

Technical Support Document:

Chapter 3

Final Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for Alabama

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 (SO₂) primary national ambient air quality standard (NAAQS) (2010 SO₂ NAAQS). Our Notice of Availability (NOA)¹ and our Technical Support Document (TSD)² for our intended designations for the round of designations we are required to complete by December 31, 2017, provided background on the relevant CAA definitions, and the history of the designations for this NAAQS. Chapter 1 of this TSD for the final designations explains the definitions we are applying in the final designations. The TSD for the intended Round 3 area designations also described Alabama’s recommended designations, assessed the available relevant monitoring, modeling, and any other information, and provided our intended designations.

This TSD for the final Round 3 area designations for Alabama addresses any change in Alabama’s recommended designations since we communicated our intended designations for areas in Alabama. It also provides our assessment of additional relevant information that was submitted too close to the signature of the NOA to have been considered in our intended designations, or that has been submitted by Alabama or other parties since the publication of the NOA. This TSD does not repeat information contained in the TSD for our intended designations except as needed to explain our assessment of the newer information and to make clear the final action we are taking and its basis, but that information is incorporated as part of our final designations. If our assessment of the information already considered in our TSD for our intended designations has changed based on new information and we are finalizing a designation based on such change in our assessment, this TSD also explains that change. For areas of Alabama, not explicitly addressed in this chapter, we are finalizing the designations described in our intended designation letters and the TSD for the intended Round 3 area designations. All the final designations are listed in Table 1 below.

In our August 22, 2017, intended designations for Alabama the EPA requested that any additional information that the Agency should consider prior to finalizing the designation should be submitted by October 23, 2017. Additionally, on September 5, 2017, the EPA also published a

¹ EPA Responses to Certain State Designation Recommendations for the 2010 Sulfur Dioxide Primary National Ambient Air Quality Standard: Notification of Availability and Public Comment Period, September 5, 2017 (82 FR 41903)

² Intended Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard Technical Support Document, August 2017. <https://www.epa.gov/sulfur-dioxide-designations/initial-technical-support-documents-area-designations-round-3>

notice of availability and public comment period in the *Federal Register*, inviting the public to review and provide input on our intended designations by October 5, 2017 (82 FR 10563).

On October 5, 2017, the EPA received public comments from Alabama Power Southern Company (Alabama Power) for consideration regarding our intended designations for the Mobile County, AL area surrounding the AkzoNobel Functional Chemicals, LLC LeMonye Site(AkzoNobel) and Alabama Power Company James M. Barry Electric Generating Plant (Plant Barry) DRR sources (that were modeled together). Alabama Power's October 5, 2017 comment provided documentation of modeling receptor grid for the AkzoNobel and Alabama Power Plant Barry (Plant Barry) and permanent and federally enforceable emission reductions at Plant Barry and clarification of modeled emissions for all modeled Alabama Power DRR sources. Additionally, PowerSouth Energy Cooperative (PowerSouth) submitted public comments for the Washington County, AL area surrounding the Charles R. Lowman Power Plant (Lowman) on a number of modeling issues EPA identified in the intended designations TSD.

On October 19, 2017, the Alabama Department of Environmental Management (ADEM) submitted responses to EPA's August 22, 2017 intended designations for nine areas in the State. related to a number of air dispersion modeling issues the EPA identified in the 120-day intended designations (including processing of meteorological data and surface characteristics, federally enforceability of emission reductions, background concentrations, etc.). ADEM did not submit any revised modeling analyses. Additionally, on November 6, 2017, ADEM provided meteorology files for the following three counties: Autauga, Walker, and Russell Counties.

Based on review of new technical information for the State and other organizations, the EPA is revising its intended designations for Autauga, Walker, and Russell Counties from unclassifiable to attainment/unclassifiable. For the other six areas with intended unclassifiable designation, the EPA concludes that the additional information provided by the states does not resolve the modeling issues identified in our intended designation TSD.

For the areas in Alabama that are part of the Round 3 designations process, Table 1 identifies EPA's final designations and the counties or portions of counties to which they apply. It also lists Alabama's current recommendations. EPA notes the additional information submitted by ADEM on October 19, 2017 did not include changes to their designation recommendation. The EPA's final designations for these areas are based on an assessment and characterization of air quality through ambient air quality data, air dispersion modeling, other evidence and supporting information, or a combination of the above.

