

US EPA ARCHIVE DOCUMENT



THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

DEC 14 2012

Mr. Timothy K. Webster
Sidley Austin, LLP
Counsel to Devon Energy Corporation
1501 K Street, NW
Washington, D.C. 20005

Dear Mr. Webster:

I am pleased to respond to your July 20, 2012, letter in which you filed a petition for reconsideration on behalf of Devon Energy Corporation concerning the Environmental Protection Agency's final rule titled, "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards." *See 77 Federal Register* 30008 (May 21, 2012). The petition requests that the EPA reconsider the nonattainment designation for Wise County, Texas, as part of the Dallas-Fort Worth ozone nonattainment area and also requests that the EPA stay the effective date of the above final rule pending reconsideration.

The EPA has carefully evaluated the issues and information in your petition. For the reasons provided in the enclosure, the EPA is denying your petition and request for stay. The EPA continues to believe that Wise County is properly designated nonattainment based on our conclusion that it is an area that contributes to ozone nonattainment in the Dallas-Fort Worth area.

The enclosure also addresses the specific issues raised in your petition and provides the basis for this denial. In addition, we are enclosing our responses to Texas Pipeline Association's and Texas Commission on Environmental Quality's petitions for reconsideration since you stated your support for their comments as justification for reconsideration. The EPA hopes that the responses will help to explain the agency's conclusions, so that you will better understand our final decision. The EPA considers the designation of nonattainment areas with appropriate boundaries to be an important step in implementing the 2008 ozone standards.

Please know that we look forward to working with the state of Texas and those in the Dallas-Fort Worth area to ensure achievement of the 2008 ozone standards.

In the meantime, I thank you for your interest in protecting the quality of our environment.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa P. Jackson", is written over a horizontal line.

Lisa P. Jackson

Enclosures

Enclosure

EPA Response to Petition for Reconsideration from Devon Energy Corporation

By letter dated July 20, 2012, Sidley Austin LLP, on behalf of Devon Energy Corporation, petitioned the EPA to reconsider the final area designation for Wise County in the Dallas-Fort Worth (DFW) ozone nonattainment area and to stay the effectiveness of the designation for Wise County, pending reconsideration. For the reasons discussed below, the EPA is denying the Petition. Therefore, the EPA is also denying the request for stay. For the sake of clarity, we have organized most of this response according to the structure of the July 20, 2012, petition.

I. Concern About Treatment of the Oil and Gas Industry

Issue: The Petitioner claims that the designation of Wise County should be reconsidered because of a perceived bias by Dr. Armendariz against the oil and gas industry that may have played an undue role in the designation process.

Response: The EPA's final designation decision for the DFW area was based on the EPA's evaluation of the data and technical information, extensive and thoughtful consideration of input from TCEQ and other interested parties. The EPA's national Office of Air and Radiation works closely with technical staff in the EPA's regional offices to ensure that decisions are based on the factual record and consistent across the country. As demonstrated in the Technical Support Document (TSD) accompanying the EPA's intended designations issued in December, 2011 and the TSD accompanying the final designation on April 30, 2012, the EPA performed a thorough assessment of information relevant to five designations-related factors in determining which areas should be included as part of the DFW nonattainment area. The final decision was made by Administrator Lisa Jackson based on the record before the EPA. We further note that there are other Texas counties where oil and gas production and activity occur that were initially considered for inclusion into a nonattainment area, but were ultimately not included. For example Hood County, Texas and Matagorda County, Texas were considered and proposed for inclusion in their respective areas. However, following a review of comments from Texas and from public commenters and upon further evaluation of all available data relevant to their contribution to ozone violations, we determined those counties should not be included as part of a nonattainment area. Our record details those decisions.

II. Modeling Analysis

A. Source Apportionment Modeling

Issue: The Petitioner claims that the EPA's re-analysis of TCEQ's Source Apportionment Modeling (SAM) is new information and is not a logical outgrowth of the proposal. It was therefore impracticable for Petitioner to raise objections to the modeling work and the standard for "contribution" during the public comment period. Such re-analysis should therefore undergo public review before final rulemaking.

Response: While we agree that our analysis of the state's SAM modeling was not available for comment at the time of proposal, we do not believe this issue warrants reconsideration. First, in response to the EPA's 120-day letter notifying it of the intended designations, the state submitted, among other things,

the SAM data and results. Our evaluation of the SAM was in response to such submittal and was consistent with the process established by Congress in section 107(d) of the Act. For initial area designations for a new or revised NAAQS, section 107(d)(1) of the CAA sets forth a detailed and specific process between the EPA and the states. This provision provides: (i) that Governors of states make the initial recommendations to the EPA for designations and boundaries; and (ii) that the EPA provide the states with 120 days notice of any intended modifications to the state recommendation prior to finalizing the designation. The 120-day notification process is for the purpose of providing “such State with an opportunity to demonstrate why any proposed modification is inappropriate.” The CAA does not expressly provide a role for any other entity and, moreover, expressly waives the notice and public comment process of the Administrative Procedure Act for initial designations for new or revised NAAQS. *See* CAA section 107(d)(2)(B). Although no public comment period is required, the EPA opted to provide such a comment period for the ozone designations for the 2008 ozone NAAQS. We appropriately followed the process specifically contemplated by the Act. The EPA’s response to TCEQ’s SAM is detailed in the EPA’s final TSD. *See* Final DFW TSD at 15-20.

Second, and as a general matter, agencies are not required to provide an additional opportunity for public comment on material supporting a final rule, such as responses to comments or on information supporting a response to a comment. Such an approach would result in an unworkable endless rulemaking process. *See Catawba*, 571 F.3d at 50-51 (In rejecting a claim by New York that it should have been allowed additional input into the EPA’s decision to rely on a different monitor for evaluating contribution for the final designation the court noted that such an ongoing exchange with the states is inconsistent with the CAA and that “Congress imposed deadlines on the EPA and thus clearly envisioned an end to the designation process.”) *See also International Fabricare Institute v. EPA*, 972 F.2d 384, 399 (D.C. Cir. 1992) (notice and comment is not intended to result in “interminable back-and-forth”) and *Community Nutrition Institute v. Block*, 749 F.2d 50, 58 (D.C. Cir. 1984) (agency is not required to provide additional opportunity to comment on its response to comments).

Issue: The Petitioner claims that as part of the final rule the EPA used a new 1% standard in analyzing the source apportionment modeling (SAM), and it did not offer a rational basis for its use or opportunity for comment. Furthermore, the Petition claims that the EPA’s use of the 1% standard was inconsistent with other Regions and specifically raises concerns with the EPA’s review and conclusions of SAM analysis for three counties in the Chicago area.

Response: The EPA considered source apportionment modeling (SAM) in its decision making only in areas where it was provided by states or others during the public process. Since the SAM was provided during the comment period, as discussed above, our evaluation consequently could not be available for public comment.

SAM results were available for the EPA consideration in the designation process for only three areas, Dallas, Houston and Chicago, because those were the only areas where it was developed and submitted to the EPA by states or other entities. The EPA does not have specific guidance on how to evaluate the impact of emissions from a county on a nearby violating monitor in the context of a designation decision. Moreover, in the few instances where SAM was submitted for our consideration, the form and type of the information varied between areas. The EPA evaluated each submission of SAM on a case-by-case basis, carefully assessing a number of issues including how the modeling was conducted, model performance, and available data from the analysis in order to derive appropriate conclusions from the results.

For the SAM submitted for Dallas and Houston, we considered other recent modeling work as a guide. Our basis for identifying days with a non-trivial impacts is discussed on page 17 of the TSD where we explained, “Often in attainment demonstration modeling, controlling of sources is evaluated and results in only a few tenths of a ppb change, therefore we used a 1% of the standard cut point for the days where we would consider Hood or Wise County’s emissions to be significant.” We also note that modeling from TCEQ in a 2007 8-hour Ozone Attainment Demonstration for DFW included multiple analyses of individual control strategies and the resultant impacts on monitors in DFW area, where Texas had chosen controls that provided changes of a few tenths of a part per billion (ppb).¹ In addition, we note that the EPA concluded in the recent Cross State Air Pollution Rule, that a “one percent of the NAAQS” impact result in the source apportionment modeling was appropriate to determine if a state’s emissions significantly impacted a downwind state’s nonattainment or maintenance area.² Thus we believe it was reasonable to examine the frequency of a modeled impact of 0.75 ppb, or one percent of the 2008 ozone standard, as a metric to identify days with a nontrivial impact.³

In addition, the number of days exceeding the one percent (0.75 ppb) cut point is only one of the metrics evaluated from the SAM results. In the DFW Final TSD and in supporting files, we discussed all of the metrics used in our assessment of the SAM results, and the unique factors that we weighed in our analysis of SAM results for DFW. Using the detailed daily information available to the EPA for analyzing SAM for the DFW and Houston areas designations, we evaluated the average impact, maximum impact, as well as the number of modeled days exceeding 0.075 and 0.070 parts per million (ppm) where the Wise County impact was above 0.75 ppb. These other model output metrics also help explain the impact of Wise County. For example, on some specific modeled days the impact of Wise County was much larger than 0.5 ppb and as much as 5 ppb at the Eagle Mountain Lake Monitor, which is one of the monitors in DFW that sets the DV for the DFW nonattainment area.⁴ Also, it is important to remember that the SAM results were only one type of information that we considered in our five factor analysis that resulted in our determination that Wise County contributes to nonattainment in the DFW area.

Our decision to use 1% of the NAAQS (0.75 ppb) as a cut point to identify days with a non-trivial impact is supported by our record, and a count of such days is only one of the metrics we evaluated from the SAM results. As stated in our TSD, the 2008 Emissions Inventory for Wise County shows that Wise County’s nitrogen oxide emissions of 11,911 tons per year (tpy) are the 6th highest of the 19-county DFW Combined Statistical Area (CSA) and the County’s volatile organic compound emissions of 17,609 tpy are the fourth highest of the 19 counties. *See* TSD pages 6-7. The TSD demonstrates that there are six ozone monitors violating the standard in the two counties adjacent to Wise County (TSD Figure 1, page 3) and notes that Wise County is less than ½ mile from a violating monitor with a design value of 0.085 ppm (TSD 2008 to 2010 data, pages 5 and 23). We also evaluated meteorological transport patterns during exceedances using NOAA’s HYSPLIT model. These patterns indicate that emissions from Wise County are transported to the DFW ozone monitors violating the standard based on 2008-2010 data, and we conclude that the Wise County emissions are large enough that they can contribute to ozone exceedances on certain days and many of these days are the days that set the DV at the highest monitors in DFW. *See* TSD pages 14-17, 19, 20, and 23.

¹ See the sensitivity runs in TCEQ’s 2007 DFW 1997 8-hour ozone Attainment Demonstration SIP - APPENDIX D: DFW Future Case (2009) Sensitivity Tests.

² See Cross State Air Pollution Rule and the Technical Support Document for the rule (Docket ID: EPA-HQ-OAR-2009-0491 at www.regulations.gov)

³ TSD page 17, TCEQ’s 2007 DFW 1997 8-hour ozone Attainment Demonstration SIP – Appendix D: DFW Future Case (2009) Sensitivity Tests.

⁴ TSD page 20

Finally, our evaluation of SAM was not inconsistent with actions taken by other Regional offices. Again, our record supports our decision on this issue. We considered SAM for the Houston area in the same way we considered it for Dallas because the SAM submitted for both areas was similar in how it was performed and the type of information provided. The only other area for which the EPA had SAM results was for the Chicago area. The SAM submitted for the Chicago area was sufficiently different that direct comparisons to the DFW area analysis are not generally appropriate. In the Chicago area SAM, the EPA was provided the average modeled impact levels on estimated exceedances for an entire ozone season. Emphasis on the average modeled impact is more appropriate when a full ozone season of model results is available. A full season of modeling results was not available for the DFW area. Indiana had provided SAM that evaluated the impact of three Indiana counties on a monitor in the greater Chicago area. The reported impacts from two Counties (Lake and Porter) were about 2 ppb and 4 ppb. The SAM result for the third Indiana County (Jasper) indicated less than 0.5 ppb impact. In evaluating this result, the EPA was aware that the modeling did not reflect emissions reductions that had been achieved at a large power plant in Jasper County, reducing Jasper County's total NOx emissions by more than 50%.⁵ Based on the analysis of all the factors, including the SAM and additional emission reductions, the EPA decided to include Lake and Porter Counties, and not to include Jasper County, Indiana within the nonattainment area. As with the contribution level evaluated for Wise County, the contribution levels discussed in the Region 5 Chicago Final TSD do not represent a bright line criterion for inclusion or exclusion of a county. Moreover, the inclusion of two counties with an average contribution of 2 and 4 ppb and exclusion of a county with less than 0.5 ppb in the Chicago area is not inconsistent with inclusion of Wise County, which is based in part on a count of days with greater than 0.75 ppb contribution in the Dallas area. As noted above, however, for both the Chicago and Dallas areas, SAM results are simply one element of one of the five factors the EPA considered in determining whether to include counties as part of the designated nonattainment area.

Issue: The Petitioner claims that the EPA's analysis of the SAM focused on exceedances of the NAAQS rather than violations and as such is flawed and inconsistent with past practice and guidance. The Petitioner also indicated that the EPA's methodology is inconsistent with past practices because it focused on absolute rather than relative results. They indicated that for comparison that TCEQ staff had analyzed the SAM in a relative sense and scaled to the observed design values with calculated DVs at each monitoring site. The Petitioner indicated that the EPA's guidance is to use the model in a relative sense, rather than absolute as was done in CSAPR. The Petitioner indicated that TCEQ had concluded that Wise County only contributed 0.41 ppb and 0.008 ppb to the Eagle Mountain Lake and Keller monitors 2012 future year DVs, and that this is below any threshold used by the EPA, including the 0.75 ppb in the Final DFW TSD and the threshold for Jasper County in the Chicago area. The Petitioner concluded that the EPA was inconsistent with its own guidance and past practice in CSAPR, and that TCEQ was in compliance with both.

Response: While our analysis of the state's SAM modeling was not available for comment at the time of proposal, we do not believe this issue warrants reconsideration. In addition, we disagree that our analysis was flawed or inconsistent with our past practice and guidance, and our decision is supported by our record as stated below.

First, in analyzing possible contributions from emissions in surrounding counties using the SAM tool, the EPA only evaluated and considered the amount of modeled impact from Wise County emissions on

⁵ Region 5 TSD, Original 2008 NOx emissions quantified as 19,788 tons/year and value was footnoted as "... updated emissions data were provided for Jasper County showing 2011 NOx emission levels of 9,791 tons."

monitors that were violating the 2008 ozone standard according to the 2008-2010 data.⁶ We focused our assessment on monitors violating the standard and, in doing so, examined contributions on days when there were exceedances at those violating monitors. As a factual matter, it is not possible to separate “actual violations” from the “exceedances” that result in the violation. Based on the form of the ozone standard, an area is determined to be violating the standard if the three consecutive year average of the annual fourth highest daily maximum 8-hour average ambient air quality ozone concentration is greater than the standard (0.075 ppm). Therefore, all daily maximum 8-hour averages that exceed 0.075 ppm at a violating monitor (i.e., “exceedances”) are relevant for purposes of determining whether emissions contribute to a violation at that monitor. Accordingly, we restricted our review of available modeling impact results to days with modeled exceedances at violating monitors.⁷ As part of this analysis, we evaluated the monitoring data during the episode modeled to determine if exceedances had actually occurred at the monitor on that specific day.

The use of modeled exceedance days for estimating ozone using photochemical grid models is a long-established practice for modeled attainment demonstrations. This approach is recommended by the EPA in “Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze” (EPA-454/B-07-002), and used by the EPA to support Federal rules such as the Cross-State Air Pollution Rule.

The EPA does not have specific guidance on how to evaluate the impact of emissions from one county on a nearby violating monitor using SAM. Our evaluation of the SAM results provided by TCEQ for the DFW area and by LADCO for the Chicago area differed according to the nature of the modeling conducted and the results provided to us. In the Chicago case, we evaluated the average impact over the entire ozone season; day-specific impact information was not provided. In evaluating the TCEQ SAM results, we felt it was appropriate to consider day-specific impacts because, as discussed above, individual exceedance days contribute to the calculation of the area’s DV’s. Varying meteorological conditions can lead to the individual exceedances and as a result can lead to a violation. As the SAM results show, some days Wise County’s impact is much greater than others. This information is masked when only average impacts are considered. In addition, as discussed later, we place more weight on day-specific impacts as compared to average impacts because the Texas modeling did not cover a complete ozone season.

Since the EPA does not have a specific guidance document on how to evaluate the impact of emissions from one county on a nearby monitor using SAM, the Petitioner’s concern that the EPA did not follow its own guidance by using the model in an absolute sense rather than a relative sense is misplaced. Consideration of day-specific impacts does not as easily lend itself to using the model in a relative sense. If, however, the EPA had used a relative reduction factor approach to estimating the day-specific impacts, we believe the modeled impacts from Wise County would have been larger because of the model’s underestimation bias.

We note that the EPA’s current modeling guidance is directed towards the overall attainment demonstration test and not towards SAM analysis, but in the past we have evaluated day-specific results provided in previous DFW attainment demonstration modeling.⁸ The Petitioner is incorrect that TCEQ did not include absolute modeled values in their comments. TCEQ comments included using the model

⁶ Final TSD, pages 15-20.

⁷ Id., pages 15-20.

⁸ TCEQ 2007 Attainment Demonstration for DFW 1997 8-hour ozone included day specific modeling calculations.

in both the relative sense and in the absolute sense. In fact, TCEQ had six different figures with the absolute values and only one figure with relative values.⁹

Petitioner points to the TCEQ's conclusions that Wise County only contributed 0.41 ppb and 0.008 ppb to two monitors' 2012 future year DVs, which are below a threshold of 0.75 ppb. Therefore, Petitioner claims Wise County's contribution is not significant. The EPA notes that this is comparing data in an 'apples to oranges' manner. The 0.41 ppb and 0.008 ppb are average values of contribution to any exceedance of 75 ppb predicted at the Eagle Mountain Lake and Keller monitors, respectively, in 2012 for the episode days modeled. By contrast, the 0.75 ppb value was a day-specific cut point to identify days with non-trivial impacts. However, there were specific modeled days on which the contribution level from Wise County at the Eagle Mountain monitor was predicted to be above 0.75 ppb. As noted in our TSD, we were concerned that the underestimation bias in the model was underestimating the number of days that exceedances are predicted compared to the monitored values in 2006. The effects of this underestimation bias is that the 0.41 ppb average impact value is based on fewer days than actually had measured exceedances. In addition, since the modeling was not for a full season it does not capture all of the meteorological conditions that lead to high ozone in the DFW area. As a result, average values for ozone impacts based on less than a full year of modeling and that are based on a model that underestimates ozone levels can be misleading and underestimate the impact of emissions from a source area. Therefore, our analysis placed greater weight on modeled daily contributions than on episode average values, as discussed on pages 15-20 of the Final DFW TSD. As discussed above, the EPA does not have LADCO modeling for Jasper County that is reflective of the large NO_x reductions that have occurred since the modeling was performed, but revised modeling would be expected to show a much lower ozone season average contribution than 0.41 ppb. Again, this number is not directly comparable to the 0.75 ppb cut point used in the EPA's evaluation of the DFW area to identify individual modeled days with non-trivial impacts.

