Technical Support Document:

Chapter 39
Intended Round 3 Area Designations for the 2010 1-Hour SO$_2$ Primary National Ambient Air Quality Standard for Texas

1. Summary

Pursuant to section 107(d) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (the EPA, we, or us) must designate areas as either "nonattainment," "attainment," or "unclassifiable" for the 2010 1-hour sulfur dioxide (SO$_2$) primary national ambient air quality standard (NAAQS) (2010 SO$_2$ NAAQS). The CAA defines a nonattainment area as an area that does not meet the NAAQS or that contributes to a nearby area that does not meet the NAAQS. An attainment area is defined by the CAA as any area that meets the NAAQS and does not contribute to a nearby area that does not meet the NAAQS. Unclassifiable areas are defined by the CAA as those that cannot be classified on the basis of available information as meeting or not meeting the NAAQS. In this action, the EPA has defined a nonattainment area as an area that the EPA has determined violates the 2010 SO$_2$ NAAQS or contributes to a violation in a nearby area, based on the most recent 3 years of air quality monitoring data, appropriate dispersion modeling analysis, and any other relevant information. An unclassifiable/attainment area is defined by the EPA as an area that either: (1) based on available information including (but not limited to) appropriate modeling analyses and/or monitoring data, the EPA has determined (i) meets the 2010 SO$_2$ NAAQS, and (ii) does not contribute to ambient air quality in a nearby area that does not meet the NAAQS; or (2) was not required to be characterized under 40 CFR 51.1203(c) or (d) and the EPA does not have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the area may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS[1]. An unclassifiable area is defined by EPA as an area that either: (1) was required to be characterized by the state under 40 CFR 51.1203(c) or (d), has not been previously designated, and on the basis of available information cannot be classified as either: (i) meeting or not meeting the 2010 SO$_2$ NAAQS, or (ii) contributing or not contributing to ambient air quality in a nearby area that does not meet the NAAQS; or (2) was not required to be characterized under 40 CFR 51.1203(c) or (d) and EPA does have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the area may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS.

This technical support document (TSD) addresses designations for nearly all remaining undesignated areas in Texas for the 2010 SO$_2$ NAAQS. In previous final actions, the EPA has

---

[1] The term "designated attainment area" is not used in this document because the EPA uses that term only to refer to a previous nonattainment area that has been redesignated to attainment as a result of the EPA's approval of a state-submitted maintenance plan.

issued designations for the 2010 SO$_2$ NAAQS for selected areas of the country.[2] The EPA is under a December 31, 2017, deadline to designate the areas addressed in this TSD as required by the U.S. District Court for the Northern District of California.[3] We are referring to the set of designations being finalized by the December 31, 2017 deadline as "Round 3" of the designations process for the 2010 SO$_2$ NAAQS. After the Round 3 designations are completed, the only remaining undesignated areas will be those where a state has installed and timely begun operating a new SO$_2$ monitoring network meeting EPA specifications referenced in the EPA's SO$_2$ Data Requirements Rule (DRR) (80 FR 51052). The EPA is required to designate those remaining undesignated areas by December 31, 2020.

Texas submitted its first recommendation regarding designations for the 2010 1-hour SO$_2$ NAAQS on June 2, 2011. The state submitted updated recommendations on April 20, 2012, September 18, 2015, and January 12, 2017. In our intended designations, we have considered all the submissions from the state, except where a recommendation in a later submission regarding a particular area indicates that it replaces an earlier recommendation for that area we have considered the recommendation in the later submission.

For the areas in Texas that are part of the Round 3 designations process, Table 1 identifies EPA's intended designations and the counties or portions of counties to which they would apply. It also lists Texas' current recommendations. The EPA's final designation for these areas will be 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. Summary of the EPA's Intended Designations and the Designation Recommendations by Texas

Area/County	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Wilbarger, Texas	Wilbarger County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ Attainment

---

[2] A total of 94 areas throughout the U.S. were previously designated in actions published on August 5, 2013 (78 FR 47191), July 12, 2016 (81 FR 45039), and December 13, 2016 (81 FR 89870).
[3] *Sierra Club v. McCarthy*, No. 3-13-cv-3953 (SI) (N.D. Cal. Mar. 2, 2015).

Area/County	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Remaining Undesignated Areas to Be Designated in this Action*	All Remaining Counties in Texas.	Various Texas recommended a designation of attainment for 11 counties with monitoring data and unclassifiable/ attainment for counties without monitoring data.	Certain Remaining Undesignated Counties and Partial Counties in Texas, As Separately Designated Areas	Unclassifiable/ Attainment

* Except for areas that are associated with sources for which Texas elected to install and began timely operation of a new, approved SO$_2$ monitoring network meeting EPA specifications referenced in the EPA's SO$_2$ DRR(*see* Table 2), the EPA intends to designate the remaining undesignated counties (or portions of counties) in Texas as "unclassifiable/attainment" as these areas were not required to be characterized by the state under the DRR and the EPA does not have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the areas may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS. These areas that we intend to designate as unclassifiable/attainment (those to which this row of this table is applicable) are identified more specifically in section 4 of this TSD.

Areas for which Texas elected to install and began operation of a new, approved SO$_2$ monitoring network are listed in Table 2. The EPA is required to designate these areas, pursuant to a court ordered schedule, by December 31, 2020. Table 2 also lists the SO$_2$ emissions sources around which each new, approved monitoring network has been established.

Table 2 – Undesignated Areas Which the EPA Is Not Addressing in this Round of Designations (and Associated Source or Sources)

Area	Source(s)
Jefferson County	Oxbow Calcining LLC- Oxbow Calcining
Orange County	Orion Engineered Carbons LLC- Echo Carbon Black Plant
Hutchinson County	Sid Richardson Carbon LTD- Borger Carbon Black Plant; Orion Engineered Carbons LLC- Borger Carbon Black Plant
Navarro County	TRNLWS LLC- Streetman Plant
Bexar County	City Public Service- Calaveras Plant
Howard County	Sid Richardson Carbon Co.- Big Spring Carbon Black
Harrison County	Southwestern Electric Power Co.- AEP Pirkey Power Plant
Titus County (p)*	Southwestern Electric Power Co.- Welsh Power Plant

* EPA designated part of Titus County, around the Monticello Power Plant, nonattainment in Round 2 (*see* 81 FR 89870). Texas installed and began operation of a new, approved monitor in Titus County on December 7, 2016, to characterize air quality around the Welsh Power Plant.

Areas that the EPA previously designated unclassifiable in Round 1 (*see* 78 FR 47191) and Round 2 (*see* 81 FR 45039 and 81 FR 89870) are not affected by the designations in Round 3 unless otherwise noted.

2. General Approach and Schedule

Updated designations guidance documents were issued by the EPA through a July 22, 2016, memorandum and 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 I-X. These memoranda supersede earlier designation guidance for the 2010 SO_2 NAAQS, issued on March 24, 2011, and identify factors that the EPA intends to evaluate in determining whether areas are in violation of the 2010 SO_2 NAAQS. The documents also contain the factors that the EPA intends to evaluate in determining the boundaries for designated areas. 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.

To assist states and other interested parties in their efforts to characterize air quality through air dispersion modeling for sources that emit SO_2, the EPA released its most recent version of a draft document titled, "SO_2 NAAQS Designations Modeling Technical Assistance Document" (Modeling TAD) in August 2016.[4]

Readers of this chapter of this TSD should refer to the additional general information for the EPA's Round 3 area designations in Chapter 1 (Background and History of the Intended Round 3 Area Designations for the 2010 1-Hour SO_2 Primary National Ambient Air Quality Standard) and Chapter 2 (Intended Round 3 Area Designations for the 2010 1-Hour SO_2 Primary National Ambient Air Quality Standard for States with Sources Not Required to be Characterized).

As specified by the March 2, 2015, court order, the EPA is required to designate by December 31, 2017, all "remaining undesignated areas in which, by January 1, 2017, states have not installed and begun operating a new SO_2 monitoring network meeting EPA specifications referenced in EPA's" DRR. The EPA will therefore designate by December 31, 2017, areas of the country that are not, pursuant to the DRR, timely operating EPA-approved and valid monitoring networks. The areas to be designated by December 31, 2017, include the area associated with one source in Texas meeting DRR emissions criteria that the state has chosen to be characterized using air dispersion modeling and other areas not specifically required to be characterized by the state under the DRR.

---

[2] https://www.epa.gov/sites/production/files/2016-06/documents/so2modelingtad.pdf. In addition to this TAD on modeling, the EPA also has released a technical assistance document addressing SO_2 monitoring network design, to advise states that have elected to install and begin operation of a new SO_2 monitoring network. *See* Draft SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document, February 2016, https://www.epa.gov/sites/production/files/2016-06/documents/so2monitoringtad.pdf.

Section 3 of this preliminary TSD addresses Wilbarger County, for which modeling information is available. The remaining to-be-designated counties are then addressed together in section 4. The EPA does not plan to revise this TSD after consideration of state and public comment on our intended designation. A separate TSD will be prepared as necessary to document how we have addressed such comments in the final designations.

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) 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.
3) Designated nonattainment area – an area that, based on available information including (but not limited to) appropriate modeling analyses and/or monitoring data, EPA has determined either: (1) does not meet the 2010 SO2 NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS.
4) Designated unclassifiable/attainment area – an area that either: (1) based on available information including (but not limited to) appropriate modeling analyses and/or monitoring data, EPA has determined (i) meets the 2010 SO2 NAAQS, and (ii) does not contribute to ambient air quality in a nearby area that does not meet the NAAQS; or (2) was not required to be characterized under 40 CFR 51.1203(c) or (d) and EPA does not have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the area may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS.
5) Designated unclassifiable area – an area that either: (1) was required to be characterized by the state under 40 CFR 51.1203(c) or (d), has not been previously designated, and on the basis of available information cannot be classified as either: (i) meeting or not meeting the 2010 SO2 NAAQS, or (ii) contributing or not contributing to ambient air quality in a nearby area that does not meet the NAAQS; or (2) was not required to be characterized under 40 CFR 51.1203(c) or (d) and EPA does have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the area may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS.
6) Modeled violation – a violation of the SO_2 NAAQS demonstrated by air dispersion modeling.
7) Recommended attainment area – an area that a state, territory, or tribe has recommended that the EPA designate as attainment.
8) Recommended nonattainment area – an area that a state, territory, or tribe has recommended that the EPA designate as nonattainment.
9) Recommended unclassifiable area – an area that a state, territory, or tribe has recommended that the EPA designate as unclassifiable.
10) Recommended unclassifiable/attainment area – an area that a state, territory, or tribe has recommended that the EPA designate as unclassifiable/attainment.

