6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R9-OAR-2018-0821; FRL-10001-65-Region 9]

Determination of Attainment by the Attainment Date for the 2008 Ozone National Ambient Air Quality Standards; Phoenix-Mesa, Arizona

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is taking final action to determine that the Phoenix-Mesa ozone nonattainment area ("Phoenix NAA"), which is classified as "Moderate" for the 2008 ozone National Ambient Air Quality Standards (NAAQS or "standards"), attained the NAAQS by the Moderate area attainment date of July 20, 2018. This determination is based on complete, quality-assured, and certified data for 2015-2017. This final action is necessary to fulfill the EPA's statutory obligation to determine whether ozone nonattainment areas attained the NAAQS by the applicable attainment date.

DATES: This rule will be effective on [**Insert date 30 days after date of publication in the *Federal Register***].

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-R09-OAR-2018-0821. All documents in the docket are listed on the *https://www.regulations.gov* web site. Although listed in the index, some information is not publicly available, e.g., Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be

publicly available only in hard copy form. Publicly available docket materials are available through *https://www.regulations.gov*, or please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section for additional availability information.

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SUPPLEMENTARY INFORMATION: Throughout this document, "we," "us," and "our" refer to the EPA.

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I. Proposed Action

On June 13, 2019 (84 FR 27566), the EPA proposed to determine that the Phoenix NAA attained the 2008 ozone standard[1] by the Moderate area attainment date of July 20, 2018, based on complete, quality-assured, and certified ambient air quality monitoring data for the 2015-2017 monitoring period. Based on our proposed finding of attainment by the applicable attainment date, we also proposed to determine that the CAA requirement for the State Implementation Plan (SIP) to provide for contingency measures to be implemented in the event the area fails to attain ("attainment contingency measures") would no longer apply to the Phoenix NAA. Our proposed action contains more information on our determinations.

II. Public Comments and EPA Responses

[1] Since the primary and secondary 2008 ozone standards are identical, we hereinafter refer to "standards" in the singular. 73 FR 16436.

The EPA's proposed action provided a 30-day public comment period. During this period, we received comments from five commenters. We summarize the comments and provide our responses below.

Commenter #1: Arizona Center for Law in the Public Interest

Comment: Arizona Center for Law in the Public Interest (ACLIPI) noted that monitoring data from 2018 and 2019 show multiple exceedances of the 2008 ozone standard and concluded that the Phoenix NAA does not "actually" comply with the standard. ACLIPI asserted that "'paper compliance' with the 2008 ozone standard does not solve Phoenix's ongoing ozone pollution problem" and the "EPA's proposed action allows the State to avoid or significantly delay taking meaningful action to protect public health [which] contravenes the express policy of the Clean Air Act that 'protection of public health is the highest priority.'"

Response: CAA section 181(b)(2)(A) requires the EPA to determine whether an ozone nonattainment area (NAA) attained the standard by the applicable attainment date "based on the area's design value (*as of the attainment date*)."[2] The applicable attainment date for the Phoenix NAA for the 2008 ozone NAAQS is not later than July 20, 2018.[3] Because the design value for the 2008 ozone NAAQS is based on the three most recent, complete calendar years of data, attainment must be evaluated based on 2015-2017 data. Accordingly, we are not permitted to consider 2018 or 2019 data in evaluating whether the area attained by the applicable attainment date.

We note that the more recent monitoring data would be relevant if we were making a "clean data determination" and suspending attainment-related requirements for the Phoenix NAA

[2] CAA section 181(b)(2)(A) (emphasis added).
[3] 40 CFR 51.1103; 81 FR 26697, 26698.

under 40 CFR 51.1118. These data would also be relevant if we were redesignating the area to attainment under CAA section 107(d)(3). However, as explained in our proposal, we are not taking either of those actions at this time. Therefore, the designation and classification of the Phoenix NAA for the 2008 ozone NAAQS will remain Moderate nonattainment until such time as the EPA determines that the area meets the CAA requirements for redesignation to attainment. In order to redesignate the area to attainment, the EPA will have to determine, among other things, that the Phoenix NAA has continued to attain the NAAQS at the time of final redesignation, that the air quality improvement is due to permanent and enforceable emission reductions, and that the State of Arizona's ("State's") maintenance plan provides for maintenance of the NAAQS for at least ten years beyond redesignation.[4]

Finally, the commenter cited CAA section 319(b)(3)(A), which establishes five principles that the EPA must follow in developing implementing regulations for exceptional events, including that "protection of public health is the highest priority."[5] The regulatory provisions implementing this principle are found in 40 CFR 51.930, which requires air agencies requesting data exclusion to take appropriate and reasonable actions to protect public health from exceedances or violations of the NAAQS.[6] Specifically, agencies must promptly notify the public when the air quality exceeds or is expected to exceed the NAAQS, educate the public regarding steps they can take to minimize exposure, and provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air

[4] CAA section 107(d)(3)(E) and 175A(a).
[5] CAA section 319(b)(3)(A)(i).
[6] 40 CFR 51.930. See also 81 FR 68216, 68270 ("the regulatory requirements implementing [319(b)(3)(A)](i) and (iv) are found in 40 CFR 51.930, Mitigation of Exceptional Events").

quality standards caused by exceptional events.[7] The commenter has not identified whether or how it believes the State has failed to meet these requirements. Accordingly, we do not agree that the determination of attainment by the attainment date contravenes the principle that protection of public health is the highest priority.

