Final Technical Support Document

Texas
Area Designations for the 2010 SO$_2$ Primary National Ambient Air Quality Standard

Summary

Pursuant to section 107(d) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA, or the Agency) must designate areas as either "unclassifiable," "attainment," or "nonattainment" for the 2010 1-hour sulfur dioxide (SO$_2$) primary national ambient air quality standard (NAAQS). Section 107(d) of the CAA defines a nonattainment area as one that does not meet the NAAQS or that contributes to a NAAQS violation in a nearby area, an attainment area as any area other than a nonattainment area that meets the NAAQS, and an unclassifiable area as any area that cannot be classified on the basis of available information as meeting or not meeting the NAAQS.

July 2, 2016, is the deadline established by the U.S. District Court for the Northern District of California for the EPA to designate certain areas. This deadline is the first of three deadlines established by the court for the EPA to complete area designations for the 2010 SO$_2$ NAAQS. This deadline applies to certain areas in Texas because 8 emission sources meet the conditions of the court's order.

Texas submitted updated recommendations on September 18, 2015.[1] Table 1 below lists Texas' recommendations and identifies the counties in Texas that the EPA is designating in order to meet the July 2, 2016, court-ordered deadline. These final designations are based on an assessment and characterization of air quality through ambient air quality data, air dispersion modeling, other evidence and supporting information, or a combination of the above.

Table 1: Texas' Recommended and EPA's Final Designations

Area	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Final Area Definition	EPA's Final Designation
Atascosa County, Texas	Atascosa County Borders	Unclassifiable/ Attainment	Same as State's Recommendation (Atascosa County, TX)	Unclassifiable/ Attainment
Fort Bend County, Texas	Fort Bend County Borders	Unclassifiable/ Attainment	Same as State's Recommendation (Fort Bend County, TX)	Unclassifiable/ Attainment
Goliad County, Texas	Goliad County Borders	Unclassifiable/ Attainment	Same as State's Recommendation (Goliad County, TX)	Unclassifiable/ Attainment
Lamb County, Texas	Lamb County Borders	Unclassifiable/ Attainment	Same as State's Recommendation (Lamb County, TX)	Unclassifiable/ Attainment

---

[1]Note that Texas included Freestone, Milam, Titus, and Rusk Counties in its initial area designation recommendations. However, the EPA is not taking a final designation action for any of those areas at this time.

Area	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Final Area Definition	EPA's Final Designation
Limestone County, Texas	Limestone County Borders	Unclassifiable/ Attainment	Same as State's Recommendation (Limestone County, TX)	Unclassifiable/ Attainment
McLennan County, Texas	McLennan County	Attainment	Same as State's Recommendation (McLennan County, TX)	Unclassifiable/ Attainment
Potter County, Texas	Potter County Borders	Unclassifiable	Same as State's Recommendation (Potter County, TX)	Unclassifiable
Robertson County, Texas	Robertson County Borders	Unclassifiable/ Attainment	Same as State's Recommendation (Robertson County, TX)	Unclassifiable/ Attainment

Background

On June 3, 2010, the EPA revised the primary (health based) SO_2 NAAQS by establishing a new 1-hour standard at a level of 75 parts per billion (ppb) which is met at an ambient air quality monitoring site when the 3-year average of the 99th percentile of 1-hour daily maximum concentrations does not exceed 75 ppb. This NAAQS was published in the *Federal Register* on June 22, 2010 (75 FR 35520), and is codified at 40 CFR 50.17. The EPA determined this is the level necessary to protect public health with an adequate margin of safety, especially for children, the elderly, and those with asthma. These groups are particularly susceptible to the health effects associated with breathing SO_2. The two prior primary standards of 140 ppb evaluated over 24 hours, and 30 ppb evaluated over an entire year, codified at 40 CFR 50.4, remain applicable.[2] However, the EPA is not currently designating areas on the basis of either of these two primary standards. Similarly, the secondary standard for SO_2, set at 500 ppb evaluated over 3 hours, codified at 40 CFR 50.5, has not been revised, and the EPA is also not currently designating areas on the basis of the secondary standard.

General Approach and Schedule

Section 107(d) of the CAA requires that not later than 1 year after promulgation of a new or revised NAAQS, state governors must submit their recommendations for designations and boundaries to the EPA. Section 107(d) also requires the EPA to provide notification to states no less than 120 days prior to promulgating an initial area designation that is a modification of a state's recommendation. If a state does not submit designation recommendations, the EPA may promulgate the designations that it deems appropriate without prior notification to the state, although it is our intention to provide such notification when possible. If a state or tribe disagrees with the EPA's intended designations, it is given an opportunity within the 120-day period to

---

[2] 40 CFR 50.4(e) provides that the two prior primary NAAQS will no longer apply to an area 1 year after its designation under the 2010 NAAQS, except that for areas designated nonattainment under the prior NAAQS as of August 22, 2010, and areas not meeting the requirements of a SIP Call under the prior NAAQS, the prior NAAQS will apply until that area submits and EPA approves a SIP providing for attainment of the 2010 NAAQS. On the effective date of the promulgation of the NAAQS, Texas did not contain any areas subject to the exception.

demonstrate why any proposed modification is inappropriate. The EPA is required to complete designations within 2 years after promulgation of a new or revised NAAQS, unless the EPA determines that sufficient information is not available, in which case the deadline is extended to 3 years. The 3-year deadline for the revised SO_2 NAAQS was June 2, 2013.

On August 5, 2013, the EPA published a final rule establishing air quality designations for 29 areas in the United States for the 2010 SO_2 NAAQS, based on recorded air quality monitoring data from 2009 - 2011 showing violations of the NAAQS (78 FR 47191). In that rulemaking, the EPA committed to address, in separate future actions, the designations for all other areas for which the Agency was not yet prepared to issue designations.

Following the initial August 5, 2013, designations, three lawsuits were filed against the EPA in different U.S. District Courts, alleging the Agency had failed to perform a nondiscretionary duty under the CAA by not designating all portions of the country by the June 2, 2013, deadline. In an effort intended to resolve the litigation in one of those cases, plaintiffs, Sierra Club and the Natural Resources Defense Council, and the EPA filed a proposed consent decree with the U.S. District Court for the Northern District of California. On March 2, 2015, the court entered the consent decree and issued an enforceable order for the EPA to complete the area designations according to the court-ordered schedule.

According to the court-ordered schedule, the EPA must complete the remaining designations by three specific deadlines. By no later than July 2, 2016 (16 months from the court's order), the EPA must designate two groups of areas: (1) areas that have newly monitored violations of the 2010 SO_2 NAAQS, and (2) areas that contain any stationary sources that had not been announced as of March 2, 2015, for retirement and that, according to the EPA's Air Markets Database, emitted in 2012 either (i) more than 16,000 tons of SO_2, or (ii) more than 2,600 tons of SO_2 with an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, a stationary source with a coal-fired unit that, as of January 1, 2010, had a capacity of over 5 megawatts and otherwise meets the emissions criteria, is excluded from the July 2, 2016, deadline if it had announced through a company public announcement, public utilities commission filing, consent decree, public legal settlement, final state or federal permit filing, or other similar means of communication, by March 2, 2015, that it will cease burning coal at that unit.

The last two deadlines for completing remaining designations are December 31, 2017, and December 31, 2020. The EPA has separately promulgated requirements for state and other air agencies to provide additional monitoring or modeling information on a timetable consistent with these designation deadlines. We expect this information to become available in time to help inform these subsequent designations. These requirements were promulgated on August 21, 2015 (80 FR 51052), in a rule known as the SO_2 Data Requirements Rule (DRR), codified at 40 CFR part 51 subpart BB.

Updated designations guidance was issued by the EPA through a March 20, 2015, memorandum from Stephen D. Page, Director, U.S. EPA, Office of Air Quality Planning and Standards, to Air Division Directors, U.S. EPA Regions 1-10. This memorandum supersedes earlier designation guidance for the 2010 SO_2 NAAQS, issued on March 24, 2011, and it identifies factors that the

EPA intends to evaluate in determining whether areas are in violation of the 2010 SO_2 NAAQS. The guidance also contains the factors the EPA intends to evaluate in determining the boundaries for all remaining areas in the country, consistent with the court's order and schedule. These factors include: 1) Air quality characterization via ambient monitoring or dispersion modeling results; 2) Emissions-related data; 3) Meteorology; 4) Geography and topography; and 5) Jurisdictional boundaries. This guidance was supplemented by two non-binding technical assistance documents intended to assist states and other interested parties in their efforts to characterize air quality through air dispersion modeling or ambient air quality monitoring for sources that emit SO_2. Notably, the EPA's documents titled, "SO_2 NAAQS Designations Modeling Technical Assistance Document" (Modeling TAD) and "SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document" (Monitoring TAD), were available to states and other interested parties. Both of these TADs were most recently updated in February 2016.

Based on complete, quality assured and certified ambient air quality data collected between 2013 and 2015, no violations of the 2010 SO_2 NAAQS have been recorded at ambient air quality monitors in any undesignated part of Texas. However, there are 8 sources in the State meeting the emissions criteria of the consent decree for which the EPA must complete designations by July 2, 2016. In this final technical support document, the EPA discusses its review and technical analysis of Texas's updated recommendations for the areas that we must designate. The EPA also discusses any intended and final modifications from the State's recommendation based on all available data before us.

The following are definitions of important terms used in this document:

1) 2010 SO_2 NAAQS – the primary NAAQS for SO_2 promulgated in 2010. This NAAQS is 75 ppb, based on the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations. See 40 CFR 50.17.
2) Attaining monitor – an ambient air monitor meeting all methods, quality assurance, and siting criteria and requirements whose valid design value is equal to or less than 75 ppb, based on data analysis conducted in accordance with Appendix T of 40 CFR part 50.
3) Design Value – a statistic computed according to the data handling procedures of the NAAQS (in 40 CFR part 50 Appendix T) that, by comparison to the level of the NAAQS, indicates whether the area is violating the NAAQS.
4) Designated nonattainment area – an area which the EPA has determined has violated the 2010 SO_2 NAAQS or contributed to a violation in a nearby area. A nonattainment designation reflects considerations of the state's recommendations and all of the information discussed in this document. The EPA's decision is based on all available information including the most recent 3 years of air quality monitoring data, available modeling analyses, and any other relevant information.
5) Designated unclassifiable area – an area for which the EPA cannot determine based on all available information whether or not it meets the 2010 SO_2 NAAQS.
6) Designated unclassifiable/attainment area – an area which the EPA has determined to have sufficient evidence to find either is attaining or is likely to be attaining the NAAQS. The EPA's decision is based on all available information including the most recent 3

years of air quality monitoring data, available modeling analyses, and any other relevant information.
7) Modeled violation – a violation based on air dispersion modeling.
8) Recommended attainment area – an area a state or tribe has recommended that the EPA designate as attainment.
9) Recommended nonattainment area – an area a state or tribe has recommended that the EPA designate as nonattainment.
10) Recommended unclassifiable area – an area a state or tribe has recommended that the EPA designate as unclassifiable.
11) Recommended unclassifiable/attainment area – an area a state or tribe has recommended that the EPA designate as unclassifiable/attainment.
12) Violating monitor – an ambient air monitor meeting all methods, quality assurance, and siting criteria and requirements whose valid design value exceeds 75 ppb, based on data analysis conducted in accordance with Appendix T of 40 CFR part 50.

Technical Analysis for Atascosa County, Texas

<u>Introduction</u>

The Atascosa County, Texas, area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the San Miguel Lignite Fired Power Plant (San Miguel Power Plant) emitted 10,950 tons of SO_2, and had an emissions rate of 0.63 lbs SO_2/MMBTU. As of March 2, 2015, this stationary source had not met the criteria for being "announced for retirement." Pursuant to the March 2, 2015, court-ordered schedule, the EPA must designate the area surrounding this facility by July 2, 2016.

In its September 18, 2015, submission, Texas recommended that the area surrounding the San Miguel Power Plant facility, specifically the entirety of Atascosa County, be designated as unclassifiable/attainment, based on an assessment and characterization of air quality from the facility and other nearby sources which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions.

On February 11, 2016, the EPA notified Texas that we intended to designate the area around San Miguel Power Plant area as unclassifiable/attainment. Additionally, we informed Texas that our intended boundaries for the unclassifiable/attainment area consisted of the entirety of Atascosa County, Texas. Our intended designation and associated boundaries were based on, among other things, modeling submitted by the State in which the EPA identified no major issues. The modeling showed attainment, and the modeling was in accordance with the Modeling TAD and published EPA guidance. We determine that the area within Atascosa County was the appropriate boundary area for this designation, based upon the State's recommendation. Additionally, the EPA confirmed that there are no other sources in Atascosa County or near its borders that are likely to cause or contribute to a violation of the 2010 SO_2 NAAQS within Atascosa County.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas. This document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

Assessment of New Information

In our February 11, 2016, notification to Texas regarding our intended unclassifiable/attainment designation for the Atascosa County area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

The EPA received responses from Texas supporting our intended designation for the area, and we did not receive any comments from the public. A summary of the comments and our responses can be found in the RTC.

Conclusion

The EPA concludes that Atascosa Count is meeting the 2010 primary SO_2 NAAQS. Therefore, the EPA is designating Atascosa County, Texas, as unclassifiable/attainment for the 2010 SO_2 NAAQS. This is based on the available information including the analyses performed for the purposes of the preliminary technical support document, and the absence of any new information that would otherwise lead to a different conclusion regarding air quality in the area or any new information that would otherwise lead to a different conclusion regarding the area boundaries.

The boundaries for this unclassifiable/attainment area consist of the entirety of Atascosa County borders, and are shown in the figure below. Also included in the figure are nearby emitters of SO_2, and Texas' recommended area, which is the same as the EPA's recommendation.