Issue: The Petitioner claims that the EPA did not recognize that the modeling assumed significantly higher annual VOC emissions than has been more recently reported by TCEQ data. Specifically, the more recent data indicate VOC emissions are 25% lower for Wise County than the levels used in the model. The Petition asserts that the EPA should have utilized the newer data in its analysis of modeling.

Response: The Petitioner did provide comments on this issue during the comment period. The EPA responded to those comments, as referenced below. Therefore, reconsideration is not appropriate here. In addition, TCEQ provided updated 2008 emissions inventory data in October 2011. On February 29, 2012, Texas submitted source apportionment modeling (SAM) results and indicated that the modeling was not conducted using the new lower VOC emission estimates that TCEQ had submitted to the EPA in October 2011. See page 10 of TCEQ letter.

Although we could not rerun the model using the emissions information submitted by TCEQ in October 2011, we did consider the emissions information, including how that information might affect the modeled results. As noted in our Final TSD and RTC, we revised the Wise County VOC emissions inventory based on comments we received from the State of Texas.¹⁰ We also indicated in the RTC and other supporting materials that DFW is a NO_x limited area and VOC reductions have not shown significant benefit in reducing ozone levels in past modeling conducted by TCEQ. The Petitioner seems to recognize this point when they note: "TCEQ has demonstrated through complex modeling that it is NO_x, not man-made VOC that drives ozone formation in the DFW region." (See Devon Comment letter

⁹ Page 11-14 of TCEQ attachment to Governor Perry's comment letter dated February 29, 2012 included Figures 7-11 that had maximum, average and hourly time series absolute values and only Table 3 which had the relative value.

¹⁰ Final TSD, page 6; RTC pages 52-56.

February 3, 2012, page 4). Furthermore, in the record we recognized that the VOCs that are potentially overestimated are from oil and gas operations and that these VOC emissions “are relatively nonreactive,” i.e., they are less likely to result in ozone formation than VOCs that are more reactive. Accordingly, we did consider the potential impact of the new reported VOC emission levels on our interpretation of the SAM results for Wise, County and concluded that the impacts would be negligible.¹¹

B. HYSPLIT

Issue: The Petitioner claims that Region 6 erroneously relied on the HYSPLIT model because other Regional Offices relied on prevailing wind direction. Furthermore, they assert that the EPA erroneously relied on the HYSPLIT modeling to include Wise County as part of the designated nonattainment area because the modeling shows that Wise County is not contributing to violations of the NAAQS because HYSPLIT provides no information regarding the formation or transport of ozone and shows that in only the rarest of instances, wind from Wise County reaches a monitor exceeding the NAAQS. Finally, Petitioner claims there were only two days in which the HYSPLIT modeling indicates that wind passing over Wise County may have reached an exceeding/violating monitor.

Response: Petitioner raised the HYSPLIT issue during the comment period and the EPA adequately responded to those comments. See RTC pages 59, 60. Therefore, reconsideration is not appropriate. Our record fully supports our decision. The EPA’s record supports that HYSPLIT is a useful tool for determining areas where air originates or passes through on the way to a monitored ozone exceedance. We disagree that our evaluation of HYSPLIT modeling to inform our nonattainment area designation decisions was incorrect or inconsistent. As we stated in the RTC, “[i]n terms of identifying potential local and regional source-receptor patterns, HYSPLIT wind trajectory or other modeling based tools are excellent tools for determining the frequencies for which areas potentially contribute to high ozone levels and are preferred over more basic assessments of wind speed and direction at a given point locations (e.g., wind roses, or pollution roses). The basic assessments, such as wind roses, are potentially misleading in cases where wind speeds are light and the wind direction is variable....”¹² The light and variable meteorological regime is one of the classic meteorological types that results in high ozone in the DFW area. “While it is true that EPA was unable to use HYSPLIT modeling to inform our decisions for all areas, we believe that it is a valuable tool and should not be disregarded where the information is available, even if the information is not available in all areas.” See RTC page 59.

We note that each designation decision is made on a case-by-case basis after weighing information relevant to the five factors (and any other relevant information) as they apply based on the unique

¹¹ Final TSD, pages 6-8; Houston Final TSD, pages 5-7; RTC pages 52-56, including “...the VOC emissions resulting from oil & gas production activities are relatively nonreactive in the photochemical generation of ground-level ozone and that additionally the DFW area is NO_x-limited such that VOC emissions in general do not contribute as much as NO_x emissions to the generation of ground-level ozone.” And “EPA has since reviewed the updated emissions data reported by the TCEQ and notes that the revised numbers do not affect the ranking of the counties for VOC emissions. EPA’s analysis indicates that even with the reduced 2009 VOC emissions data, the emissions from Wise County still contribute to measured violations of the 2008 ozone NAAQS at monitors in neighboring counties. In making our final decision, we considered the reduced emissions and the reduction in drilling activity since 2009.” The Governor Perry’s comment letter dated February 29, 2012, pages 17-21, also referred to other TCEQ documents that further support that DFW area is a NO_x limited regime and changes to VOC levels do not result in much impact in ozone levels: TCEQ 2011 DFW 1997 8-hour Ozone Attainment Demonstration SIP – “APPENDIX E: Protocol for the Eight-Hour Ozone Modeling of the Dallas-Fort Worth Area,” and “APPENDIX D: Conceptual Model For The DFW Attainment Demonstration SIP Revision For The 1997 Eight-Hour Ozone Standard.”

¹² See page 59 of the RTC.

situation of each area. The HYSPLIT modeling was considered as one component of information for one of the five factors, and was not the sole consideration in making our designation decisions.

We conducted HYSPLIT analysis for several monitors in DFW for purposes of both the Preliminary TSD (December 2011) and the Final TSD (April 2012). In the Final TSD, we noted that “[t]he HYSPLIT model yields an estimate of the path an air mass has traveled before reaching a monitor at a specific location and time. Specifically, the model provides the centerline of the probable path. By knowing where an air mass has traveled before reaching a monitor where an exceedance has occurred, one can consider what potential areas and emission sources could have contributed to the exceedance.” In the Final TSD at page 14, we stated, “[w]e focused on the Keller and Eagle Mountain Lake monitors in Tarrant County and the Parker County monitor because the Keller and Eagle Mountain Lake monitors have recorded some of the highest ozone levels in the region, and inclusion of the Parker County monitor provided a good cross-section of the monitors in the western DFW area that experienced exceedances in the 2006-2010 period.” The EPA included trajectory plot maps for the Keller and Eagle Mountain Lake monitors in both the Preliminary and Final TSDs and also made the individual back trajectory files available for review during the comment period. Analysis of the plots in the TSDs indicates that 3 trajectory ‘centerlines’ directly traversed Wise County for the Keller monitor, and at least 7 trajectory ‘centerlines’ traversed Wise County for the Eagle Mountain Lake monitor. In addition, some other back trajectories that did not directly traverse Wise County had centerlines near enough to Wise County to suggest a path of upwind influence involving Wise County emissions. Accordingly, we concluded that there are a number of days (not just two) with back trajectories that suggest influence from Wise County emissions.

We also note in the record at page 23 of the Final DFW TSD that a review of the individual trajectory files shows that several of the days that trajectories passed through Wise County were also days that made up the 1st to 4th highest monitored values, which are the values used in establishing the design value, at the Eagle Mountain Lake and Keller monitors during the periods evaluated. These individual trajectory files were included in the supporting materials for the EPA’s intended and final designations and were made available upon request. In fact, five of the seven back trajectories that traversed Wise County occurred on days that contributed to the Eagle Mountain Lake Design value calculation.¹³

Finally, we note that the EPA Region 6’s reliance on HYSPLIT modeling was consistent with actions in other Regions. The EPA considered HYSPLIT results for 16 designations in five Regions. The fact that HYSPLIT modeling was not available for all areas does not mean that our consideration of that information, where available, was inconsistent. “While it is true that EPA was unable to use HYSPLIT modeling to inform our decisions for all areas, we believe that it is a valuable tool and should not be disregarded where the information is available, even if the information is not available in all areas.” See RTC page 59.

Furthermore, we recognized that HYSPLIT modeling is a particularly useful tool in areas such as Dallas. As we stated in the RTC, “[i]n terms of identifying potential local and regional source/receptor patterns, HYSPLIT wind trajectory or other modeling-based tools are excellent tools for determining the

¹³ We note that all this data is available in the record. For the Eagle Mountain Lake Monitor, the following days were the 1st thru 4th High values that set the monitor’s DV. Highlighted in BOLD are the days that EPA’s HYSPLIT analysis indicates potential contribution from Wise County emissions. 2006 (6/14 – 107 ppb, 6/9 – 106 ppb, 6/28 – 98 ppb, 7/18 – 98 ppb); 2007 (**8/14 – 121 ppb**, 8/15 – 101 ppb, 10/04 – 86 ppb, **9/22 – 84 ppb**, 7/25 – 84 ppb); 2008 (8/04 – 98 ppb, **6/18 – 92 ppb**, 6/23 – 86 ppb, 6/19 – 85 ppb); 2009 (**6/25 – 100 ppb**, 6/5 – 92 ppb, 6/26 – 92 ppb, **8/26 – 91 ppb**, **7/2 – 91 ppb**); 2010 (6/4 – 94 ppb, 8/27 – 91 ppb, 8/28 – 83 ppb, 5/29 – 81 ppb). When there was a tie for the fourth high value we looked at trajectories for both days.

frequencies for which areas potentially contribute to high ozone levels and are preferred over more basic assessments of wind speed and direction at a given point location (e.g., wind roses, or pollution roses). These basic assessments, such as wind roses, are potentially misleading in cases where wind speeds are light and the wind direction is variable....”¹⁴ The light and variable meteorological regime is one of the classic meteorological types that results in high ozone in the DFW area.

Issue: The Petitioner includes additional information in their petition (not previously submitted through comments during the designation process) indicating which specific monitored exceedance days (2006-2010) had HYSPLIT back trajectories that passed through Wise County’s airshed. Petitioner asserts that the exceedance days that the EPA identified where wind from Wise County reached the Eagle Mountain Lake monitor were modest exceedances and not days that determine the monitor’s design value.

Response: Petitioner could have submitted such information to the EPA during the public comment period and did not do so. Consideration of this information outside the comment period is not an appropriate basis for reconsideration. We also note that the Petitioner did not provide details on how their HYSPLIT analysis was conducted nor what databases were used. Based on the analysis documented in our final TSD, we disagree with the Petitioner’s characterization that only three days had trajectories through Wise County’s airshed. Without the specifics of the Petitioner’s analysis and their HYSPLIT files, it is not possible for the EPA to more fully discuss the nature and causes of differences with the EPA’s analysis.

III. Condensate Tank Emissions

Issue: The Petitioner claims that a new study by TCEQ indicates that emissions of VOCs from condensate storage tanks are likely much lower than reflected in the emissions estimates that the EPA used.

Response: This comment was raised during the comment period. While we did not specifically respond to this comment for the DFW area, the comment was considered by the EPA, thus is not appropriate for reconsideration. The emissions inventory (EI) considered in the final DFW TSD included revisions to the EI submitted by Texas in October 2011, which updated oil and gas sector pneumatic emissions. See final TSD at pages 6-7. However, Texas did not submit revised emissions data for condensate tanks in the oil and gas industry. The EPA based its final designation decisions on the 2008 EI as updated in October 2011 because it was the most current and accurate data available at the time of designations.

More generally, we considered the potential overestimation of emissions from condensate storage tanks in Texas in the context of concerns raised by Matagorda County officials in March/April 2012. At that time, TCEQ did indicate to the EPA they were conducting a further study that would be available in draft form in fall 2012.¹⁵ TCEQ indicated to the EPA during these discussions in spring 2012 that they did not have any updates to the state default emissions estimates currently used in the emission inventory. In October 2012, TCEQ did provide the EPA with a report on condensate tank emission estimates but that report has not yet been finalized. This new technical information is not an appropriate basis for reconsideration. As noted by the Court in *Catawba v. EPA*, 571 F.3d 20 at 23, “Congress imposed deadlines on EPA and thus clearly envisioned an end to the designation process.” We do not agree that information that was not available in time for the EPA to consider while complying with the procedural requirements of the Act provides an appropriate basis for reconsidering the designations. It is

¹⁴ See page 59 of the RTC.

¹⁵ Final HGB TSD, pages 6-7.

important that states are able to rely on the completed designations and to move forward with the planning now required for areas.

While we are not required to consider this information that was not available at the time of the designation decision, we note, as discussed elsewhere, the DFW area is NO_x limited. Thus, additional changes in the VOC inventory would not have been likely to change the conclusion that Wise County emissions contribute to nonattainment because this conclusion is based more on the relatively high emissions of NO_x in Wise County.

IV. Responses to Comments

Issue: Petitioner claims that the EPA did not respond to all significant comments, particularly the detailed examples of inconsistencies provided by the Texas Pipeline Association (TPA) in their comment letter dated February 2, 2012. The Petitioner incorporates these comments by reference in its Petition.

Response: While we did not provide responses to certain comments raised during the comment period, and as referenced in your Petition, we do not believe this supports reconsideration. As provided below, as to the technical concerns raised, our record supports and fully explains our decision. Furthermore, certain of these issues did not address whether the EPA's five factor analysis for the identified areas resulted in disparate treatment, but instead made comparisons between counties in other nonattainment areas and the three Texas Counties (Wise, Hood, and Matagorda Counties) only with regard to one or two factors out of the five factors the EPA analyzed. Comparing counties from different areas based only on one or two of the factors from the five-factor analyses is not sufficient to support a disparate treatment argument. See *Catawba County, North Carolina v. EPA*, 571 F.3d 20 (D.C. Cir. 2009) ("petitioners seize upon discrete data points and ignore the very nature of the nine-factor test, which is designed to analyze a wide variety of data on a 'case-by-case basis.'")

We also note that unlike most other rulemaking actions under the CAA, Congress did not provide a participatory role for parties other than the states and tribes. For designations, section 107(d) of the CAA sets forth a detailed and specific process between the EPA and the states. This provision provides: (i) that Governors of states make the initial recommendations to the EPA for designations and boundaries; and (ii) that the EPA provide the states with 120 days notice of any intended modifications to the state recommendation prior to finalizing the designation. The 120 day notification process is for the purpose of providing "such state with an opportunity to demonstrate why any proposed modification is inappropriate." The CAA does not expressly provide a role for any other entity (including local governments) and, moreover, expressly waives the notice and public comment process of the Administrative Procedure Act for initial designations for new or revised NAAQS. Although no public comment period is required, the EPA opted to provide such a comment period for the 2012 ozone designations.

Specific issues raised by the TPA comments and incorporated by reference into the Petition are identified below. We note that a number of the comments raised issues for Wise, Matagorda and Hood Counties. In the final designations, the EPA designated Hood and Matagorda Counties as attainment and the present Petition raises issues solely with regard to Wise County. Thus, we summarize the issues and present our responses below only with regard to Wise County.

Issue: Petitioner incorporates TPA's claim that there is no correlation between increased Barnett Shale exploration and production and increased ozone. The data illustrate that even with increased production, design values are generally down.

Response: This comment was raised during the comment period. While we did not specifically respond to this comment for the DFW area, the comment was considered by the EPA. Thus it is not appropriate for reconsideration. The central issue is whether emissions from Wise County contribute to ozone violations in nearby areas. As the record indicates, monitors in the Dallas CSA are violating the ozone standard and the EPA is required to designate areas as nonattainment if they violate the standard or contribute to a violation in a nearby area. As discussed in the RTC and TSD, some of the highest days during the 2006-2010 period included transport of Wise County emissions (including any Barnett Shale-related emissions) to some of the highest ozone exceedances at the Eagle Mountain Lake and Keller monitors, which are two of the DFW area's monitors with the highest ozone levels. The TCEQ's SAM also shows that emissions from Wise County (which would include Barnett Shale-related emissions) are transported to the violating monitors and that the amount of contribution could be as high as 50% of the total impact on certain days with high ozone levels.¹⁶

Design values and design value trends are a product of a number of variables, not simply the emissions of one or more types of emissions sources, which is why we perform a five-factor analysis in determining whether an area contributes to a violation of the standard in a nearby area. Decreases in design values over time can occur due to many variables, including decreases in ozone precursor emissions (such as in the DFW Nonattainment area due to federal measures and measures implemented by TCEQ in past ozone attainment demonstration SIPs). The fact that the design value is lower (i.e., that ozone has not "increased") does not preclude a determination that emissions from Wise County contribute to exceedances at violating monitors in the DFW CSA.

Issue: Petitioner incorporates TPA's claim that TCEQ has demonstrated through complex modeling that it is NOx, not man-made VOCs that drive ozone formation in the DFW area and the DFW NAA is generally NOx limited. Emissions from the Barnett Shale are primarily VOCs and further the VOC species emitted by oil and gas industry are primarily straight alkanes, and not the highly reactive alkenes that are linked to ozone formation.

Response: As discussed in a previous response, we recognize in the TSD and RTC that the DFW Area is NOx limited and that reductions in man-made VOC emissions only have small effects on ozone levels in the DFW area. We also recognized that VOC emissions from Barnett Shale activities are predominantly in the form of VOCs that have low reactivity, but would not classify them as non-reactive.¹⁷ However, contrary to the Petitioner's assertion, and as documented in our emissions analysis in the preliminary and final TSDs and in TCEQ's SAM, oil and gas production activity in Wise County does result in significant NOx emissions. It is primarily these NOx emissions that supported our determination that Wise County emissions contribute to ozone formation in the DFW area.