Comment: ACLIPI noted that, in the proposed determination of attainment, the EPA excluded exceedances of the 2008 ozone standard on June 20, 2015 and July 7, 2017, based on the EPA's concurrence with the State's request to find that these exceedances were due to "exceptional events" under the EPA's Exceptional Events Rule. The commenter claimed that the Arizona Department of Environmental Protection's (ADEQ's) documentation does not support treating the June 20, 2015 exceedances as exceptional events because the documentation "does not convincingly establish any causal relationship between the Lake Fire and the June 2015 exceedances, much less a clear causal relationship."

Response: As indicated by the commenter, one of the required elements of an exceptional events demonstration is a showing that "there exists a clear causal relationship between the specific event and the monitored exceedance or violation."[8] This showing must be supported by analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times,[9] and may also be supported by other types of analyses.[10]

[7] Id. and 40 CFR 50.14(c)(1).
[8] 40 CFR 50.14(c)(3)(iv)(B). See also CAA section 319(b)(3)(B)(ii)("a clear causal relationship must exist between the measured exceedances of a national ambient air quality standard and the exceptional event").
[9] 40 CFR 50.14(c)(3)(iv)(C).
[10] 81 FR 68241, Table 1--Example Clear Causal Relationship Evidence and Analyses.

The EPA reviews the information and analyses in the air agency's demonstration package using a weight of evidence approach.[11] As explained in the preamble to revisions to the Exceptional Events Rule promulgated in 2016:

> . . . in applying a "weight of evidence" approach to reviewing individual exceptional events demonstrations, the EPA believes it is appropriate to consider all relevant evidence and qualitatively "weigh" this evidence based on its relevance to the Exceptional Events Rule criterion being addressed, the degree of certainty, its persuasiveness, and other considerations appropriate to the individual pollutant and the nature and type of event.

Therefore, the EPA considers a variety of evidence when evaluating whether there is a clear causal relationship between a specific event and the monitored exceedance or violation, and weighs the available evidence based on its relevance, degree of certainty, persuasiveness, and other appropriate considerations.

The EPA's "Guidance on the Preparation of Exceptional Events Demonstrations for Wildfire Events that May Influence Ozone Concentrations" (September 2016) (hereinafter "Wildfire Ozone Guidance" or "Guidance") recommends a tiered approach for addressing the clear causal relationship element:

> Tier 1 clear causal analyses should be used for wildfire events that cause clear O_3 impacts in areas or during times of year that typically experience lower O_3 concentrations, and are thus simpler and less resource intensive than analyses for other events. Tier 2 clear causal analyses are likely appropriate when the impacts of the wildfire on O_3 levels are less clear and require more supportive documentation than Tier 1 analyses. Tier 3 clear causal analyses should be used for events in which the relationship between the wildfire and the O_3 exceedance

[11] 81 FR 68242 (". . . the EPA will use a weight of evidence approach in reviewing submitted demonstrations and will consider the 'clear causal relationship' information, including the comparison to historical concentrations showing, along with evidence supporting the other Exceptional Events Rule criteria.") See also "Technical Support Document for EPA Concurrence On O_3 Exceedances Measured In The Phoenix-Mesa 2008 8-Hour O_3 Nonattainment Area on June 20, 2015 as Exceptional Events," (hereinafter "TSD"), 1.

> or violation is more complicated than the relationship in a Tier 2 analysis, and thus would require more supportive documentation than Tier 2 analyses.[12]

The Guidance describes the "key factors" and specific types of technical analyses that can be used to evaluate these factors in order to determine which tier a particular demonstration falls into and whether it meets the clear causal criterion.[13]

In this case, as part of the discussions between the EPA and ADEQ after the initial notification and during the air agency's demonstration development, the EPA found that the June 20, 2015 event did not meet all the key factors for a wildfire ozone Tier 1 or Tier 2 analysis. Therefore, the EPA and ADEQ agreed that additional evidence to support the clear causal demonstration (i.e., a Tier 3 analysis) was appropriate.[14] In accordance with this finding, ADEQ's documentation for the June 20, 2015 exceedances included additional evidence to support that (1) wildfire emissions were transported from the wildfire to the monitors; (2) wildfire emissions affected the monitors; and (3) wildfire emissions caused the ozone exceedances.[15] As described in further detail below, the EPA evaluated the relevance, persuasiveness, and certainty of this evidence and found that the weight of the evidence established the existence of a clear causal relationship between the Lake Fire and the June 20, 2015 exceedances.

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[12] Guidance, 4. This guidance uses "O_3" to refer to "ozone."
[13] Id. at 9-20.
[14] TSD, 8.
[15] Id. ADEQ's documentation for the June 20, 2015 exceedances consisted of three separate submittals: "State of Arizona Exceptional Event Documentation for Wildfire-Caused Ozone Exceedances on June 20, 2015 in the Maricopa Nonattainment Area," (September 2016) ("initial submittal"); "Addendum to: State of Arizona Exceptional Event Documentation for Wildfire-Caused Exceedances on June 20, 2015 in the Maricopa Nonattainment Area – September 2016; Additional Evidence that Ozone and Ozone Precursor Emissions From the Lake Fire Reached and Affected Ozone Monitors Within the Maricopa Nonattainment Area" (May 2018) ("first addendum"); and "Addendum to: State of Arizona Exceptional Event Documentation for Wildfire-Caused Exceedances on June 20, 2015 in the Maricopa Nonattainment Area – September 2016; Expanded Conceptual Model Linking Ozone and Ozone Precursors From the Lake Fire with the Ozone Exceedances in the Maricopa Nonattainment Area," (March 2019) ("second addendum").

