have been, or will be, documented by the CDPHE APCD in previous (see March 22, 2009 TSD) or future exceptional event technical support documents.

The elevated PM_{10} concentrations in Alamosa at the Adams State College and Municipal Building sites of 92 µg/m^3 and 107 µg/m^3, respectively and at Mount Crested Butte 80 µg/m^3, and Breckenridge 79 µg/m^3 on April 3, 2009 provide additional direct evidence that the regional dust storm brought elevated PM_{10} concentrations to other areas in Colorado and affected air quality in those areas. There were no other PM_{10} exceedances recorded in the State because the PM_{10} daily monitoring network is sparse in this area of Colorado and dust storms do not have homogeneous deposition

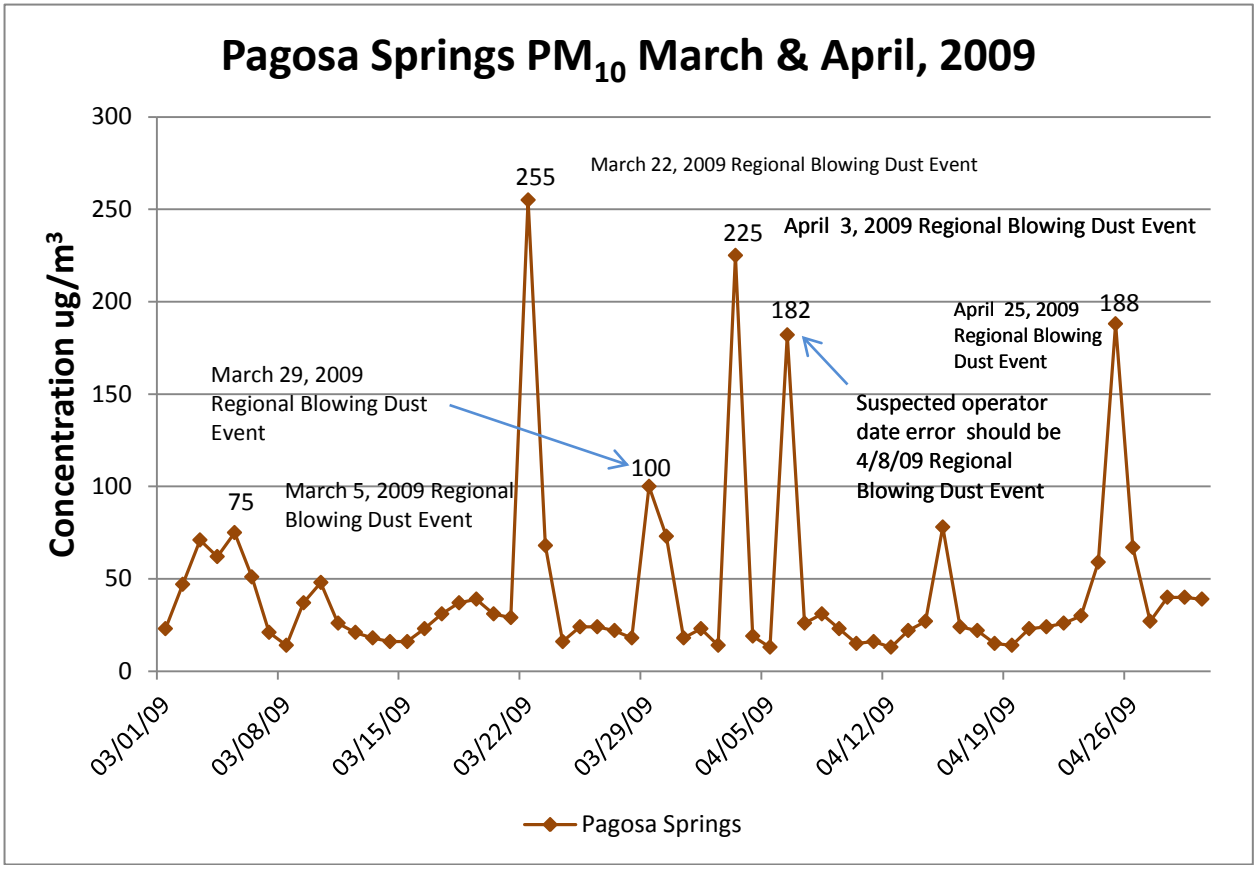


Figure 31. PM_{10} Seasonal Concentrations in Pagosa Springs March and April, 2009.

Figure 32 shows the annual PM_{10} data for 2009 in Pagosa Springs. There were at least six regional blowing dust events identified by the Division that adversely affected the air quality in Pagosa Springs in 2009. Four of those events caused PM_{10} 24-hour exceedances in Pagosa Springs. Also, the data would support that PM_{10} is well controlled in Pagosa Springs. If it were not, there should be high PM_{10} spikes during the winter when temperature inversions are strongest, which is common in Colorado mountain valley regimes. Instead, high PM_{10} concentrations are only seen when winds are highest during regional dust storm events. All of these six dust storms originated in the Four Corners area from deserts in northern Arizona and northwest New Mexico.

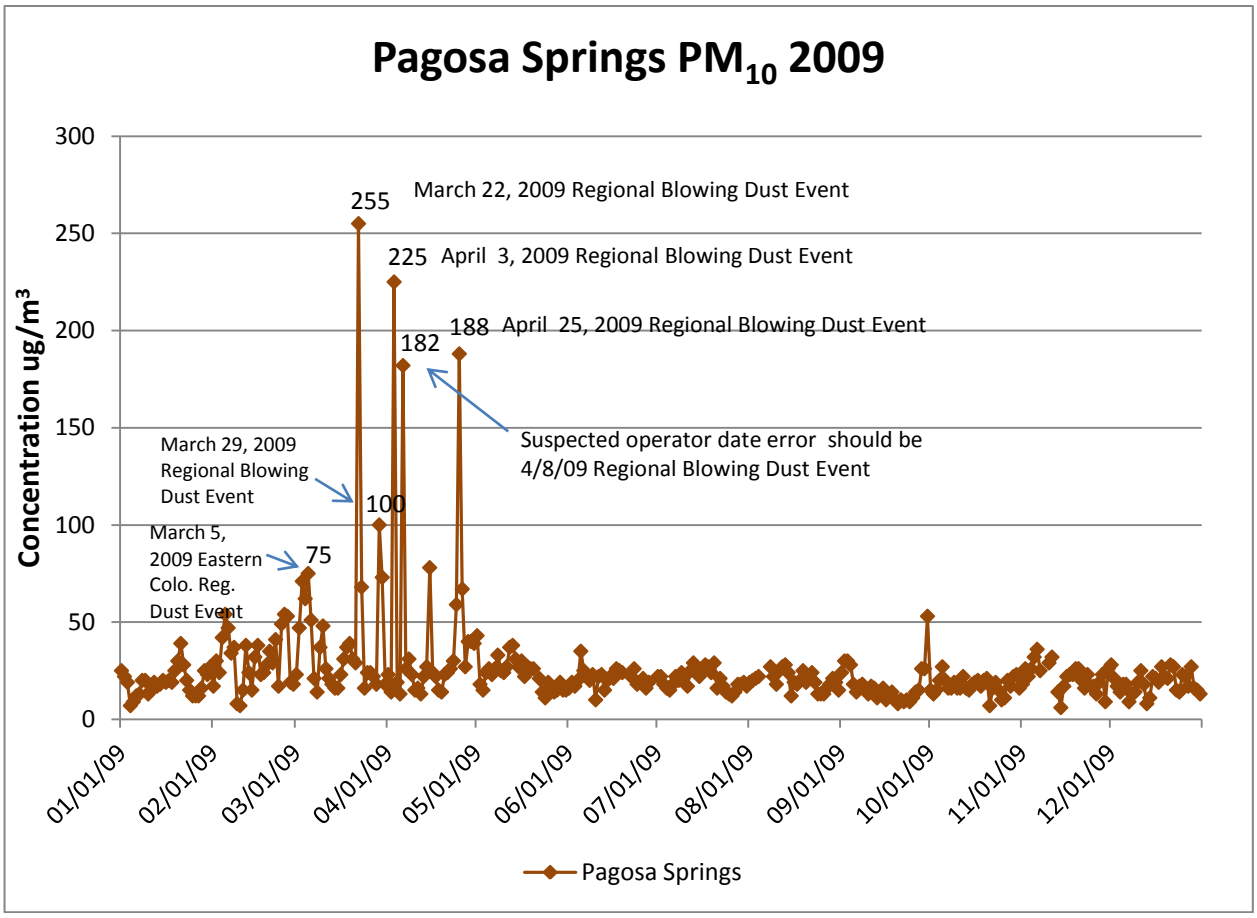


Figure 32. Pagosa Springs PM_{10} Time Series for 2009

Figure 33, the Alamosa PM_{10} time series graph for 2009, is shown to demonstrate how Alamosa was impacted by the dust storm on April 3, 2009 and to show the extent of the blowing dust. Even though Alamosa did not exceed the NAAQS on April 3, 2009, the PM_{10} concentrations were significantly elevated with values of 107 $\mu g/m^3$ at the Alamosa-Municipal site and 92 $\mu g/m^3$ at the Alamosa-Adams State College site, respectively.

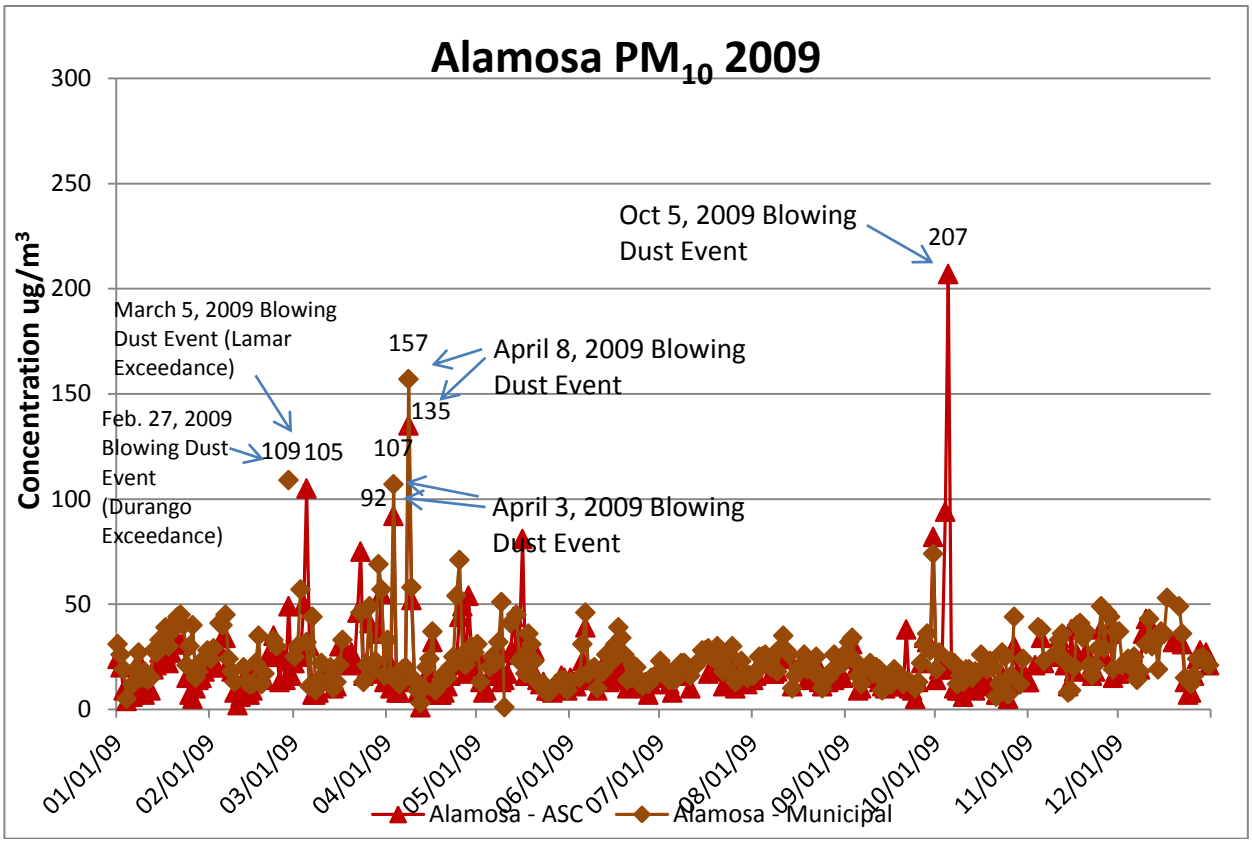


Figure 33. Alamosa PM_{10} Time Series for 2009

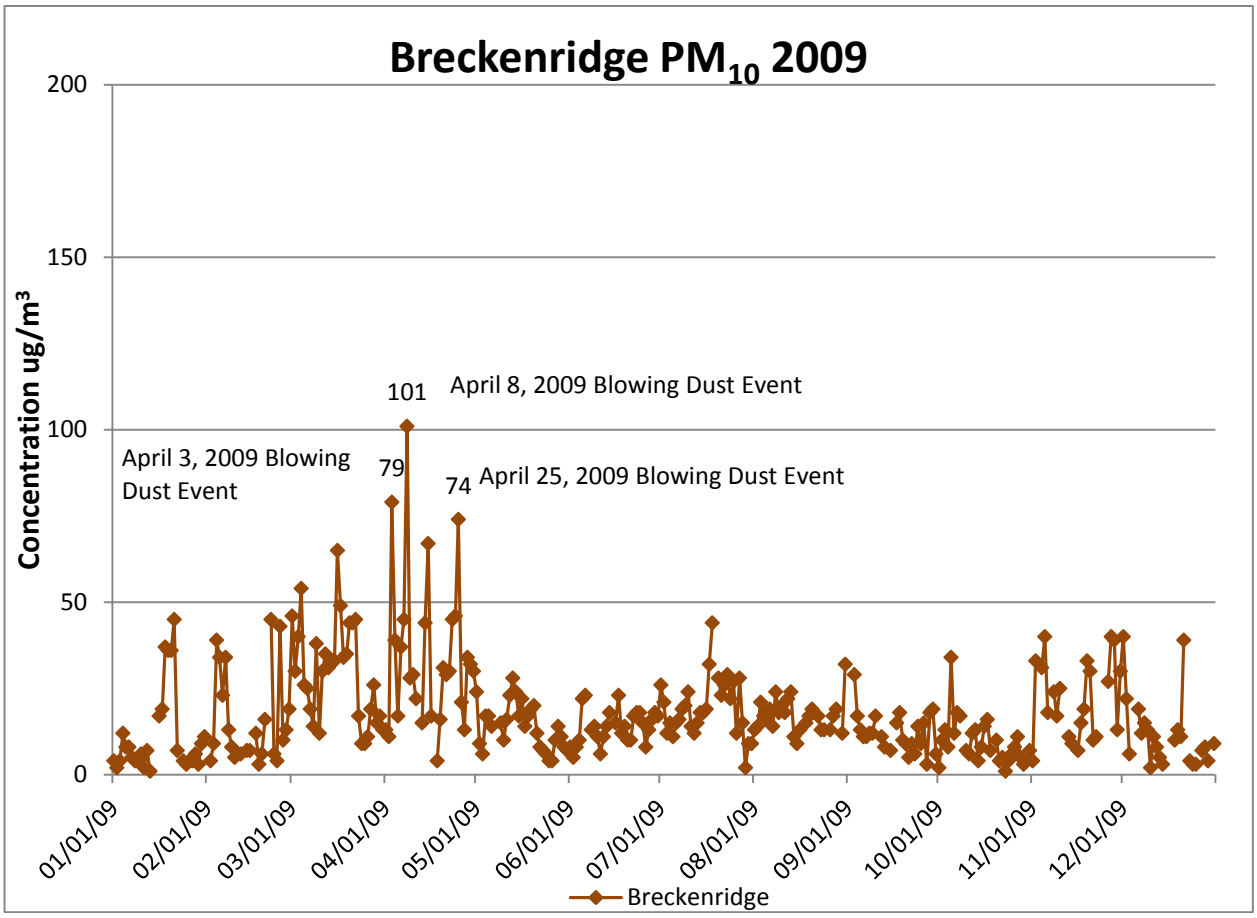


Figure 34. Breckenridge PM_{10} Time Series for 2009

The 2009 PM_{10} data for Breckenridge does appear to show a seasonal bias. The concentrations are higher in the spring period. This is confirmed in the 2004 - 2009 time series graph in Figure 35 which shows significant seasonality unlike other sites in the south, southwest, and southeast Colorado. Breckenridge is an international resort ski town. The elevated PM_{10} emissions are probably due to paved street emissions in the winter and spring when the roads dry out. Also, there is a lack of PM_{10} control measures for street emissions in Breckenridge since there is no SIP or MOU in place. However, Breckenridge has banned residential wood burning for all but a few grandfathered woodstoves. The PM_{10} concentrations are not high enough to warrant a SIP or MOU. There has only been one exceedance recorded of the NAAQS in Breckenridge from 2004 – 2009, at a concentration of 170 $\mu g/m^3$ on May 19, 2005. The PM_{10} concentration of 79 $\mu g/m^3$ on April 3, 2009 is the second highest concentration in 2009 and the sixteenth highest in the 2004 – 2009 dataset (n= 1785 samples). The second, third and fourth highest concentrations are only 110 $\mu g/m^3$, 105 $\mu g/m^3$, and 104 $\mu g/m^3$, respectively.

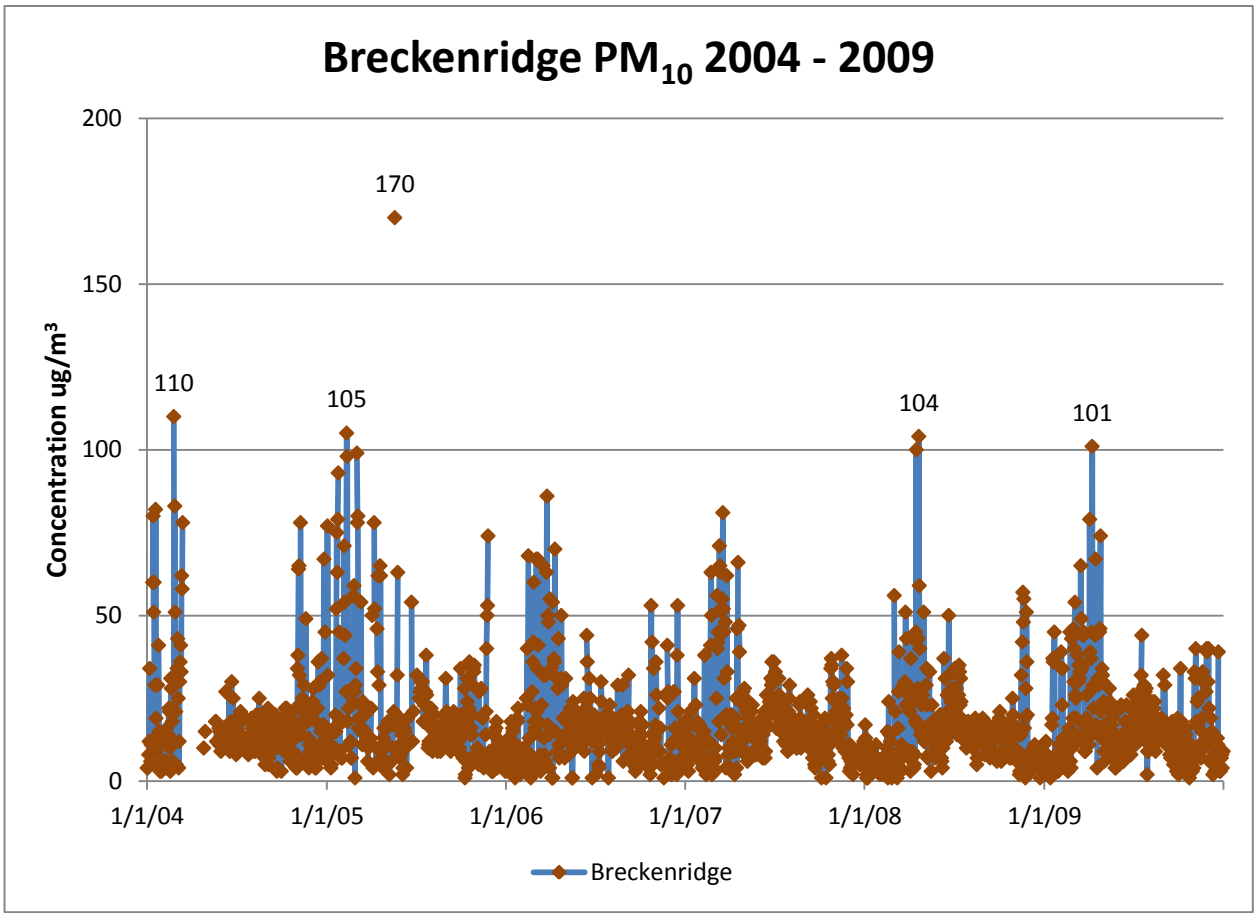


Figure 35. Breckenridge PM_{10} Time Series for 2004 - 2009

Mount Crested Butte is located 112 miles (182 km) north of Pagosa Springs with very complex terrain (13,000 – 14,000 foot peaks) between the two towns. Mount Crested Butte is a ski area town and the PM10 monitor is located at an elevation of 9,403 feet (2,866 m). CDPHE has a Memorandum of Agreement (MOA) in Mount Crested Butte to control dust from roads and other anthropogenic sources in the town. Furthermore, the Mount Crested Butte area was snow covered on March 22, 2009. The major sources of PM_{10} in Crested Butte: re-entrained dust from local streets (there are no major streets or highways in town) and residential wood burning. The largest contributor is re-entrained dust and the street dust was likely well controlled due to the controls in the MOA (using more durable sand and magnesium chloride to reduce dust on parking lots, more frequent street sweeping, and a construction ordinance to reduce mud and dirt carry-out on streets). (Reference: Mount Crested Butte, Memorandum of Agreement, Effective March 5, 1998.)

Figure 36 shows that PM_{10} concentrations in Mount Crested Butte for 2009 are much lower than the other impacted sites. Most days are well below 50 $\mu g/m^3$ and there are no concentrations above 100 $\mu g/m^3$. However, four of the 2009 blowing dust events significantly impacted air quality in Mount Crested Butte and the April 3, 2009 concentration was 80 $\mu g/m^3$, which was the second highest concentration in 2009 and the 98.9th percentile concentration for 2005 – 2009 (see Table 15).

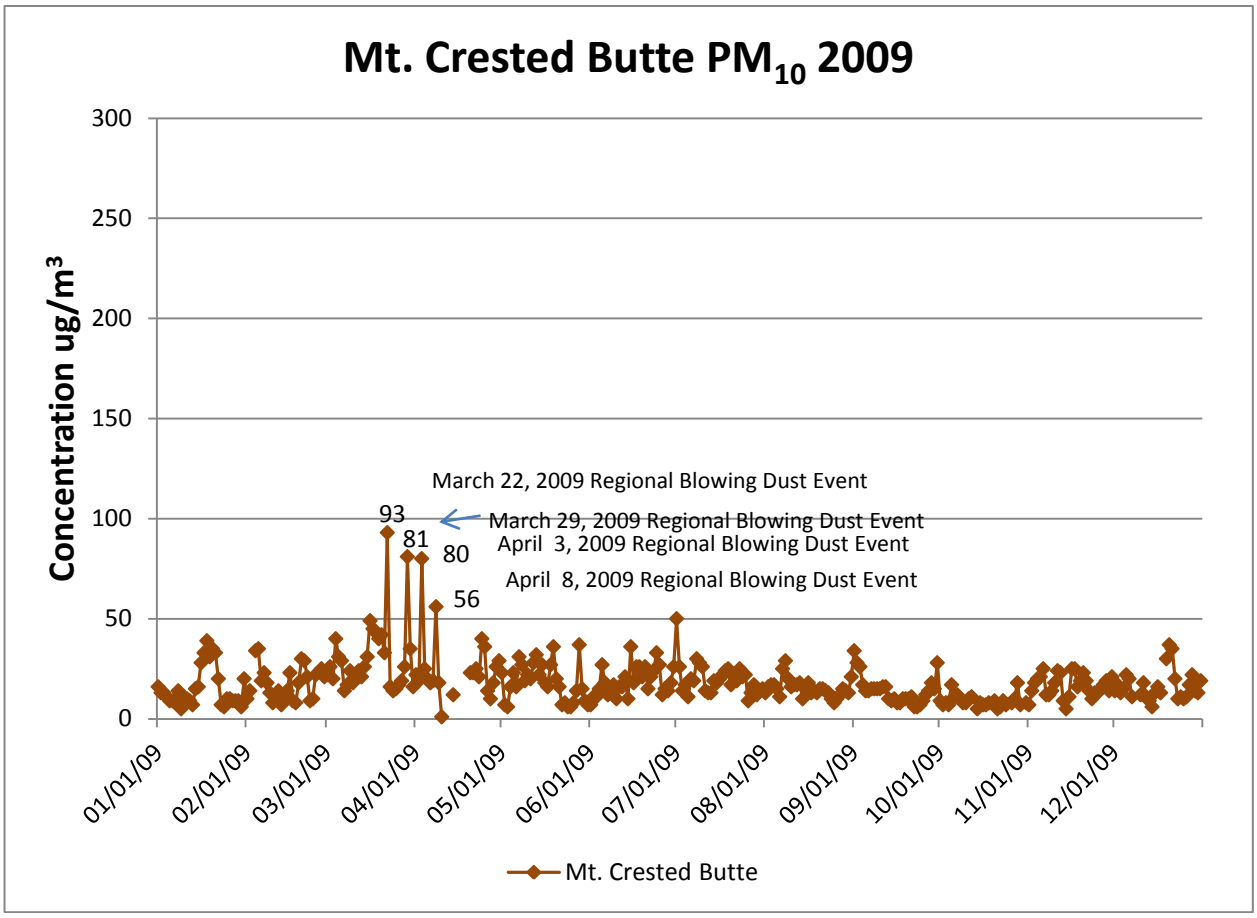


Figure36. Mount Crested Butte PM10 Time Series for 2009.

The six-year time-series graph in Figure 37 below shows that PM_{10} in Pagosa Springs sometimes has high concentrations in the winter to early summer period (Jan. to June). Statistically, however, there is little seasonal variation or month-to-month variation as discussed below. Most of the concentrations above are below 50 ug/m^3 and there are just three excursions between 100 – 150 ug/m^3. There were four PM_{10} exceedance in the spring of 2009. This was a very unusual dry period with several high wind blowing dust storms in the region. The four exceedances occurred on March 22, 2009, April 2, 2009, April 8, 2009, and April 25, 2009. The APCD has submitted a technical support document (TSD) for the March 22, 2009 Pagosa Springs Exceptional Event to EPA. This TSD provided ample evidence to support this exceedance as a natural high wind blowing dust event. The APCD plans to submit TSD's for the other exceedances in 2009 along with this April 3, 2009 exceedance as there is also ample evidence to support these PM_{10} exceedances as being caused by natural high wind blowing dust events.

Also, in this five-year period were three events that were elevated above 100 µg/m^3 and were caused by natural high wind events that are worth mentioning here. A near-exceedance of 149 ug/m3 occurred on May 1, 2008, but that date was not documented as an exceptional event by the APCD as it was not an exceedance of the 24-hour PM_{10} NAAQS. However, there is a high probability that the 149 ug/m3 was an exceptional event due to high winds and blowing dust. There is also ample weather data to demonstrate that May 1, 2008 had sustained wind speeds above the blowing dust threshold of greater than 25 mph (see http://mesowest.utah.edu/index.html). The other two concentrations greater than 100 ug/m3 (122 ug/m3 on February 15, 2006 and 102 ug/m3 on June 6, 2007) were also associated with high regional sustained winds above the blowing dust threshold of 25 mph and gusts of much higher winds also occurred on the high wind days. Both of these dates are recorded in the Colorado

Dust-on-Snow Deposition Events Log (see Table 13) as regional blowing dust events that brought windblown dust to snow covered areas near high mountain passes in Colorado, where there are little or no local anthropogenic sources of PM_{10}. Furthermore, the February 15, 2006 event was a documented exceptional event that caused an exceedance in Alamosa and Grand Junction, which are east and north of Pagosa Springs, respectively (see exceptional event Technical Support Documentation for Alamosa on 2/15/06.)

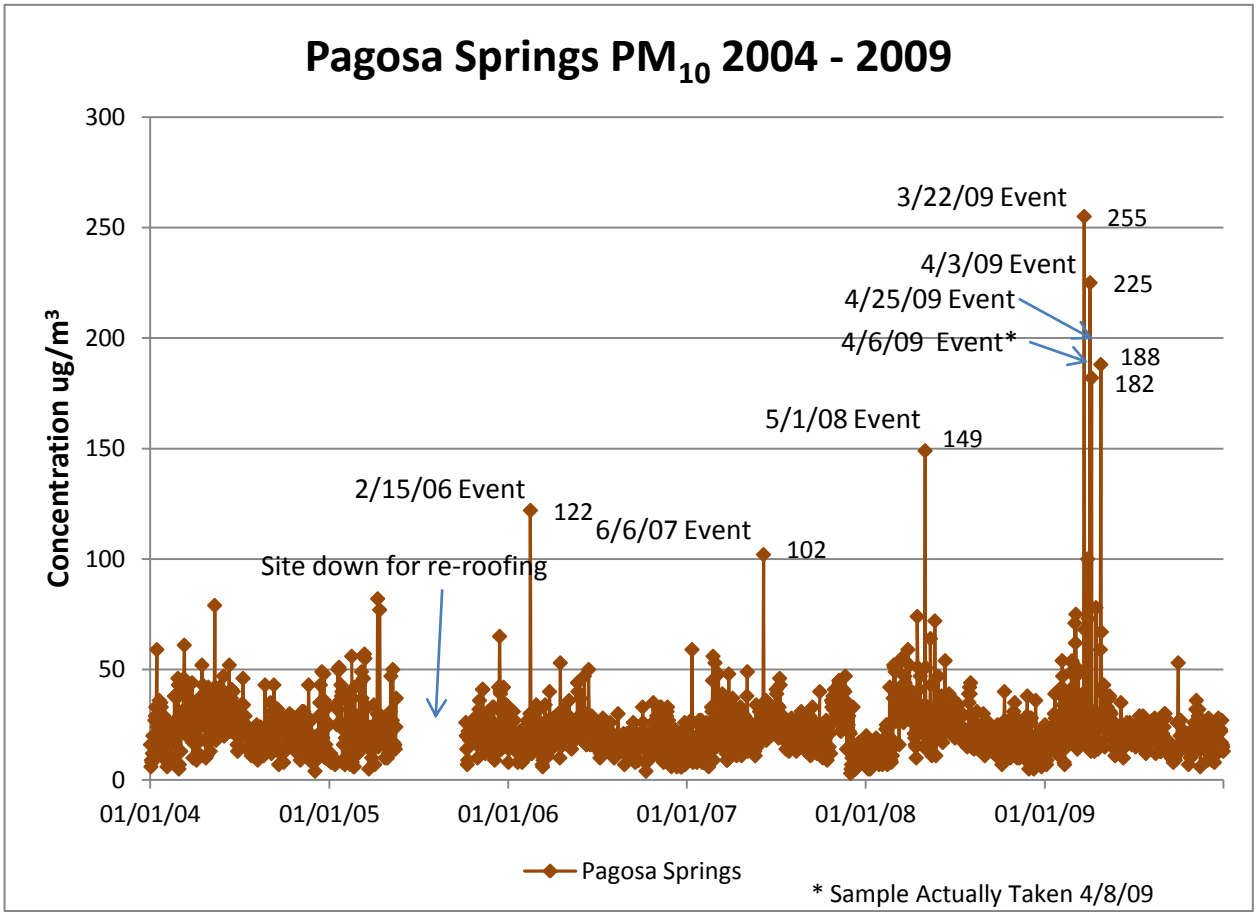


Figure37. Pagosa Springs PM_{10} Six Year Time Series

The monitoring data above shows the spatial extent and magnitude of impact of the regional blowing dust storm that impacted Alamosa and other Colorado towns. Section 3.1 below will discuss the historical fluctuations of PM_{10} in Alamosa and provide statistical analyses to demonstrate the magnitude and the seasonality of the April 3, 2009 dust storm. It will also provide a "but for" test using typical concentrations versus the exceptional event due to the regional dust storm to estimate the impact that was due to the regional dust storm.

3.1 Historical Fluctuations of PM_{10} Concentrations Pagosa Springs

This historical fluctuation evaluation of PM_{10} monitoring data for sites affected by the April 3, 2009 event was made using valid samples from PM_{10} samplers In Pagosa Springs. APCD has monitored PM_{10} in Pagosa Springs at two different sites (080070001 and 080070002) at various frequencies and intervals beginning in 1985. However, it's only been since 1992 that monitoring was performed with a consistent frequency (daily) and with sufficient completeness (> 75%) to satisfy data requirements for this analysis. Therefore, the data in this analysis is from both sites beginning January 1992 through the end of 2009. The sites are spatially situated so that concerns

regarding comparability between sites are minimal. There was no time period when data was taken concurrently at both sites; however the data from each data set reflects a similar distribution. This period includes a five-month interval from mid May 2005 through early October 2005 when the site was down for roof construction activities. The overall data summary and a time series plot for data from 2005 to 2009 are presented in Figure 38, with all data values being presented in $\mu g/m^3$

Table 14. Pagosa Springs PM_{10} Monitoring Data Summary

Summary 1992 - 2009

	Pagosa Springs
Count	6096
Min	3
1 Q	18
Median	24
3 Q	36
Max	262
Mean	28.6
SD	17.6
Date Range	1992 - 2009
04/03/2009	225

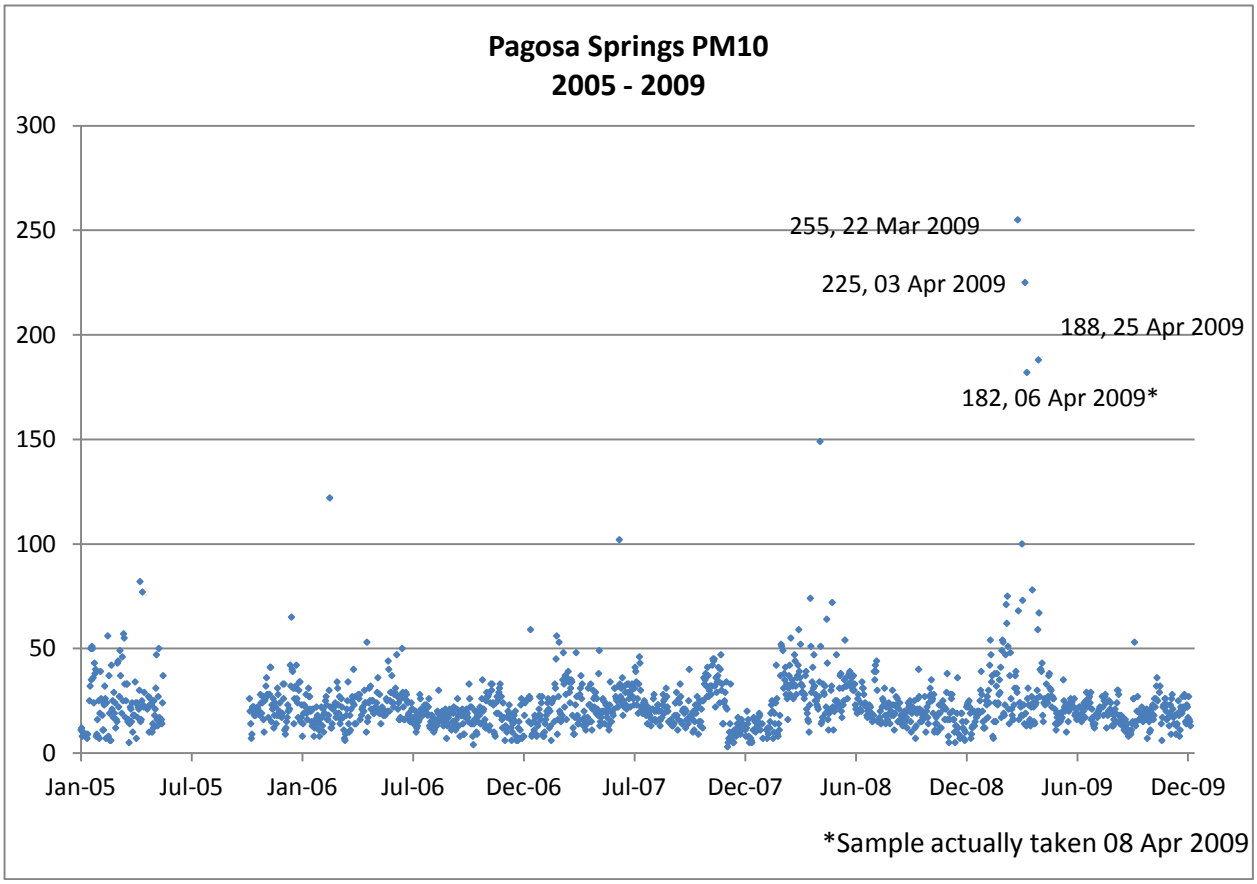


Figure 38. Five Year Time-Series Graph of PM_{10} in Pagosa Springs

The spatial scope of this event was state-wide and had an impact on PM_{10} concentration at multiple sites. A snapshot of data from those sites affected by the event is presented here, along with the approximate percentile value that data point represents for each site for their unique historical data sets, for the month of the event (every sample in any April), and for the year.

Table 15. Percentile Values for April 3, 2009 PM_{10} Concentrations

Evaluation	Alamosa ASC	Alamosa Municipal	Mt. Crested Butte	Breckenridge
03-Apr-09	92 μg/m^3	107 μg/m^3	80 μg/m^3	79 μg/m^3
Overall	99.0%	99.2%	98.9%	98.9%
All April	96.8%	95.4%	99.0%	98.3%
2009	98.8%	99.4%	99.4%	99.7%

Additionally, the Pagosa Springs data set was summarized by month and year. These summaries present no obvious 'season'; PM_{10} levels at any particular site in Colorado do not necessarily fluctuate by season. Of greater importance affecting day-to-day, typical PM_{10} concentrations are local sources, e.g. road sanding and sweeping, local burning from agriculture and residential heating, vehicle contributions via road dust, unpaved lots or roads, etc. While the historic monthly median values for Pagosa Springs are higher during the winter and spring months than the rest of the year there is little month-to-month variation. This time frame (winter and early spring) is that which is most likely to experience the meteorological and dry conditions exhibited during this event and discussed elsewhere in this document. The lack of variability between monthly medians suggests that typical data exhibiting regular variation due to local sources are those in the inner-quartile range (i.e. between the 75th and 25th percentile). If a conservative approach is taken then a typical value should be no higher than the historic monthly 75th percentile value. The summary data for the month of April (all samples in any April) and for 2009 is presented in Table 16:

Table 16. Month and Year PM_{10} Monitoring Data Summary

Pagosa Springs	April	2009
Count	511	354
Min	3	6
1 Q	20	16
Median	27	20
3 Q	37	26
Max	225	255
Mean	31.1	24.9
sd	20.2	23.4

Pagosa Springs – 080070001 and 080070002

The PM_{10} sample on 03-April, 2009, at Pagosa Springs of 225 μg/m^3 is greater than the 99th percentile value (87 μg/m^3) for all April data, is greater than the 99th percentile value (138 μg/m^3) for all 2009 data, and is greater than the 99th percentile value (56 μg/m^3) for the entire dataset. Overall, this sample is the fourth highest sample in the entire data set, the second highest sample in 2009, and the maximum sample in any April. The three samples in the entire data set greater than the event sample are 262 μg/m^3 (12/29/94), 262 μg/m^3 (12/21/1994), and 255 μg/m^3 (03/22/2009); all three samples are associated with high wind events. There are 6096 samples in

this dataset. The sample of April 3, 2009 clearly exceeds the typical samples for this site and sits well beyond the normal distribution.

The following plots graphically characterize the Durango PM_{10} data. The first plot is the overall frequency histogram. The histogram displays a well-formed density function, almost 80% of the samples values are less than 40 $\mu g/m^3$ and over 90% of the samples are less than 50 $\mu g/m^3$.

