

To: Stakeholders
 From: Scott DiBiase, Pinal County Air Quality
 Date: 12/2/2020

DRAFT 2020 Pinal County PM₁₀ & PM_{2.5} Exceedances **DRAFT**

***DRAFT* Summary of 2020 24-hour Average PM₁₀ Exceedance Day(s) by Monitoring Site**

Monitoring Site - AQS # (POC))	# PM ₁₀ 24-hr Average Exceedances				Total Exceedances
	Related to Wind	Related to Stagnation	Related to Combination of windy and stagnant conditions	Related to Transport	
Apache Junction – 04-021-3002					
Casa Grande - 04-021-3001(3)	1				1
Combs - 04-021-3009 (3)					
Eloy – 04-021-3014 (1) & (3)	2				2
Hidden Valley – 04-021-3015 (3)	1	49	7		57
Maricopa – 04-021-3016 (3)	3				3
Pinal Air Park – 04-021-3007 (3)					
PCH – 04-021-3011 (3)	1				1
Stanfield – 04-021-3008 (3)	3	1			4

***DRAFT* Summary of 2020 24-hour Average PM_{2.5} Exceedance Day(s) by Monitoring Site**

Monitoring Site - AQS # (POC))	# PM ₁₀ 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)	1	17	1		19

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*Data preliminary – subject to change *

Date	Day of Week	Site	AQS #	PM ₁₀ 24-hr Average Concentration (ug/m ³)	PM _{2.5} 24-hr Average Concentration (ug/m ³)	Weather Type (Cold Front, Monsoon, etc.)	Exceedance(s) Related to Wind, Stagnation, Combo ⁱ , Transport	AQI Forecast ⁱⁱ / Dust Risk Forecast ⁱⁱⁱ
5/6/20	Wed	Hidden Valley	04-021-3015	196.3	35.1	High Pressure (Max. wind 15 mph)	Stagnation	Moderate/ Moderate
5/26/20	Tue	Hidden Valley	04-021-3015	176.8	21.4	High Pressure (Max. wind 11 mph)	Stagnation	Moderate/ Moderate
5/30/20	Sat	Hidden Valley	04-021-3015	186	27.9	High pressure/evening outflows (Max. wind 49 ¹ mph)	Combo	Moderate/ Moderate
6/3/20	Wed	Hidden Valley	04-021-3015	169	23.3	High pressure (Max. wind 15 mph)	Stagnation	Moderate/ Moderate
6/10/20	Wed	Hidden Valley	04-021-3015	213	28.8	High pressure (Max. wind 11 mph)	Stagnation	Moderate/ Moderate
6/13/20	Sat	Hidden Valley	04-021-3015	159	20.9	Trough (Max. wind 23 mph)	Stagnation	Moderate/ Moderate
6/25/20	Thu	Hidden Valley	04-021-3015	168.1	21.7	High pressure (Max. wind 19 mph)	Stagnation	Moderate/ Moderate
6/26/20	Fri	Hidden Valley	04-021-3015	190	43.0	Open wave (Max. wind 17 mph)	Stagnation	Moderate/ Moderate
7/2/20	Thu	Hidden Valley	04-021-3015	200	48.0	High pressure (Max. wind 26 mph)	Stagnation	Moderate/ High
7/15/20	Wed	Hidden Valley	04-021-3015	161	36.0	High pressure (Max. wind 17 mph)	Stagnation	Moderate/ Moderate
7/16/20	Thu	Hidden Valley	04-021-3015	220	48.6	High pressure (Max. wind 16 mph)	Stagnation	USG/High
7/22/20	Wed	Hidden Valley	04-021-3015	199	35.0	Monsoon/Outflows (Max. wind 17 mph)	Combo	Moderate/ Moderate

¹ 49 mph gust in Randolph, 35 mph gust in San Tan Valley (SRP – Quail), 28 mph gust at Hidden Valley

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7/23/20	Thu	Hidden Valley	04-021-3015	158	20.7	Monsoon/Outflows (Max. wind 25 mph)	Combo	USG/High
7/25/20	Sat	Hidden Valley	04-021-3015	159	27.2	High pressure (Max. wind 13 mph)	Stagnation	Moderate/Moderate
7/27/20	Mon	Hidden Valley	04-021-3015	162	32.2	High pressure (Max. wind 13 mph)	Stagnation	Moderate/Moderate
8/4/20	Tue	Hidden Valley	04-021-3015	137	39.2	High pressure (Max. wind 14 mph)	Stagnation	Moderate/Moderate
8/11/20	Tue	Stanfield	04-021-3008	158	n/a	Outflow winds (Max. wind 41 mph)	Wind	Moderate/Moderate
8/14/20	Fri	Hidden Valley	04-021-3015	180	27.0	High pressure (Max. wind 14 mph)	Stagnation	Moderate/Moderate
8/16/20²	Sun	Eloy	04-021-3014	1,228	n/a	Outflow winds (Max. wind 53³ mph)	Wind	USG/High
		Hidden Valley	04-021-3015	97	49.7			
8/17/20	Mon	Maricopa	04-021-3016	249	n/a	Outflow winds (Max. wind 34 mph)	Wind	Moderate/High
		Hidden Valley	04-021-3015	217	38.2		Combo	USG/High
8/25/20	Tue	Hidden Valley	04-021-3015	157	39.3	High pressure (Wildfires) (Max. wind 8 mph)	Stagnation	Moderate/Moderate