Table 1. Summary of the EPA’s Final Designations and the Designation Recommendations by Alabama

Area/ County	Alabama’s Recommended Area Definition	Alabama’s Recommended Designation	The EPA’s Intended Designation	The EPA’s Final Area Definition	The EPA’s Final Designation³
Autauga County	Statewide Autauga County (Area Surrounding the IP-Prattville Mill)	Attainment	Unclassifiable	Autauga County	Attainment/ Unclassifiable
Russell County	Statewide Russell County (Area Surrounding Continental Carbon)	Attainment	Unclassifiable	Russell County	Attainment/ Unclassifiable
Walker County	Statewide Walker County (Area Surrounding Plant Gorgas)	Attainment	Unclassifiable	Walker County	Attainment/ Unclassifiable
Mobile County	Statewide - Mobile County (Area Surrounding Plant Barry and AkzoNobel)	Attainment	Unclassifiable	Mobile County	Unclassifiable
Escambia County	Statewide Escambia County (Area Surrounding the Big Escambia Creek Plant)	Attainment	Unclassifiable	Escambia County	Unclassifiable
Morgan County	Statewide Morgan County (Area Surrounding Ascend)	Attainment	Unclassifiable	Morgan County	Unclassifiable

³ Refer to Chapter 1 of Technical Support Document: Final Round 3 Area Designations for the 2010 1-Hour SO₂ Primary National Ambient Air Quality Standard for definitions of the designation categories and the terminology change from Unclassifiable/Attainment to Attainment/Unclassifiable.

Area/ County	Alabama's Recommended Area Definition	Alabama's Recommended Designation	The EPA's Intended Designation	The EPA's Final Area Definition	The EPA's Final Designation³
Pike County	Statewide Pike County (Area Surrounding Sanders Lead)	Attainment	Unclassifiable	Pike County	Unclassifiable
Washington County	Statewide Washington County (Area Surrounding Gaston Plant)	Attainment	Unclassifiable	Washington County	Unclassifiable
Shelby County (partial)	Statewide Shelby County	Attainment	Unclassifiable	Shelby County (partial) Includes the portion of Shelby County contained within the 2016 U. S. Census Block Groups 011170308001 and 011170308002	Unclassifiable
*Rest of the State	Rest of the State (all other counties)	Attainment	Unclassifiable/ Attainment	Rest of the State (except as otherwise noted, all other counties or portions of counties)	Attainment/ Unclassifiable

* Except for areas that are associated with sources for which Alabama elected to install and timely began operation of a new SO₂ monitoring network meeting EPA specifications referenced in EPA's SO₂ DRR (see Table 2 below). These areas that we are designating as attainment/unclassifiable (those to which this row of this table is applicable) are identified more specifically in Section 12 of Chapter 3 (addressing Alabama) of the TSD for our intended designations.

Areas for which Alabama elected to install and began timely operation of a new, approved SO₂ 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 SO₂ 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)
Shelby County (remaining portion)	L'hoist North America of Alabama

2. Technical Analysis of New Information for the Autauga County Area

2.1. Introduction

The EPA must designate the Autauga County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Autauga County. The area includes International Paper-Prattville Mill (IP-Prattville Mill). In its January 2017 submission, Alabama recommended attainment for the entire state including Autauga County and the area around the Prattville Mill based in part on a combined modeling assessment using actual emissions. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Autauga County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether area around IP-Prattville Mill meets or does not meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Autauga County area in response to the air dispersion modeling issues EPA identified in the intended designations TSD. ADEM's new information included an explanation as to why there was a discrepancy between EPA's Emission Inventory System (EIS) Gateway emissions database and the modeled emissions values. ADEM's submission indicates that the 2012 calculation methodology on the No. 2 Recovery Furnace was updated to reflect the current calculation methodology and that the 2013 and 2014 emissions for the No. 1 Recovery Furnace were updated to reflect more representative stack test data conducted during 2015 rather than the previously relied upon stack test data from 1998 since the No. 1 Recovery Furnace had undergone a number of process changes that made the 1998 stack test data no longer reflective of the 2013 and 2014 emission rates. The EPA also received the AERMET and AERSURFACE files used in the modeling from ADEM on November 6, 2017.

2.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for the Autauga County area around Prattville Mill was based on a combined modeling assessment using AERMOD Model Version 16216r and characterization of air quality impacts from the one DRR source and no other nearby sources. The modeling considered actual emissions for IP-Prattville Mill and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value resulted in 189.61 µg/m³, equivalent to 72.40 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA's intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations including no documentation to

support the AERMET inputs used to generate the surface and upper air meteorology files and a discrepancy between modeled emission values for Prattville Mill and those in the EPA’s EIS Gateway emissions database for the years that were modeled. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 5 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 4. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Autauga County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	December 9, 2016	December 2016 All4 Modeling Report	Final Modeling Report
Alabama*	January 31, 2017	Revised Modeling	Updated modeling with AERMOD version 16216r

*Alabama forwarded the assessment prepared by ALL4.