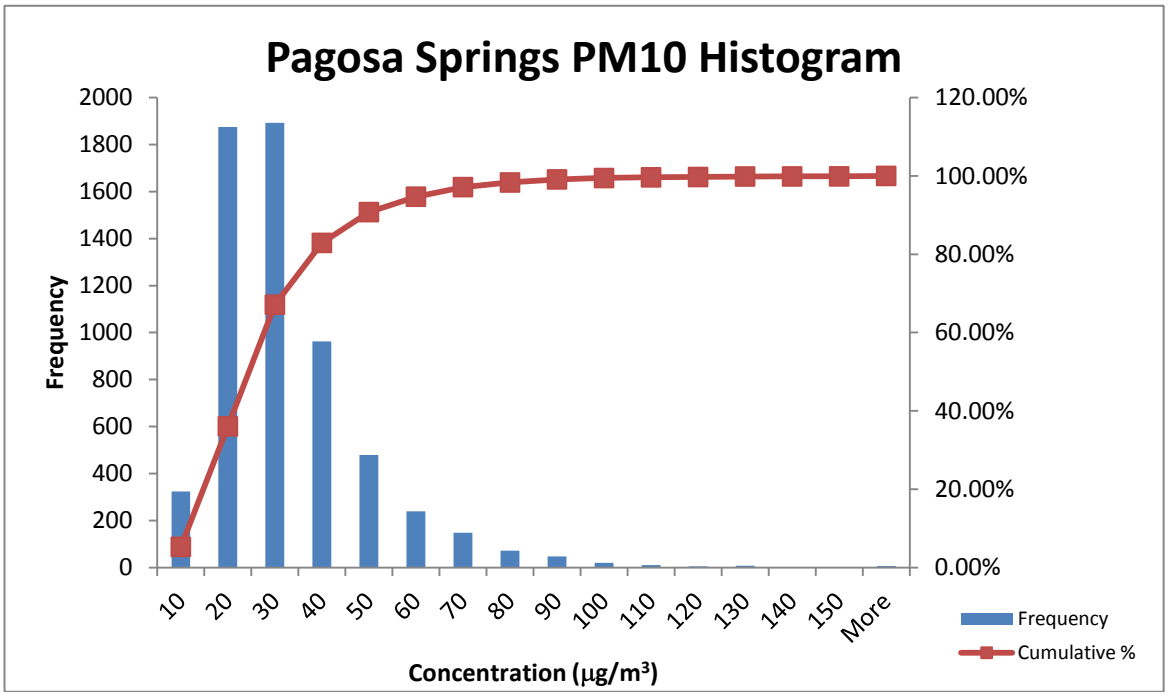


Figure 39. Histogram of PM_{10} Data in Pagosa Springs (1992 – 2009)

The monthly box-whisker plot, below, highlights the consistency of the majority of data from month to month. Note the greater variability (wider inner-quartile range) and greater range of the data through the winter and early spring months that's accompanied by typically greater monthly maxima. Recall, this time period experiences a greater number of days with meteorological conditions similar to those experienced on April 3, 2009. Although these high values affect the variability and central tendency of the dataset they are not representative of what is typical at the site.

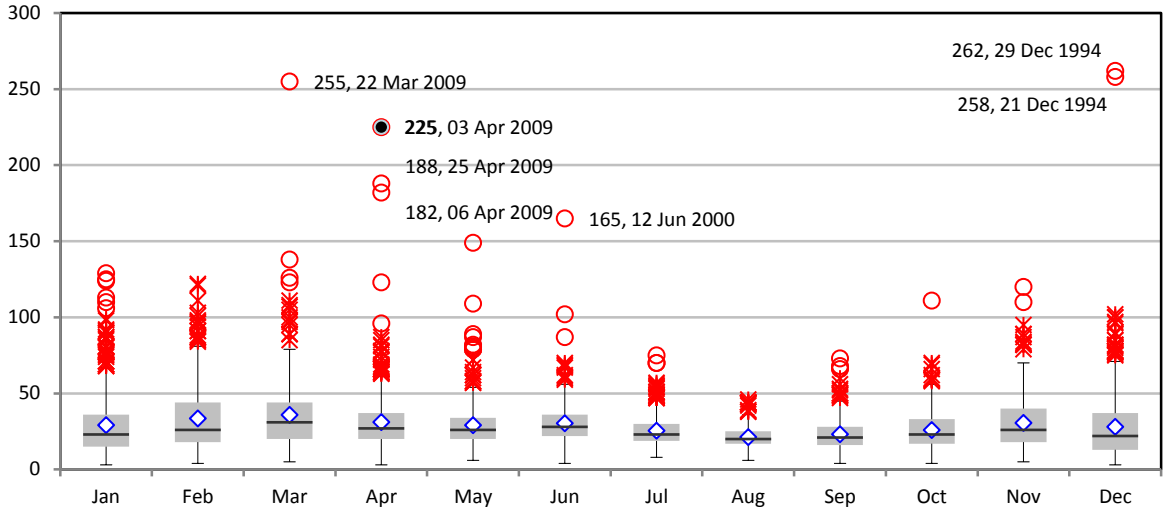


Figure 40. Monthly Pagosa Springs PM10 Box and Whisker Plot (1992 – 2009)

The box in whisker plots graphically represent the overall distribution of each data set including the median (◇), the inner quartile range (IQR, defined to be the distance between the 75th% and 25th%), the mean (represented by the horizontal black line) and two types of outliers identifed in these plots: outliers greater than 75% +1.5*IQR (✳)and outliers greater than 3Q + 3*IQR (○). The outliers that satisfy the last criteria are labeled with sample value and sample date for those samples greater than 150 µg/m^3. Each of these outliers is associated with a known high-wind event similar to that of 03-April. One sample, April 6, 2009, is believed to have been mislabeled by the operator; APCD believes the sample was actually taken on the April 8, 2009 – corresponding to another high wind event.

The box plot of annual summaries may point to a trend of decreasing sample values, but without a similar decrease in the number of outliers. In 2009 there were more samples greater than 150 mg/m3 than in any other year yet the variation in the data as measured by the IQR is less than that for any year except 2006. Each of these samples from 2009 is associated with an event similar to the one discussed in this document.

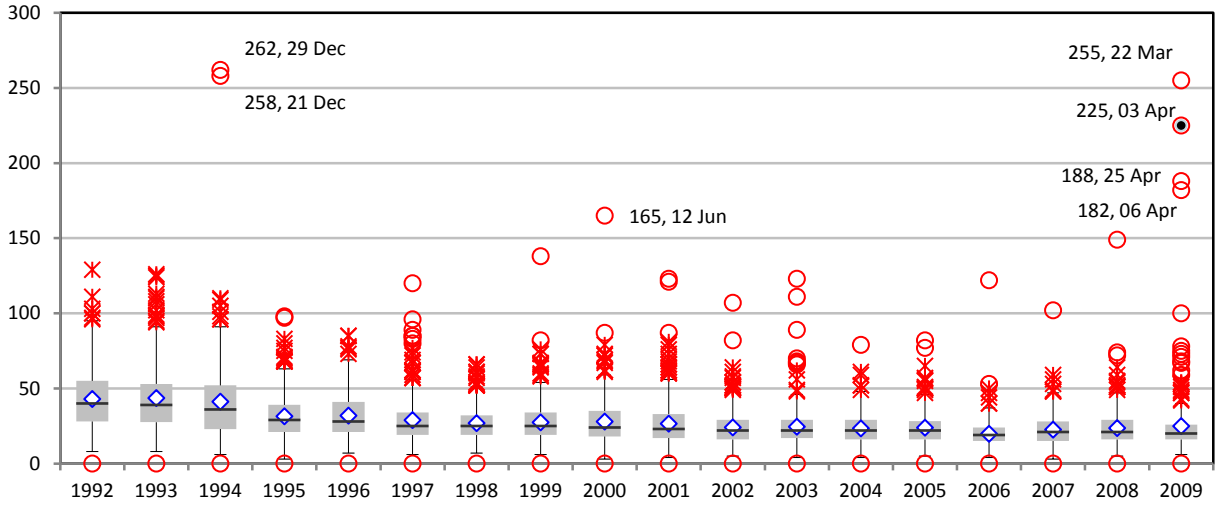


Figure 41. Annual Pagosa Springs PM_{10} Box and Whisker Plot (1992 – 2009)

No Exceedance But For the Event

An estimation of PM_{10} due to the event is presented here. Based on the entirety of data in the Historical Summary (including multiple high wind events), a conservative estimate of the 'typical' values in March for Pagosa Springs would have been between 37 and 43 $\mu g/m^3$ corresponding to the 75th and 84th Percentile values. Using these conservative values as a range to estimate typical local contributions would indicate that the event provided an additional contribution of 182 – 188 $\mu g/m^3$. Clearly, there would have been no exceedance but for the additional contribution provided by the event.

Table 17. No Exceedance But For the Event Test

Site	Event Day Concentration ($\mu g/m^3$)	April Median ($\mu g/m^3$)	April Average ($\mu g/m^3$)	April 75th % ($\mu g/m^3$)	April 84th % ($\mu g/m^3$)	Est. Conc. Above Typical ($\mu g/m^3$)
Pagosa Springs	225	31	31.1	37	43	182 - 188

3.2 Monitoring Data and Conclusions

Since the local anthropogenic sources are well controlled in Pagosa Springs and the surrounding area is covered by trees and other vegetation, and since the sustained surface wind speeds were well above 25 mph in the region of the dust storm, it follows that the dust was transported into Pagosa Springs on April 3, 2009. This high wind blowing dust event affected the air quality in Pagosa Springs and several other locations, including but not limited to Alamosa, Breckenridge, Mount Crested Butte in the state of Colorado on April 3, 2009. The size, extent, and origination of the blowing dust storm made the event not preventable and it could not be reasonably controlled. Statistical data in section 3.1 clearly shows that but for this high wind blowing dust event Pagosa Springs would not have exceeded the 24-hour NAAQS on April 3, 2009.

4.0 News Accounts and Credible Evidence

Who's paying attention to the drought on the Colorado Plateau?

By Daniel Ferguson and Michael Crimmins

Daniel Ferguson, CLIMAS program manager, and Michael Crimmins, a climate science extension specialist for Arizona Cooperative Extension, visited staff members from the Hopi Department of Natural Resources (DNR) in May to discuss drought and climate change on the Colorado Plateau. During the day-and-a-half Ferguson and Crimmins were able to spend with the Hopi DNR, one theme continually emerged: who's monitoring the current drought on the Colorado Plateau?

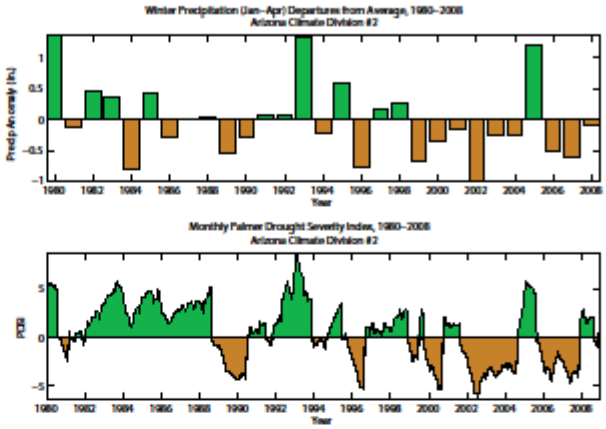


Figure 1. Precipitation and Palmer Drought Severity Index data from Arizona Climate Division 2, 1980–2008.

Driving along Arizona Highway 264 toward the Hopi mesas in May 2009, our conversation kept circling back to the unusual thunderstorms that had been forming across the southern Colorado Plateau all week. These climatologically uncommon rains were a welcome relief from an otherwise dry 2009, but they certainly did not signal the end of the long-term drought plaguing the region.

At the behest of Arnold Taylor, manager of the Hopi Department of Natural Resources (DNR), we were headed to Kykotsmovi, Ariz., to meet with staff members from the Hopi DNR to discuss drought and climate change on the Colorado Plateau and begin assessing the DNR's small weather monitoring network.

Prior to our visit, we were well aware that monitoring in this part of the Southwest was spotty at best, even though several federal agencies, including the National Weather Service (NWS), the US Geological Survey (USGS), and the US Department of Agriculture (USDA), and both the Hopi Nation and Navajo Nation have weather stations and stream gages across this part of the plateau. We also knew the ongoing drought was creating a variety of impacts, but our day-and-a-half visit with our Hopi colleagues made clear that natural resource managers and climate scientists alike were all facing the same fundamental question: Is anyone actually capturing the current drought on the Colorado Plateau?

Mr. Taylor had invited us to the Hopi Nation to brief his staff about current science, but perhaps more important, he wanted to make us aware of drought conditions on the reservation and Hopi efforts to monitor it.

The string of very dry years has Mr. Taylor concerned about present conditions as well as anticipated changes in climate that are expected to bring even more intense droughts. In the midst of this current drought, it is clear the somewhat ad hoc climate monitoring network across the region is having difficulties resolving and tracking these conditions.

Hopi people have been living on or near the mesas at the heart of the current Hopi reservation for more than a millennium. Located on the Colorado Plateau, in the Little Colorado River watershed, the Hopi landscape encompasses high mesas, deep canyons, and an arid climate.

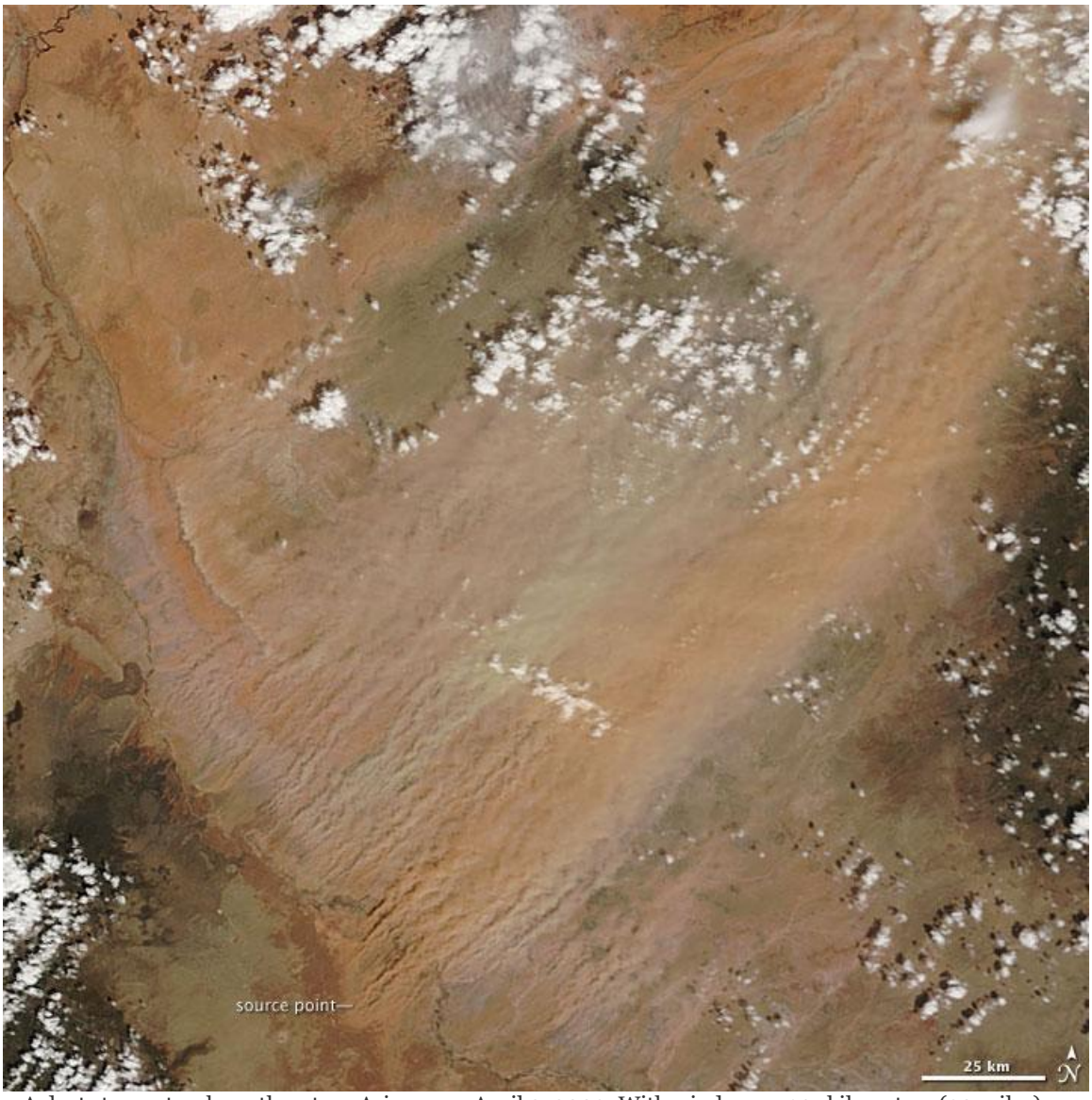
As dryland farmers and ranchers, the Hopi have a long and deep cultural relationship with the climate of the Southwest. Drought is neither uncommon nor unexpected in Hopiland, but current drought conditions and recent science about a future warmer, dryer Southwest has decision makers across the desert Southwest, including Hopi resource managers like Mr. Taylor, asking a common question: how do we best proceed into a climatologically uncertain future?

One clear component of any answer to this question is effective monitoring of weather, climate, and drought impacts. Our Hopi hosts made clear throughout our visit that monitoring on the Hopi Nation and across the Colorado Plateau is inadequate for the climate adaptation task at hand. Recent work led by CLIMAS investigator Dr. Gregg Garfin and a team of researchers from The University of Arizona, Arizona State University, and Northern Arizona University, in partnership with the Navajo Nation, resulted in a detailed assessment of monitoring issues on the Navajo Nation

continued on page 4

Dust Storm in Northeastern Arizona

Posted April 11, 2009
download large image (589 KB, JPEG) acquired April 3, 2009
This image is a favorite! **Vote** for your favorite image now.



A dust storm struck northeastern Arizona on April 3, 2009. With winds over 145 kilometers (90 miles) per hour reported near Meteor Crater, east of Flagstaff, the storm reduced visibility and forced the temporary closure of part of Interstate 40, according to *The Arizona Republic*.

The Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite captured this image on April 3, 2009. Clear skies allow a view of multiple source points of this dust storm. The source points occur along an arc that runs from northwest to southeast.

This dust storm occurred in the area known as Arizona's Painted Desert, and the dust plumes show why. Whereas many dust plumes are uniform in color, these plumes resemble a band of multicolored ribbons, ranging from pale beige to red-brown, reflecting the varied soils from which the plumes arise. The landscapes of the Painted Desert are comprised mostly of Chinle Formation rocks—remains of sediments laid down during the time of the first dinosaurs, over 200 million years ago.

1. References

2. Engelbart, D. (2009, April 3). I-40 near Flagstaff reopened after winds cut visibility. *The Arizona Republic.* Accessed April 6, 2009.
3. U.S. National Park Service. (2009, March 17). Petrified Forest National Park. Accessed April 10, 2009.

NASA image by Jeff Schmaltz, MODIS Rapid Response Team, Goddard Space Flight Center. Caption by Michon Scott.

Press Release 09-133

Desert Dust Alters Ecology of Colorado Alpine Meadows

Accelerated snowmelt, prompted by dust, changes how plants respond to seasonal climate cues

More dust covers snow in the San Juan Mountains of Colorado than previously documented.
Credit and Larger Version

June 29, 2009

Accelerated snowmelt--precipitated by desert dust blowing into the mountains--changes how alpine plants respond to seasonal climate cues that regulate their life cycles, according to results of a new study reported this week in the journal *Proceedings of the National Academy of Sciences (PNAS).* These results indicate that global warming may have a greater influence on plants' annual growth cycles than previously thought.

Current mountain dust levels are five times greater than they were before the mid-19th century, due in large part to increased human activity in deserts.

"Human use of desert landscapes is linked to the life cycles of mountain plants, and changes the environmental cues that determine when alpine meadows will be in bloom, possibly increasing plants' sensitivity to global warming," said Jay Fein, program director in the National Science Foundation (NSF)'s Division of Atmospheric Sciences, which funded the research in part.

This year, 12 dust storms have painted the mountain snowpack red and advanced the retreat of snow cover, likely by more than a month across Colorado.

"Desert dust is synchronizing plant growth and flowering across the alpine zone," said Heidi Steltzer, a Colorado State University scientist who led the study. "Synchronized growth was unexpected, and may have adverse effects on plants, water quality and wildlife."

"It's striking how different the landscape looks as result of this desert-and-mountain interaction," said Chris Landry, director of the Center for Snow and Avalanche Studies (CSAS) in Silverton, Colo., who, along with Tom Painter, director of the Snow Optics Laboratory at the University of Utah, contributed to the study.

"Visitors to the mountains arriving in late June will see little remaining snow," said Landry, "even though snow cover was extensive and deep in April. The snow that remains will be barely distinguishable from the surrounding soils.

Earlier snowmelt by desert dust, said Painter, "depletes the natural water reservoirs of mountain snowpacks and in turn affects the delivery of water to urban and agricultural areas."

With climate change, warming and drying of the desert southwest are likely to result in even greater dust accumulation in the mountains.

In an alpine basin in the San Juan Mountains, the researchers simulated dust effects on snowmelt in experimental plots. They measured dust's acceleration of snowmelt on the life cycles of alpine plants.

The timing of snowmelt signals to mountain plants that it's time to start growing and flowering. When dust causes early snowmelt, plant growth does not necessarily begin soon after the snow is gone.

Instead, plants delay their life cycle until air temperatures have warmed consistently above freezing.

"Climate warming could therefore have a great effect on the timing of growth and flowering," said Steltzer.

Competition for water and nutrient resources among plants should increase, leading to the loss of less competitive species. Delayed plant growth could increase nutrient losses, decreasing water quality.

Similarity in flowering times and plant growth will result in abundant resources for wildlife for a short time rather than staggered resources over the whole summer, Steltzer believes.

"With increasing dust deposition from drying and warming in the deserts," she said, "the composition of alpine meadows could change as some species increase in abundance, while others are lost, possibly forever."

-NSF-

5.0 Local Dust Control Measures

The following control measures resulted in the area's attainment of the PM_{10} NAAQS, and these measures should ensure continued maintenance of the PM_{10} NAAQS through the year 2021, which is the duration of the maintenance period.

1. Control of Emissions through Road Paving

The Town of Pagosa Springs paved 6.5 miles of unpaved roads during 1992, 1993, and 1994 in order to reduce PM_{10} emissions. This strategy was adopted locally in 1991 and included in State regulation in 1992 (Section I.B. of the "State Implementation Plan-Specific Regulations for Nonattainment - Attainment/Maintenance Areas (Local Elements)). The rule was approved by EPA in 1994 and was removed from the Colorado regulation in 2000 as the paving requirements had been completed.

2. Street Sanding Controls

There is a requirement that any user that applies street sanding material on Highway 160 and Highway 84 in the Pagosa Springs attainment/maintenance area must use materials containing less than one percent fines. Users of street sand on these highways must also use 15 percent less sand than an established base sanding amount. These strategies were adopted in 1992 and approved by EPA in 1994, and they are defined in detail in Sections I.B. and C., respectively, of the "State Implementation Plan-Specific Regulations for Nonattainment - Attainment/Maintenance Areas (Local Elements) Regulations (5 CCR 1001-20).

3. Control of Emissions from Stationary Sources

Although there are no stationary sources located in the Pagosa Springs attainment/maintenance area, the State's comprehensive permit rules will limit emissions from any new source that may, in the future, locate in the area. These rules include: 1) under Colorado Air Quality Control Commission's (AQCC) Regulation No. 3, "Air Pollution Emission Notices, Construction Permits and Fees, Operating Permits, and Including the Prevention of Significant Deterioration," 2) the "Common Provisions" regulation, and 3) AQCC Regulation No. 6, "Standards of Performance for New Stationary Sources."

The Common Provisions, and Parts A and B of Regulation No. 3, are already included in the approved SIP. AQCC Regulation No. 6 implements the federal standards of performance for new stationary sources. The maintenance plan makes no changes to these regulations. This reference to Regulation No. 6 shall not be construed to mean that this regulation is included in the SIP.

As indicated above, emissions from new or modified major stationary sources emissions of PM_{10} are controlled under AQCC Regulation No. 3's nonattainment-area (NAA) new source review (NSR) permitting requirements. The NSR provisions require all new and modified major stationary sources to apply emission control equipment that achieves the "lowest achievable emission rate" (LAER) and to obtain emission offsets from other stationary sources of PM_{10}.

The EPA approval of the original PM_{10} Maintenance Plan, effective on 08/14/01, reinstates the prevention of significant deterioration (PSD) permitting requirements in the Pagosa Springs Attainment/Maintenance area. The federal PSD requirements are considered a relaxation from the NAA NSR requirements, as LAER is no longer required and is replaced by the less stringent "best available control technology" (BACT), along with the removal of the requirement to offset PM_{10} emissions. The future reapplication of NAA NSR provisions appears unlikely in the Pagosa Springs Attainment/Maintenance area based on current PM_{10} monitoring trends.

4. Federal Motor Vehicle Emission Control Program

The federal motor vehicle emission control program has reduced PM_{10} emissions through a continuing process of requiring diesel engine manufacturers to produce new vehicles that meet tighter and tighter emission standards. As older, higher emitting diesel vehicles are replaced with newer vehicles; the PM_{10} emissions in the Pagosa Springs area will be reduced.

5. Voluntary and State-Only Measures

In addition to the mandatory control measures discussed above, there are other activities that result in the reduction of PM_{10} emissions that are not classified as "federally enforceable control measures." Some notable examples include:

The Town of Pagosa Springs has historically cleaned Highway 160 in town throughout the winter and spring using regenerative air vacuum sweepers. The frequency of this voluntary sweeping/cleaning has been about once after each street sanding deployment. For the future, the Town of Pagosa Springs has committed to regularly vacuum sweep/clean Highway 160 within four days of the roadway becoming free and clear of snow and ice following each street sanding deployment, as weather, temperature, and street conditions permit, between the intersections of Highway 84 to the east and 14th street to the west.

The Town of Pagosa Springs requires that all new developments have paved streets.

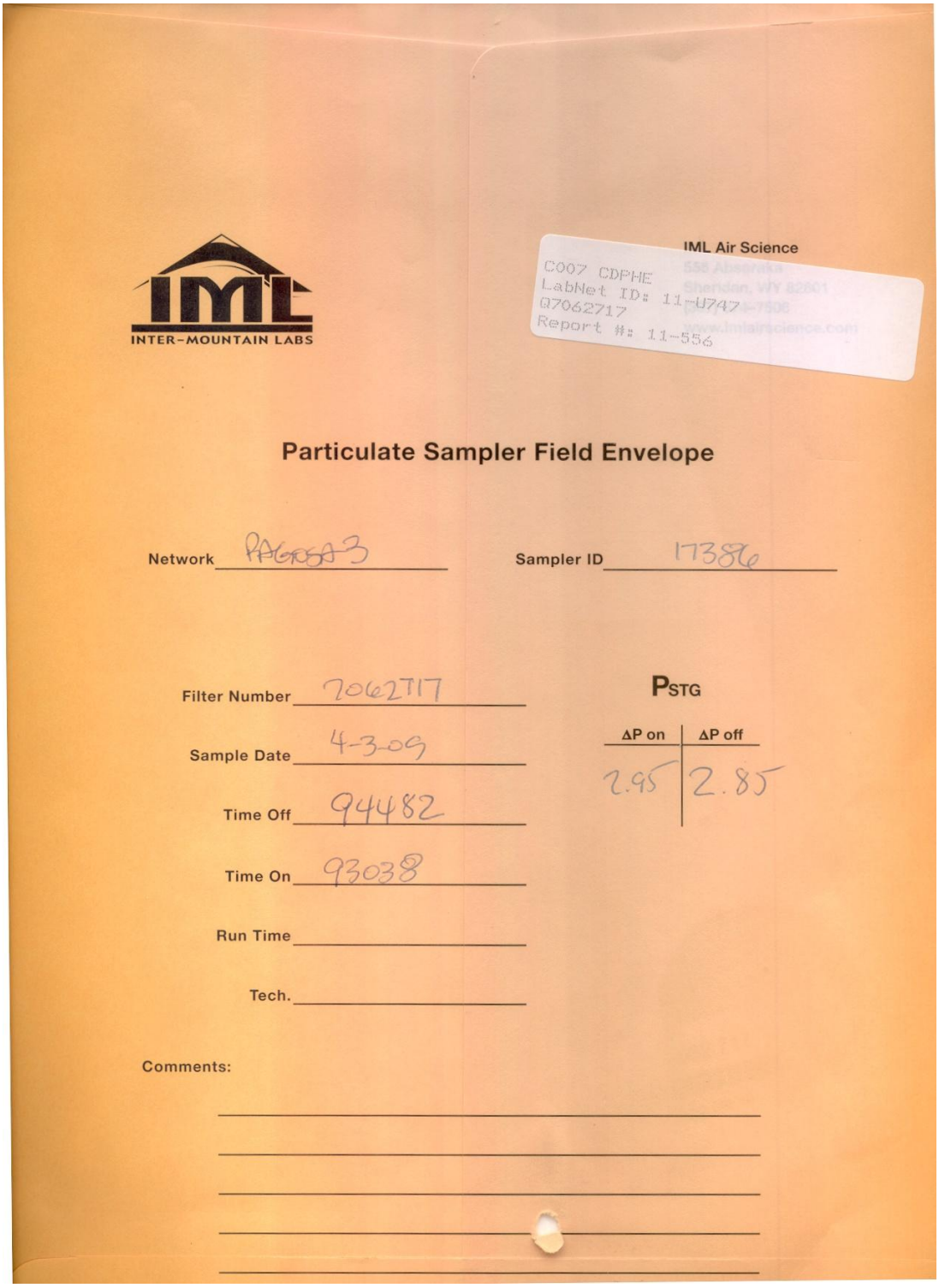
The Town of Pagosa Springs encourages private businesses to properly clean/sweep private parking lots on a regular basis.

Archuleta County has completed the road paving (100% of total segment) of Hot Springs Boulevard.

Any owner or operator responsible for the construction or maintenance of any existing or new unpaved roadway which has vehicle traffic exceeding 200 vehicles per day in the attainment/maintenance area and surrounding areas must stabilize the roadway in order to minimize fugitive dust emissions. These State-wide requirements are defined in detail in Section III.D.2.a.(I) of the AQCC's Regulation No. 1.

These strategies are considered to be voluntary local initiatives and State-only requirements, and are intended to reduce PM_{10} emissions. These strategies are not intended to be federally enforceable.

6.0 Laboratory and Field Data



INTER-MOUNTAIN LABS

IML Air Science
C007 CDPHE
LabNet ID: 11-U747
Q7062717
Report #: 11-556

Particulate Sampler Field Envelope

Network PM2.5-3

Sampler ID 17386

Filter Number 7062717

Sample Date 4-3-09

Time Off 94482

Time On 93038

Run Time

Tech.

PSTG

ΔP on	ΔP off
2.95	2.85

Comments:

7.0 Summary and Conclusions

Elevated 24-hour PM10 concentrations were recorded across Colorado on April 3, 2009. All of the noted April 3 twenty-four-hour PM10 concentrations were above the 95th percentile concentrations for their locations. *The Pagosa Springs concentration is greater than the 99th percentile, and a conservative estimate of the dust storm contribution to the total concentration is 182 – 188 μg/m3. This is evidence that the event was associated with a measured concentration in excess of normal historical fluctuations including background. But for the dust storm to be described in detail in this report, there would have been no exceedance on this day in Pagosa Springs.*

This exceedance was the consequence of strong gusty winds ahead of a deep low pressure with a trailing cold front, in combination with dry conditions, which caused significant blowing dust across parts of Arizona, New Mexico, and Colorado. These winds were partly the result of a developing low pressure centered over southwestern Utah with a cold front trailing to the south as well as a second low pressure system over south-central Wyoming. These low pressures merged and centered over Colorado on April 3. Surface weather analyses show an area of low pressure affecting the Four Corners region. *Winds in the dust source regions of northeast Arizona and in Flagstaff, Arizona were 74 mph on April 3, 2009. Surface winds of 20 to 54 mph with gusts of 25 to 91 mph were recorded across the Four Corners region on April 3, 2009. These speeds are above the thresholds for blowing dust identified in EPA draft guidance and in detailed analyses completed by the State of Colorado.*

Climatological data for March and April shows that most of the Four Corners area had received less than normal precipitation for the period of interest. Soils in many areas of the Four Corners region had below normal moisture, and northeast Arizona was abnormally dry. Winslow in northeastern Arizona received only 0.05 inches of precipitation during the 30 days prior to April 8, 2009. This total is well below the approximate threshold for blowing dust conditions at Hopi identified in the analysis contained in Attachment A. Both wind speeds and soil moisture in the Four Corners area and northeastern Arizona were conducive to the generation of significant blowing dust.

Friction velocities calculated for the region also help to explain why blowing dust originated in the Four Corners region. Even undisturbed desert soils normally resistant to wind erosion will be susceptible to blowing dust when friction velocities are greater than about 1.0 to 2.0 meters per second. High values above 2.0 meters per second were present within the Little Colorado River Valley and Painted Desert region of northeast Arizona where satellite imagery shows the eruption of large plumes of blowing dust. Note that blowing dust will typically only occur where these values are high and the soils are dry and not protected by vegetation, forest cover, boulders, rocks, etc. This is why blowing dust occurred in the desert and more arid areas of northeast Arizona and northwest New Mexico on April 3, 2009. *The high friction velocities and the data on soil moisture conditions presented elsewhere in this report prove that this dust storm was a natural event that was not reasonably controllable or preventable.*

Satellite imagery shows large plumes of southwest to northeast trending blowing dust in the Painted Desert and Little Colorado River Valley region of northeastern Arizona on April 3, 2009. Satellite imagery also shows this dust moving across the Four Corners into southwest Colorado. Backward trajectories, wind streamline analyses, and surface and upper-level wind patterns show that this dust would have been transported into Colorado on April 3, 2009. *Multiple sources of data and analyses of past dust storms in this area prove that this was a natural event and, more specifically, a significant natural dust storm originating in northeastern Arizona and*

northwestern New Mexico. But for the dust storm on April 3, 2009, this exceedance would not have occurred.

The Center for Snow and Avalanche Studies (http://www.snowstudies.org/index.html) has been studying the effects of desert dust deposition on snowpack albedo and snowmelt in the San Juan Mountains of Colorado. The center's log of events lists April 3, 2009, as one of twelve Dust-on-Snow events for the 2008/2009 water year. Web cam photos from the Shamrock site in southwestern Colorado support the conclusion that widespread blowing dust was present on April 8, 2009. NOAA's Satellite Service Division also describes blowing dust moving from Arizona to southwest Colorado on April 3, 2009. *Multiple reports from professional experts at other institutions substantiate the conclusion that this was a natural event. But for the dust storm on April 3, 2009, this exceedance would not have occurred.*

8.0 References

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Marticorena, B., G. Bergametti, D. Gillette, and J. Belnap, 1997, Factors controlling threshold friction velocity in semiarid and arid areas of the United States, *Journal of Geophysical Research 102 D19*, 23,277-23, 287.

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United States Environmental Protection Agency, May 2, 2011, draft *Guidance on the Preparation of Demonstrations in Support of Requests to Exclude Ambient Air Quality Data Affected by High Winds under the Exceptional Events Rule*.

Attachment A
Grand Junction, Colorado,
Blowing Dust Climatology

January 24, 2012

Technical Services Program
Air Pollution Control Division
Colorado Department of Public Health & Environment

A case can be made for the significant transport of regional blowing dust into Grand Junction from source regions in Utah and Arizona. While there are sources for wind-blown dust within the Grand Valley and Grand Junction itself, there is evidence from the analysis of soil features, wind and precipitation climatology, and statistical analyses of Grand Junction exceedances of the PM10 standard that regional sources often play a significant role during these blowing dust events. This document provides a weight of evidence analysis for dust transport into Colorado.

Grand Junction, Colorado, is located in a part of the country that is largely arid to semi-arid. Figure A-1 through A-3 show the annual average precipitation for Colorado, Arizona, and Utah, respectively. Grand Junction is in the Grand Valley of Western Colorado where the annual precipitation is typically less than 10 inches. Northeastern Arizona, which is frequently upwind of Grand Junction during blowing dust events, receives between 5 and 15 inches of precipitation each year. The Colorado River Basin in eastern and southeastern Utah, which is also frequently upwind of Grand Junction during blowing dust events, also receives 5 to 10 inches per year.

Figure A-4 shows the 1971-2000 monthly normal precipitation amounts for Grand Junction, Colorado. The annual average for this time period is 8.99 inches. The wettest months are March through May and August through October. The driest months are January, February, June, July, November, and December. These months receive an average of 0.57 inches per month. The annual monthly average precipitation is 0.75 inches.

Arid to semi-arid soils make much of the region susceptible to blowing dust. The map in Figure A-5 shows that portion of the Colorado Plateau (circled in red) where modern wind erosion features are common and clearly visible in Google Earth images. These features include longitudinal dunes and other sand or soil erosion structures with a predominant southwest to northeast orientation. This orientation is the result of the predominant southwesterly flow that occurs during high wind and blowing dust events in the region. Figures A-6 through A-12 present aerial views of ubiquitous erosion features in northeastern Arizona and southeastern Utah. The Painted Desert of northeastern Arizona is frequently the source for much of the blowing dust in the Four Corners region. Figure A-13 provides a particularly good satellite image of a blowing dust event originating in the Painted Desert and extending northeastward across the junction of the Four Corners (source: NASA Tera satellite, http://earthobservatory.nasa.gov/IOTD/view.php?id=37791). Strong southwesterly winds caused this blowing dust event.

The text that accompanies this image on NASA's Earth Observatory 10th Anniversary page follows below:

> "A dust storm struck northeastern Arizona on April 3, 2009. With winds over 145 kilometers (90 miles) per hour reported near Meteor Crater, east of Flagstaff, the storm reduced visibility and forced the temporary closure of part of Interstate 40, according to *The Arizona Republic.*
>
> The Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite captured this image on April 3, 2009. Clear skies allow a view of multiple source points of this dust storm. The source points occur along an arc that runs from northwest to southeast.
>
> This dust storm occurred in the area known as Arizona's Painted Desert, and the dust plumes show why. Whereas many dust plumes are uniform in color, these plumes resemble a band of multicolored ribbons, ranging from pale beige to red-brown, reflecting the varied soils from which the plumes arise. The landscapes of the Painted Desert are comprised mostly of Chinle Formation rocks—remains of sediments laid down during the time of the first dinosaurs, over 200 million years ago."

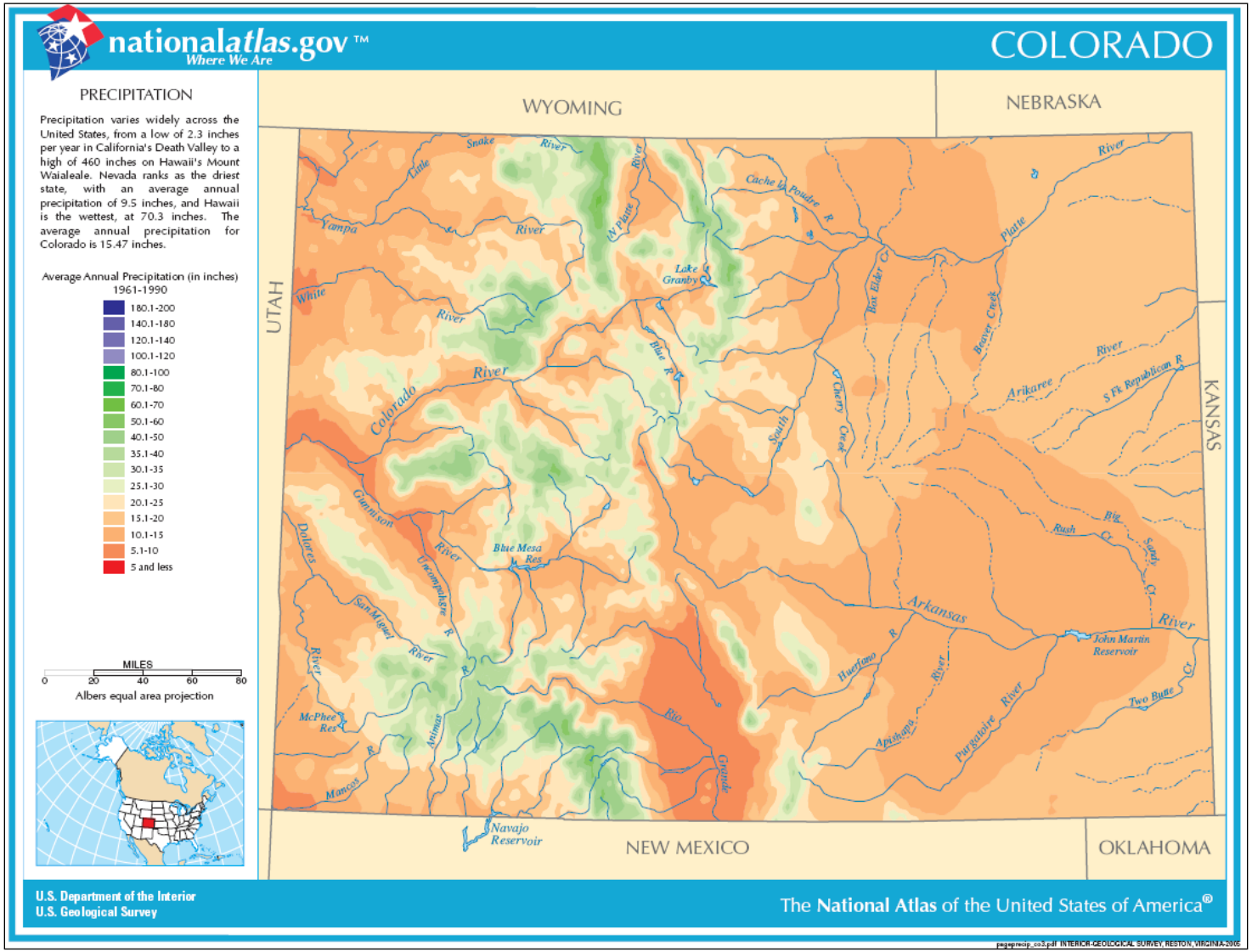


Figure A-1. Average annual precipitation in Colorado based on 1961-1990 normals.