² Several PM10 monitors in Maricopa County exceeded – Central Phoenix, Salt River High School, Osborn & Alma School, South Scottsdale, St. Johns, West 43rd and West Chandler; Additionally, Casa Blanca and Sacaton in Pinal County also exceeded the PM10 NAAQS.

³ NWS Local Storm report (10:49 pm, Sunday, August 16, 2020), 5:43 p.m. NON-TSTM WND GST 5 NNW CASA GRANDE 32.95N 111.77W, M53 MPH PINAL AZ AWOS, OUTFLOW WINDS ASSOCIATED WITH DUST STORM. AWOS STATION KCGZ CASA GRANDE.

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8/26/20	Wed	Hidden Valley	04-021-3015	126	36.8	High pressure (Wildfires) (Max. wind 15 mph)	Stagnation	Moderate/ Moderate
9/4/20	Fri	Hidden Valley	04-021-3015	162	25.3	High pressure (Max. wind 10 mph)	Stagnation	Moderate/ Moderate
9/12/20	Sat	Hidden Valley	04-021-3015	172	30.3	High pressure (Max. wind 7 mph)	Stagnation	Moderate/ Moderate
9/17/20	Thu	Hidden Valley	04-021-3015	190	30.2	High pressure (Max. wind 11 mph)	Stagnation	USG/ High
9/18/20	Fri	Hidden Valley	04-021-3015	162	29.6	High pressure (Max. wind 13 mph)	Stagnation	USG/ High
9/19/20	Sat	Hidden Valley	04-021-3015	168	43.7	High pressure (Max. wind 13 mph)	Stagnation	USG/ High
9/24/20	Thu	Hidden Valley	04-021-3015	165	31.3	High pressure (Max. wind 12 mph)	Stagnation	Moderate/ Moderate
9/28/20	Mon	Hidden Valley	04-021-3015	246	37.8	High pressure (Max. wind 9 mph)	Stagnation	USG/ High
9/29/20	Tue	Hidden Valley	04-021-3015	181	26.7	Pressure gradient (Max. wind 18 mph)	Combo	USG/High
9/30/20	Wed	Hidden Valley	04-021-3015	281	67.3	High pressure (Max. wind 9 mph)	Stagnation	USG/High
10/1/20	Thu	Hidden Valley	04-021-3015	224	47.3	High pressure (Max. wind 9 mph)	Stagnation	USG/High
10/2/20	Fri	Hidden Valley	04-021-3015	199	28.7	High pressure (Max. wind 8 mph)	Stagnation	USG/High

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10/4/20	Sun	Hidden Valley	04-021-3015	175	34.6	High pressure (Max. wind 8 mph)	Stagnation	Moderate/Moderate
10/5/20	Mon	Hidden Valley	04-021-3015	192	32.6	High pressure (Max. wind 10 mph)	Stagnation	USG/High
10/6/20	Tue	Hidden Valley	04-021-3015	231	39.0	High pressure (Max. wind 9 mph)	Stagnation	USG/High
10/7/20	Wed	Hidden Valley	04-021-3015	253	43.6	High pressure (Max. wind 13 mph)	Stagnation	USG/High
10/8/20	Thu	Hidden Valley	04-021-3015	215	32.4	High pressure (Max. wind 15 mph)	Stagnation	USG/High
10/9/20	Fri	Hidden Valley	04-021-3015	160	29.2	High pressure (Max. wind 15 mph)	Stagnation	USG/High
10/12/20	Mon	Hidden Valley	04-021-3015	244	54.5	High pressure (Max. wind 8 mph)	Stagnation	USG/High
10/13/20	Tue	Hidden Valley	04-021-3015	245	33.0	High pressure (Max. wind 10 mph)	Stagnation	Moderate/Moderate
10/14/20	Wed	Hidden Valley	04-021-3015	242	31.7	High pressure (Max. wind 12 mph)	Stagnation	USG/High
10/15/20	Thu	Hidden Valley	04-021-3015	160	44.2	High pressure (Max. wind 12 mph)	Stagnation	USG/High
10/16/20	Fri	Hidden Valley	04-021-3015	155	21.1	High pressure (Max. wind 14 mph)	Stagnation	USG/High
10/18/20	Sun	Hidden Valley	04-021-3015	248	37.2	High pressure (Max. wind 10 mph)	Stagnation	Moderate/Moderate
10/19/20	Mon	Hidden Valley	04-021-3015	279	40.6	High pressure (Max. wind 9 mph)	Stagnation	USG/High