In order to demonstrate that wildfire emissions were transported to the monitor, ADEQ's initial submittal presented a trajectory analysis using the HYbrid Single-Particle Lagrangian Integrated Trajectory model (HYSPLIT) and satellite imagery of smoke and National Oceanic and Atmospheric Administration (NOAA) smoke contours for light, medium, and heavy smoke.[16] The EPA found that these initial analyses "provided evidence that smoke was present over the nonattainment area on June 19, 2015, but did not provide evidence that the smoke was at ground level, nor that smoke was present over the nonattainment area on June 20, 2015."[17] However, the second addendum to the demonstration included additional analyses to clarify transport of wildfire emissions and mechanisms for mixing to ground level along "upper-air" and "lower-air" pathways, including updated HYSPLIT analyses, satellite imagery and data, water vapor and dew point analysis, and meteorological data regarding boundary layer depths in the nonattainment area on June 20, 2015.[18] The EPA evaluated these analyses and determined that, collectively, they adequately established that "emissions from the Lake Fire in California were transported to the nonattainment area and the affected monitoring sites and reached ground level on June 20, 2015."[19]

In order to demonstrate that the wildfire emissions affected the monitors, the initial submittal provided maps of daily maximum 8-hour average ozone concentrations from June 17 through June 21, 2015.[20] These maps showed a regional rise in ozone concentrations across much of Arizona on June 19 and 20, 2015, suggesting that factors affecting elevated ozone

[16] Id.
[17] Id. at 9.
[18] Id.
[19] Id. at 11.
[20] Id.

concentrations within the nonattainment area were regional in nature. The initial submittal also provided ozone diurnal profiles of the exceeding monitors on June 20, 2015. The first addendum supplemented this analysis by providing an expanded analysis of ozone diurnal hourly concentrations at the exceeding monitors for June 19 through 21, 2015, along with comparisons to historical hourly concentrations, which showed that ozone concentrations were at or above the 95th percentile values for several hours on June 20, 2015.[21] The initial submittal also provided an analysis of diurnal nitrogen dioxide (NO_2) concentrations, which the first addendum supplemented with an expanded statistical analysis of NO_2 similar to the expanded ozone analysis. In addition, the initial submittal also evaluated particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers ($PM_{2.5}$), which is much more commonly associated with fire emissions than NO_2, but found that $PM_{2.5}$ was not elevated within the nonattainment area prior to or during the exceedance day. To address the lack of elevated $PM_{2.5}$ observed in the nonattainment area, the initial submittal and first addendum examined speciation data for elemental carbon (EC) and organic carbon (OC).[22] After examining these analyses, we concluded that:

> Overall, the lack of elevated $PM_{2.5}$ in the nonattainment area raises questions about the extent to which wildfire emissions reached the ground and affected the monitor. However, the supplemental analyses showing elevated OC and relatively low EC/OC concentrations, and unusually elevated NO_2 and O_3 concentrations observed on a Saturday, along with the robust analysis of transport and mixing mechanisms described earlier in this document, ultimately support the conclusion that wildfire emissions reached the ground and affected measurements at the exceeding monitors on June 20, 2015.[23]

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[21] Id.

[22] $PM_{2.5}$ is made of many different chemical species, including EC and OC. Elevated OC concentrations and low EC/OC ratios are generally associated with biomass smoke and therefore indicate the presence of wildfire emissions. See first addendum, 10.

[23] Id. at 13.

The initial submittal and addenda also provided additional evidence to demonstrate that the wildfire emissions caused the ozone exceedances observed on June 20, 2015, including three "matching day" analyses that (1) compared days in 2010 through 2015 during the month of June with similar meteorological conditions to June 20, 2015; (2) compared the conditions of all exceedance days in 2010 through 2015 during the month of June in comparison to June 20, 2015; and (3) discussed the characteristics of June 20, 2015, as a rare Saturday exceedance.[24] We found that these analyses demonstrated the unusual nature of the June 20, 2015 event. We also found that, along with the previously described analyses, the matching day analyses sufficiently demonstrated a clear causal relationship between the emissions generated by the Lake Fire and the exceedances measured at the Phoenix area monitors.[25]

As explained in further detail in response to other comments elsewhere in this document, the commenter has not provided any evidence that undermines this finding that the weight of the evidence supports a clear causal relationship between the Lake Fire and the exceedances. Accordingly, we conclude that the weight of the evidence establishes that the clear causal criterion has been met for the June 20, 2015 event.

Comment: ACLIPI claimed that "there is nothing 'exceptional' about exceedances of the 2008 ozone standard at the monitors at issue" since "these monitors routinely register some of the highest ozone concentrations in the Phoenix NAA."

[24] Id. at 13-14.
[25] Id. at 14-15.