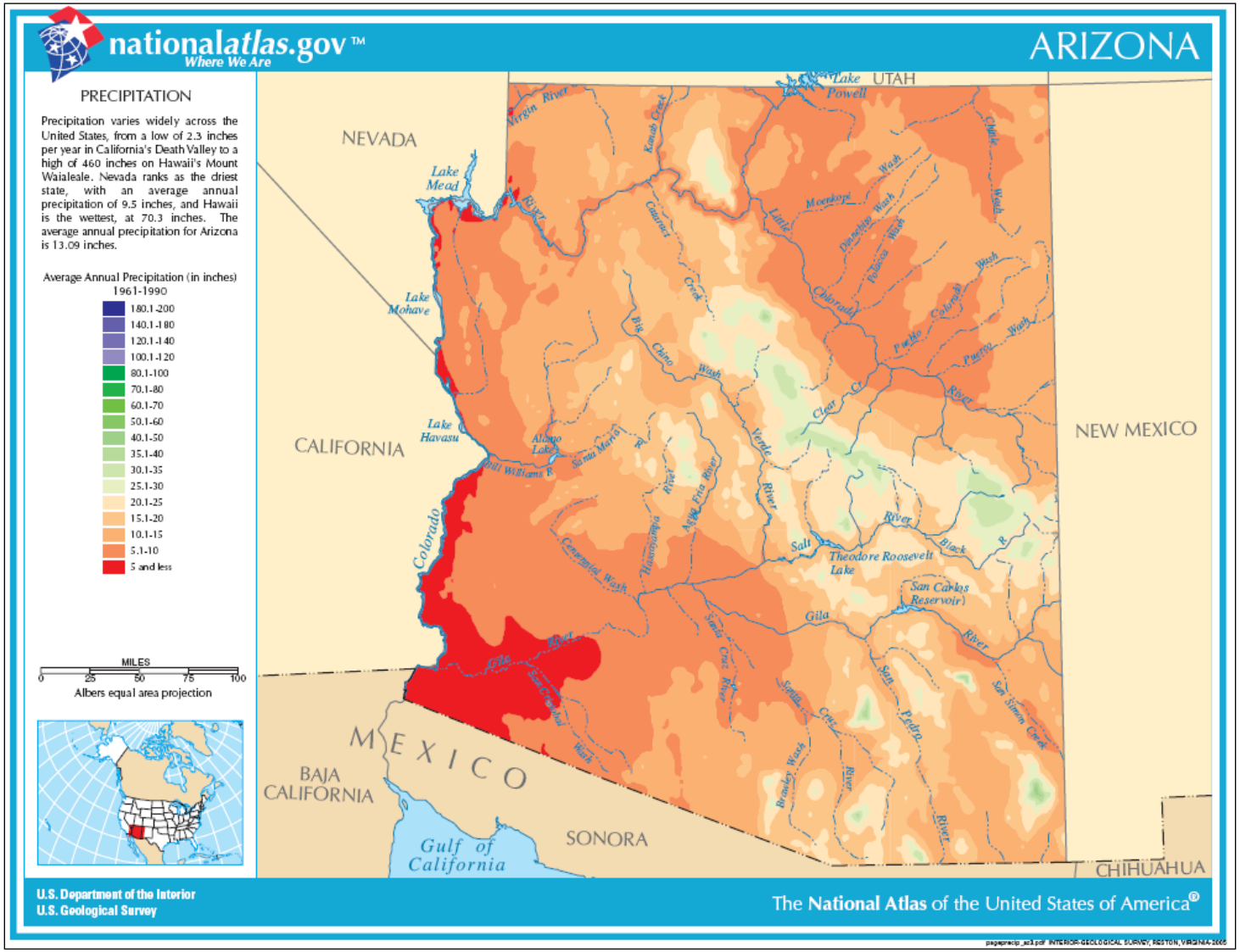


Figure A-2. Average annual precipitation in Arizona based on 1961-1990 normals.

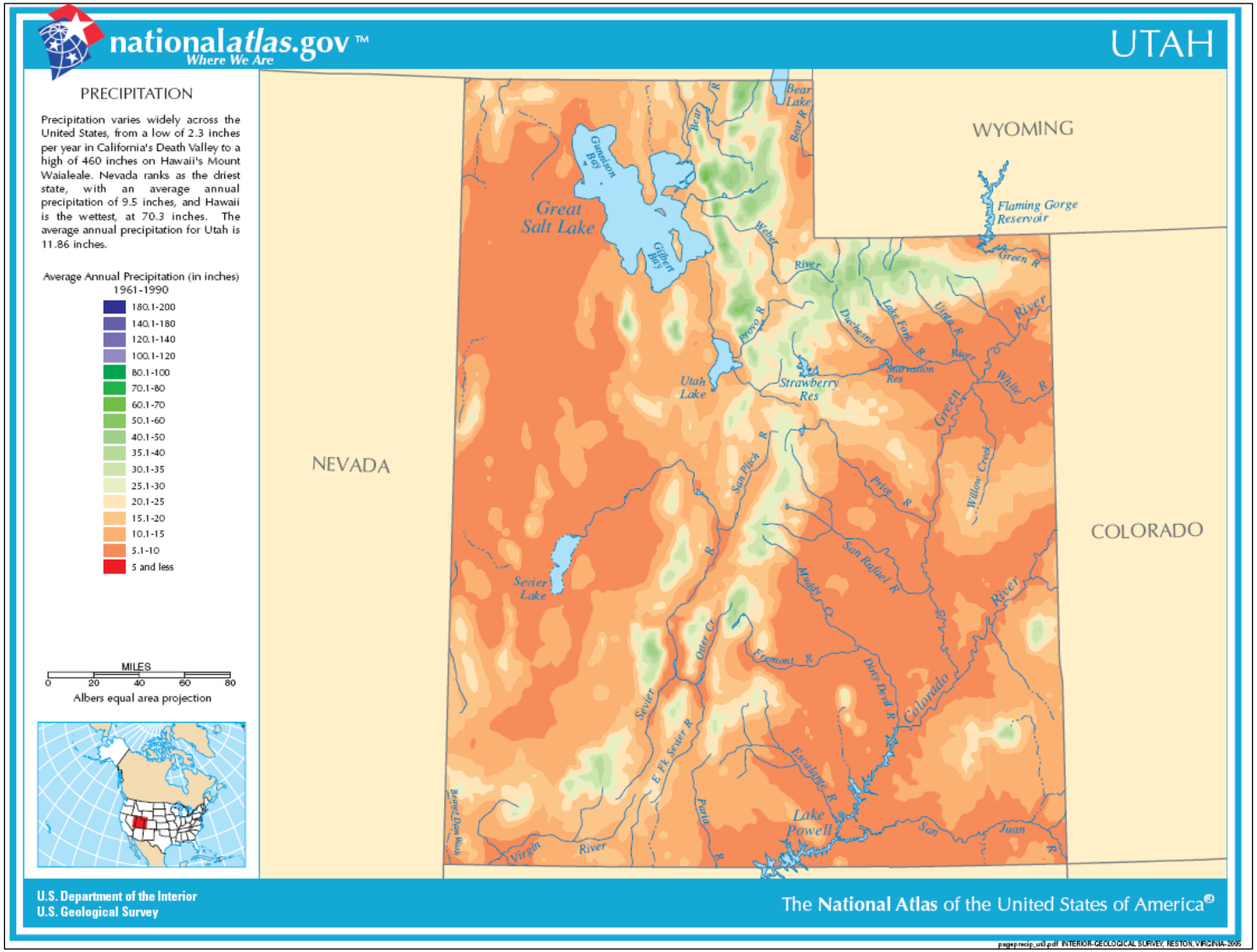


Figure A-3. Average annual precipitation in Utah based on 1961-1990 normals.

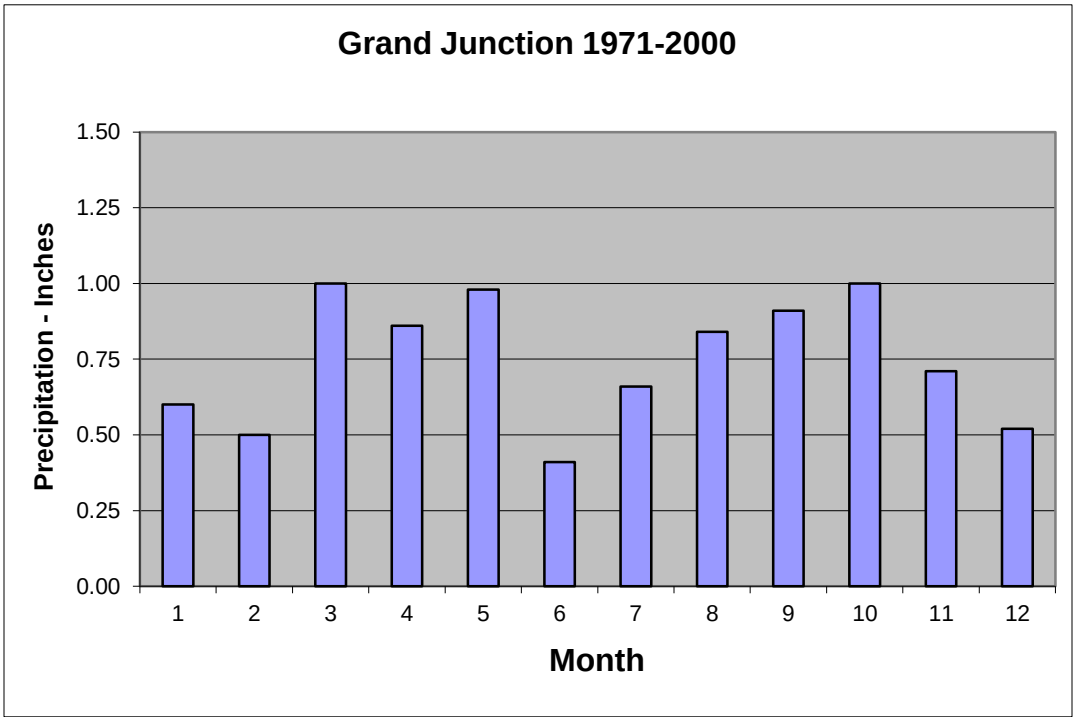


Figure A-4. 1971-2000 monthly normal precipitation in Grand Junction Colorado.

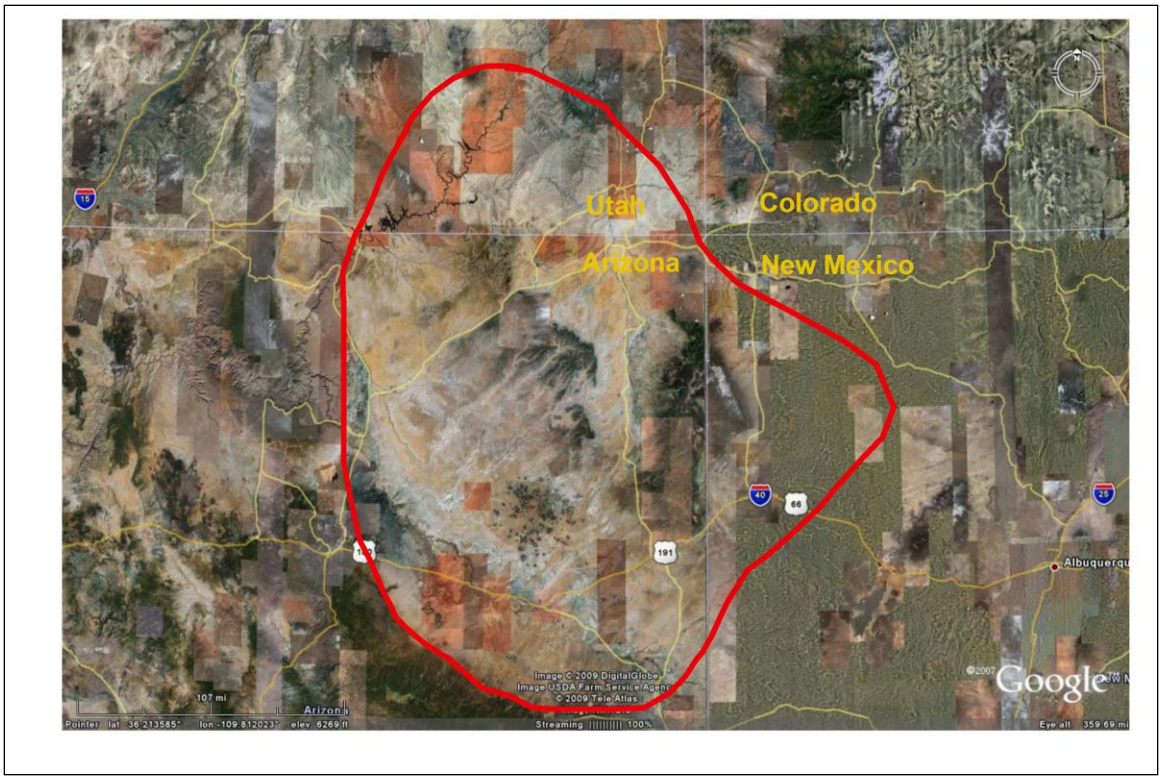


Figure A-5. The portion of the Colorado Plateau in Utah, Arizona, and New Mexico that exhibits widespread surface soil and sand erosion features in Google Earth imagery. Much of the highlighted area within Arizona is within the Painted Desert.

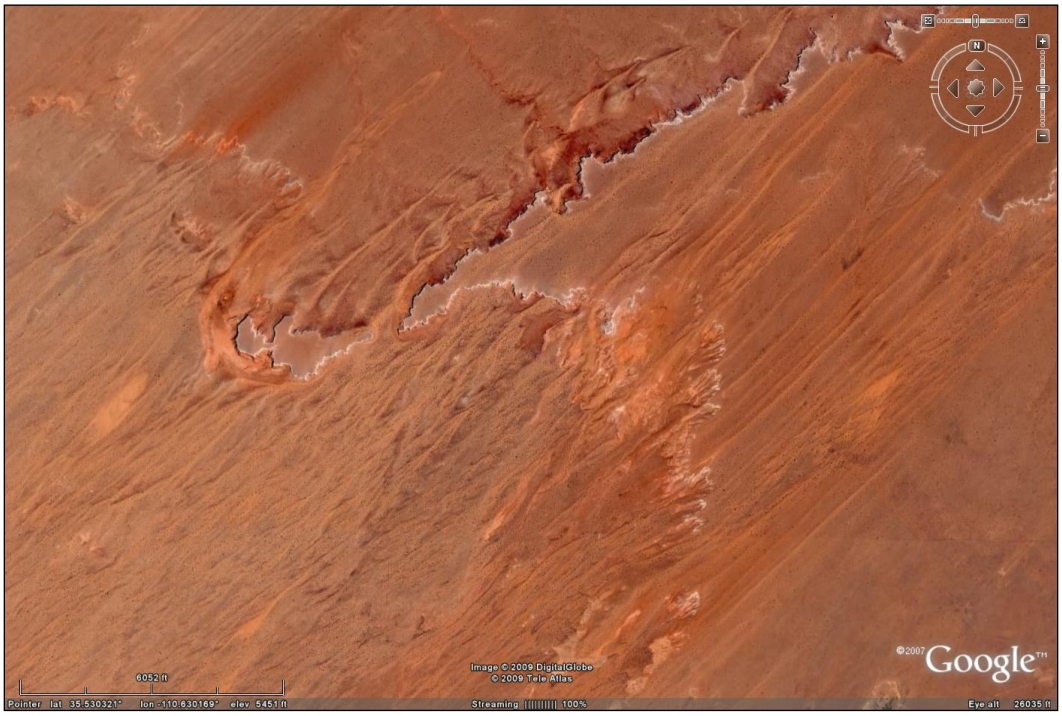


Figure A-6. Southwest to northeast soil and sand erosion structures in southeastern Utah.

Figure A-7. Southwest to northeast soil and sand erosion structures in northeastern Arizona (Painted Desert).

Figure A-8. Southwest to northeast soil and sand erosion structures in southeastern Utah.

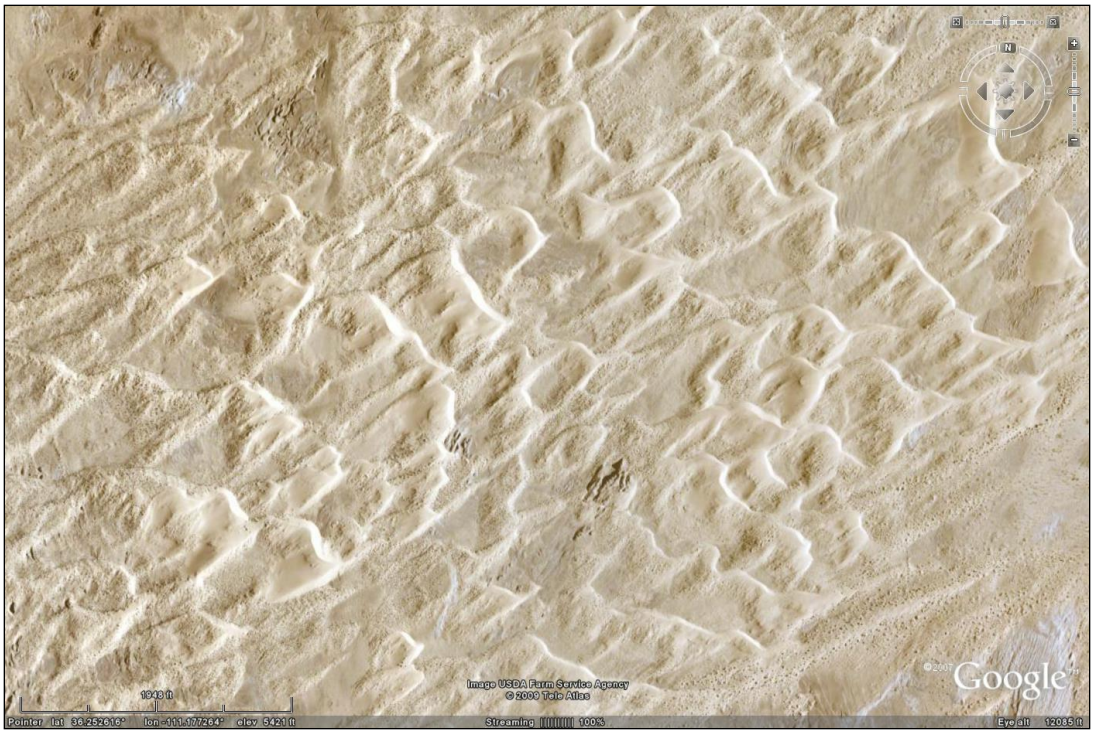


Figure A-9. Southwest to northeast soil and sand erosion structures in northeastern Arizona (Painted Desert). The slip faces of dunes (lighter bands) face in the direction of wind flow – toward the northeast.

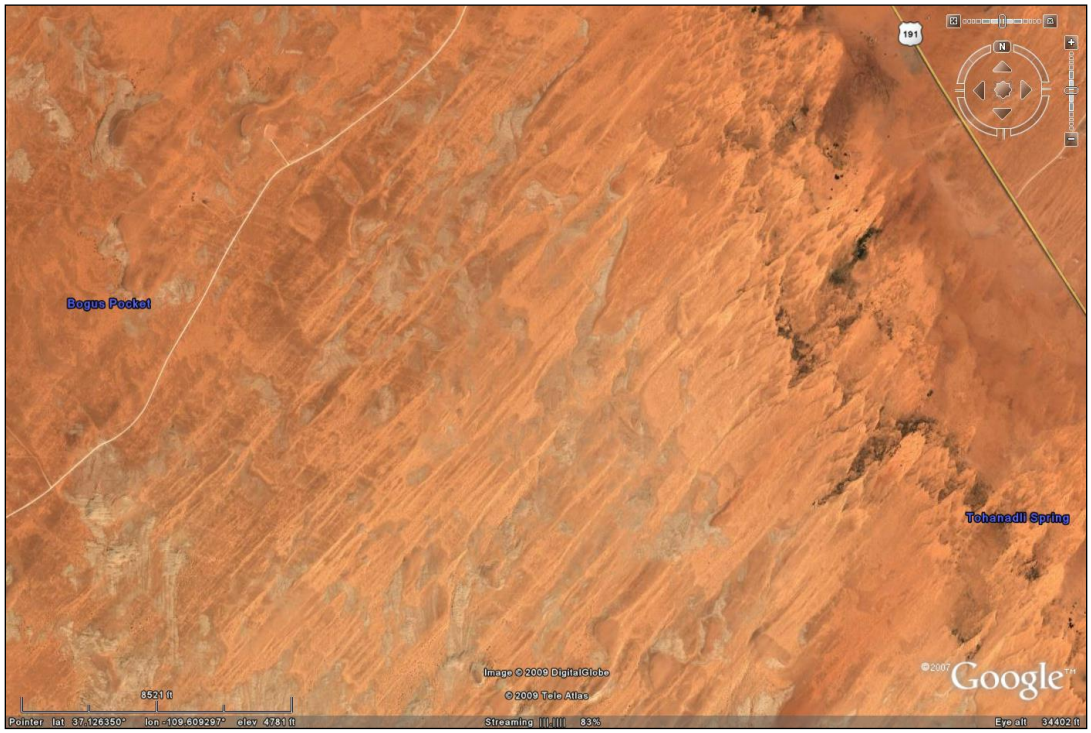


Figure A-10. Southwest to northeast soil and sand erosion structures in southeastern Utah.

Figure A-11. Southwest to northeast soil and sand erosion structures in northeastern Arizona (Painted Desert).

Figure A-12. Southwest to northeast soil and sand erosion structures in northeastern Arizona (Painted Desert).

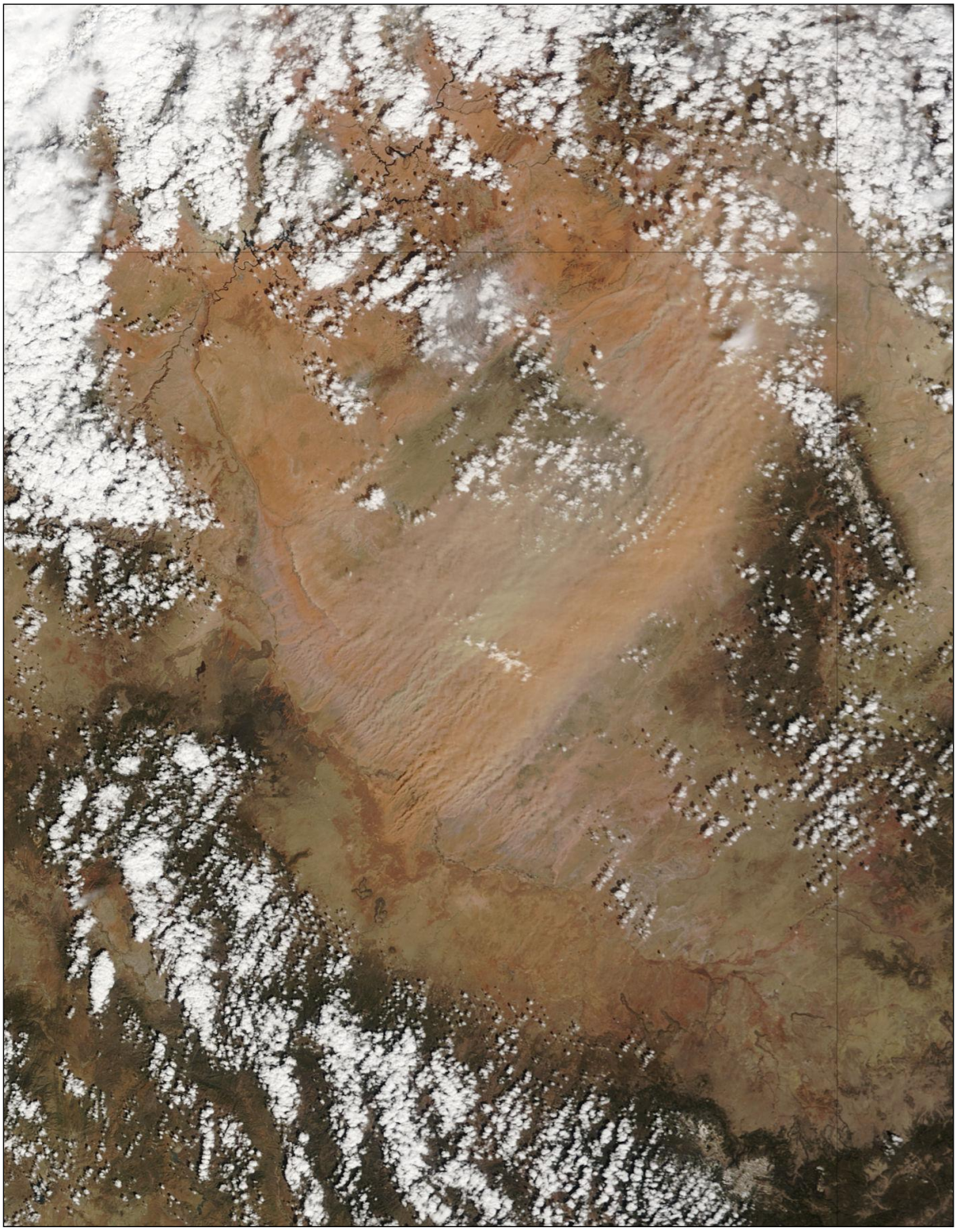


Figure A-13. NASA Tera satellite image of a dust storm on April 3, 2009, in southwesterly flow over the Painted Desert of northeastern Arizona (http://earthobservatory.nasa.gov/IOTD/view.php?id=37791).

Figure A-14 displays the surface weather map for this event (00Z April 4, 2009, or 5 PM MST April 3, 2009). A strong low pressure system in southern Colorado, strong southwesterly winds in the Four Corners area, and the blowing dust symbol (infinity sign) at Farmington (New Mexico) and Cortez (Colorado) are evident in this map. Blowing dust in this region is frequently associated with southwesterly flow.

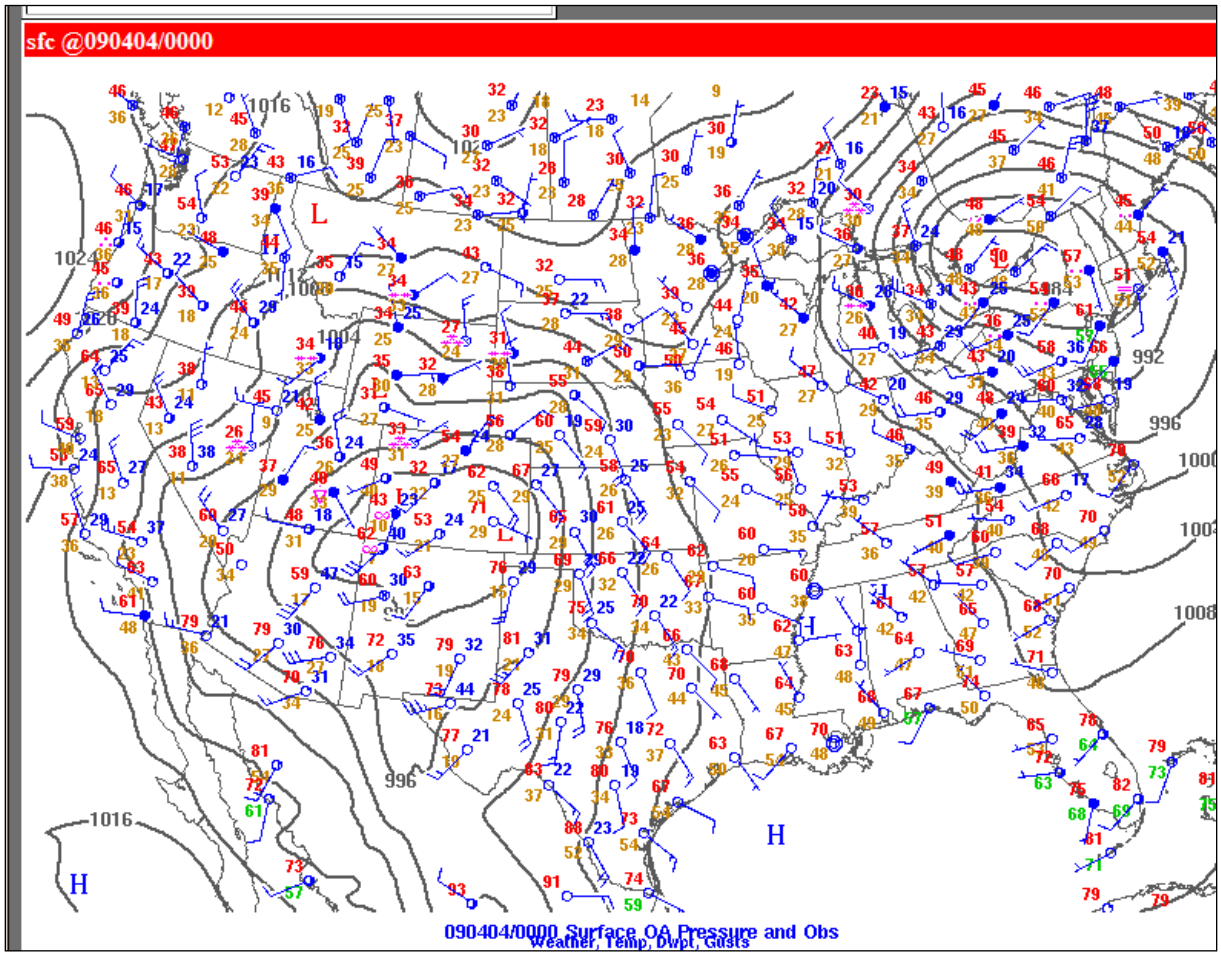


Figure A-14. Surface weather map for 00Z April 4, 2009, (5 PM MST April 3, 2009), showing a strong low pressure system in southern Colorado, strong southwesterly winds in the Four Corners area and the blowing dust symbol (infinity sign) at Farmington (New Mexico) and Cortez (Colorado).

A USGS map of the Colorado Plateau in Figure A-15 shows the prevalence of eolian or wind-blown sand deposits in southeastern Utah and northeastern Arizona. An analysis of the annual frequency of dust storms (Orgill and Sehmel, 1976) in the western half of the U.S. suggests that portions of eastern and western Utah and northeastern Arizona are source regions for blowing dust (see Figure A-16). Soil and sand structures point to the prevalence of southwesterly flow during blowing dust events, and precipitation climatology highlights the potential for blowing dust across much of the region. In addition, an analysis of back trajectories associated with high PM10 concentration events in Grand Junction discussed in the next section of this document supports the conclusion that soils in Arizona and Utah are likely significant contributors to PM10 measured during many dust storms affecting Grand Junction.

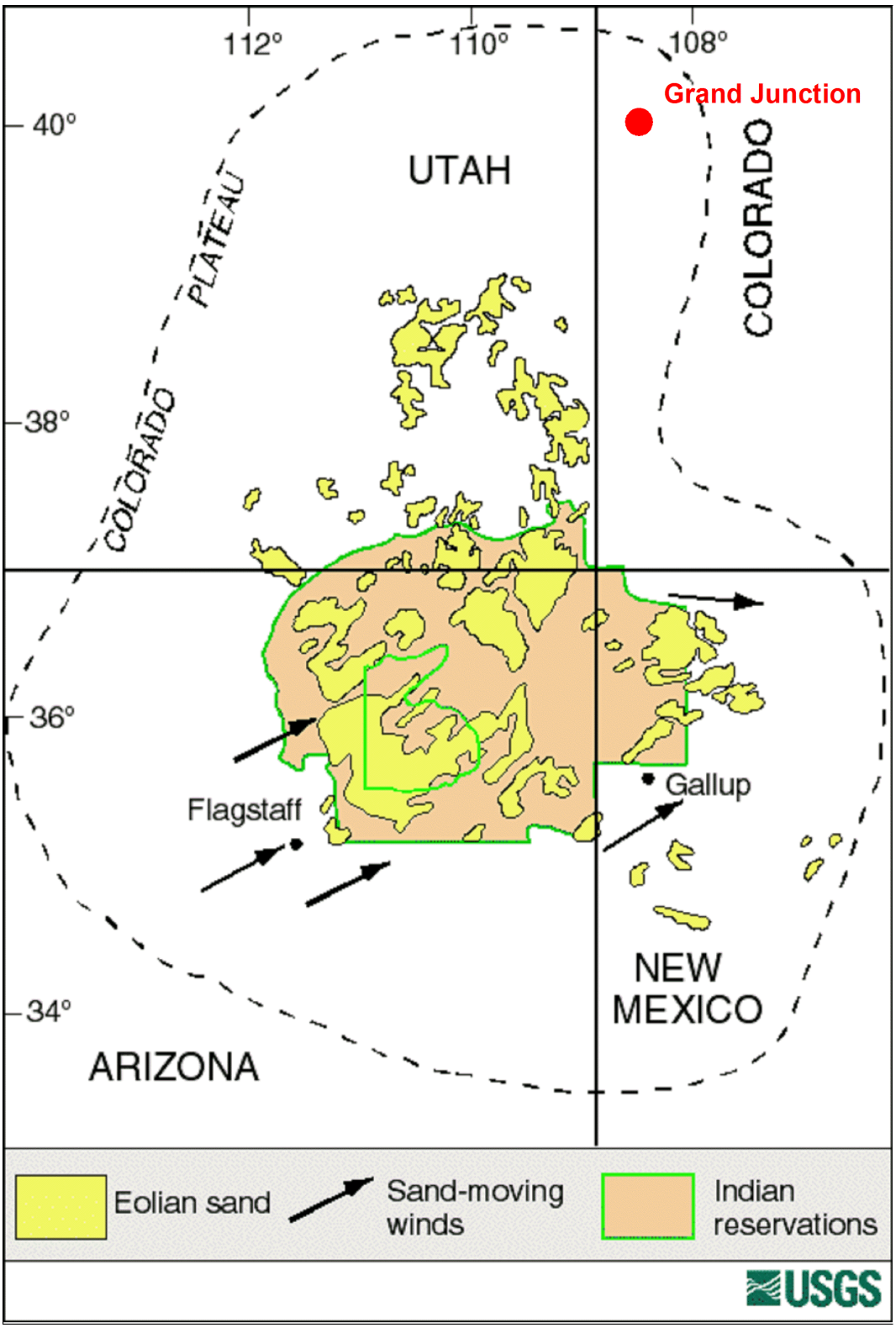


Figure A-15. USGS map of eolian sand features on the Colorado Plateau (http://geochange.er.usgs.gov/sw/impacts/geology/sand/).

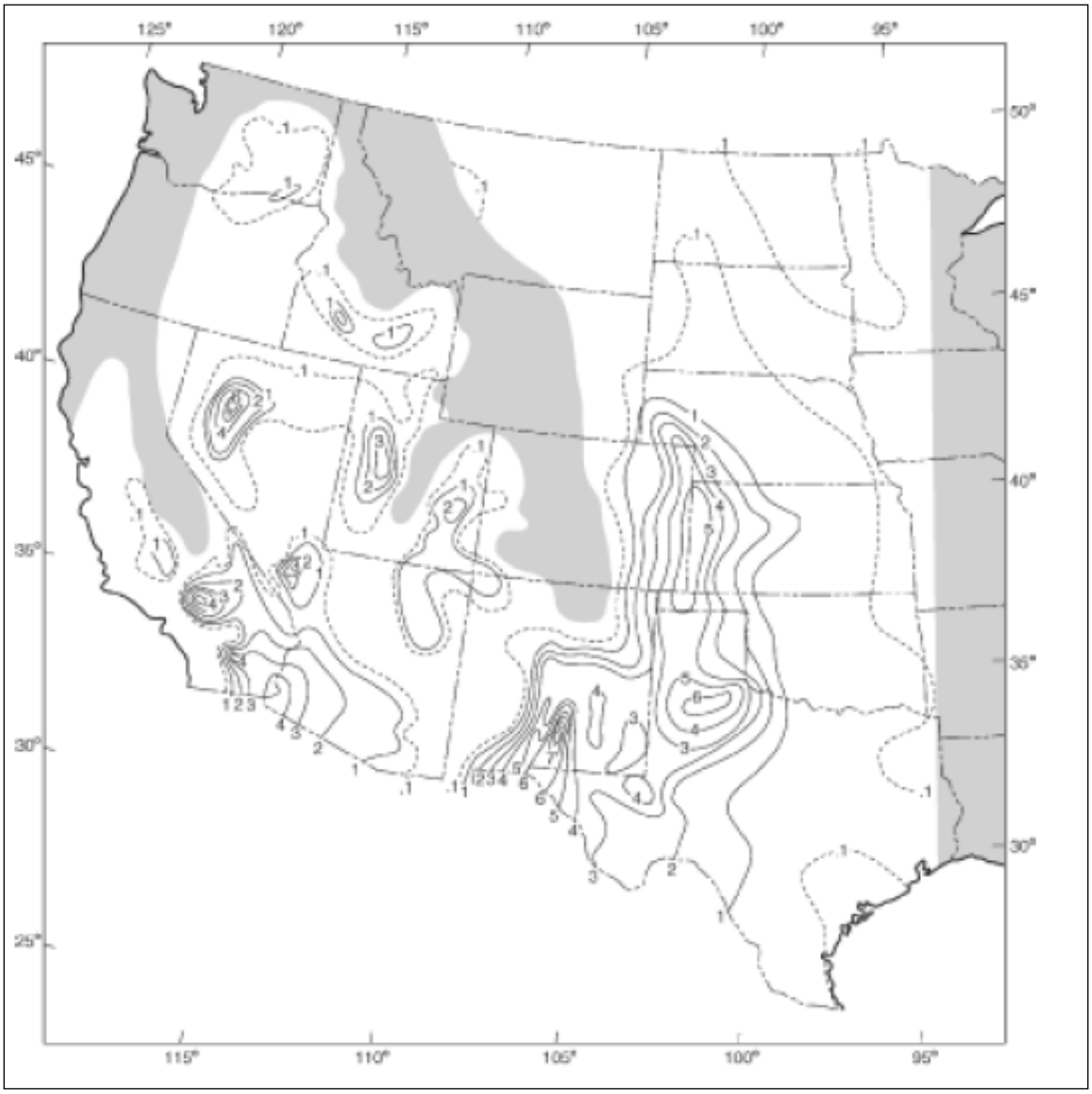


Figure A-16. Number of dust storms per year from: Orgill, M.M., Sehmel, G.A., 1976. Frequency and diurnal variation of dust storms in the contiguous USA. **Atmospheric Environment 10**, 813−825.

NOAA HYSPLIT 36-hour back trajectories were calculated for Grand Junction for the eight 24-hour periods from 2004 through early 2009 with the Powell monitor PM10 concentrations in excess of 75 ug/m3, strong regional winds, and dry soils. Trajectories were modeled every 4 hours for each day. Data presented later in this document provides evidence that the moderate to high PM10 levels on these days were from blowing dust. The 6 back trajectories for each day were calculated for an arrival height of 500 meters using EDAS40 data and model vertical velocities (see: http://www.arl.noaa.gov/HYSPLIT.php). The eight days used in the analysis and the Powell monitor concentrations measured on these days are presented in Table A-1.

The back trajectories for these high-concentration days are shown in Figure A-17. Transport was generally from the west through southwest. A high density of trajectory points is found in northeast Arizona and southeast Utah. Most of these trajectories in Figure A-17 are also consistent with transport from or across suspected or known blowing dust source regions highlighted in Figures A-5, A-13, A-15, and A-16.

Table A-1. Grand Junction Powell monitor days with concentrations in excess of 75 ug/m3 and blowing dust conditions (from 2004 through early 2009).

