

To: Stakeholders  
 From: Scott DiBiase, Pinal County Air Quality  
 Date: 2/13/2018

**DRAFT** 2017 Pinal County PM<sub>10</sub> & PM<sub>2.5</sub> Exceedances **DRAFT**

**\*DRAFT\* Summary of 2017 24-hour Average PM<sub>10</sub> Exceedance Day(s) by Monitoring Site**

Monitoring Site - AQS # (POC))	# PM <sub>10</sub> 24-hr Average Exceedances				Total Exceedances
	Related to Wind	Related to Stagnation	Related to Combination of windy and stagnant conditions	Related to Transport	
Casa Grande - 04-021-3001(3)	1				1
Combs - 04-021-3009 (3)	1			1	2
Eloy – 04-021-3014 (1) & (3)	1	1		1	3
Hidden Valley – 04-021-3015 (3)	1	31	6		38
Maricopa – 04-021-3010 (3)	2				2
Pinal Air Park – 04-021-3007 (3)					
PCH – 04-021-3011 (3)	7	1		2	10
Stanfield – 04-021-3008 (3)	9	2	1	1	13

**\*DRAFT\* Summary of 2017 24-hour Average PM<sub>2.5</sub> Exceedance Day(s) by Monitoring Site**

Monitoring Site - AQS # (POC))	# PM <sub>10</sub> 24-hr Average Exceedances				Total Exceedances
	Related to Wind	Related to Stagnation	Related to Combination of windy and stagnant conditions	Related to Transport	
Casa Grande - 04-021-3001(3)					
Hidden Valley – 04-021-3015 (3)		11	1		12

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\*Data preliminary – subject to change \*

Date	Day of Week	Site	AQS #	PM <sub>10</sub> 24-hr Average Concentration (ug/m <sup>3</sup> )	PM <sub>2.5</sub> 24-hr Average Concentration (ug/m <sup>3</sup> )	Weather Type (Cold Front, Monsoon, etc.)	Exceedance(s) Related to Wind, Stagnation, Combo <sup>i</sup> , Transport	AQI Forecast <sup>ii</sup> /Dust Risk Forecast <sup>iii</sup>
4/13/17	Thu	Hidden Valley	04-021-3015	163	28.7	High pressure (Max. wind 22 mph, Max. sustained wind 13 mph)	Stagnation	Moderate/Moderate
4/20/17	Thu	Hidden Valley	04-021-3015	175	22.4	High pressure (Max. wind 20 mph, Max. sustained wind 9 mph)	Stagnation	Moderate/Moderate
<b>4/28/17</b>	<b>Fri</b>	<b>Stanfield</b>	<b>04-021-3008</b>	<b>205</b>	<b>n/a</b>	<b>Trough (Max. wind 30 mph)<sup>1</sup></b>	<b>Wind</b>	<b>Moderate/High</b>
5/1/17	Mon	Hidden Valley	04-021-3015	187	21.0	High pressure (Max. wind 13 mph, Max. sustained wind 6 mph)	Stagnation	Moderate/High
5/3/17	Wed	Hidden Valley	04-021-3015	155	26.9	High pressure (Max. wind 19 mph, Max. sustained wind 12 mph)	Stagnation	USG/High
5/4/17	Thu	Hidden Valley	04-021-3015	121.5	57.5	High pressure (Max. wind 14 mph, Max. sustained wind 6 mph)	Stagnation	USG/High
5/6/17	Sat	Stanfield	04-021-3008	294	n/a	Upper low/Cold Front (Max. wind 36 mph, Max. sustained wind 22 mph)	Wind	USG/High
		PCH	04-021-3011	206				
		Maricopa	04-021-3010	156				
5/30/17	Tue	PCH	04-021-3011	179	n/a	Outflows (Max. wind 40 mph, Max. sustained wind 17 mph)	Wind	Moderate/Moderate
6/7/17	Wed	Hidden Valley	04-021-3015	217	34.9	High pressure (Max. wind 20 mph, Max. sustained wind 13 mph)	Stagnation	Moderate/Moderate