Figure 1: The EPA's Final Unclassifiable/Attainment Area: Atascosa County, Texas
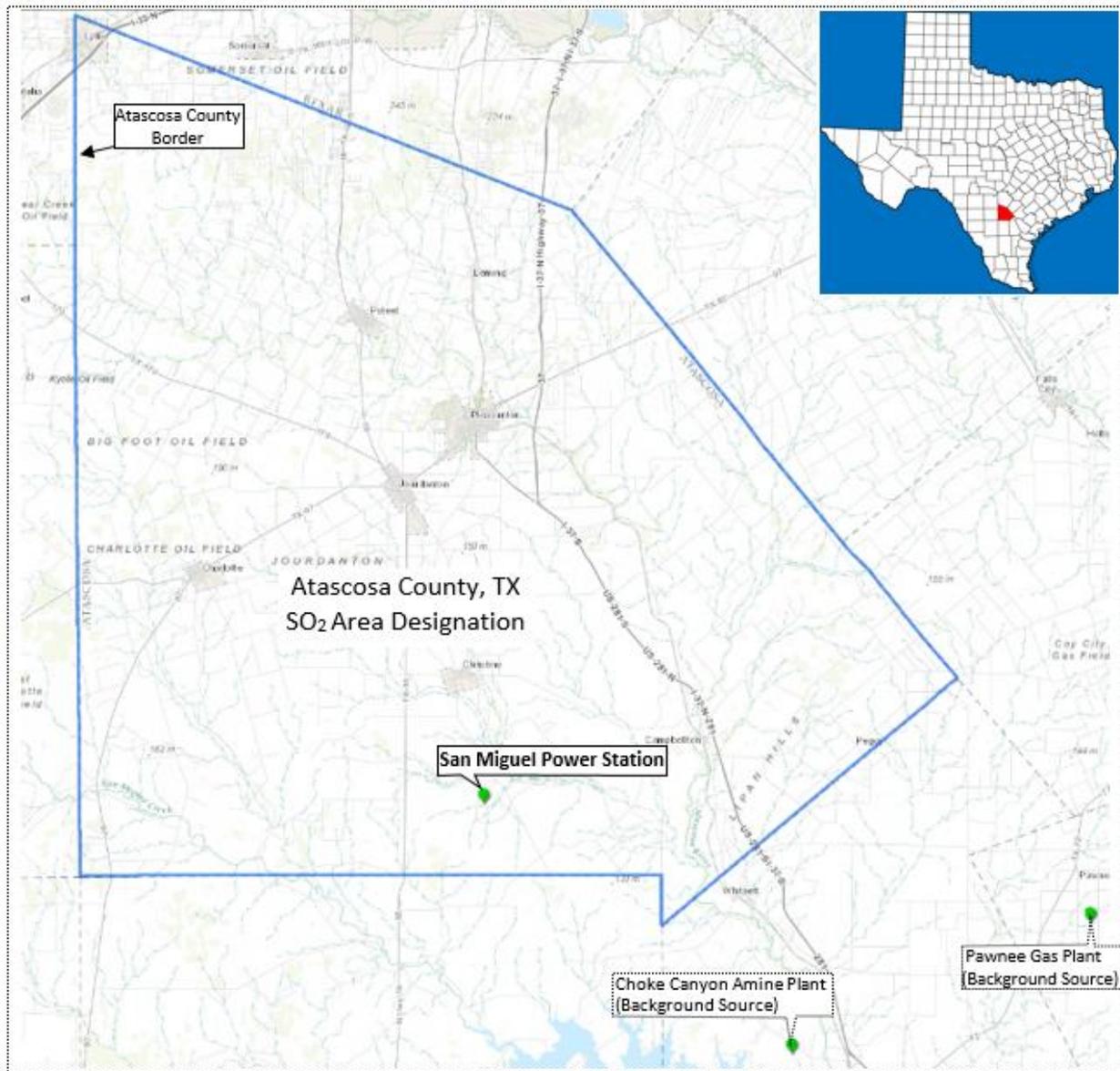
At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the court-ordered schedule, the EPA

will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Technical Analysis for Fort Bend County, Texas

Introduction

The Fort Bend County, Texas, area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the W.A. Parish Electric Generating Station (W.A. Parish Station) emitted 37,861 tons of SO_2 and had an emissions rate of 0.49 lbs SO_2/mmBTU. As of March 2, 2015, this stationary source had not met the criteria for being "announced for retirement." Pursuant to the March 2, 2015, court-ordered schedule, the EPA must designate the area surrounding this facility by July 2, 2016.

In the September 18, 2015, submission, Texas recommended that the area surrounding the W.A. Parish Station, specifically Fort Bend County, be designated as unclassifiable/attainment. This was based on an assessment and characterization of air quality from the facility and other nearby sources, which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions completed by industry on behalf of the WA Parish Station.

On February 11, 2016, the EPA notified Texas that we intended to designate the Fort Bend County, Texas area as unclassifiable, due to our view that based on available information we could not determine whether the area was meeting the NAAQS. Additionally, we informed Texas that our intended boundaries for the unclassifiable area consisted of the entirety of Fort Bend County. Our intended designation and associated boundaries were based on, among other things, insufficient information available at the time of intended designations to determine whether or not the area meets the 2010 SO_2 NAAQS.

As summarized in the preliminary technical support document for Texas, the EPA received three modeling analysis submittals from Sierra Club, three modeling analysis submittals from industry, and one modeling analysis submittal from the State as prepared by industry for the analysis area surrounding the W.A. Parish Station.

The EPA determined that the modeling analyses submitted from all parties prior to the proposed designation were either inconsistent with EPA's Modeling TAD or were submitted too late for formal consideration at the proposal state. Specifically, EPA noted that the submittal received

from Sierra Club before our intended designation contained model input errors (i.e., stack parameters for several on-site sources did not accurately reflect the actual stack parameters) and additional areas in the modeling approach needed to be further refined (i.e., seasonal, diurnal background concentrations; updates to land use data so that calculated surface characteristics are more representative of current surface characteristics) in order to be consistent with the Modeling TAD. Industry submitted modeling on January 25, 2016, not allowing sufficient time prior to our intended designation of the area to determine if the modeling is sufficient to support a designation of unclassifiable/attainment as it requested. Therefore, based on the information available at the time, our intended designation for the Fort Bend County, Texas areas was unclassifiable.

As stated in the preliminary technical support document, the EPA continued our review of the January 2016 industry submittal and considered this submittal in our final designation, as discussed later in this document. The boundaries for this intended designation were the jurisdictional boundaries of Fort Bend County, Texas, based upon the State's recommendation. Additionally, the EPA confirmed that there are no other sources in Fort Bend County or near its borders that are likely to cause or contribute to a violation of the NAAQS within Fort Bend County.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas, and this document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.
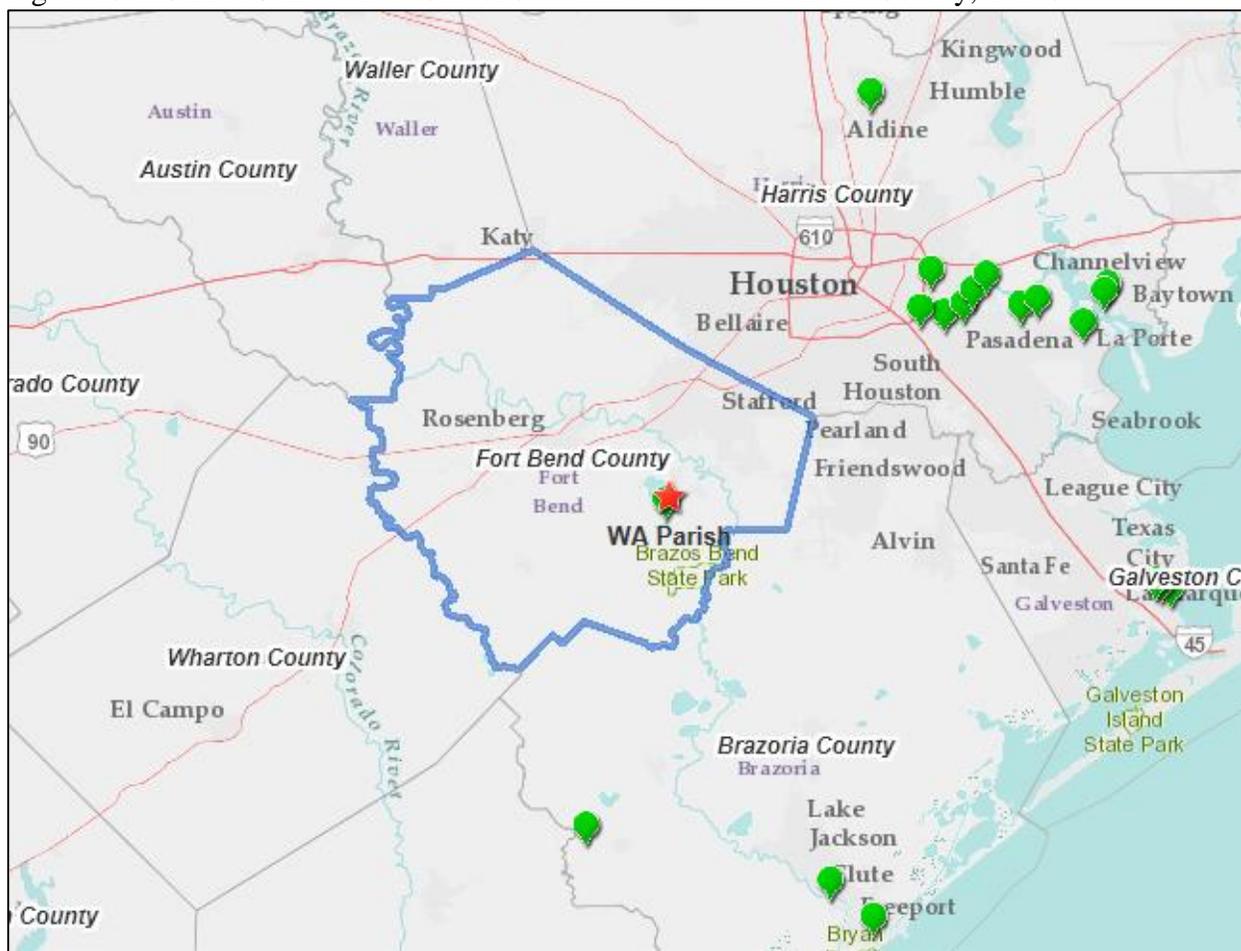
Assessment of New Information

In our February 11, 2016, notification to Texas regarding our intended unclassifiable designation for the Fort Bend County, Texas, area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

As further discussed below, after carefully considering all available data and information, the EPA determines that the Fort Bend County, Texas area is meeting the NAAQS, and therefore is designating the area as unclassifiable/attainment for the 2010 SO_2 NAAQS. The boundaries for this unclassifiable/attainment area consist of Fort Bend County in its entirety, and are shown in the figure below. Also included in the figure are nearby emitters of SO_2 and Texas's recommended area.

Figure 1: The EPA's final unclassifiable/attainment area: Fort Bend County, Texas

 As noted above, the EPA received information from industry regarding our intended designation for this area prior to the February 11, 2016, notification to the State. However, due to the timing of receipt relative to the scheduled timeline for announcing our intended designation, the EPA was not able to evaluate the information at that time; this final technical support document incorporates our analyses and conclusions regarding that information.

The EPA received substantive comments regarding our intended unclassifiable designation for the Fort Bend County, Texas, area, and a comprehensive summary of these comments and our responses can be found in the RTC.

Also, additional information, specifically air dispersion modeling, were submitted to the EPA during the State and public comment period in order to characterize air quality in the Fort Bend, Texas, area. Notably, industry provided additional air dispersion modeling information during the comment period asserting that the area surrounding the W.A. Parish Station should be designated as unclassifiable/attainment based on their most recent modeling analysis. The information submitted by industry during the public comment period was a resubmittal of the latest industry air dispersion modeling that was received prior to our intended designation but the timing of receipt did not allow for full evaluation prior to our intended designations. This information was submitted to support a modification to either our proposed designation, our proposed designation boundaries for the area, or both. The discussion and analysis of this new information that follow reference the Modeling TAD, Monitoring TAD, and the factors for evaluation contained in the EPA's March 20, 2015, guidance, as appropriate and applicable. The State referenced modeling that had been completed by Industry. No new or revised modeling was received from the state or third parties.

Model Selection and Modeling Components

The EPA's Modeling TAD notes that for area designations under the 2010 SO_2 NAAQS, the AERMOD modeling system should be used, unless use of an alternative model can be justified. In some instances the recommended model may be a model other than AERMOD, such as the BLP model for buoyant line sources. The AERMOD modeling system contains the following components:
- AERMOD: the dispersion model
- AERMAP: the terrain processor for AERMOD
- AERMET: the meteorological data processor for AERMOD
- BPIPPRIME: the building input processor
- AERMINUTE: a pre-processor to AERMET incorporating 1-minute automated surface observation system (ASOS) wind data
- AERSURFACE: the surface characteristics processor for AERMET
- AERSCREEN: a screening version of AERMOD

Industry used AERMOD version 15181, and a discussion of the individual components will be referenced in the corresponding discussion that follows, as appropriate.
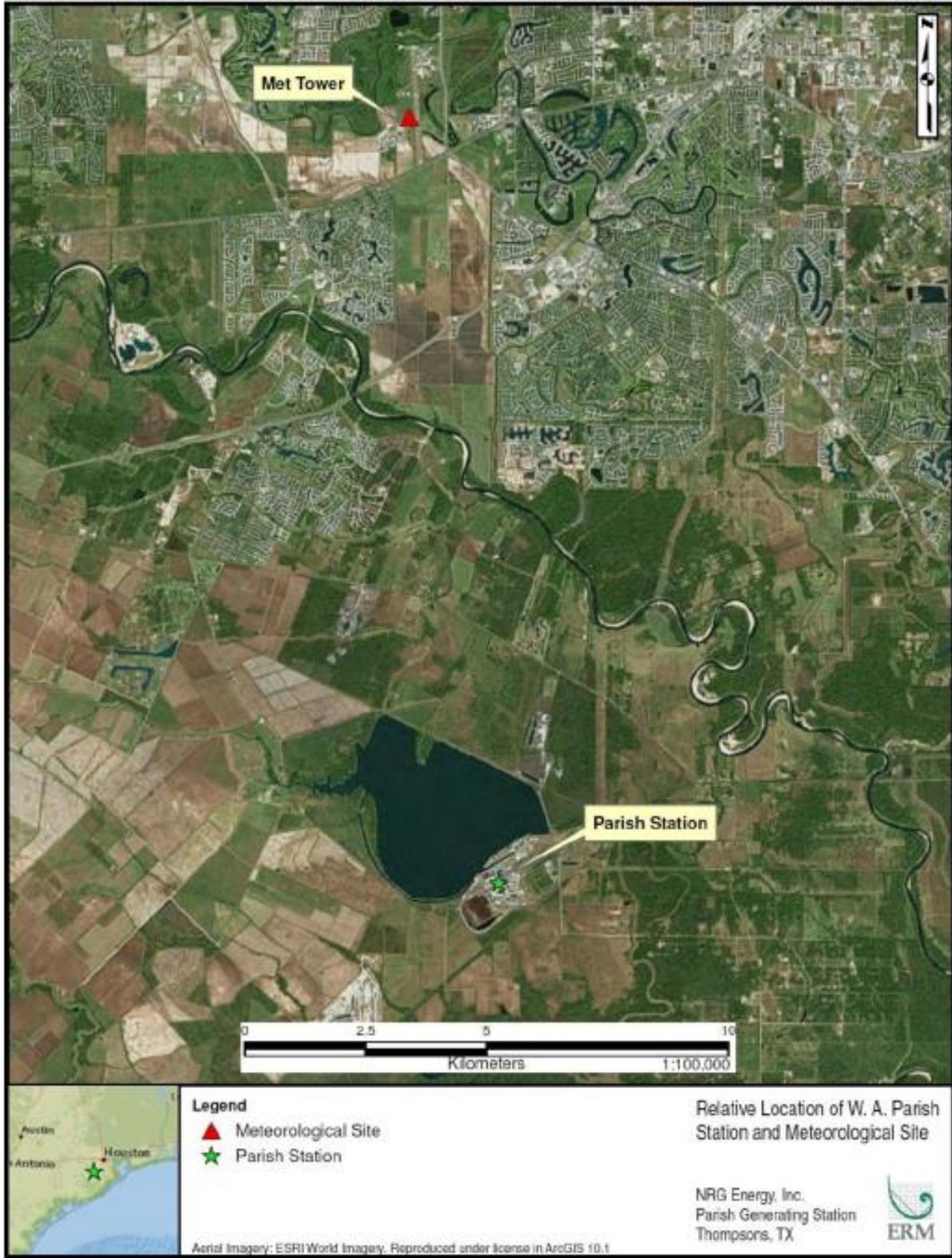
Modeling Parameter: Rural or Urban Dispersion

The EPA's recommended procedure for characterizing an area by prevalent land use is based on evaluating the dispersion environment within 3 km of the facility. According to the EPA's modeling guidelines contained in documents such as the Modeling TAD, rural dispersion coefficients are to be used in the dispersion modeling analysis if more than 50% of the area within a 3 km radius of the facility is classified as rural. Conversely, if more than 50% of the area is urban, urban dispersion coefficients should be used in the modeling analysis. When

performing the modeling for the area of analysis, industry determined that it was most appropriate to run the model in rural mode.