Response: The term "exceptional" in the context of exceptional events does not require that the concentrations be the highest observed at the monitoring sites. CAA section 319(b)(1)(A) defines an "exceptional event" as an event that:

> (i) affects air quality;
> (ii) is not reasonably controllable or preventable;
> (iii) is an event caused by human activity that is unlikely to recur at a particular location or a natural event; and
> (iv) is determined by the Administrator through the process established in the [Exceptional Events Rule] to be an exceptional event.[26]

A previous version of the Exceptional Events Rule required that, in addition to meeting these statutory elements criteria, states also submit evidence that the event was associated with a measured concentration in excess of normal historical fluctuations, including background.[27] However, in the 2016 revisions to the Rule, the EPA removed this requirement and replaced it with a requirement for states to provide analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times in support of the clear causal criterion.[28] The revised rule also provides that states are not required to prove a specific percentile point in the distribution of data.[29] In other words, "[t]here is no pass or fail threshold for the historical concentrations data presentation."[30]

Nonetheless, to facilitate development and evaluation of demonstrations for wildfire-influenced ozone exceedances, the EPA has suggested statistical benchmarks for comparing the event-related ozone concentration with non-event-related high ozone concentrations as part of

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[26] See also 40 CFR 50.1(j).
[27] 40 CFR 50.14(c)(3)(iv)(C)(2007 version).
[28] 40 CFR 50.14(c)(3)(iv)(C) (2017 version). See also 81 FR 68241-68245.
[29] 40 CFR 50.14(c)(3)(iv)(C).
[30] Wildfire Ozone Guidance, 10.

"Tier 2 key factor 2." [31] Specifically, for key factor 2, a state would show that the exceedance is either (1) in the 99th or higher percentile of the 5-year distribution of ozone monitoring data, or (2) one of the four highest ozone concentrations within 1 year (among those concentrations that have not already been excluded under the Exceptional Events Rule, if any).[32] If either of these two criteria is met, then the event-influenced data are generally considered to be high compared to other data at the monitoring site. [33]

In this case, as part of the Tier 2 key factor 2 analyses,[34] ADEQ demonstrated that five of the six monitors had daily maximum 8-hour average ozone concentrations during the event at or above the 99th percentile for the 5-year period, while one monitor (Pinnacle Peak) did not. However, the event ozone concentration at Pinnacle Peak was the third highest ozone concentration measured at the site in 2015.[35] Based on the concentrations observed at these monitors, the event exceedances meet Tier 2 key factor 2, and are therefore high relative to other data at the monitoring site.

Comment: The commenter asserted that the exceedances were caused by local conditions and that "if a wildfire smoke plume had transported to the Phoenix NAA and uniformly influenced its monitors, it would have caused abnormally high concentrations across the nonattainment area, or at least an atypical pattern of such concentrations," but "[i]nstead the

[31] Id. at 21.
[32] Id.
[33] Id.
[34] The June 20, 2015 event did not qualify for a Tier 2 analysis because it did not meet Tier 2 Factor 1. TSD, 8. However, the EPA recommends that, as part of a Tier 3 analysis, that states "explain how the events, monitor and exceedance compare" with the Tier 2 key factors. Guidance, 26.
[35] TSD, 8.

monitors that recorded the highest ozone concentrations were predictably located in the upslope/northeastern upslope portion."

Response: As noted in the Wildfire Ozone Guidance, ozone production is non-linear and therefore impacts of wildfire emissions on ozone can be difficult to predict. While an atypical pattern of exceedances could provide additional evidence to support that wildfire emissions affected ozone concentrations, the lack of such a pattern does not preclude a finding that wildfire emissions influenced a monitor. Similarly, an area-wide increase is not a necessary factor to demonstrate a clear causal relationship between the wildfire emissions and observed exceedances. The EPA evaluated other analyses and evidence provided in the demonstration and addenda and concluded that the weight of the evidence established a clear causal relationship between the Lake Fire and the June 20, 2015 exceedances.

Comment: The commenter claimed that "[t]here is nothing unusual about the fact that the June 2015 exceedances occurred on a Saturday" and that "[n]either ADEQ nor EPA has presented any support for the notion that high ozone concentrations on the weekend must have been affected by wildfire emissions, and that EPA cannot simply assume this to be true."

Response: ADEQ provided evidence that the characteristics of the June 20, 2015 Saturday exceedances were unique. ADEQ reviewed all Saturday exceedances at the six monitors during the month of June from 2010 to 2015 and found that there were only two other Saturdays where exceedances were measured. These two other Saturday exceedance days were preceded by higher exceedances on the day prior (Friday) as part of a multi-day event from the weekday. The June 20, 2015 exceedance, however, "is not a part of a prior episode event, and shows an increase of ozone from a Friday to Saturday," and "the event is unique when compared

to the prior six years of exceedance data and strongly suggests that an outside source of ozone or ozone precursor emissions caused the exceedances."[36] The EPA agreed that the exceedances were unusual, which points to a unique emissions source contributing to the exceedances, but did not claim that the unusual nature of these Saturday exceedances alone specifically identified wildfire emissions as the cause. Rather, the EPA considered the information indicating that the exceedances were unusual as part of the weight of evidence approach.

Comment: The commenter claimed that while the "EPA correctly found that $PM_{2.5}$ concentrations were not elevated in the nonattainment area and therefore did not demonstrate wildfire influence, [the] EPA erroneously concluded this could be overcome by speciated carbon concentration data obtained from the Phoenix JLG Supersite ('Supersite') monitor." The commenter noted that "the Supersite [monitor] did not exceed the 2008 standard on June 20, 2015; showed no signs of being significantly influenced by wildfire smoke on that day; and is located a minimum of 15 miles away from the nearest 'exceptional events' monitor."

Response: Speciated carbon concentration data (i.e., EC and OC data) are relevant in evaluating the existence of clear causal relationship between fire emissions and ozone exceedances because elevated OC concentrations and low EC/OC ratios are generally associated with biomass smoke and therefore indicative of the presence of wildfire emissions.[37] In this case,

[36] First addendum, 24.