11) Violating monitor – an ambient air monitor meeting 40 CFR parts 50, 53, and 58 requirements whose valid design value exceeds 75 ppb, based on data analysis conducted in accordance with Appendix T of 40 CFR part 50.
12) We, our, and us – these refer to the EPA.

3. Technical Analysis for the Wilbarger County Area

3.1. Introduction

The EPA must designate the Wilbarger County, Texas, area by December 31, 2017, because no portion of the county has been previously designated and Texas has not installed and begun timely operation of a new, approved SO_2 monitoring network to characterize air quality in the vicinity of any source in Wilbarger County.

3.2. Air Quality Modeling Analysis for the Wilbarger County Area Addressing Oklaunion Power Station

3.2.1. Introduction

This section 3.2 presents all the available air quality modeling information for Wilbarger County, which includes Public Service Co. of Oklahoma- Oklaunion Power Station (Oklaunion Station), and portions of surrounding counties. (This area including Wilbarger County will often be referred to as "the Wilbarger County area" within this section 3.2). This area contains the following SO_2 source, around which Texas is required by the DRR to characterize SO_2 air quality, or alternatively to establish an SO_2 emissions limitation of less than 2,000 tons per year (tpy):

- The Oklaunion Station facility emitted 2,000 tons of SO_2 or more annually. Specifically, Oklaunion Station emitted 3,506 tons of SO_2 in 2014. This source meets the DRR criteria and thus is on the SO_2 DRR Source list, and Texas has chosen to characterize it via modeling.

In its submission, Texas recommended that an area that includes the area surrounding the Oklaunion Station facility, specifically the entirety of Wilbarger County, be designated as unclassifiable/attainment based in part on an assessment and characterization of air quality impacts from this facility. This assessment and characterization was performed using air dispersion modeling software, i.e., AERMOD, analyzing actual emissions. After careful review of the state's assessment, supporting documentation, and all available data, the EPA agrees with the state's recommendation for the area, and intends to designate the area as unclassifiable/attainment. Our reasoning for this conclusion is explained in section 3.5 of this TSD, after all the available information is presented.

The area that the state has assessed via air quality modeling is located in Wilbarger County, which is located near the Oklahoma border. As seen in Figure 1 below, the Oklaunion Station facility is located in Vernon, Texas.

Also included in Figure 1 is the state's recommended area for the unclassifiable/attainment designation, which encompasses the entirety of Wilbarger County. The EPA's intended unclassifiable/attainment designation boundary for the Wilbarger County area is the same are recommended by the state.

Figure 1. Map of the Wilbarger County, Texas Area Addressing Oklaunion Station
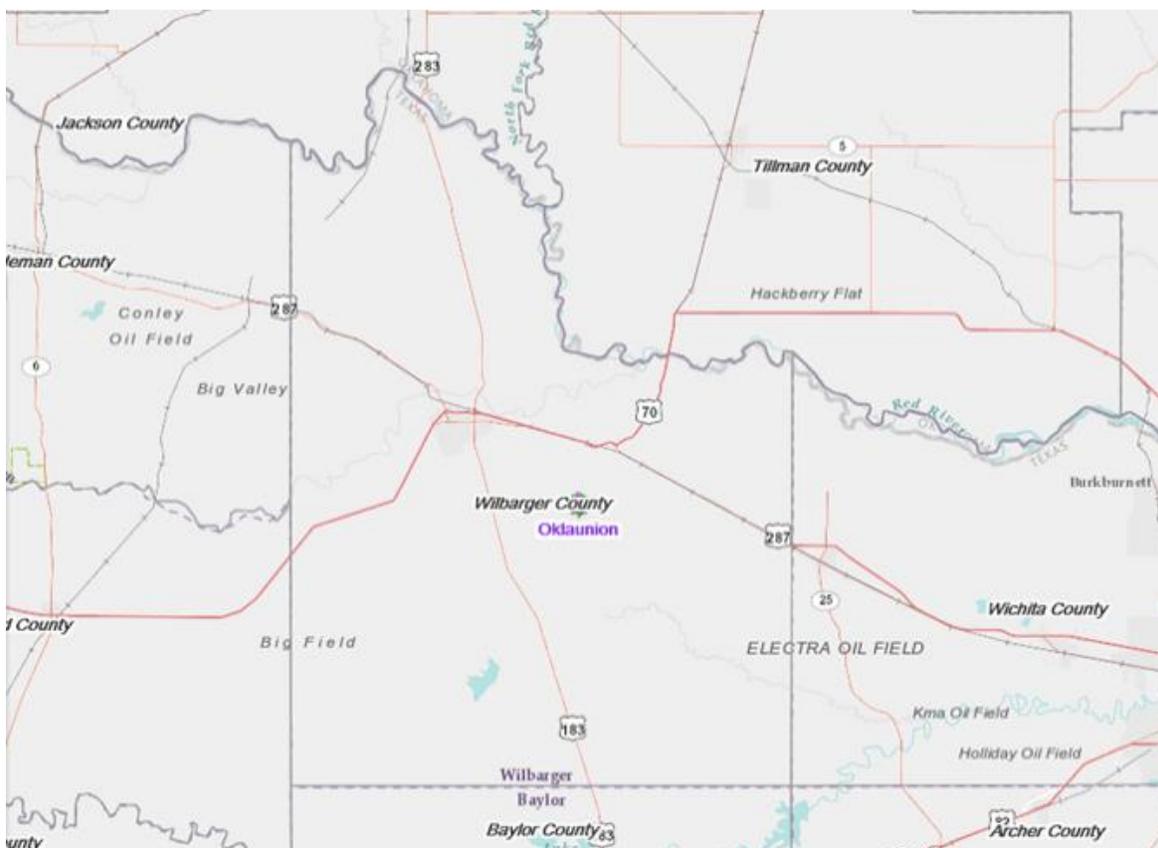
The discussion and analysis that follows below will reference the Modeling TAD and the factors for evaluation contained in the EPA's July 22, 2016, guidance and March 20, 2015, guidance, as appropriate.

For this area, the EPA received and considered one modeling assessment from the state (received January 12, 2017) and no assessments from other parties.

3.2.2. Modeling Analysis Provided by the State

3.2.2.1. 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. 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
- BPIPPRM: 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. A discussion of the state's approach to the individual components is provided in the corresponding discussion that follows, as appropriate. On January 17, 2017, EPA published its revision to Appendix W – Guideline to Air Quality Models. Since the publication of Appendix W, AERMOD version 16216r has since become the regulatory model version. There were no updates from 15181 to 16216r that would significantly affect the concentrations predicted here. The EPA finds the AERMOD version and its components to be acceptable for this analysis.

3.2.2.2. Modeling Parameter: Rural or Urban Dispersion

For any dispersion modeling exercise, the "urban" or "rural" determination of a source is important in determining the boundary layer characteristics that affect the model's prediction of downwind concentrations. For SO_2 modeling, the urban/rural determination is important because AERMOD invokes a 4-hour half-life for urban SO_2 sources. Section 6.3 of the Modeling TAD details the procedures used to determine if a source is urban or rural based on land use or population density.

For the purpose of performing the modeling for the area of analysis, the state determined that it was most appropriate to run the model in rural mode. The state selected the rural mode as the source is surrounded by fields and other rural land, and there are no towns in the vicinity of the plant. EPA agrees the area analyzed is rural in nature and the selection of rural mode for the model is appropriate.

3.2.2.3. Modeling Parameter: Area of Analysis (Receptor Grid)

The TAD recommends that the first step towards characterization of air quality in the area around a source or group of sources is to determine the extent of the area of analysis and the spacing of the 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 due to the influence of nearby sources; and sufficient receptor coverage and density to adequately capture and resolve the model predicted maximum SO_2 concentrations.

The source of SO$_2$ emissions subject to the DRR in this area is described in the introduction to this section. For the Wilbarger County area, the state has included no other emitters of SO$_2$, as the nearest source of SO$_2$ greater than 100 tpy is 58 km distant in neighboring Wichita County (Works No. 4 Glass Plant, with 2014 SO$_2$ emissions of 380 tpy). The state determined that 50 km was the appropriate distance to adequately characterize air quality through modeling to include the potential extent of any SO$_2$ NAAQS exceedances in the area of analysis and any potential impact on SO$_2$ air quality from other sources in nearby areas. No other sources beyond 50 km were determined by the state to have the potential to cause concentration gradient impacts within the area of analysis.

The grid receptor spacing for the area of analysis chosen by the state is as follows:

- The receptor grid consists of a series of nested receptor grids starting at the Oklaunion Station Unit 1 stack and extending out roughly 50 km from that starting point.
- The first nest around the plant has a resolution of 100 meters (m) and extends out 4 km from the stack location in all directions.
- The second nest has a resolution of 250 m covering the next 5 km out from the stack.
- The third nest has a resolution of 500 m covering the next 7 km.
- The fourth nest has a resolution of 1000 m and extends out an additional 10 km.
- The fifth and final receptor field has a resolution of 2000 m and extends out from 26 km to 52 km from the stack.
- No receptors were removed from the plant property.

The receptor network contained 17,457 receptors, and the network covered the entirety of Wilbarger County, the western portion of Wichita County in Texas, the northern portion of Baylor County in Texas, the eastern portions of Foard and Hardeman Counties in Texas, and the southern portion of Tillman County in Oklahoma.

Figures 2 and 3, included in the state's recommendation, show the state's chosen area of analysis surrounding the Oklaunion Station, as well as the receptor grid for the area of analysis.

The state did not remove any receptors from the uniform Cartesian grid on the basis of infeasibility to place a monitor, or on the basis of a location not considered to be ambient air. The state did not remove receptors from within the fenceline of the Oklaunion Station facility's property.

Figure 2: Oklaunion Station and the Surrounding Area Showing Property Owned by the Facility

Figure 3: Receptor Grid for the Wilbarger County Area. The different patterns of red dots correspond to the different receptor densities. The black rectangle is the modeling domain boundary.

3.2.2.4.   *Modeling Parameter: Source Characterization*

Section 6 of the Modeling TAD offers recommendations on source characterization including source types, use of accurate stack parameters, inclusion of building dimensions for building downwash (if warranted), and the use of actual stack heights with actual emissions or following GEP policy with allowable emissions.