Year	Month	Day	Powell 24-hour PM10 concentration in ug/m3
2005	4	19	197.8
2008	4	15	116.1
2008	4	21	103.6
2004	9	3	102
2006	3	3	98.3
2008	5	21	86.7
2008	4	30	83.5
2006	6	7	77.9

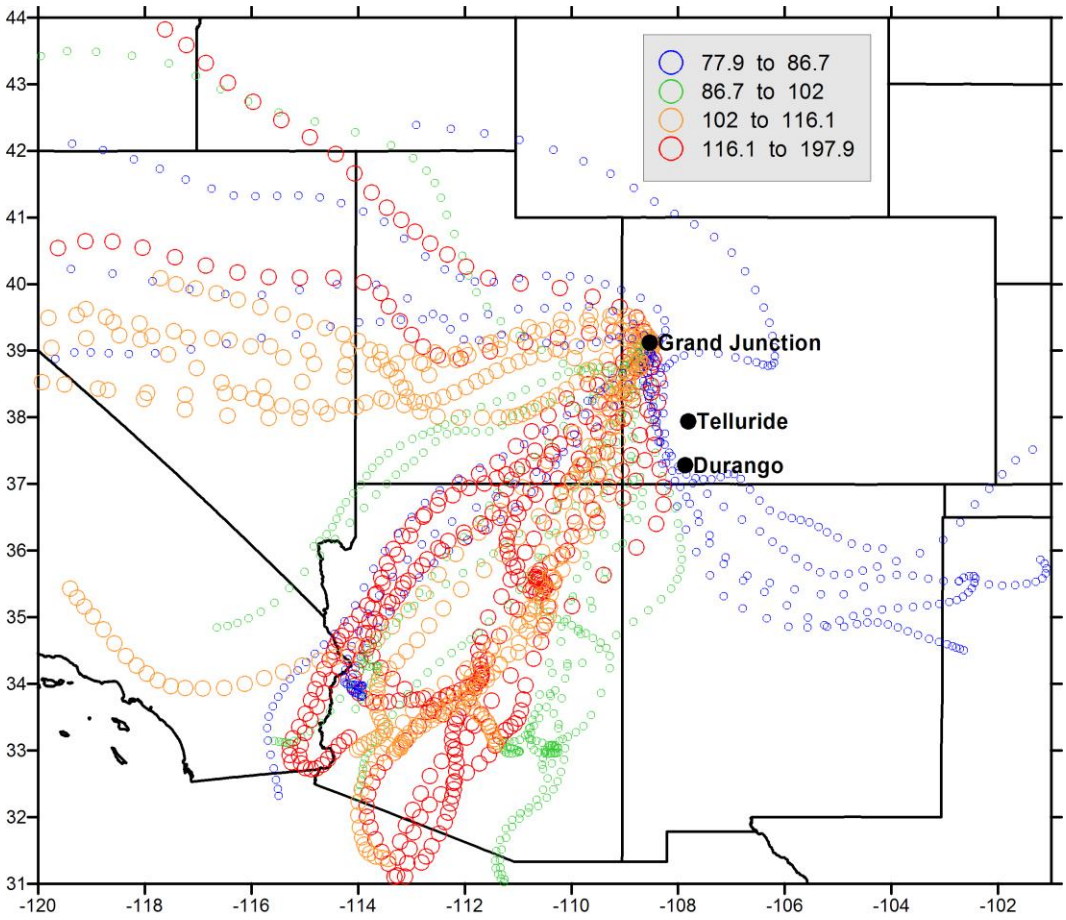


Figure A-17. NOAA HYSPLIT 36-hour back trajectories for Grand Junction for those eight 24-hour periods from 2004 through early 2009 with the Powell monitor PM10 concentrations in excess of 75 ug/m3, strong regional winds, and dry soils. Trajectory points are sized and color-coded to reflect 24-hour PM10 concentrations in ug/m3. Trajectories were calculated every 4 hours for each day.

The trajectories in Figure A-17 point to the possibility that, at times, dust from Utah and Arizona can have a major impact on Grand Junction and less of an impact elsewhere in western Colorado. This non-homogeneity is possible given the fact that dust storms are frequently organized into discreet plumes from discreet areas that maintain their integrity for long distances. An example of this can be seen in Figure A-

18 that shows plumes of dust in New Mexico during a windstorm on May 20, 2008.

Figure A-19 shows the NOAA HYSPLIT back trajectories for the highest concentration day during the 2004 through early 2009 period: April 19, 2005. Twenty-four hour back trajectories for each hour during the period with high winds (using EDAS40 data and 500-meter arrival heights) show that the back trajectories for Grand Junction were more likely to have crossed the Painted Desert and southeastern Utah than those for Telluride and Durango, which measured lower PM10 concentrations on this day.

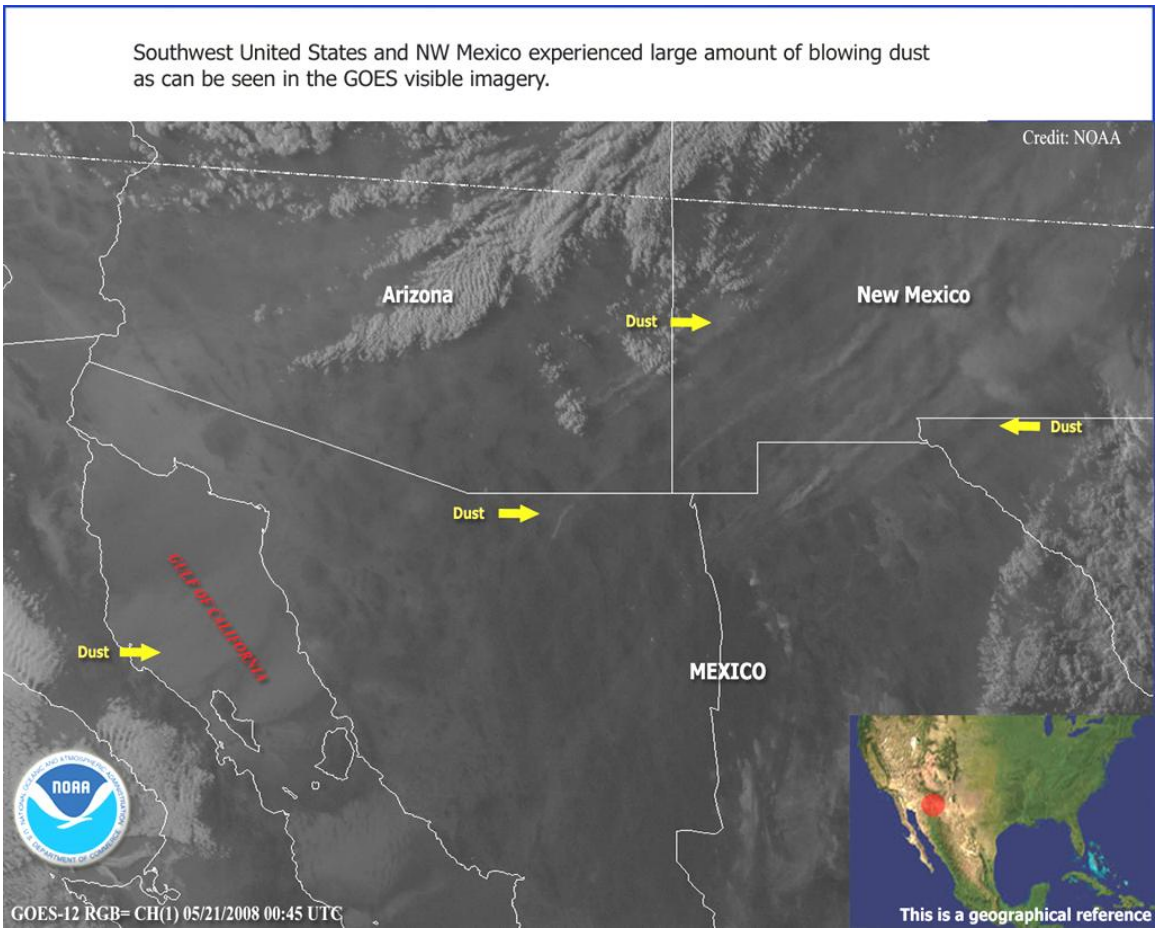


Figure A-18. Discreet plumes of blowing dust in New Mexico, Mexico, and Arizona visible in GOES satellite imagery for May 20, 2008 (http://www.osei.noaa.gov/Events/Dust/US_Southwest/2008/DSTusmx142_G12.jpg).

K-means cluster analysis has been applied to Grand Junction Powell PM10 concentrations, Grand Junction and Painted Desert 30-day total precipitation for each PM10 monitoring day, and Grand Junction and Painted Desert daily maximum wind gust speeds for each monitoring day. K-means cluster analysis is a statistical method for identifying clusters or groupings of values for many variables. For environmental variables, these clusters often represent distinct processes, conditions, or events. In this case, cluster analysis differentiates PM10 concentrations associated with strong winds, low soil moistures, and blowing dust by providing mean values for these 5 variables for 5 distinct categories of PM10 events. The period of record considered was from January 2004 through March 2009. The Hopi weather station located in the central portion of the Painted Desert was used to represent Painted Desert conditions in northeastern Arizona, and the Grand Junction National Weather Service station was used to represent Grand Junction conditions. The 30-day total precipitation values appear to be a better metric for blowing dust conditions than shorter-term totals.

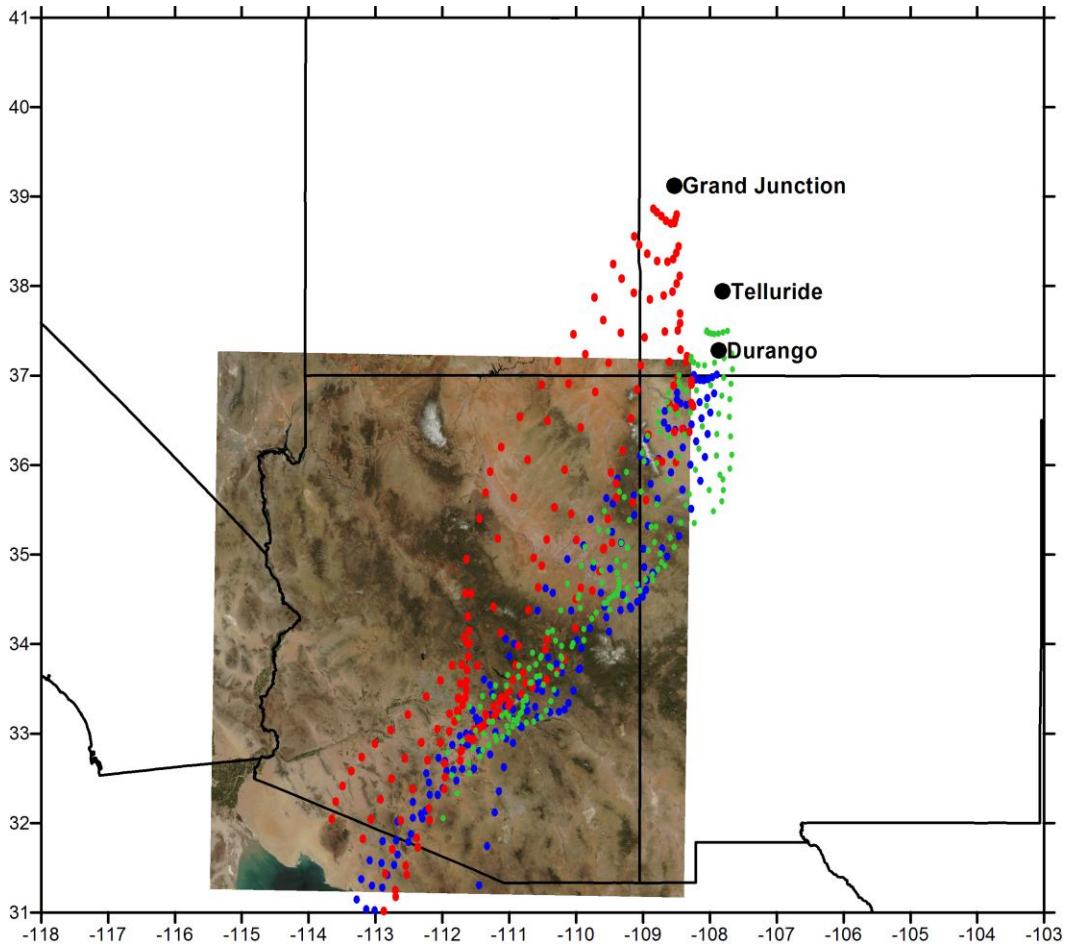


Figure A-19. 24-hour NOAA HYSPLIT back trajectories for every hour from 1500 MST to 2200 MST for Grand Junction (red), Telluride (green), and Durango (blue) for the dust storm of April 19, 2005.

The results of the cluster analysis are presented in Table A-2 below. Cluster 1 represents high soil moisture conditions, moderate gust speeds, and low PM10 concentrations. Cluster 2 represents very low soil moisture, moderate PM10, and low gust speeds. Cluster 3 represents low soil moisture, moderate gusts, and low PM10. Cluster 4 represents moderate soil moisture, low gusts, and low PM10. Finally, Cluster 5 represents high PM10, high gusts, and low soil moisture. Cluster numbers, Grand Junction Powell PM10 concentrations, and Grand Junction daily maximum gust speeds are plotted in Figure A-20.

The data in Figure A-20 clearly show that the highest PM10 concentrations tend to occur in Cluster 5 with gusts above 40 mph. The only exceedance in this period occurred on a day with a peak gust of 43 mph. Cluster 2 is likely to be indicative of wintertime inversion conditions with lighter winds and moderately elevated PM10. Figure A-21 shows the concentrations and cluster values associated with Hopi station daily maximum gust speeds. The overall pattern is similar. The highest concentration day is associated with a peak gust of 47 mph at Hopi. All of the days/events presented in Figure A-17, A-19, and Table A-1 were classified as Cluster 5.

Table A-2. K-means cluster analysis means for Grand Junction PM10 and meteorological variables.

Cluster Variables	Cluster 1 Means	Cluster 2 Means	Cluster 3 Means	Cluster 4 Means	Cluster 5 Means
Powell 24-hour PM10 in ug/m3	24.5	37.3	24.3	21.8	74.9
Hopi Wind Gust in mph	20.8	18.0	32.5	20.7	40.5
Grand Junction Wind Gust in mph	20.4	16.5	31.8	19.6	43.1
Grand Junction 30-day Precipitation	1.7	0.4	0.5	0.8	0.6
Hopi 30-day Precipitation	1.8	0.2	0.5	0.7	0.3
Count	85	120	170	147	24

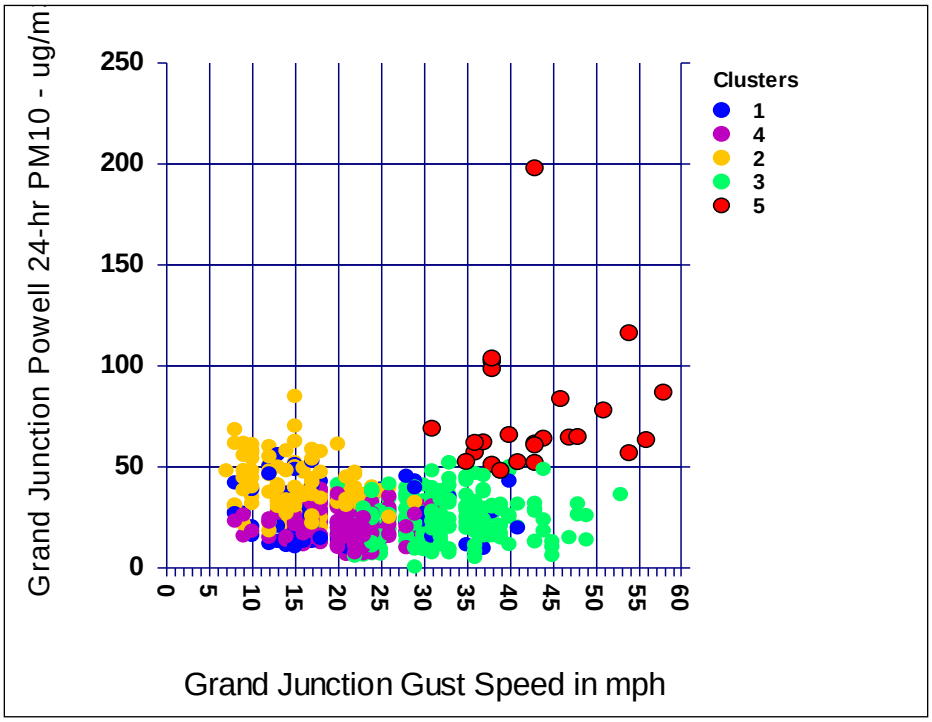


Figure A-20. Grand Junction Powell 24-hour PM10 concentrations versus Grand Junction gust speed by cluster.

Figures A-22 and A-23 show Powell PM10 concentrations versus Grand Junction and Hopi 30-day precipitation totals, respectively, by cluster. The blowing dust group, Cluster 5, is generally associated with 30-day precipitation totals of less than 1.00 inches at Grand Junction and less than 0.50 inches at Hopi. While this is not proof that the measured dust in Grand Junction is from Arizona, it adds to the weight of evidence that the Painted Desert makes a significant contribution to PM10 concentrations in Grand Junction during many blowing dust events. Of interest in this regard are the two high concentrations (greater than 100 ug/m3) that occurred when Grand Junction 30-day precipitation totals were greater than an inch (see Figure A-22). One of these occurred when transport was from the southwest. On this day (April 21, 2008) the NOAA Satellite Smoke Text Archive reported the following (see http://www.ssd.noaa.gov/PS/FIRE/smoke.html):

"Blowing dust is seen over most of Utah (and part of western Nevada) and the dust is moving toward the northeast, reaching into northwestern Colorado and southern Wyoming."

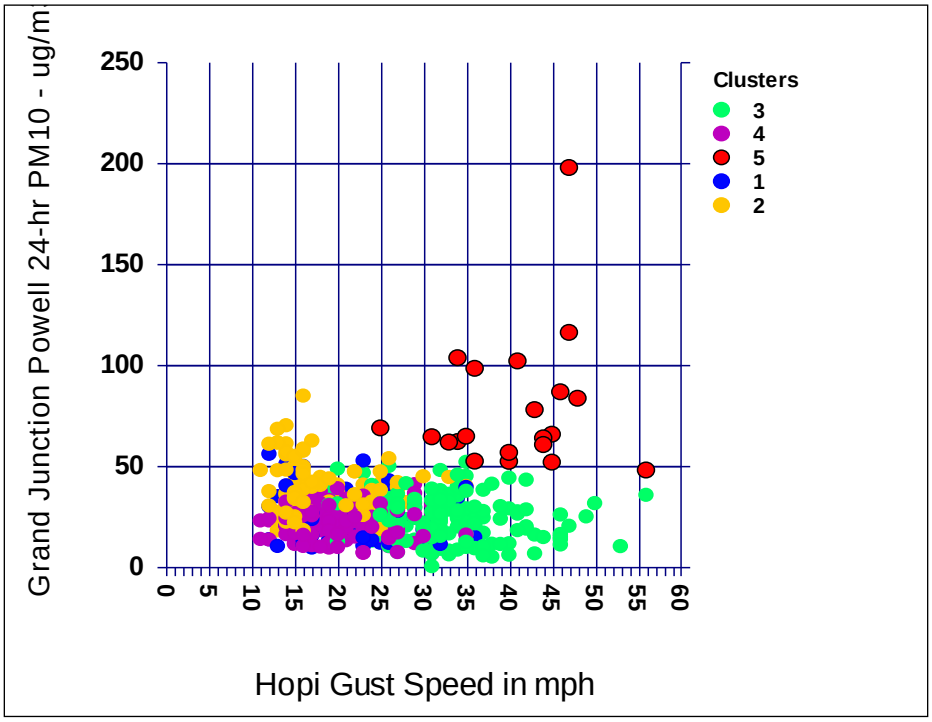


Figure A-21. Grand Junction Powell 24-hour PM10 concentrations versus Hopi gust speed by cluster.

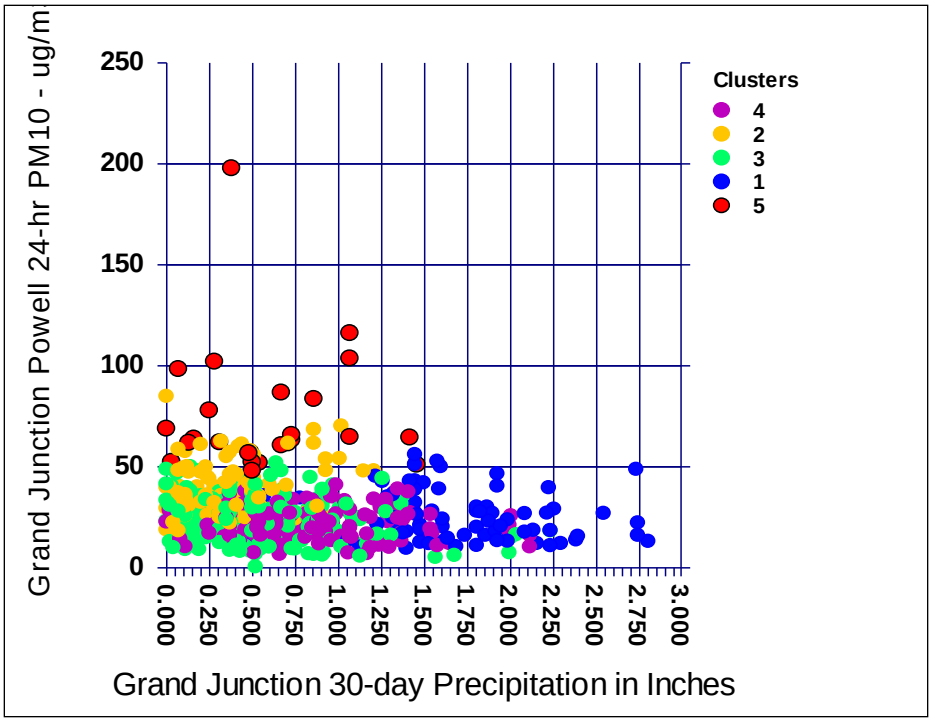


Figure A-22. Grand Junction Powell 24-hour PM10 concentrations versus Grand Junction 30-day total precipitation by cluster.

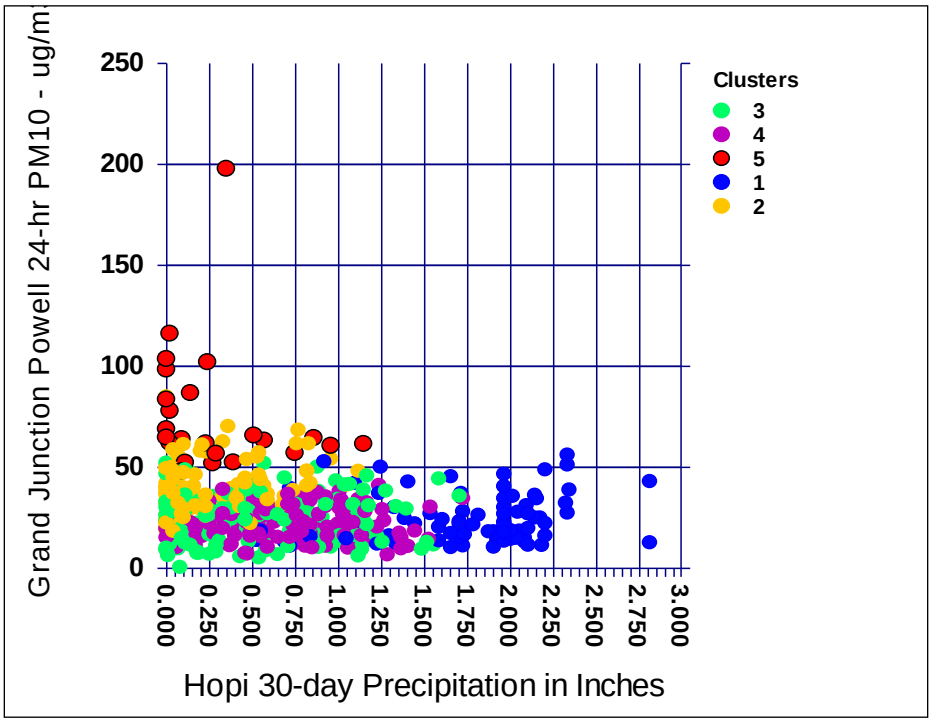


Figure A-23. Grand Junction Powell 24-hour PM10 concentrations versus Hopi 30-day total precipitation by cluster.

The other occurred on April 15, 2008, when the flow was from Arizona and southeast Utah. The transport conditions, the discrepancy between high recent precipitation in Grand Junction and low recent precipitation at Hopi for these two days, and, in one case, analyst discussion of what was visible in satellite images suggest that much of the dust might have originated from outside of the Grand Junction environment.

Figure A-24 shows Grand Junction Powell 24-hour PM10 concentrations versus peak gust wind directions at the Little Delores RAWS weather station about 25 miles west-southwest of Grand Junction. Grand Junction is situated on the floor of the Grand Valley, a major northwest to southeast trending basin than can force or channel synoptic scale flows. As a result, surface wind directions in Grand Junction may not be useful indicators of the direction of longer-range transport. Little Delores is on the Umcompahgre Plateau, and winds here are more likely to reflect the larger-scale transport directions for the region. This graph indicates that high PM10 at Grand Junction (Cluster 5) is associated with winds from the south-southeast to west-southwest at Little Delores. These directions point to dust sources in southeast Utah and northeastern Arizona. This is further evidence that dust from these areas may make a significant contribution to PM10 measured in Grand Junction during blowing dust events.

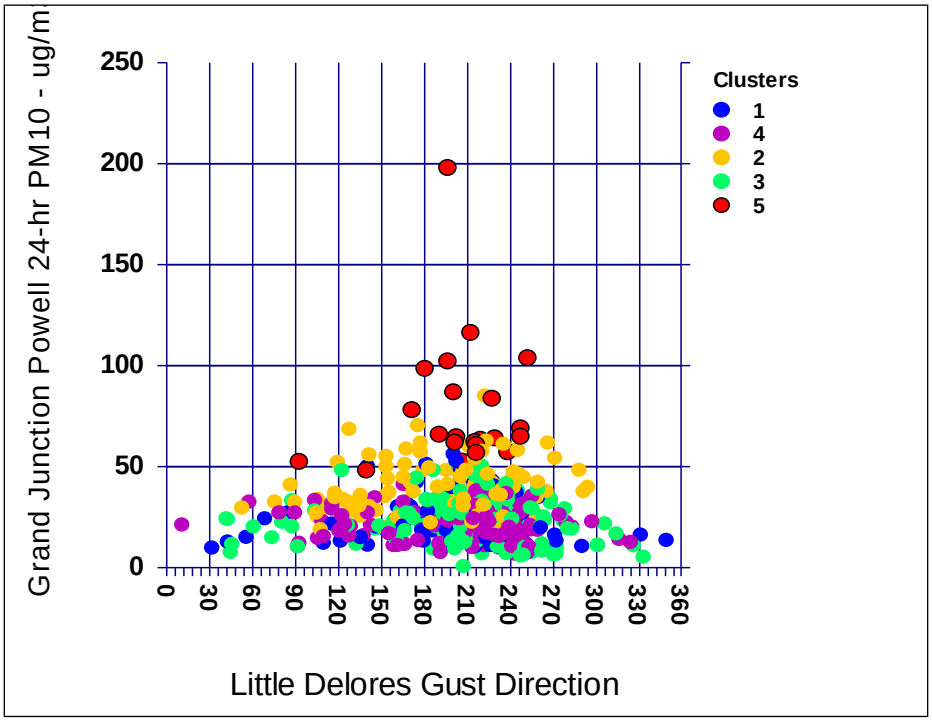


Figure A-24. Grand Junction Powell 24-hour PM10 concentrations versus peak gust wind directions at the Little Delores RAWS weather station, by cluster.

Figure A-25 presents monthly percentiles for Grand Junction gust speeds. Wind gusts generally considered to be high enough for significant blowing dusts (40 mph or higher) are within the upper 5 to 15 percent during each month of the year. Consequently, these events can be viewed as exceptional rather than normal. Gusts in this category can occur any month of the year, but are most likely in March, April, May and October. Figure A-4 shows that in Grand Junction these are typically among the wettest months of the year. It is in drier years, therefore, that blowing dust may be most prevalent during the spring and fall months. January, February, and June are typically very dry, and might be expected to have a significant proportion of blowing dust events.

Figures A-26 and A-27 show histograms for Grand Junction and Hopi wind gusts, respectively. The 95th percentile gust speed for Grand Junction is 43 mph. For Hopi it is 41 mph. For both sites, it is clear that gusts in the range that is associated with blowing dust are the exception rather than the rule. Cluster analysis also shows that the blowing dust events represent only 4% of the PM10 sample days (from Table A-2, Cluster 5 had 24 cases out of a total of 546). The weight of evidence presented in this document clearly suggests that source regions in Arizona and Utah can have a significant impact on PM10 concentrations in Grand Junction during blowing dust events and that these events occur when dry soils are affected by winds of exceptional strength. Control of these sources, which are outside of Colorado, may not be reasonably achievable or possible.

The precipitation climatology for the Four Corners area indicates that the area can be susceptible to blowing dust when winds are high. Landform imagery shows that northeastern Arizona and southeastern Utah in particular have experienced a long-term pattern of wind erosion and blowing dust when winds have been southwesterly and blowing into western and southern Colorado. Back trajectories, case studies, satellite imagery, and statistical analyses have also shown that northeastern Arizona and southeastern Utah are a significant source for blowing dust transported into Colorado. Elevated PM10 in Grand Junction during windstorms is generally associated with wind gusts of 40 mph or higher at Grand Junction and Hopi in northeastern Arizona and southwesterly flow in Grand Junction. Elevated PM10 in Grand Junction is generally associated with 30-day precipitation totals of less than 1.00 inches at Grand Junction and less than 0.50 inches at Hopi.

Reference:

Orgill, M.M., Sehmel, G.A., 1976. Frequency and diurnal variation of dust storms in the contiguous USA. **Atmospheric Environment 10**, 813−825

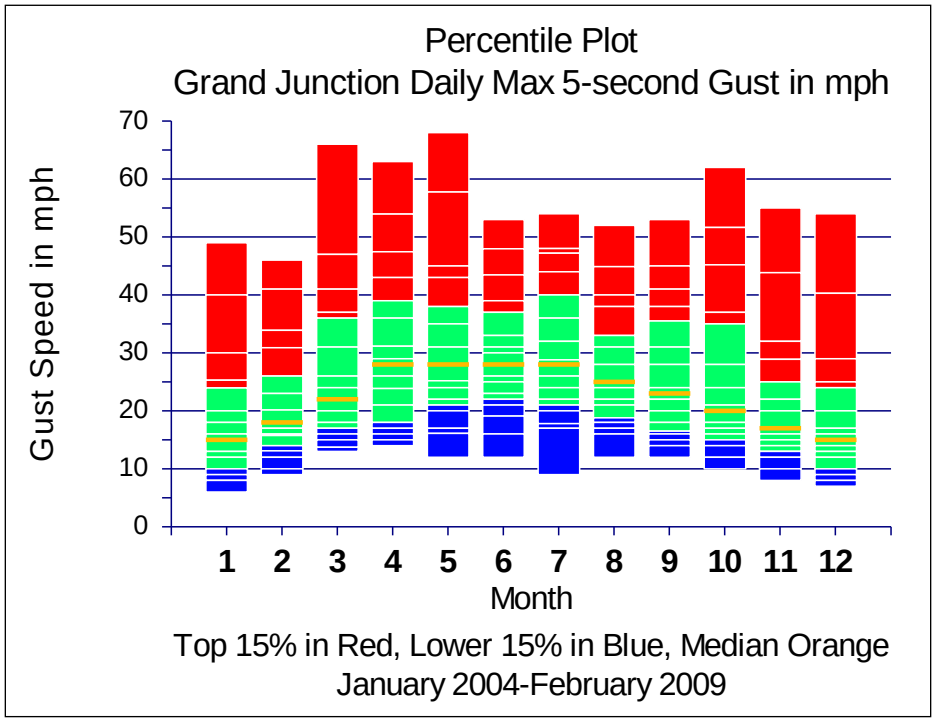


Figure A-25. Percentile plot of Grand Junction daily maximum 5-second gust speed in miles per hour showing that gusts of 40 mph or greater always occur within the top 15 percentile speeds for each month of the year.

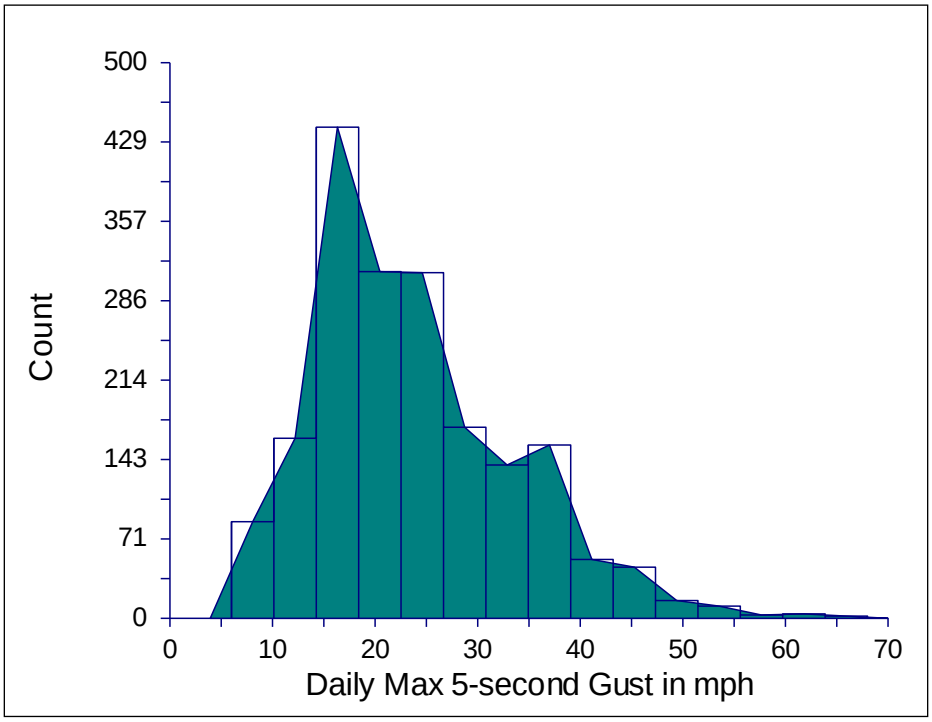


Figure A-26. Histogram of daily maximum 5-second wind gusts at Grand Junction based on January 2004 – February 2009.

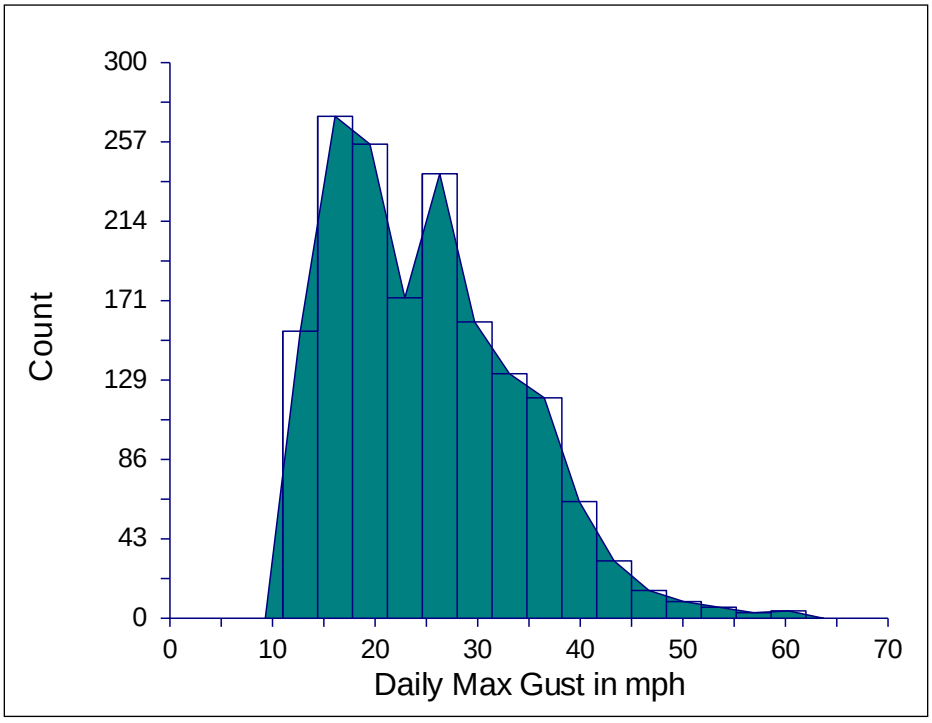
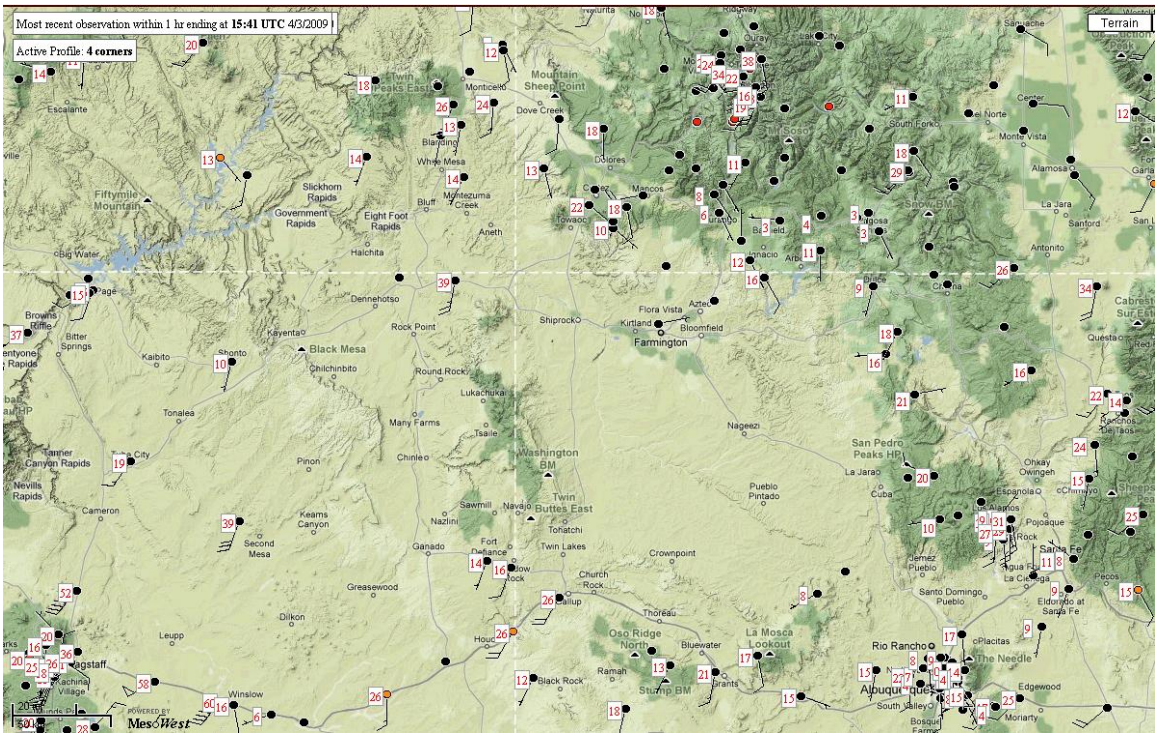


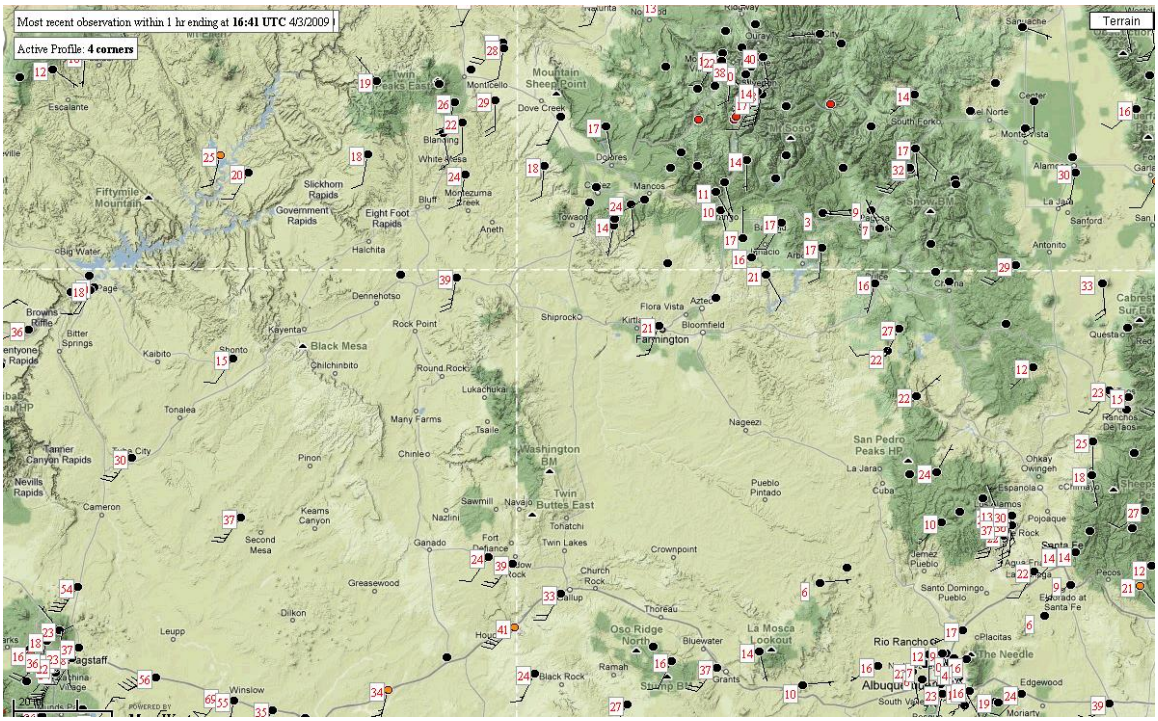
Figure A-27. Histogram of daily maximum 5-second wind gusts at Hopi based on January 2004 – February 2009.