<sup>1</sup> Casa Grande and Apache Junction Max. wind speeds were 34 mph

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6/14/17	Wed	Hidden Valley	04-021-3015	193	26.2	High pressure (Max. wind 14 mph, Max. sustained wind 7 mph)	Stagnation	Moderate/Moderate
6/15/17	Thu	Hidden Valley	04-021-3015	251	26.8	High pressure (Max. wind 13 mph, Max. sustained wind 7 mph)	Stagnation	Moderate/Moderate
6/20/17	Tue	Hidden Valley	04-021-3015	174	32.8	High pressure (Max. wind 14 mph, Max. sustained wind 9 mph)	Stagnation	Moderate/High
6/25/17	Sun	Hidden Valley	04-021-3015	132.1	38.2 <sup>iv</sup>	High pressure (Max. wind 22 mph, Max. sustained wind 13 mph)	Stagnation	Moderate/High
6/26/17	Mon	Hidden Valley	04-021-3015	174	39.6	High pressure (Max. wind 20 mph, Max. sustained wind 11 mph)	Stagnation	Moderate/High
6/30/17	Fri	Hidden Valley	04-021-3015	200	36.6	High pressure (Max. wind 17 mph, Max. sustained wind 8 mph)	Stagnation	Moderate/Moderate
7/7/17	Fri	Hidden Valley	04-021-3015	225	31.0	Monsoon/Outflows (Max. wind 38 mph, Max. sustained wind 9 mph)	Combo	USG/High
		Stanfield	04-021-3008	158	n/a			
7/10/17	Mon	Hidden Valley	04-021-3015	148	37.8	Monsoon/Outflows (Max. wind 26 mph, Max. sustained wind 17 mph)	Combo	Moderate/Moderate

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7/14/17	Fri	PCH	04-021-3011	232	n/a	Monsoon/Outflows (Max. wind 44 mph <sup>2</sup> , Max. sustained wind 18 mph)	Wind	Moderate/Moderate
		Hidden Valley	04-021-3015	177	11.9			
7/15/17	Sat	PCH	04-021-3011	476	n/a	Monsoon/Outflows (Max. wind 51 mph <sup>3</sup> , sustained wind 45 mph)	Wind	Moderate/High
		Stanfield	04-021-3008	328				
		Casa Grande	04-021-0001	226	23.7			
8/4/17	Fri	Stanfield	04-021-3008	213	n/a	Monsoon/Outflows (Max. wind 52 mph <sup>3</sup> , Sustained wind 23 mph)	Wind	Good/Low
8/7/17	Mon	Hidden Valley	04-021-3015	161	26.2	High Pressure (Max. wind 15 mph, Max. sustained wind 6 mph)	Stagnation	Moderate/Moderate
8/8/17	Tue	Hidden Valley	04-021-3015	186	34.6	High Pressure (Max. wind 12 mph, Max. sustained wind 5 mph)	Stagnation	Moderate/Moderate
8/10/17	Thu	PCH	04-021-3011	194		Monsoon/Outflows (Max. wind 35 mph <sup>4</sup> )	Wind	USG/High
		Stanfield	04-021-3008	210	n/a			
8/20/17	Sun	Hidden Valley	04-021-3015	181	27.8	High pressure (Max. wind 16 mph, Max. sustained wind 8 mph)	Stagnation	Moderate/Low

<sup>2</sup> Max. wind gust 38 mph at Casa Grande. Max. sustained wind 31 mph at Casa Grande