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10/20/20	Tue	Hidden Valley	04-021-3015	240	34.9	High pressure (Max. wind 8 mph)	Stagnation	USG/High
10/21/20	Wed	Hidden Valley	04-021-3015	189	24.0	High pressure (Max. wind 11 mph)	Stagnation	USG/High
10/22/20	Thu	Hidden Valley	04-021-3015	205	32.9	High pressure (Max. wind 11 mph)	Stagnation	USG/High
10/26/20	Mon	Maricopa	04-021-3016	269	n/a	Cold Front (Max. wind 31 mph ^{iv})	Wind	Moderate/Moderate
		Stanfield	04-021-3008	181	n/a			
10/28/20	Wed	Hidden Valley	04-021-3015	194	18.0	High pressure (Max. wind 9 mph)	Stagnation	USG/High
11/1/20	Sun	Hidden Valley	04-021-3015	172	19.3	Upper level low (Max. wind 20 mph ⁴)	Combo	USG/High
11/5/20	Thu	Hidden Valley	04-021-3015	164	24.9	High pressure (Max wind 16 mph ⁵)	Stagnation	USG/High
11/6/20	Fri	Hidden Valley	04-021-3015	263	25.5	Approaching Upper Low (Max. wind 15 mph)	Combo ⁶	USG/High

⁴ 20 mph @ PCH, 9 mile/hour max. wind at Hidden Valley

⁵ 16 mph @ Apache Junction, 8 mph max wind at Hidden Valley

⁶ Winds/blowing dust arrived late evening, however the early morning stagnation related PM10 spikes already surpassed the 24-hour PM10 NAAQS, excluding the late evening winds. Therefore not flagged as exceptional event.

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11/7/20	Sat	Eloy	04-021-3014	624	n/a	Cold Front (Max. wind 44 mph ⁷)	Wind	USG/High
		Maricopa	04-021-3016	263	n/a			
		Casa Grande	04-021-3001	219	24.6			
		PCH	04-021-3011	209	n/a			
		Stanfield	04-021-3008	205	n/a			
		Hidden Valley	04-021-3015	172	14.6			
11/12/20	Thu	Hidden Valley	04-021-3015	157	17.8	Approaching Open Wave (Max. wind 9 mph)	Stagnation	Moderate/Low
11/17/20	Tue	Hidden Valley	04-021-3015	191	20.4	High pressure (Max. wind 12 mph)	Stagnation	Moderate/Moderate
11/18/20	Wed	Hidden Valley	04-021-3015	157	19.5	High pressure (Max. wind 11 mph)	Stagnation	Moderate/Moderate
11/21/20	Sat	Hidden Valley	04-021-3015	184	33.7	High pressure (Max. wind 11 mph)	Stagnation	Moderate/Moderate
11/22/20	Sun	Stanfield	04-021-3008	164	n/a	High pressure (Max. wind 8 mph)	Stagnation	Moderate/Moderate
11/23/20	Mon	Hidden Valley	04-021-3015	157	33.2	Approaching Upper Low (Max. wind 19 mph) ⁸	Stagnation	Moderate/Moderate
11/25/20	Wed	Hidden Valley	04-021-3015	189	22	High pressure (Max. wind 8 mph)	Stagnation	USG/High

⁷ Quail (SRP) in San Tan Valley

⁸ Max. wind @ PCH, 15 mph wind speed max at HV. The highest PM10 levels at HV were during the morning hours (light winds). During the afternoon breeziness, lowest PM10 levels at HV. Therefore not considered wind influenced.

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12/1/20	Tue	Hidden Valley	04-021-3015	179	16.1	High Pressure (Max. wind 10 mph)	Stagnation	Moderate/ Moderate

Bold text means the PM₁₀ and/or PM_{2.5} data is going to be flagged as exceptional/natural event in AQS
ADEQ flagged exceptional/natural event

ⁱ Combination of stagnation and winds (i.e. light winds in the morning with elevated PM₁₀ levels and higher winds in afternoon/evening with elevated PM₁₀ levels attributed to windblown dust).

ⁱⁱ 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 High Pollution Advisory (HPA) is for forecasted AQI levels of 101+.

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

^{iv} Ak-Chin Regional Airport

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