The Oklaunion Station contains one coal-fired boiler, an emergency generator, and a diesel fire pump. The emergency generator and diesel fire pump are each classified as an emergency engine under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE) Maximum Achievable Control Technology

(MACT) 40 CFR 63 Subpart ZZZZ. The diesel fire pump is not reported to the state on the Annual Emissions Inventory due to its small emissions and low annual operating levels, which ranged from 6.4 to 22.8 annual hours for each of the modeled years (2013-2015). The emergency generator was estimated to have annual SO_2 emissions ranging from 0.0002 to 0.0004 tpy for each of the modeled years based on its annual operating levels that ranged from 3.1 to 6.4 annual hours. Due to the very small emissions and annual operating hours of the emergency generator and diesel fire pump, only the main boiler at the Oklaunion Station was included in the modeling analysis.

The state characterized this source within the area of analysis in accordance with the best practices outlined in the Modeling TAD. Specifically, the state used actual stack heights in conjunction with actual emissions. The state 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. The AERMOD component BPIPPRM was used to assist in addressing building downwash at the Oklaunion Station facility.

EPA agrees with the state's source characterization for the Oklaunion Station, including its decision to include only the main boiler in the modeling analysis.

3.2.2.5.   *Modeling Parameter: Emissions*
The EPA's Modeling TAD notes that for the purpose 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 indicates that it would be acceptable to use allowable emissions in the form of the most recently permitted (referred to as PTE or allowable) emissions rate that is federally enforceable and effective.

The EPA believes that continuous emissions monitoring systems (CEMS) data provide acceptable historical emissions information, when they are available. 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 EPA recommends using detailed throughput, operating schedules, and emissions information from the impacted source(s).

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. For example, where a facility has recently adopted a new federally enforceable emissions limit or implemented other federally enforceable mechanisms and control technologies to limit SO_2 emissions to a level that indicates compliance with the NAAQS, the state may choose to model PTE rates. These new limits or conditions may be used in the application of AERMOD for the purposes of modeling for designations, even if the source has not been subject to these limits for the entirety of the most recent 3 calendar years. In these cases, the Modeling TAD notes that a state should be able to find the necessary emissions information for designations-related modeling in the existing SO_2 emissions inventories used for permitting or SIP planning demonstrations. 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, the state included Oklaunion Station in the area of analysis. The state has chosen to model this facility using actual emissions. The facility in the state's modeling analysis and its associated annual actual SO_2 emissions between 2013 and 2015 are summarized below.

For Oklaunion Station, the state provided annual actual SO_2 emissions between 2013 and 2015. This information is summarized in Table 3. A description of how the state obtained hourly emission rates is given below Table 3.

Table 3. Actual SO₂ Emissions Between 2013 – 2015 from Oklaunion Station

Facility Name	SO₂ Emissions (tpy)		
	2013	2014	2015
Oklaunion Station	3,809	3,506	1,480

For Oklaunion Station, the actual hourly emissions data were obtained from CEMs. The emissions, temperature, and exit velocity data for the period 2013 to 2015 were prepared into an HOUREMIS file as described in the AERMOD User's Guide. This preparation included the inspection of each data element and the replacement of missing, substituted, and otherwise erroneous data that meets Part 75 requirements, but is unsuitable for any purpose other than demonstrating compliance with the requirements of 40 CFR 75. The replacement of the data deemed unacceptable for modeling purposes by the state used various techniques as appropriate for the parameter and amount of data replaced. These methods include hour before/hour after substitution for those cases where the data gap is short and the method can appropriately bridge the gap based on an evaluation of other operating parameters; a constrained ending hour/unconstrained beginning hour for cases where a single operational ramp describes the data to be replaced; tabular substitution based on binned load or heat input; average hour for similar conditions (typically used in start-up conditions to replace missing or diluent-capped data); data developed from other available operating data; and professional judgment. A comparison of the annual average of the original hourly CEMS data as reported to EPA for compliance demonstration purposes vs. the annual average of the processed hourly emissions data as used in the modeling shows that the percent difference between the two ranged from 0.13 to 0.24% on any given year out of the three modeled years (2013-2015).

As an additional quality control check, EPA totaled the modeling emissions for Oklaunion Station for each year 2013-2015 and compared the totals to the emissions reported to the State of Texas Air Reporting System (STARS). As shown in Table 4, the modeling emissions were within 0.2% of the STARS emissions in each year.

Table 4: Comparison of Modeled Total Yearly Emission Rates to STARS Emissions for Oklaunion Station.

Year	STARS emissions (tpy)	Modeling Emissions (tpy)
2013	3,809	3,806
2014	3,506	3,502
2015	1,480	1,478

This check shows that the annually-averaged magnitude of the hourly CEM data used in the modeling was consistent with the data reported for compliance purposes. The very small differences indicated in these checks are not significant to the overall results of the modeling. EPA considers the CEM emissions as composed for the modeling input to be of acceptable quality for this modeling.

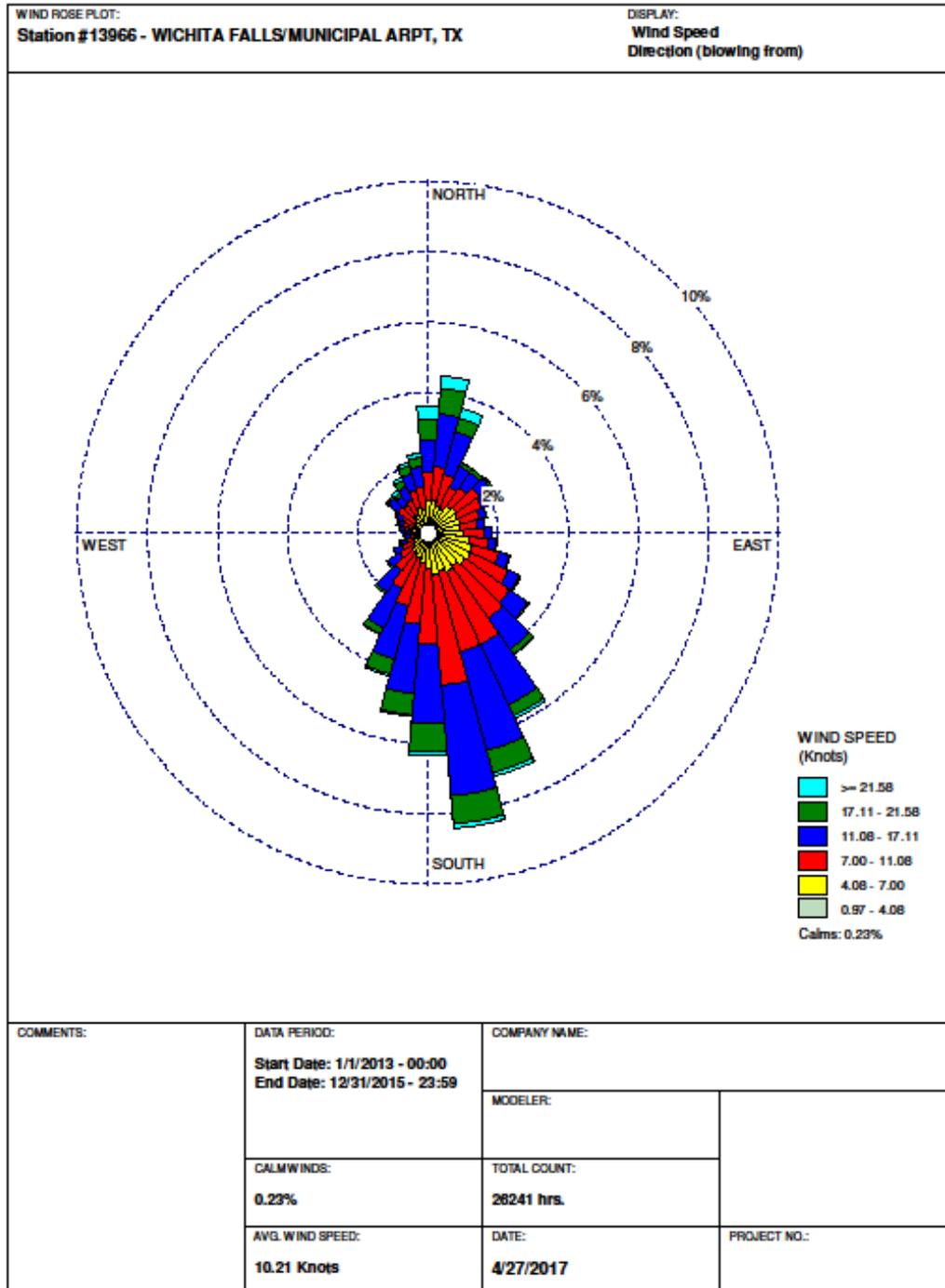### 3.2.2.6. *Modeling Parameter: Meteorology and Surface Characteristics*

As noted in the Modeling TAD, the most recent 3 years of meteorological data (concurrent with the most recent 3 years of emissions data) should be used in designations efforts. The selection of data should be based on spatial and climatological (temporal) representativeness. The representativeness of the data is determined 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, Federal Aviation Administration (FAA), and military stations.

For the area of analysis for the Wilbarger County area, the state used 2013-2015 meteorological data. The state selected the surface meteorology from the NWS station at the Wichita Falls Municipal Airport in Wichita Falls, Texas, site ID 13966 located at latitude: 33.979° N, longitude: 98.493° W, approximately 64 km to the east-southeast of the source, and coincident upper air observations from a different NWS station located in Fort Worth, Texas, site ID 3990, located at latitude 32.80° N, longitude: 97.30° W, 224 km to the southeast of the source, as best representative of meteorological conditions within the area of analysis. The NWS upper air site at Norman, Oklahoma, (35.242° N, 97.471° W) is closer at approximately 203 km to the NE. Although the state did not state its criteria for selecting the Fort Worth site which is slightly further away, these are the sites used for the model-ready data that TCEQ makes available to the public for AEMOD modeling for Wilbarger County.