Attachment B

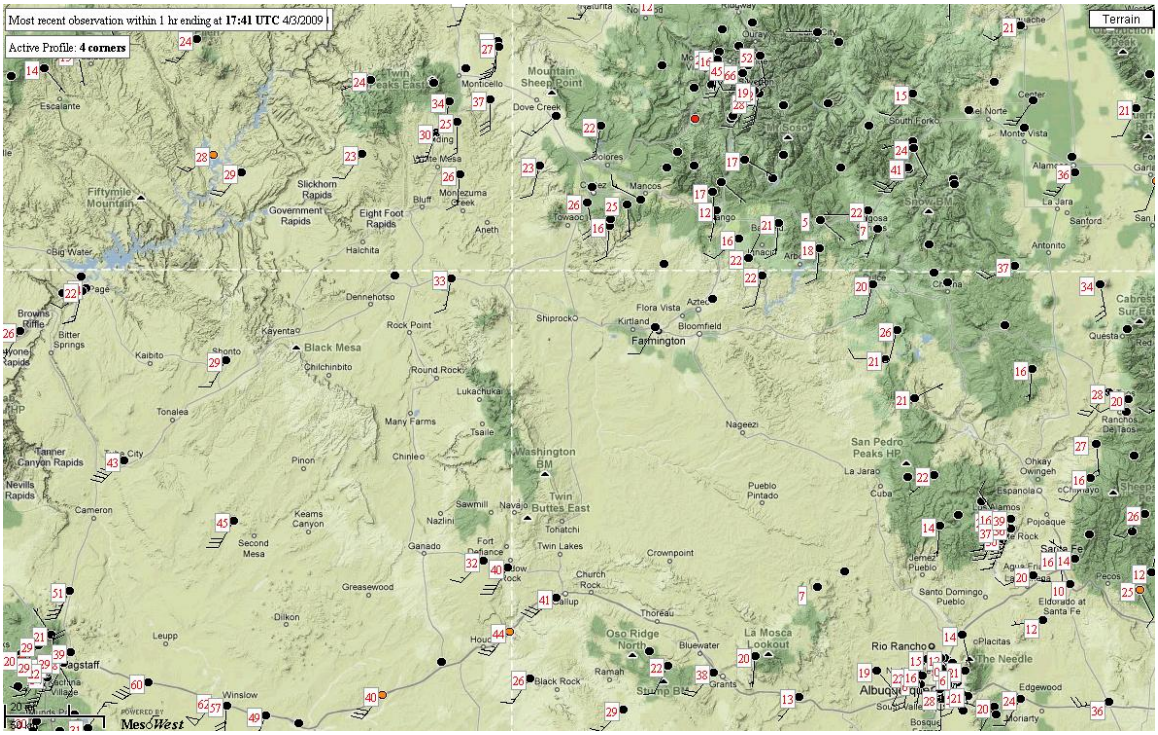
Hourly MesoWest Surface maps, for April 3, 2009



Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 15:41 UTC April 3, 2009 or *8:41 AM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 16:41 UTC April 3, 2009 or *9:41 AM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



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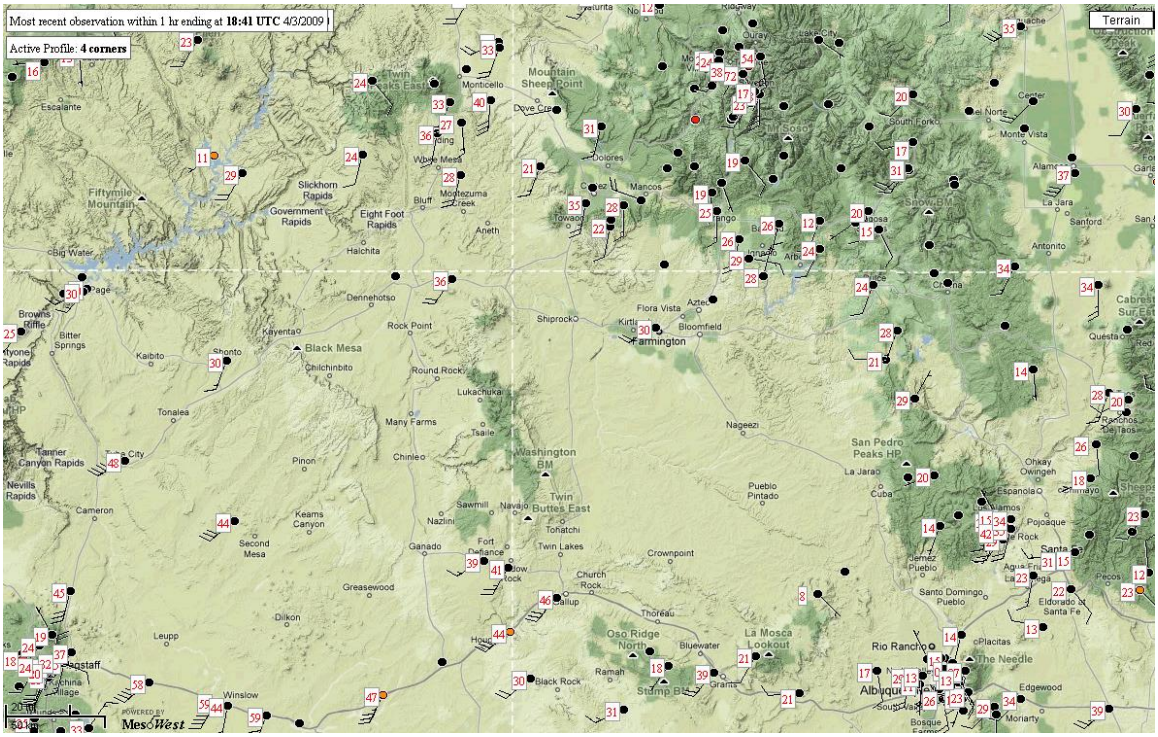
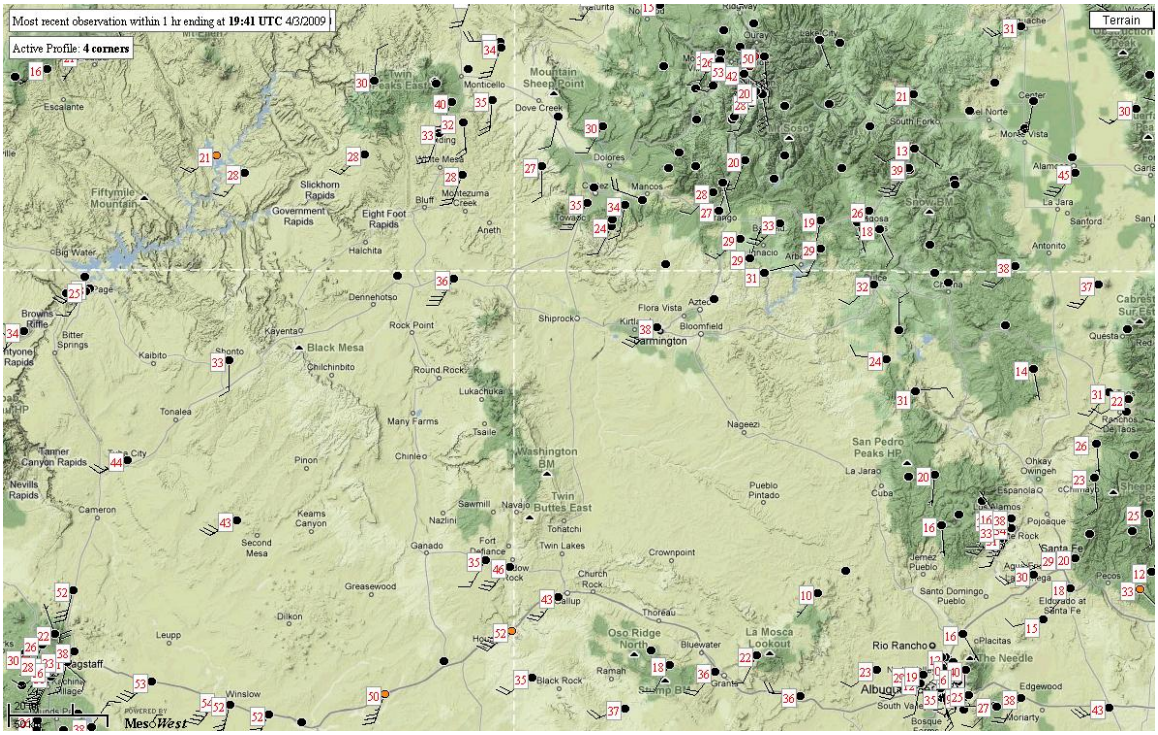
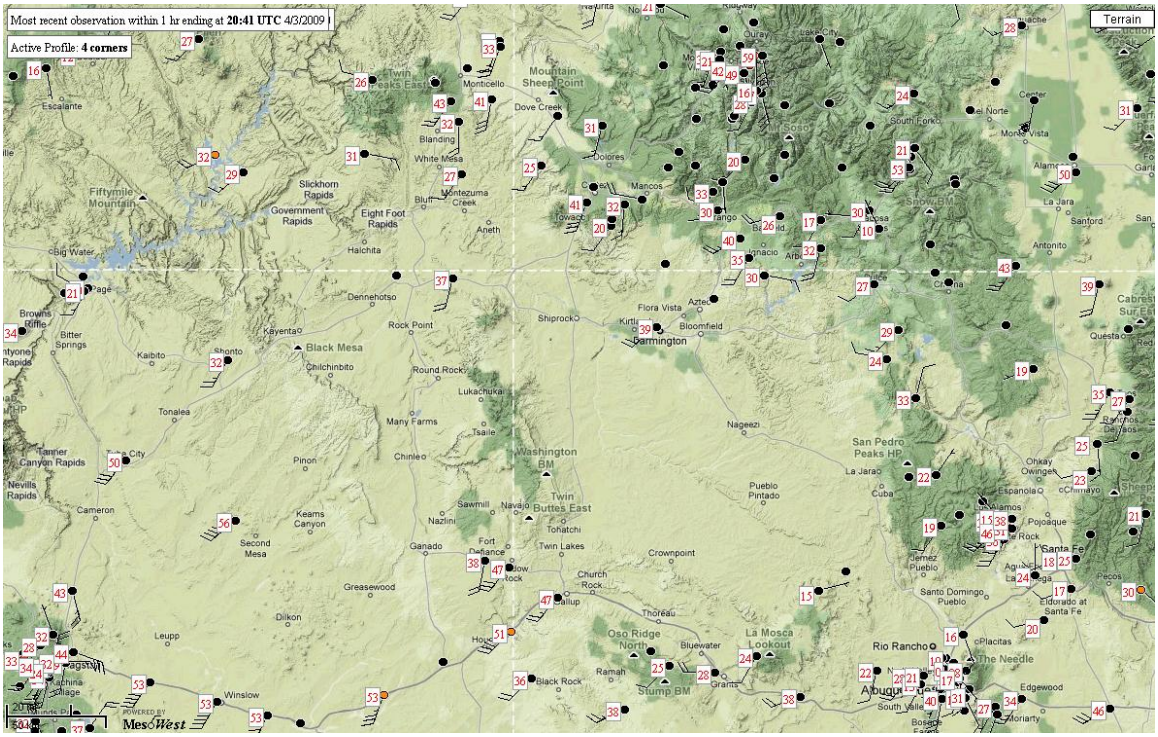


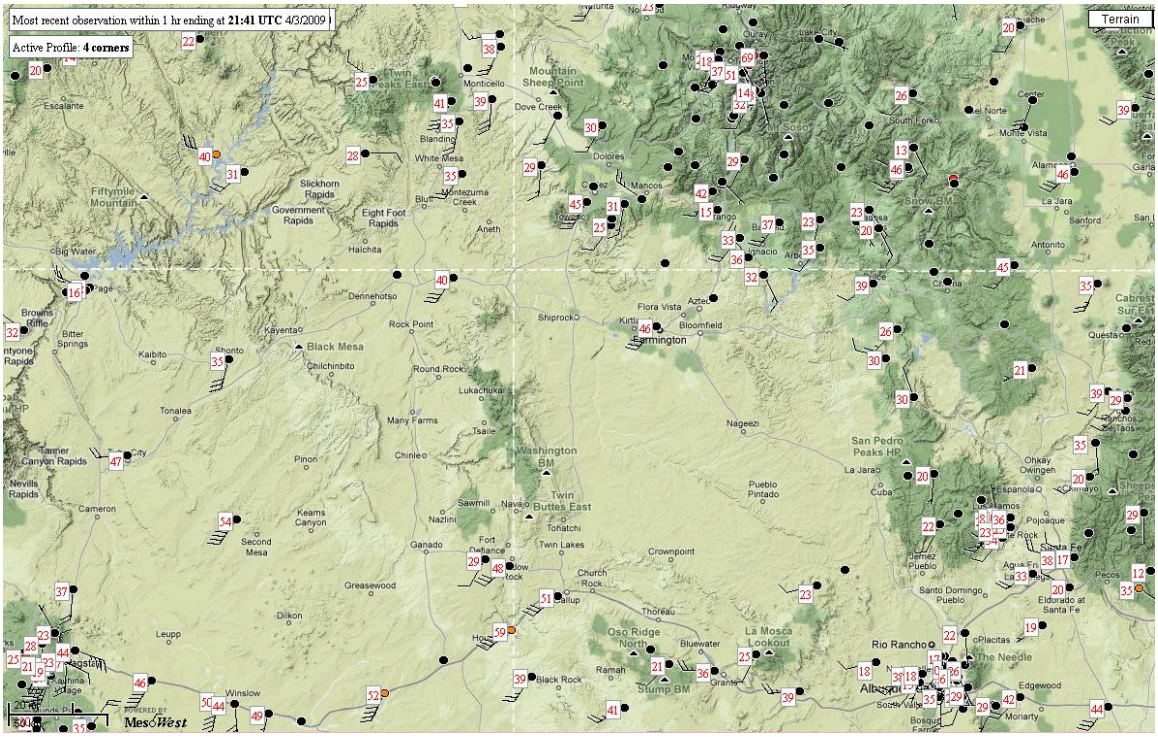
Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 18:41 UTC April 3, 2009 or *11:41 AM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



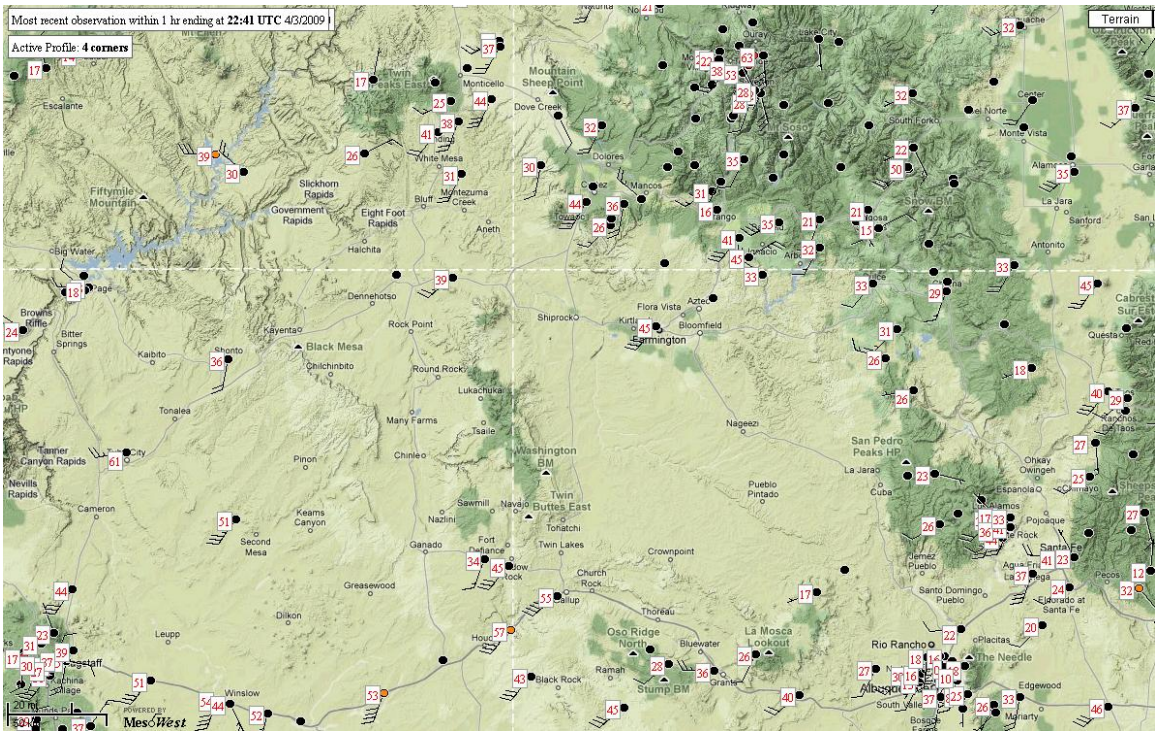
Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 19:41 UTC April 3, 2009 or *12:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



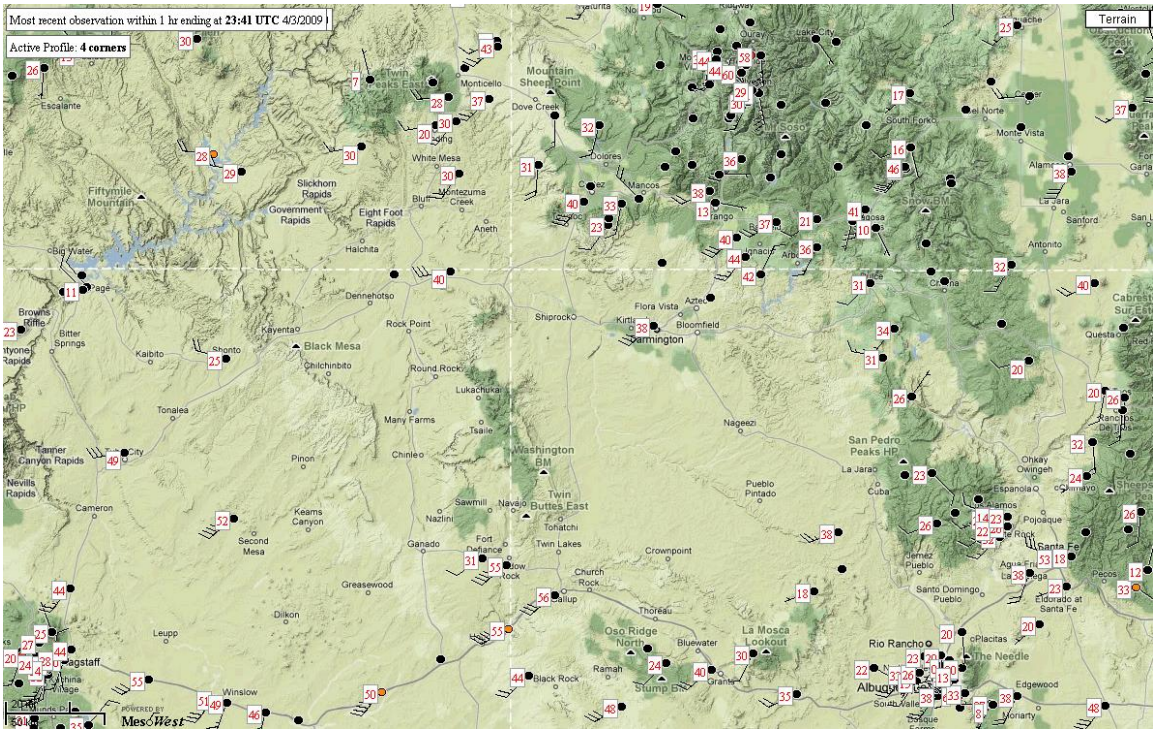
Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 20:41 UTC April 3, 2009 or *1:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 21:41 UTC April 3, 2009 or *2:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 22:41 UTC April 3, 2009 or *3:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



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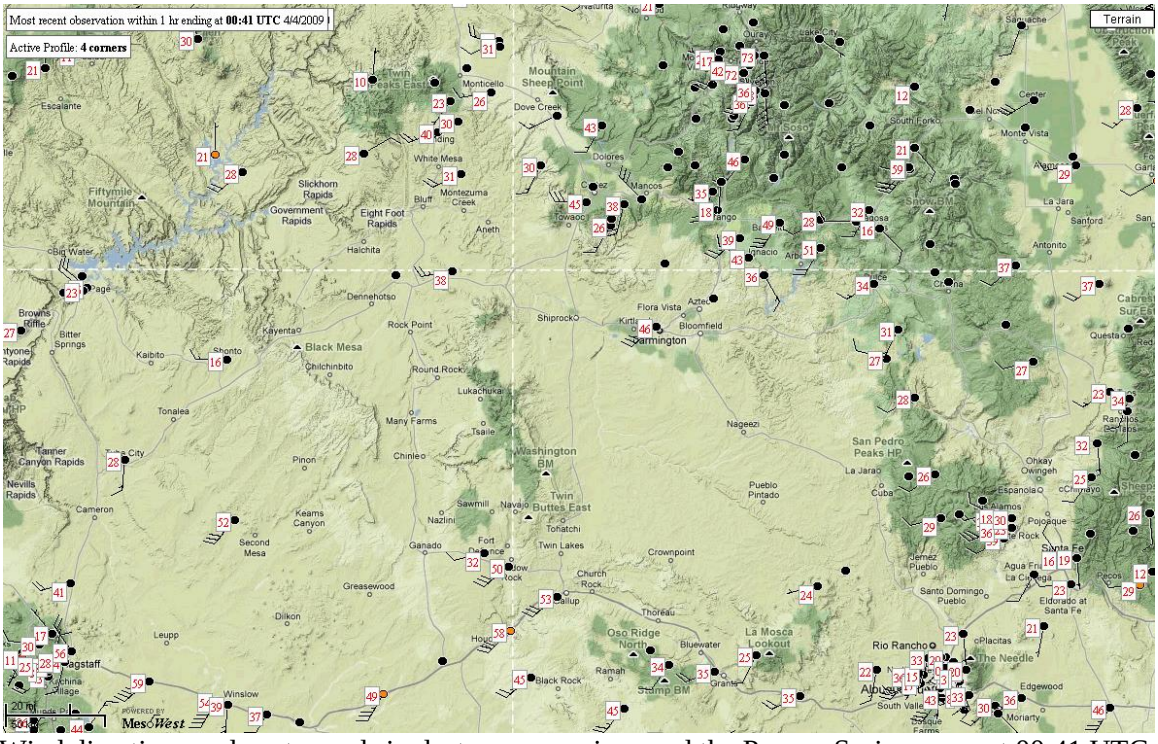
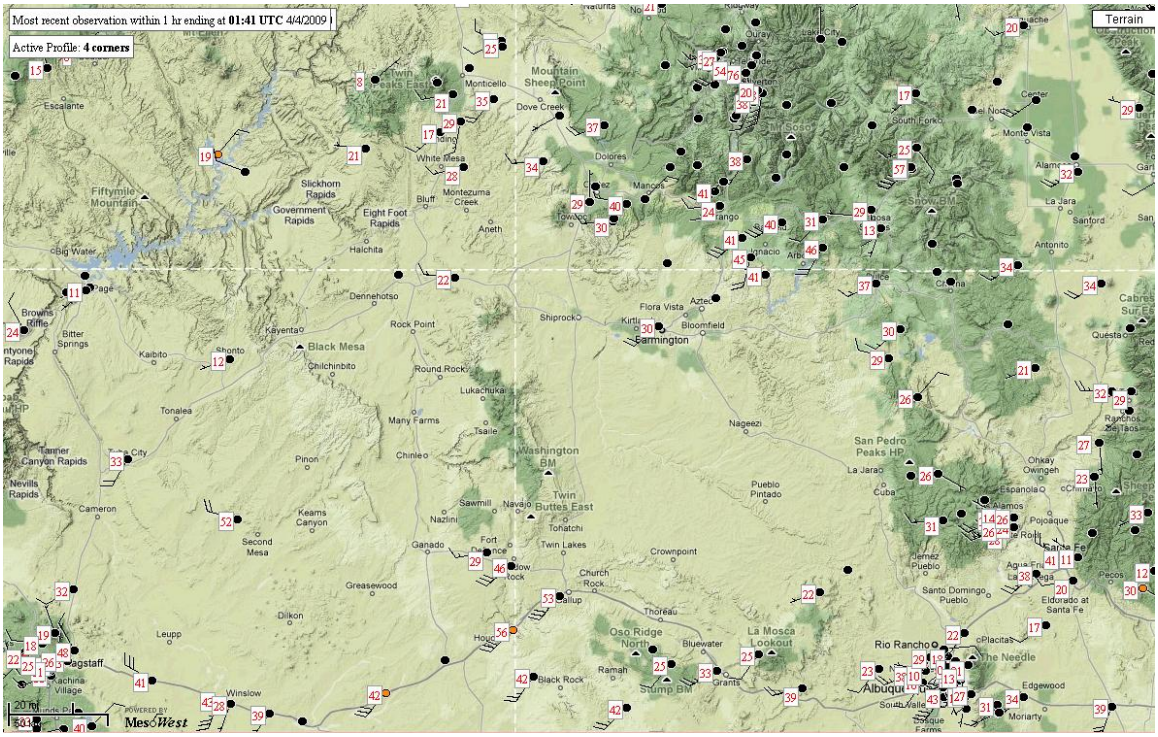
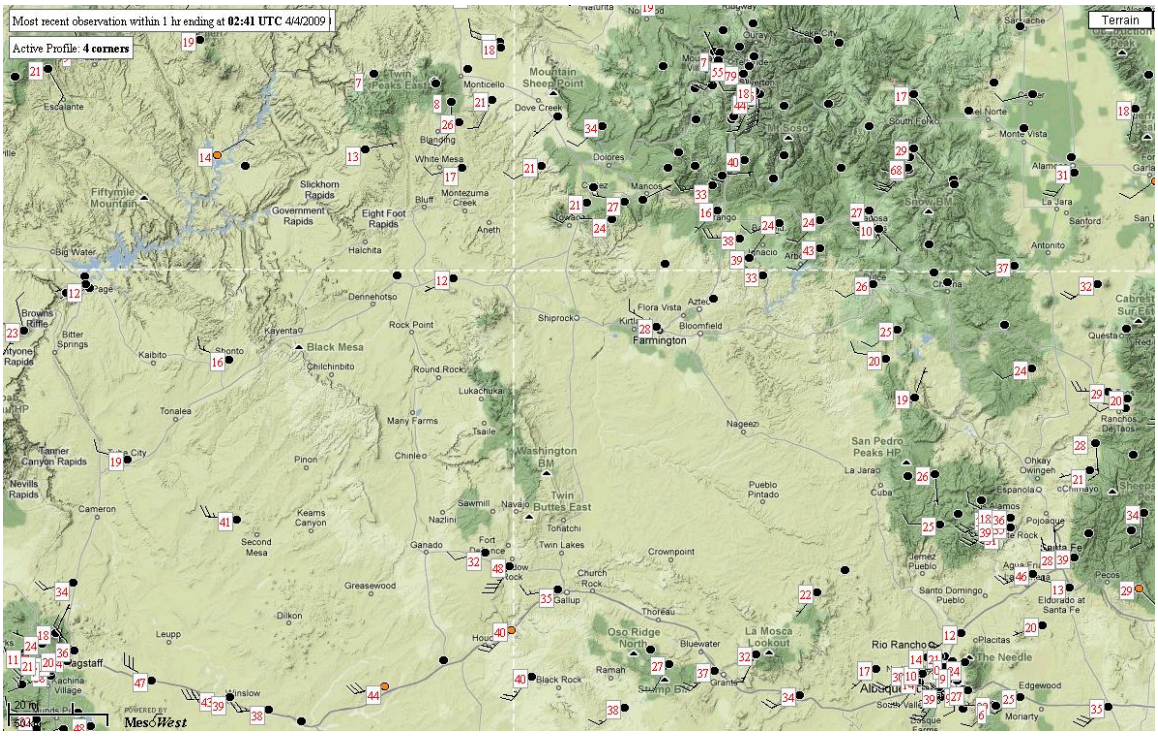


Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 00:41 UTC April 4, 2009 or *5:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 01:41 UTC April 4, 2009 or *6:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



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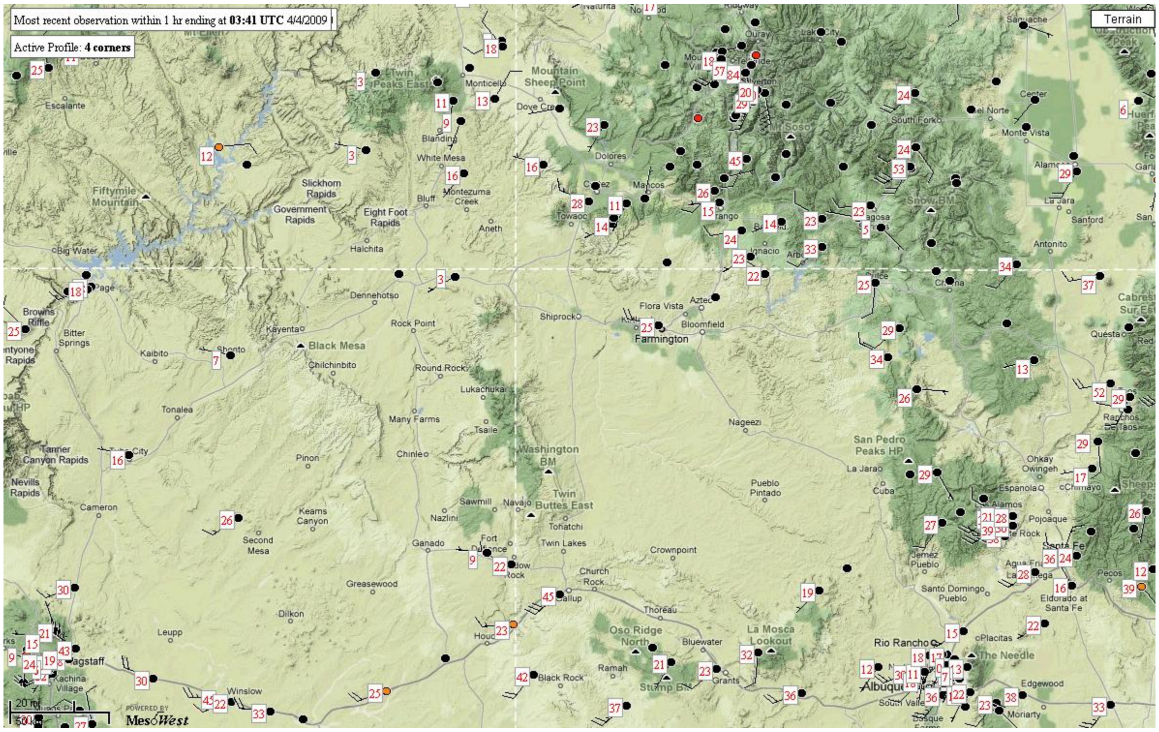

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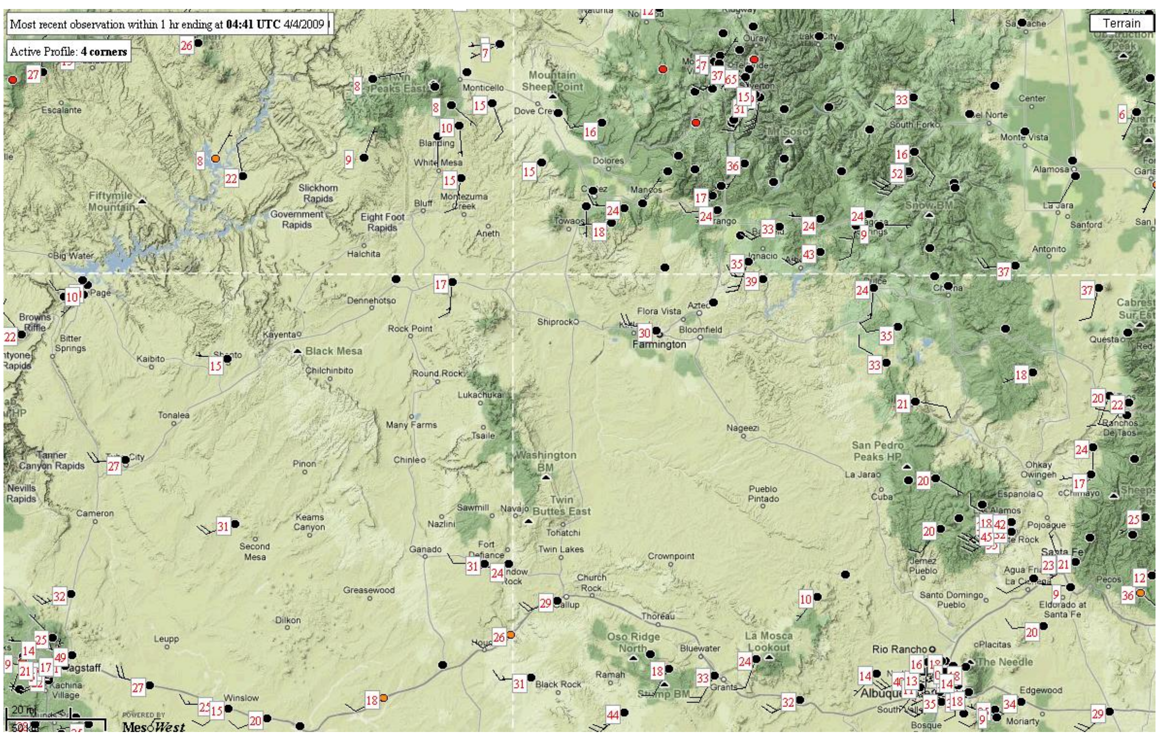
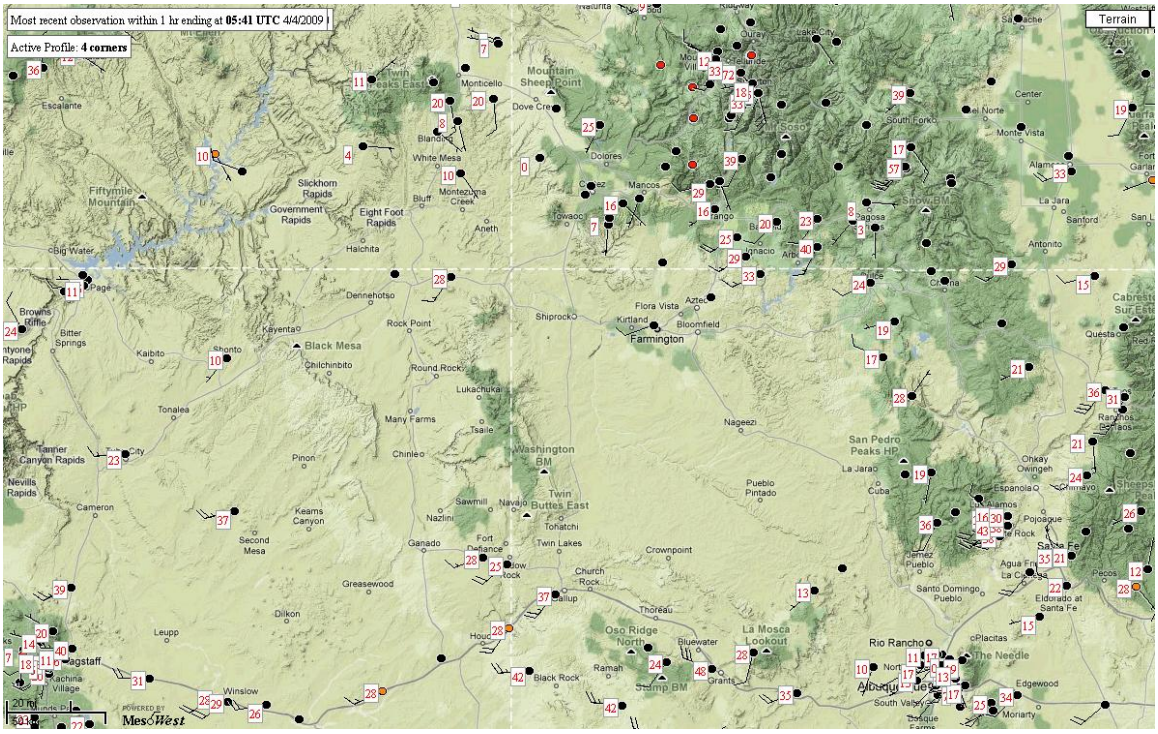


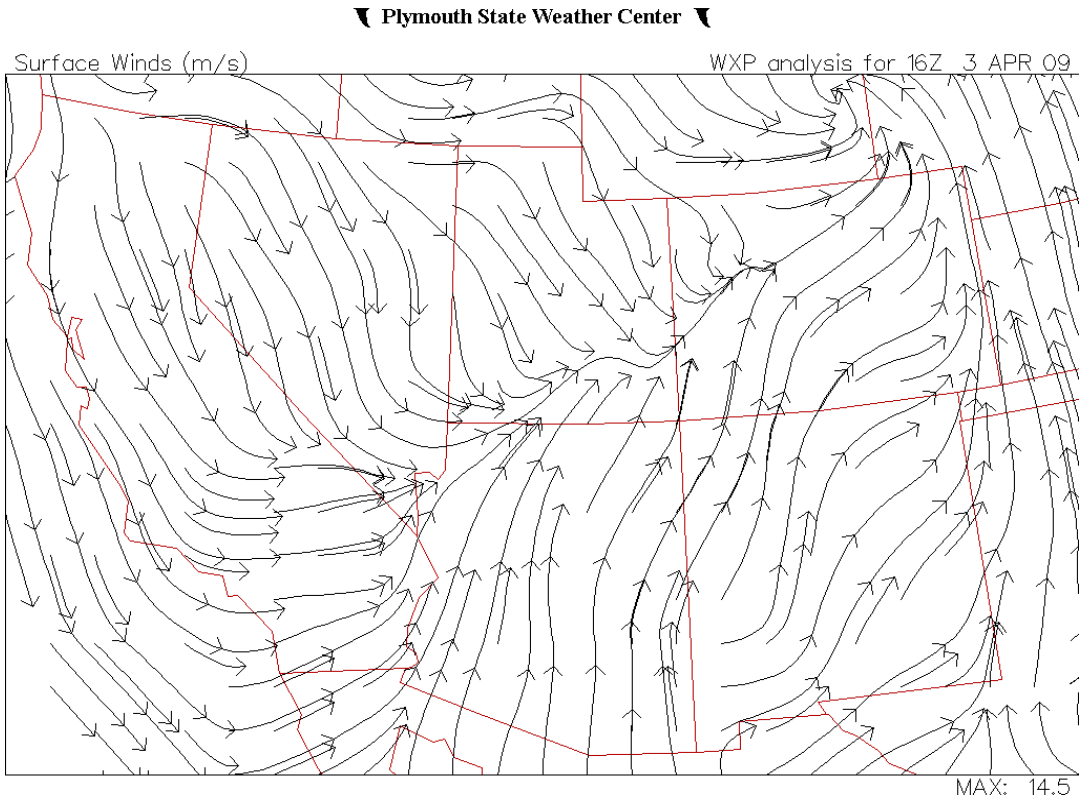
Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 04:41 UTC April 4, 2009 or *9:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).



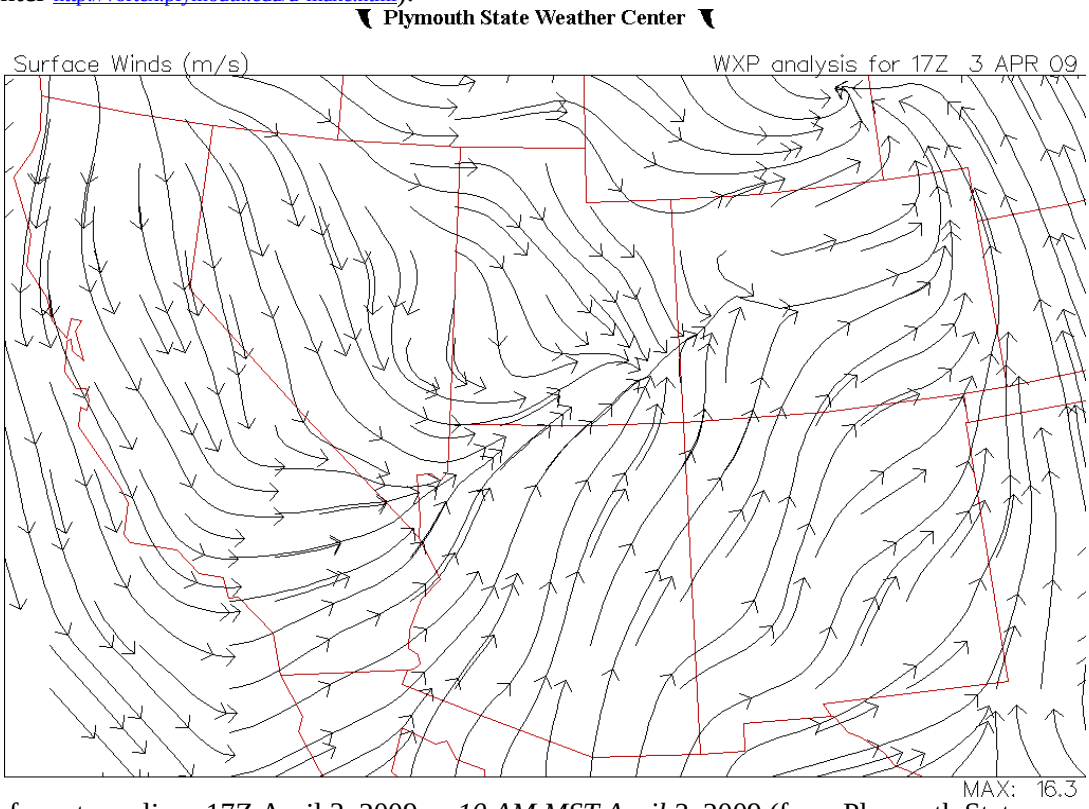
Wind directions and gust speeds in dust source regions and the Pagosa Springs area at 05:41 UTC April 4, 2009 or *10:41 PM MST April 3*, 2009 (http://www.met.utah.edu/mesowest/).