Based on our review of aerial photography of the area surrounding the facility, the determination to run the model in rural mode is appropriate (see Figure 2).

Figure 2: Aerial image by industry showing W.A. Parish Station and surrounding area

Met Tower

Parish Station

0   2.5   5   10
Kilometers   1:100,000

Legend
▲ Meteorological Site
★ Parish Station

Relative Location of W. A. Parish
Station and Meteorological Site

NRG Energy, Inc.
Parish Generating Station
Thompsons, TX

ERM

Aerial Imagery: ESRI World Imagery. Reproduced under license in ArcGIS 10.1

*Modeling Parameter: Area of Analysis (Receptor Grid)*

The EPA's view is that a reasonable first step towards characterization of air quality in the area surrounding the W.A. Parish Station is to determine the extent of the area of analysis, i.e., receptor grid. Considerations presented in the Modeling TAD include but are not limited to: the location of the SO_2 emission sources or facilities considered for modeling; the extent of significant concentration gradients of nearby sources; and sufficient receptor coverage and density to adequately capture and resolve the model predicted maximum SO_2 concentrations.

The grid receptor spacing for the area of analysis chosen by industry is as follows:
- 50-meter spacing along the facility fence line
- 100-meter spacing extending from the fence line to 3 kilometers
- 200-meter spacing extending from 3 to 5 kilometers
- 500-meter spacing extending from 5 to 10 kilometers
- 1,000-meter spacing extending from 10 to 20 kilometers

The receptor network contained 6,909 receptors and covered the majority of Fort Bend County and small portions southwest of Harris County and northwest of Brazoria County. Figure 3, shows the chosen area of analysis surrounding the W.A. Parish Station, as well as the receptor grid for the area of analysis. Industry conservatively did not exclude any receptors from the modeling based on the Modeling TAD's option not to include those locations where it would not be feasible to place a monitor and record ambient impacts. The impacts of the area's geography and topography are discussed later.

Figure 3: Receptor grid for the W.A. Parish area of analysis
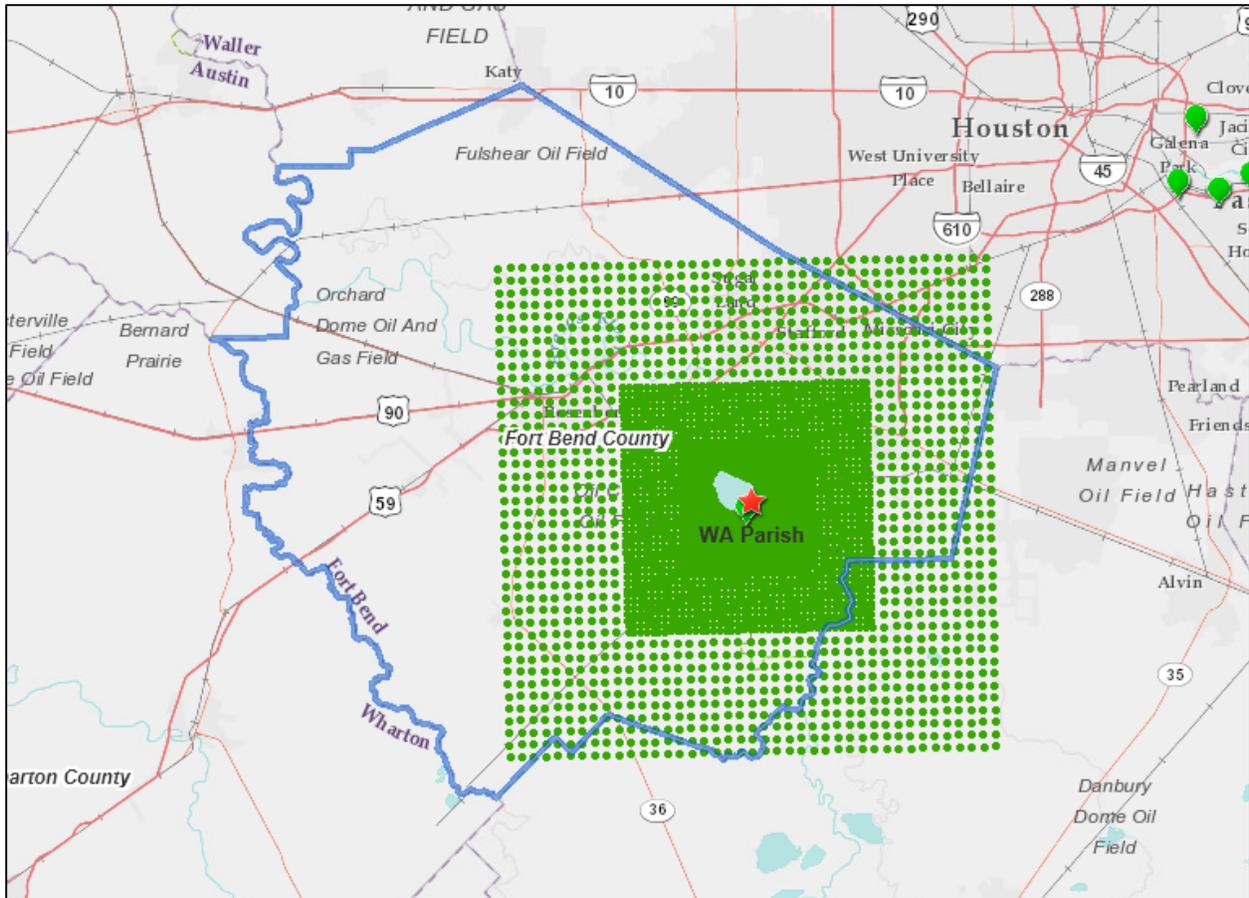
Industry reviewed the locations of all major sources of SO₂ within 50 kilometers of W.A. Parish station to determine what off-site sources may need to be included in the modeling analysis. It concluded that the closest source emitting at least 2,000 tons was the Rhodia Chemical Plant in Houston (Harris County) located 44.6 km to the northeast of the W.A. Parish station. After further review of the following factors industry did not include the Rhodia facility as a modeled source from the modeling due to:

- Distance from W.A. Parish station;
- Direction upwind and downwind of W.A. Parish station and frequency that the wind blows in those directions; and
- The presence of a significant concentration gradient in the direction of the sources being considered.

As discussed in the TSD accompanying the intended designations, Sierra Club modeling did include the Rhodia facility in their cumulative modeling analysis. However, comparison of the SO₂ modeling results shown in the December 15, 2015, Sierra Club submittal both with and without Rhodia emissions included does not show any difference in the maximum modeled impacts. Industry also noted that Sierra Club's modeling including Rhodia was conservative and not representative of the facility's emissions because they included modeled emission rates based on the facility's 2012 operating permit, which do not reflect the SO₂ controls installed after 2012.

Industry stated that current emission rates from Rhodia are lower than the emission rates that Sierra Club modeled and that the 2014 emissions were less than 1,000 tpy. Review of 2014 State Emissions Inventory information confirmed that actual emissions for the facility were approximately 921 tpy.

Modeling Parameter: Source Characterization

Industry characterized the sources within the area of analysis in accordance with practices outlined as acceptable in the Modeling TAD. Specifically, industry used actual stack heights in conjunction with actual emissions. Industry also adequately characterized the source's building layout and location, as well as the stack parameters, e.g., exit temperature, exit velocity, location, and diameter.

Modeling Parameter: Emissions

The EPA's Modeling TAD notes that for the purposes of modeling to characterize air quality for use in designations, the recommended approach is to use the most recent 3 years of actual emissions data and concurrent meteorological data. However, the Modeling TAD also provides for the flexibility of using allowable emissions in the form of the most recently permitted (referred to as PTE or allowable) emissions rate.

The continuous emissions monitoring systems (CEMS) data provide acceptable historical emissions information when it is available and that these data are available for many electric generating units. In the absence of CEMS data, the EPA's Modeling TAD highly encourages the use of AERMOD's hourly varying emissions keyword HOUREMIS or through the use of AERMOD's variable emissions factors keyword EMISFACT. When choosing one of these methods, the detailed throughput, operating schedules, and emissions information from the impacted sources should be used.

In certain instances, states and other interested parties may find that it is more advantageous or simpler to use PTE rates as part of their modeling runs. Specifically, a facility may have recently adopted a new federally enforceable emissions limit, been subject to a federally enforceable consent decree, or implemented other federally enforceable mechanisms and control technologies to limit SO_2 emissions to a level that indicates compliance with the NAAQS. These new limits or conditions may be used in the application of AERMOD. In these cases, the Modeling TAD notes that the existing SO_2 emissions inventories used for permitting or SIP planning demonstrations should contain the necessary emissions information for designations-related modeling. In the event that these short-term emissions are not readily available, they may be calculated using the methodology in Table 8-1 of Appendix W to 40 CFR Part 51 titled, "Guideline on Air Quality Models."

For W.A. Parish Station in the area of analysis, industry used actual emissions from the most recent 3-year data set available at the time of the modeling analysis, i.e., 2012 - 2014. These emissions data were obtained from CEMS data and included hourly data. Industry also utilized variable stack temperatures and exit velocities. Industry's latest modeling, which was resubmitted as part of the public comment period, addressed and corrected modeled stack

parameters (stack heights and diameters for some of the W.A. Parish Station sources) that were identified to be erroneous in previous modeling submittals.

These potential errors were based on EPA's review of modeled stack parameters compared to emissions inventory stack information. As part of their January 2016 response to EPA's request for additional information, industry reviewed the identified stack parameter inconsistencies and provided updated information, including revised modeling, as necessary.

Modeling Parameter: Meteorology and Surface Characteristics

The most recent 3 years of meteorological data (concurrent with the most recent 3 years of emissions data) should be used in designations efforts. As noted in the Modeling TAD, the selection of data should be based on spatial and climatological (temporal) representativeness. The representativeness of the data are based on: 1) the proximity of the meteorological monitoring site to the area under consideration, 2) the complexity of terrain, 3) the exposure of the meteorological site, and 4) the period of time during which data are collected. Sources of meteorological data include National Weather Service (NWS) stations, site-specific or onsite data, and other sources such as universities, the Federal Aviation Administration (FAA), and military stations.

For the Fort Bend County, Texas, area of analysis, surface meteorology from the NWS station at Sugar Land Regional Airport in Sugar Land, TX (WBAN No. 12977), approximately 15 km to the north, and coincident upper air observations from Lake Charles, LA (WBAN No. 03937), approximately 250 km to the northeast, were selected as best representative of meteorological conditions within the area of analysis.

Industry used AERSURFACE version 13016 using data from the NWS station in Sugar Land, Texas (located at 29.6197, -95.6575) to estimate the surface characteristics of the area of analysis. Industry estimated values for 12 spatial sectors out to 1 km at a monthly temporal resolution for moisture conditions defined by month. Industry also estimated values for albedo (the fraction of solar energy reflected from the earth back into space), the Bowen ratio (the method generally used to calculate heat lost or heat gained in a substance), and the surface roughness (sometimes referred to as "Zo"). In Figure 2 submitted by industry, the location of the Sugar Land, Texas, NWS station is shown relative to the W.A. Parish Station in the area of analysis.

When completing the AERSURFACE analysis, industry did make adjustments to the NLCD 1992 land use category information to be more consistent with the current conditions and surface types at the Sugar Land Airport. Figure 4 below shows the initial 1992 land use definitions alongside the revised land use definitions superimposed on a current aerial photograph of the meteorological station.

Figure 4: 1992 NLCD land use and updated land use for Sugar Land Airport

Figure 2-2:   Sugar Land Airport – 1km 1992 NLCD Land Use

Figure 2-3:   Sugar Land Airport – 1km Updated Land Use

Legend:
- Open_Water
- Perennial_Ice_Snow
- Low_Intensity_Residential
- High_Intensity_Residential
- Commercial_Indust_Transp_at_Airport
- Commercial_Indust_Transp_Not_at_Airport
- Bare_Rock_Sand_Clay_(Arid_Region)
- Bare_Rock_Sand_Clay_(Non_Arid_Region)
- Quarries_Strip_Mines_Gravel
- Transitional
- Deciduous_Forest
- Evergreen_Forest
- Mixed_Forest
- Shrubland_(Arid_Region)
- Shrubland_(Non_Arid_Region)
- Orchards_Vineyards_Other
- Grasslands_Herbaceous
- Pasture_Hay
- Row_Crops
- Small_Grains
- Fallow
- Urban_Recreational_Grasses
- Woody_Wetlands
- Emergent_Herbaceous_Wetlands

Meteorological data from the above surface and upper air stations were used in generating AERMOD-ready files with the AERMET processor. The output meteorological data created by the AERMET processor is suitable for being applied with AERMOD input files for AERMOD modeling runs. Industry followed the methodology and settings presented in the most recent versions of meteorological preprocessing files of AERMOD, and is consistent with EPA guidance in the processing of the raw meteorological data into an AERMOD-ready format, and used AERSURFACE to best represent surface characteristics.

Hourly surface meteorological data records are read by AERMET, and include all the necessary elements for data processing. However, wind data taken at hourly intervals may not always

portray wind conditions for the entire hour, which can be variable in nature. Hourly wind data may also be overly prone to indicate calm conditions, which are not modeled by AERMOD. In order to better represent actual wind conditions at the meteorological tower, wind data of 1 minute duration was provided from the same instrument tower, but in a different formatted file to be processed by a separate preprocessor, AERMINUTE. These data were subsequently integrated into the AERMET processing to produce final hourly wind records of AERMOD-ready meteorological data that better estimate actual hourly average conditions and that are less prone to over-report calm wind conditions. This allows AERMOD to apply more hours of meteorology to modeled inputs, and therefore produce a more complete set of concentration estimates. As a guard against excessively high concentrations that could be produced by AERMOD in very light wind conditions, industry set a minimum threshold of 0.5 meters per second in processing meteorological data for use in AERMOD. This approach is consistent with a March 2013 EPA memo titled, "Use of ASOS meteorological data in AERMOD dispersion Modeling." In setting this threshold, no wind speeds lower than this value would be used for determining concentrations. This threshold was specifically applied to the 1-minute wind data.