The state used AERSURFACE version 13016. The NWS station used for surface meteorology is in Wichita Falls, Texas. The AERSURFACE run used the surface characteristics around the Oklaunion Station facility rather than at the Wichita Falls meteorological site as recommended in the Modeling TAD and in Section 8.3.c of Appendix W and the AERSURFACE User's Guide (U.S. EPA 2008). Albedo is the fraction of solar energy reflected from the earth back into space, the Bowen ratio is the method generally used to calculate heat lost or heat gained in a substance, and the surface roughness is sometimes referred to as "Z_o." The state estimated values for 12 spatial sectors out to 1 km at a monthly temporal resolution for moisture conditions for each year relative to the 30-year average conditions. Monthly precipitation data for use in determining the surface moisture levels for the 2013 to 2015 period based on the 30-year historic average for the Wichita Falls Municipal Airport was sourced from the National Climatic Data Center.

In Figures 4 and 5 below, generated by the EPA, the locations of these NWS stations are shown relative to the area of analysis.

Figure 4. Area of Analysis and the NWS Wichita Falls Municipal Airport station in the Wilbarger County Area

Figure 5. Area of Analysis and the NWS Fort Worth station in the Wilbarger County Area

EPA created a plot of the 3-year surface wind rose for the Wichita Falls NWS station from the model ready files provided by the state using Lakes Environmental Software's WRPLOT View program. In Figure 6, the frequency and magnitude of wind speed and direction are defined in terms of from where the wind is blowing. The winds are predominantly from the south with 48% of the winds from between 125-215 degrees. Winds from the west are very rare. Only 0.2% of the winds were calm and the average wind speed was 10.2 knots.

Figure 6: Wilbarger County, Texas, Cumulative Annual Wind Rose for Years 2013 – 2015

WIND ROSE PLOT:
Station #13966 - WICHITA FALLS/MUNICIPAL ARPT, TX

DISPLAY:
Wind Speed
Direction (blowing from)

WIND SPEED
(Knots)

	>= 21.58
	17.11 - 21.58
	11.08 - 17.11
	7.00 - 11.08
	4.08 - 7.00
	0.97 - 4.08

Calms: 0.23%

COMMENTS:

DATA PERIOD:
Start Date: 1/1/2013 - 00:00
End Date: 12/31/2015 - 23:59

COMPANY NAME:

MODELER:

CALMWINDS:
0.23%

TOTAL COUNT:
26241 hrs.

AVG. WIND SPEED:
10.21 Knots

DATE:
4/27/2017

PROJECT NO.:

WRPLOT View - Lakes Environmental Software

Meteorological data from the above surface and upper air NWS 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. The state followed the methodology and settings presented in the Modeling TAD 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 and 5-minute duration was provided from the NWS station at the Wichita Falls Municipal Airport, 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, the state set a minimum threshold of 0.5 meters per second in processing meteorological data for use in AERMOD. 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.

In summary, EPA finds that the state followed the guidance of the modeling TAD in processing the meteorological data except for locating the surface processing at the facility rather than at the meteorological site as EPA recommends. Because of this deviation from the TAD, in the event that modeled design values were near the standard, EPA would recommend that the modeling be redone with a change in location to the area around the NWS surface station for the AERSURFACE analysis. Given that the modeling is less than 25% of the standard, we would not expect a corrected AERSURFACE analysis to result in values near or above the standard. The meteorological sites chosen were the closest sites for the upper air and surface date available. They used the most recent three years of meteorological data available.

3.2.2.7. Modeling Parameter: Geography, Topography (Mountain Ranges or Other Air Basin Boundaries) and Terrain

The terrain in the area of analysis is best described as complex to gently rolling. 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 is from the USGS National Elevation Database. The elevation of the plant site averages 372 m MSL. Along the N-S axis of the modeling domain is rolling with the minimum elevation is 345 m and the maximum 410 m with the steepest grade at 4%. Along the E-W axis the elevation gradually rises from 325 to 435 m at the western boundary. The area around the plant is surrounded by rural fields and lands and was classified as rural for purposes of air quality modeling as there are no towns n in the vicinity of the plant. EPA concurs with the state's treatment of these parameters in the modeling.

3.2.2.8. 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 "tier 1" approach, based on a monitored design value, or 2) a temporally varying "tier 2" approach, based on the 99th percentile monitored concentrations by hour of day and season or month. For this area of analysis, the state used the tier 1 approach. The state examined several SO_2 monitors for use as potential background ambient monitors. The nearest SO_2 monitors to the Oklaunion Station are located southeast of the plant in Dallas, Texas, (AQS ID# 48-113-0069) and in Midlothian, Texas, (AQS ID# 48-139-0016), which is more distant; northwest of the plant in Amarillo, Texas, (AQS ID# 48-375-1025); and northeast in Oklahoma City, Oklahoma, (AQS ID# 40-107-1037). The monitor in Amarillo was dropped from further consideration as data capture at this monitor was very limited in 2013. The Midlothian monitor (AQS ID# 48-139-0016) is impacted by local sources so it was not used. The Oklahoma City monitor (AQS ID# 40-109-103 7), and Dallas monitor (AQS ID# 48-113-0069) all showed relative stability in the high level values and did not exhibit a sharp gradient, indicating that they do not appear to be impacted by local sources (*see* Table 5). Since the Dallas area monitor is located in a much larger urban area, is near a large commercial airport (Love Field), and is surrounded by more urban sources than the Oklahoma City monitor, the Oklahoma City monitor was chosen to use for background. We note that both Oklahoma City and the Oklaunion are on the order of 150-180 miles downwind of Dallas further supporting that the Oklahoma City monitor is a better background site. The stability of the monitored values at the Oklahoma City monitor and the apparent lack of SO_2 sources around Oklaunion Station and the Oklahoma City monitor support using this monitor for a background value. A 3-year average of the 99th percentile values was used for all hours in this modeling study.

Table 5. Potential Background Monitors- 1-Hour Daily Maximum and Second Maximum and Annual 99th Percentile SO$_2$ Metrics by Year (ppb)

Monitor	2013			2014			2015			2013-2015 Design Value
	1-hr Max	1-hr 2nd Max	99th pctle	1-hr Max	1-hr 2nd Max	99th pctle	1-hr Max	1-hr 2nd Max	99th pctle	
Dallas 48-113-0069	7.4	7.3	5	6.3	5.3	5	5.6	4.8	4	4.7
Midlothian 48-139-0016	23.8	18.4	16	19.8	11.1	8	12.7	8.6	5	9.7
Oklahoma City 40-109-1037	**5**	**3**	**3**	**7**	**4**	**3**	**4**	**4**	**3**	**3.0**

The single value of the background concentration for this area of analysis was determined by the state to be 7.9 micrograms per cubic meter ($\mu g/m^3$), equivalent to 3.0 ppb when expressed in 2 significant figures[5], and that value was incorporated into the final AERMOD results.

EPA has determined that the state followed the modeling TAD in deriving a representative tier 1 background concentration for the modeling of Wilbarger County area.

3.2.2.9.   *Summary of Modeling Inputs and Results*

The AERMOD modeling input parameters for the Wilbarger County area of analysis are summarized below in Table 6.

Table 6: Summary of AERMOD Modeling Input Parameters for the Area of Analysis for the Wilbarger County Area

Input Parameter	Value
AERMOD Version	15181 (regulatory options)
Dispersion Characteristics	Rural
Modeled Sources	1
Modeled Stacks	1
Modeled Structures	32
Modeled Fencelines	No
Total receptors	17,457
Emissions Type	Actual
Emissions Years	2013-2015
Meteorology Years	2013-2015
NWS Station for Surface Meteorology	Wichita Falls Municipal Airport, located in Wichita Falls, Texas (Station ID: 13966)
NWS Station Upper Air Meteorology	Fort Worth, Texas (Station ID: 3990)
NWS Station for Calculating Surface Characteristics	Wichita Falls Municipal Airport, located in Wichita Falls, Texas (Station ID: 13966)
Methodology for Calculating Background SO_2 Concentration	Oklahoma City monitor (AQS ID# 40-109-1037) Tier 1 approach based on design value
Calculated Background SO_2 Concentration	7.9 $\mu g/m^3$ (3.0 ppb)

The results presented below in Table 7 show the magnitude and geographic location of the highest predicted modeled concentration based on the input parameters.

Table 7. Maximum Predicted 99th Percentile Daily Maximum 1-Hour SO₂ Concentration Averaged Over 3 Years for the Wilbarger County Area

Averaging Period	Data Period	Receptor Location UTM zone 14		99th percentile daily maximum 1-hour SO₂ Concentration (µg/m³)	
		UTM	UTM	Modeled concentration (including background)	NAAQS Level
99th Percentile 1-Hour Average	2013-2015	480387 E	3771926 N	41.96	196.4*

*Equivalent to the 2010 SO₂ NAAQS of 75 ppb using a 2.619 µg/m³ conversion factor

The state's modeling indicates that the highest predicted 99th percentile daily maximum 1-hour concentration within the chosen modeling domain is 41.96 µg/m³, equivalent to 16.02 ppb. This modeled concentration included the background concentration of SO₂, and is based on actual emissions from the facility. This is well below the standard and would still be the case if the higher Dallas background value was used. Figures 6 and 7 below were included as part of the state's recommendation, and indicate that the predicted value occurred in the vicinity of the Oklaunion Station. Note that these plots do not include the contribution from the uniform background concentration of 7.9 µg/m³.

---

[5] The SO₂ NAAQS level is expressed in ppb but AERMOD gives results in µg/m³. The conversion factor for SO₂ (at the standard conditions applied in the ambient SO₂ reference method) is 1ppb = approximately 2.619 µg/m³.