Attachment C

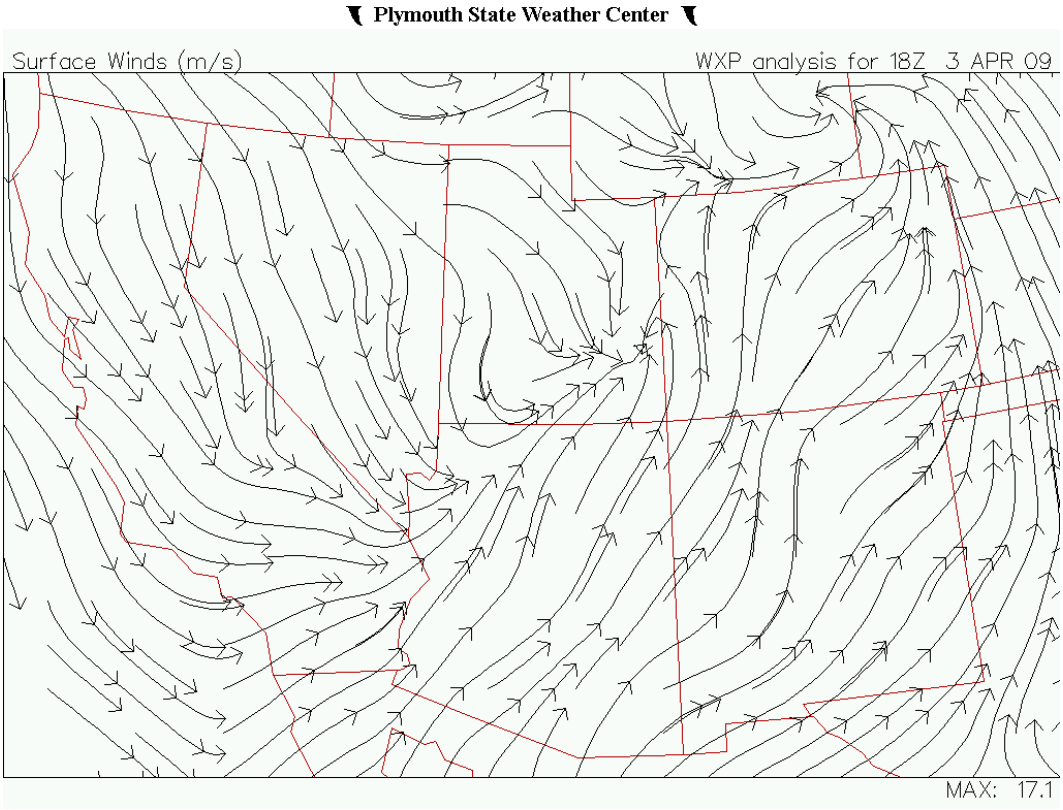
Streamline Analyses
for
April 3, 2009



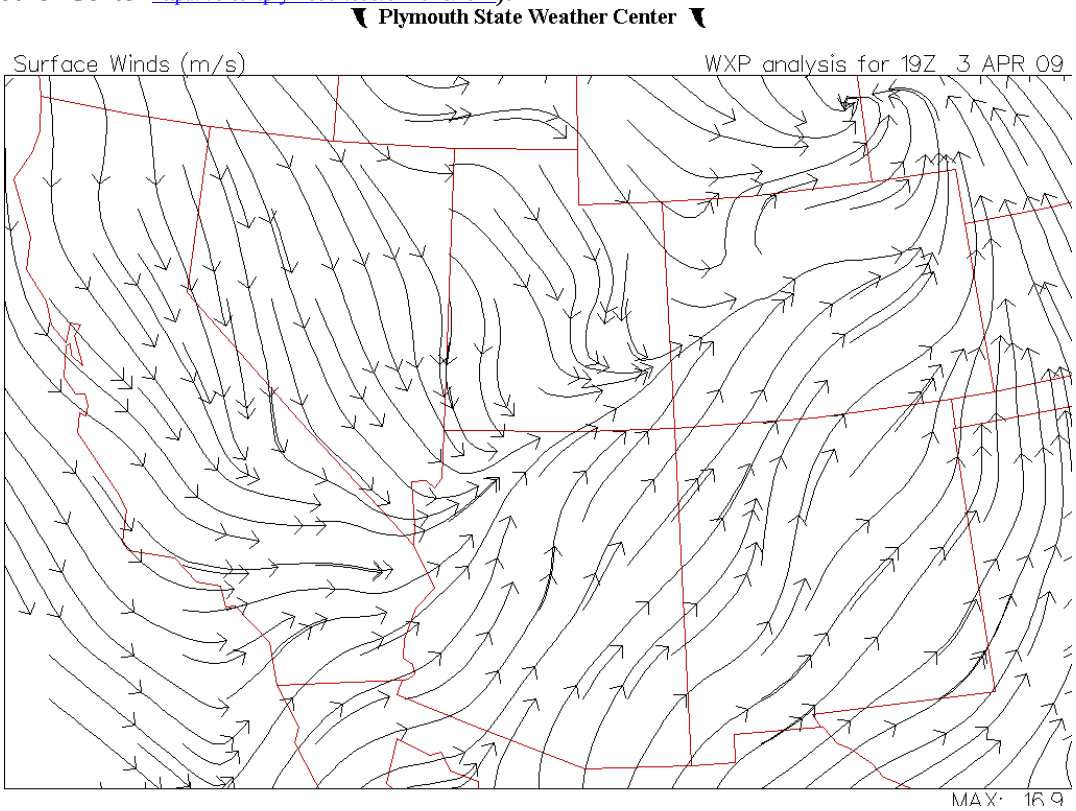
Surface streamlines 16Z April 3, 2009 or *9 AM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



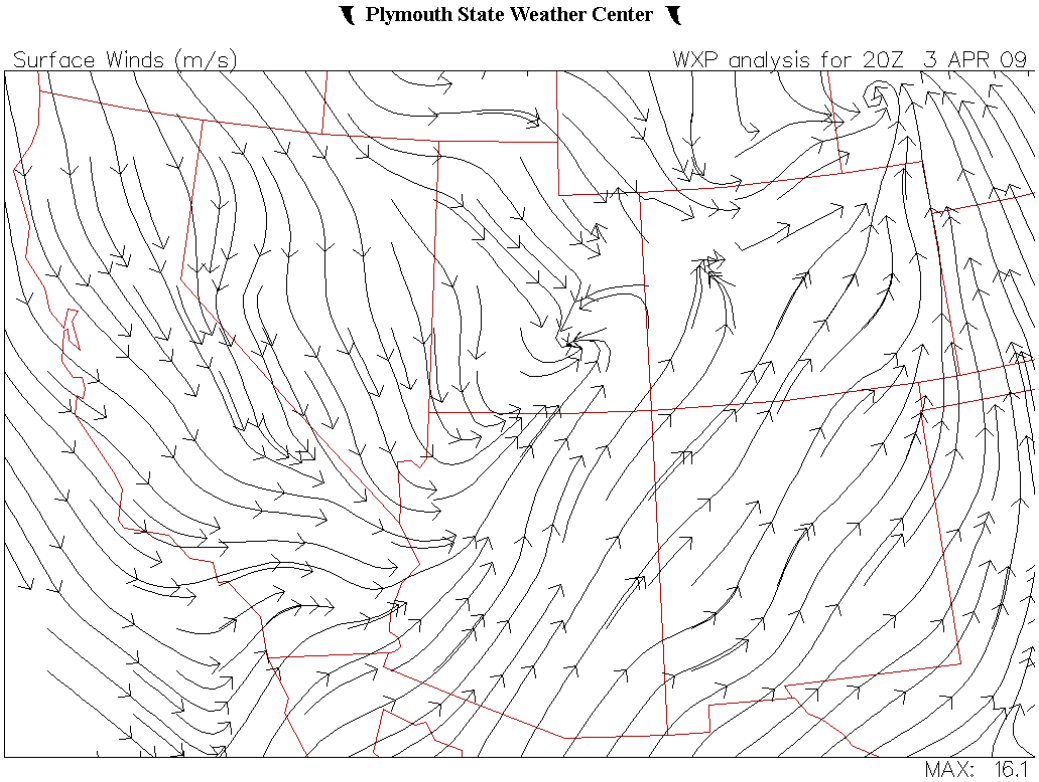
Surface streamlines 17Z April 3, 2009 or *10 AM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



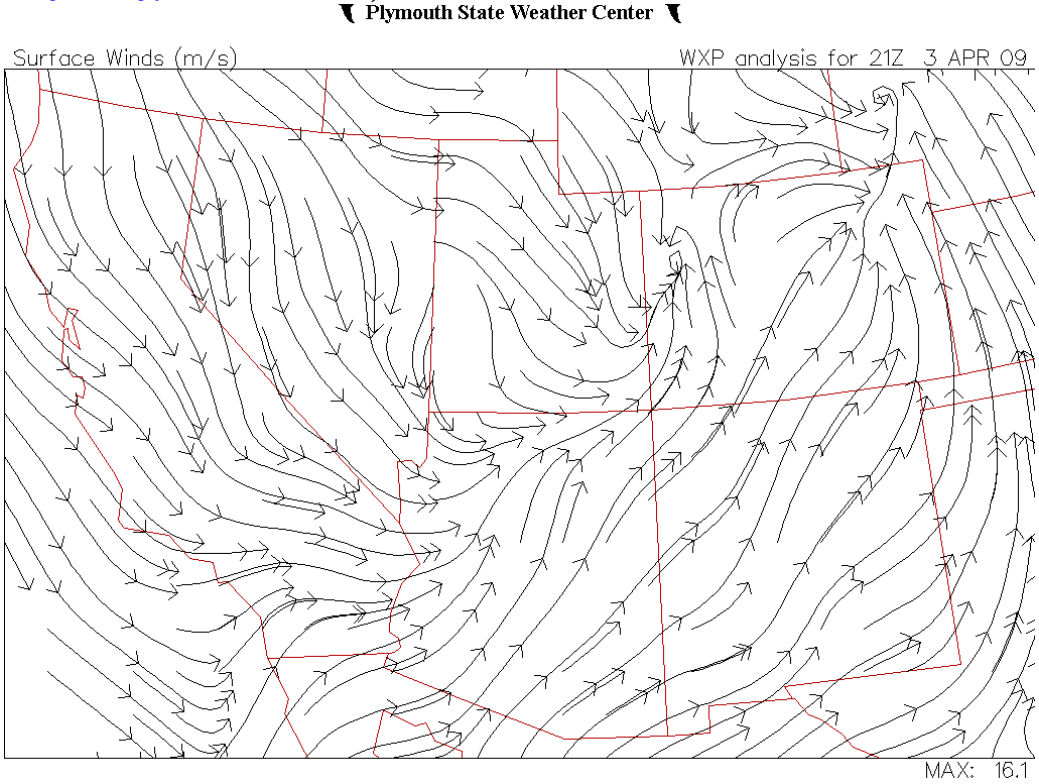
Surface streamlines 18Z April 3, 2009 or *11 AM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



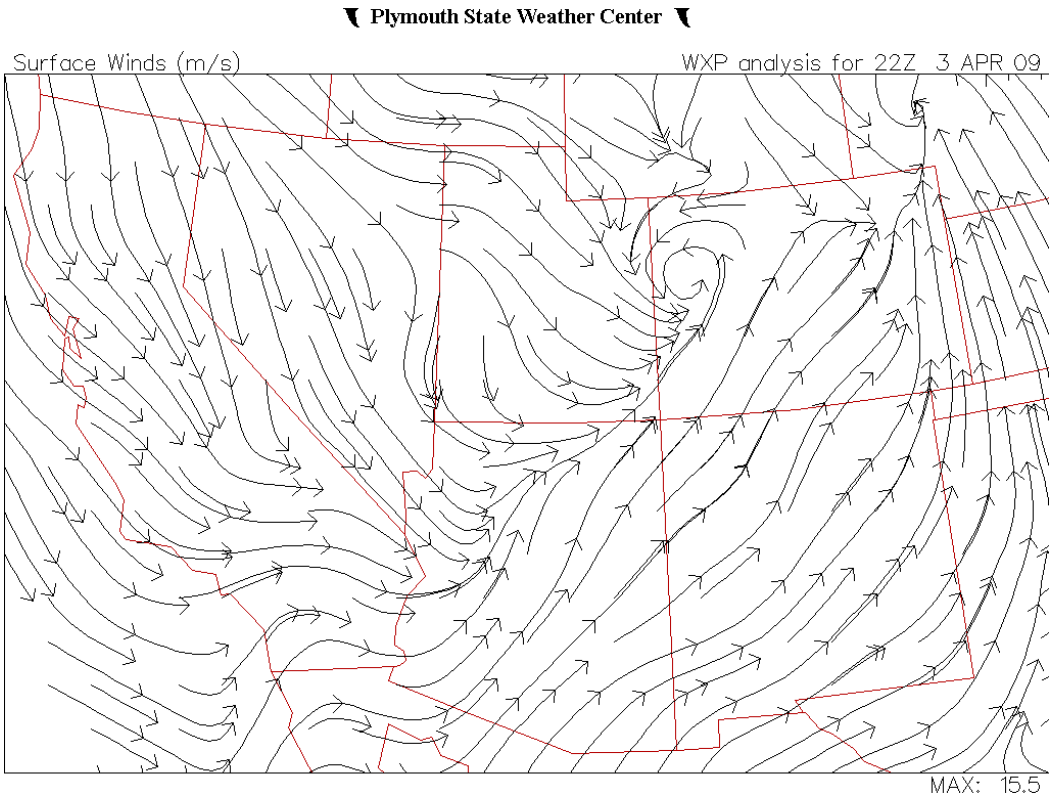
Surface streamlines 19Z April 3, 2009 or *12 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



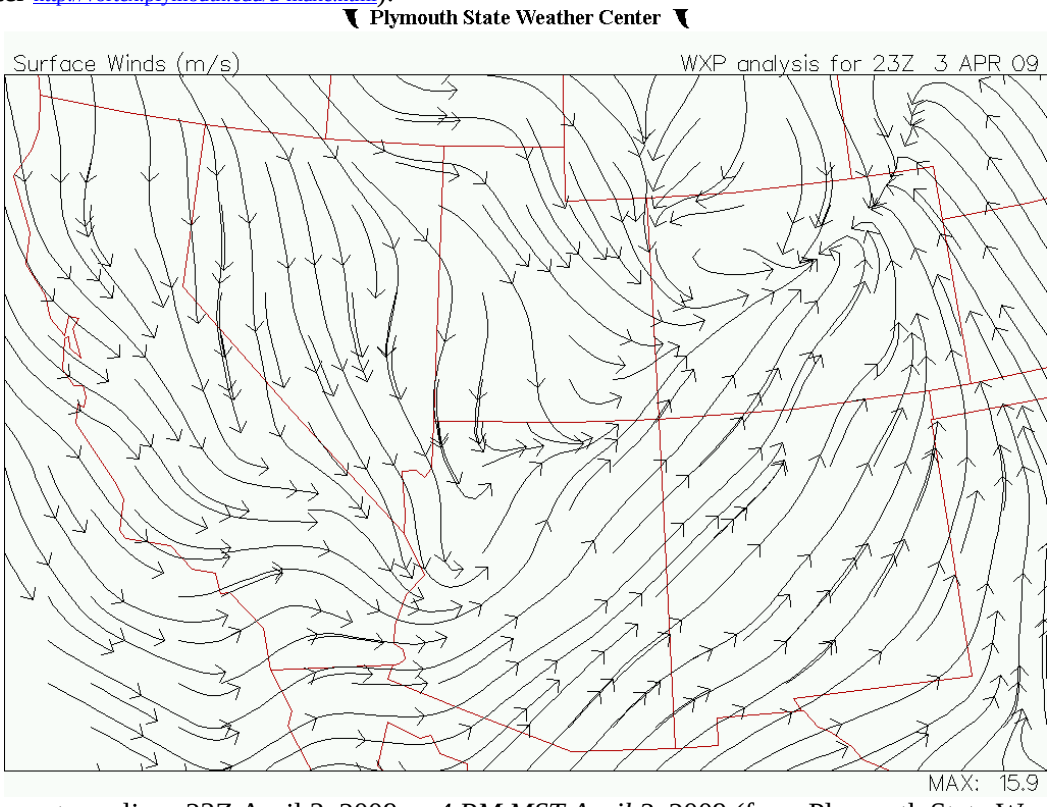
Surface streamlines 20Z April 3, 2009 or *1 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



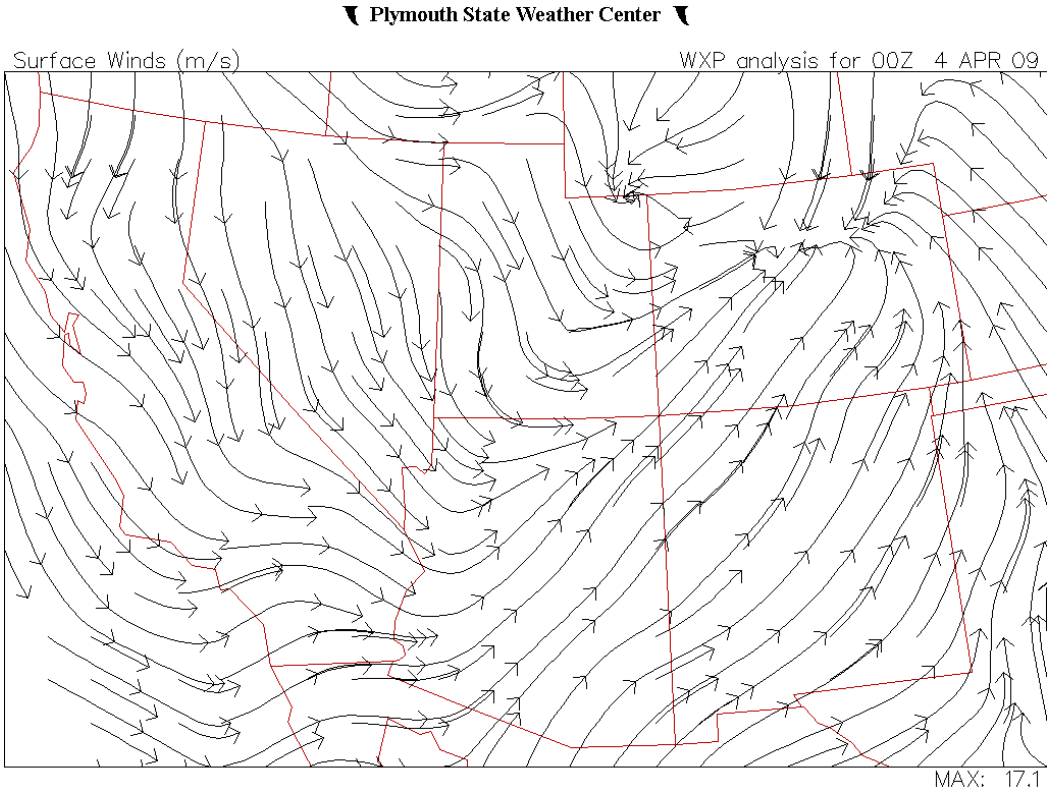
Surface streamlines 21Z April 3, 2009 or *2 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



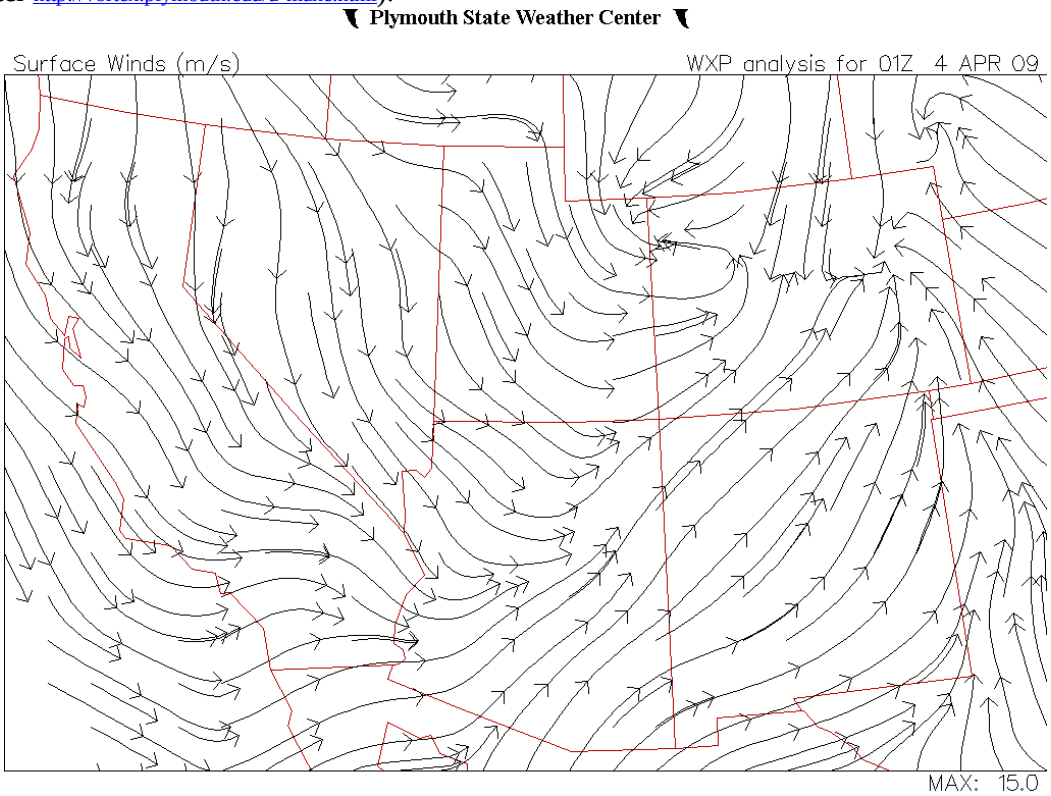
Surface streamlines 22Z April 3, 2009 or *3 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



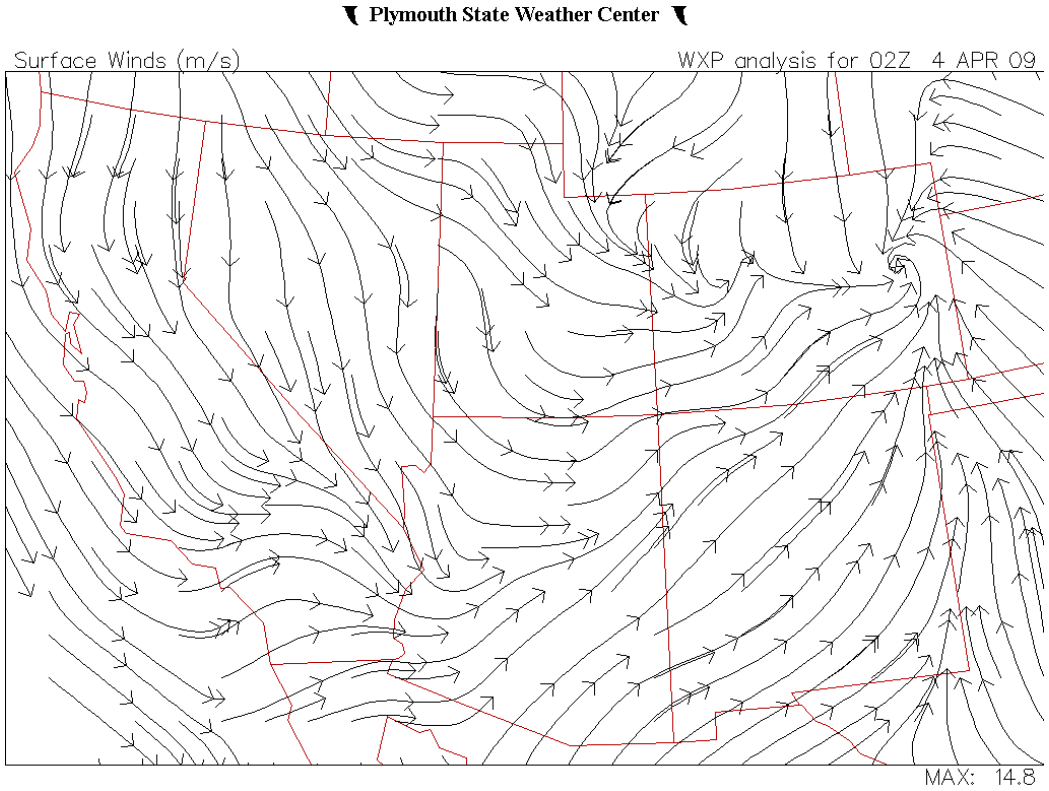
Surface streamlines 23Z April 3, 2009 or *4 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



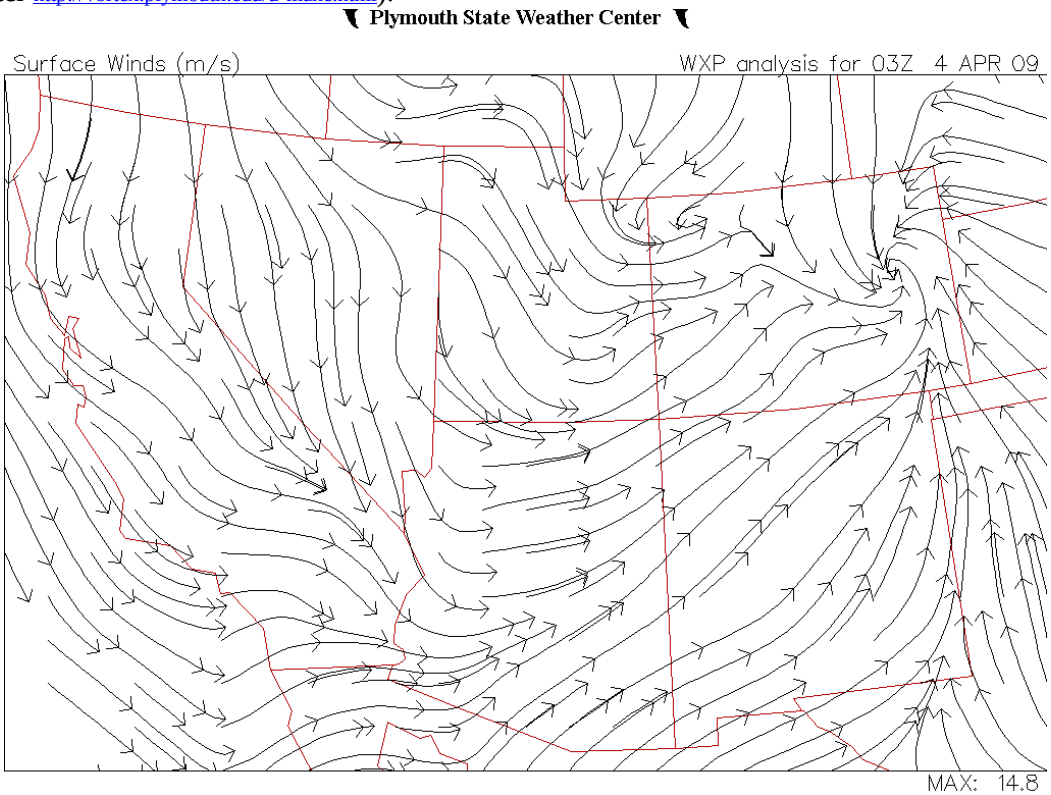
Surface streamlines 00Z April 4, 2009 or *5 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



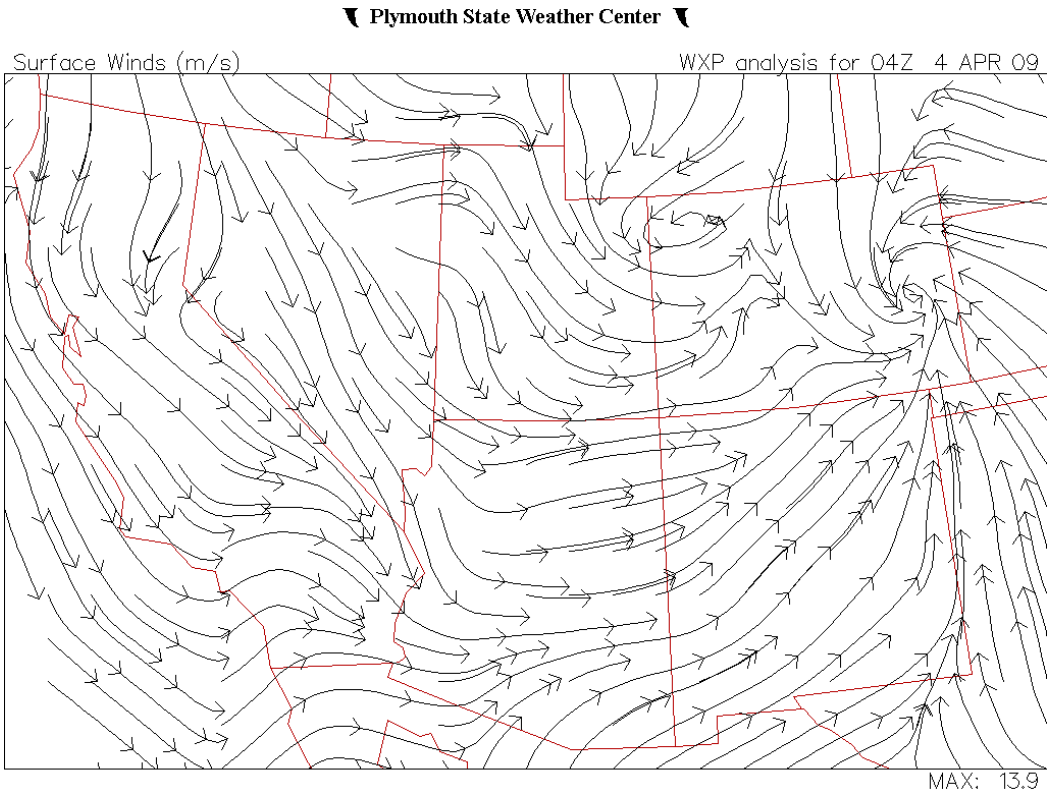
Surface streamlines 01Z April 4, 2009 or *6 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



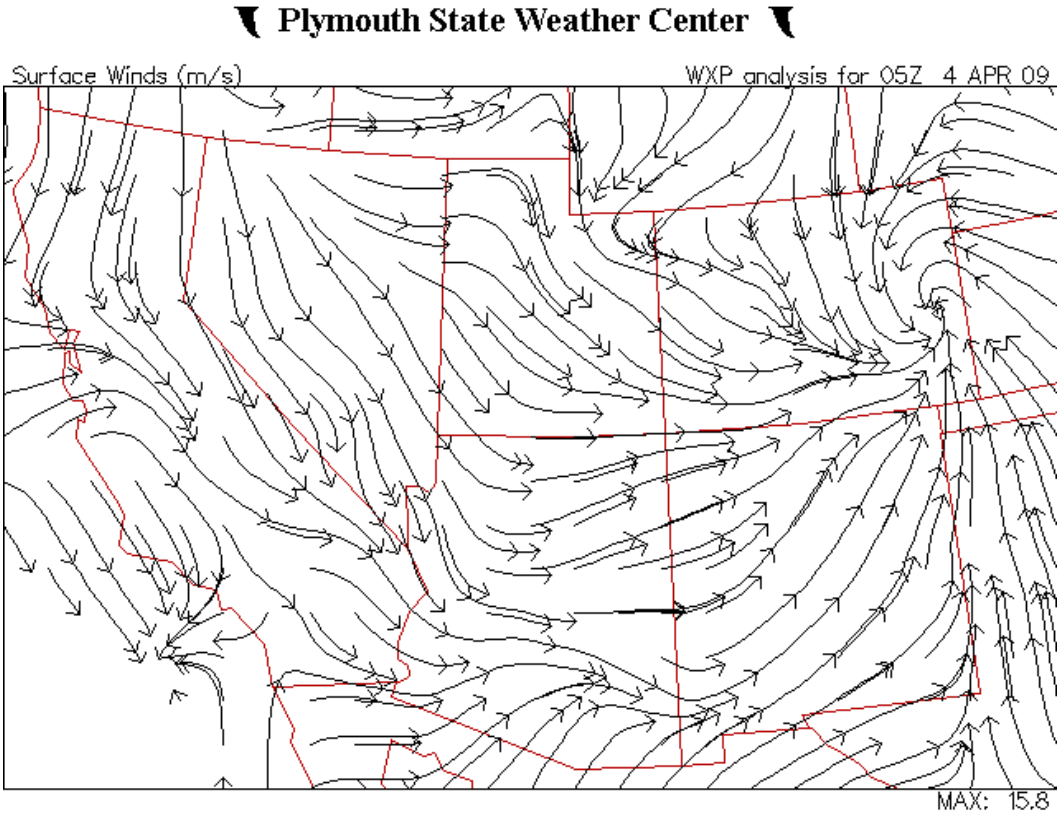
Surface streamlines 02Z April 4, 2009 or *7 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



Surface streamlines 03Z April 4, 2009 or *8 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



Surface streamlines 04Z April 4, 2009 or *9 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).



Surface streamlines 05Z April 4, 2009 or *10 PM MST April 3*, 2009 (from Plymouth State Weather Center http://vortex.plymouth.edu/u-make.html).

Attachment D

NWS Grand Junction, Colorado, Forecast Office,
NWS Albuquerque, New Mexico, Forecast Office,
and
NWS Flagstaff, Arizona, Forecast Office
High Wind Advisories,
High Wind Watches,
and
High Wind Warnings
for
April 3, 2009

NWS SRRS PRODUCTS FOR:
2009040200 to 2009040323

Grand Junction Colorado, National Weather Service Forecast Office

WWUS75 KGJT 030929
NPWGJT
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE GRAND JUNCTION CO
329 AM MDT FRI APR 3 2009
COZ021-UTZ022-029-031800-
/O.NEW.KGJT.WI.Y.0004.090403T1800Z-090404T0600Z/
FOUR CORNERS/UPPER DOLORES RIVER-SOUTHEAST UTAH-
CANYONLANDS/NATURAL BRIDGES-
INCLUDING THE CITIES OF...CORTEZ...DOVE CREEK...MANCOS...
BLANDING...BLUFF...MEXICAN HAT
329 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO MIDNIGHT MDT
TONIGHT...
THE NATIONAL WEATHER SERVICE IN GRAND JUNCTION HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY UNTIL MIDNIGHT MDT
TONIGHT.
A STORM APPROACHING FROM THE WEST AND NORTHWEST WILL RESULT IN
WINDY CONDITIONS DEVELOPING ACROSS SOUTHEAST UTAH AND THE FOUR
CORNERS AREA TODAY. SOUTHWEST WINDS 15 TO 25 MPH WITH OCCASIONAL
GUSTS TO 45 MPH ARE EXPECTED THIS AFTERNOON AND EVENING. STRONGER
WIND GUSTS WILL BE POSSIBLE FROM ANY FAST MOVING SHOWER OR
THUNDERSTORM THAT MIGHT DEVELOP LATE TODAY. WINDS WILL DECREASE
LATE THIS EVENING AS THE SURFACE LOW MOVES EAST OF THE AREA.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
WIND GUSTS FROM 45 TO 57 MPH ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES. USE
EXTRA CAUTION.
&&
$$
JAD

WWUS75 KGJT 031805
NPWGJT
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE GRAND JUNCTION CO
1205 PM MDT FRI APR 3 2009
COZ021-UTZ022-029-040215-
/O.CON.KGJT.WI.Y.0004.000000T0000Z-090404T0600Z/
FOUR CORNERS/UPPER DOLORES RIVER-SOUTHEAST UTAH-
CANYONLANDS/NATURAL BRIDGES-
INCLUDING THE CITIES OF...CORTEZ...DOVE CREEK...MANCOS...
BLANDING...BLUFF...MEXICAN HAT
1205 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MDT TONIGHT...
A WIND ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MDT TONIGHT.