<sup>3</sup> At Casa Grande Airport

<sup>4</sup> At Hidden Valley

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8/26/17	Sat	Hidden Valley	04-021-3015	193	26.7	High Pressure (Remote outflows in evening) (Max. wind 23 <sup>5</sup> mph, Max. sustained wind 8 mph)	Combo	Moderate/ Moderate
8/28/17	Mon	Hidden Valley	04-021-3015	222	26.0	AM Stagnation/PM Outflows (Max. wind 31 mph, Max. sustained wind 15 mph)	Combo	USG/High
		Stanfield	04-021-3008	172		PM Outflows (Max. wind 26 mph)	Wind	Mod/High
8/30/17	Wed	Hidden Valley	04-021-3015	188	30.0	High Pressure (Max. wind 16 mph, Max. sustained wind 9 mph)	Stagnation	USG/High
8/31/17	Thu	Hidden Valley	04-021-3015	157	23.6	High Pressure (Max. wind 19 mph, Max. sustained wind 9 mph)	Stagnation	USG/High
9/6/17	Wed	Hidden Valley	04-021-3015	230	37.0	High Pressure (Max. wind 19 mph, Max. sustained wind 8 mph)	Stagnation	USG/High

<sup>5</sup> Apache Junction 8/26/17 maximum wind speed was 32 mph. Stanfield maximum wind speed on 8/26/17 was 27 mph

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9/7/17	Thu	PCH	04-021-3011	416		PM Outflows (Max. wind 55 mph)	Wind	Mod/High
		Stanfield	04-021-3008	308		PM Outflows (Max. wind 36 mph)	Wind	Mod/High
		Maricopa	04-021-3010	226			Wind	Mod/High
		Hidden Valley	04-021-3015	173	32.1	AM Stagnation/PM Outflows (Max. wind 24 mph)	Combo	USG/High
		Combs	04-021-3009	172			Wind	Mod/High
		Eloy	04-021-3014	168				
9/14/17	Thu	Stanfield	04-021-3008	283		Upper low/Cold Front (Max. wind 36 <sup>6</sup> mph)	Wind	USG/High
		PCH	04-021-3011	190			Wind	USG/High
9/18/17	Mon	Hidden Valley	04-021-3015	164	19.6	Zonal Flow (Max. wind 23 mph, Max. sustained wind 13 mph)	Stagnation	Moderate/Moderate
9/26/17	Tue	Hidden Valley	04-021-3015	177	29.8	Upper low (Max. wind 15 mph, sustained wind 8 mph)	Stagnation	Moderate/Moderate
9/30/17	Sat	Hidden Valley	04-021-3015	186	23.7	Zonal Flow (Max. wind 13 mph, Max. sustained wind 7 mph)	Stagnation	Moderate/High
10/7/17	Sat	Hidden Valley	04-021-3015	229	38.5	Zonal Flow (Max. wind 11 mph, Max. sustained wind 6 mph)	Stagnation	USG/High

<sup>6</sup> Casa Grande

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10/8/17	Sun	Hidden Valley	04-021-3015	182	n/a	Zonal Flow (Max. wind 18 mph, Max. sustained wind 10 mph)	Stagnation	Moderate/High
10/13/17	Fri	Hidden Valley	04-021-3015	179	24.8	Zonal Flow (Max. wind 12 mph, Max. sustained wind 6 mph)	Stagnation	Moderate/High
10/15/17	Sun	Stanfield	04-021-3008	158	n/a	High pressure (Max. wind 11 mph)	Stagnation	Moderate/High
10/18/17	Wed	Hidden Valley	04-021-3015	116	38.6	Trough (Max. wind 12 mph, Max. sustained wind 7 mph)	Stagnation	Moderate/High
10/19/17	Thu	Hidden Valley	04-021-3015	223	25.0	Trough (Max. wind 10 mph, Max. sustained wind 6 mph)	Stagnation	Moderate/High
10/21/17	Sat	PCH	04-021-3011	205	n/a	Trough (Max. wind 15 mph, Max. sustained wind 8 mph)	Transport	Moderate/ Moderate
		Stanfield	04-021-3008	161	n/a			
		Casa Grande	04-021-0101	160	21.3			
		Eloy	04-021-3014	160	n/a			
10/24/17	Tue	Hidden Valley	04-021-3015	246	32.2	Pressure Gradient (Max. wind 26 mph, Max. sustained wind 10 mph)	Combo	USG/High
10/26/17	Thu	Hidden Valley	04-021-3015	181	31.0	High pressure (Max. wind 17 mph, Max. sustained wind 10 mph)	Stagnation	Moderate/ Moderate