Figure 6: Predicted 99th Percentile Daily Maximum 1-Hour SO₂ Concentrations Averaged Over 3 Years for the Wilbarger County Area (Background monitor value is not included)
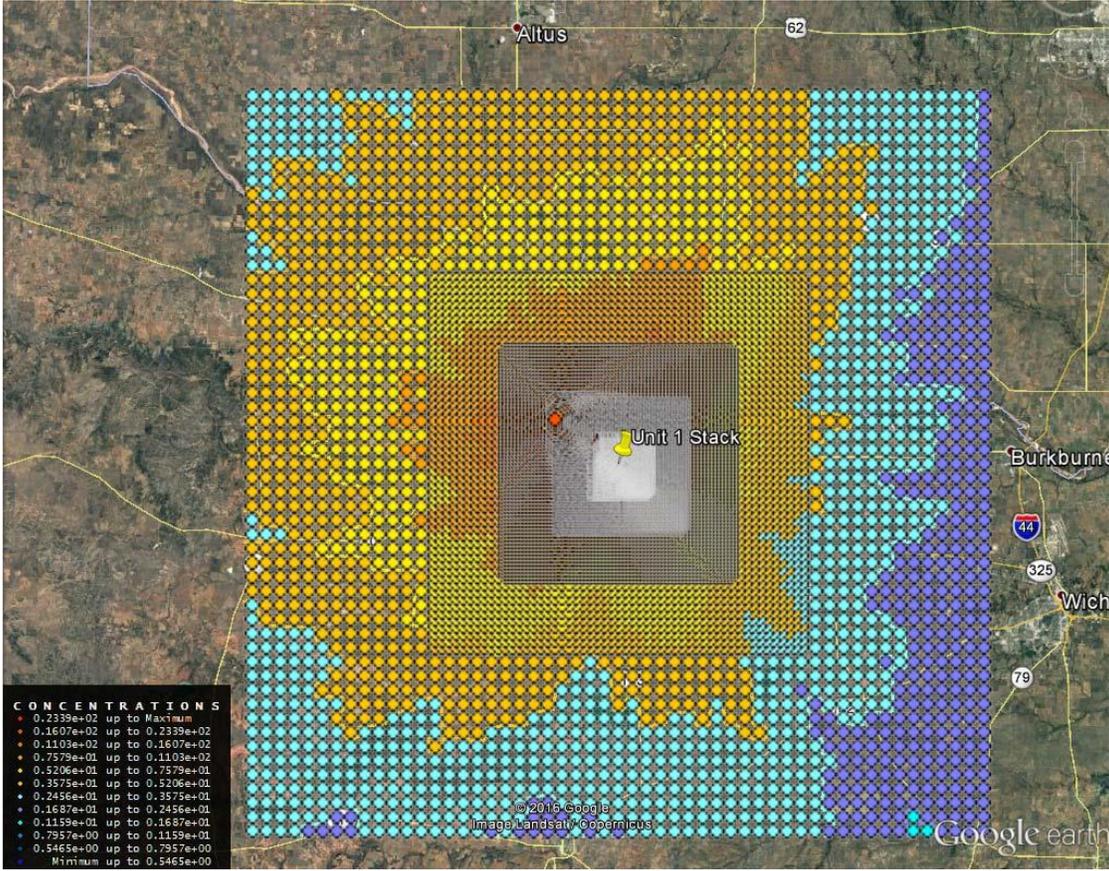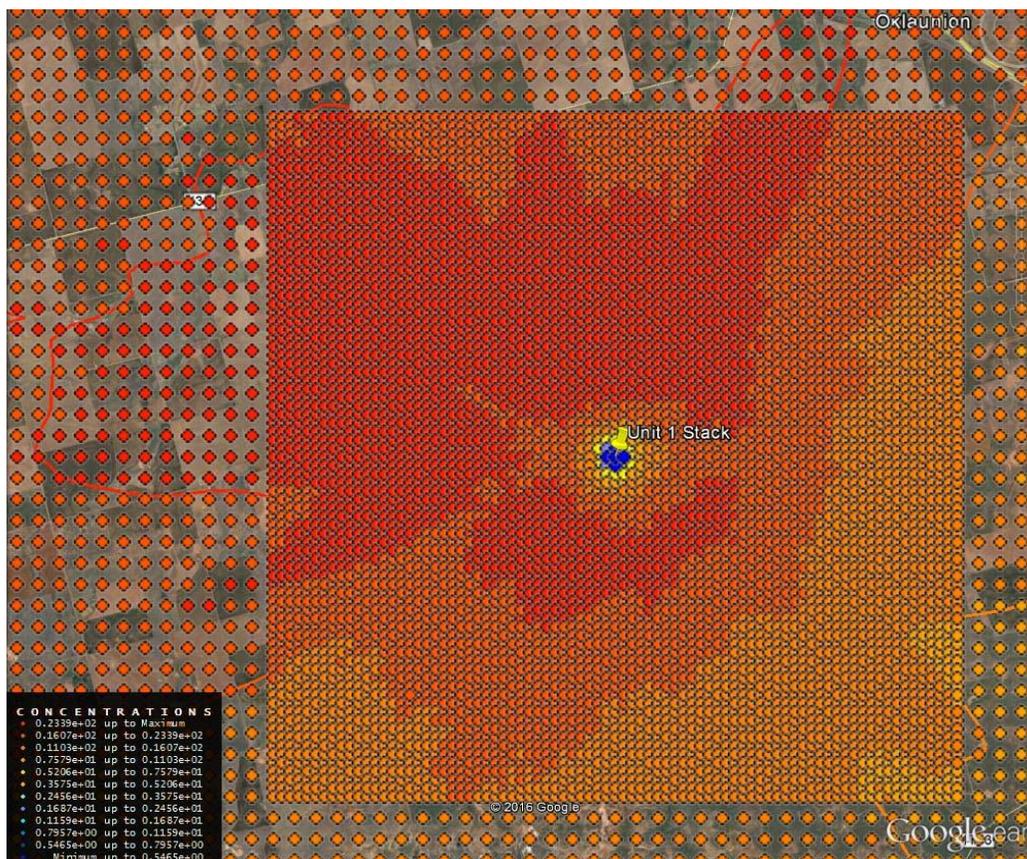
Figure 7: Predicted 99th Percentile Daily Maximum 1-Hour SO₂ Concentrations Averaged Over 3 Years – Detail for the 100m Grid(Background monitor value is not included)

The modeling submitted by the state does not indicate that the 1-hour SO₂ NAAQS is violated at the receptor with the highest modeled concentration. The modeling analysis demonstrates that the area around Oklaunion Station meets that 1-hour SO₂ standard based on the use of actual emissions and actual stack heights combined with meteorological data from the 3 years 2013-2015.

3.2.2.10.   The EPA's Assessment of the Modeling Information Provided by the State

The state followed the EPA guidance contained in the Modeling TAD for receptors, emissions, surface processing, and meteorology with the exception of one meteorological issue, but we would not expect a corrected AERSURFACE analysis to result in values near or above the standard. The default options for the version of AERMOD employed were set and conservative methodology for estimating the background concentrations for the facility and an appropriate rural land use characterization were used.

3.3. Emissions and Emissions-Related Data, Meteorology, Geography, and Topography for Wilbarger County, Texas

These factors have been incorporated into the air quality modeling efforts and results discussed above. The EPA is giving consideration to these factors by considering whether they were properly incorporated and by considering the air quality concentrations predicted by the modeling.

3.4. Jurisdictional Boundaries in Wilbarger County, Texas

Existing jurisdictional boundaries are considered for the purpose of informing the EPA's designation action for Wilbarger County. Our goal is to base designations on clearly defined legal boundaries, and to have these boundaries align with existing administrative boundaries when reasonable.

Based on the results of the modeling analysis conducted, the state recommended that the entirety of Wilbarger County be designated as a separate unclassifiable/attainment area.

## 3.5. The EPA's Assessment of the Available Information for Wilbarger County, Texas

EPA intends to designate Wilbarger County in its entirety as a separate unclassifiable/attainment area, based on our view that the area is meeting the 1-hour SO_2 NAAQS and is not causing or contributing to nonattainment in nearby areas. Our intended designation and associated boundaries were based on, among other things, our evaluation of the state's modeling that showed attainment, the decline of concentrations with distance from the maximum modeled concentration, the absence of large SO_2 sources in neighboring areas, and our conclusion that the modeling generally followed EPA guidance, including the Modeling TAD and the AERSURFACE location difference would not change our conclusions if it was corrected.

The EPA believes that our intended unclassifiable/attainment area, bounded by Wilbarger County, will have clearly defined legal boundaries, and we intend to find these boundaries to be a suitable basis for defining our intended unclassifiable/attainment area.

3.6. Summary of Our Intended Designation for Wilbarger County, Texas

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA intends to designate Wilbarger County as unclassifiable/attainment for the 2010 SO_2 NAAQS because, based on available information including (but not limited to) appropriate modeling analyses and/or monitoring data, the EPA has determined (i) meets the 2010 SO_2 NAAQS, and (ii) does not contribute to ambient air quality in a nearby area that does not meet the NAAQS. Specifically, the intended boundary is the Wilbarger County boundary. Figure 8 shows the boundary of this intended designated area.

Figure 8. Boundary of the Intended Wilbarger County Unclassifiable/Attainment Area
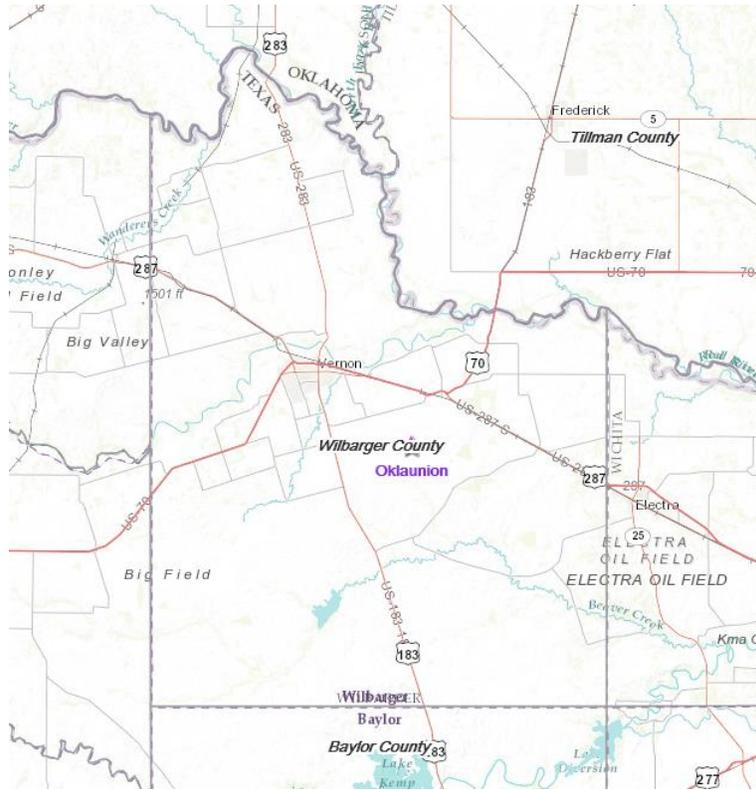
At this time, our intended designations for the state only apply to this area and the other areas presented in this technical support document. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Texas by December 31, 2020.