[37] See, e.g., J. L. Hand, et al. "Spatial and Temporal Trends in $PM_{2.5}$ Organic and Elemental Carbon across the United States," *Advances in Meteorology*, Article ID 367674 (2013); Dan Jaffe, et al. "Interannual Variations in PM2.5 due to Wildfires in the Western United States" *Environmental Science and Technology*, 42, 2812-2818 (2008); Dominic Spracklen., et al. "Wildfires drive interannual variability of organic carbon in the western U.S. in summer," *Geophysical Research Letters*, 34, L16816 (2007).

the Supersite monitor is the only location within the Phoenix NAA that measures EC and OC and is therefore the appropriate source of such data.[38]

The speciated carbon analysis at Supersite indicated elevated OC concentrations and relatively low EC/OC ratios, suggesting that wildfire emissions were present in the area. The fact that the Supersite monitor did not exceed the ozone standard on June 20, 2015, does not undermine the relevance of these data. Ozone is a secondary pollutant formed through photochemical production in a non-linear fashion. While precursors to ozone may be present in one location, ozone formation may occur on different spatial and temporal scales. In this instance the Supersite monitor showed elevated OC concentrations, relatively low EC/OC ratios, and elevated levels of NO_2, an ozone precursor emitted by wildfires; these indicate the presence of wildfire emissions in the area. While the Supersite monitor did not itself experience exceedances of the ozone NAAQS during the event, other monitors in the vicinity did. In addition, two other monitors besides the Supersite monitor showed elevated levels of NO_2.[39] This pattern is consistent with the presence of wildfire emissions in the area contributing to the formation of ozone at the affected monitoring sites and thus supports the existence of a clear causal relationship between the wildfire emissions and the exceedances on June 20, 2015.

Comment: The commenter claimed that "ADEQ's reliance on NO_2 concentration data is ... misplaced" due to the EPA statement that "NO_2 is a poor tracer for fire because it is not specific to fire emissions and is emitted in large amounts by several anthropogenic sources (e.g.,

[38] See Wildfire Ozone Guidance, 22 (supporting analyses of pollutants associated with wildfire emissions can be "co-located or nearby" the exceeding monitoring site(s) and "in the same airshed (or nonattainment/near nonattainment area).").

[39] As noted in response to the next comment, these were the only two other sites with NO_2 data determined to be relevant for this analysis. In addition, none of the other sites in the Phoenix NAA measure EC and OC, so those sites may have also had elevated OC concentrations and low EC/OC ratios.

cars, power plants)" and that the West Phoenix, Central Phoenix, and Supersite monitors "did not record abnormally high ozone concentrations on June 20, 2015" and "they are too far away from the 'exceptional events' monitors to provide relevant data." The commenter also stated that ADEQ "should include data for all monitors in the NAA and not cherry-pick the data that arguably support its conclusion."

Response: The EPA agrees that NO_2 is a poor tracer for isolating wildfire emissions because NO_2 is emitted by both anthropogenic sources and wildfires. However, given that NO_2 is emitted by wildfires and is a precursor to ozone, evidence of the presence or absence of elevated NO_2 concentrations in the nonattainment area around the time of the exceedances is relevant to review as part of the weight of evidence for determining whether a clear causal relationship between the wildfire emissions and the exceedances exists. Accordingly, in reviewing ADEQ's demonstration, we found that evidence concerning elevated NO_2 concentrations provided some additional support to the conclusion that the wildfire emissions affected the monitors.[40] Specifically, ADEQ's analysis revealed that "several of the recorded hourly NO_2 concentrations were at or above the 95th percentile on [Saturday] June 20, 2015" at West Phoenix, Central Phoenix, and Supersite, whereas daily NO_2 concentrations are typically lowest on weekend days.[41] Accordingly, we agreed with ADEQ's conclusion that concentrations of NO_2 at these monitors were unusual. However, we did not claim that the elevated concentrations alone were sufficient to demonstrate a clear causal relationship between wildfire emissions and the monitored exceedances. Instead, the EPA considered the unusual NO_2 concentrations as one of

[40] TSD, 13.
[41] First Addendum, 17.

several pieces of evidence that supported the existence of a clear causal relationship using the weight of evidence approach.

As for the monitors chosen for this analysis, we believe that ADEQ provided an adequate rationale for focusing on West Phoenix, Central Phoenix, and Supersite monitoring sites: NO_2 is only monitored at six sites in the area, and the remaining three that were not included in this analysis were either outside of the Phoenix NAA (Buckeye) or serve as mobile source-oriented near-road monitors (Diablo and Thirty-Third Avenue).

Comment: The commenter claimed that, while "ADEQ argues based on regression analysis that it is unusual for ozone concentrations to be so high at exceeding monitors under prevailing weather conditions," this analysis "mainly proved that the regression equation it used consistently failed to predict high real-world ozone concentrations unaffected by wildfire."

Response: The EPA agrees that the regression analysis consistently underpredicted ozone at high concentrations, including for non-event exceedances. As noted in the Technical Support Document (TSD) for our concurrence on the June 20, 2015 event, the regression analysis also did not meet metrics described in the Wildfire Ozone Guidance.[42] In evaluating the weight of the evidence, the EPA did not rely on the regression analysis to support the clear causal determination.

Comment: The commenter stated that the "matching day analysis did not bolster the case for an 'exceptional event'" as "[t]he most this analysis could show was that the meteorological conditions that existed on June 20, 2015, would not normally be enough to be the sole cause of an exceedance of the 2008 ozone standard at the monitors that recorded exceedances."

[42] TSD, 13.