Issue: Petitioner incorporates TPA's claim that wind rose charts demonstrate that, on a yearly basis, the winds rarely blow into the DFW area from Wise County. The TCEQ's findings based on the HYSPLIT model with their endpoint analysis, demonstrate that "at most 2.87% of the trajectory endpoints from Wise County impact violating monitors."

¹⁶ See the TCEQ source apportionment modeling files, including the Excel Spreadsheet that was placed in the record during the final action. (Hood-Wise_DVf_Contribution_wPies.xls)

¹⁷ DFW Final TSD, pages 6-8; Houston Final TSD, pages 5-7; RTC pages 52-56.

Response: Our previous responses in the HYSPLIT section of this enclosure address the concern about the trajectory endpoints, and also discuss why HYSPLIT modeling can be a more useful tool than annualized wind patterns especially in an area like DFW that experiences light wind speeds and winds from variable directions. While the percentage of days when the wind carried air from Wise County was relatively low overall, our analysis indicated that the days when the air did come from Wise County, the downwind monitors had some of the highest ozone readings during the time period evaluated.

Issue: Petitioner incorporates TPA's claim that other the EPA Regions have declined nonattainment designations based simply on prevailing winds. For example, TSDs from various Regions make generalized references to prevailing wind patterns, 30-year wind history, wind roses showing yearly average wind direction, and references to "predominant" wind direction.

Response: These comments did not address whether the EPA's five factor analysis for the identified areas resulted in disparate treatment, but instead focused only on meteorology. Therefore this does not warrant reconsideration on this issue. Evaluation of certain aspects of only one or two factors is not appropriate because other factors have to be considered. As we have explained, the designation process involves a five factor analyses that is done case-by-case for each individual area. One cannot look at differences between elements of one or two of the factors and conclude there has been disparate or inconsistent treatment. Many of the specific issues raised by the Petitioner and discussed below focus on only one or two factors, or individual elements of only one or two factors, without a full comparison of how the five factors were applied. EPA will not repeat this full explanation in each instance, but it applies throughout this response.

Issue: Petitioner incorporates by reference TPA's comments that include a list of 13 counties in other areas that they summarize as being upwind of nonattainment counties and violating monitors over 20% of the time and that were designated as attainment/unclassifiable. TPA asserts that Wise, Hood, and Matagorda Counties would not be included in a nonattainment area if another EPA region had made the decision.

Response: TPA's comments identify only the percentage of time a county is upwind and they do not address how this information, when considered as part of a more comprehensive five factor analysis suggests that Wise County was treated inconsistently with any other area. Therefore this does not warrant reconsideration on this issue.

Issue: The Petitioner (while incorporating TPA's comments) indicates that the EPA Region 6 incorrectly and conclusively relied on HYSPLIT modeling and used it in a selective manner, while another Region correctly disregarded HYSPLIT modeling (e.g., the EPA Region 3 in the TSD for the Pittsburgh area) and based meteorological analyses on general historical wind patterns. The Petitioner (while incorporating TPA's comments) further indicates that the EPA failed to provide record support adequately justifying its conclusion that HYSPLIT modeling is a proper basis for a nonattainment designation in Wise County. The Petitioner (while incorporating TPA's comments) indicated that the EPA Region 6 conducted a 'nit-picking' analysis by focusing on only the days with violations with HYSPLIT instead of using general wind patterns as have been used in other preliminary TSDs. The Petitioner listed preliminary TSDs for the areas that did not use HYSPLIT to indicate disparate treatment of wind patterns by Region 6 in Texas.

Response: We refer generally to our earlier responses addressing the use of the HYSPLIT modeling for the DFW area. Wise County was not treated disparately by the EPA's use of HYSPLIT modeling results. HYSPLIT was used in 16 areas where it was either submitted to the EPA or the EPA performed the

modeling because we believed it could provide additional insight into the factors that contribute to nonattainment.¹⁸ For example, as discussed previously, we explained in our TSD that HYSPLIT modeling is particularly useful for areas, such as Dallas, where wind speeds can be light and wind direction variable.

Each of our designations decisions were based on a five-factor analysis of the unique circumstances relevant to each area. The level of detail for meteorological analysis can vary area-to-area. For example, in cases where counties did not have significant emissions compared to other counties in a specific area a more general meteorological approach may have been sufficient.

With regard to the claim that Region 3 disregarded HYSPLIT modeling, this is an incorrect characterization. In the preliminary TSD for Pennsylvania, the EPA stated that:

“Further analysis of backward trajectories could prove helpful in resolving the affect of meteorology on this area. Pennsylvania’s March 2009 ozone recommendation did contain some NOAA HYSPLIT model backward trajectory information, but not for monitors in the Pittsburgh area. The supplied information for a monitor in eastern Pennsylvania indicated that HYSPLIT 24-hour period back trajectories were highly variable based upon the episode in question. Therefore, this information was not useful in determining the impact of meteorology on the Pittsburgh-New Castle CSA.”¹⁹

The EPA only determined that a HYSPLIT run in eastern Pennsylvania was not useful for evaluating the Pittsburgh area, which is located in the western portion of the state. Subsequently, as part of the analysis for the final designation decision, the EPA Region 3 used the HYSPLIT model to further understand the meteorological transport conditions within the region around Pittsburgh and other areas of Pennsylvania.²⁰

Issue: Petitioner claims (while incorporating TPA’s comments) that the EPA Region 6 incorrectly and inconsistently applied HYSPLIT to justify a nonattainment designation for Wise County. The Petitioner further claims that HYSPLIT cannot establish a causal connection between winds in one area and ozone formation in another.

Response: We agree that HYSPLIT modeling has limits and that its primary use is in showing where air has traveled before reaching a certain location at a given time, thus giving an indication of what pollution sources may have contributed to the monitored pollution level. As noted throughout the designation process, however, the EPA analyzes meteorology, including HYSPLIT where available, as one component of the meteorology factor in the five-factor analysis. The EPA indicated in the

¹⁸ EPA considered HYSPLIT analyses in the following 16 areas for the 2008 ozone designation process: Allentown-Bethlehem-Easton, PA; Baltimore, MD; Baton Rouge, LA; Charlotte-Rock Hill, NC-SC; Chicago-Naperville, IL-IN-WI; Dallas-Fort Worth, TX; Denver-Boulder-Greeley-Ft Collins-Loveland, CO; Houston-Galveston-Brazoria, TX; Knoxville, TN; Lancaster, PA; Memphis, TN-MS-AR; Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE; Pittsburgh-Beaver Valley, PA; Reading, PA; San Luis Obispo (Eastern San Luis Obispo), CA; and Washington, DC-MD-VA. The TSDs for ozone designation decisions for each of these areas can be found in the public docket and on the EPA’s ozone designations website. Docket No. EPA-HQ-OAR-2008-0476 and <http://epa.gov/ozonedesignations/2008standards/tsd.htm>.

¹⁹ Pennsylvania Preliminary TSD “Pennsylvania Area Designations for the 2008 Ozone National Ambient Air Quality Standards,” December 2011, page 41 (Docket ID No. EPA-HQ-OAR-2008-0476-0237). We note that Pittsburgh is in Western Pennsylvania and the March 2009 HYSPLIT analysis included in Pennsylvania’s 2009 recommendation was for an ozone episode in Eastern Pennsylvania.

²⁰ Pennsylvania Final TSD “Pennsylvania Area Designations for the 2008 Ozone National Ambient Air Quality Standards,” April 2012, pages 10-13, 24-28, 41-45, and 73-79 (Docket ID No. EPA-HQ-OAR-2008-0476-0632).

preliminary and Final TSDs for the DFW area that the combination of back trajectories and the close proximity of large emissions of ozone pre-cursors to the monitor supported its decision to include Wise County. TCEQ's SAM modeling, which is based on a wide array of information, including meteorology and emissions, further confirmed that Wise County emissions yield increased ozone levels at monitors in DFW.²¹

Issue: Petitioner incorporates comments by TPA regarding the EPA Region 6's approach to performing HYSPLIT analyses. Specifically, Petitioner refers to TPA's comment that Region 6's use of HYSPLIT was inconsistent with other regions, as detailed below:

Response: We do note that some of the HYSPLIT analyses were conducted at different times, and the EPA used some slightly different approaches for the different HYSPLIT analyses. For example, we varied start time for the back trajectories dependent upon when the 8-hour exceedances occurred at the monitor being evaluated. To obtain additional insight, we also separated HYSPLIT runs for several different hours for some of the monitors that make up the 8-hour exceedance period since the exceedance period is made up of 8 consecutive 1-hour ozone readings. We noted our methodologies for conducting the HYSPLIT analyses in the TSD and in the individual electronic HYSPLIT output files. The meteorological data on which the EPA based its HYSPLIT model analysis was available to the public.²² On December 20, 2011 (76 FR 78872), the EPA published a notice in the *Federal Register* inviting public comment from interested parties other than states and tribes on the letters sent to states with the intended designations. The notice provided that any comments should be received on or before January 19, 2012, but in response to requests from several parties, including Wise County, the EPA extended the public comment period to February 3, 2012. (See 77 FR 2678, January 19, 2012). TPA requested a copy of the HYSPLIT data from the EPA on January 17, 2012. The EPA provided a copy of the meteorological and ambient monitoring data on January 19 – 24, 2012, and also posted copies of the data to the rulemaking docket.

County 1 - Issue: (Lebanon County, PA) Petitioner incorporates TPA's comment that Lebanon County was considered as part of the Berks County (Reading) Pennsylvania area but was designated attainment even though the winds blew from Lebanon County into Berks County 40 percent of the time during the summer, which was far more often than prevailing winds blew from Wise County to the violating monitors in the DFW area. TPA recognized that Lebanon County had somewhat lower emissions than Wise County.

County 1 - Response: (Lebanon County, PA) The Petitioner (by incorporating TPA's comments) only discusses aspects of two factors, meteorology and emissions, and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County. As to the emission factor, the comment recognizes that emissions in Lebanon County were low and relies solely on the meteorology factor to suggest that Wise County was treated differently than Lebanon County. With regard to the meteorology, we note two things. First, the 40% of the time for wind direction from Lebanon County is a summertime predominant wind analysis and not specific to days on which the violating monitor was experiencing ozone exceedances. Second, based on comments received, the EPA more closely examined the

²¹ Page 13 of TCEQ attachment to Governor Perry's comment letter dated February 29, 2012, Source apportionment modeling files provided by TCEQ to EPA demonstrate that Wise County NOx emission impacts at other DFW monitors including Eagle Mountain Lake and Keller monitors is what makes up almost all of the ozone level changes due to Wise County emissions. Electronic files are available in the electronic record for the Final designation. (EPA Document ID: EPA-HQ-OAR-2008-0476-0633)

²² The meteorological data on which EPA based its HYSPLIT model analysis was accessible to the public at the NCAR FTP site at <ftp://arlftp.arl.noaa.gov/pub/archives/edas40/>.

meteorology using HYSPLIT and the analysis results were included for this area in the Final PA TSD. The EPA concluded that air flow was primarily from the Southerly direction, rather than from the Westerly direction where Lebanon County is located, at times when the monitor was recording ozone exceedances.

County 2 - Issue: (Lawrence County, PA) TPA summarized information from the EPA Region 3's preliminary TSD that Lawrence County had 8,960 tpy NO_x and 3,814 tpy VOC and is located to the west and northwest of violating monitors in the Pittsburgh area. Although Region 3 noted that ozone winds in the area had strong westerly components, Lawrence County was designated attainment.

County 2 - Response: (Lawrence County, PA) TPA only discusses aspects of two factors, meteorology and emissions. This is not sufficient to demonstrate how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 3 - Issue: (Kent County, DE) TPA summarized information from the EPA Region 3's preliminary TSD that winds during ozone season come predominantly from the southwest. The comment also noted that Kent County's ozone design value was 74; that its NO_x and VOC tpy figures were 7,667 and 5,381, respectively; that its VMT was 1,565,000; and that its population growth was +28 percent; and that the EPA was proposing to designate the county attainment/unclassifiable because it is "unlikely to contribute to downwind violations during *most* of the ozone season." The comment concluded that the facts supporting nonattainment designation of Kent County were significantly stronger than those supporting the nonattainment designation of Wise County. Nonetheless, Region 3 concluded that Kent County should be proposed to be designated unclassifiable/attainment. The comment concluded that there is no doubt that under the Region 6 method of analysis, Kent County would have been designated nonattainment.

County 3 - Response: TPA examined aspects of three of the factors: meteorology based on general wind patterns during the ozone season, emissions/emission related data and air quality monitoring data. As an initial matter, we note the circumstances regarding Kent County raised complex issues that are not relevant for the DFW area. There are only three counties in Delaware. The northernmost county, New Castle, is part of the Philadelphia-Camden-Vineland, PA-NJ-MD-DE CSA. See Delaware TSD at page 4. The middle county, Kent is the Dover, DE micropolitan statistical area (MSA) and the southern county, Sussex, is the Seaford MSA. Delaware TSD at page 18. All three Delaware Counties were designated nonattainment as part of the Philadelphia area for the 1997 ozone NAAQS. Thus, for purposes of our analysis, we evaluated all counties within the CSA and the two additional Delaware Counties that are outside the CSA but were included as part of the Philadelphia nonattainment area for the 1997 ozone NAAQS. In addition, we also evaluated several counties in New Jersey that are also outside the CSA but that were included as part of the designated nonattainment area for the 1997 ozone NAAQS. See Delaware TSD at pages 6 & 18.

The five-factor analysis for the counties being considered for inclusion in one nonattainment area will always be different than a five-factor analysis for the counties being considered for inclusion in another area. This is because the facts vary significantly among the areas. For example, the number of counties being considered can vary from one to more than 40. Additionally, the geographic extent of an area under consideration can vary greatly as well, with some CSAs being as large as 100 or more miles from north to south or east to west or both and some being significantly smaller. For that reason, it is difficult to draw direct comparisons between two counties in different CSAs with regard to one factor, such as absolute emissions. As noted above, one distinguishing factor between Kent County and Wise County is that Kent County is not part of the Philadelphia CSA. We also identify some differences between Kent

County and Wise County below with regard to two of the factors raised in the comment. We emphasize, however, that we do not consider this information conclusive outside the five factor analysis. We present it simply to rebut the comment suggesting that two areas are similar. We evaluated both Wise and Kent County based on whether their emissions were contributing to a nearby violation of a monitor, not on whether there was a monitor violating the standard in the county. We note that the distance to the closest violating monitor is 20 miles for Kent County and 0.5 miles for Wise County. See final DFW TSD at page 3 and final Delaware TSD at page 4.

With regard to meteorology, based on comments on the adequacy of general surface wind roses, The EPA conducted HYSPLIT analysis to further examine meteorology. The more detailed HYSPLIT analysis indicated a wider range of wind directions for transport to exceedances in the Philadelphia-Wilmington-Atlantic City PA-NJ-DE-MD nonattainment area. The HYSPLIT analysis also showed that the winds are mostly from the south to northwest directions, with the strongest direction being from the southwest during monitored ozone exceedances from 2007-2011. See Delaware TSD at pages 13-17.

With regard to emissions, out of the 19 counties evaluated in the Philadelphia area, Kent County ranked 14 for NO_x and 17 for VOCs. Kent County ranks 14 out of 19 in VMT. While Kent County did have the highest growth rate of the counties considered, it has a relatively small population base and it had a low proportion of commuters from the county to the Philadelphia area. Wise County ranks 6 out of 19 counties in the Dallas CSA for NO_x emissions and 4 out of 19 for VOC emissions. Population and VMT rankings are similar between Wise County and Kent County. See final DFW TSD, pages 6-14.

County 4 - Issue: (Roane County, TN) TPA summarized information from the EPA Region 4's preliminary TSD that Roane County had emissions of 10,711 tpy NO_x and 3,006 tpy VOC and was predominately upwind of nearby violating monitors.

County 4 - Response: (Roane County, TN) TPA only examined aspects of two factors, meteorology and emissions. This is not sufficient to demonstrate how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 5 - Issue: (Pointe Coupee Parish, LA) TPA also claimed disparate treatment with regard to Pointe Coupee Parish, which was considered for inclusion in the Baton Rouge nonattainment area. TPA notes that Pointe Coupee Parish's NO_x and VOC emissions tpy figures were 15,733 and 2,560 respectively and that its NO_x emissions are higher than those for Wise County. TPA also notes that Pointe Coupee Parish's population density was roughly equivalent with that of Wise County. TPA points out that Region 6 stated that "for the five-year 2006-2010 time period only 5 percent of all days with ozone concentrations greater than 75 ppb at the LSU site had wind back trajectories that went back through Pointe Coupee Parish." The EPA Region 6 proposed a nonattainment determination for Wise County even though the winds blew across Wise County toward violating monitors far less often than the "only 5 percent" figure upon which Region 6 based its proposed attainment/unclassifiable designation for Pointe Coupee Parish in Louisiana.

County 5 - Response: (Pointe Coupee Parish, LA) TPA examined aspects of three factors, meteorology, air quality and emissions. In the Final Louisiana TSD, we indicated that the Big Cajun Power Plant (which we noted in our preliminary TSD is already controlled) emitted 12,119 tpy in 2008 and the rest of the Parish's emissions of man-made NO_x were only 3,614 tpy. Furthermore, we indicated that for the 5 years of back trajectories for ozone exceedances at the LSU monitor only two back trajectories passed over Pointe Coupee Parish. Of the two back trajectories, one of the back trajectories barely went through the southwest corner of Pointe Coupee Parish on the opposite corner

of the Parish from the Big Cajun Power plant in the northeast portion of the Parish. Therefore it is unlikely that emissions from the main point source in Pointe Coupee Parish contributed to the violating monitor for this ozone exceedance, leaving only one back trajectory in 5 years that indicates potential contribution. In comparison, 7 trajectories in 5 years for the Eagle Mountain Lake monitor in DFW passed through areas with emissions in Wise County, and five of these days were the highest monitored ozone days that helped set the monitor's DV. We note in the RTC (page 56) that we weighed the combination of emissions and distance to a violating monitor in our evaluation comparing Hood and Wise Counties and placed more weight on contribution from Wise County due to Wise County's larger emissions and closer proximity to a violating monitor. Similarly, the distance to the only violating monitor in Baton Rouge area (2008-2010 DV of 78 ppb) is approximately 18 miles for Pointe Coupee Parish (26 miles from Big Cajun) in comparison to Wise County's distance of 0.5 miles to the Eagle Mountain Lake monitor (2008-2010 DV of 85 ppb).