4. Technical Analysis for Remainder of the State (Excluding Areas with New Approved SO$_2$ Monitors)

4.1. Introduction

The state has not installed and begun timely operation of a new, approved SO$_2$ monitoring network meeting EPA specifications referenced in the EPA's SO$_2$ DRR for any sources of SO$_2$ emissions in the counties and portions of counties identified in Table 8. Accordingly, the EPA must designate these counties by December 31, 2017. At this time, there are no air quality modeling results available to the EPA for these counties and portions of counties. In addition, there is no air quality monitoring data that indicate any violation of the 1-hour SO$_2$ NAAQS. The EPA is designating the counties and portions of counties in Table 8 in the state as "unclassifiable/attainment" since these counties were not required to be characterized under 40 CFR 51.1203(c) or (d) and EPA does not have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the area may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS.

Table 8. Counties and Portions of Counties that the EPA Intends to Designate Unclassifiable/Attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
AQCR 022 Shreveport-Texarkana-Tyler Interstate (part):				
Anderson County (p)	Anderson County	Unclassifiable/ Attainment	Anderson County (p) The portion of Anderson County NOT encompassed by the previously designated Freestone and Anderson Counties Nonattainment area that is bounded by the	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
			rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 14 with datum NAD83 as follows: (1) Vertex- UTM Easting (m) 766752.69, UTM Northing (m) 35363333.0, (2) Vertex- UTM Easting (m) 784752.69, UTM Northing (m) 3536333.0, (3) Vertex- UTM Easting (m) 784752.69, UTM Northing (m) 3512333.0, (4) Vertex— UTM Easting (m) 766752.69, UTM Northing (m) 3512333.0 This portion of Anderson County is intended to be combined with a portion of Freestone	

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
			County into a single designated area.	
Bowie County	Bowie County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Camp County	Camp County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Cass County	Cass County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Cherokee County	Cherokee County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Delta County	Delta County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Franklin County	Franklin County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Gregg County	Gregg County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hopkins County	Hopkins County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lamar County	Lamar County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Marion County	Marion County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Morris County	Morris County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Panola County (p)	Panola County	Unclassifiable/ Attainment	Panola County (p) The portion of Panola County NOT encompassed by the previously designated Rusk and Panola Counties Nonattainment area that is bounded by the rectangle with the vertices using	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
			Universal Traverse Mercator (UTM) coordinates in UTM zone 15 with datum NAD83 as follows: (1) Vertex—UTM Easting (m) 340067.31, UTM Northing (m) 3575814.75 (2) Vertex—UTM Easting (m) 356767.31, UTM Northing (m) 3575814.75 (3) Vertex—UTM Easting (m) 356767.31, UTM Northing (m) 3564314.75 (4) Vertex—UTM Easting (m) 340067.31, UTM Northing (m) 3564314.75 This portion of Panola County is intended to be combined with a portion of Rusk County into a single designated area.	

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Rains County	Rains County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Red River County	Red River County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Rusk County (p)	Rusk County	Unclassifiable/ Attainment	Rusk County (p) The portion of Rusk County NOT encompassed by the previously designated Rusk and Panola Counties Nonattainment area that is bounded by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 15 with datum NAD83 as follows: (1) Vertex— UTM Easting (m) 340067.31, UTM Northing (m) 3575814.75 (2) Vertex— UTM Easting (m) 356767.31, UTM Northing (m) 3575814.75 (3) Vertex— UTM Easting	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
			(m) 356767.31, UTM Northing (m) 3564314.75 (4) Vertex— UTM Easting (m) 340067.31, UTM Northing (m) 3564314.75 This portion of Rusk County is intended to be combined with a portion of Panola County into a single designated area.	
Smith County	Smith County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Upshur County	Upshur County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Van Zandt County	Van Zandt County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Wood County	Wood County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 106 S Louisiana-SE Texas Interstate (part):				
Angelina County	Angelina County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hardin County	Hardin County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Houston County	Houston County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Jasper County	Jasper County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Nacogdoches County	Nacogdoches County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Newton County	Newton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Polk County	Polk County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Sabine County	Sabine County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
San Augustine County	San Augustine County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
San Jacinto County	San Jacinto County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Shelby County	Shelby County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Trinity County	Trinity County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Tyler County	Tyler County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 153 El Paso-Las Cruces-Alamogordo Interstate:				
Brewster County	Brewster County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Culberson County	Culberson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
El Paso County	El Paso County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hudspeth County	Hudspeth County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Jeff Davis County	Jeff Davis County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Presidio County	Presidio County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 210 Abilene-Wichita Falls Intrastate (part):				
Archer County	Archer County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Baylor County	Baylor County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Brown County	Brown County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Callahan County	Callahan County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Clay County	Clay County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Coleman County	Coleman County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Comanche County	Comanche County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Cottle County	Cottle County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Eastland County	Eastland County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Fisher County	Fisher County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Foard County	Foard County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hardeman County	Hardeman County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Haskell County	Haskell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Jack County	Jack County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Jones County	Jones County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kent County	Kent County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Knox County	Knox County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Mitchell County	Mitchell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Montague County	Montague County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Nolan County	Nolan County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Runnels County	Runnels County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Scurry County	Scurry County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Shackelford County	Shackelford County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Stephens County	Stephens County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Stonewall County	Stonewall County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Taylor County	Taylor County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Throckmorton County	Throckmorton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Wichita County	Wichita County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Young County	Young County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 211 Amarillo-Lubbock Intrastate (part):				
Armstrong County	Armstrong County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Bailey County	Bailey County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Briscoe County	Briscoe County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Carson County	Carson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Castro County	Castro County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Childress County	Childress County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Cochran County	Cochran County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Collingsworth County	Collingsworth County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Crosby County	Crosby County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Dallam County	Dallam County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Deaf Smith County	Deaf Smith County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Dickens County	Dickens County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Donley County	Donley County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Floyd County	Floyd County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Garza County	Garza County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Gray County	Gray County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hale County	Hale County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hall County	Hall County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hansford County	Hansford County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hartley County	Hartley County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hemphill County	Hemphill County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hockley County	Hockley County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
King County	King County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lipscomb County	Lipscomb County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lubbock County	Lubbock County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lynn County	Lynn County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Moore County	Moore County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Motley County	Motley County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Ochiltree County	Ochiltree County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Oldham County	Oldham County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Parmer County	Parmer County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Randall County	Randall County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Roberts County	Roberts County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Sherman County	Sherman County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Swisher County	Swisher County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Terry County	Terry County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Wheeler County	Wheeler County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Yoakum County	Yoakum County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 212 Austin-Waco Intrastate (part):				
Bastrop County	Bastrop County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Bell County	Bell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Blanco County	Blanco County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Bosque County	Bosque County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Brazos County	Brazos County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Burleson County	Burleson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Burnet County	Burnet County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Caldwell County	Caldwell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Coryell County	Coryell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Falls County	Falls County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Fayette County	Fayette County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Freestone County (p)	Freestone County	Unclassifiable/ Attainment	Freestone County (p)	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
			The portion of Freestone County NOT encompassed by the previously designated Freestone and Anderson Counties Nonattainment area that is bounded by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 14 with datum NAD83 as follows: (1) Vertex- UTM Easting (m) 766752.69, UTM Northing (m) 35363333.0, (2) Vertex- UTM Easting (m) 784752.69, UTM Northing (m) 3536333.0, (3) Vertex- UTM Easting (m) 784752.69, UTM Northing (m) 3512333.0,	

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
			(4) Vertex— UTM Easting (m) 766752.69, UTM Northing (m) 3512333.0 This portion of Freestone County is intended to be combined with a portion of Anderson County into a single designated area.	
Grimes County	Grimes County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hamilton County	Hamilton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hays County	Hays County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hill County	Hill County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lampasas County	Lampasas County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lee County	Lee County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Leon County	Leon County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Llano County	Llano County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Madison County	Madison County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Mills County	Mills County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
San Saba County	San Saba County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Travis County	Travis County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Washington County	Washington County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Williamson County	Williamson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 213 Brownsville-Laredo Intrastate:				
Cameron County	Cameron County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hidalgo County	Hidalgo County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Jim Hogg County	Jim Hogg County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Starr County	Starr County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Webb County	Webb County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Willacy County	Willacy County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Zapata County	Zapata County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 214 Corpus Christi-Victoria Intrastate (part):				
Aransas County	Aransas County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Bee County	Bee County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Brooks County	Brooks County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Calhoun County	Calhoun County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
DeWitt County	DeWitt County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Duval County	Duval County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Gonzales County	Gonzales County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Jackson County	Jackson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Jim Wells County	Jim Wells County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kenedy County	Kenedy County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kleberg County	Kleberg County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Lavaca County	Lavaca County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Live Oak County	Live Oak County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
McMullen County	McMullen County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Nueces County	Nueces County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Refugio County	Refugio County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
San Patricio County	San Patricio County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Victoria County	Victoria County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 215 Metro Dallas-Fort Worth Intrastate (part):				
Collin County	Collin County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Cooke County	Cooke County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Dallas County	Dallas County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Denton County	Denton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Ellis County	Ellis County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Erath County	Erath County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Fannin County	Fannin County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Grayson County	Grayson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Henderson County	Henderson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hood County	Hood County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Hunt County	Hunt County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Johnson County	Johnson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kaufman County	Kaufman County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Palo Pinto County	Palo Pinto County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Parker County	Parker County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Rockwall County	Rockwall County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Somervell County	Somervell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Tarrant County	Tarrant County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Wise County	Wise County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 216 Metro Houston-Galveston-Brazoria Intrastate (part):				
Austin County	Austin County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Brazoria County	Brazoria County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Chambers County	Chambers County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Colorado County	Colorado County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Galveston County	Galveston County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Harris County	Harris County	Attainment	Same as State's Recommendation	Unclassifiable/ attainment

| County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Liberty County	Liberty County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Matagorda County	Matagorda County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Montgomery County	Montgomery County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Walker County	Walker County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Waller County	Waller County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Wharton County	Wharton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 217 Metro San Antonio Intrastate (part):				
Bandera County	Bandera County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Comal County	Comal County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Dimmit County	Dimmit County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Edwards County	Edwards County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Frio County	Frio County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Guadalupe County	Guadalupe County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Gillespie County	Gillespie County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Karnes County	Karnes County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kendall County	Kendall County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kerr County	Kerr County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Kinney County	Kinney County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
La Salle County	La Salle County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Maverick County	Maverick County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Medina County	Medina County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Real County	Real County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Uvalde County	Uvalde County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Val Verde County	Val Verde County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Wilson County	Wilson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Zavala County	Zavala County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
AQCR 218 Midland-Odessa-San Angelo Intrastate (part):				
Andrews County	Andrews County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Borden County	Borden County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Coke County	Coke County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Concho County	Concho County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Crane County	Crane County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Crockett County	Crockett County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Dawson County	Dawson County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Ector County	Ector County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Gaines County	Gaines County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Glasscock County	Glasscock County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Irion County	Irion County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