Response: The EPA agrees that the matching day analysis does not specifically implicate wildfire emissions. The EPA considered the matching day analysis as one of several pieces of evidence that supported the existence of a clear causal relationship using the weight of evidence approach. As explained in the TSD and elsewhere in this document, other pieces of evidence provided by ADEQ do implicate wildfire emissions. The commenter has not suggested an alternative cause for the unusually elevated levels of ozone on June 20, 2015, other than wildfire emissions, and we are not aware of any such cause.

Comment: ACLIPI claimed that satellite images of smoke over the Phoenix NAA are inconsistent with such smoke originating from the Lake Fire due to the shape and location of the smoke, and the "upper air" and "lower air" pathways in the conceptual model are "difficult to conceive."

Response: We disagree with the commenter's assertions that the observed smoke is unlikely to be from the Lake Fire and that the transport pathways within the conceptual model are unlikely. The observed smoke covers a large area and is both visible in the satellite imagery and identified as smoke as part of the NOAA smoke maps discussed further in a subsequent response. The satellite imagery also shows the smoke only at a snapshot in time; the shape and location of the smoke at a single point in time is inadequate to judge whether the smoke was transported from the Lake Fire (as opposed to fires in Mexico). The HYSPLIT trajectory analyses presented in the demonstration and addenda are consistent with this smoke originating from the Lake Fire. The size of the Lake Fire, relative to the fires in Mexico, also supports that the smoke originated from the Lake Fire.

As for the "upper air" and "lower air" pathways, ADEQ clearly described these in the second addendum and supported them with evidence including multiple HYSPLIT trajectories from different locations and at different times, a multi-dimensional dew point and water vapor analysis, and meteorological data from within the Phoenix NAA regarding boundary layer depths. The EPA found that these technical analyses supported the pathways identified in the conceptual model. The commenters did not provide any technical evidence to contradict these analyses or support their claim that the pathways are questionable.

Comment: The commenter stated that "[t]he NOAA smoke maps tend to show that any transported Lake Fire smoke (as opposed [to] smoke from other sources) bypassed the Phoenix NAA completely" and "are inconclusive at best."

Response: We disagree with the commenter's claims that the NOAA smoke maps show that transported Lake Fire smoke bypassed the Phoenix NAA completely. Multiple NOAA smoke maps show light and moderate levels of smoke over the nonattainment area. As described in the response to a previous comment regarding satellite imagery of smoke, this smoke was consistent with HYSPLIT trajectories showing transport from the Lake Fire. Additionally, the maps show smoke at a single point in time (i.e., when a satellite passes overhead); smoke that is near the Phoenix NAA at the time corresponding to the smoke map may pass through the Phoenix NAA at another time. The maps cannot be used to show that smoke "bypassed the [area] completely" since they do not represent all points in time.

Comment: The commenter claimed that the estimated emissions quantity over distance (Q/D) ratio of 54 tons per day/kilometers (tpd/km) is "well below the value of 100 tpd/km that EPA recommends as indicating clear causality."

Response: The commenter has mischaracterized the nature of the 100 Q/D threshold in the Wildfire Ozone Guidance. A Q/D value of 100 or more does not by itself indicate clear causality, nor does a Q/D value less than 100 indicate the absence of clear causality. Rather, the Q/D ratio is one of two factors that the EPA uses to evaluate whether a Tier 2 or Tier 3 clear causal analysis is appropriate for a particular exceptional events demonstration.[43] The Guidance explains that the EPA selected 100 tpd/km "as a conservative indicator" of ozone impacts.[44] The EPA has concurred on a number of fire-related exceptional events demonstrations with Q/D values well below 100 tpd/km.[45]

Because the ratio for the June 20, 2015 event did not meet the 100 Q/D threshold for a Tier 2 analysis, we determined that a Tier 3 analysis, involving additional supportive documentation, was appropriate for this event. As described elsewhere in this document, ADEQ provided such additional documentation in the form of several different technical analyses. Collectively, the weight of this evidence establishes a causal relationship between the Lake Fire and the June 20, 2015 exceedances for the June 20, 2015 event.

Comment: ACLIPI asserted that it is unclear whether ADEQ provided adequate notice regarding the opportunity to comment on its exceptional events documentation. Specifically, ACLIPI asserted that "ADEQ maintains email lists of parties interested in air quality actions to which the agency regularly distributes notices regarding upcoming rulemakings. If ADEQ sent

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[43] Guidance, 16-22.
[44] Guidance, 17.
[45] See, e.g., "Technical Support Document for EPA Concurrence on Ozone Exceedances Measured in Connecticut on May 25 and 26, 2016 as Exceptional Events" (attachment to letter dated July 31, 2017), 7; "Technical Support Document for EPA Concurrence on Ozone Exceedances Measured in Massachusetts on May 25 and 26, 2016 as Exceptional Events" (attachment to letter dated September 19, 2017), 7;"Technical Support Document for EPA Concurrence on Ozone Exceedances Measured in Rhode Island on May 25 and 26, 2016 as Exceptional Events" (attachment to letter dated September 19, 2017), 7.

notice to any stakeholders concerning its proposed exceptional events demonstration, it should explain how and to whom it sent notice."