County 6 - Issue: (Dutchess, Putnam, Orange, and Ulster Counties, NY) TPA compared Dutchess, Putnam, Orange and Ulster Counties, which are in the New York – New Jersey – Long Island, NY-NJ-CT nonattainment area, with Wise County. TPA pointed out that the EPA Region 2's preliminary TSD indicated that Dutchess County was upwind 23 percent during the summer; Putnam County 24 percent; Ulster County 29 percent; and Orange County 25 percent.

County 6 - Response: TPA only examined meteorology and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 7 - Issue: (Stafford County, VA) TPA also cited Stafford County Virginia, which the EPA evaluated for inclusion as part of the Washington, DC – MD-VA nonattainment area. Specifically, TPA pointed to the EPA Region 3's preliminary TSD for Maryland that indicated Stafford County is upwind 22 percent of the time and that Stafford County should be designated attainment/unclassifiable.

County 7 - Response: TPA generally discussed aspects of only two factors – meteorology and emissions, and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 8 - Issue: (Cattaraugus Reservation – Seneca Nation) TPA cites to meteorological and emissions data from the EPA Region 2's preliminary TSD that indicates that the Cattaraugus Reservation could have a small impact on the Jamestown, NY nonattainment area. However, the EPA proposed that the Reservation should be designated attainment/unclassifiable.

County 8 - Response: (Cattaraugus Reservation – Seneca Nation) In determining whether a county should be included as part of the designated nonattainment area, we look at whether the county contributes to nonattainment in the area. Our analysis looks at whether the area's contribution is at a level to have a significant effect on ambient ozone levels. See *Catawba v. EPA* at 39 (recognizing that "contribute" under section 107(d) is ambiguous and does not necessarily mean any level of contribution.) In looking at our 5 factors, we note that in the Jamestown Area TSD, we determined that there were no known permitted sources on the Reservation and that the population was sparse. We also noted that the Reservation is downwind of Jamestown and transport to the nonattainment area is likely to be low or nonexistent. Based on our full five-factor analysis, we concluded that tribal lands are not contributing to the nonattainment area. See Jamestown TSD at 4, 9 and 12.

County 9 - Issue: (Sussex County, DE; Berks County, PA; Calvert, Fredrick, Montgomery, Prince George's and Loudon Counties, Washington DC-MD-VA) TPA summarized information from several of the EPA Region 3's preliminary TSDs regarding counties that the EPA proposed to designate as nonattainment and claimed that they show disparate treatment for Wise County.²³

County 9 - Response: The issue for each of these counties was not whether the area should be designated as nonattainment but rather in which nonattainment area the county should be included. We note that each of these counties is located in the northeast U.S. corridor where nonattainment areas frequently adjoin, and the associated CSA and CBSA can include 40 or more counties. Our consideration of which nonattainment area a county should be affiliated with raises different issues than the issue of whether an area should be designated nonattainment based on contribution. For example, the jurisdictional factor often plays a more significant role in these cases and, in the absence of a five-factor analysis supporting a contrary conclusion, we generally will defer to the state's recommendation as to which of the two nonattainment areas should include the county. *See e.g., Pennsylvania Department of Environmental Protection v. EPA*, 429 F.3d 1125, 1129 (D.C. Cir. 2005). Our decisions for these counties do not show disparate treatment for Wise.

County 10 - Issue: (Dauphin and York Counties, PA) TPA generally referred to discussion of the EPA's meteorology factor in EPA Region 3's preliminary TSD. The EPA proposed to designate these counties attainment/unclassifiable even though meteorology indicates that Lebanon and Dauphin may contribute to violations in Lancaster.

County 10 - Response: (Dauphin and York Counties, PA) TPA only discussed one factor, meteorology, and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 11 - Issue: (Dorchester, Wicomico, and Worcester Counties, MD) TPA referred to the EPA's emissions and meteorology factors discussion in the EPA Region 3's preliminary TSD. The EPA proposed to designate three Maryland counties attainment/unclassifiable even though emissions from these counties would contribute little to violations in downwind Sussex County, Delaware.

County 11 - Response: (Dorchester, Wicomico, and Worcester Counties, MD) After a review of the EPA's five factors, the EPA concluded in the Final TSD "[a]lthough emissions from those counties might contribute to violations in downwind Sussex County, Delaware, the emissions levels from those counties are so low that little actual contribution is expected." The EPA determined after weighing all five factors that these counties do not in fact contribute to ozone at a violating monitor.

County 12 - Issue: (Carroll and Hall Counties, GA) TPA generally discussed distances separating emissions sources from the violating monitors. The EPA Region 4's preliminary TSD proposed a designation of attainment/unclassifiable for these counties because their distance from violating monitors limited their impact on such violating monitors.

²³ These counties are: (1) Sussex County, Delaware, which was designated as a single county nonattainment area and not included as part of the Philadelphia nonattainment area; (2) Berks County, Pennsylvania, which was designated as a single county nonattainment area and not included as part of the Philadelphia nonattainment area; and (3) Calvert, Fredrick, Montgomery, Prince George's and Loudon Counties which were included in the Washington DC-MD-VA nonattainment area and not the Baltimore nonattainment area.

County 12 - Response: TPA only discussed one aspect relating to ambient air and distance to a violating monitor, and thus did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

Issue: TPA (page 20 of TPA's comment letter) indicated that TCEQ has already determined, in a study done in connection with the East Texas Combustion rule, that the imposition of controls on sources in six counties, including Wise and Hood, would have such a negligible effect on conditions in the DFW nonattainment area that it was not justified. Modeling sensitivity runs were conducted by TCEQ in connection with the East Texas Combustion rule in order to assess the potential benefit of including six counties, including Wise and Hood, in the rule. According to TCEQ, "[t]hese sensitivity runs indicate that the Dallas-Fort Worth eight-hour ozone nonattainment area would only benefit approximately 0.05 ppb reduction in ozone from including these six counties under the rule." See 32 Texas Register 3303 (June 8, 2007).

Response: Section 107(d) of the CAA requires the EPA to designate as nonattainment any area that does not meet the air quality standard or that contributes to a violation of the air quality standard in a nearby area. Based on our analysis of contribution in the DFW TSD, we determined that Wise County contributed to monitored violations of the 2008 ozone NAAQS and included Wise County in the ozone nonattainment area. We further note here, that in evaluating whether an area is contributing to a current violation of the ozone NAAQS, we do not evaluate how the implementation of individual, specific measures, or the failure to implement such measures, might affect ozone levels within the area. The issue of which measures are appropriate for reducing ozone levels in an area violating the standard will be addressed by the states during the post-designation attainment planning process.

We also note that the modeling the TPA cites was in relation to an older ozone standard (84 ppb versus the current 75 ppb) and is comprised of an older meteorological episode with fewer days. Additionally, the emission estimates in the modeling do not account for the growth in emissions due to the Oil and Gas developments in north Texas since 2005/6. The modeling TPA discussed is older modeling that was for an older limited number of days episode (10 days) that did not have as many meteorological regimes as the more recent SAM modeling provided by TCEQ (with over 30 days) to the EPA as part of their comments for the designations of the 2007 8-hour standard. The older modeling only was conducted for evaluations of potential controls to help the DFW area attain the 1997 8-hour standard (84 ppb) and the conclusions would likely be different if the analysis was done for the current 75 ppb standard. The modeling did not include revised emissions due to the growth of oil and gas emissions in Wise County and other North Texas counties that have seen increased emissions due to oil and gas field developments since 2005/6 when the emission inventory for the modeling cited by the petitioner was developed for the older modeling analysis.



THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

DEC 14 2012

Mr. Zak Covar
Executive Director
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Dear Mr. Covar:

I am pleased to respond to your July 18, 2012, letter in which you filed a petition for reconsideration on behalf of the Texas Commission on Environmental Quality concerning the U.S. Environmental Protection Agency's final rule, "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards." *See 77 Federal Register 30008* (May 21, 2012). The petition requests that the EPA reconsider the nonattainment designation for Wise County, Texas, as part of the Dallas-Fort Worth ozone nonattainment area and also requests that the EPA stay the effective date of the designation for Wise County, pending reconsideration.

The EPA has carefully evaluated the issues and information in your petition. For the reasons provided in the enclosure to this letter, the EPA is denying your petition and request for stay. The EPA continues to believe that Wise County is properly designated nonattainment because of its contribution to ozone nonattainment in the Dallas-Fort Worth area.

The enclosure addresses the specific issues in your petition and provides the basis for this denial. The EPA hopes that the responses will help to explain the agency's conclusions so that you will better understand our final decision. The EPA considers the designation of nonattainment areas with appropriate boundaries to be an important step in implementing the 2008 ozone standards.

Please know that we look forward to working with the state of Texas and those in the Dallas-Fort Worth area to ensure achievement of the 2008 ozone standards.

In the meantime, I thank you for your interest in protecting the quality of our environment.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa P. Jackson", is written over a printed name.

Lisa P. Jackson

Enclosure

Enclosure

EPA Response to Petition for Reconsideration from the Texas Commission on Environmental Quality

By letter dated July 18, 2012, the Texas Commission on Environmental Quality (TCEQ) petitioned the EPA to reconsider the final area designation for Wise County in the Dallas-Fort Worth (DFW) area. For the reasons discussed below, the EPA is denying the Petition. TCEQ also requested that the EPA stay the effective date of the designation for Wise County. Because the EPA is denying Petitioner's reconsideration request, the EPA is also denying the stay request. For the sake of clarity, we have organized this response according to the structure of the July 18, 2012 Petition.

I. Analysis of TCEQ's Source Apportionment Modeling:

Issue: The EPA erred in failing to follow its own guidance. The guidance requires the agency to use the Source Apportionment Modeling (SAM) results in a relative way using a relative response factor (RRF) and anchor the analysis on the base year Design Value (DV) at the monitor, rather than using modeled future-year concentrations directly in a deterministic approach (using direct model outputs). The EPA ignored the TCEQ SAM relative response-based predictions and instead cherry-picked direct predictions from TCEQ's SAM (not anchored to any measurements) to declare that Wise County's contribution to the Eagle Mountain Lake monitor's design value was significant. The same principles apply where ozone concentrations at a monitor location are allocated to a specified set of emission sources, an approach the EPA followed in the modeling conducted for the Cross State Air Pollution Rule (CSAPR).

Response: The EPA fully described the reasons it weighed some of the model outputs provided by Texas more than others and why we evaluated Texas's SAM results using additional metrics. Thus, we do not believe this issue warrants reconsideration. We note that in Texas's February 29, 2012 comment letter attachment they included SAM results using the absolute values from the model (average and maximum contributions) and also results using an RRF technique. So the EPA did not cherry pick the results but used information provided by Texas and further evaluated Texas's SAM results.¹ In fact, TCEQ had six different figures with the absolute values and only one figure with relative values for the DFW SAM comments.

As discussed in greater detail in the Technical Support Document (TSD) and in other Responses in this Petition response, we had concerns with model performance and that the episode was not reflective of the complete suite of conditions that result in ozone exceedances in the DFW area. Because of our concerns we indicated that we were putting more weight on the day specific (absolute values) and not the average values. The RRF approach averages the impacts over all exceedances, and with a limited set of modeled days we believe this could give a potentially misleading assessment. Even in an analysis of the entire ozone season, we would still want to evaluate the day-specific impacts in addition to the averaged and relative impacts to determine if impacts occur often enough from a specific meteorological regime that transports emissions from an area that is not transported toward the monitor in other regimes, which would potentially limit an area's ability to reach attainment.² For example if a regime occurs on average only 20% of the time but drives the overall area's design value (DV), it could have

¹ See Enclosure to Texas's February 29, 2012 comment letter. Absolute values SAM analysis included Pages 10-14, Figures 7, 8, 9, 10, 11, 12 for the DFW area and Pages 18-27, Figures 17-32 for the Houston/Galveston/Brazoria area.

² In the case of Wise County and DFW we discuss in the TSD and elsewhere that the meteorological regime of Light and Variable winds with some recirculation of air masses is one of the classic worst-case regimes that often impacts the DFW design value.

significant implications for attainment. Because the RRF approach averages the impacts of all the meteorological regimes, it masks to some degree the impact of the meteorological regime that drives the highest levels. This is of particular concern in evaluating SAM for a determination of inclusion/exclusion of a county under only one meteorological regime. Note that if the EPA had used a relative reduction factor approach to estimate the day-specific impacts from the TCEQ SAM, we believe the modeled impacts from Wise County would likely have been larger.³

SAM is a technique to look at culpability of individual areas or source groups on specific area(s) of concern, and it is common to use both direct model results and relative modeling results. The EPA's SAM analysis is consistent with many past SAM analyses that have been conducted by the EPA, RPOs, states, and other researchers. The EPA has never issued specific guidance on how SAM analysis should be performed, therefore our analysis does not conflict with the EPA guidance. The EPA has issued guidance for attainment demonstrations indicating that modeling should be analyzed in a relative sense using the RRF technique for determining whether the emissions reduction measures in an adopted plan will achieve overall attainment/nonattainment, but the EPA has not issued guidance on how SAM should be evaluated or more specifically how SAM should be performed when evaluating the impact of a county on a violating monitor in the context of an attainment/nonattainment designation decision. We further note that to the extent that the EPA has guidance on modeling, guidance documents are not binding rules and thus cannot "require" any specific action by the EPA, states or any other party. As noted, the EPA fully explained how it interpreted the SAM results in the record for this action.

The EPA has used SAM to support national rulemakings such as the CSAPR to assess a state's impact on downwind receptors of concern (the EPA defined nonattainment or maintenance receptors). In the context of this designation action, TCEQ submitted and the EPA used SAM to evaluate impacts of a single county's emissions contribution to a downwind receptor in an adjacent nonattainment area. This is fundamentally a finer scoping of SAM compared to analyses in the EPA's national rulemakings that are on the scale of state-to-state impacts, so there is no direct comparison. As discussed further in addressing other specific issues raised in the petition, we think there were concerns and differences that we documented in our Final TSD that supported our consideration of impacts on a daily basis, and we therefore focused on the higher and maximum impacts than on the average impacts that would result from a RRF based analysis.⁴ We note, however, that contrary to the suggestion by the Petitioner, when we have used SAM in national rulemakings the EPA has used absolute values as well as relative values.

Issue: TCEQ's RRF analysis results for Wise County indicated the impact from Wise County emissions at the Eagle Mountain Lake monitor was 0.41 parts per billion (ppb). This value is below the EPA's 1% threshold, therefore Wise County should not have been included in the DFW nonattainment area.

Response: As also discussed elsewhere, the EPA does not have specific guidance on evaluating SAM results nor how to evaluate the impact of emissions from a county on a nearby violating monitor in the context of a designation decision. The EPA evaluates each submission of SAM on a case-by-case basis, carefully assessing a number of issues including how the modeling was conducted, model performance, and available data from the analysis in order to derive appropriate conclusions from the results. The EPA used a 1% of the National Ambient Air Quality Standards (NAAQS) (0.75 ppb) cutpoint in evaluating SAM results to identify days with a non-trivial impact. We did not imply that 1% of the NAAQS was a criteria threshold point for inclusion or exclusion. Our basis for identifying days with a

³ Electronic SAM files provided by TCEQ included a file "Hood-Wise_Dvf_Contribution_wPies.xls" that included both the absolute values and the RRF based calculated value. The absolute 2012 impacts from Wise County on the Eagle Mountain Lake monitor is 0.58 ppb (mean of 10 days used in the RRF) and the RRF based approach has a value of 0.64 ppb.

⁴ Final TSD SAM discussion on pages 15-20 and HYSPLIT discussion pages 14-15.

non-trivial impact is discussed on page 17 of the TSD where we explained, “[o]ften in attainment demonstration modeling, controlling of sources is evaluated and results in only a few tenths of a ppb change, therefore we used a 1% of the standard threshold for the days where we would consider Hood or Wise County’s emissions to be significant.” We also note that modeling from TCEQ in a 2007 8-hour Ozone Attainment Demonstration for DFW included multiple analyses of individual control strategies and the resultant impacts on monitors in DFW area, where Texas had chosen controls that provided changes of a few tenths of a ppb. In addition, we considered the recent Cross State Air Pollution Rule, which used a one percent threshold in the source apportionment modeling to determine if a state’s emissions significantly impacted a downwind state’s nonattainment or maintenance area. Thus we determined that an impact of 0.75 ppb, or one percent of the 2008 ozone standard, which is higher than that used by the state in determining emissions strategies for the DFW area, would be appropriate as a metric to identify days with a nontrivial impact.

It is important to note that the number of days with an impact of 0.75 ppb or more is only one of the metrics evaluated from the SAM results. In the DFW Final TSD and in supporting files, we discussed all of the metrics used in our assessment of the SAM results, and the unique factors that we weighed in our analysis of SAM results for DFW. Given the detailed daily information available for analyzing SAM for the DFW and Houston areas designations, we evaluated the average impact, maximum impact, and an additional metric, the number of days where impacts may be high enough that reductions might be beneficial in development of an attainment demonstration.

Issue: The EPA appears to conclude in the Final TSD that TCEQ’s SAM was not adequate because it was not inclusive of an entire ozone season in addition to underestimating exceedances on many days by underpredicting peak values. To compensate for these concerns, the EPA relied on absolute modeled maximum concentrations to predict the potential contribution from Wise County to the DFW nonattainment area. The use of photochemical modeling that supports a DFW attainment demonstration is appropriate and relevant evidence to determining the potential downwind contribution of Wise County to the DFW nonattainment area; it is the best evidence possible. It was irrational for the EPA to fail to utilize this evidence, particularly since the EPA had ample opportunity to notify TCEQ of any concerns. The EPA’s rationale for not utilizing the TCEQ SAM because it did not include an entire ozone season is based on the fact that the TCEQ SAM should have included days from the August-September period, which typically show higher ozone concentrations than the June period modeled. This reason ignores the specific facts of the actual monitoring data for 2006, which the EPA does not explain. The EPA also ignored the basis and support provided for the June 2006 episode days, instead of an entire ozone season.

TCEQ referred to the Modeling Protocol for the 2011 DFW Ozone Attainment Demonstration, provided to the EPA on October 5, 2010, noted that the 2006 base year was chosen largely because it represents an exceptionally rich set of air quality and meteorological measurements, which satisfies one of the criteria listed in the modeling guidance for selecting episodes. The protocol also explained that in 2006, June had the most high- ozone days of any month (more than August/September), and that all the meteorological conditions linked to formation of high ozone concentrations were represented, also consistent with the guidance. TCEQ continued that the EPA modeling guidance recommends relatively long time periods covering multiple synoptic cycles and does not require a full ozone season, so using the May 31 - July 2, 2006 period is entirely consistent with the guidance.