Modeling Parameter: Geography and Terrain

The terrain in the area of analysis is best described as flat, with little to no elevation changes between the facility's location and the airport's location. To account for any terrain changes, the AERMAP terrain program within AERMOD was used to specify terrain elevations for all the receptors. The source of the elevation data incorporated into the model was the USGS National Elevation Database.

Modeling Parameter: Background Concentrations of SO_2

The Modeling TAD offers two mechanisms for characterizing background concentrations of SO_2 that are ultimately added to the modeled design values: 1) a "first tier" approach, based on monitored design values, or 2) a temporally varying approach, based on the 99th percentile monitored concentrations by hour of day and season or month. For the Fort Bend County, Texas area of analysis, industry chose to use the second tier seasonal variable diurnal profiles for the background concentrations from data collected at Italy, Texas, located about 320 km WNW of the W.A. Parish Station. Table 1 contains the seasonal, diurnal SO_2 concentrations for the Italy monitor. These background concentrations were incorporated into the final AERMOD results.

Table 1: Seasonal, diurnal 1-hour SO_2 concentrations (μg/m^3) for the Italy, Texas Monitor

Hour[1]	Winter	Spring	Summer	Fall
1	3.66	2.70	3.23	3.05
2	2.62	2.27	2.18	2.88
3	2.53	2.44	2.36	3.32
4	2.62	2.18	2.09	3.66
5	2.18	1.75	1.48	2.97
6	2.27	1.66	1.40	3.32
7	2.18	1.57	1.75	2.18
8	2.36	2.36	3.05	4.01
9	3.58	3.32	3.66	6.37
10	4.71	6.20	6.02	10.38
11	7.33	5.24	6.98	9.77
12	8.73	4.54	6.28	16.93
13	9.16	5.85	5.06	10.30
14	7.42	5.76	5.06	9.77
15	7.33	5.76	6.02	8.20
16	9.07	4.36	4.28	8.73
17	6.46	3.75	3.66	13.26
18	8.38	4.28	5.24	8.20
19	4.89	3.58	5.67	4.89
20	13.00	4.19	8.55	6.54
21	4.01	2.62	6.72	6.02
22	2.79	2.53	5.15	4.54
23	2.27	3.32	2.88	5.06
24	2.36	2.79	2.88	4.62

1. Hours in AERMOD are defined as hour-ending. i.e., Hour 1 is the period from midnight through 1 AM, etc.

Summary of Modeling Results

The AERMOD modeling parameters, as supplied by additional information from industry during the comment period for the Fort Bend County, Texas, area of analysis are summarized below in Table 2. With the exception of revisions to erroneous stack parameters, the modeling parameters in the most recent modeling from industry remain unchanged from the analysis evaluated in our intended designation. As documented in the TSD accompanying our intended designation, the modeling conducted by industry was determined to be consistent with current EPA modeling guidance, including the Modeling TAD. For more details reference our intended designation documents, available in the docket.

Table 2: AERMOD Modeling Parameters for the Fort Bend County, Texas Area

Fort Bend County, Texas Area of Analysis	
AERMOD Version	15181
Dispersion Characteristics	Rural
Modeled Sources	1
Modeled Stacks	14
Modeled Structures	353
Modeled Fence lines	Yes, W.A. Parish Station Fence line
Total receptors	6,909
Emissions Type	Actual
Emissions Years	2012-2014
Meteorology Years	2012-2014
Surface Meteorology Station	Sugar Land Regional Airport, TX
Upper Air Meteorology Station	Lake Charles, LA
Methodology for Calculating Background SO_2 Concentration	Seasonal diurnal values
Calculated Background SO_2 Concentration	See Table 1

The results presented below in Table 3 show the magnitude and geographic location of the highest predicted modeled concentration based on actual emissions.

Table 3: Maximum Predicted 99th Percentile 1-Hour SO_2 Concentration in the Fort Bend County, Texas Area of Analysis Based on Actual Emissions

Averaging Period	Data Period	Receptor Location		SO_2 Concentration (µg/m³)	
		UTM/Latitude	UTM/Longitude	Modeled (including background)	NAAQS
99th Percentile 1-Hour Average	2012-2014	242505.31	3259955.75	184.184	196.5*

*Equivalent to the 2010 SO_2 NAAQS set at 75 ppb

Industry's latest modeling indicates that the highest predicted 3-year average 99th percentile 1-hour average concentration within the chosen modeling domain is 184.2 μg/m^3, or 70.3 ppb. This modeled concentration included the background concentration of SO_2, and is based on actual emissions from the facility.

Jurisdictional Boundaries:

Once the geographic area of analysis associated with the W.A. Parish Station, other nearby sources of SO_2, and background concentration is determined, existing jurisdictional boundaries are considered for the purpose of informing our final unclassifiable/attainment area, specifically with respect to clearly defined legal boundaries. The EPA has confirmed that aside from the W.A. Parish station, there are no other sources in Fort Bend County or within 20 km of its borders that according to the 2011 NEI, have reported SO_2 emissions of 100 tpy or greater. As a result, the EPA finds that it is unlikely for any sources in a neighboring county to cause or contribute to a violation of the NAAQS in Fort Bend County.

The EPA finds that our final unclassifiable/attainment area, consisting of Fort Bend County, Texas, is comprised of clearly defined legal boundaries, and we find these boundaries to be a suitably clear basis for defining our final unclassifiable/attainment area.

Conclusion

After careful evaluation of the State's recommendation, all timely comments and information received during the State and public comment period, and additional relevant information as discussed in this document, the EPA determines that the area around W.A. Parish Station is meeting the NAAQS, and is designating the area as unclassifiable/attainment for the 2010 SO_2 NAAQS. Specifically, the boundaries for unclassifiable/attainment area consist of the entirety of Fort Bend County, Texas as shown in Figure 1.

Since our intended designation, we have been able to complete our evaluation of the latest air dispersion modeling submitted by industry on January 25, 2016, which demonstrated attainment in the area of analysis. The EPA finds that this latest submittal is consistent with the Modeling TAD and applicable EPA guidance and has corrected the erroneous model inputs outlined in our intended designation for Fort Bend County, Texas.

At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Technical Analysis for Goliad County, Texas

Introduction

The Goliad County, Texas area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the Coleto Creek Power Station (Coleto Creek Station) emitted 16,218 tons of SO_2, and had an emissions rate of 0.615 lbs SO_2/mmBTU. As of March 2, 2015, this stationary source had not met the specific requirements for being "announced for retirement." Pursuant to the March 2, 2015, court-ordered schedule, the EPA must designate the area surrounding this facility by July 2, 2016.

In its September 18, 2015, submission, Texas recommended that the area surrounding the Coleto Creek Station facility, specifically the entirety of Goliad County, be designated as unclassifiable/attainment based on an assessment and characterization of air quality from the facility and other nearby sources which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions.

On February 11, 2016, the EPA notified Texas that we intended to designate the area around Coleto Creek Station area as unclassifiable/attainment. Additionally, we informed Texas that our intended boundaries for the unclassifiable/attainment area consisted of the entirety of Goliad County, Texas. Our intended designation and associated boundaries were based on, among other things, air quality characterization through modeling submitted by the State, and conducted within the Goliad County area, in accordance with the EPA guidance, including the Modeling TAD, and showed a maximum predicted 99th percentile 1-hour SO_2 concentration below the NAAQS. The boundaries for this designation are the jurisdictional boundaries of Goliad County, which are the same as the State's recommendation. Additionally, the EPA confirmed that there are no other sources in Goliad County or near its borders that are likely to cause or contribute to a violation of the 2010 SO_2 NAAQS within Goliad County.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas. This document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

Assessment of New Information

In our February 11, 2016, notification to Texas regarding our intended unclassifiable/attainment designation for the Goliad County area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

Subsequent to our February 11, 2016, notification to the State, the EPA received a response from Texas supporting our intended designation for the area, and we did not receive any comments from the public regarding the Coleto Creek Station for our intended unclassifiable/attainment designation for the Goliad County, Texas, area. A summary of the comments and our responses can be found in the RTC.

Conclusion

Therefore, the EPA finds that the Goliad County, Texas, area is meeting the 2010 SO_2 NAAQS, and is designating that area unclassifiable/attainment for the 2010 SO_2 NAAQS. This is based on consideration of the information available to the EPA and includes the analyses performed for the purposes of the preliminary technical support document, and the absence of any new information that would otherwise lead to a different conclusion regarding air quality in the area or any new information that would otherwise lead to a different conclusion regarding the area boundaries.

The boundaries for this unclassifiable/attainment area consist of the entirety of Goliad County's borders and is shown in the figure below. Also included in the figure are nearby emitters of SO_2 and Texas' recommended area, which is the same as the EPA's recommendation.

Figure 1: The EPA's final unclassifiable/attainment area: Goliad County, Texas
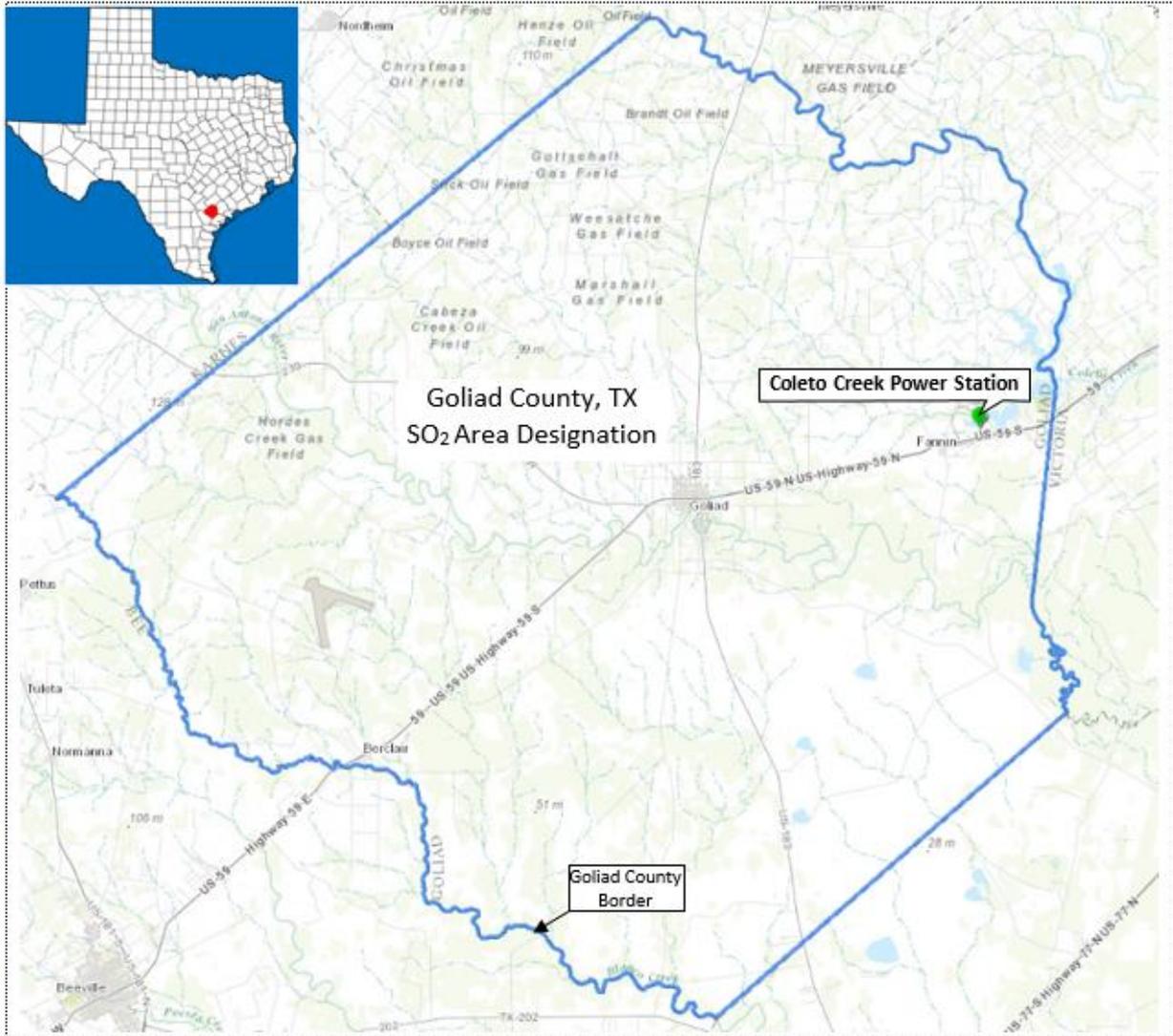
At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the remaining court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Technical Analysis for Lamb County, Texas

Introduction

The Lamb County, Texas, area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the Tolk Electric Station (Tolk Station) emitted 19,168 tons of SO_2, and had an emissions rate of 0.52 lbs/ SO_2/mmBTU. Pursuant to the March 2, 2015, consent decree, the EPA must designate the area surrounding the facility by July 2, 2016.

In its September 18, 2015, submission, Texas recommended that the area surrounding the Tolk station, specifically Lamb County, be designated as unclassifiable/attainment based on an assessment and characterization of air quality from the facility and other nearby sources which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions.

On February 11, 2016, the EPA notified Texas that we intended to designate the area surrounding Tolk Station, specifically the entirety of Lamb County area as unclassifiable/attainment. Additionally, we informed Texas that our intended boundaries for the unclassifiable/attainment area consisted of the entirety of Lamb County. Our intended designation and associated boundaries were based on, among other things, modeling submitted by the State that was performed in accordance with appropriate EPA modeling guidance and used conservative assumptions. Additionally, the EPA confirmed that there were no other sources in Lamb County or near its borders that were likely to cause or contribute to a violation of the 2010 SO_2 NAAQS within Lamb County.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas, and this document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

Assessment of New Information

In our February 11, 2016, notification to Texas regarding our intended unclassifiable/attainment designation for the Lamb County area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

The EPA received responses from Texas supporting our intended designation for the area, and we did not receive any comments from the public. A summary of the comments and our responses can be found in the RTC.

Conclusion

The EPA concludes that the Lamb County area is meeting the 2010 primary SO_2 NAAQS. Therefore, based on the information available to the EPA at this time including the analyses performed for the purposes of the preliminary technical support document, and absent any new information that would otherwise lead to a different conclusion regarding air quality in the area or any new information that would otherwise lead to a different conclusion regarding the area boundaries, the EPA is designating the Lamb County area as unclassifiable/attainment for the 2010 SO_2 NAAQS.

The boundaries for this unclassifiable/attainment area consist of the entirety of Lamb County, and are shown in the figure below. Also included in the figure are nearby emitters of SO_2.