2.3. Assessment of New Air Quality Monitoring Data for the Autauga County Area

This factor considers the SO₂ air quality monitoring data in the area of Autauga County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

2.4. Assessment of New Technical Information for the Autauga County Area Addressing International Paper-Prattville Mill

Alabama has requested a designation of attainment for all the areas identified by the DRR. The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations including lack of documentation to support the AERMET inputs used to generate the surface and upper air meteorology files, and a discrepancy between the Prattville Mill emission values that were modeled and those in EPA’s

EIS Gateway emissions database. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

ADEM's October 19, 2017 submittal provided a response to the EPA's comments about the lack of documentation for the AERMET files and the discrepancy in emissions. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA. ADEM's new information included an explanation as to why there was a discrepancy between the EPA's EIS Gateway emissions database and the modeled emissions values. ADEM's submission indicates that the 2012 calculation methodology on the No. 2 Recovery Furnace was updated to reflect the current calculation methodology and that the 2013 and 2014 emissions for the No. 1 Recovery Furnace were updated to reflect more representative stack test data conducted during 2015 rather than the previously relied upon stack test data from 1998 since the No. 1 Recovery Furnace had undergone a number of process changes that made the 1998 stack test data no longer reflective of the 2013 and 2014 emission rates. The EPA agrees that the more updated stack test data that was used for the No. 1 Recovery Furnace for 2013 and 2014 is appropriate. This additional information adequately explains the difference between the emissions used in the modeling and the emissions in the EIS Gateway emissions database.

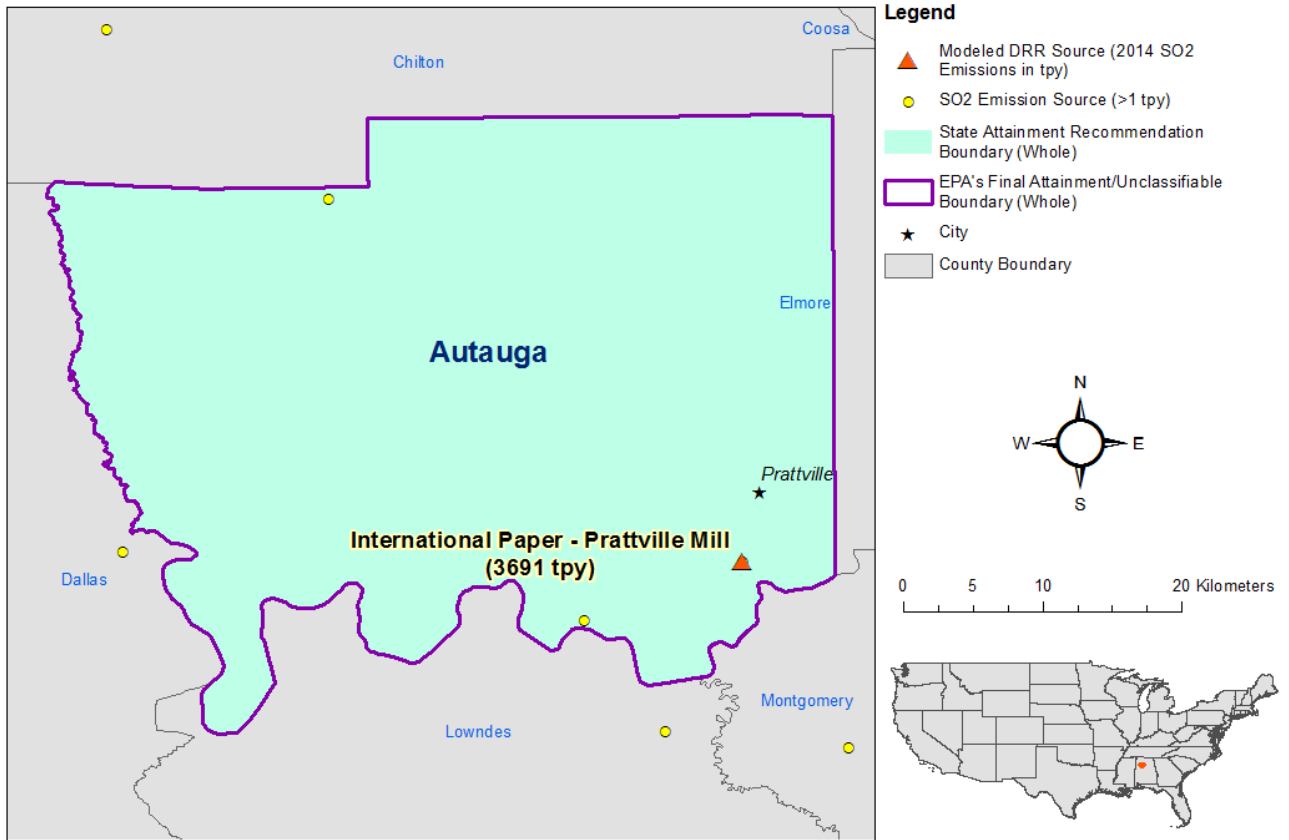
ADEM also submitted additional information to the EPA on November 6, 2017. ADEM submitted the AERMET files used in the modeling so that the EPA could confirm that the procedures used for the processing of the meteorology are appropriate. The EPA has confirmed that the processing of the meteorology for Prattville Mill was done appropriately. The additional information that ADEM submitted in response to the intended designation TSD has resolved the two outstanding comments for the Autauga County Area.