The EPA’s explanation does not address why an episode based on an entire ozone season would be necessary, given that the more specific period of May 31 - July 2, 2006 had the most high-ozone days of any month in 2006. The EPA’s evaluation of the TCEQ SAM ignored both the factual monitoring data

for 2006 and its own guidance to use modeling in a relative sense, without explaining why this deviation from established guidance was appropriate in this case.

Response: The EPA did consider the SAM results provided by TCEQ and our concerns with the SAM are documented on pages 15-20 of our Final TSD.⁵ The EPA took these concerns into account in our interpretation of the SAM results for purposes of designations. The EPA recognizes that model episode selection is always a balance of many factors including the availability of data and the time available for completion in addition to considerations as to whether all important meteorological regimes have been addressed. We would agree that the 2006 episode is a great improvement over the previous 10-day episode for Dallas from 1999. Because these factors have to be balanced, no model episode is perfect and the limitations have to be considered. In this case the modeling does not include all of the meteorological regimes that can lead to high ozone and the model has an under prediction bias. We also noted that TCEQ's own DFW conceptual model analyses, that has been included in TCEQ's 2011 DFW Ozone Attainment Demonstration SIP and past Attainment Demonstrations SIPs, also indicated a roughly bimodal distribution of ozone exceedances with highest values in mid- to late-summer (July-September), and that this latter summer period had some different meteorological regimes than the early summer period that TCEQ included in their modeling. Based on our analysis of HYSPLIT results, the worst days for some of the DFW area monitors that set the Design Value are in the later summer. Later summer is also when the frequency of weak frontal passages are higher where we could see influence from Wise County emissions on DFW nonattainment monitors more often. The fact that not all meteorological regimes are addressed led us to weigh day-specific impacts and maximum impacts more than average impacts. It is important to note that since violations of the ozone NAAQS cannot be separated from exceedances,⁶ looking at day specific impacts would be reasonable even if the model covered a full ozone season. The fact that the model has an under-prediction bias led us to consider that the model was not predicting all of the exceedances that had occurred during the episode. We note that the current 2011 DFW Ozone Attainment Demonstration modeling of 2012 projected levels indicated that the DFW area would be well under the 1997 8-hour standard, but based on 2008-10 data at the time and more recent 2011 (DV of 90 ppb) and 2012 preliminary data (DV of 87 ppb), the area is still well above the levels projected by the model (2012 DV of 78 ppb). This confirmed our concerns about modeling underprediction bias.

⁵ EPA Final TSD pp. 15-20 and including this quote on pp. 16, "[e]valuations of the conceptual model for high ozone in DFW by TCEQ, EPA and others indicates that high ozone in DFW is roughly a bimodal distribution with lower peaks in early summer (May-June) and the highest values in mid to late-summer (July-September) and that the mid to late summer has some different meteorological/transport regimes than the early summer episodes. Therefore, TCEQ's SAM does not include a large number of days and does not include all of the meteorology regimes conducive for ozone events in DFW and is missing the events that happen in mid to late-summer that often set the DFW area's DV."

⁶ In analyzing possible contributions from emissions in surrounding counties using the SAM tool, the EPA only evaluated and considered the amount of modeled impact from Wise County emissions on monitors that were violating the 2008 ozone standard according to the 2008-2010 data. We focused our assessment on monitors violating the standard and, in doing so, examined contributions on days when there were exceedances at those violating monitors. As a factual matter, it is not possible to separate "actual violations" from the "exceedances" that result in the violation. Based on the form of the ozone standard, an area is determined to be violating the standard if the three consecutive year average of the annual fourth highest daily maximum 8-hour average ambient air quality ozone concentration is greater than the standard (0.075 ppm). Therefore, all daily maximum 8-hour averages that exceed 0.075 ppm at a violating monitor (i.e., "exceedances") are relevant for purposes of determining whether emissions contribute to a violation at that monitor. Accordingly, we restricted our review of available modeling impact results to days with modeled exceedances at violating monitors. As part of this analysis, we evaluated the monitoring data during the episode modeled to determine if exceedances had actually occurred at the monitor on that specific day. The use of modeled exceedance days for estimating ozone using photochemical grid models is a long-established practice for modeled attainment demonstrations. This approach is recommended by the EPA in "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM_{2.5}, and Regional Haze" (EPA-454/B-07-002), and used by the EPA to support Federal rules such as the Cross-State Air Pollution Rule.

We also note that while weak frontal passages are one of the conceptual model meteorological regimes for the DFW area for the 1997 8-Hour standard and would also be expected to be one of the key regimes for the 2008 8-Hour Ozone standard, and there were not many of these in later summer 2006 compared to what occurred in other years. There were a number of these specific regimes in 2007 and other years, including one in August 2007 that resulted in the highest 8-hour readings monitored in DFW in the last 15 years (121 ppb at two monitors). The EPA's modeling guidance is premised upon trying to model the meteorology/emissions of past ozone exceedances such that a modeling system can be developed to accurately assess potential impacts of emission changes and predict if an area will reach attainment by the required date. Based upon the many competing factors, including the amount of time it takes to run computer models and develop modeling that is performing accurately enough for the task at hand the EPA's guidance is to weigh the mitigating factors and model enough days to develop a sufficient modeling system. The EPA's guidance does indicate that at a minimum, areas should model enough days to capture multiple synoptic periods and many areas have been modeling complete ozone seasons to help capture enough days and meteorology combinations that perform adequately for use in predicting future attainment/nonattainment levels.⁷

Issue: The EPA also justified its use of the absolute modeled maximum concentration because the TCEQ modeling under-predicted the peak 8-hour contributions in 2006. The RRF concept was developed precisely to correct for situations where the model over- or under-predicts the baseline concentrations. The EPA failed to explain why the RRF concept, developed by the EPA to address both the possibility of under- and over-prediction of photochemical models, was not applied for the purpose of evaluating the possible contribution of Wise County to the DFW nonattainment area.

The EPA appears to argue that the TCEQ SAM was not adequate because the TCEQ SAM used spatially averaged baseline and future ozone concentrations instead of maxima. However, since the EPA didn't actually use the RRF-based contribution to 2012 future design values, this argument is irrelevant. The primary reason the EPA guidance was developed supporting the use of the maximum value "near" a monitor is to allow the RRF calculation to account for possible migration of ozone plumes due to implementing controls in an area. Instead of considering an RRF-based approach, the EPA relied on the 2012 daily modeled absolute contributions.⁸

Similarly, there is no rational basis for the EPA's use of a 70 ppb threshold for selecting days to analyze since the EPA did not use those days to calculate an RRF as per the EPA guidance. Instead, the EPA selected days using a 70 ppb threshold from the 2006 baseline and used corresponding days in 2012 to look for Wise County contributions above 0.75 ppb. On many of those days in 2012, the predicted eight-hour ozone concentrations were less than 75 or 70 ppb. The EPA should have selected days using a 75 ppb threshold from the future year modeling, but in any event, did not provide a rational basis for its

⁷ The EPA's 2007 Modeling Guidance pp.122-23, "Due to increased computer speeds, it is now prudent to recommend modeling relatively long time periods. For 8-hour ozone and 24-hour PM2.5, **at a minimum**, (emphasis added) modeling episodes which cover full synoptic cycles is desirable. Depending on the area and the time of year, a synoptic cycle may be anywhere from 5-15 days. Modeling even longer time periods of up to a full season may simplify the episode selection process and provide a rich database with which to apply the modeled attainment test."; pp. 140 "With the advancement in computer technology over the past decade, computer speed and storage issues are no longer an impediment to modeling long time periods. In fact, many groups have recently modeled entire summers and/or full years for ozone, PM2.5, and regional haze (Baker, 2004a) (U.S. EPA, 2005b)"

⁸ The TCEQ used averages instead of maxima for its calculation of the future DV contributions because the APCA software reports averages, but notes that using averages does not necessarily introduce bias in the RRF calculation. In fact, the total DV calculated using the APCA average-based RRF only differed from that calculated using the maximum-based RRF by 0.2 ppb (77.86 ppb vs. 78.06 ppb), so it is extremely unlikely that using spatial maxima would have made any perceptible difference in Wise County's modeled 2012 DV contribution.

selection. For example, the EPA notes in the DFW TSD that "This analysis indicated Wise County emissions had even larger impacts of up to 5 ppb on the Eagle Mountain Lake monitor." The EPA refers to the 2012 contribution from Wise County to Eagle Mountain Lake of 5.03 ppb on June 13th. While in the 2006 baseline modeling the eight-hour ozone maximum concentration in the 3x3 grid cell array around the Eagle Mountain Lake monitor on June 13 was 72.91 ppb, in the 2012 modeling the eight-hour ozone maximum concentration in the 3x3 grid cell array around the Eagle Mountain Lake monitor was only 59.74 ppb. Although Wise County may have contributed 5.03 ppb to the 2012 modeled concentration of 59.74 ppb, the total 2012 predicted ozone was much less than the 2008 eight-hour ozone standard of 75 ppb. The EPA thus erred in their analysis by selecting days to analyze based on comparing the 2006 baseline ozone concentrations to a 70 or 75 ppb threshold. The comparison should have been made to 2012 future year ozone predicted concentrations. Furthermore, the EPA's choice to analyze days with ozone concentrations as low as 70 ppb, was erroneous, since such days could not reasonably be expected to contribute to nonattainment of the 2008 ozone NAAQS.

Response: TCEQ's comments included both the maximum and average impact values for Wise County emissions based on using the absolute SAM results for 2012 (not using the RRF technique). The RRF calculation approach for DFW was provided in one Table, in addition to the 6 figures presenting absolute results from direct model output data (without any RRF analysis). As noted above, the EPA placed less weight on the average impact, which includes both the average of the days, and the RRF approach which is another way to average the information over all the days above a threshold. The EPA explained our reasoning for considering modeled impact on days with values of less than 75 ppb. In the TSD (page 16) we indicated:

"Therefore, TCEQ's SAM does not include a large number of days and does not include all of the meteorology regimes conducive for ozone events in DFW and is missing the events that happen in mid to late-summer that often set the DFW area's DV. As a result, it may be appropriate to place more weight on the maximum estimated impact and the number of days with sizeable impacts on violating monitors as compared to average impact. Another observation is that the evaluation used modeled exceedances for contribution and the modeling is underestimating exceedances on many days and therefore is underestimating the number of days of potential contribution. Modeling is significantly under predicting peaks by 5-20 ppb at critical monitors; therefore we also looked at contribution at lower modeled values (70 ppb)."

We also noted that the RRF approach indicates that a threshold lower than the standard can be used and should be used if there are not enough days with modeling values above the standard in the base (2006 in this case). The EPA's attainment demonstration guidance for the 1997 8-hour standard recommended using thresholds as low as 15 ppb below the standard to obtain enough days for evaluation, especially when weighing that the base modeling is underestimating compared to the monitoring data. For the 1997 8-hour ozone standard (84 ppb), our guidance allows basecase (2006 here) modeling days as low as 70 ppb to be used for the RRF evaluation. This supports the use of modeled days with thresholds of 70 and 75 ppb in the basecase 2006 modeling instead of only evaluating days with modeled exceedances in 2012. Although we have not revised our guidance for the 2008 8-hour ozone standard, we can try applying the same logic to the 75 ppb standard, which could result in values as low as 59 ppb to be allowed in RRF calculations. We also note that TCEQ's own RRF analysis used days with values below 70 ppb and even below 60 ppb in the 2012 model projections and only had 3 days out of 10 with values above 75 ppb in the RRF calculations for the Eagle Mountain Lake monitor. The use of this lower threshold in the guidance is a direct result of taking into account potential issues with model underprediction, etc., so the logic to use a threshold of 65 or 70 ppb is within the logic and guidance currently used for RRF analyses in our guidance. Therefore we disagree with TCEQ assertion that we

have not validated using a modeling threshold of 70 ppb period, when their own RRF based comments included values as low as 58 ppb in 2012.

TCEQ's 2012 ozone modeling projections using the RRF technique indicate only four monitors in the DFW area would be above the 75 ppb standard, with the highest value of 78.06 ppb at the Eagle Mountain Lake monitor. In contrast, the actual 2009-2011 DV was 83 ppb and the preliminary 2010-2012 DV at Eagle Mountain Lake is 82 ppb. Furthermore, 80% of the monitors in DFW are exceeding the 75 ppb standard (16 of the 20 monitors) and have preliminary 2012 4th High values above 75 ppb (data ranges from 76 to 92 ppb). The DFW area 2009-2011 DV was 90 ppb and the preliminary 2010-2012 DV of 87 ppb is still 10 ppb above the standard. The monitoring data demonstrates that the 2006 model predicted levels are below current monitored values and the modeled 2012 DV projections are underestimated by more than 10 ppb at some monitors. Therefore the 2006 levels seem more appropriate to compare to actual 2011 and preliminary 2012 monitored data.

In photochemical grid modeling the modeling domain is broken up into 4 km x 4 km squares that we call grid cells. In this case when we obtain the model value for further evaluation we look at the value for the grid cell the monitor is in and all grid cells immediately touching the grid cell with the monitor (similar to a Tic Tac Toe box with the monitor in the center). The EPA guidance is to use the maximum value from the 9 values to represent the model estimate for the monitor and TCEQ used the average value in some of their analysis. TCEQ indicates, based on one example calculation, that the difference between using the average or maximum modeled values in the grid cells around a monitor would not result in a perceptible difference in arguing that their use of the average value was acceptable. TCEQ's example calculation was for a Future Design Value calculation (based on all emissions in the model) and not for a source apportionment calculation (which uses the model estimate for only the emissions from Wise County in this case). We note the EPA's guidance recommends using the maximum value of the grid cells in the grid cell array around a monitor. From one of the files from TCEQ we were able to evaluate what the differences are when we used the maximum vs. the average value and we did note some differences in source apportionment results. If the SAM had been evaluated using the maximum value, as EPA guidance recommends, the values may have been larger.

II. Analysis of HYSPLIT Model Results:

Issue: The Petitioner claims that the EPA failed to quantify the number of trajectories transecting Wise County before crossing either the Eagle Mountain Lake or the Keller monitor and also failed to quantify the number of trajectories that passed over other counties before passing through Wise County. In each case those percentages were extremely low for the trajectories passing over Wise County. Furthermore, the EPA failed to provide a rationale for how trajectories traversing Wise County indicate contribution from Wise County. Since ozone readings at a monitor are cumulative of the sum of the ozone and the ozone precursors along the trajectory path, the EPA's failure to quantify the number of trajectories through other counties was irrational and in error. Furthermore, the EPA failed to explain how much ozone if any would result from the VOCs from Wise County.

Response: The EPA conducted HYSPLIT analysis of several monitors in DFW for purposes of the Preliminary Technical Support Document or TSD (December 2011) and the Final TSD (April 2012). In the Final TSD we noted that "The HYSPLIT model yields an estimate of the path an air mass has traveled before reaching a monitor at a specific location and time. Specifically, the model provides the centerline of the probable path. By knowing where an air mass has traveled before reaching a monitor where an exceedance has occurred, one can consider what potential areas and emission sources could have contributed to the exceedance." The EPA included trajectory plot maps for the Keller and Eagle

Mountain Lake monitors in both the Preliminary and Final TSDs and also made the individual back trajectory files available for review during the comment period. While the EPA did not specifically state the number of trajectories that transect Wise County in text in the TSD, the plots in the TSDs indicate that 3 trajectory ‘centerlines’ directly traversed Wise County for the Keller monitor, and at least 7 trajectory ‘centerlines’ traversed Wise County for the Eagle Mountain Lake monitor. In addition, some other back trajectories that did not directly traverse Wise County had centerlines near enough to Wise County to suggest a path of upwind influence involving Wise County emissions.

We note that a review of the individual trajectory files shows that several of the days that trajectories passed through Wise County were also days that made up the 1st to 4th highest monitored values, which are the values used in establishing the Design Value at the Eagle Mountain Lake and Keller monitors during the periods evaluated; these individual trajectory files were included in the supporting materials for the EPA’s intended and final designations.⁹

We also considered the amount of emissions in Wise County and the proximity to violating monitors. TCEQ has well established the record that the DFW area ozone levels are NOx limited and we based our analysis on the amount of Wise County NOx emissions and their ozone generation potential. In the SAM results for Wise County emissions and comments that TCEQ provided, there was a specific analysis that indicated that almost all of the ozone increases at monitors were due to Wise County NOx emissions.¹⁰ In general the VOCs from Wise County were not considered to contribute to ozone levels very much.

III. Significance of Contribution of Oil and Gas Activity:

Issue: The Petitioner stated that current oil and gas activity levels in Wise County are unlikely to be contributing significantly to nonattainment in the DFW nonattainment area. The Petitioner noted that oil and gas production and drilling in Wise County is starting to decline and stated that there is no evidence of a correlation between the growth in Barnett Shale gas production development activity and ozone production in the DFW area. The Petitioner expressed concerns that the EPA may have inadvertently

⁹ We note that all this data is available in the record. For the Eagle Mountain Lake Monitor, the following days were the 1st thru 4th High values that set the monitor’s DV. Highlighted in BOLD is the days that EPA’s HYSPLIT analysis indicates potential contribution from Wise County emissions. 2006 (6/14 – 107 ppb, 6/9 – 106 ppb, 6/28 – 98 ppb, 7/18 – 98 ppb); 2007 (**8/14 – 121 ppb**, 8/15 – 101 ppb, 10/04 – 86 ppb, **9/22 – 84 ppb**, 7/25 – 84 ppb); 2008 (8/04 – 98 ppb, **6/18 – 92 ppb**, 6/23 – 86 ppb, 6/19 – 85 ppb); 2009 (**6/25 – 100 ppb**, 6/5 – 92 ppb, 6/26 – 92 ppb, **8/26 – 91 ppb**, **7/2 – 91 ppb**); 2010 (6/4 – 94 ppb, 8/27 – 91 ppb, 8/28 – 83 ppb, 5/29 – 81 ppb). When there was a tie for the fourth high value we looked at trajectories for both days.