Figure 1: The EPA's final unclassifiable/attainment area: Lamb County, Texas
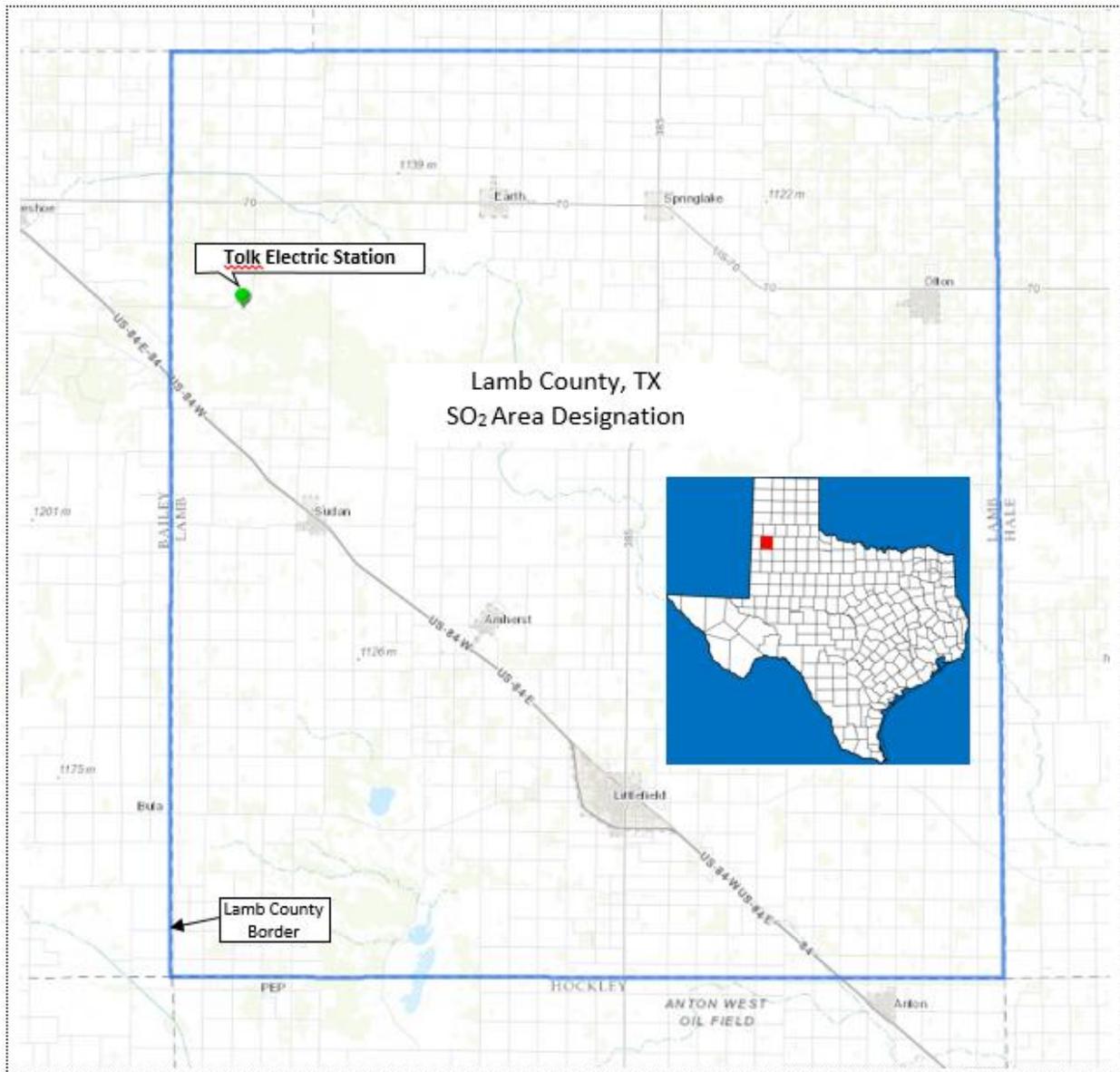
At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Technical Analysis for Limestone County, Texas

Introduction

The Limestone County, Texas, area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the Limestone Power Station emitted 20,671 tons of SO_2 and had an emissions rate of 0.36 lbs SO_2/mmBTU. As of March 2, 2015, this stationary source had not met the criteria for being "announced for retirement." Pursuant to the March 2, 2015, court-ordered schedule, the EPA must designate the area surrounding this facility by July 2, 2016.

In the September 18, 2015, submission, Texas recommended that the area surrounding the Limestone Power Station, specifically the entirety of Limestone County, be designated as unclassifiable/attainment. This was based on an assessment and characterization of air quality from the facility and other nearby sources, which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions completed by industry on behalf of the NRG Limestone Power Station.

After the EPA had completed its review and analysis of the modeling submitted by the State, industry submitted a supplemental modeling report on December 1, 2015. This supplemental report presented the results of additional dispersion modeling completed to address our comments and requests for additional information. Notably, the EPA participated in numerous conference calls and meetings to discuss potential model input errors and inconsistencies in the modeling compared to the procedures described in the EPA's Modeling TAD. In response to those discussions, industry provided the December 1, 2015, supplement, which was submitted to address the following:

1. Correct errors in the hourly SO_2 emissions and parameter input file;
2. Examine the effect on modeled concentrations of correcting and using land use information for the Corsicana airport, which was used to develop meteorological inputs to AERMOD; and
3. Examine the effect on modeled concentrations of the use of two options within AERMOD that are currently designated as "beta" options requiring justification, but which the EPA has proposed to designate as "default" options.

Following review of the supplement modeling report, the EPA requested additional information regarding the revised Limestone modeling analysis. Specifically, the EPA requested that industry review the stack parameter information included as model inputs and confirm their accuracy. In

response to our request, industry submitted the January 25, 2016, supplement,[3] to provide verification of stack parameters, as requested by the EPA. Industry indicated that the stack parameters included in the December 1, 2015, submittal were accurate and representative of the emission sources at the Limestone Power Station.

On February 11, 2016, the EPA notified Texas that we intended to designate the Limestone County, Texas, area as unclassifiable/attainment, based on our view after reviewing the available information that the area was meeting the 2010 SO_2 NAAQS. Additionally, we informed Texas that our intended boundaries for the unclassifiable/attainment area consisted of Limestone County in its entirety. Our intended designation and associated boundaries were based on, among other things, the modeling analysis submitted by the State and supplemented by industry, which was performed in accordance with appropriate EPA modeling guidance and using conservative assumptions. While nonattainment was asserted in a separate modeling analysis completed by Sierra Club, various issues concerning this modeling led us to consider this modeling as less reliable than the modeling provided by the State and industry for characterizing the air quality status of the area.

Specifically, Sierra Club relied on hourly emission rates, stack velocities and temperatures provided by NRG that were later found to have flaws and NRG corrected for this in subsequent model submittals. These flaws caused some of the data to be matched to the wrong hours and thus to the wrong meteorological conditions. The Sierra Club modeling was also less refined than the NRG modeling because the NRG modeling used updated surface characteristics. Finally, NRG used seasonal estimates that refined the background. The most recent submittal from Sierra Club contained model input errors and additional areas in the modeling approach that could be further refined in order to be consistent with the Modeling TAD. Therefore, the submittals received from Sierra Club do not contain sufficient information to indicate that the area of analysis should be designated nonattainment. The boundaries for this intended designation were the jurisdictional boundaries of Limestone County, based upon the State's recommendation.

As discussed in detail in the TSD accompanying our intended designation of Limestone County, the EPA reviewed off-site emission inventory sources in Limestone County and neighboring counties. The emissions from any of the off-site inventory sources in the Limestone Power Station area of analysis will not cause or contribute to a violation of the NAAQS in Limestone County.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas, and this document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

Assessment of New Information

---

[3] Electronic report providing response to the EPA's request for stack parameter verification was provided via email on January 25, 2016.

In our February 11, 2016, notification to Texas regarding our intended unclassifiable/attainment designation for the Limestone County, Texas area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

The EPA received a response from Texas supporting our intended designation for the area, and we also received comments from the Limestone Power Station supporting our intended designation for the area. We did not receive any additional comments or updated analysis from Sierra Club for the Limestone Power Station during the public comment period. A summary of the comments and our responses can be found in the RTC.

Conclusion

Based on the information available to the EPA at this time, including the analyses performed for the purposes of the preliminary technical support document and in the absence of any new information that would otherwise lead to a different conclusion regarding air quality in the area or any new information that would otherwise lead to a different conclusion regarding the area boundaries, the EPA concludes that the Limestone County, Texas, area is meeting the 2010 primary SO_2 NAAQS, and is designating the area as unclassifiable/attainment. The boundaries for this unclassifiable/attainment area consist of the entirety of Limestone County's borders and are shown in Figure 1 below. Also included in the figure are nearby emitters of SO_2.

Figure 1: The EPA's final unclassifiable/attainment area: Limestone County, Texas
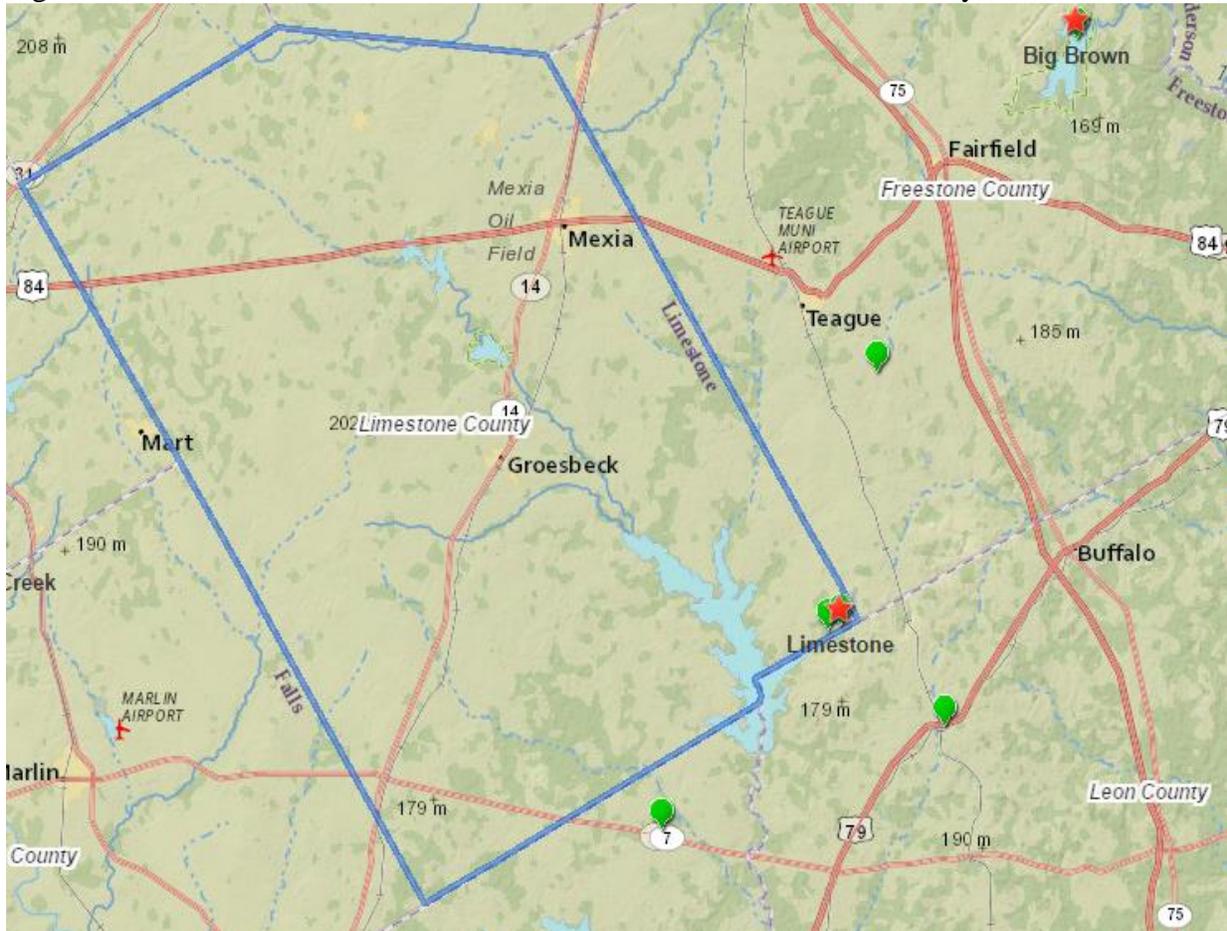
At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Technical Analysis for McLennan County, Texas

<u>Introduction</u>

The McLennan County, Texas, area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the Sandy Creek Energy Station emitted 4,955 tons of SO_2 and had an emissions rate of 1.41 lbs SO_2/mmBTU. As of March 2, 2015, this stationary source had not met the criteria for being "announced for retirement." Pursuant to the March 2, 2015, court-ordered schedule, the EPA must designate the area surrounding this facility by July 2, 2016.

In its September 18, 2015, submission, Texas recommended that the area surrounding the Sandy Creek Energy Station, specifically the entirety of McLennan County, be designated as attainment based on an assessment and characterization of air quality from the facility and other nearby sources which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was based on historical modeling performed in 2011 by the facility using air dispersion modeling software, i.e., AERMOD, analyzing permitted emissions and review of available monitor data.[4]

On February 11, 2016, the EPA notified Texas that we intended to designate the McLennan County, Texas area as unclassifiable, due to our view that based on available information we could not determine whether the area was meeting the NAAQS. Additionally, we informed Texas that our intended boundaries for the unclassifiable area consisted of McLennan County in its entirety. Our intended designation and associated boundaries were based on, among other things, the EPA's finding that the historical modeling submitted for the area surrounding the Sandy Creek Energy Station was inconsistent with EPA's modeling guidance and Modeling TAD. In addition, the monitoring data referenced in the Texas submittal was not sufficient technical justification to rule out that an exceedance of the 2010 SO_2 NAAQS may occur in the immediate vicinity of the Sandy Creek Energy Station.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas, and this document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

As discussed in this document, we are not going forward with our intended designation of unclassifiable and instead are finalizing the designation of the McLennan County, Texas area as unclassifiable/attainment based on the additional information received during the public comment period. Details regarding the additional information received by the EPA and our evaluation of this information as part of the final designations process are provided below.

<u>Assessment of New Information</u>

---

[4] Waco Manzac Monitor located 14 miles northwest of the facility.

In our February 11, 2016 notification to Texas regarding our intended unclassifiable designation for the McLennan County, Texas area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

The EPA received substantive comments regarding our intended unclassifiable designation for the McLennan County, Texas area, and a comprehensive summary of these comments and our responses can be found in the RTC.

As further discussed below, after carefully considering all available data and information, the EPA determines that the McLennan County, Texas, area is meeting the NAAQS, and is designating the area as unclassifiable/attainment for the 2010 SO_2 NAAQS. The boundaries for this unclassifiable/attainment area consist of McLennan County in its entirety, and are shown in the Figure 1 below. Also included in the figure are nearby emitters of SO_2 and Texas' recommended area.