County or Partial County (p)	Texas' Recommended Area Definition	Texas' Recommended Designation	EPA's Intended Area Definition	EPA's Intended Designation
Kimble County	Kimble County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Loving County	Loving County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
McCulloch County	McCulloch County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Martin County	Martin County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Mason County	Mason County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Menard County	Menard County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Midland County	Midland County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Pecos County	Pecos County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Reagan County	Reagan County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Reeves County	Reeves County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Schleicher County	Schleicher County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Sterling County	Sterling County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Sutton County	Sutton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Terrell County	Terrell County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Tom Green County	Tom Green County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Upton County	Upton County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Ward County	Ward County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment
Winkler County	Winkler County	Unclassifiable/ Attainment	Same as State's Recommendation	Unclassifiable/ attainment

Table 8 also summarizes Texas' recommendations for these areas. Specifically, in its recommendation letters dated June 2, 2011, April 20, 2012, and September 18, 2015, the state recommended that the entirety of Dallas County, El Paso County, Ellis County, Galveston County, Gregg County, Harris County, Kaufman County, and Nueces County be designated as attainment based on certified monitoring data showing no violations. The state also

recommended that the remainder of the counties in the state be designated unclassifiable/attainment. After careful review of the state's assessment, supporting documentation, and all available data, the EPA intends to designate the areas listed in Table 8 as unclassifiable/attainment. Figure 9 shows the locations of these areas within Texas relative to counties which have already been designated, are intended to be designated in Round 3, or will be designated in Round 4.

Figure 9. The EPA's Intended Unclassifiable/Attainment Designation(s) for Counties in Texas Shown Relative to Other Counties
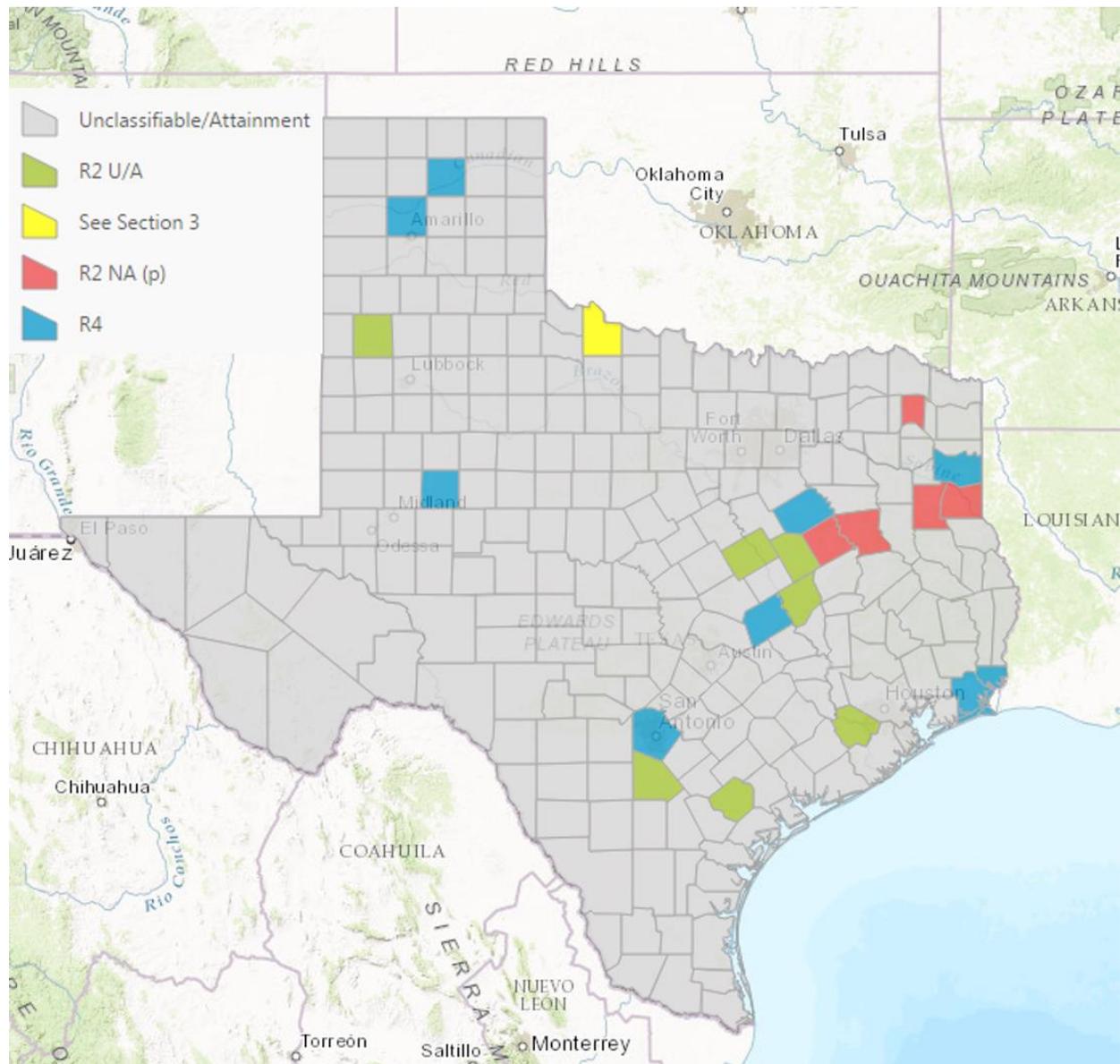
NOTE: The partial counties that were designated in Round 2 consist of Freestone, Anderson, Rusk, Panola, and Titus Counties. In this action we are proposing to designate the undesignated parts of these counties, with the exception of the remaining area in Titus County, as unclassifiable/attainment. The remaining area of Titus County

will be designated in Round 4. A new, EPA-approved monitor has been installed to characterize the area near the Welsh Power Plant in Titus County.

As referenced in the Summary in Section 1 (*see* Table 2), the undesignated counties associated with sources for which Texas has installed and begun timely operation of a new, approved SO_2 monitoring network are required to be designated by December 31, 2020, but are not being addressed at this time.

4.2. Air Quality Monitoring Data for the Remainder of the State (Excluding Areas with New Approved SO_2 Monitors)

Texas operated 24 SO_2 monitors with sufficient valid data for 2013-2015 to calculate design values and these data indicate that there were no violations of the 2010 SO_2 NAAQS at the monitoring sites in that period (*see* Table 9), though the EPA does not have information to support the monitors are located in maximum concentration for each area.

Table 9: SO₂ Monitor Sites in Texas with Sufficient Data to Calculate a 2013-2015 Design Value

AQS Site ID #	County	Street Address	2013-2015 Design Value (ppb)
48-029-0059	Bexar*	14620 Laguna Rd	15
48-113-0069	Dallas	1415 Hinton Street	5
48-139-0016	Ellis	2725 Old Fort Worth Road	9
48-139-1044	Ellis	900 FM 667 Ellis County	8
48-141-0037	El Paso	250 Rim Rd	5
48-141-0044	El Paso	800 S San Marcial Street	9
48-141-0058	El Paso	5050A Yvette Drive	2
48-167-0005	Galveston	2516 1/2 Texas Avenue	18
48-183-0001	Gregg	Gregg Co Airport near Longv	46
48-201-0046	Harris	7330 1/2 North Wayside	8
48-201-0051	Harris	13826 1/2 Croquet	22
48-201-0062	Harris	9726 1/2 Monroe	10
48-201-0416	Harris	7421 Park Place Blvd	20
48-201-1035	Harris	9525 1/2 Clinton Dr	16
48-201-1039	Harris	4514 1/2 Durant St	9
48-201-1050	Harris	4522 Park Rd	8
48-245-0009	Jefferson*	1086 Vermont Avenue	15
48-245-0011	Jefferson*	623 Ellias Street	57
48-257-0005	Kaufman	3790 S Houston St	13
48-309-1037	McLennan**	4472 Mazanec Rd	7
48-349-1051	Navarro*	Corsicana Airport	39
48-355-0026	Nueces	9860 La Branch	4
48-355-0032	Nueces	3810 Huisache Street	4
48-453-0014	Travis	3724 North Hills Dr	5

* As shown in Table 2 of this TSD, Texas elected to install and timely began operation of a new, approved SO₂ monitoring network in Bexar, Jefferson, and Navarro Counties. The EPA is required to designate these areas, pursuant to a court ordered schedule, by December 31, 2020. Therefore, we are not designating these areas in this round of designations.
** EPA designated McLennan County unclassifiable/attainment in Round 2 (*See* 81 FR 45039). Therefore, this TSD does not address this county.

4.3. Jurisdictional Boundaries in the Remainder of the State (Excluding Undesignated Areas with New Approved SO$_2$ Monitors)

Existing jurisdictional boundaries are considered for the purpose of informing the EPA's designation action for city/county/parish. Our goal is to base designations on clearly defined legal boundaries, and to have these boundaries align with existing administrative boundaries when reasonable.

In its recommendation letters dated June 2, 2011, April 20, 2012, and September 18, 2015, the state recommended that the entirety of Dallas County, El Paso County, Ellis County, Galveston County, Gregg County, Harris County, Kaufman County, and Nueces County be designated as attainment based on certified monitoring data showing no violations. The state also recommended a designation of unclassifiable/attainment for remaining areas in the state.

The EPA interprets the state's recommendation letters as intending that each county (or partial county) be designated as a separate area, using county boundaries (and where applicable the boundaries of previously designated nonattainment areas where they do not follow county boundaries). We intend to designate the counties and partial counties in Texas in this manner.

4.4. The EPA's Assessment of the Available Information for the Remainder of the State (Excluding Undesignated Areas with New Approved SO$_2$ Monitors)

These counties were not required to be characterized under 40 CFR 51.1203(c) or (d) and EPA does not have available information including (but not limited to) appropriate modeling analyses and/or monitoring data that suggests that the area may (i) not be meeting the NAAQS, or (ii) contribute to ambient air quality in a nearby area that does not meet the NAAQS. These counties therefore meet the definition of an "unclassifiable/attainment" area for this action. Therefore, the EPA intends to designate the areas in the above Table 8 as unclassifiable/attainment for the 2010 SO$_2$ NAAQS.