¹⁰ Governor Perry’s comment letter dated February 29, 2012, pages 13, “[a]t the Weatherford (Parker County) ozone monitor NOx emissions from Hood and Wise Counties created 97-99% of the contributed ozone from these counties, while VOC emissions were only responsible for 1-3% of the contributed ozone from these counties.” See Final TSD, pages 6-8; Houston Final TSD, pages 5-7; RTC pages 52-56, including “...the VOC emissions resulting from oil & gas production activities are relatively nonreactive in the photochemical generation of ground-level ozone and that additionally the DFW area is NOx-limited such that VOC emissions in general do not contribute as much as NOx emissions to the generation of ground-level ozone.” And “EPA has since reviewed the updated emissions data reported by the TCEQ and notes that the revised numbers do not affect the ranking of the counties for VOC emissions. EPA’s analysis indicates that even with the reduced 2009 VOC emissions data, the emissions from Wise County still contribute to measured violations of the 2008 ozone NAAQS at monitors in neighboring counties. In making our final decision, we considered the reduced emissions and the reduction in drilling activity since 2009.” The Governor Perry’s comment letter dated February 29, 2012, pages 17-21, also referred to other TCEQ documents that further support that DFW area is a NOx limited regime and changes to VOC levels do not result in much impact in ozone levels: TCEQ 2011 DFW 1997 8-hour Ozone Attainment Demonstration SIP – “APPENDIX E: Protocol for the Eight-Hour Ozone Modeling of the Dallas-Fort Worth Area,” and “APPENDIX D: Conceptual Model For The DFW Attainment Demonstration SIP Revision For The 1997 Eight-Hour Ozone Standard.”

“double-counted” emissions by summing the emissions data from the 2008 National Emissions Inventory with that of TCEQ’s 2009 Special Inventory for the Barnett Shale.

Response: This comment was raised during the comment period. While we did not specifically respond to this comment for the DFW area, the comment was considered by the EPA. Thus it is not appropriate for reconsideration. In the final DFW TSD, the EPA provides two emissions inventories (EIs) of nitrogen oxides (NO_x) and volatile organic compounds (VOCs), which are ozone precursors (pages 7-8). The two EIs are: 1) a 2008 EI of all Wise County sources and 2) a TCEQ 2009 Barnett Shale special inventory. The 2008 EI included revisions to the EI submitted by TCEQ in October 2011 which updated oil and gas sector pneumatic emissions (pages 6-7). The EPA did not add emissions from the Barnett Shale special inventory to the 2008 EI.

The central issue is whether emissions from Wise County contribute to ozone violations in nearby areas. As the record indicates, monitors in the Dallas CSA are violating the ozone standard and the EPA is required to designate areas as nonattainment if they violate the standard or contribute to a violation in a nearby area. As discussed in the RTC and TSD, some of the highest days during the 2006-2010 period included transport of Wise County emissions (including any Barnett Shale-related emissions) to some of the highest ozone exceedances at the Eagle Mountain Lake and Keller monitors, which are two of the DFW area’s monitors with the highest ozone levels. The TCEQ’s SAM also shows that emissions from Wise County (which would include Barnett Shale-related emissions) are transported to the violating monitors and that the amount of contribution could be as high as 50% of the total impact on certain days with high ozone levels.¹¹ TCEQ’s SAM submitted by the Petitioner included the combination of meteorology and emissions from Wise County (including emissions from oil and gas production activity), and the resultant modeling indicated contributions to multiple exceedances of the ozone standard at several monitor sites.

Design values and design value trends are a product of a number of variables, not simply the emissions of one or more types of emissions sources, which is why we perform a five-factor analysis in determining whether an area contributes to a violation of the standard in a nearby area. Decreases in design values over time can occur due to many variables, including decreases in ozone precursor emissions (such as in the DFW Nonattainment area due to federal measures and measures implemented by TCEQ in past ozone attainment demonstration SIPs). The fact that the design value is lower (i.e., that ozone has not “increased”) does not preclude a determination that emissions from Wise County contribute to exceedances at violating monitors in the DFW CSA.

¹¹ See the TCEQ source apportionment modeling files, including the Excel Spreadsheet that was placed in the record during the final action. (Hood-Wise_DVf_Contribution_wPies.xls)



THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

DEC 14 2012

Mr. Thure Cannon
Executive Director
Texas Pipeline Association
604 West 14th Street
Austin, Texas 78701

Dear Mr. Cannon:

I am pleased to respond to your July 20, 2012, letter in which you filed a petition for reconsideration on behalf of the Gas Processors Association and the Texas Pipeline Association concerning the U.S. Environmental Protection Agency's final rule, "Air Quality Designations for the 2008 Ozone National Ambient Air Quality Standards." *See 77 Federal Register 30008* (May 21, 2012). The petition requests that the EPA reconsider the nonattainment designation for Wise County, Texas, as part of the Dallas-Fort Worth ozone nonattainment area.

The EPA has carefully evaluated the issues and information in your petition. For the reasons provided in the enclosure to this letter, the EPA is denying your petition. The EPA continues to believe that Wise County is properly designated nonattainment because of its contribution to ozone nonattainment in the Dallas-Fort Worth area.

The enclosure addresses the specific issues raised in your petition and provides the basis for this denial. The EPA hopes that the responses will help to explain the agency's conclusions so that you will better understand our final decision. The EPA considers the designation of nonattainment areas with appropriate boundaries to be an important step in implementing the 2008 ozone standards.

We look forward to working with the state of Texas and those in the Dallas-Fort Worth area to ensure achievement of the 2008 ozone standards.

Thank you for your interest in this issue.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa P. Jackson", is written over a horizontal line.

Lisa P. Jackson

Enclosure

Enclosure

EPA Response to Petition for Reconsideration from Gas Processors Association and Texas Pipeline Association

On July 20, 2012, the Gas Processors Association and Texas Pipeline Association petitioned the EPA to reconsider the final area designation for Wise County in the Dallas-Fort Worth (DFW) area. For the reasons discussed below, the EPA is denying the Petition. For the sake of clarity, we have organized this response according to the structure of the July 20, 2012 petition.

I. Emissions Trends and Inventories

Issue: The Petition states that the EPA should consider more fully emissions trends and inventories. The Petitioner also claims that a new study by Texas Commission on Environmental Quality (TCEQ) indicates that volatile organic compounds (VOC) emissions from condensate storage tanks are likely much lower than reflected in the emissions estimates that the EPA used.

Response: This issue was raised during the comment period, and we responded to these comments in our Response to Comment (RTC). Thus it is not an appropriate basis for reconsideration. We did not look at future trends, such as future reductions that may result from new air regulations, in this designation process because that is not an appropriate consideration under the Clean Air Act. *See* RTC at page 58 (“[w]e agree that we did not consider the impact of new air regulations. The implementation of new and existing regulations should result in lower ozone precursor emissions in the future; however, for purposes of designating areas, we consider whether such areas are “currently contributing” (i.e., current activities) to violations of the 2008 ozone National Ambient Air Quality Standards (NAAQS) and do not assess or predict future source emissions”). Our evaluation found that Wise County is currently contributing to violations of the 2008 ozone NAAQS.

To clarify, we do consider past trends such as growth rates and patterns.¹ As an example, we state in the final DFW Technical Support Document (TSD) that “[r]apid growth in population or vehicle miles traveled (VMT) in a county on the urban perimeter signifies increasing integration with the core urban area, and indicates that it may be appropriate to include such perimeter area(s) as part of the nonattainment area” *See* TSD page 9. This information is helpful in the five factor analysis to determine if an area is contributing to a violation.

With regards to condensate emissions, we considered the most recent data available at the time that we issued the designations. We considered potential overestimation of emissions from condensate storage tanks in Texas in the context of concerns raised by Matagorda County officials in March/April 2012. At that time, TCEQ indicated to the EPA they were conducting a further study that would be available in draft form in Fall 2012.² In October 2012, TCEQ provided the EPA with a report on condensate tank emission estimates but that report has not yet been finalized. This new technical information is not an appropriate basis for reconsideration. As noted by the Court in *Catawba v. EPA*, 571 F.3d 20 at 23, “Congress imposed deadlines on the EPA and thus clearly envisioned an end to the designation process.” We do not agree that information that was not available in time for the EPA to consider while complying

¹ *See* “Factors EPA Plans to Consider in Determining Nonattainment Boundaries in Designations for the 2008 Ozone NAAQS”, Attachment 2 to the December 4, 2008, EPA memorandum “Area Designations for the 2008 Revised Ozone National Ambient Air Quality Standards” from Robert J. Meyers, Principal Deputy Assistant Administrator to Regional Administrators, Regions I-X.

² Final HGB TSD, pages 6-7.

with the procedural requirements of the Clean Air Act (Act or CAA) provides an appropriate basis for reconsidering the designations. It is important that states are able to rely on the completed designations and to move forward with the planning now required for the area.

Finally, we note, as discussed in the TSD, the DFW area is nitrogen oxide (NO_x) limited; thus we believe it is unlikely that changes in the VOC inventory would affect EPA's determination that that Wise County emissions contribute to nonattainment.

II. Adequacy of Record

Issue: The Petitioner states that generally Wise County is indistinguishable from Hood County, which was excluded from the nonattainment area, and that the rationale for excluding Hood County should also apply to Wise County.

Response: As documented in the final DFW TSD, Wise County is distinguishable from Hood County in several ways. The 2008 Emissions Inventory (EI) with revisions submitted by Texas in October 2011 shows that Wise County has approximately twice the amount of NO_x and VOC emissions. Wise County's emissions are 11,911 tpy NO_x and 17,609 tpy VOC. Hood County's emissions are 5,515 tpy NO_x and 8,739 tons per year (tpy) VOC. TSD at 7. Additionally, Hood County is further from violating monitors than Wise County (figure 1, page 3). We also summarized the EPA's evaluation of the Source Apportionment Modeling (SAM) that indicated significant differences between contributions to ozone from Hood and Wise County in terms of both the maximum impact at a violating monitor (2008-2010 Design Value (DV)) and the number days with impacts greater than 0.75 ppb (parts per billion). *See* TSD at pages 6 – 14 and RTC pages 51 - 61.

III. Response To Comments

Issue: Petitioner claims that the EPA did not respond to all significant comments, particularly the detailed examples of inconsistencies provided by them in their comment letter dated February 2, 2012.

Response: While we did not provide responses to certain comments raised during the comment period, and as referenced in your Petition, we do not believe this supports reconsideration. As provided below, as to the technical concerns raised, our record supports and fully explains our decision. Furthermore, certain of these concerns did not address whether the EPA's five factor analysis for the identified areas resulted in disparate treatment, but instead made comparisons between counties in other nonattainment areas and the three Texas Counties (Wise, Hood, and Matagorda Counties) only with regard to one or two factors out of the five factors the EPA analyzed. Comparing counties from different areas based only on one or two of the factors from the five-factor analyses is not sufficient to support a disparate treatment argument. *See Catawba County, North Carolina v. EPA*, 571 F.3d 20 (D.C. Cir. 2009) (“petitioners seize upon discrete data points and ignore the very nature of the nine-factor test, which is designed to analyze a wide variety of data on a ‘case-by-case basis.’”)

We also note that unlike most other rulemaking actions under the CAA, Congress did not provide a participatory role for parties other than the states and tribes. For designations, section 107(d) of the CAA sets forth a detailed and specific process between the EPA and the states. This provision provides: (i) that Governors of states make the initial recommendations to the EPA for designations and boundaries; and (ii) that the EPA provide the states with 120 days notice of any intended modifications to the state recommendation prior to finalizing the designation. The 120 day notification process is for the purpose of providing “such State with an opportunity to demonstrate why any proposed modification is

inappropriate.” The CAA does not expressly provide a role for any other entity (including local governments) and, moreover, expressly waives the notice and public comment process of the Administrative Procedure Act for initial designations for new or revised NAAQS. Although no public comment period is required, the EPA opted to provide such a comment period for the 2012 ozone designations.

Specific issues raised by the Petitioner are identified below. We note that a number of the comments raised issues about the differences between the way Wise, Matagorda and Hood Counties were treated. In the final designations, the EPA designated Hood and Matagorda Counties as attainment and the present Petition raises issues solely with regard to Wise County. Thus, we summarize the issues and present our responses below only with regard to Wise County.

Issue: Petitioner claims that there is no correlation between increased Barnett Shale exploration and production and increased ozone. The data illustrate that even with increased production, ozone design values are generally down.

Response: This comment was raised during the comment period. While we did not specifically respond to this comment for the DFW area, the comment was considered by the EPA. Thus it is not appropriate for reconsideration. The central issue is whether emissions from Wise County contribute to ozone violations in nearby areas. As the record indicates, monitors in the Dallas CSA are violating the ozone standard and the EPA is required to designate areas as nonattainment if they violate the standard or contribute to a violation in a nearby area. As discussed in the RTC and TSD, some of the highest days during the 2006-2010 period included transport of Wise County emissions (including any Barnett Shale-related emissions) to some of the highest ozone exceedances at the Eagle Mountain Lake and Keller monitors, which are two of the DFW area’s monitors with the highest ozone levels. The TCEQ’s SAM also shows that emissions from Wise County (which would include Barnett Shale-related emissions) are transported to the violating monitors and that the amount of contribution could be as high as 50% of the total impact on certain days with high ozone levels.³

Design values and design value trends are a product of a number of variables, not simply the emissions of one or more types of emissions sources, which is why we perform a five-factor analysis in determining whether an area contributes to a violation of the standard in a nearby area. Decreases in design values over time can occur due to many variables, including decreases in ozone precursor emissions (such as in the DFW Nonattainment area due to federal measures and measures implemented by TCEQ in past ozone attainment demonstration SIPs). The fact that the design value is lower (i.e., that ozone has not “increased”) does not preclude a determination that emissions from Wise County contribute to exceedances at violating monitors in the DFW CSA.

Issue: Petitioner claims that TCEQ has demonstrated through complex modeling that it is NO_x, not man-made VOCs that drive ozone formation in the DFW area and the DFW nonattainment area (NAA) is generally NO_x limited. Emissions from the Barnett Shale are primarily VOCs and further the VOC species emitted by oil and gas industry are primarily straight alkanes, and not the highly reactive alkenes that are linked to ozone formation.

Response: As discussed in a previous response, we recognize in the TSD and RTC that the DFW Area is NO_x limited and that reductions in man-made VOC emissions only have small effects on ozone levels in

³ See the TCEQ source apportionment modeling files, including the Excel Spreadsheet that was placed in the record during the final action. (Hood-Wise_DVf_Contribution_wPies.xls)

the DFW area. We also recognized that VOC emissions from Barnett Shale activities are predominantly in the form of VOCs that have low reactivity, but would not classify them as non-reactive.⁴ However, contrary to the Petitioner's assertion, and as documented in our emissions analysis in the preliminary and final TSDs and in TCEQ's SAM, oil and gas production activity in Wise County does result in significant NOx emissions. It is primarily these NOx emissions that supported our determination that Wise County emissions contribute to ozone formation in the DFW area.

Issue: Petitioner claims that wind rose charts demonstrate that, on a yearly basis, the winds rarely blow into the DFW area from Wise County. The TCEQ's findings based on the HYSPLIT model with their endpoint analysis, demonstrate that "at most 2.87% of the trajectory endpoints from Wise County impact violating monitors."

Response: Our response below on the HYSPLIT section of this enclosure address the concern about the trajectory endpoints, and also discuss why HYSPLIT modeling can be a more useful tool than annualized wind patterns especially in an area like DFW that experiences light wind speeds and winds from variable directions. While the percentage of days when the wind carried air from Wise County was relatively low overall, our analysis indicated that the days when the air did come from Wise County, the downwind monitors had some of the highest ozone readings during the time period evaluated.

Issue: Petitioner claims that other EPA Regions have declined nonattainment designations based simply on prevailing winds. For example, TSDs from various Regions make generalized references to prevailing wind patterns, 30-year wind history, wind roses showing yearly average wind direction, and references to "predominant" wind direction.

Response: These comments did not address whether the EPA's five factor analysis for the identified areas resulted in disparate treatment, but instead focused only on meteorology. Therefore, this does not warrant reconsideration on this issue. As we have explained earlier, the designation process involves a five factor analysis conducted for each individual area. We cannot look at just one or two factors in isolation to conclude there has been disparate or inconsistent treatment. Many of the specific issues raised by the Petitioner, and discussed below, focus on only one or two factors, without a full comparison of how the five factors were applied. EPA will not repeat this full explanation in each instance, but it applies throughout this response.

Issue: Petitioner's comments include a list of 13 counties in other areas of the country that were designated as attainment/unclassifiable. Petitioners claim that these counties are upwind of nonattainment counties and violating monitors over 20% of the time. Petitioner asserts that Wise, Hood, and Matagorda Counties would not be included in a nonattainment area if another EPA region had made the decision.

Response: Petitioner's comments identify only the percentage of time a county is upwind and they do not address how this information, when considered as part of a more comprehensive five factor analysis suggests that EPA treated Wise County in a manner inconsistent with the way we treated other areas. Therefore, this does not warrant reconsideration on this issue.

Issue: The Petitioner indicates that the EPA Region 6 incorrectly and conclusively relied on HYSPLIT modeling and used it in a selective manner, while another Region correctly disregarded HYSPLIT modeling (e.g., EPA Region 3 in the TSD for the Pittsburgh area) and based meteorological

⁴ DFW Final TSD, pages 6-8; Houston Final TSD, pages 5-7; RTC pages 52-56.

analyses on general historical wind patterns. The Petitioner further indicates that the EPA failed to provide record support adequately justifying its conclusion that HYSPLIT modeling is a proper basis for a nonattainment designation in Wise County. The Petitioner indicated that the EPA Region 6 conducted a ‘nit-picking’ analysis by focusing on only the days with violations with HYSPLIT instead of using general wind patterns as have been used in other preliminary TSDs. The Petitioner listed preliminary TSDs for the areas that did not use HYSPLIT to indicate disparate treatment of wind patterns by Region 6 in Texas.

Response: We refer generally to our responses addressing the use of the HYSPLIT modeling for the DFW area. Wise County was not treated disparately by the EPA’s use of HYSPLIT modeling results. HYSPLIT was used in 16 areas where it was either submitted to the EPA or the EPA performed the modeling because we believed it could provide additional insight into the factors that contribute to nonattainment.⁵ For example, we explained in our TSD that HYSPLIT modeling is particularly useful for areas, such as Dallas, where wind speeds can be light and wind direction variable.

Each of our designations decisions were based on a five-factor analysis of the unique circumstances relevant to each area. The level of detail for meteorological analysis can vary area-to-area. For example, in cases where counties did not have significant emissions compared to other counties in a specific area a more general meteorological approach may have been sufficient.