Figure 1: The EPA's Final Unclassifiable/Attainment Area: McLennan County, Texas
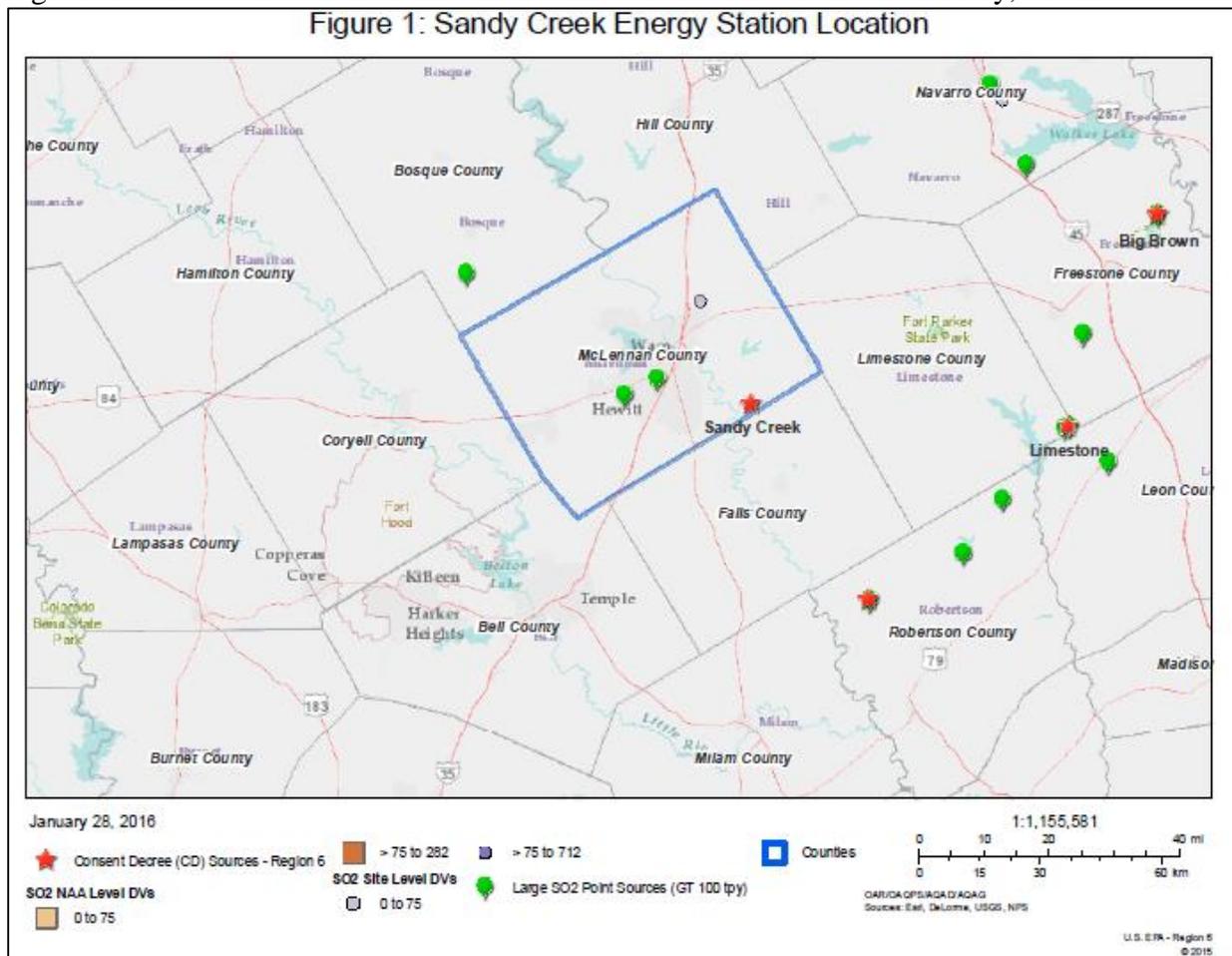
Comments and additional information, specifically air dispersion modeling, were submitted to the EPA during the state and public comment period in order to characterize air quality in the McLennan County, Texas, area. A summary of the comments and our responses can be found in the RTC. Notably, Texas provided additional air dispersion modeling information during the comment period asserting that the area surrounding the Sandy Creek Energy Station, specifically the entirety of McLennan County, should be designated as unclassifiable/attainment. This information was submitted to support a modification to either our proposed designation, our proposed designation boundaries for the area, or both. The discussion and analysis of this new information that follow reference the Modeling TAD, Monitoring TAD, and the factors for evaluation contained in the EPA's March 20, 2015 guidance, as appropriate and applicable.

Model Selection and Modeling Components

The EPA's Modeling TAD notes that for area designations under the 2010 SO$_2$ NAAQS, the AERMOD modeling system should be used, unless use of an alternative model can be justified. In some instances the recommended model may be a model other than AERMOD, such as the BLP model for buoyant line sources. The AERMOD modeling system contains the following components:

- AERMOD: the dispersion model
- AERMAP: the terrain processor for AERMOD
- AERMET: the meteorological data processor for AERMOD
- BPIPPRIME: the building input processor
- AERMINUTE: a pre-processor to AERMET incorporating 1-minute automated surface observation system (ASOS) wind data
- AERSURFACE: the surface characteristics processor for AERMET
- AERSCREEN: a screening version of AERMOD

The State used AERMOD version 15181 (i.e., the most recent version of the model), and a discussion of the individual components will be referenced in the corresponding discussion that follows, as appropriate.

Modeling Parameter: Rural or Urban Dispersion

The EPA's recommended procedure for characterizing an area by prevalent land use is based on evaluating the dispersion environment within 3 km of the facility. According to the EPA's modeling guidelines contained in documents such as the Modeling TAD, rural dispersion coefficients are to be used in the dispersion modeling analysis if more than 50% of the area within a 3 km radius of the facility is classified as rural. Conversely, if more than 50% of the area is urban, urban dispersion coefficients should be used in the modeling analysis. When performing the modeling for the area of analysis, Texas determined that it was most appropriate to run the model in rural mode. Based on our review of aerial photography of the area surrounding the Sandy Creek Energy Station, the determination of modeling using rural mode is appropriate as shown in Figure 2 below.

Figure 2: Aerial Image for Sandy Creek Energy Station

Figure 2: Aerial Image for Sandy Creek Energy Station
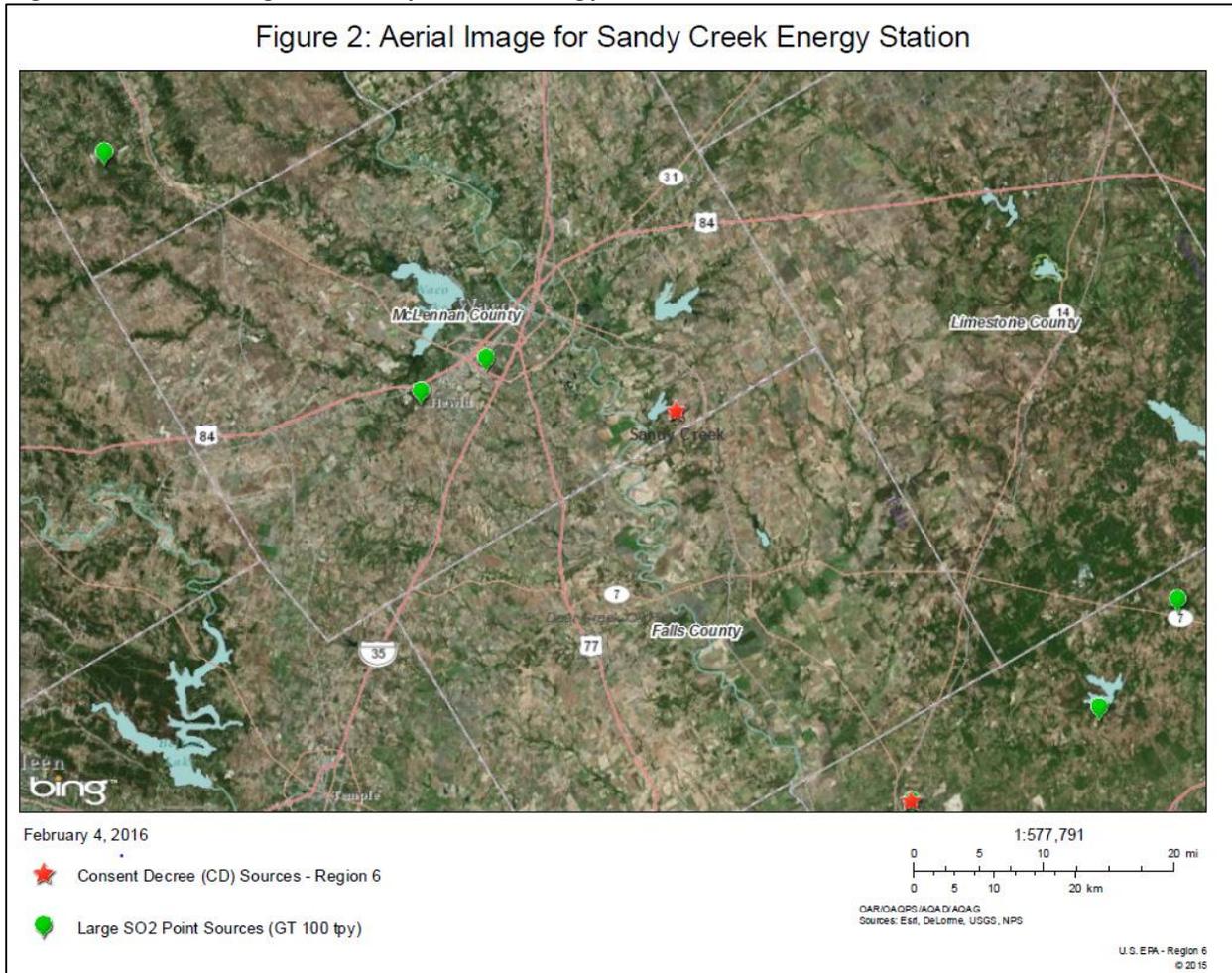
Modeling Parameter: Area of Analysis (Receptor Grid)

A reasonable first step towards characterization of air quality in the area surrounding the Sandy Creek Energy Station is to determine the extent of the area of analysis, i.e., receptor grid. Considerations presented in the Modeling TAD include but are not limited to: the location of the SO_2 emission sources or facilities considered for modeling; the extent of significant concentration gradients of nearby sources; and sufficient receptor coverage and density to adequately capture and resolve the model predicted maximum SO_2 concentrations.

The grid receptor spacing for the area of analysis chosen by Texas is as follows:
- 25 meter spacing along the fence line
- 25 meter spacing in a band extending 300 meters from the fence line
- A square 5 km x 5 km grid of 100 meter spacing centered on the facility
- A square 10 km x 10 km grid of 500 meter spacing centered on the facility
- A square 15 km x 15 km grid of 1000 meter spacing centered on the facility

The receptor network contained 6,875 receptors and covered 15 kilometers in all directions from the facility center, which included the eastern portion of McLennan County and the northern portion of Falls County. Figure 3, which was included in Texas's submission during the comment period, shows the chosen area of analysis surrounding the Sandy Creek Energy Station, as well as the receptor grid for the area of analysis. Texas conservatively included all receptors in the 30 x 30 kilometer grid and did not exclude any areas where it would not be feasible to place a monitor and record ambient air impacts. The impacts of the area's geography and topography will be discussed later within this document.

Figure 3: Receptor Grid for the Sandy Creek Energy Station Area of Analysis
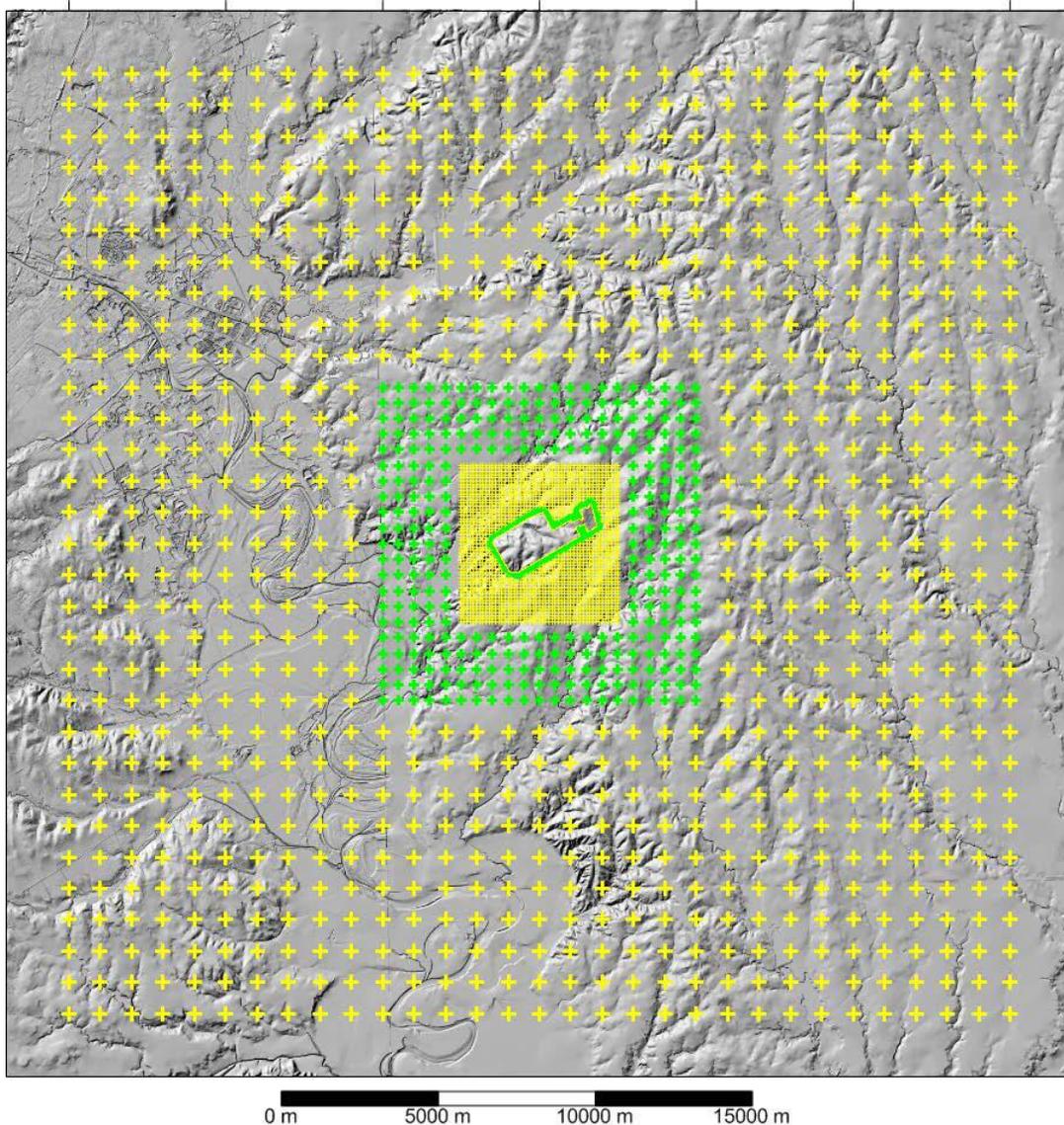
Texas examined other large SO_2 emitters (> 100 tpy) located within 50 km of the Sandy Creek Energy Station to determine what if any additional nearby emission sources should be included in the modeling for the McLennan County, Texas area of analysis. We agree with the 50 km area of examination chosen by Texas since any emission source(s) beyond that distance would exceed

the generally accepted scale for AERMOD. Texas identified 100 + tpy SO_2 emission sources within this distance – Owens Brockway Glass (281 tpy) and Lehigh Cement (273 tpy). Both sources are located more than 20 km west of the Sandy Creek Energy Station. Based on the distances between the sources, the relative low magnitudes of emissions, and the predominant wind flow for the area of analysis, Texas excluded these sources from the modeling analysis because they are not expected to cause significant 1-hour SO_2 concentration gradients in the vicinity of the Sandy Creek Energy Station. Texas also stated that they expect the background concentration taken from the Waco monitor to adequately represent these sources. Based on our review of the information provided by Texas, the distance chosen for the area of analysis and the determination to exclude the two nearby sources from the analysis is adequate.