A STORM APPROACHING FROM THE WEST AND NORTHWEST WILL RESULT IN
WINDY CONDITIONS DEVELOPING ACROSS SOUTHEAST UTAH AND THE FOUR
CORNERS AREA TODAY. SOUTHWEST WINDS 15 TO 25 MPH WITH OCCASIONAL
GUSTS TO 45 MPH ARE EXPECTED THIS AFTERNOON AND EVENING. STRONGER
WIND GUSTS WILL BE POSSIBLE FROM ANY FAST MOVING SHOWER OR
THUNDERSTORM THAT MIGHT DEVELOP LATE TODAY. WINDS WILL DECREASE
LATE THIS EVENING AS THE SURFACE LOW MOVES EAST OF THE AREA.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
WIND GUSTS FROM 45 TO 57 MPH ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
USE EXTRA CAUTION.
&&
$$

WWUS75 KGJT 032131
NPWGJT
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE GRAND JUNCTION CO
331 PM MDT FRI APR 3 2009
COZ021-UTZ022-029-040600-
/O.CON.KGJT.WI.Y.0004.000000T0000Z-090404T0600Z/
FOUR CORNERS/UPPER DOLORES RIVER-SOUTHEAST UTAH-
CANYONLANDS/NATURAL BRIDGES-
INCLUDING THE CITIES OF...CORTEZ...DOVE CREEK...MANCOS...
BLANDING...BLUFF...MEXICAN HAT
331 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MDT TONIGHT...
A WIND ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MDT TONIGHT.
A STORM APPROACHING FROM THE WEST AND NORTHWEST WILL RESULT IN
WINDY CONDITIONS DEVELOPING ACROSS SOUTHEAST UTAH AND THE FOUR
CORNERS AREA THIS EVENING. SOUTHWEST WINDS 15 TO 25 MPH WITH OCCASIONAL
GUSTS TO 45 MPH ARE EXPECTED LATE THIS AFTERNOON AND EVENING. STRONGER
WIND GUSTS WILL BE POSSIBLE FROM ANY FAST MOVING SHOWER OR
THUNDERSTORM THAT MIGHT DEVELOP LATE TODAY. WINDS WILL DECREASE
LATE THIS EVENING AS THE SURFACE LOW MOVES EAST OF THE AREA.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
WIND GUSTS FROM 45 TO 57 MPH ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
USE EXTRA CAUTION.
&&
$$

WWUS75 KGJT 032131
NPWGJT
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE GRAND JUNCTION CO
331 PM MDT FRI APR 3 2009
COZ021-UTZ022-029-040600-
/O.CON.KGJT.WI.Y.0004.000000T0000Z-090404T0600Z/
FOUR CORNERS/UPPER DOLORES RIVER-SOUTHEAST UTAH-
CANYONLANDS/NATURAL BRIDGES-
INCLUDING THE CITIES OF...CORTEZ...DOVE CREEK...MANCOS...
BLANDING...BLUFF...MEXICAN HAT
331 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MDT TONIGHT...
A WIND ADVISORY REMAINS IN EFFECT UNTIL MIDNIGHT MDT TONIGHT.
A STORM APPROACHING FROM THE WEST AND NORTHWEST WILL RESULT IN

WINDY CONDITIONS DEVELOPING ACROSS SOUTHEAST UTAH AND THE FOUR
CORNERS AREA THIS EVENING. SOUTHWEST WINDS 15 TO 25 MPH WITH OCCASIONAL
GUSTS TO 45 MPH ARE EXPECTED LATE THIS AFTERNOON AND EVENING. STRONGER
WIND GUSTS WILL BE POSSIBLE FROM ANY FAST MOVING SHOWER OR
THUNDERSTORM THAT MIGHT DEVELOP LATE TODAY. WINDS WILL DECREASE
LATE THIS EVENING AS THE SURFACE LOW MOVES EAST OF THE AREA.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
WIND GUSTS FROM 45 TO 57 MPH ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
USE EXTRA CAUTION.
&&
$$

NWS SRRS PRODUCTS FOR:
2009040200 to 2009040323
Albuquerque New Mexico, National Weather Service Forecast Office

WWUS75 KABQ 020302
NPWABQ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
902 PM MDT WED APR 1 2009
NMZ001-003-008-009-014-015-020415-
/O.EXP.KABQ.WI.Y.0021.000000T0000Z-090402T0300Z/
NORTHWEST PLATEAU-UPPER RIO GRANDE VALLEY-WEST CENTRAL MOUNTAINS-
MIDDLE RIO GRANDE VALLEY/ALBUQUERQUE METRO AREA-
SOUTHWEST MOUNTAINS/UPPER GILA REGION-LOWER RIO GRANDE VALLEY-
INCLUDING THE CITIES OF...FARMINGTON...ESPANOLA...GALLUP/GRANTS...
ALBUQUERQUE...GLENWOOD...SOCORRO
902 PM MDT WED APR 1 2009
...WIND ADVISORY WILL EXPIRE AT 9 PM MDT THIS EVENING...
THE WIND ADVISORY WILL EXPIRE AT 9 PM MDT THIS EVENING.
NORTHWEST TO NORTH WINDS WILL STILL BLOW OCCASIONALLY AT SPEEDS OF
15 TO 25 MPH WITH SOME GUSTS BETWEEN 30 AND 40 MPH THROUGH 11 PM
OR MIDNIGHT. WINDS WILL DECREASE SLOWLY THEREAFTER.
$$
NMZ005-010-011-016-017-019-026-020415-
/O.EXP.KABQ.WI.Y.0021.000000T0000Z-090402T0300Z/
NORTHEAST HIGHLANDS-SANDIA/MANZANO MOUNTAINS-
CENTRAL HIGH PLAINS/ESTANCIA VALLEY-
LINCOLN COUNTY HIGH PLAINS/HONDO VALLEY-
CAPITAN/NORTHERN SACRAMENTO MOUNTAINS-CHAVES COUNTY PLAINS-
GUADALUPE MOUNTAINS OF CHAVES COUNTY-
INCLUDING THE CITIES OF...LAS VEGAS/RATON...
SANDIA PARK/CEDAR CREST...MORIARTY/ESTANCIA...CARRIZOZO...
RUIDOSO...ROSWELL
902 PM MDT WED APR 1 2009
...WIND ADVISORY WILL EXPIRE AT 9 PM MDT THIS EVENING...
THE WIND ADVISORY WILL EXPIRE AT 9 PM MDT THIS EVENING.
NORTHWEST TO NORTH WINDS WILL STILL BLOW OCCASIONALLY AT SPEEDS OF
20 TO 30 MPH WITH SOME GUSTS BETWEEN 35 AND 45 MPH THROUGH
MIDNIGHT OR 1 AM MDT. WINDS WILL DECREASE SLOWLY THROUGH THE EARLY
MORNING HOURS.
$$
NMZ006-007-021200-
/O.CON.KABQ.WI.Y.0021.000000T0000Z-090402T1200Z/
HARDING COUNTY-FAR NORTHEAST PLAINS-

INCLUDING THE CITIES OF...ROY...CLAYTON
902 PM MDT WED APR 1 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT THURSDAY...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT THURSDAY.
BREEZY WEST AND NORTHWEST WINDS WILL SHIFT LATE THIS EVENING IN
THE NORTHEASTERN PLAINS. STRONG NORTHERLY WINDS WILL THEN DEVELOP
AS A COLD FRONT ROLLS THROUGH THE EASTERN PLAINS OF NEW MEXICO.
SUSTAINED WIND SPEEDS OF 25 TO 35 MPH ARE EXPECTED ALONG AND JUST
BEHIND THE FRONT WITH OCCASIONAL GUSTS UP TO 55 MPH POSSIBLE.
WINDS WILL REMAIN QUITE STRONG THROUGH THE OVERNIGHT...AND WILL
GRADUALLY WEAKEN BY SUNRISE THURSDAY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
&&
$$
NMZ013-020-021-021200-
/O.CON.KABQ.WI.Y.0021.000000T0000Z-090402T1200Z/
QUAY COUNTY-ROOSEVELT COUNTY-CURRY COUNTY-
INCLUDING THE CITIES OF...TUCUMCARI...PORTALES...CLOVIS
902 PM MDT WED APR 1 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT THURSDAY...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT THURSDAY.
SUSTAINED WEST TO NORTHWEST WINDS OF 25 TO 40 MPH WITH GUSTS TO AROUND
55 MPH WILL CONTINUE ACROSS MUCH OF THE EAST CENTRAL AND SOUTHEAST
PLAINS...IN ADVANCE OF A COLD FRONT. THE WIND IS EXPECTED TO SHIFT
TO THE NORTH AND NORTHWEST NEAR TO A COUPLE HOURS AFTER MIDNIGHT AS
THE FRONT COMES THROUGH...BUT WILL CONTINUE TO BE STRONG IN THE WAKE
OF THE FRONT FOR A FEW HOURS. VISIBILITIES AT TIMES MAY BE REDUCED
IN BLOWING DUST...WHICH MAY IMPACT TRAVEL THROUGH THE AREA. THIS
INCLUDES PORTIONS OF INTERSTATE 40.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
&&
$$
NMZ012-018-021200-
/O.CON.KABQ.WI.Y.0021.000000T0000Z-090402T1200Z/
CONCHAS LAKE/GUADALUPE COUNTY-DE BACA COUNTY-
INCLUDING THE CITIES OF...SANTA ROSA...FORT SUMNER
902 PM MDT WED APR 1 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT THURSDAY...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT THURSDAY.
SUSTAINED WEST TO NORTHWEST WINDS OF 25 TO 40 MPH WITH GUSTS TO AROUND
55 MPH WILL CONTINUE ACROSS MUCH OF THE EAST CENTRAL AND SOUTHEAST
PLAINS...IN ADVANCE OF A COLD FRONT. THE WIND IS EXPECTED TO SHIFT
TO THE NORTH AND NORTHWEST NEAR TO A COUPLE HOURS AFTER MIDNIGHT AS
THE FRONT COMES THROUGH...BUT WILL CONTINUE TO BE STRONG IN THE WAKE
OF THE FRONT FOR A FEW HOURS. VISIBILITIES AT TIMES MAY BE REDUCED
IN BLOWING DUST...WHICH MAY IMPACT TRAVEL THROUGH THE AREA. THIS
INCLUDES PORTIONS OF INTERSTATE 40.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
&&
$$

WWUS75 KABQ 031035
NPWABQ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
435 AM MDT FRI APR 3 2009
...EXTENDED PERIOD OF WINDY CONDITIONS EXPECTED THROUGH SATURDAY...
.A STRONG UPPER LEVEL LOW PRESSURE SYSTEM SLIDING EAST ACROSS THE
SOUTHERN ROCKIES WILL COMBINE WITH AN AREA OF LOW PRESSURE OVER
SOUTHEAST COLORADO TO CREATE STRONG SOUTHWEST TO WEST WINDS TODAY
AND SATURDAY. SOUTHWEST WINDS WILL INCREASE ACROSS THE WESTERN
MOUNTAINS...THE CENTRAL HIGH PLAINS...THE SACRAMENTO...SANDIA...
AND MANZANO MOUNTAINS THIS AFTERNOON AND CONTINUE THROUGH TONIGHT.
WINDS WILL GRADUALLY TURN TO THE WEST AND MAY INCREASE EVEN MORE
OVER THE EASTERN PLAINS SATURDAY. THE POTENTIAL EXISTS FOR LOCALLY
DAMAGING WIND GUSTS ACROSS THE SACRAMENTO MOUNTAINS TONIGHT AND
OVER PORTIONS OF THE EASTERN PLAINS SATURDAY. AREAS OF BLOWING
DUST ARE ALSO POSSIBLE OVER THE EASTERN PLAINS BY LATE SATURDAY
MORNING WITH REDUCED VISIBILITIES.
NMZ005-010>012-016-026-031800-
/O.NEW.KABQ.WI.Y.0022.090403T1800Z-090404T1200Z/
/O.NEW.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
NORTHEAST HIGHLANDS-SANDIA/MANZANO MOUNTAINS-
CENTRAL HIGH PLAINS/ESTANCIA VALLEY-CONCHAS LAKE/GUADALUPE COUNTY-
LINCOLN COUNTY HIGH PLAINS/HONDO VALLEY-
GUADALUPE MOUNTAINS OF CHAVES COUNTY-
INCLUDING THE CITIES OF...LAS VEGAS/RATON...
SANDIA PARK/CEDAR CREST...MORIARTY/ESTANCIA...SANTA ROSA...
CARRIZOZO
435 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO 6 AM MDT SATURDAY...
...HIGH WIND WATCH IN EFFECT FROM SATURDAY MORNING THROUGH
SATURDAY EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO 6 AM MDT
SATURDAY. A HIGH WIND WATCH HAS ALSO BEEN ISSUED. THIS HIGH WIND
WATCH IS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY
EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO
45 MPH THIS AFTERNOON. WINDS WILL CONTINUE THROUGH TONIGHT...
PARTICULARLY OVER THE CENTRAL HIGH PLAINS AND NORTHEAST HIGHLANDS.
WINDS WILL GRADUALLY TURN TO THE WEST THROUGH SATURDAY MORNING
AND ARE EXPECTED TO INCREASE TO BETWEEN 30 AND 40 MPH WITH GUSTS
AS HIGH AS 65 MPH EARLY SATURDAY AFTERNOON. WINDS WILL DIMINISH
GRADUALLY LATE SATURDAY AFTERNOON TO EASE THE HAZARDOUS
CONDITIONS. STRONG WINDS WILL AFFECT TRAVEL ALONG LOCATIONS SUCH
AS INTERSTATE 25 AND INTERSTATE 40.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
$$
NMZ017-031800-
/O.NEW.KABQ.WI.Y.0022.090403T1800Z-090404T0300Z/
/O.NEW.KABQ.HW.A.0006.090404T0300Z-090405T0300Z/
CAPITAN/NORTHERN SACRAMENTO MOUNTAINS-

INCLUDING THE CITY OF...RUIDOSO
435 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO 9 PM MDT THIS EVENING...
...HIGH WIND WATCH IN EFFECT FROM THIS EVENING THROUGH SATURDAY EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO 9 PM MDT THIS EVENING. A HIGH WIND WATCH HAS ALSO BEEN ISSUED. THIS HIGH WIND WATCH IS IN EFFECT FROM THIS EVENING THROUGH SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO 45 MPH THIS AFTERNOON. WINDS MAY INCREASE EVEN MORE AFTER SUNSET TONIGHT AND CONTINUE THROUGH EARLY SATURDAY AFTERNOON. STRONG SOUTHWEST WINDS OF 35 TO 45 MPH WITH LOCAL GUSTS UP TO 65 MPH ARE POSSIBLE TONIGHT INTO SATURDAY AFTERNOON. WINDS WILL GRADUALLY TURN TO THE WEST SATURDAY AFTERNOON AND DIMINISH BELOW HAZARDOUS LEVELS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
$$
NMZ008-014-031800-
/O.NEW.KABQ.WI.Y.0022.090403T1800Z-090404T1200Z/
WEST CENTRAL MOUNTAINS-SOUTHWEST MOUNTAINS/UPPER GILA REGION-
INCLUDING THE CITIES OF...GALLUP/GRANTS...GLENWOOD
435 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO 6 AM MDT SATURDAY...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO 6 AM MDT SATURDAY.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO 45 MPH THIS AFTERNOON. WINDS WILL GRADUALLY TURN TO THE WEST THIS EVENING AND CONTINUE THROUGH TONIGHT. WINDS ARE EXPECTED TO DIMINISH AROUND SUNRISE SATURDAY TO EASE THESE HAZARDOUS CONDITIONS. WINDY CONDITIONS WILL IMPACT TRAVEL ALONG THE INTERSTATE 40 CORRIDOR.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
&&
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NMZ006-007-013-018>021-031800-
/O.NEW.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
HARDING COUNTY-FAR NORTHEAST PLAINS-QUAY COUNTY-DE BACA COUNTY-
CHAVES COUNTY PLAINS-ROOSEVELT COUNTY-CURRY COUNTY-
INCLUDING THE CITIES OF...ROY...CLAYTON...TUCUMCARI...
FORT SUMNER...ROSWELL...PORTALES...CLOVIS
435 AM MDT FRI APR 3 2009
...HIGH WIND WATCH IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH WIND WATCH...WHICH IS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE LATE TONIGHT AND BECOME STRONG EARLY SATURDAY MORNING. WEST WINDS OF 30 TO 40 MPH WITH LOCAL

GUSTS UP TO 60 MPH ARE POSSIBLE SATURDAY MORNING THROUGH SATURDAY
AFTERNOON. AREAS OF BLOWING DUST ARE POSSIBLE SATURDAY AFTERNOON
WITH REDUCED VISIBILITIES. TRAVEL ALONG INTERSTATE 40 WILL BE
IMPACTED BY STRONG WINDS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
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GUYER

WWUS75 KABQ 031035
NPWABQ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
435 AM MDT FRI APR 3 2009
...EXTENDED PERIOD OF WINDY CONDITIONS EXPECTED THROUGH SATURDAY...
.A STRONG UPPER LEVEL LOW PRESSURE SYSTEM SLIDING EAST ACROSS THE
SOUTHERN ROCKIES WILL COMBINE WITH AN AREA OF LOW PRESSURE OVER
SOUTHEAST COLORADO TO CREATE STRONG SOUTHWEST TO WEST WINDS TODAY
AND SATURDAY. SOUTHWEST WINDS WILL INCREASE ACROSS THE WESTERN
MOUNTAINS...THE CENTRAL HIGH PLAINS...THE SACRAMENTO...SANDIA...
AND MANZANO MOUNTAINS THIS AFTERNOON AND CONTINUE THROUGH TONIGHT.
WINDS WILL GRADUALLY TURN TO THE WEST AND MAY INCREASE EVEN MORE
OVER THE EASTERN PLAINS SATURDAY. THE POTENTIAL EXISTS FOR LOCALLY
DAMAGING WIND GUSTS ACROSS THE SACRAMENTO MOUNTAINS TONIGHT AND
OVER PORTIONS OF THE EASTERN PLAINS SATURDAY. AREAS OF BLOWING
DUST ARE ALSO POSSIBLE OVER THE EASTERN PLAINS BY LATE SATURDAY
MORNING WITH REDUCED VISIBILITIES.
NMZ005-010>012-016-026-031800-
/O.NEW.KABQ.WI.Y.0022.090403T1800Z-090404T1200Z/
/O.NEW.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
NORTHEAST HIGHLANDS-SANDIA/MANZANO MOUNTAINS-
CENTRAL HIGH PLAINS/ESTANCIA VALLEY-CONCHAS LAKE/GUADALUPE COUNTY-
LINCOLN COUNTY HIGH PLAINS/HONDO VALLEY-
GUADALUPE MOUNTAINS OF CHAVES COUNTY-
INCLUDING THE CITIES OF...LAS VEGAS/RATON...
SANDIA PARK/CEDAR CREST...MORIARTY/ESTANCIA...SANTA ROSA...
CARRIZOZO
435 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO 6 AM MDT SATURDAY...
...HIGH WIND WATCH IN EFFECT FROM SATURDAY MORNING THROUGH
SATURDAY EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO 6 AM MDT
SATURDAY. A HIGH WIND WATCH HAS ALSO BEEN ISSUED. THIS HIGH WIND
WATCH IS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY
EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO
45 MPH THIS AFTERNOON. WINDS WILL CONTINUE THROUGH TONIGHT...
PARTICULARLY OVER THE CENTRAL HIGH PLAINS AND NORTHEAST HIGHLANDS.
WINDS WILL GRADUALLY TURN TO THE WEST THROUGH SATURDAY MORNING
AND ARE EXPECTED TO INCREASE TO BETWEEN 30 AND 40 MPH WITH GUSTS
AS HIGH AS 65 MPH EARLY SATURDAY AFTERNOON. WINDS WILL DIMINISH
GRADUALLY LATE SATURDAY AFTERNOON TO EASE THE HAZARDOUS
CONDITIONS. STRONG WINDS WILL AFFECT TRAVEL ALONG LOCATIONS SUCH
AS INTERSTATE 25 AND INTERSTATE 40.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND

ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
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NMZ017-031800-
/O.NEW.KABQ.WI.Y.0022.090403T1800Z-090404T0300Z/
/O.NEW.KABQ.HW.A.0006.090404T0300Z-090405T0300Z/
CAPITAN/NORTHERN SACRAMENTO MOUNTAINS-
INCLUDING THE CITY OF...RUIDOSO
435 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO 9 PM MDT THIS
EVENING...
...HIGH WIND WATCH IN EFFECT FROM THIS EVENING THROUGH SATURDAY
EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO 9 PM MDT THIS
EVENING. A HIGH WIND WATCH HAS ALSO BEEN ISSUED. THIS HIGH WIND
WATCH IS IN EFFECT FROM THIS EVENING THROUGH SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO
45 MPH THIS AFTERNOON. WINDS MAY INCREASE EVEN MORE AFTER SUNSET
TONIGHT AND CONTINUE THROUGH EARLY SATURDAY AFTERNOON. STRONG
SOUTHWEST WINDS OF 35 TO 45 MPH WITH LOCAL GUSTS UP TO 65 MPH
ARE POSSIBLE TONIGHT INTO SATURDAY AFTERNOON. WINDS WILL GRADUALLY
TURN TO THE WEST SATURDAY AFTERNOON AND DIMINISH BELOW HAZARDOUS
LEVELS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
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NMZ008-014-031800-
/O.NEW.KABQ.WI.Y.0022.090403T1800Z-090404T1200Z/
WEST CENTRAL MOUNTAINS-SOUTHWEST MOUNTAINS/UPPER GILA REGION-
INCLUDING THE CITIES OF...GALLUP/GRANTS...GLENWOOD
435 AM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM NOON TODAY TO 6 AM MDT SATURDAY...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM NOON TODAY TO 6 AM MDT
SATURDAY.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO
45 MPH THIS AFTERNOON. WINDS WILL GRADUALLY TURN TO THE WEST THIS
EVENING AND CONTINUE THROUGH TONIGHT. WINDS ARE EXPECTED TO DIMINISH
AROUND SUNRISE SATURDAY TO EASE THESE HAZARDOUS CONDITIONS. WINDY
CONDITIONS WILL IMPACT TRAVEL ALONG THE INTERSTATE 40 CORRIDOR.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
&&
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NMZ006-007-013-018>021-031800-
/O.NEW.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
HARDING COUNTY-FAR NORTHEAST PLAINS-QUAY COUNTY-DE BACA COUNTY-
CHAVES COUNTY PLAINS-ROOSEVELT COUNTY-CURRY COUNTY-

INCLUDING THE CITIES OF...ROY...CLAYTON...TUCUMCARI...
FORT SUMNER...ROSWELL...PORTALES...CLOVIS
435 AM MDT FRI APR 3 2009
...HIGH WIND WATCH IN EFFECT FROM SATURDAY MORNING THROUGH
SATURDAY EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH
WIND WATCH...WHICH IS IN EFFECT FROM SATURDAY MORNING THROUGH
SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE LATE TONIGHT AND BECOME STRONG
EARLY SATURDAY MORNING. WEST WINDS OF 30 TO 40 MPH WITH LOCAL
GUSTS UP TO 60 MPH ARE POSSIBLE SATURDAY MORNING THROUGH SATURDAY
AFTERNOON. AREAS OF BLOWING DUST ARE POSSIBLE SATURDAY AFTERNOON
WITH REDUCED VISIBILITIES. TRAVEL ALONG INTERSTATE 40 WILL BE
IMPACTED BY STRONG WINDS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
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GUYER

WWUS75 KABQ 031803
NPWABQ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
1203 PM MDT FRI APR 3 2009
...STRONG TO VERY STRONG WINDS NOW EXPECTED TO BEGIN AS EARLY AS
THIS AFTERNOON IN CENTRAL AND WESTERN NEW MEXICO...
.A POTENT UPPER LEVEL LOW PRESSURE SYSTEM CROSSING THE WESTERN
U.S. WILL COMBINE WITH A SURFACE LOW OVER SOUTHEAST COLORADO TO
CREATE VERY STRONG SOUTHWEST AND WEST WINDS. THE STRONGEST WINDS
WILL DEVELOP IN THE WESTERN MOUNTAINS THIS AFTERNOON AND EVENING
BEFORE SHIFTING TO THE SOUTH CENTRAL MOUNTAINS LATE THIS EVENING
AND INCLUDING THE EAST SLOPES OF THE CENTRAL MOUNTAIN CHAIN AND
EASTERN PLAINS THROUGH SATURDAY. THE POTENTIAL EXISTS FOR LOCALLY
DAMAGING WIND GUSTS ACROSS THE SACRAMENTO MOUNTAINS TONIGHT AND
OVER PORTIONS OF THE EASTERN PLAINS SATURDAY. NOW...THE MIDDLE AND
LOWER RIO GRANDE VALLEY CAN ALSO EXPECT STRONG WINDS LATE THIS
AFTERNOON THROUGH EARLY EVENING. THE STRONG WINDS IN THE WESTERN
MOUNTAINS WILL GRADUALLY WEAKEN AFTER MIDNIGHT WITH LESS WINDY
CONDITIONS IN THE CENTRAL VALLEY AND WESTERN MOUNTAINS ON
SATURDAY. AREAS OF BLOWING DUST WILL SIGNIFICANTLY REDUCE
VISIBILITIES IN DUST PRONE LOCATIONS.
NMZ008-014-032300-
/O.UPG.KABQ.WI.Y.0022.000000T0000Z-090404T1200Z/
/O.NEW.KABQ.HW.W.0011.090403T1803Z-090404T1200Z/
WEST CENTRAL MOUNTAINS-SOUTHWEST MOUNTAINS/UPPER GILA REGION-
INCLUDING THE CITIES OF...GALLUP/GRANTS...GLENWOOD
1203 PM MDT FRI APR 3 2009
...HIGH WIND WARNING IN EFFECT UNTIL 6 AM MDT SATURDAY...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH
WIND WARNING...WHICH IS IN EFFECT UNTIL 6 AM MDT SATURDAY. THE
WIND ADVISORY IS NO LONGER IN EFFECT.
SOUTHWEST WINDS WILL INCREASE TO 30 TO 40 MPH WITH GUSTS UP TO 60 MPH
THIS AFTERNOON. WINDS WILL GRADUALLY TURN TO THE WEST THIS EVENING
WITH THE STRONGEST WINDS CONTINUING THROUGH THE EVENING. AFTER
MIDNIGHT WIND SPEEDS WILL GRADUALLY DECREASE TO 25 TO 35 MPH WITH
GUSTS UP TO 45 MPH...WITH THE STRONGEST WINDS ACROSS THE HIGHER
TERRAIN AND SIGNIFICANTLY WEAKER WINDS IN VALLEYS. HAZARDOUS WINDS ARE

EXPECTED TO DIMINISH BY SUNRISE SATURDAY. BLOWING DUST WILL DROP VISIBILITY BELOW ONE HALF MILE AT TIMES IN DUST PRONE LOCATIONS...INCLUDING PORTIONS OF THE I-40 CORRIDOR.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WARNING AREA. BE ALERT TO SUDDEN GUSTS OF WIND WHICH MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS WHEN DRIVING ON NORTH SOUTH OR EAST WEST ORIENTED ROADS. REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS ARE IMMINENT OR HIGHLY LIKELY.
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NMZ009-015-032300-
/O.EXB.KABQ.WI.Y.0022.090403T2100Z-090404T0300Z/
MIDDLE RIO GRANDE VALLEY/ALBUQUERQUE METRO AREA-
LOWER RIO GRANDE VALLEY-
INCLUDING THE CITIES OF...ALBUQUERQUE...SOCORRO
1203 PM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM 3 PM THIS AFTERNOON TO 9 PM MDT THIS EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 3 PM THIS AFTERNOON TO 9 PM MDT THIS EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS FROM 45 TO 50 MPH THIS AFTERNOON. THE STRONG WINDS WILL WEAKEN SIGNIFICANTLY AROUND SUNSET WITH HAZARDOUS CONDITIONS NO LONGER EXPECTED AFTER 9 PM. BLOWING DUST WILL DROP VISIBILITY BELOW ONE MILE AT TIMES IN DUST PRONE LOCATIONS...INCLUDING PORTIONS OF I-40 AND I-25.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS. REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
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NMZ005-010>012-016-026-032300-
/O.CON.KABQ.WI.Y.0022.000000T0000Z-090404T1200Z/
/O.CON.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
NORTHEAST HIGHLANDS-SANDIA/MANZANO MOUNTAINS-
CENTRAL HIGH PLAINS/ESTANCIA VALLEY-CONCHAS LAKE/GUADALUPE COUNTY-
LINCOLN COUNTY HIGH PLAINS/HONDO VALLEY-
GUADALUPE MOUNTAINS OF CHAVES COUNTY-
INCLUDING THE CITIES OF...LAS VEGAS/RATON...
SANDIA PARK/CEDAR CREST...MORIARTY/ESTANCIA...SANTA ROSA...
CARRIZOZO
1203 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT SATURDAY...
...HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT SATURDAY. A HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO 45 MPH THIS AFTERNOON. WINDS WILL CONTINUE THROUGH TONIGHT... PARTICULARLY OVER THE CENTRAL HIGH PLAINS AND NORTHEAST HIGHLANDS. WINDS WILL GRADUALLY TURN TO THE WEST THROUGH SATURDAY MORNING AND ARE EXPECTED TO INCREASE TO BETWEEN 30 AND 40 MPH

WITH GUSTS AS HIGH AS 65 MPH EARLY SATURDAY AFTERNOON. WINDS WILL DIMINISH GRADUALLY LATE SATURDAY AFTERNOON TO EASE THE HAZARDOUS CONDITIONS. STRONG WINDS WILL AFFECT TRAVEL ALONG LOCATIONS SUCH AS INTERSTATE 25 AND INTERSTATE 40.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS. REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.

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NMZ017-032300-

/O.CON.KABQ.WI.Y.0022.000000T0000Z-090404T0300Z/

/O.CON.KABQ.HW.A.0006.090404T0300Z-090405T0300Z/

CAPITAN/NORTHERN SACRAMENTO MOUNTAINS-

INCLUDING THE CITY OF...RUIDOSO

1203 PM MDT FRI APR 3 2009

...WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MDT THIS EVENING...

...HIGH WIND WATCH REMAINS IN EFFECT FROM 9 PM MDT THIS EVENING THROUGH SATURDAY EVENING...

A WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MDT THIS EVENING. A HIGH WIND WATCH REMAINS IN EFFECT FROM 9 PM MDT THIS EVENING THROUGH SATURDAY EVENING.

SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO 45 MPH THIS AFTERNOON. WINDS MAY INCREASE EVEN MORE AFTER SUNSET TONIGHT AND CONTINUE THROUGH EARLY SATURDAY AFTERNOON. STRONG SOUTHWEST WINDS OF 35 TO 45 MPH WITH LOCAL GUSTS UP TO 65 MPH ARE POSSIBLE TONIGHT INTO SATURDAY AFTERNOON. WINDS WILL GRADUALLY TURN TO THE WEST SATURDAY AFTERNOON AND DIMINISH BELOW HAZARDOUS LEVELS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS. REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.

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NMZ006-007-013-018>021-032300-

/O.CON.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/

HARDING COUNTY-FAR NORTHEAST PLAINS-QUAY COUNTY-DE BACA COUNTY-

CHAVES COUNTY PLAINS-ROOSEVELT COUNTY-CURRY COUNTY-

INCLUDING THE CITIES OF...ROY...CLAYTON...TUCUMCARI...

FORT SUMNER...ROSWELL...PORTALES...CLOVIS

1203 PM MDT FRI APR 3 2009

...HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING...

A HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING.

SOUTHWEST WINDS WILL INCREASE LATE TONIGHT AND BECOME STRONG EARLY SATURDAY MORNING. WEST WINDS OF 30 TO 40 MPH WITH LOCAL GUSTS UP TO 60 MPH ARE POSSIBLE SATURDAY MORNING THROUGH SATURDAY AFTERNOON. AREAS OF BLOWING DUST ARE POSSIBLE SATURDAY AFTERNOON WITH REDUCED VISIBILITIES. TRAVEL ALONG INTERSTATE 40 WILL BE IMPACTED BY STRONG WINDS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.

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44/43/50

WWUS75 KABQ 031819
NPWABQ
URGENT - WEATHER MESSAGE...CORRECTED
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
1203 PM MDT FRI APR 3 2009
CORRECTED RECOMMENDED PRECAUTIONARY ACTIONS FOR NMZ008-014 AND
NMZ009-015
...STRONG TO VERY STRONG WINDS NOW EXPECTED TO BEGIN AS EARLY AS
THIS AFTERNOON IN CENTRAL AND WESTERN NEW MEXICO...
.A POTENT UPPER LEVEL LOW PRESSURE SYSTEM CROSSING THE WESTERN
U.S. WILL COMBINE WITH A SURFACE LOW OVER SOUTHEAST COLORADO TO
CREATE VERY STRONG SOUTHWEST AND WEST WINDS. THE STRONGEST WINDS
WILL DEVELOP IN THE WESTERN MOUNTAINS THIS AFTERNOON AND EVENING
BEFORE SHIFTING TO THE SOUTH CENTRAL MOUNTAINS LATE THIS EVENING
AND INCLUDING THE EAST SLOPES OF THE CENTRAL MOUNTAIN CHAIN AND
EASTERN PLAINS THROUGH SATURDAY. THE POTENTIAL EXISTS FOR LOCALLY
DAMAGING WIND GUSTS ACROSS THE SACRAMENTO MOUNTAINS TONIGHT AND
OVER PORTIONS OF THE EASTERN PLAINS SATURDAY. NOW...THE MIDDLE AND
LOWER RIO GRANDE VALLEY CAN ALSO EXPECT STRONG WINDS LATE THIS
AFTERNOON THROUGH EARLY EVENING. THE STRONG WINDS IN THE WESTERN
MOUNTAINS WILL GRADUALLY WEAKEN AFTER MIDNIGHT WITH LESS WINDY
CONDITIONS IN THE CENTRAL VALLEY AND WESTERN MOUNTAINS ON
SATURDAY. AREAS OF BLOWING DUST WILL SIGNIFICANTLY REDUCE
VISIBILITIES IN DUST PRONE LOCATIONS.
NMZ008-014-032300-
/O.UPG.KABQ.WI.Y.0022.000000T0000Z-090404T1200Z/
/O.COR.KABQ.HW.W.0011.090403T1803Z-090404T1200Z/
WEST CENTRAL MOUNTAINS-SOUTHWEST MOUNTAINS/UPPER GILA REGION-
INCLUDING THE CITIES OF...GALLUP/GRANTS...GLENWOOD
1203 PM MDT FRI APR 3 2009
...HIGH WIND WARNING IN EFFECT UNTIL 6 AM MDT SATURDAY...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH
WIND WARNING...WHICH IS IN EFFECT UNTIL 6 AM MDT SATURDAY. THE
WIND ADVISORY IS NO LONGER IN EFFECT.
SOUTHWEST WINDS WILL INCREASE TO 30 TO 40 MPH WITH GUSTS UP TO 60 MPH
THIS AFTERNOON. WINDS WILL GRADUALLY TURN TO THE WEST THIS EVENING
WITH THE STRONGEST WINDS CONTINUING THROUGH THE EVENING. AFTER
MIDNIGHT WIND SPEEDS WILL GRADUALLY DECREASE TO 25 TO 35 MPH WITH
GUSTS UP TO 45 MPH...WITH THE STRONGEST WINDS ACROSS THE HIGHER
TERRAIN AND SIGNIFICANTLY WEAKER WINDS IN VALLEYS. HAZARDOUS WINDS ARE
EXPECTED TO DIMINISH BY SUNRISE SATURDAY. BLOWING DUST WILL DROP
VISIBILITY BELOW ONE HALF MILE AT TIMES IN DUST PRONE
LOCATIONS...INCLUDING PORTIONS OF THE I-40 CORRIDOR.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WARNING
AREA. BE ALERT TO SUDDEN GUSTS OF WIND WHICH MAY CAUSE YOU TO LOSE
CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS
WINDS.
REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS
ARE IMMINENT OR HIGHLY LIKELY.
&&
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NMZ009-015-032300-
/O.COR.KABQ.WI.Y.0022.090403T2100Z-090404T0300Z/
MIDDLE RIO GRANDE VALLEY/ALBUQUERQUE METRO AREA-

LOWER RIO GRANDE VALLEY-
INCLUDING THE CITIES OF...ALBUQUERQUE...SOCORRO
1203 PM MDT FRI APR 3 2009
...WIND ADVISORY IN EFFECT FROM 3 PM THIS AFTERNOON TO 9 PM MDT THIS EVENING...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 3 PM THIS AFTERNOON TO 9 PM MDT THIS EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS FROM 45 TO 50 MPH THIS AFTERNOON. THE STRONG WINDS WILL WEAKEN SIGNIFICANTLY AROUND SUNSET WITH HAZARDOUS CONDITIONS NO LONGER EXPECTED AFTER 9 PM. BLOWING DUST WILL DROP VISIBILITY BELOW ONE MILE AT TIMES IN DUST PRONE LOCATIONS...INCLUDING PORTIONS OF I-40 AND I-25.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
&&
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NMZ005-010>012-016-026-032300-
/O.CON.KABQ.WI.Y.0022.000000T0000Z-090404T1200Z/
/O.CON.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
NORTHEAST HIGHLANDS-SANDIA/MANZANO MOUNTAINS-
CENTRAL HIGH PLAINS/ESTANCIA VALLEY-CONCHAS LAKE/GUADALUPE COUNTY-
LINCOLN COUNTY HIGH PLAINS/HONDO VALLEY-
GUADALUPE MOUNTAINS OF CHAVES COUNTY-
INCLUDING THE CITIES OF...LAS VEGAS/RATON...
SANDIA PARK/CEDAR CREST...MORIARTY/ESTANCIA...SANTA ROSA...
CARRIZOZO
1203 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT SATURDAY...
...HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 6 AM MDT SATURDAY. A HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO 45 MPH THIS AFTERNOON. WINDS WILL CONTINUE THROUGH TONIGHT... PARTICULARLY OVER THE CENTRAL HIGH PLAINS AND NORTHEAST HIGHLANDS. WINDS WILL GRADUALLY TURN TO THE WEST THROUGH SATURDAY MORNING AND ARE EXPECTED TO INCREASE TO BETWEEN 30 AND 40 MPH WITH GUSTS AS HIGH AS 65 MPH EARLY SATURDAY AFTERNOON. WINDS WILL DIMINISH GRADUALLY LATE SATURDAY AFTERNOON TO EASE THE HAZARDOUS CONDITIONS. STRONG WINDS WILL AFFECT TRAVEL ALONG LOCATIONS SUCH AS INTERSTATE 25 AND INTERSTATE 40.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
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NMZ017-032300-
/O.CON.KABQ.WI.Y.0022.000000T0000Z-090404T0300Z/
/O.CON.KABQ.HW.A.0006.090404T0300Z-090405T0300Z/
CAPITAN/NORTHERN SACRAMENTO MOUNTAINS-
INCLUDING THE CITY OF...RUIDOSO

1203 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MDT THIS EVENING...
...HIGH WIND WATCH REMAINS IN EFFECT FROM 9 PM MDT THIS EVENING
THROUGH SATURDAY EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MDT THIS EVENING. A
HIGH WIND WATCH REMAINS IN EFFECT FROM 9 PM MDT THIS EVENING
THROUGH SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE TO 25 TO 35 MPH WITH GUSTS UP TO
45 MPH THIS AFTERNOON. WINDS MAY INCREASE EVEN MORE AFTER SUNSET
TONIGHT AND CONTINUE THROUGH EARLY SATURDAY AFTERNOON. STRONG
SOUTHWEST WINDS OF 35 TO 45 MPH WITH LOCAL GUSTS UP TO 65 MPH ARE
POSSIBLE TONIGHT INTO SATURDAY AFTERNOON. WINDS WILL GRADUALLY
TURN TO THE WEST SATURDAY AFTERNOON AND DIMINISH BELOW HAZARDOUS
LEVELS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND
ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL
OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
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NMZ006-007-013-018>021-032300-
/O.CON.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
HARDING COUNTY-FAR NORTHEAST PLAINS-QUAY COUNTY-DE BACA COUNTY-
CHAVES COUNTY PLAINS-ROOSEVELT COUNTY-CURRY COUNTY-
INCLUDING THE CITIES OF...ROY...CLAYTON...TUCUMCARI...
FORT SUMNER...ROSWELL...PORTALES...CLOVIS
1203 PM MDT FRI APR 3 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING
THROUGH SATURDAY EVENING...
A HIGH WIND WATCH REMAINS IN EFFECT FROM SATURDAY MORNING THROUGH
SATURDAY EVENING.
SOUTHWEST WINDS WILL INCREASE LATE TONIGHT AND BECOME STRONG
EARLY SATURDAY MORNING. WEST WINDS OF 30 TO 40 MPH WITH LOCAL
GUSTS UP TO 60 MPH ARE POSSIBLE SATURDAY MORNING THROUGH SATURDAY
AFTERNOON. AREAS OF BLOWING DUST ARE POSSIBLE SATURDAY AFTERNOON
WITH REDUCED VISIBILITIES. TRAVEL ALONG INTERSTATE 40 WILL BE
IMPACTED BY STRONG WINDS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A
HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
&&
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44/43/50

WWUS75 KABQ 032214
NPWABQ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE ALBUQUERQUE NM
414 PM MDT FRI APR 3 2009
...STRONG TO VERY STRONG WINDS EXPECTED TONIGHT INTO SATURDAY...
.AN INTENSE UPPER LEVEL LOW PRESSURE SYSTEM APPROACHING FROM THE
GREAT BASIN WILL COMBINE WITH SURFACE LOW PRESSURE OVER SOUTHEAST
COLORADO TO CREATE STRONG TO VERY STRONG SOUTHWEST AND WEST
WINDS. THE STRONGEST WINDS WILL BE ACROSS THE WESTERN AND CENTRAL
MOUNTAINS TONIGHT THEN INCLUDE THE EASTERN PLAINS THROUGH SATURDAY.
THE POTENTIAL EXISTS FOR LOCALLY DAMAGING WIND GUSTS ACROSS AND
JUST TO THE LEE OF THE MOUNTAINS TONIGHT AND OVER PORTIONS OF THE

EAST HALF OF THE STATE SATURDAY. THE MIDDLE AND LOWER RIO GRANDE VALLEY CAN ALSO EXPECT STRONG WINDS INTO AT LEAST MID EVENING. THE STRONG WINDS IN THE WESTERN MOUNTAINS WILL GRADUALLY WEAKEN AFTER MIDNIGHT WITH LESS WINDY CONDITIONS IN THE CENTRAL VALLEY AND WESTERN MOUNTAINS ON SATURDAY. AREAS OF BLOWING DUST WILL SIGNIFICANTLY REDUCE VISIBILITIES IN DUST PRONE LOCATIONS.

NMZ012-040300-
/O.CAN.KABQ.WI.Y.0022.000000T0000Z-090404T1200Z/
/O.UPG.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
/O.EXB.KABQ.HW.W.0011.090404T1200Z-090405T0200Z/
CONCHAS LAKE/GUADALUPE COUNTY-
INCLUDING THE CITY OF...SANTA ROSA
414 PM MDT FRI APR 3 2009

...HIGH WIND WARNING IN EFFECT FROM 6 AM TO 8 PM MDT SATURDAY...
...WIND ADVISORY IS CANCELLED...

THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH WIND WARNING...WHICH IS IN EFFECT FROM 6 AM TO 8 PM MDT SATURDAY. THE WIND ADVISORY HAS BEEN CANCELLED. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.

WINDS WILL GRADUALLY TURN TO THE WEST THROUGH SATURDAY MORNING AND ARE EXPECTED TO INCREASE TO BETWEEN 30 AND 40 MPH WITH GUSTS AS HIGH AS 60 OR 65 MPH DURING THE MORNING AND INTO THE AFTERNOON SATURDAY. AREAS OF BLOWING DUST ARE LIKELY TO DEVELOP. WINDS WILL DIMINISH GRADUALLY LATE SATURDAY AFTERNOON TO EASE THE HAZARDOUS CONDITIONS. STRONG WINDS WILL AFFECT TRAVEL ALONG LOCATIONS SUCH AS INTERSTATE 25 AND INTERSTATE 40.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS ARE IMMINENT OR HIGHLY LIKELY.

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NMZ005-010-011-016-026-040300-
/O.UPG.KABQ.WI.Y.0022.000000T0000Z-090404T1200Z/
/O.UPG.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
/O.EXB.KABQ.HW.W.0011.090403T2214Z-090405T0000Z/
NORTHEAST HIGHLANDS-SANDIA/MANZANO MOUNTAINS-
CENTRAL HIGH PLAINS/ESTANCIA VALLEY-
LINCOLN COUNTY HIGH PLAINS/HONDO VALLEY-
GUADALUPE MOUNTAINS OF CHAVES COUNTY-
INCLUDING THE CITIES OF...LAS VEGAS/RATON...
SANDIA PARK/CEDAR CREST...MORIARTY/ESTANCIA...CARRIZOZO
414 PM MDT FRI APR 3 2009

...HIGH WIND WARNING IN EFFECT UNTIL 6 PM MDT SATURDAY...

THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH WIND WARNING...WHICH IS IN EFFECT UNTIL 6 PM MDT SATURDAY. THE WIND ADVISORY IS NO LONGER IN EFFECT. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.