Response: The Exceptional Events Rule requires that, as part of the submission of an exceptional events demonstration, a state must (1) document that it followed a public comment process, including a comment period of at least 30 days; (2) submit any public comments received; and (3) address any comments disputing or contradicting factual evidence provided in the demonstration.[46] Although emailing stakeholders is one means of providing public notice of draft exceptional events demonstration,[47] nothing in the Exceptional Events Rule or the Clean Air Act requires states to take this approach. Rather, "[p]roviding sufficient opportunity for public comment for a demonstration is case-by-case and depends on the circumstances and intended audience."[48]

In this case, for each of the submissions, ADEQ provided public notice by posting the draft demonstration submissions on its website and publishing a notice in the Arizona Republic at the start of the 30-day public comment period.[49] The EPA considers this to be adequate public notice under 40 CFR 51.14(c)(3)(v). Therefore, ADEQ is not required to explain whether or not it sent notice to any stakeholders.

Comment: ACLIPI asserted that, for the reasons previously cited in its comment letter, the EPA's invitation to the State to withdraw its contingency measure is unwarranted and should be revoked.

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[46] 40 CFR 50.14(c)(3)(v).
[47] See "2016 Revisions to the Exceptional Events Rule: Update to Frequently Asked Questions," July 2019, 26.
[48] Id. at 25.
[49] May 18, 2018 submittal Section I, 4 and Appendix D; letter dated July 17, 2018, from Timothy Franquist, ADEQ, to Michael Stoker, EPA Region 9,; Demonstration, 4, Appendix E; First addendum, 2, Appendix B; letter dated July 17, 2018, from Timothy Franquist, ADEQ, to Michael Stoker, EPA Region 9; Second addendum, 1, Appendix C; letter dated April 26, 2019, from Timothy Franquist, ADEQ, to Michael Stoker, EPA Region 9.

Response: In conjunction with our proposed finding of attainment by the applicable attainment date, we also proposed to determine that the CAA requirement for the State to submit a SIP revision to provide for contingency measures to be implemented in the event the area fails to attain by its attainment date ("attainment contingency measures") will no longer apply for the Phoenix NAA. The State has already submitted a SIP revision providing for attainment contingency measures, so we also noted that the State could elect to withdraw the attainment contingency measures to lift the obligation on the EPA under section 110(k) to act on these measures.

For the reasons described in our proposal and elsewhere in this document, we are finalizing our determination that the Phoenix NAA attained the 2008 ozone standard by its Moderate area attainment date of July 20, 2018, and our determination that there is no existing requirement for attainment contingency measures for the 2008 ozone NAAQS in the Phoenix NAA.

Comment: ACLIPI argued that the EPA was incorrect that its proposed rulemaking "does not directly affect the level of protection provided for human health or the environment" and "does not concern an environmental health risk" to children. The commenter asserted that, if the EPA makes a determination of attainment by the attainment date, the Phoenix NAA would not be reclassified ("bumped up") to a "Serious" classification, and the State would be "excused from having to adopt and implement additional or more effective control measures, at least until the Phoenix NAA is inevitably reclassified to "[M]oderate" for the 2015 ozone standard." The commenter concluded that this delay poses a significant risk to human health, particularly for children, the elderly, and people with preexisting lung and cardiovascular diseases.

Response: We disagree with this comment. As explained in a previous response, we are required to determine whether the Phoenix NAA attained the 2008 ozone NAAQS by its Moderate area date of July 20, 2018, based on 2015-2017 data, which show that the area attained the 2008 ozone NAAQS during that period. This determination does not in and of itself affect the level of protection provided for human health, children's health, or the environment.

As alluded to by the commenter, if we had determined the Phoenix NAA had not attained the 2008 NAAQS by the attainment date, we would have reclassified the area to Serious nonattainment, which would have triggered additional planning and implementation requirements. However, this would not have directly altered the level of protection for human health or the environment within the area since the area would ultimately have been obligated to meet the same NAAQS.

In addition, the Phoenix area is currently designated and classified as a "Marginal" nonattainment area for the 2015 ozone NAAQS.[50] The EPA will determine whether the area has met the August 3, 2020 Marginal attainment date for the 2015 standard based on 2017-2019 monitoring data. While the commenter appears to assume that the area will not attain by the Marginal attainment date, and will therefore be bumped up to Moderate, the data are not yet available to make this determination.

Commenter #2: Public comment (no name)

Comment: The commenter argued that the EPA cannot make a determination of attainment because the ozone data being used is old (2015-2017). The commenter suggested that the EPA must have 2018 data, but that it has not provided updated design values on our public

[50] 40 CFR 81.303.

website. The commenter further noted that ADEQ has made 2018 data publicly available, and that these data show more than 26 days in 2018 when the 2008 NAAQS was exceeded. The commenter asserted that, with this number of exceedances, the EPA cannot make a determination of attainment and has a statutory obligation to bump up the area and require the State to comply with Serious area requirements.

Response: As explained above in response to a similar comment from ACLIPI, we are not permitted to consider 2018 or 2019 data in evaluating whether the area attained by the applicable attainment date of July 20, 2018. Our statutory obligation under CAA section 181(b)(2)(A) is to determine whether the Phoenix NAA attained the standard by the applicable attainment date based on the design value as of the attainment date. We are fulfilling that obligation with today's final action.

We also note that agency air data submitted to the EPA's Air Quality System (AQS) database is considered preliminary until such data are certified. Agencies are required to certify the data annually by May 1 of the following year. For example, the deadline for agencies to certify data collected during calendar year 2018 was May 1, 2019. After the certification deadline, the design values are reviewed by EPA staff before they are posted to the EPA website, which generally occurs within a few months of the certification deadline. The 2018 design values were posted to the EPA's website on July 23, 2019. The EPA makes both preliminary data submitted to the AQS database and data submitted to AirNow for public notification purposes available on the EPA's Air Data webpage prior to data certification.[51]

Commenter #3: Arizona Chamber of Commerce

[51] *https://www.epa.gov/outdoor-air-quality-data*.