Our intended unclassifiable/attainment areas, bounded by the county boundary or other boundary as specified in Table 8, will have clearly defined legal boundaries, and we intend to find these boundaries to be a suitable basis for defining our intended unclassifiable/attainment area.

4.5. Summary of Our Intended Designation for the Remainder of the State (Excluding Areas with New Approved SO$_2$ Monitors)

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA intends to designate 236 counties or portions of counties areas as separate unclassifiable/attainment areas for the 2010 SO$_2$ NAAQS. Specifically, the boundaries are comprised of the county boundaries, with the exception of Anderson County, Panola County, Rusk County, and Freestone County, for which the boundaries of the unclassifiable/attainment area are specified in Table 8. These are the same boundaries as used earlier to designate the other portions of these counties.

Figure 9 above shows the location of these areas within Texas.

For the majority of the areas, the boundary of the unclassifiable/attainment area is the county boundary. The boundaries for exceptions to this are described below. In each case, the described rectangular area has been previously designated nonattainment.

Figure 11 shows the boundary of intended Freestone County (partial) and Anderson County (partial) unclassifiable/attainment area. The boundary is defined as the portion of Freestone and Anderson counties not encompassed by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 14 with datum NAD83 as follows:

(1) Vertex— UTM Easting (m) 766752.69, UTM Northing (m) 35363333.0,
(2) Vertex—UTM Easting (m) 784752.69, UTM Northing (m) 3536333.0,
(3) Vertex—UTM Easting (m) 784752.69, UTM Northing (m) 3512333.0,
(4) Vertex—UTM Easting (m) 766752.69, UTM Northing (m) 3512333.0

Figure 11. Boundary of the Intended Freestone County (Partial) and Anderson County (Partial) Unclassifiable/Attainment Area
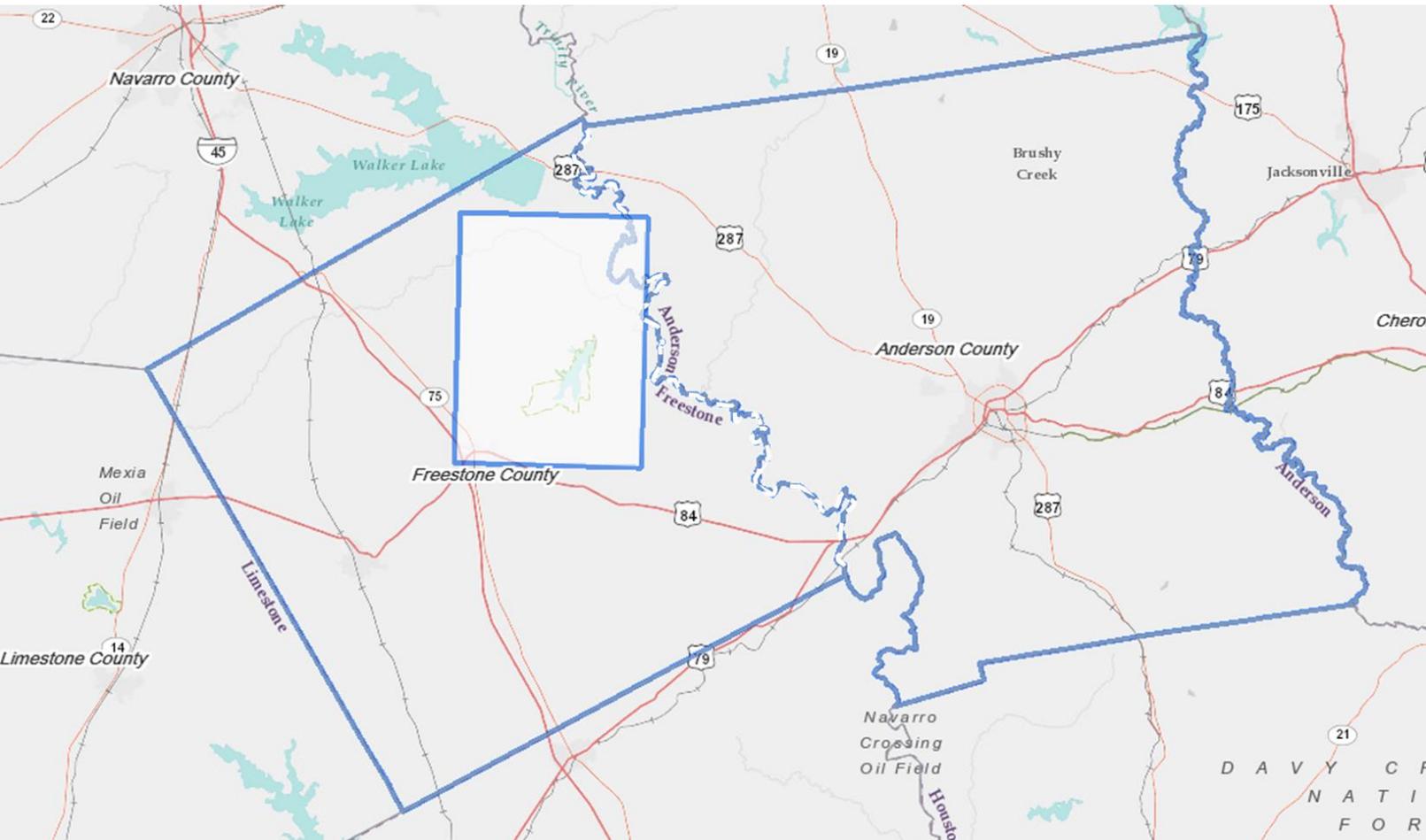
Figure 12 shows the boundary of intended Rusk County (partial) and Panola County (partial) unclassifiable/attainment area. The boundary is defined as the portion of Rusk and Panola counties <u>not</u> encompassed by the rectangle with the vertices using Universal Traverse Mercator (UTM) coordinates in UTM zone 15 with datum NAD83 as follows:

(1) Vertex—UTM Easting (m) 340067.31, UTM Northing (m) 3575814.75,
(2) Vertex—UTM Easting (m) 356767.31, UTM Northing (m) 3575814.75,
(3) Vertex—UTM Easting (m) 356767.31, UTM Northing (m) 3564314.75,
(4) Vertex—UTM Easting (m) 340067.31, UTM Northing (m) 3564314.75

Figure 12. Boundary of the Intended Rusk County (Partial) and Panola County (Partial) Unclassifiable/Attainment Area
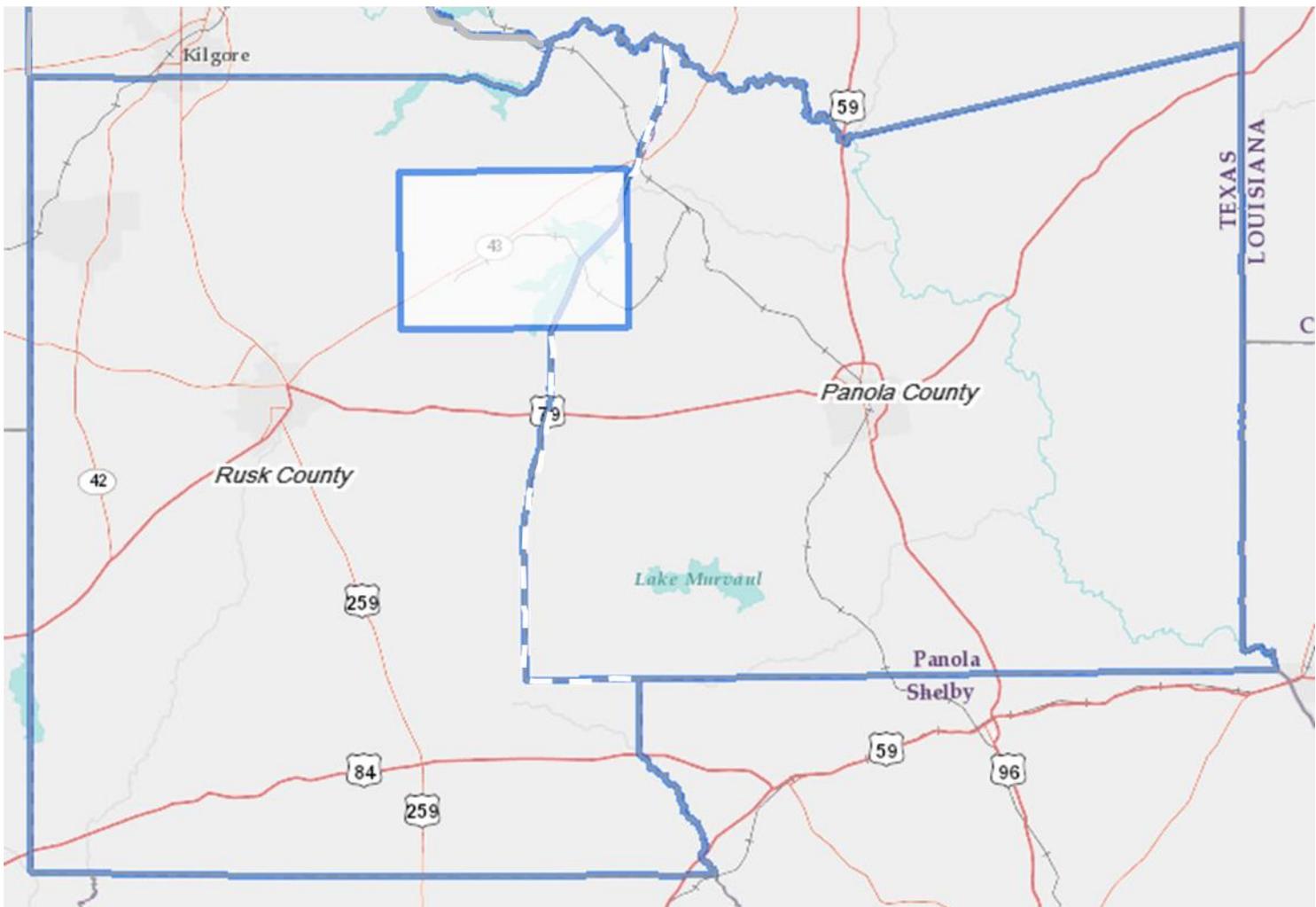
At this time, our intended designations for the state only apply to these areas the other areas presented in this technical support document. The EPA intends to evaluate and designate all remaining undesignated areas in Texas by December 31, 2020.