With regard to the claim that Region 3 disregarded HYSPLIT modeling, this is an incorrect characterization. In the preliminary TSD for Pennsylvania, the EPA stated that:

“Further analysis of backward trajectories could prove helpful in resolving the affect of meteorology on this area. Pennsylvania’s March 2009 ozone recommendation did contain some NOAA HYSPLIT model backward trajectory information, but not for monitors in the Pittsburgh area. The supplied information for a monitor in eastern Pennsylvania indicated that HYSPLIT 24-hour period back trajectories were highly variable based upon the episode in question. Therefore, this information was not useful in determining the impact of meteorology on the Pittsburgh-New Castle CSA.”⁶

EPA only determined that a HYSPLIT run in eastern Pennsylvania was not useful for evaluating the Pittsburgh area, which is located in the western portion of the state. Subsequently, as part of the analysis for the final designation decision, the EPA Region 3 used the HYSPLIT model to further understand the meteorological transport conditions within the region around Pittsburgh and other areas of Pennsylvania.⁷

⁵ The EPA considered HYSPLIT analyses in the following 16 areas for the 2008 ozone designation process: Allentown-Bethlehem-Easton, PA; Baltimore, MD; Baton Rouge, LA; Charlotte-Rock Hill, NC-SC; Chicago-Naperville, IL-IN-WI; Dallas-Fort Worth, TX; Denver-Boulder-Greeley-Ft Collins-Loveland, CO; Houston-Galveston-Brazoria, TX; Knoxville, TN; Lancaster, PA; Memphis, TN-MS-AR; Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE; Pittsburgh-Beaver Valley, PA; Reading, PA; San Luis Obispo (Eastern San Luis Obispo), CA; and Washington, DC-MD-VA. The TSDs for ozone designation decisions for each of these areas can be found in the public docket and on the EPA’s ozone designations website. Docket No. EPA-HQ-OAR-2008-0476 and <http://epa.gov/ozonedesignations/2008standards/tsd.htm>.

⁶ Pennsylvania Preliminary TSD “Pennsylvania Area Designations for the 2008 Ozone National Ambient Air Quality Standards,” December 2011, page 41 (Docket ID No. EPA-HQ-OAR-2008-0476-0237). We note that Pittsburgh is in Western Pennsylvania and the March 2009 HYSPLIT analysis included in Pennsylvania’s 2009 recommendation was for an ozone episode in Eastern Pennsylvania.

⁷ Pennsylvania Final TSD “Pennsylvania Area Designations for the 2008 Ozone National Ambient Air Quality Standards,” April 2012, pages 10-13, 24-28, 41-45, and 73-79 (Docket ID No. EPA-HQ-OAR-2008-0476-0632).

Issue: Petitioner claims that the EPA Region 6 incorrectly and inconsistently applied HYSPLIT to justify a nonattainment designation for Wise County. The Petitioner further claims that HYSPLIT cannot establish a causal connection between winds in one area and ozone formation in another.

Response: We agree that HYSPLIT modeling has limits and that its primary use is in showing where air has traveled before reaching a certain location at a given time, thus giving an indication of what pollution sources may have contributed to the monitored pollution level. As noted throughout the designation process, however, the EPA analyzes meteorology, including HYSPLIT where available, as one component of the meteorology factor in the five-factor analysis. The EPA indicated in the preliminary and Final TSDs for the DFW area that the combination of back trajectories and the close proximity of large emissions of ozone precursors to the monitor supported its decision to include Wise County. TCEQ's SAM modeling, which is based on a wide array of information, including meteorology and emissions, further confirmed that Wise County emissions yield increased ozone levels at monitors in DFW.⁸

Issue: Petitioner claims that EPA Region 6's approach to performing HYSPLIT analyses was inconsistent. Specifically, Petitioner claims that Region 6's use of HYSPLIT was inconsistent with other regions, as detailed below:

Response: We do note that some of the HYSPLIT analyses were conducted at different times, and the EPA used some slightly different approaches for the different HYSPLIT analyses. For example, we varied start time for the back trajectories dependent upon when the 8-hour exceedances occurred at the monitor being evaluated. To obtain additional insight, we also separated HYSPLIT runs for several different hours for some of the monitors that make up the 8-hour exceedance period since the exceedance period is made up of 8 consecutive 1-hour ozone readings. We noted our methodologies for conducting the HYSPLIT analyses in the TSD and in the individual electronic HYSPLIT output files. The meteorological data on which EPA based its HYSPLIT model analysis was available to the public.⁹ On December 20, 2011 (76 FR 78872), the EPA published a notice in the *Federal Register* inviting public comment from interested parties other than states and tribes on the letters sent to states with the intended designations. The notice provided that any comments should be received on or before January 19, 2012, but in response to requests from several parties, including Wise County, the EPA extended the public comment period to February 3, 2012. (See 77 FR 2678, January 19, 2012). TPA requested a copy of the HYSPLIT data from the EPA on January 17, 2012. The EPA provided a copy of the meteorological and ambient monitoring data on January 19 – 24, 2012, and also posted copies of the data to the rulemaking docket.

County 1 - Issue: (Lebanon County, PA) Petitioner claims that Lebanon County was considered as part of the Berks County (Reading) Pennsylvania area but was designated attainment even though the winds blew from Lebanon County into Berks County 40 percent of the time during the summer, which was far more often than prevailing winds blew from Wise County to the violating monitors in the DFW area. TPA recognized that Lebanon County had somewhat lower emissions than Wise County.

⁸ Page 13 of TCEQ attachment to Governor Perry's comment letter dated February 29, 2012. Source apportionment modeling files provided by TCEQ to EPA demonstrate that Wise County NOx emission impacts at other DFW monitors including Eagle Mountain Lake and Keller monitors is what makes up almost all of the ozone level changes due to Wise County emissions. Electronic files are available in the electronic record for the Final designation. (EPA Document ID: EPA-HQ-OAR-2008-0476-0633)

⁹ The meteorological data on which EPA based its HYSPLIT model analysis was accessible to the public at the NCAR FTP site at <ftp://arlftp.arl.hq.noaa.gov/pub/archives/edas40/>.

County 1 - Response: (Lebanon County, PA) The Petitioner only discusses aspects of two factors, meteorology and emissions, and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County. As to the emission factor, the comment recognizes that emissions in Lebanon County were low and relies solely on the meteorology factor to suggest that Wise County was treated differently than Lebanon County. With regard to the meteorology, we note two things. First, the 40% of the time for wind direction from Lebanon County is a summertime predominant wind analysis and not specific to days on which the violating monitor was experiencing ozone exceedances. Second, based on comments received, the EPA more closely examined the meteorology using HYSPLIT and the analysis results were included for this area in the Final PA TSD. The EPA concluded that air flow was primarily from the Southerly direction, rather than from the Westerly direction where Lebanon County is located, at times when the monitor was recording ozone exceedances.

County 2 - Issue: (Lawrence County, PA) Petitioner summarized information from the EPA Region 3's preliminary TSD that Lawrence County had 8,960 tpy NO_x and 3,814 tpy VOC and is located to the west and northwest of violating monitors in the Pittsburgh area. Although Region 3 noted that winds in the area had strong westerly components, Lawrence County was designated attainment.

County 2 - Response: (Lawrence County, PA) Petitioner only discusses aspects of two factors, meteorology and emissions. This is not sufficient to demonstrate how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 3 - Issue: (Kent County, DE) Petitioner summarized information from the EPA Region 3's preliminary TSD that winds during ozone season come predominantly from the southwest. The comment also noted that Kent County's ozone design value was 74 ppb; that its NO_x and VOC tpy figures were 7,667 and 5,381, respectively; that its VMT was 1,565,000; and that its population growth was +28 percent; and that the EPA was proposing to designate the county attainment/unclassifiable because it is "unlikely to contribute to downwind violations during *most* of the ozone season." The comment concluded that the facts supporting nonattainment designation of Kent County were significantly stronger than those supporting the nonattainment designation of Wise County. Nonetheless, Region 3 concluded that Kent County should be proposed to be designated unclassifiable/attainment. The comment concluded that there is no doubt that under the Region 6 method of analysis, Kent County would have been designated nonattainment.

County 3 - Response: Petitioner examined aspects of three of the factors: meteorology based on general wind patterns during the ozone season, emissions/emission related data and air quality monitoring data. As an initial matter, we note the circumstances regarding Kent County raised complex issues that are not relevant for the DFW area. There are only three counties in Delaware. The northernmost county, New Castle, is part of the Philadelphia-Camden-Vineland, PA-NJ-MD-DE CSA. Delaware TSD at page 4. The middle county, Kent is the Dover, DE metropolitan statistical area and the southern county, Sussex, is the Seaford micropolitan statistical area. See Delaware TSD at page 18. All three Delaware Counties were designated nonattainment as part of the Philadelphia area for the 1997 ozone NAAQS. Thus, for purposes of our analysis, we evaluated all counties within the CSA and the two additional Delaware Counties that are outside the CSA but were included as part of the Philadelphia nonattainment area for the 1997 ozone NAAQS. In addition, we also evaluated several counties in New Jersey that are also outside the CSA but that were included as part of the designated nonattainment area for the 1997 ozone NAAQS. See Delaware TSD at pages 6 & 18.

The five-factor analysis for the counties being considered for inclusion in one nonattainment area will always be different than a five-factor analysis for the counties being considered for inclusion in another area. This is because the facts vary significantly among the areas. For example, the number of counties being considered can vary from one to more than 40. Additionally, the geographic extent of an area under consideration can vary greatly as well, with some CSAs being as large as 100 or more miles from north to south or east to west or both and some being significantly smaller. For that reason, it is difficult to draw direct comparisons between two counties in different CSAs with regard to one factor, such as absolute emissions. As noted above, one distinguishing factor between Kent County and Wise County is that Kent County is not part of the Philadelphia CSA while Wise County is part of the DFW CSA. We also identify some differences between Kent County and Wise County below with regard to two of the factors raised in the comment. We emphasize, however, that we do not consider this information conclusive outside the five factor analysis. We present it simply to rebut the comment suggesting that two areas are similar. We evaluated both Wise and Kent Counties based on whether their emissions were contributing to a nearby violation of a monitor, not on whether there was a monitor violating the standard in the county. We note that the distance to the closest violating monitor is 20 miles for Kent County and 0.5 miles for Wise County. *See* final DFW TSD at page 3 and final Delaware TSD at page 4.

With regard to meteorology, based on comments on the adequacy of general surface wind roses, the EPA conducted HYSPLIT analysis to further examine meteorology. The more detailed HYSPLIT analysis indicated a wider range of wind directions for transport to exceedances in the Philadelphia-Wilmington-Atlantic City PA-NJ-DE-MD nonattainment area. The HYSPLIT analysis also showed that the winds are mostly from the south to northwest directions, with the strongest direction being from the southwest during monitored ozone exceedances from 2007-2011. *See* Delaware TSD at pages 13-17.

With regard to emissions, out of the 19 counties evaluated in the Philadelphia area, Kent County ranked 14 for NO_x and 17 for VOCs. Kent County ranks 14 out of 19 in VMT. While Kent County did have the highest growth rate of the counties considered, it has a relatively small population base and it had a low proportion of commuters from the county to the Philadelphia area. In comparison, Wise County's total emissions of NO_x and VOC are 11,911 tpy and 17,609 tpy, respectively. Wise County ranks 6 out of 19 counties in the Dallas CSA for NO_x emissions and 4 out of 19 for VOC emissions. Population and VMT rankings are similar between Wise County and Kent County. *See* final DFW TSD, pages 6-14.

County 4 - Issue: (Roane County, TN) Petitioner summarized information from the EPA Region 4's preliminary TSD that Roane County had emissions of 10,711 tpy NO_x and 3,006 tpy VOC and was predominately upwind of nearby violating monitors.

County 4 - Response: (Roane County, TN) Petitioner only examined aspects of two factors, meteorology and emissions. This is not sufficient to demonstrate how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 5 - Issue: (Pointe Coupee Parish, LA) Petitioner also claimed disparate treatment with regard to Pointe Coupee Parish, which was considered for inclusion in the Baton Rouge nonattainment area. TPA notes that Pointe Coupee Parish's NO_x and VOC emissions tpy figures were 15,733 and 2,560 respectively and that its NO_x emissions are higher than those for Wise County. Petitioner also notes that Pointe Coupee Parish's population density was roughly equivalent with that of Wise County. Petitioner points out that Region 6 stated that "for the five-year 2006-2010 time period only 5 percent of all days with ozone concentrations greater than 75 ppb at the LSU site had wind back trajectories that went back through Pointe Coupee Parish." The EPA Region 6 proposed a nonattainment determination for Wise

County even though the winds blew across Wise County toward violating monitors far less often than the "only 5 percent" figure upon which Region 6 based its proposed attainment/unclassifiable designation for Pointe Coupee Parish in Louisiana.

County 5 - Response: (Pointe Coupee Parish, LA) Petitioner examined aspects of three factors, meteorology, air quality and emissions. In the Final Louisiana TSD, we indicated that the Big Cajun Power Plant (which we noted in our preliminary TSD is already controlled) emitted 12,119 tpy in 2008 and the rest of the Parish's emissions of man-made NO_x were only 3,614 tpy. Furthermore, we indicated that for the 5 years of back trajectories for ozone exceedances at the LSU monitor only two back trajectories passed over Pointe Coupee Parish. Of the two back trajectories, one of the back trajectories barely went through the southwest corner of Pointe Coupee Parish on the opposite corner of the Parish from the Big Cajun Power plant in the northeast portion of the Parish. Therefore, it is unlikely that emissions from the main point source in Pointe Coupee Parish contributed to the violating monitor for this ozone exceedance, leaving only one back trajectory in 5 years that indicates potential contribution. In comparison, 7 trajectories in 5 years for the Eagle Mountain Lake monitor in DFW passed through areas with emissions in Wise County, and five of these days were the highest monitored ozone days that helped set the monitor's DV. We note in the RTC (page 56) that we weighed the combination of emissions and distance to a violating monitor in our evaluation comparing Hood and Wise and put more weight on contribution from Wise County due to Wise County's larger emissions and closer proximity to a violating monitor. Similarly, the distance to the only Baton Rouge area violating monitor (2008-2010 DV of 78 ppb) is approximately 18 miles for Pointe Coupee Parish (26 miles from Big Cajun) in comparison to Wise County's distance of 0.5 miles to the Eagle Mountain Lake monitor (2008-2010 DV of 85 ppb).

County 6 - Issue: (Dutchess, Putnam, Orange, and Ulster Counties, NY) Petitioner compared Wise County with Dutchess, Putnam, Orange and Ulster Counties, which are in the New York – New Jersey – Long Island, NY-NJ-CT nonattainment area. Petitioner pointed out that the EPA Region 2's preliminary TSD indicated that Dutchess County was upwind 23 percent during the summer; Putnam County 24 percent; Ulster County 29 percent; and Orange County 25 percent.

County 6 - Response: Petitioner only examined meteorology and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 7-Issue: (Stafford County, VA) Petitioner also cited Stafford County Virginia, which the EPA evaluated for inclusion as part of the Washington, DC-MD-VA nonattainment area. Specifically, Petitioner pointed to the EPA Region 3's preliminary TSD for Maryland that indicated Stafford County is upwind 22 percent of the time and that Stafford County should be designated attainment/unclassifiable.

County 7 - Response: Petitioner generally discussed aspects of only two factors – meteorology and emissions, and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 8 - Issue: (Cattaraugus Reservation – Seneca Nation) Petitioner cites meteorological and emissions data from the EPA Region 2's preliminary TSD that indicates that the Cattaraugus Reservation could have a small impact on the Jamestown, NY nonattainment area. However, the EPA proposed that the Reservation should be designated attainment/unclassifiable.

County 8 - Response: (Cattaraugus Reservation – Seneca Nation) In determining whether a county should be included as part of the designated nonattainment area, we look at whether the county contributes to nonattainment in the area. Our analysis looks at whether the area's contribution is at a level to have a significant effect on ambient ozone levels. *See Catawba v. EPA* at 39 (recognizing that "contribute" under section 107(d) is ambiguous and does not necessarily mean any level of contribution.) In looking at our 5 factors, we note that in the Jamestown Area TSD that there were no known permitted sources on the Reservation and that the population was sparse. We also noted that the Reservation is downwind of Jamestown and transport to the nonattainment area is likely to be low or nonexistent. Based on our full analysis of all of the factors, we concluded that tribal lands are not contributing to the nonattainment area. Jamestown TSD at 4, 9, 12.

County 9 - Issue: (Sussex County, DE; Berks County, PA; Calvert, Fredrick, Montgomery, Prince George's and Loudon Counties, Washington DC-MD-VA) Petitioner summarized information from several of the EPA Region 3's preliminary TSDs regarding counties that the EPA proposed to designate as nonattainment and claimed that they show disparate treatment for Wise County.¹⁰

County 9 - Response: The issue for each of these counties was not whether the area should be designated as nonattainment but rather in which nonattainment area the county should be included. We note that each of these counties is located in the northeast U.S. corridor where nonattainment areas frequently adjoin, and the associated CSA and CBSA can include 40 or more counties. Our consideration of which nonattainment area a county should be affiliated raises different issues than the issue of whether an area should be designated nonattainment based on contribution. For example, the jurisdictional factor often plays a more significant role in these cases and, in the absence of a five-factor analysis supporting a contrary conclusion, we generally will defer to the state's recommendation as to which of the two nonattainment areas should include the county. *See e.g., Pennsylvania Department of Environmental Protection v. EPA*, 429 F.3d 1125, 1129 (D.C. Cir. 2005). Our decisions for these counties do not show disparate treatment for Wise.

County 10 - Issue: (Dauphin and York Counties, PA) Petitioner generally referred to discussion of the EPA's meteorology factor in the EPA Region 3's preliminary TSD. The EPA proposed to designate these counties attainment/unclassifiable even though meteorology indicates that Lebanon and Dauphin may contribute to violations in Lancaster.

County 10 - Response: (Dauphin and York Counties, PA) Petitioner only discussed one factor, meteorology, and did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

County 11 - Issue: (Dorchester, Wicomico, and Worcester Counties, MD) Petitioner generally referred to the EPA's emissions and meteorology factors discussion in the EPA Region 3's preliminary TSD. The EPA proposed to designate three Maryland counties attainment/unclassifiable even though emissions from these counties would contribute little to violations in downwind Sussex County, Delaware.

¹⁰ These counties are: (1) Sussex County, Delaware, which was designated as a single county nonattainment area and not included as part of the Philadelphia nonattainment area; (2) Berks County, Pennsylvania, which was designated as a single county nonattainment area and not included as part of the Philadelphia nonattainment area; and (3) Calvert, Fredrick, Montgomery, Prince George's and Loudon Counties which were included in the Washington DC-MD-VA nonattainment area and not the Baltimore nonattainment area.