Comment: The commenter expressed support for the proposed determination and argued that it is proper to exclude the "Qualifying Exceptional Events."

Response: The EPA acknowledges the commenter's support for this action.

Comment: The commenter stated that the main cause of ozone is emissions from road and non-road engines, additional restrictions on major sources will not have a measurable impact on ozone levels, the Phoenix NAA has high background ozone and transport, and that the most effective way to reduce emissions in the area is to reduce emissions from on road and non-road engines through an emissions reduction credit (ERC) program for non-traditional ERCs. The commenter urged the EPA to help ADEQ and Maricopa County to establish an ERC framework for nontraditional sources so that the area can reduce emissions from vehicle emissions for 2015 NAAQS.

Response: The EPA acknowledges the comment but notes that it is not relevant to this action.

Commenter #4: Maricopa County

Comment: The commenter expressed support for the proposed determination of attainment by the attainment date.

Response: The EPA acknowledges the commenter's support for this action.

Commenter #5: ADEQ

Comment: The commenter expressed support for the proposed determination of attainment by the attainment date.

Response: The EPA acknowledges the commenter's support for this action.

III. EPA Action

No comments were submitted that change our assessment of the determinations as described in our proposed action. Therefore, the EPA is finalizing our determination that the Phoenix NAA attained the 2008 ozone standard by the Moderate area attainment date of July 20, 2018. We are also finalizing our determination that attainment contingency measures for this NAAQS no longer apply to the Phoenix NAA.

This action does not suspend the attainment-related requirements for the Phoenix NAA under 40 CFR 51.1118. We also note that this determination that the Phoenix ozone NAA has attained the 2008 ozone NAAQS does not constitute a redesignation of the area to attainment for the 2008 ozone standard. Under CAA section 107(d)(3)(E), redesignations to attainment require states to meet additional statutory criteria, including the EPA's approval of a SIP revision demonstrating maintenance of the standard for 10 years after redesignation. The designation status of the Phoenix area will remain Moderate nonattainment for the 2008 ozone NAAQS until such time as the EPA determines that the area meets the CAA requirements for redesignation to attainment.

IV. Environmental Justice Considerations

The EPA believes that this action will not have disproportionately high or adverse human health or environmental effects on minority, low-income, or indigenous populations. The purpose of this rule is to determine whether the Phoenix NAA attained the 2008 ozone standard by the Moderate area attainment date, which is required under the CAA for purposes of implementing the 2008 ozone standard. As such, this action does not directly affect the level of protection provided for human health or the environment.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is not an Executive Order 13771 regulatory action because this action is not significant under Executive Order 12866.

C. Paperwork Reduction Act (PRA)

This rule does not impose any new information collection burden under the PRA not already approved by the OMB.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments, or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, tribes, or the relationship between the national government and the states

and tribes, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action has tribal implications. However, it will neither impose substantial direct compliance costs on federally recognized tribal governments, nor preempt tribal law. Four tribes have areas of Indian country within or directly adjacent to the Phoenix NAA: Fort McDowell Yavapai Nation, Gila River Indian Community, Salt River Pima-Maricopa Indian Community of the Salt River Reservation, and the Tohono O'odham Nation of Arizona. The EPA sent letters to potentially affected tribes located within or directly adjacent to the boundaries of the Phoenix NAA informing them of our proposed action and offering consultation.[52] We did not receive any requests for consultation.

H. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of "covered regulatory action" in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

I. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer Advancement Act (NTTAA)

[52] See letters from Elizabeth Adams, EPA Region IX Air and Radiation Division Director, to tribal officials, dated June 13, 2019.

This rulemaking does not involve technical standards.

K. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes the human health or environmental risk addressed by this action will not have potential disproportionately high and adverse human health or environmental effects on minority, low-income, or indigenous populations. The results of this evaluation are contained in the section of the preamble titled "Environmental Justice Considerations."

L. Congressional Review Act (CRA)

The CRA, 5 U.S.C. section 801 *et seq*., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. The EPA will submit a report containing this action and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the *Federal Register*. A major rule cannot take effect until 60 days after it is published in the *Federal Register*. This action is not a "major rule" as defined by 5 U.S.C. 804(2).

M. Judicial Review

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. Filing a petition for reconsideration by the Administrator of this final rule does not affect the

finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: October 21, 2019.

Deborah Jordan,
Acting Regional Administrator,
Region IX.

Part 52, Chapter I, Title 40 of the Code of Federal Regulations is amended as follows:

PART 52 - APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for Part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

Subpart D – Arizona

2. Add § 52.153 to read as follows:

§ 52.153 Control strategy and regulations: Ozone.

(a) *Determination of attainment by the attainment date*. Effective [**Insert date 30 days after date of publication in the *Federal Register***] the EPA has determined that the Phoenix-Mesa Moderate nonattainment area in Arizona attained the 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) by the applicable attainment date of July 20, 2018, based upon complete, quality-assured, and certified data for the calendar years 2015-2017. The EPA has also determined that the requirement of section 172(c)(9) to provide for contingency measures to be implemented in the event the area fails to attain by its attainment date for the 2008 8-hour NAAQS does not apply to the area.

(b) [Reserved]

[FR Doc. 2019-23829 Filed: 11/8/2019 8:45 am; Publication Date: 11/12/2019]