Modeling Parameter: Source Characterization

Texas characterized the sources within the area of analysis in accordance with practices outlined as acceptable in the Modeling TAD. Specifically, the State followed the EPA's good engineering practices (GEP) policy in conjunction with allowable emissions limits. Texas also adequately characterized the source's building layout and location, as well as the stack parameters, e.g., exit temperature, exit velocity, location, and diameter. Where appropriate, the AERMOD component BPIPPRIME was used to assist in addressing building downwash.

Modeling Parameter: Emissions

The EPA's Modeling TAD notes that for the purposes of modeling to characterize air quality for use in designations, the recommended approach is to use the most recent 3 years of actual emissions data and concurrent meteorological data. However, the TAD also provides for the flexibility of using allowable emissions in the form of the most recently permitted (referred to as PTE or allowable) emissions rate.

The continuous emissions monitoring systems (CEMS) data provide acceptable historical emissions information when it is available and that these data are available for many electric generating units. In the absence of CEMS data, the EPA's Modeling TAD highly encourages the use of AERMOD's hourly varying emissions keyword HOUREMIS or through the use of AERMOD's variable emissions factors keyword EMISFACT. When choosing one of these methods, the detailed throughput, operating schedules, and emissions information from the impacted sources should be used.

In certain instances, states and other interested parties may find that it is more advantageous or simpler to use PTE rates as part of their modeling runs. Specifically, a facility may have recently adopted a new federally enforceable emissions limit, been subject to a federally enforceable consent decree, or implemented other federally enforceable mechanisms and control technologies to limit SO_2 emissions to a level that indicates compliance with the NAAQS. These new limits or conditions may be used in the application of AERMOD. In these cases, the Modeling TAD notes that the existing SO_2 emissions inventories used for permitting or SIP planning demonstrations should contain the necessary emissions information for designations-related modeling. In the event that these short-term emissions are not readily available, they may

be calculated using the methodology in Table 8-1 of Appendix W to 40 CFR Part 51 titled, "Guideline on Air Quality Models."

As previously noted, Texas included only the Sandy Creek Energy Station emission sources in the area of analysis. Texas modeled the Sandy Creek Energy Station using the most recent federally enforceable PTE limits for SO_2. The Sandy Creek Energy Station in Texas's area of analysis and their associated PTE rates are summarized below.

Table 1: SO_2 Allowable Emissions in the Sandy Creek Energy Station Area of Analysis

Emission Source	Hourly SO_2 Emissions (lbs per hour, based on PTE)
Pulverized Coal Boiler	2,892
Auxiliary Boiler	0.17
Diesel-fired Emergency Generator	0.029
Emergency Diesel Fuel-Fired Firewater Pump	0.029
Emergency Diesel Fuel-Fired Firewater Booster Pump	0.029

The modeled PTE emissions for the Sandy Creek Energy Station's emission sources reflect worst-case permit allowable emission rates. Texas also included the hourly emissions from the emergency equipment that potentially could have been excluded in accordance with the EPA's intermittent source policy for 1-hour SO_2 modeling. Texas indicated that these conservative approaches further support their assertion that the area surrounding the Sandy Creek Energy Station should be designated as unclassifiable/attainment.

*Modeling Parameter: Meteorology and Surface Characteristics*

The most recent 3 years of meteorological data (concurrent with the most recent 3 years of emissions data) should be used in designations efforts. As noted in the Modeling TAD, the selection of data should be based on spatial and climatological (temporal) representativeness. The representativeness of the data are based on: 1) the proximity of the meteorological monitoring site to the area under consideration, 2) the complexity of terrain, 3) the exposure of the meteorological site, and 4) the period of time during which data are collected. Sources of meteorological data include National Weather Service (NWS) stations, site-specific or onsite data, and other sources such as universities, the Federal Aviation Administration (FAA), and military stations.

For the Sandy Creek Energy Station area of analysis, surface meteorology from the NWS station in Waco, Texas, approximately 30 km to the northeast, and coincident upper air observations from the NWS station in Fort Worth, Texas, approximately 150 km to the northwest south were selected as best representative of meteorological conditions within the area of analysis.

Texas used AERSURFACE version 13016 using data from the NWS station in Waco, Texas located at (31.6179, -97.2283) to estimate the surface characteristics of the area of analysis. Texas estimated values for 12 spatial sectors out to 1 km at a seasonal temporal resolution for

average conditions in 2012 and 2013 and dry conditions in 2014. Texas also estimated values for albedo (the fraction of solar energy reflected from the earth back into space), the Bowen ratio (the method generally used to calculate heat lost or heat gained in a substance), and the surface roughness (sometimes referred to as "Zo"). In Figure 4 below generated by the EPA, the location of the Waco, Texas NWS station is shown relative to the Sandy Creek Energy Station area of analysis.

Figure 4: Sandy Creek Energy Station Area of Analysis and the Waco, Texas NWS Station
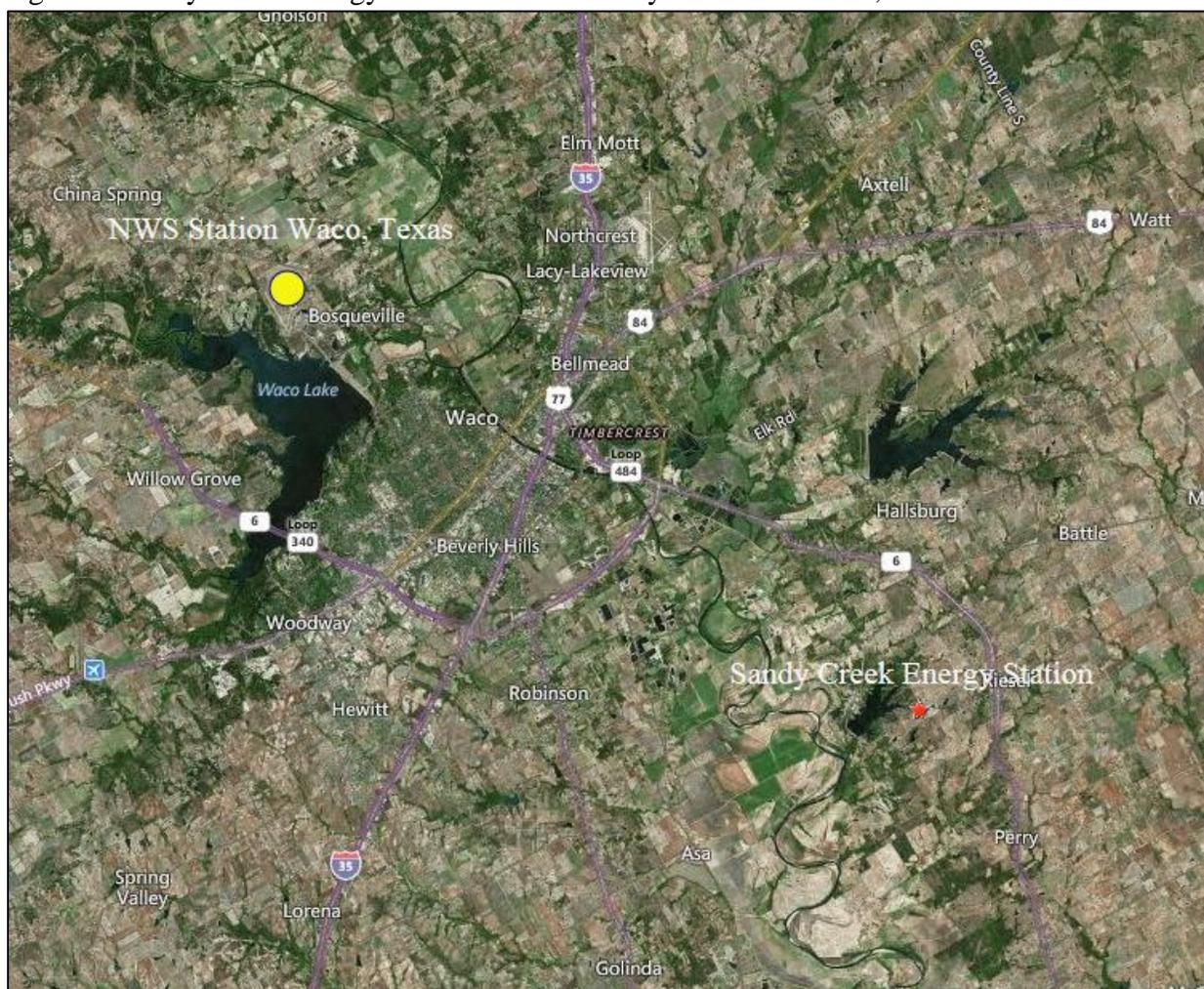
Meteorological data from the above surface and upper air stations were used in generating AERMOD-ready files with the AERMET processor. The output meteorological data created by the AERMET processor is suitable for being applied with AERMOD input files for AERMOD modeling runs. Texas followed the methodology and settings presented in EPA guidance, including EPA default settings, in the processing of the raw meteorological data into an AERMOD-ready format, and used AERSURFACE to best represent surface characteristics.

Hourly surface meteorological data records are read by AERMET, and include all the necessary elements for data processing. However, wind data taken at hourly intervals may not always

portray wind conditions for the entire hour, which can be variable in nature. Hourly wind data may also be overly prone to indicate calm conditions, which are not modeled by AERMOD. In order to better represent actual wind conditions at the meteorological tower, wind data of 1 minute duration was provided from the same instrument tower, but in a different formatted file to be processed by a separate preprocessor, AERMINUTE. These data were subsequently integrated into the AERMET processing to produce final hourly wind records of AERMOD-ready meteorological data that better estimate actual hourly average conditions and that are less prone to over-report calm wind conditions. This allows AERMOD to apply more hours of meteorology to modeled inputs, and therefore produce a more complete set of concentration estimates. As a guard against excessively high concentrations that could be produced by AERMOD in very light wind conditions, Texas set a minimum threshold of 0.5 meters per second in processing meteorological data for use in AERMOD. This approach is consistent with a March 2013 EPA memo titled, "Use of ASOS meteorological data in AERMOD dispersion Modeling." In setting this threshold, no wind speeds lower than this value would be used for determining concentrations. This threshold was specifically applied to the 1-minute wind data.

Modeling Parameter: Geography and Terrain

The terrain in the area of analysis is best described as flat to gently rolling with no significant terrain barriers. To account for these terrain changes, the AERMAP terrain program within AERMOD was used to specify terrain elevations for all the receptors. The source of the elevation data incorporated into the model was the USGS National Elevation Database.

Modeling Parameter: Background Concentrations of SO_2

The Modeling TAD offers two mechanisms for characterizing background concentrations of SO_2 that are ultimately added to the modeled design values: 1) a "first tier" approach, based on monitored design values, or 2) a temporally varying approach, based on the 99th percentile monitored concentrations by hour of day and season or month. For the Sandy Creek Energy Station area of analysis, Texas chose to use the first tier method by incorporating the 2014 monitored design value from the Waco Mazanec monitor. The background concentration for this area of analysis was determined by Texas to be 15.7 micrograms per cubic meter ($\mu g/m^3$), or 6 ppb,[5] and that value was incorporated into the final AERMOD results.

Summary of Modeling Results

The AERMOD modeling parameters, as supplied by additional information from Texas during the comment period for the Sandy Creek Energy Station area of analysis are summarized below in Table 2.

Table 2: AERMOD Modeling Parameters for the Sandy Creek Energy Station

---

[5] The conversion factor for SO_2 (at the standard conditions applied in the ambient SO_2 reference method) is 1ppb = approximately 2.62 $\mu g/m^3$.

Sandy Creek Energy Station, Texas Area of Analysis	
AERMOD Version	15181
Dispersion Characteristics	Rural
Modeled Sources	1
Modeled Stacks	5
Modeled Structures	29
Modeled Fence lines	Yes, Sandy Creek Energy Station fence line
Total receptors	6,875
Emissions Type	PTE
Emissions Years	Current PTE (start-up emissions)
Meteorology Years	(2012-2014)
Surface Meteorology Station	Waco, Texas
Upper Air Meteorology Station	Fort Worth, Texas
Methodology for Calculating Background SO_2 Concentration	Tier 1 (2014 DV)
Calculated Background SO_2 Concentration	15.7 μg/m^3 or 6 ppb

The results presented below in Table 2 show the magnitude and geographic location of the highest predicted modeled concentration based on worst-case PTE emissions.

Table 3: Maximum Predicted 99th Percentile 1-Hour SO_2 Concentration in the Sandy Creek Energy Station Area of Analysis Based on PTE Emissions

Averaging Period	Data Period	Receptor Location		SO_2 Concentration (μg/m^3)	
		UTM/Latitude	UTM/Longitude	Modeled (including background)	NAAQS
99th Percentile 1-Hour Average	(2012-2014)	695,600	3,484,900	125.2	196.5*

*Equivalent to the 2010 SO_2 NAAQS set at 75 ppb

The State's modeling indicates that the highest predicted 3-year average 99th percentile 1-hour average concentration within the chosen modeling domain is 125.2 μg/m^3, or 47.8 ppb. This modeled concentration included the background concentration of SO_2, and is based on PTE emissions from the Sandy Creek Energy Station. Figure 5 below was included as part of group's submission and indicates that the predicted value occurred to the north of the Sandy Creek Energy Station.

Figure 5: Maximum Predicted 99th Percentile 1-Hour SO_2 Concentrations in the Sandy Creek Energy Station Area of Analysis Based on PTE Emissions

Jurisdictional Boundaries:

Once the geographic area of analysis associated with Sandy Creek Energy Station, other nearby sources of SO_2, and background concentration is determined, existing jurisdictional boundaries are considered for the purpose of informing our final unclassifiable/attainment area, specifically with respect to clearly defined legal boundaries.

The EPA has confirmed that the Sandy Creek Energy Station is the only large source of SO_2 emissions within a 50 km radius. As previously stated, the other sources located in McLennan County approximately 20 km to northwest of Sandy Creek Energy Station each have emissions less than 300 tpy. In addition, there is only one emitter of SO_2 in any county neighboring

McLennan County with emissions above 100 tpy. Specifically, the Chemical Lime Clifton Plant in Bosque County is located approximately 10 km from the McLennan County border. Its 2011 NEI reported SO_2 emissions were 383 tpy. Due to its low emissions and distance from the McLennan County border and based on all available information, the emissions from the plant are not likely to cause or contribute to a violation of the NAAQS within McLennan County.