County 11 - Response: (Dorchester, Wicomico, and Worcester Counties, MD) After a review of the EPA's five factors, the EPA concluded in the Final TSD "[a]lthough emissions from those counties might contribute to violations in downwind Sussex County, Delaware, the emissions levels from those counties are so low that little actual contribution is expected." The EPA determined after weighing all five factors that these counties do not in fact contribute to ozone at a violating monitor.

County 12 - Issue: (Carroll and Hall Counties, GA) Petitioner generally discussed distances separating emissions sources from the violating monitors. The EPA Region 4's preliminary TSD proposed a designation of attainment/unclassifiable for these counties because their distance from violating monitors limited their impact on such violating monitors.

County 12 - Response: Petitioner only discussed one aspect relating to ambient air and distance to a violating monitor, and thus did not address how the EPA's five factor analysis resulted in disparate treatment of Wise County.

Issue: Petitioner (on page 20 of their comment letter) indicated that TCEQ has already determined, in a study done in connection with the East Texas Combustion rule, that the imposition of controls on sources in six counties, including Wise and Hood, would have such a negligible effect on conditions in the DFW nonattainment area; therefore, the Combustion rule was not justified. Modeling sensitivity runs were conducted by TCEQ in connection with the East Texas Combustion rule in order to assess the potential benefit of including six counties, including Wise and Hood, in the rule. According to TCEQ, "[t]hese sensitivity runs indicate that the Dallas-Fort Worth eight-hour ozone nonattainment area would only benefit approximately 0.05 ppb reduction in ozone from including these six counties under the rule." See 32 Texas Register 3303 (June 8, 2007).

Response: Section 107(d) of the CAA requires the EPA to designate as nonattainment any area that does not meet the air quality standard or that contributes to a violation of the air quality standard in a nearby area. Based on our analysis of contribution in the DFW TSD, we determined that Wise County contributed to monitored violations of the 2008 ozone NAAQS and included Wise County in the ozone nonattainment area. We further note here, that in evaluating whether an area is contributing to a current violation of the ozone NAAQS, we do not evaluate how the implementation of individual, specific measures, or the failure to implement such measures, might affect ozone levels within the area. The issue of which measures are appropriate for reducing ozone levels in an area violating the standard will be addressed by the states during the post-designation attainment planning process.

We also note that the modeling the Petitioner cites was in relation to an older ozone standard (85 ppb versus the current 75 ppb) and is comprised of an older meteorological episode with fewer days. Additionally, the emission estimates in the modeling do not account for the growth in emissions due to the Oil and Gas developments in north Texas since 2005/6. The modeling Petitioner discussed is older modeling that was for an older limited number of days episode (10 days) that did not have as many meteorological regimes as the more recent SAM modeling provided by TCEQ (with over 30 days) to the EPA as part of their comments for the designations of the 2007 8-hour standard. The older modeling only was conducted for evaluations of potential controls to help the DFW area attain the 1997 8-hour standard (85 ppb) and the conclusions would likely be different if the analysis was done for the current 75 ppb standard. The modeling and associated emission inventory cited by the Petitioner did not include revised emissions reflecting the growth of oil and gas emissions in Wise County and other North Texas counties since 2005/6. Since that time, these counties have seen increased emissions due to oil and gas field developments.

IV. Analysis of HYSPLIT and Potential Impact of Wise County Emissions

Issue: The Petitioner claims that the EPA's HYSPLIT analysis was not conclusive and given undue weight. Specifically, the Petition claims that the HYSPLIT modeling gives only an indication of possible contribution to downwind nonattainment. Further, Petitioner claims that the EPA should provide greater clarity as to how HYSPLIT is applied and what weight HYSPLIT results are given in making the Wise County designation decision.

Response: Petitioner raised the HYSPLIT issue during the comment period and the EPA responded to those comments. See RTC pages 59, 60. Therefore, reconsideration is not appropriate. Our record fully supports our decision. The EPA's record explains that HYSPLIT is a useful tool for determining areas where air originates or passes through on the way to a monitored ozone exceedance. As we stated in the RTC, "[i]n terms of identifying potential local and regional source-receptor patterns, HYSPLIT wind trajectory or other modeling based tools are excellent tools for determining the frequencies for which areas potentially contribute to high ozone levels and are preferred over more basic assessments of wind speed and direction at a given point locations (e.g., wind roses, or pollution roses). The basic assessments, such as wind roses, are potentially misleading in cases where wind speeds are light and the wind direction is variable. . ."¹¹ The light and variable meteorological regime is one of the classic meteorological types that results in high ozone in the DFW area.

We conducted HYSPLIT analysis for several monitors in DFW for purposes of both the Preliminary TSD (December 2011) and the Final TSD (April 2012). In the Final TSD, we noted that "[t]he HYSPLIT model yields an estimate of the path an air mass has traveled before reaching a monitor at a specific location and time. Specifically, the model provides the centerline of the probable path. By knowing where an air mass has traveled before reaching a monitor where an exceedance has occurred, one can consider what potential areas and emission sources could have contributed to the exceedance." In the Final TSD at page 14, we stated, "[w]e focused on the Keller and Eagle Mountain Lake monitors in Tarrant County and the Parker County monitor because the Keller and Eagle Mountain Lake monitors have recorded some of the highest ozone levels in the region, and inclusion of the Parker County monitor provided a good cross-section of the monitors in the western DFW area that experienced exceedances in the 2006-2010 period." The EPA included trajectory plot maps for the Keller and Eagle Mountain Lake monitors in both the Preliminary and Final TSDs and also made the individual back trajectory files available for review during the comment period. Analysis of the plots in the TSDs indicates that 3 trajectory 'centerlines' directly traversed Wise County for the Keller monitor, and at least 7 trajectory 'centerlines' traversed Wise County for the Eagle Mountain Lake monitor. In addition, some other back trajectories that did not directly traverse Wise County had centerlines near enough to Wise County to suggest a path of upwind influence involving Wise County emissions. Accordingly, we concluded that there are a number of days (not just two) with back trajectories that suggest influence from Wise County emissions.

As provided in the Final DFW TSD, a review of the individual trajectory files shows that several of the days that trajectories passed through Wise County were also days that made up the 1st to 4th highest monitored values, which are the values used in establishing the design value at the Eagle Mountain Lake and Keller monitors during the periods evaluated. In fact, five of the seven back trajectories that traversed Wise County occurred on days that contributed the Eagle Mountain Lake Design value

¹¹ See page 59 of the RTC.

calculation.¹² The individual trajectory files were included in the supporting materials for the EPA's intended and final designations.

V. Source Apportionment Modeling (SAM) and Opportunity for Public Comment:

Issue: The Petitioner claims that the EPA did not provide opportunity for public comments on the use of TCEQ's SAM modeling. Specifically, the Petition claims that the EPA did not present any source apportionment modeling in its proposed designation decision, yet relied on such modeling in making the final designation decision for Wise County.

Response: While we agree that our analysis of the state's SAM modeling was not available for comment at the time of proposal, we do not believe this issue warrants reconsideration. First, in response to the EPA's 120-day letter notifying it of the intended designations, the state submitted, among other things, the SAM data and results. Our evaluation of the SAM was in response to such submittal and was consistent with the process established by Congress in section 107(d) of the Act. For initial area designations for a new or revised NAAQS, section 107(d)(1) of the CAA sets forth a detailed and specific process between the EPA and the states. This provision provides: (i) that Governors of states make the initial recommendations to the EPA for designations and boundaries; and (ii) that the EPA provide the states with 120 days notice of any intended modifications to the state recommendation prior to finalizing the designation. The 120-day notification process is for the purpose of providing "such state with an opportunity to demonstrate why any proposed modification is inappropriate." The CAA does not expressly provide a role for any other entity and, moreover, expressly waives the notice and public comment process of the Administrative Procedure Act for initial designations for new or revised NAAQS. *See* CAA section 107(d)(2)(B). Although no public comment period is required, the EPA opted to provide such a comment period for the ozone designations for the 2008 ozone NAAQS. We appropriately followed the process specifically contemplated by the Act. The EPA's response to TCEQ's SAM is detailed in the EPA's final TSD. *See* Final DFW TSD at 15-20.

Second, and as a general matter, agencies are not required to provide an additional opportunity for public comment on material supporting a final rule, such as responses to comments or on information supporting a response to a comment. Such an approach would result in an unworkable endless rulemaking process. *See Catawba*, 571 F.3d at 50-51 (In rejecting a claim by New York that it should have been allowed additional input into the EPA's decision to rely on a different monitor for evaluating contribution for the final designation than it did for the intended designation the court noted that such an ongoing exchange with the states is inconsistent with the CAA and that "Congress imposed deadlines on EPA and thus clearly envisioned an end to the designation process.") *See also International Fabricare Institute v. EPA*, 972 F.2d 384, 399 (D.C. Cir. 1992) (notice and comment is not intended to result in "interminable back-and-forth") and *Community Nutrition Institute v. Block*, 749 F.2d 50, 58 (D.C. Cir. 1984) (agency is not required to provide additional opportunity to comment on its response to comments).

¹² We note that all this data is available in the record. For the Eagle Mountain Lake Monitor, the following days were the 1st thru 4th High values that set the monitor's DV. Highlighted in BOLD are the days that EPA's HYSPLIT analysis indicates potential contribution from Wise County emissions. 2006 (6/14 – 107 ppb, 6/9 – 106 ppb, 6/28 – 98 ppb, 7/18 – 98 ppb); 2007 (**8/14 – 121 ppb**, 8/15 – 101 ppb, 10/04 – 86 ppb, **9/22 – 84 ppb**, 7/25 – 84 ppb); 2008 (8/04 – 98 ppb, **6/18 – 92 ppb**, 6/23 – 86 ppb, 6/19 – 85 ppb); 2009 (**6/25 – 100 ppb**, 6/5 – 92 ppb, 6/26 – 92 ppb, **8/26 – 91 ppb**, **7/2 – 91 ppb**); 2010 (6/4 – 94 ppb, 8/27 – 91 ppb, 8/28 – 83 ppb, 5/29 – 81 ppb). When there was a tie for the fourth high value we looked at trajectories for both days.

Issue: The Petitioner claims that as part of the final rule the EPA used a new 1% standard in analyzing the source apportionment modeling (SAM), and it did not offer a rational basis for its use or opportunity for comment. Furthermore, the Petition claims that EPA was inconsistent in our use of the 1% standard and specifically raises concerns with the EPA's review and conclusions of SAM analysis for three counties in the Chicago area.

Response: The EPA considered SAM in its decision making only in areas where it was provided by states or others during the public process. Since the SAM was provided during the comment period, as discussed above, our evaluation consequently could not be available for public comment.

SAM results were available for the EPA consideration in the designation process for only three areas, Dallas, Houston and Chicago, because those were the only areas where it was developed and submitted by states or other entities. The EPA does not have specific guidance on how to evaluate the impact of emissions from a county on a nearby violating monitor in the context of a designation decision.

Moreover, in the few instances where SAM was submitted for our consideration, the form and type of the information varied between areas. The EPA evaluated each submission of SAM on a case-by-case basis, carefully evaluating a number of issues including how the modeling was conducted, model performance, and available data from the analysis in order to determine how to appropriately evaluate the results.

For the SAM submitted for Dallas and Houston, we considered other recent modeling work that could serve as a guide. Our basis for identifying days with a non-trivial impacts is discussed on page 17 of the TSD where we explained, "Often in attainment demonstration modeling, controlling of sources is evaluated and results in only a few tenths of a ppb change, therefore we used a 1% of the standard cut point for the days where we would consider Hood or Wise County's emissions to be significant." We also note that modeling from TCEQ in a 2007 8-hour Ozone Attainment Demonstration for DFW included multiple analyses of individual control strategies and the resultant impacts on monitors in DFW area, where Texas had chosen controls that provided changes of a few tenths of a ppb.¹³ In addition, we also note that the EPA concluded in the recent Cross State Air Pollution Rule, that a "one percent of the NAAQS" impact result in the source apportionment modeling was appropriate to determine if a state's emissions significantly impacted a downwind state's nonattainment or maintenance area.¹⁴ Thus we believe it was reasonable to examine the frequency of a modeled impact of 0.75 ppb, or one percent of the 2008 ozone standard, as a metric to identify days with a nontrivial impact.¹⁵

In addition, the number of days exceeding the one percent (0.75 ppb) cut point is only one of the metrics evaluated from the SAM results. In the DFW Final TSD and in supporting files, we discussed all of the metrics used in our assessment of the SAM results, and the unique factors that we weighed in our analysis of SAM results for DFW. Using the detailed daily information available to the EPA for analyzing SAM for the DFW and Houston areas designations, we evaluated the average impact, maximum impact, as well as the number of modeled days exceeding 0.75 and 0.70 ppm where the Wise County impact was above 0.75 ppb. These other model output metrics also help explain the impact of Wise County. For example, on some specific modeled days the impact of Wise County was much larger than 0.5 ppb and as much as 5 ppb at the Eagle Mountain Lake Monitor which is one of the monitors in

¹³ See the sensitivity runs in TCEQ's 2007 DFW 1997 8-hour ozone Attainment Demonstration SIP - APPENDIX D: DFW Future Case (2009) Sensitivity Tests.

¹⁴ See Cross State Air Pollution Rule and the Technical Support Document for the rule (Docket ID: EPA-HQ-OAR-2009-0491 at www.regulations.gov)

¹⁵ TSD page 17, TCEQ's 2007 DFW 1997 8-hour ozone Attainment Demonstration SIP - Appendix D: DFW Future Case (2009) Sensitivity Tests.

DFW that sets the DV for the DFW nonattainment area.¹⁶ Also, it is important to remember that the SAM results were only piece of information that we considered in our five factor analysis that resulted in our determination that Wise County contributes to nonattainment in the DFW area.

Our decision to use 1 % of the NAAQS or 0.75 ppb, as a cut point to identify days with a non-trivial impact is supported by our record and a count of such days is only one of the metrics we evaluated from the SAM results. As stated in our TSD, the 2008 Emissions Inventory for Wise County shows that Wise County's nitrogen oxide emissions of 11,911 tpy are the 6th highest of the 19-county DFW Combined Statistical Area (CSA) and the County's volatile organic compound emissions of 17,609 tpy are the fourth highest of the 19 counties. See TSD pages 6-7. The TSD demonstrates that there are six ozone monitors violating the standard in the two counties adjacent to Wise County (TSD Figure 1, page 3) and notes that Wise County is less than ½ mile from a violating monitor with a design value of 0.085 parts per million (TSD 2008 to 2010 data, pages 5 and 23). We also evaluated meteorological transport patterns during exceedances using NOAA's HYSPLIT model. These patterns indicate that emissions from Wise County are transported to the DFW ozone monitors violating the standard based on 2008-2010 data, and we conclude that the Wise County emissions are large enough that they can contribute to ozone exceedances on certain days. See TSD pages 14-17, 19, 20, and 23.

Finally, the Region 6 evaluation of SAM was not inconsistent with actions taken by other Regional offices. Again, our record supports our decision on this issue. The EPA considered SAM for the Houston area in the same way we considered it for Dallas because the SAM submitted for both areas was similar in how it was performed and the type of information provided. The only other area for which the EPA had SAM results was for the Chicago area. The SAM submitted for the Chicago area was sufficiently different that direct comparisons to the DFW area analysis are not generally appropriate. In the Chicago area SAM, the EPA was provided the average modeled impact levels on estimated exceedances for an entire ozone season. Emphasis on the average modeled impact is more appropriate when a full ozone season of model results is available. A full season of modeling results was not available for the DFW area. Indiana had provided SAM modeling that evaluated the impact of three Indiana counties on a monitor in the greater Chicago area. The reported impacts from two Counties (Lake and Porter) were about 2 ppb and 4 ppb. The SAM result for the third Indiana County (Jasper) indicated less than 0.5 ppb impact. In evaluating this result, the EPA was aware that the modeling did not reflect reductions that had been achieved at a large power plant in Jasper County, reducing the Jasper County total emissions of NOx by more than 50%.¹⁷ Based on the analysis of all the factors, including the SAM and additional emission reductions, the EPA decided to include Lake and Porter counties, and not to include Jasper County, Indiana within the nonattainment area. As with the contribution level evaluated for Wise County, the contribution levels discussed in the Region 5 Chicago Final TSD do not represent a bright line criterion for inclusion or exclusion of a county. Moreover, the inclusion of two counties with an average contribution of 2 and 4 ppb and exclusion of a county with 0.5 ppb in the Chicago area is not inconsistent with inclusion of Wise County based in part on a count of days with greater than 0.75 ppb contribution in the Dallas area. As noted above, however, for both the Chicago and Dallas areas, this consideration was simply one element of one of the five factors the EPA considered in determining whether to include counties as part of the designated nonattainment area.

¹⁶ TSD page 20

¹⁷ Region 5 TSD, Original 2008 NOx emissions quantified as 19,788 tons/year and value was footnoted as "... updated emissions data were provided for Jasper County showing 2011 NOx emission levels of 9,791 tons."

VI. Concern About Treatment of the Oil and Gas Industry

Issue: The Petitioner claims that the designation of Wise County should be reconsidered because of a perceived bias by former Regional Administrator Dr. Armendariz against the oil and gas industry that may have played an undue role in the designation process.

Response: The EPA's final designation decision for the DFW area was based on the EPA's evaluation of the data and technical information, extensive and thoughtful consideration of input from TCEQ and other interested parties. The EPA's national Office of Air and Radiation works closely with technical staff in EPA's regional offices to ensure that decisions are based on the factual record and are consistent across the country. As demonstrated in the TSD accompanying the EPA's intended designations issued in December, 2011 and the TSD accompanying the final designation on April 30, 2012, the EPA performed a thorough assessment of information relevant to five designations-related factors in determining which areas should be included as part of the DFW nonattainment area. The final decision was made by Administrator Lisa Jackson based on the record before the EPA. We further note that there are other Texas counties where oil and gas production and activity occur that were initially considered for inclusion into a nonattainment area, but were ultimately not included. For example Hood County, Texas and Matagorda County, Texas were considered and proposed for inclusion in their respective areas. However, following a review of comments from Texas and from public commenters and upon further evaluation of all available data relevant to their contribution to ozone violations, we determined those counties should not be included as part of a nonattainment area. Our record details those decisions.