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11/13/17	Mon	Hidden Valley	04-021-3015	213	38.5	High pressure (Max. wind 7 mph, Max. sustained wind 3 mph)	Stagnation	Moderate/Moderate
11/14/17	Tue	Hidden Valley	04-021-3015	217	36.6	High pressure (Max. wind 11 mph, Max. sustained wind 6 mph)	Stagnation	Moderate/Moderate
11/16/17	Thu	Hidden Valley	04-021-3015	197	40.2	High pressure (Max. wind 7 mph, Max. sustained wind 4 mph)	Stagnation	USG/High
11/17/17	Fri	Hidden Valley	04-021-3015	174	22.8	Trough (Max. wind 20 mph, Max. sustained wind 11 mph)	Stagnation	Moderate/Moderate
11/27/17	Mon	Hidden Valley	04-021-3015	155	18.2	Trough (Max. wind 18 mph, Max. sustained wind 9 mph)	Combo	Moderate/Moderate
11/28/17	Tue	PCH	04-021-3011	162	N/A	High pressure (Max. wind 9 mph)	Transport <sup>v</sup>	Moderate/High
11/29/17	Wed	Hidden Valley	04-021-3015	168	21.5	High Pressure (Max. wind 11 mph)	Stagnation	Moderate/High
		Stanfield	04-021-3008	158	N/A			
11/30/17	Thu	Hidden Valley	04-021-3015	169	23.2	High Pressure (Max. wind 8 mph)	Stagnation	USG/High
		Eloy	04-021-3014	165	N/A			Mod/High
12/1/17	Fri	PCH	04-021-3011	185	N/A	Zonal Flow (Max wind 10 mph)	Stagnation	USG/High
		Hidden Valley	04-021-3015	175	42			

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<b>Date</b>	<b>Day of Week</b>	<b>Site</b>	<b>AQS #</b>	<b>PM<sub>10</sub> 24-hr Average Concentration (ug/m<sup>3</sup>)</b>	<b>PM<sub>2.5</sub> 24-hr Average Concentration (ug/m<sup>3</sup>)</b>	<b>Weather Type (Cold Front, Monsoon, etc.)</b>	<b>Exceedance(s) Related to Wind, Stagnation, Combo<sup>i</sup>, Transport</b>	<b>AQI Forecast<sup>ii</sup>/ Dust Risk Forecast<sup>iii</sup></b>
<b>12/10/17</b>	<b>Sun</b>	<b>Stanfield</b>	<b>04-021-3008</b>	<b>264</b>	<b>N/A</b>	<b>Pressure Gradient (Max. wind 22 mph)</b>	<b>Wind</b>	<b>Moderate/Moderate</b>

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**Bold text means the PM<sub>10</sub> and/or PM<sub>2.5</sub> data is going to be flagged as exceptional/natural event in AQS**  
ADEQ flagged exceptional/natural event

<sup>i</sup> Combination of stagnation and winds (i.e. light winds in the morning with elevated PM<sub>10</sub> levels and higher winds in afternoon/evening with elevated PM<sub>10</sub> levels attributed to windblown dust).

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<sup>ii</sup> Air Quality Index (AQI) forecast issued by Pinal County Air Quality – AQI Categories (Good (G), Moderate (M), Unhealthy for Sensitive Groups (USG), Unhealthy (U), etc.). PM10 Health Watch (HW) is for forecasted PM10 AQI levels of 90-100 on the AQI scale. PM10 High Pollution Advisory (HPA) is for forecasted AQI levels of 101+.

<sup>iii</sup> 2014 Adopted legislation (HB2125) – A West Pinal County PM10 Nonattainment Area Dust Risk Forecast prepared by Pinal County Air Quality and issued by ADEQ – Risk categories (Low (L), Moderate (M), High (H)).

<sup>iv</sup> Hidden Valley PM<sub>2.5</sub> BAM

<sup>v</sup> Cold front late on 11/27/17 brought transported PM10 from Southern California and SW Arizona. Stagnant conditions on 11/28/17 kept the transported particulates in place and local dust generation added to the PM10 concentrations.

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