The final unclassifiable/attainment area, consisting of McLennan County in its entirety, is comprised of clearly defined legal boundaries, and we find these boundaries to be a suitably clear basis for defining our final unclassifiable/attainment area.

Conclusion

After careful evaluation of the State's recommendation, all timely comments and information received during the state and public comment period, and additional relevant information as discussed in this document, the EPA concludes that McLennan County, Texas is meeting the 2010 primary SO_2 NAAQS. Therefore, the EPA is designating McLennan County, Texas, as unclassifiable/attainment for the 2010 SO_2 NAAQS.

This designation is made based on the modeling of current PTE emissions for the Sandy Creek Energy Station. An analysis of the modeling data indicates it was performed in accordance with appropriate EPA modeling guidance and using conservative assumptions. Additionally, the EPA has confirmed that there are no other sources in McLennan County or near its borders that are likely to cause or contribute to a violation of the NAAQS within McLennan County.

At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Technical Analysis for Potter County, Texas

Introduction

The Potter County, Texas, area contains a stationary source that according to the EPA's Air Markets Database emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). As of March 2, 2015, this stationary source had not met the criteria for being "announced for retirement." Specifically, in 2012, the Harrington Power Station emitted 15,383 tons of SO_2, and had an emissions rate of 0.46 lbs SO_2/mmBTU. Pursuant to the March 2, 2015, consent decree, the EPA must designate the area surrounding the facility by July 2, 2016.

Texas provided no formal recommendation for the area surrounding the Harrington Power Station. Instead, as part of their September 18, 2015, submittal, Texas provided a general recommendation of unclassifiable/attainment for the 243 counties located in the State, including Potter County, that do not have any operational SO_2 regulatory monitors. This general recommendation for Potter County was not accompanied by modeling, monitoring, or other technical information to inform our decision regarding the attainment status of the area.

On February 11, 2016, the EPA notified Texas that we intended to designate the area surrounding the Harrington Power Station as unclassifiable, based on our view that available information did not support a determination regarding whether the area was meeting the NAAQS. Additionally, we informed Texas that our intended boundaries for the unclassifiable area consisted of the entirety of Potter County. Our intended designation and associated boundaries were based on, among other things, the lack of available information for the area surrounding the Harrington Power Station.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas, and this document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

Assessment of New Information

In our February 11, 2016, notification to Texas regarding our intended unclassifiable designation for the Potter County area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this

area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.

The EPA received comments from Texas regarding our intended unclassifiable designation for the Potter County, Texas area, indicating that because of the lack of monitoring data, the EPA should designate the area attainment. The EPA disagrees, because the lack of monitoring data, particularly in an area with a large SO_2 source is not sufficient information to determine whether the area is attaining the standard. A comprehensive summary of these comments and our responses can be found in the RTC.

Jurisdictional Boundaries:

Existing jurisdictional boundaries are considered for the purpose of informing our final unclassifiable area, specifically with respect to clearly defined legal boundaries. Comments regarding our intended boundaries for this area have been addressed in the RTC.

The EPA finds that our final unclassifiable area, consisting of the area within Potter County, is comprised of clearly defined legal boundaries, and finds these boundaries to be a suitably clear basis for defining our final unclassifiable area.

Conclusion

After careful evaluation of the State's recommendation, all timely comments and information received during the state and public comment period, and additional relevant information as discussed in this document, the EPA is unable to determine whether the area around the Harrington Power Station is meeting or not meeting the 2010 SO_2 NAAQS, and is designating the area as unclassifiable. The boundaries for this unclassifiable area consist of all area within Potter County borders and are shown in the figure below. Also included in the figure are nearby emitters of SO_2.

At this time, our final designations for the State only apply to this area and the other areas presented in this technical support document. Consistent with the court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.

Figure 1: The EPA's final unclassifiable area: Potter County, Texas
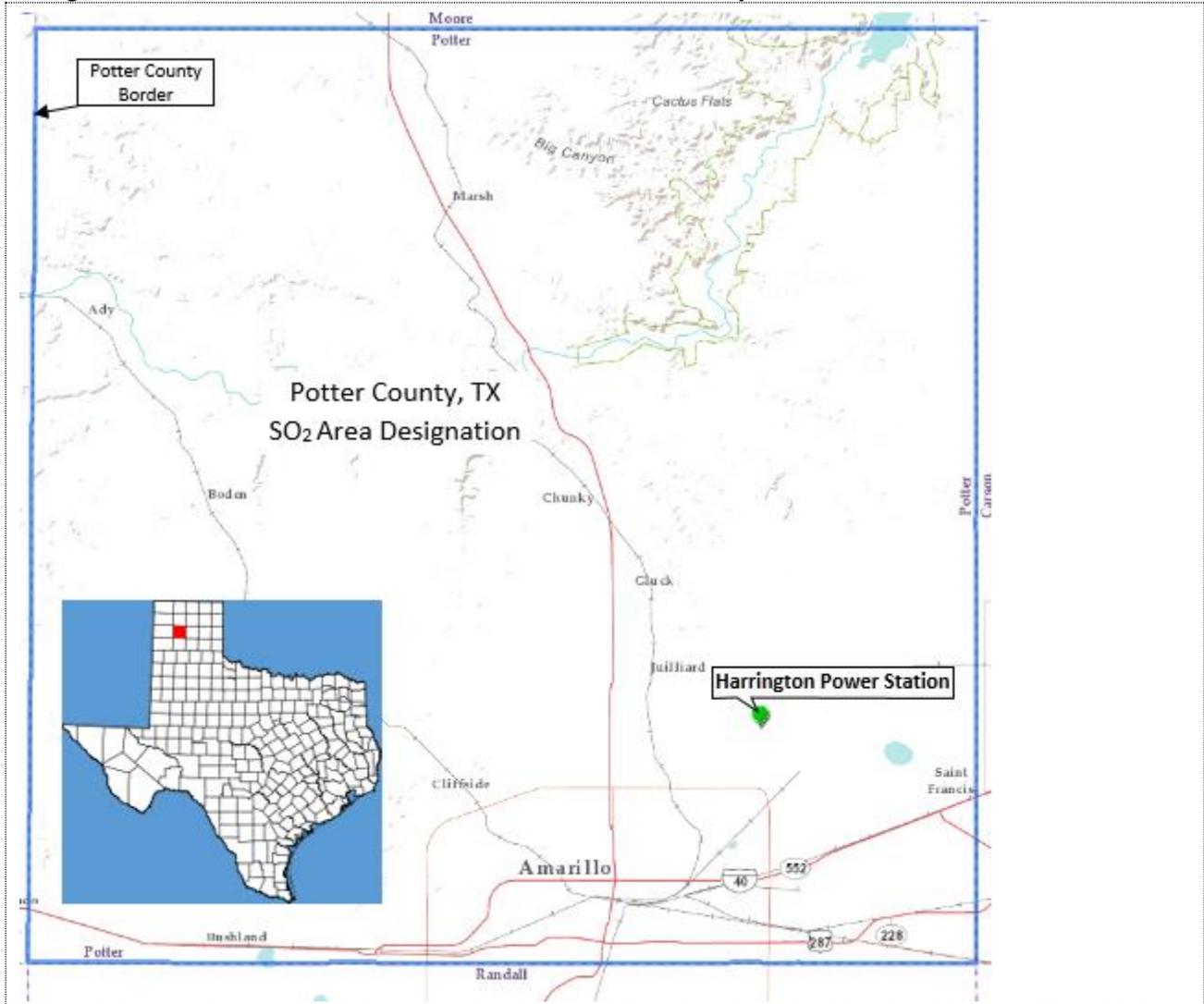
Technical Analysis for Robertson County, Texas

Introduction

The Robertson County, Texas, area contains a stationary source that, according to the EPA's Air Markets Database, emitted in 2012 either more than 16,000 tons of SO_2 or more than 2,600 tons of SO_2 and had an annual average emission rate of at least 0.45 pounds of SO_2 per one million British thermal units (lbs SO_2/mmBTU). Specifically, in 2012, the Twin Oaks Power Station emitted 4,038 tons of SO_2, and had an emissions rate of 0.51 lbs SO_2/MMBTU. As of March 2, 2015, this stationary source had not met the criteria for being "announced for retirement." Pursuant to the March 2, 2015, court-ordered schedule, the EPA must designate the area surrounding this facility by July 2, 2016.

In its September 18, 2015, submission, Texas recommended that the area surrounding the Twin Oaks Power Station, specifically Robertson County, be designated as unclassifiable/attainment based on an assessment and characterization of air quality from the facility and other nearby sources which may have a potential impact in the area of analysis where maximum concentrations of SO_2 are expected. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions reported from the facility during the 2012 to 2014 calendar years, and followed EPA's modeling TAD.

On February 11, 2016, the EPA notified Texas that we intended to designate the area around the Twin Oaks Power Station as unclassifiable/attainment, based on our review of the state's modeling submission and our view that the area was meeting the 2010 SO_2 NAAQS. Additionally, we informed Texas that our intended boundaries for the unclassifiable/attainment area consisted of the entirety of Robertson County, Texas borders. Our intended designation and associated boundaries were based on, among other things, an analysis of the modeling data, which indicated that it was performed in accordance with the Modeling TAD and published guidance and showed a maximum predicted 99th percentile 1-hour SO_2 concentration below the NAAQS. The boundaries for the intended designation were the jurisdictional boundaries of Robertson County, based upon the State's recommendation. Additionally, the EPA confirmed that there are no other sources in Robertson County or near its borders that are likely to cause or contribute to a violation of the 2010 SO_2 NAAQS within Robertson County.

Detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the preliminary technical support document for Texas, and this document along with all others related to this rulemaking can be found in Docket ID EPA-HQ-OAR-2014-0464.

Assessment of New Information

In our February 11, 2016, notification to Texas regarding our intended unclassifiable/attainment designation for the Robertson County area, the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by April 19, 2016. On March 1, 2016, the EPA also published a notice of availability and public comment

period in the *Federal Register,* inviting the public to review and provide input on our intended designations by March 31, 2016 (81 FR 10563).

The EPA is explicitly incorporating and relying upon the analyses and information presented in the preliminary technical support document for the purposes of our final designation for this area, except to the extent that any new information submitted to the EPA or conclusions presented in this final technical support document and our response to comments document (RTC), available in the docket, supersede those found in the preliminary document.
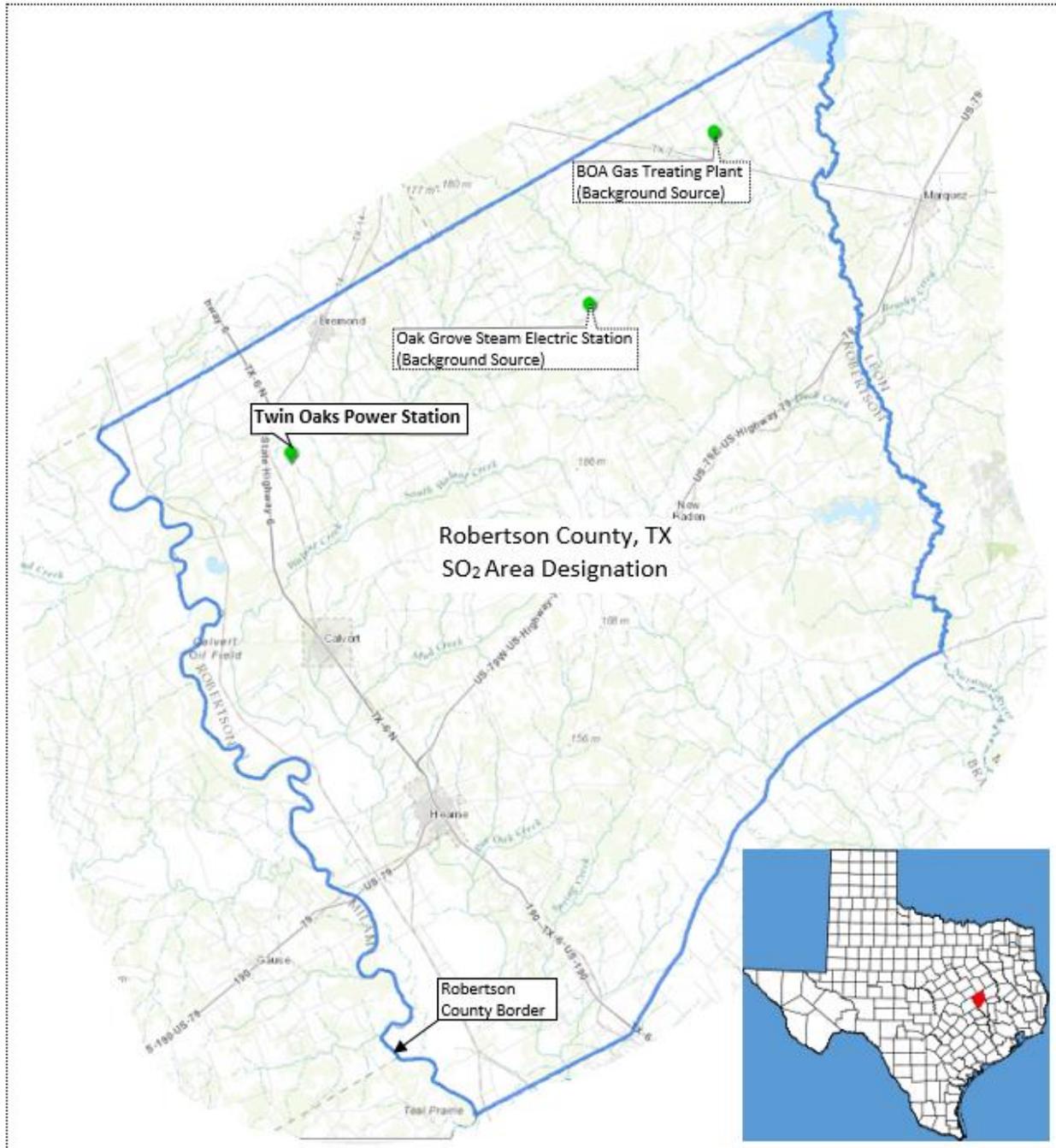
The EPA received responses from Texas supporting our intended designation for the area, and we did not receive any comments from the public regarding our intended unclassifiable/attainment designation for the Robertson County area. These comments and our responses can be found in the RTC.

Conclusion

Based on the information available to the EPA at this time, including the analyses performed for the purposes of the preliminary technical support document and in the absence of any new information that would otherwise lead to a different conclusion regarding air quality in the area or any new information that would otherwise lead to a different conclusion regarding the area boundaries, the EPA concludes that the Robertson County, Texas area is meeting the 2010 primary SO_2 NAAQS and is designating the area as unclassifiable/attainment.

The boundaries for this unclassifiable/attainment area consist of the entirety of Robertson County's borders, and are shown in the figure below. Also included in the figure are nearby emitters of SO_2, and Texas' recommended area, which is the same as the EPA's recommendation.

Figure 1: The EPA's final unclassifiable/attainment area: Robertson County, Texas

At this time, our final designations for the State only apply to this area and the others contained in this final technical support document. Consistent with the court-ordered schedule, the EPA will evaluate and designate all remaining undesignated areas in Texas by either December 31, 2017, or December 31, 2020.