SOUTHWEST WINDS WILL INCREASE TO BETWEEN 30 AND 45 MPH WITH GUSTS UP TO 65 MPH TONIGHT. WINDS WILL GRADUALLY TURN TO THE WEST THROUGH SATURDAY MORNING AND ARE EXPECTED TO CONTINUE BETWEEN 30 AND 45 MPH WITH GUSTS AS HIGH AS 65 MPH INTO SATURDAY AFTERNOON. WINDS WILL BEGIN TO DIMINISH GRADUALLY LATE SATURDAY AFTERNOON. STRONG WINDS WILL AFFECT TRAVEL ALONG LOCATIONS SUCH AS INTERSTATE 25 AND INTERSTATE 40. AREAS OF BLOWING DUST ARE LIKELY TO DEVELOP.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS ARE IMMINENT OR HIGHLY LIKELY.

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NMZ017-040300-
/O.UPG.KABQ.WI.Y.0022.000000T0000Z-090404T0300Z/
/O.UPG.KABQ.HW.A.0006.090404T0300Z-090405T0300Z/
/O.EXB.KABQ.HW.W.0011.090403T2214Z-090405T0000Z/
CAPITAN/NORTHERN SACRAMENTO MOUNTAINS-
INCLUDING THE CITY OF...RUIDOSO
414 PM MDT FRI APR 3 2009
...HIGH WIND WARNING IN EFFECT UNTIL 6 PM MDT SATURDAY...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH
WIND WARNING...WHICH IS IN EFFECT UNTIL 6 PM MDT SATURDAY. THE
WIND ADVISORY IS NO LONGER IN EFFECT. THE HIGH WIND WATCH IS NO
LONGER IN EFFECT.
SOUTHWEST WINDS WILL BLOW BETWEEN 30 AND 45 MPH WITH GUSTS
UP TO 65 OR EVEN 70 MPH TONIGHT. WINDS WILL GRADUALLY TURN TO THE
WEST THROUGH SATURDAY MORNING AND ARE EXPECTED TO CONTINUE BETWEEN
30 AND 45 MPH WITH GUSTS AS HIGH AS 65 MPH INTO SATURDAY
AFTERNOON. WINDS WILL BEGIN TO DIMINISH GRADUALLY LATE SATURDAY
AFTERNOON. AREAS OF BLOWING DUST ARE LIKELY TO DEVELOP.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS
ARE IMMINENT OR HIGHLY LIKELY.
&&
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NMZ006-007-013-018>021-040300-
/O.UPG.KABQ.HW.A.0006.090404T1200Z-090405T0300Z/
/O.EXB.KABQ.HW.W.0011.090404T1200Z-090405T0200Z/
HARDING COUNTY-FAR NORTHEAST PLAINS-QUAY COUNTY-DE BACA COUNTY-
CHAVES COUNTY PLAINS-ROOSEVELT COUNTY-CURRY COUNTY-
INCLUDING THE CITIES OF...ROY...CLAYTON...TUCUMCARI...
FORT SUMNER...ROSWELL...PORTALES...CLOVIS
414 PM MDT FRI APR 3 2009
...HIGH WIND WARNING IN EFFECT FROM 6 AM TO 8 PM MDT SATURDAY...
THE NATIONAL WEATHER SERVICE IN ALBUQUERQUE HAS ISSUED A HIGH
WIND WARNING...WHICH IS IN EFFECT FROM 6 AM TO 8 PM MDT SATURDAY.
THE HIGH WIND WATCH IS NO LONGER IN EFFECT.
SOUTHWEST WINDS WILL INCREASE LATE TONIGHT AND BECOME STRONG
SATURDAY MORNING. WEST WINDS OF 30 TO 40 MPH WITH LOCAL GUSTS UP
TO 60 MPH ARE LIKELY SATURDAY MORNING THROUGH SATURDAY
AFTERNOON. AREAS OF BLOWING DUST ARE POSSIBLE SATURDAY AFTERNOON
WITH REDUCED VISIBILITIES. TRAVEL ALONG INTERSTATE 40 WILL BE
IMPACTED BY STRONG WINDS.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS
ARE IMMINENT OR HIGHLY LIKELY.
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NMZ008-014-040300-
/O.CON.KABQ.HW.W.0011.000000T0000Z-090404T1200Z/
WEST CENTRAL MOUNTAINS-SOUTHWEST MOUNTAINS/UPPER GILA REGION-
INCLUDING THE CITIES OF...GALLUP/GRANTS...GLENWOOD
414 PM MDT FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 6 AM MDT SATURDAY...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL 6 AM MDT SATURDAY.
SOUTHWEST TO WEST WINDS WILL BLOW AT 30 TO 40 MPH WITH GUSTS UP
TO 60 MPH THIS EVENING. AFTER MIDNIGHT WIND SPEEDS WILL GRADUALLY
DECREASE TO 20 TO 35 MPH WITH GUSTS UP TO 45 MPH...BUT REMAIN AT
OR NEAR 30 TO 40 MPH WITH GUSTS NEAR 60 MPH ON THE HIGHER RIDGES
AND PEAKS. HAZARDOUS WINDS ARE EXPECTED TO DIMINISH AN HOUR OR TWO

EITHER SIDE OF SUNRISE SATURDAY. BLOWING DUST WILL DROP VISIBILITY BELOW ONE HALF MILE AT TIMES IN DUST PRONE LOCATIONS...INCLUDING PORTIONS OF THE I-40 CORRIDOR.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WARNING AREA. BE ALERT TO SUDDEN GUSTS OF WIND WHICH MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS WHEN DRIVING ON NORTH SOUTH OR EAST WEST ORIENTED ROADS.
REMEMBER...A HIGH WIND WARNING MEANS HAZARDOUS WEATHER CONDITIONS ARE IMMINENT OR HIGHLY LIKELY.
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NMZ009-015-040300-
/O.CON.KABQ.WI.Y.0022.000000T0000Z-090404T0300Z/
MIDDLE RIO GRANDE VALLEY/ALBUQUERQUE METRO AREA-
LOWER RIO GRANDE VALLEY-
INCLUDING THE CITIES OF...ALBUQUERQUE...SOCORRO
414 PM MDT FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MDT THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 9 PM MDT THIS EVENING. SOUTHWEST WINDS WILL CONTINUE AROUND 25 TO 35 MPH WITH GUSTS BETWEEN 35 AND 45 MPH INTO THIS EVENING. THE STRONG WINDS WILL WEAKEN SIGNIFICANTLY AROUND SUNSET WITH HAZARDOUS CONDITIONS NO LONGER EXPECTED AFTER 9 PM. THERE MAY BE A FEW PERIODS OF STRONGER WINDS AGAIN WELL AFTER MIDNIGHT INTO THE MORNING ALONG AND BEHIND A COLD FRONT. BLOWING DUST WILL DROP VISIBILITY BELOW ONE MILE AT TIMES IN DUST PRONE LOCATIONS...INCLUDING PORTIONS OF I- 40 AND I-25.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
MOTORISTS SHOULD EXERCISE CAUTION WHILE DRIVING IN THE WIND ADVISORY AREA. SUDDEN GUSTS OF WIND MAY CAUSE YOU TO LOSE CONTROL OF YOUR VEHICLE. EXTRA ATTENTION SHOULD BE GIVEN TO CROSS WINDS.
REMEMBER...A HIGH WIND WATCH MEANS CONDITIONS ARE FAVORABLE FOR A HAZARDOUS HIGH WIND EVENT IN AND CLOSE TO THE WATCH AREA.
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43

NWS SRRS PRODUCTS FOR:
2009040200 to 2009040323
Flagstaff Arizona, National Weather Service Forecast Office

WWUS75 KFGZ 020201
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
701 PM MST WED APR 1 2009
AZZ012>014-016-017-021015-
/O.EXP.KFGZ.WI.Y.0008.000000T0000Z-090402T0200Z/
/O.CON.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
INCLUDING THE CITIES OF...WUPATKI N.M....TUBA CITY...WINSLOW...
HOLBROOK...SNOWFLAKE...ST. JOHNS...SPRINGERVILLE...HEBER...
HAPPY JACK...FOREST LAKES...SHOW LOW...GREER...PINETOP

701 PM MST WED APR 1 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY EVENING...
...WIND ADVISORY WILL EXPIRE AT 7 PM MST THIS EVENING...
THE WIND ADVISORY WILL EXPIRE AT 7 PM MST THIS EVENING. A HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY EVENING.
NORTHWEST WINDS WILL CONTINUE TO DECREASE RAPIDLY THIS EVENING BEHIND A COLD FRONT THAT MOVED THROUGH EARLIER TODAY. THE WIND ADVISORY HAS BEEN ALLOWED TO EXPIRE.
BY FRIDAY...A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF STRONG WINDS DURING THE AFTERNOON AND EVENING. SOUTHWEST WINDS OF 30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR WIDESPREAD BLOWING DUST CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WATCH MEANS THERE IS THE POTENTIAL FOR A HAZARDOUS HIGH WIND EVENT...WITH SUSTAINED WINDS GREATER THAN 40 MPH...OR GUSTS GREATER THAN 58 MPH. MONITOR THE LATEST FORECASTS AND WARNINGS FOR UPDATES ON THIS SITUATION. ADDITIONAL WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
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AZZ004-006>011-015-038>040-021015-
/O.CON.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
KAIBAB PLATEAU-GRAND CANYON COUNTRY-COCONINO PLATEAU-
YAVAPAI COUNTY MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-CHINLE VALLEY-
CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-WESTERN MOGOLLON RIM-
OAK CREEK AND SYCAMORE CANYONS-BLACK MESA AREA-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...
GRAND CANYON VILLAGE...SUPAI...NORTH RIM...VALLE...PRESCOTT...
SELIGMAN...ASH FORK...KEAMS CANYON...KAIBITO...CANYON DE CHELLY...
CHINLE...KAYENTA...WINDOW ROCK...GANADO...FLAGSTAFF...WILLIAMS...
MUNDS PARK...SEDONA...NAVAJO N.M....DILKON...KYKOTSMOVI
701 PM MST WED APR 1 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY EVENING...
A HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF STRONG WINDS FRIDAY AFTERNOON AND EVENING. SOUTHWEST WINDS OF 30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR WIDESPREAD BLOWING DUST CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WATCH MEANS THERE IS THE POTENTIAL FOR A HAZARDOUS HIGH WIND EVENT...WITH SUSTAINED WINDS GREATER THAN 40 MPH...OR GUSTS GREATER THAN 58 MPH. MONITOR THE LATEST FORECASTS AND WARNINGS FOR UPDATES ON THIS SITUATION. ADDITIONAL WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
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WWUS75 KFGZ 021228
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ

528 AM MST THU APR 2 2009
AZZ004-006>017-038>040-022030-
/O.CON.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
KAIBAB PLATEAU-GRAND CANYON COUNTRY-COCONINO PLATEAU-
YAVAPAI COUNTY MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-CHINLE VALLEY-
CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
WESTERN MOGOLLON RIM-EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
OAK CREEK AND SYCAMORE CANYONS-BLACK MESA AREA-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...
GRAND CANYON VILLAGE...SUPAI...NORTH RIM...VALLE...PRESCOTT...
SELIGMAN...ASH FORK...KEAMS CANYON...KAIBITO...CANYON DE CHELLY...
CHINLE...KAYENTA...WINDOW ROCK...GANADO...WUPATKI N.M....
TUBA CITY...WINSLOW...HOLBROOK...SNOWFLAKE...ST. JOHNS...
SPRINGERVILLE...FLAGSTAFF...WILLIAMS...MUNDS PARK...HEBER...
HAPPY JACK...FOREST LAKES...SHOW LOW...GREER...PINETOP...SEDONA...
NAVAJO N.M....DILKON...KYKOTSMOVI
528 AM MST THU APR 2 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY EVENING...
A HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH FRIDAY EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF STRONG WINDS FRIDAY AFTERNOON AND EVENING. SOUTHWEST WINDS OF 30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR WIDESPREAD BLOWING DUST CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WATCH MEANS THERE IS THE POTENTIAL FOR A HAZARDOUS HIGH WIND EVENT...WITH SUSTAINED WINDS GREATER THAN 40 MPH...OR GUSTS GREATER THAN 58 MPH. MONITOR THE LATEST FORECASTS AND WARNINGS FOR UPDATES ON THIS SITUATION. ADDITIONAL WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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WWUS75 KFGZ 021228
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
528 AM MST THU APR 2 2009
AZZ004-006>017-038>040-022030-
/O.CON.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
KAIBAB PLATEAU-GRAND CANYON COUNTRY-COCONINO PLATEAU-
YAVAPAI COUNTY MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-CHINLE VALLEY-
CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
WESTERN MOGOLLON RIM-EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
OAK CREEK AND SYCAMORE CANYONS-BLACK MESA AREA-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...
GRAND CANYON VILLAGE...SUPAI...NORTH RIM...VALLE...PRESCOTT...

SELIGMAN...ASH FORK...KEAMS CANYON...KAIBITO...CANYON DE CHELLY...
CHINLE...KAYENTA...WINDOW ROCK...GANADO...WUPATKI N.M....
TUBA CITY...WINSLOW...HOLBROOK...SNOWFLAKE...ST. JOHNS...
SPRINGERVILLE...FLAGSTAFF...WILLIAMS...MUNDS PARK...HEBER...
HAPPY JACK...FOREST LAKES...SHOW LOW...GREER...PINETOP...SEDONA...
NAVAJO N.M....DILKON...KYKOTSMOVI
528 AM MST THU APR 2 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH
FRIDAY EVENING...
A HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH
FRIDAY EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS FRIDAY AFTERNOON AND EVENING. SOUTHWEST WINDS OF
30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE. THERE IS
ALSO A POTENTIAL FOR WIDESPREAD BLOWING DUST CREATING POOR TRAVEL
CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WATCH MEANS THERE IS THE POTENTIAL FOR A HAZARDOUS
HIGH WIND EVENT...WITH SUSTAINED WINDS GREATER THAN 40 MPH...OR
GUSTS GREATER THAN 58 MPH. MONI OTHER -- 1 SECOND PEAK WIND DURING 30
MIN ACQUISITION PERIOD

WWUS75 KFGZ 021957
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
1257 PM MST THU APR 2 2009
AZZ004-006>017-038>040-030700-
/O.CON.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
KAIBAB PLATEAU-GRAND CANYON COUNTRY-COCONINO PLATEAU-
YAVAPAI COUNTY MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-CHINLE VALLEY-
CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
WESTERN MOGOLLON RIM-EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
OAK CREEK AND SYCAMORE CANYONS-BLACK MESA AREA-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...
GRAND CANYON VILLAGE...SUPAI...NORTH RIM...VALLE...PRESCOTT...
SELIGMAN...ASH FORK...KEAMS CANYON...KAIBITO...CANYON DE CHELLY...
CHINLE...KAYENTA...WINDOW ROCK...GANADO...WUPATKI N.M....
TUBA CITY...WINSLOW...HOLBROOK...SNOWFLAKE...ST. JOHNS...
SPRINGERVILLE...FLAGSTAFF...WILLIAMS...MUNDS PARK...HEBER...
HAPPY JACK...FOREST LAKES...SHOW LOW...GREER...PINETOP...SEDONA...
NAVAJO N.M....DILKON...KYKOTSMOVI
1257 PM MST THU APR 2 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH
FRIDAY EVENING...
A HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH
FRIDAY EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS FRIDAY AFTERNOON AND EVENING. SOUTHWEST WINDS OF
30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE. THERE IS
ALSO A POTENTIAL FOR WIDESPREAD BLOWING DUST CREATING POOR TRAVEL
CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WATCH MEANS THERE IS THE POTENTIAL FOR A HAZARDOUS

HIGH WIND EVENT...WITH SUSTAINED WINDS GREATER THAN 40 MPH...OR
GUSTS GREATER THAN 58 MPH. MONITOR THE LATEST FORECASTS AND
WARNINGS FOR UPDATES ON THIS SITUATION. ADDITIONAL WEATHER
INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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WWUS75 KFGZ 021957
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
1257 PM MST THU APR 2 2009
AZZ004-006>017-038>040-030700-
/O.CON.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
KAIBAB PLATEAU-GRAND CANYON COUNTRY-COCONINO PLATEAU-
YAVAPAI COUNTY MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-CHINLE VALLEY-
CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
WESTERN MOGOLLON RIM-EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
OAK CREEK AND SYCAMORE CANYONS-BLACK MESA AREA-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...
GRAND CANYON VILLAGE...SUPAI...NORTH RIM...VALLE...PRESCOTT...
SELIGMAN...ASH FORK...KEAMS CANYON...KAIBITO...CANYON DE CHELLY...
CHINLE...KAYENTA...WINDOW ROCK...GANADO...WUPATKI N.M....
TUBA CITY...WINSLOW...HOLBROOK...SNOWFLAKE...ST. JOHNS...
SPRINGERVILLE...FLAGSTAFF...WILLIAMS...MUNDS PARK...HEBER...
HAPPY JACK...FOREST LAKES...SHOW LOW...GREER...PINETOP...SEDONA...
NAVAJO N.M....DILKON...KYKOTSMOVI
1257 PM MST THU APR 2 2009
...HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH
FRIDAY EVENING...
A HIGH WIND WATCH REMAINS IN EFFECT FROM FRIDAY MORNING THROUGH
FRIDAY EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS FRIDAY AFTERNOON AND EVENING. SOUTHWEST WINDS OF
30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE. THERE IS
ALSO A POTENTIAL FOR WIDESPREAD BLOWING DUST CREATING POOR TRAVEL
CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WATCH MEANS THERE IS THE POTENTIAL FOR A HAZARDOUS
HIGH WIND EVENT...WITH SUSTAINED WINDS GREATER THAN 40 MPH...OR
GUSTS GREATER THAN 58 MPH. MONITOR THE LATEST FORECASTS AND
WARNINGS FOR UPDATES ON THIS SITUATION. ADDITIONAL WEATHER
INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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WWUS75 KFGZ 030449
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
949 PM MST THU APR 2 2009
AZZ007-012-015-031300-
/O.UPG.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
/O.NEW.KFGZ.HW.W.0004.090403T1500Z-090404T0300Z/

COCONINO PLATEAU-LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
WESTERN MOGOLLON RIM-
INCLUDING THE CITIES OF...VALLE...WUPATKI N.M....TUBA CITY...
FLAGSTAFF...WILLIAMS...MUNDS PARK
949 PM MST THU APR 2 2009
...HIGH WIND WARNING IN EFFECT FROM 8 AM TO 8 PM MST FRIDAY...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A HIGH WIND
WARNING...WHICH IS IN EFFECT FROM 8 AM TO 8 PM MST FRIDAY. THE
HIGH WIND WATCH IS NO LONGER IN EFFECT.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND
OF STRONG WINDS MUCH OF FRIDAY AND INTO FRIDAY EVENING. SOUTHWEST
WINDS OF 30 TO 40 MPH WITH GUSTS UP TO 60 MPH WILL BE POSSIBLE.
THERE IS ALSO A POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
&&
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
&&
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AZZ013-014-016-017-040-031300-
/O.UPG.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
/O.NEW.KFGZ.HW.W.0004.090403T1500Z-090404T0700Z/
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...WINSLOW...HOLBROOK...SNOWFLAKE...
ST. JOHNS...SPRINGERVILLE...HEBER...HAPPY JACK...FOREST LAKES...
SHOW LOW...GREER...PINETOP...DILKON...KYKOTSMOVI
949 PM MST THU APR 2 2009
...HIGH WIND WARNING IN EFFECT FROM 8 AM FRIDAY TO MIDNIGHT MST
FRIDAY NIGHT...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A HIGH WIND
WARNING...WHICH IS IN EFFECT FROM 8 AM FRIDAY TO MIDNIGHT MST
FRIDAY NIGHT. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS MUCH OF FRIDAY AND FRIDAY EVENING. SOUTHWEST WINDS
OF 30 TO 40 MPH WITH GUSTS UP TO 65 MPH WILL BE POSSIBLE. THERE
WILL ALSO BE WIDESPREAD BLOWING SAND AND DUST...CREATING POOR
TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
&&
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AZZ004-006-009-031300-
/O.UPG.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
/O.NEW.KFGZ.WI.Y.0009.090403T1500Z-090404T0300Z/
KAIBAB PLATEAU-GRAND CANYON COUNTRY-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...
GRAND CANYON VILLAGE...SUPAI...NORTH RIM...KEAMS CANYON...KAIBITO

949 PM MST THU APR 2 2009
...WIND ADVISORY IN EFFECT FROM 8 AM TO 8 PM MST FRIDAY...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 8 AM TO 8 PM MST FRIDAY. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF STRONG WINDS MUCH OF FRIDAY AND INTO FRIDAY EVENING. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS UP TO 45 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR AREAS OF BLOWING DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES. CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
&&
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AZZ010-011-039-031300-
/O.UPG.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
/O.NEW.KFGZ.WI.Y.0009.090403T1500Z-090404T0500Z/
CHINLE VALLEY-CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
BLACK MESA AREA-
INCLUDING THE CITIES OF...CANYON DE CHELLY...CHINLE...KAYENTA...
WINDOW ROCK...GANADO...NAVAJO N.M.
949 PM MST THU APR 2 2009
...WIND ADVISORY IN EFFECT FROM 8 AM TO 10 PM MST FRIDAY...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 8 AM TO 10 PM MST FRIDAY. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF STRONG WINDS MUCH OF FRIDAY AND INTO FRIDAY EVENING. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS UP TO 45 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR AREAS OF BLOWING DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES. CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
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AZZ008-038-031300-
/O.UPG.KFGZ.HW.A.0003.090403T1700Z-090404T0300Z/
/O.NEW.KFGZ.WI.Y.0009.090403T1700Z-090404T0300Z/
YAVAPAI COUNTY MOUNTAINS-OAK CREEK AND SYCAMORE CANYONS-
INCLUDING THE CITIES OF...PRESCOTT...SELIGMAN...ASH FORK...SEDONA
949 PM MST THU APR 2 2009
...WIND ADVISORY IN EFFECT FROM 10 AM TO 8 PM MST FRIDAY...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A WIND ADVISORY...WHICH IS IN EFFECT FROM 10 AM TO 8 PM MST FRIDAY. THE HIGH WIND WATCH IS NO LONGER IN EFFECT.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF STRONG WINDS MUCH OF FRIDAY AND INTO FRIDAY EVENING. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS UP TO 45 MPH WILL BE POSSIBLE.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN

MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
&&
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AZZ005-031300-
/O.NEW.KFGZ.WI.Y.0009.090403T1500Z-090404T0300Z/
MARBLE AND GLEN CANYONS-
INCLUDING THE CITIES OF...PAGE...LEES FERRY
949 PM MST THU APR 2 2009
...WIND ADVISORY IN EFFECT FROM 8 AM TO 8 PM MST FRIDAY...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM 8 AM TO 8 PM MST FRIDAY.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND
OF STRONG WINDS MUCH OF FRIDAY AND INTO FRIDAY EVENING. SOUTHWEST
WINDS OF 25 TO 35 MPH WITH GUSTS UP TO 45 MPH WILL BE POSSIBLE.
THERE IS ALSO A POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
&&
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AZZ018-037-031300-
/O.NEW.KFGZ.WI.Y.0009.090403T1700Z-090404T0300Z/
NORTHERN GILA COUNTY-YAVAPAI COUNTY VALLEYS AND BASINS-
INCLUDING THE CITIES OF...PAYSON...STRAWBERRY...YOUNG...
COTTONWOOD...CAMP VERDE...CORDES JUNCTION...BAGDAD
949 PM MST THU APR 2 2009
...WIND ADVISORY IN EFFECT FROM 10 AM TO 8 PM MST FRIDAY...
THE NATIONAL WEATHER SERVICE IN FLAGSTAFF HAS ISSUED A WIND
ADVISORY...WHICH IS IN EFFECT FROM 10 AM TO 8 PM MST FRIDAY.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND
OF STRONG WINDS MUCH OF FRIDAY AND INTO FRIDAY EVENING. SOUTHWEST
WINDS OF 25 TO 35 MPH WITH GUSTS UP TO 45 MPH WILL BE POSSIBLE.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WWW.WEATHER.GOV/FLAGSTAFF.
&&
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WWUS75 KFGZ 031146
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
446 AM MST FRI APR 3 2009
AZZ007-012-015-032000-
/O.CON.KFGZ.HW.W.0004.090403T1500Z-090404T0300Z/
COCONINO PLATEAU-LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
WESTERN MOGOLLON RIM-
INCLUDING THE CITIES OF...VALLE...WUPATKI N.M....TUBA CITY...
FLAGSTAFF...WILLIAMS...MUNDS PARK
446 AM MST FRI APR 3 2009

...HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THIS MORNING TO
8 PM MST THIS EVENING...
A HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THIS MORNING TO
8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 30 TO 40 MPH WITH GUSTS UP TO
60 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR AREAS OF
BLOWING DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED
VISIBILITY.
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ013-014-016-017-040-032000-
/O.CON.KFGZ.HW.W.0004.090403T1500Z-090404T0700Z/
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...WINSLOW...HOLBROOK...SNOWFLAKE...
ST. JOHNS...SPRINGERVILLE...HEBER...HAPPY JACK...FOREST LAKES...
SHOW LOW...GREER...PINETOP...DILKON...KYKOTSMOVI
446 AM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THIS MORNING TO
MIDNIGHT MST TONIGHT...
A HIGH WIND WARNING REMAINS IN EFFECT FROM 8 AM THIS MORNING TO
MIDNIGHT MST TONIGHT.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 30 TO 40 MPH WITH GUSTS UP
TO 65 MPH WILL BE POSSIBLE. THERE WILL ALSO BE WIDESPREAD BLOWING
SAND AND DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED
VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ004>006-009-032000-
/O.CON.KFGZ.WI.Y.0009.090403T1500Z-090404T0300Z/
KAIBAB PLATEAU-MARBLE AND GLEN CANYONS-GRAND CANYON COUNTRY-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...PAGE...
LEES FERRY...GRAND CANYON VILLAGE...SUPAI...NORTH RIM...
KEAMS CANYON...KAIBITO
446 AM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT FROM 8 AM THIS MORNING TO 8 PM
MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT FROM 8 AM THIS MORNING TO 8 PM
MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS UP TO
45 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR AREAS OF
BLOWING DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED

VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ010-011-039-032000-
/O.CON.KFGZ.WI.Y.0009.090403T1500Z-090404T0500Z/
CHINLE VALLEY-CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
BLACK MESA AREA-
INCLUDING THE CITIES OF...CANYON DE CHELLY...CHINLE...KAYENTA...
WINDOW ROCK...GANADO...NAVAJO N.M.
446 AM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT FROM 8 AM THIS MORNING TO
10 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT FROM 8 AM THIS MORNING TO 10 PM
MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS UP TO
45 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR AREAS OF
BLOWING DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED
VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ008-018-037-038-032000-
/O.CON.KFGZ.WI.Y.0009.090403T1700Z-090404T0300Z/
YAVAPAI COUNTY MOUNTAINS-NORTHERN GILA COUNTY-
YAVAPAI COUNTY VALLEYS AND BASINS-OAK CREEK AND SYCAMORE CANYONS-
INCLUDING THE CITIES OF...PRESCOTT...SELIGMAN...ASH FORK...
PAYSON...STRAWBERRY...YOUNG...COTTONWOOD...CAMP VERDE...
CORDES JUNCTION...BAGDAD...SEDONA
446 AM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT FROM 10 AM THIS MORNING TO
8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT FROM 10 AM THIS MORNING TO 8 PM
MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION WILL BRING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS UP TO
45 MPH WILL BE POSSIBLE. THERE IS ALSO A POTENTIAL FOR AREAS OF
BLOWING DUST...CREATING POOR TRAVEL CONDITIONS DUE TO LIMITED
VISIBILITY.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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WWUS75 KFGZ 031738
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
1038 AM MST FRI APR 3 2009
AZZ007-012-015-040145-
/O.CON.KFGZ.HW.W.0004.000000T0000Z-090404T0300Z/
COCONINO PLATEAU-LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
WESTERN MOGOLLON RIM-
INCLUDING THE CITIES OF...VALLE...WUPATKI N.M....TUBA CITY...
FLAGSTAFF...WILLIAMS...MUNDS PARK
1038 AM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM MST THIS
EVENING...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM MST THIS
EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 30 TO 45 MPH WITH GUSTS UP
TO 65 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING. AREAS OF
BLOWING DUST CAN BE EXPECTED...CREATING POOR TRAVEL CONDITIONS DUE
TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 10 AM MST THIS MORNING INCLUDE...
FLAGSTAFF AIRPORT ..... 48 MPH.
DONEY PARK ..... 50 MPH.
WUPATKI NATIONAL MONUMENT... 51 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ013-014-016-017-040-040145-
/O.CON.KFGZ.HW.W.0004.000000T0000Z-090404T0700Z/
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...WINSLOW...HOLBROOK...SNOWFLAKE...
ST. JOHNS...SPRINGERVILLE...HEBER...HAPPY JACK...FOREST LAKES...
SHOW LOW...GREER...PINETOP...DILKON...KYKOTSMOVI
1038 AM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL MIDNIGHT MST
TONIGHT...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL MIDNIGHT MST TONIGHT.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 35 TO 50 MPH WITH GUSTS UP
TO 65 MPH WILL CONTINUE TO OCCUR THROUGH THIS EVENING. AREAS OF
BLOWING DUST CAN BE EXPECTED...CREATING POOR TRAVEL CONDITIONS DUE
TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 10 AM MST THIS MORNING INCLUDE...
WINSLOW ..... 69 MPH.
SHOW LOW ..... 47 MPH.
SAINT JOHNS ..... 53 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY

DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ004>006-009-040145-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0300Z/
KAIBAB PLATEAU-MARBLE AND GLEN CANYONS-GRAND CANYON COUNTRY-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...PAGE...
LEES FERRY...GRAND CANYON VILLAGE...SUPAI...NORTH RIM...
KEAMS CANYON...KAIBITO
1038 AM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS OF
45 TO 50 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING. THERE
IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING POOR
TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 10 AM MST THIS MORNING INCLUDE...
GRAND CANYON ..... 45 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ010-011-039-040145-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0500Z/
CHINLE VALLEY-CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
BLACK MESA AREA-
INCLUDING THE CITIES OF...CANYON DE CHELLY...CHINLE...KAYENTA...
WINDOW ROCK...GANADO...NAVAJO N.M.
1038 AM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 10 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 10 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS OF
45 TO 50 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING. THERE
IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING POOR
TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 10 AM MST THIS MORNING INCLUDE...
WINDOW ROCK ..... 43 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ008-018-037-038-040145-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0300Z/
YAVAPAI COUNTY MOUNTAINS-NORTHERN GILA COUNTY-
YAVAPAI COUNTY VALLEYS AND BASINS-OAK CREEK AND SYCAMORE CANYONS-
INCLUDING THE CITIES OF...PRESCOTT...SELIGMAN...ASH FORK...
PAYSON...STRAWBERRY...YOUNG...COTTONWOOD...CAMP VERDE...

CORDES JUNCTION...BAGDAD...SEDONA
1038 AM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND OF
STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS OF
45 TO 55 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING. THERE
IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING POOR
TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 10 AM MST THIS MORNING INCLUDE...
PRESCOTT ..... 60 MPH.
SELIGMAN ..... 47 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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WWUS75 KFGZ 032150
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
250 PM MST FRI APR 3 2009
AZZ007-012-015-040300-
/O.CON.KFGZ.HW.W.0004.000000T0000Z-090404T0300Z/
COCONINO PLATEAU-LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
WESTERN MOGOLLON RIM-
INCLUDING THE CITIES OF...VALLE...WUPATKI N.M....TUBA CITY...
FLAGSTAFF...WILLIAMS...MUNDS PARK
250 PM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM MST THIS
EVENING...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM MST THIS
EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 30 TO 45 MPH WITH GUSTS
UP TO AROUND 65 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS
EVENING. AREAS OF BLOWING DUST CAN BE EXPECTED...CREATING VERY
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY...INCLUDING ALONG
INTERSTATE 40 EAST OF FLAGSTAFF.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
FLAGSTAFF AIRPORT ..... 51 MPH.
DONEY PARK ..... 51 MPH.
WUPATKI NATIONAL MONUMENT... 54 MPH.
TUBA CITY ..... 55 MPH.
METEOR CRATER ..... 91 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ013-014-016-017-040-040600-

/O.CON.KFGZ.HW.W.0004.000000T0000Z-090404T0700Z/
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...WINSLOW...HOLBROOK...SNOWFLAKE...
ST. JOHNS...SPRINGERVILLE...HEBER...HAPPY JACK...FOREST LAKES...
SHOW LOW...GREER...PINETOP...DILKON...KYKOTSMOVI
250 PM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL MIDNIGHT MST TONIGHT...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL MIDNIGHT MST TONIGHT.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 35 TO 50 MPH WITH GUSTS
UP TO AROUND 65 MPH WILL CONTINUE TO OCCUR THROUGH THIS EVENING.
AREAS OF BLOWING DUST CAN BE EXPECTED...CREATING VERY POOR TRAVEL
CONDITIONS DUE TO LIMITED VISIBILITY...INCLUDING ALONG INTERSTATE
40 BETWEEN WINSLOW AND THE NEW MEXICO BORDER.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
WINSLOW ..... 69 MPH.
SHOW LOW ..... 49 MPH.
SAINT JOHNS ..... 61 MPH.
SANDERS ..... 68 MPH.
PETRIFIED FOREST ..... 60 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ004>006-009-040300-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0300Z/
KAIBAB PLATEAU-MARBLE AND GLEN CANYONS-GRAND CANYON COUNTRY-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...PAGE...
LEES FERRY...GRAND CANYON VILLAGE...SUPAI...NORTH RIM...
KEAMS CANYON...KAIBITO
250 PM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS
OF 45 TO 55 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING.
THERE IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
GRAND CANYON ..... 55 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ010-011-039-040500-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0500Z/
CHINLE VALLEY-CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
BLACK MESA AREA-
INCLUDING THE CITIES OF...CANYON DE CHELLY...CHINLE...KAYENTA...
WINDOW ROCK...GANADO...NAVAJO N.M.
250 PM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 10 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 10 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS
OF 45 TO 50 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING.
THERE IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
WINDOW ROCK ..... 54 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ008-018-037-038-040300-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0300Z/
YAVAPAI COUNTY MOUNTAINS-NORTHERN GILA COUNTY-
YAVAPAI COUNTY VALLEYS AND BASINS-OAK CREEK AND SYCAMORE CANYONS-
INCLUDING THE CITIES OF...PRESCOTT...SELIGMAN...ASH FORK...
PAYSON...STRAWBERRY...YOUNG...COTTONWOOD...CAMP VERDE...
CORDES JUNCTION...BAGDAD...SEDONA
250 PM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS
OF 45 TO 55 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING.
THERE IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
PRESCOTT ..... 60 MPH.
SELIGMAN ..... 71 MPH.
SEDONA ..... 51 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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WWUS75 KFGZ 032150
NPWFGZ
URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE FLAGSTAFF AZ
250 PM MST FRI APR 3 2009

AZZ007-012-015-040300-
/O.CON.KFGZ.HW.W.0004.000000T0000Z-090404T0300Z/
COCONINO PLATEAU-LITTLE COLORADO RIVER VALLEY IN COCONINO COUNTY-
WESTERN MOGOLLON RIM-
INCLUDING THE CITIES OF...VALLE...WUPATKI N.M....TUBA CITY...
FLAGSTAFF...WILLIAMS...MUNDS PARK
250 PM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM MST THIS
EVENING...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL 8 PM MST THIS
EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 30 TO 45 MPH WITH GUSTS
UP TO AROUND 65 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS
EVENING. AREAS OF BLOWING DUST CAN BE EXPECTED...CREATING VERY
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY...INCLUDING ALONG
INTERSTATE 40 EAST OF FLAGSTAFF.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
FLAGSTAFF AIRPORT ..... 51 MPH.
DONEY PARK ..... 51 MPH.
WUPATKI NATIONAL MONUMENT... 54 MPH.
TUBA CITY ..... 55 MPH.
METEOR CRATER ..... 91 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ013-014-016-017-040-040600-
/O.CON.KFGZ.HW.W.0004.000000T0000Z-090404T0700Z/
LITTLE COLORADO RIVER VALLEY IN NAVAJO COUNTY-
LITTLE COLORADO RIVER VALLEY IN APACHE COUNTY-
EASTERN MOGOLLON RIM-WHITE MOUNTAINS-
NORTHEAST PLATEAUS AND MESAS SOUTH OF HWY 264-
INCLUDING THE CITIES OF...WINSLOW...HOLBROOK...SNOWFLAKE...
ST. JOHNS...SPRINGERVILLE...HEBER...HAPPY JACK...FOREST LAKES...
SHOW LOW...GREER...PINETOP...DILKON...KYKOTSMOVI
250 PM MST FRI APR 3 2009
...HIGH WIND WARNING REMAINS IN EFFECT UNTIL MIDNIGHT MST
TONIGHT...
A HIGH WIND WARNING REMAINS IN EFFECT UNTIL MIDNIGHT MST TONIGHT.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 35 TO 50 MPH WITH GUSTS
UP TO AROUND 65 MPH WILL CONTINUE TO OCCUR THROUGH THIS EVENING.
AREAS OF BLOWING DUST CAN BE EXPECTED...CREATING VERY POOR TRAVEL
CONDITIONS DUE TO LIMITED VISIBILITY...INCLUDING ALONG INTERSTATE
40 BETWEEN WINSLOW AND THE NEW MEXICO BORDER.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
WINSLOW ..... 69 MPH.
SHOW LOW ..... 49 MPH.
SAINT JOHNS ..... 61 MPH.
SANDERS ..... 68 MPH.
PETRIFIED FOREST ..... 60 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...

A HIGH WIND WARNING MEANS A HAZARDOUS HIGH WIND EVENT IS EXPECTED
OR OCCURRING...WITH SUSTAINED WIND SPEEDS GREATER THAN 40 MPH OR
GUSTS GREATER THAN 58 MPH. WINDS THIS STRONG CAN CAUSE PROPERTY
DAMAGE. CONTINUE TO MONITOR THE LATEST FORECASTS. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
&&
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AZZ004>006-009-040300-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0300Z/
KAIBAB PLATEAU-MARBLE AND GLEN CANYONS-GRAND CANYON COUNTRY-
NORTHEAST PLATEAUS AND MESAS HWY 264 NORTHWARD-
INCLUDING THE CITIES OF...JACOB LAKE...FREDONIA...PAGE...
LEES FERRY...GRAND CANYON VILLAGE...SUPAI...NORTH RIM...
KEAMS CANYON...KAIBITO
250 PM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS
OF 45 TO 55 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING.
THERE IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
GRAND CANYON ..... 55 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ010-011-039-040500-
/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0500Z/
CHINLE VALLEY-CHUSKA MOUNTAINS AND DEFIANCE PLATEAU-
BLACK MESA AREA-
INCLUDING THE CITIES OF...CANYON DE CHELLY...CHINLE...KAYENTA...
WINDOW ROCK...GANADO...NAVAJO N.M.
250 PM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 10 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 10 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS
OF 45 TO 50 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING.
THERE IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
WINDOW ROCK ..... 54 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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AZZ008-018-037-038-040300-

/O.CON.KFGZ.WI.Y.0009.000000T0000Z-090404T0300Z/
YAVAPAI COUNTY MOUNTAINS-NORTHERN GILA COUNTY-
YAVAPAI COUNTY VALLEYS AND BASINS-OAK CREEK AND SYCAMORE CANYONS-
INCLUDING THE CITIES OF...PRESCOTT...SELIGMAN...ASH FORK...
PAYSON...STRAWBERRY...YOUNG...COTTONWOOD...CAMP VERDE...
CORDES JUNCTION...BAGDAD...SEDONA
250 PM MST FRI APR 3 2009
...WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING...
A WIND ADVISORY REMAINS IN EFFECT UNTIL 8 PM MST THIS EVENING.
A STORM SYSTEM APPROACHING THE REGION IS BRINGING ANOTHER ROUND
OF STRONG WINDS TODAY. SOUTHWEST WINDS OF 25 TO 35 MPH WITH GUSTS
OF 45 TO 55 MPH WILL CONTINUE TO OCCUR INTO EARLY THIS EVENING.
THERE IS ALSO THE POTENTIAL FOR AREAS OF BLOWING DUST...CREATING
POOR TRAVEL CONDITIONS DUE TO LIMITED VISIBILITY.
PEAK WIND GUSTS REPORTED AS OF 230 PM MST THIS AFTERNOON
INCLUDE...
PRESCOTT ..... 60 MPH.
SELIGMAN ..... 71 MPH.
SEDONA ..... 51 MPH.
PRECAUTIONARY/PREPAREDNESS ACTIONS...
A WIND ADVISORY MEANS THAT SUSTAINED WINDS OF 30 TO 39 MPH...OR
GUSTS FROM 40 TO 57 MPH...ARE EXPECTED. WINDS THIS STRONG CAN
MAKE DRIVING DIFFICULT...ESPECIALLY FOR HIGH PROFILE VEHICLES.
CONSIDER SECURING LOOSE BELONGINGS ON YOUR PROPERTY. ADDITIONAL
WEATHER INFORMATION IS ON THE WEB AT WEATHER.GOV/FLAGSTAFF.
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