2.5. Summary of Our Final Designation for the Autauga County Area

After careful evaluation of the State's recommendation and supporting information, as well as all available relevant information, the EPA is designating, in its entirety, Autauga County as attainment/unclassifiable for the 2010 SO₂ NAAQS because the EPA has determined the area meets the 2010 SO₂ NAAQS and does not contribute to ambient air quality in a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of the entirety of Autauga County.

Figure 1 shows the boundary of this final designated area.

Figure 1. Boundary of the Final Autauga County Attainment/Unclassifiable Area



At this time, our final designations for the State only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

3. Technical Analysis of New Information for the Russell County Area

3.1. Introduction

The EPA must designate the Russell County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Russell County. The area includes Continental Carbon Company – Phenix City Plant (Continental Carbon). In its January 2017 submission, Alabama recommended attainment for the entire state including Russell County and the area around Continental Carbon based in part on a combined modeling assessment including a mix of actual and allowable emissions. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Russell County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether the area around Continental Carbon meets or does meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Russell County area in response to the air dispersion modeling issues EPA identified in the intended designations. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA, provide a page from the permit to demonstrate the federally enforceable emission limit used to model the Continental Carbon emissions, and indicates that the difference in modeled actual emissions for the nearby source, IIG MinWool and the emissions reported in the EPA's national emission inventory (NEI)⁴ was 0.8 tpy, which the State indicates has no effect on the outcome of Continental Carbon's modeling. The EPA received the AERMET files from ADEM on November 6, 2017.

3.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for the Russell County area around Continental Carbon was based on a combined modeling assessment using AERMOD Model Version 15181 and characterization of air quality impacts from the DRR source and one other nearby source, IIG MinWool. The modeling considered allowable emissions for Continental Carbon, actual emissions for the nearby source, IIG MinWool, and background

⁴ Alabama did not specify the NEI year. The difference between the 2014 NEI value (34.35 tpy) and the modeled value (33.81 tpy) is 0.54 tpy. The 33.81 tpy value was calculated from the constant emissions rate used in the modeling (7.72 lb/hr) and assuming 8,760 hours/year of operation.

concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value is 158.8 $\mu\text{g}/\text{m}^3$, equivalent to 60.63 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues EPA identified in the intended designations including lack of adequate documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; lack of documentation that the modeled emissions for Continental Carbon have permanent and federally enforceable emissions restrictions; and lack of documentation to support how the emissions for the nearby modeled source, IIG MinWool, were calculated. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 5 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 5. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Russell County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama	July 1, 2016	June 2016 Enviro Clean Cardinal Modeling Protocol	None
Alabama*	January 13, 2017	December 2016 Enviro Clean Cardinal Modeling Report or Final Modeling Report	None

*Alabama submitted modeling assessment by Enviro Clean Cardinal.

3.3. Assessment of New Air Quality Monitoring Data for the Russell County Area

This factor considers the SO₂ air quality monitoring data in the area of Russell County. Our TSD for the intended area designations considered available data through 2016 for no monitoring

sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

3.4. Assessment of New Technical Information for the Russell County Area Addressing Continental Carbon

Alabama requested a designation of attainment for all the areas identified by the DRR. The EPA's intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations including lack of documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; lack of documentation to support that the modeled emissions for Continental Carbon have permanent and federally enforceable emissions restrictions; and, lack of documentation on how the emissions for the nearby source, IIG MinWool, were calculated. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

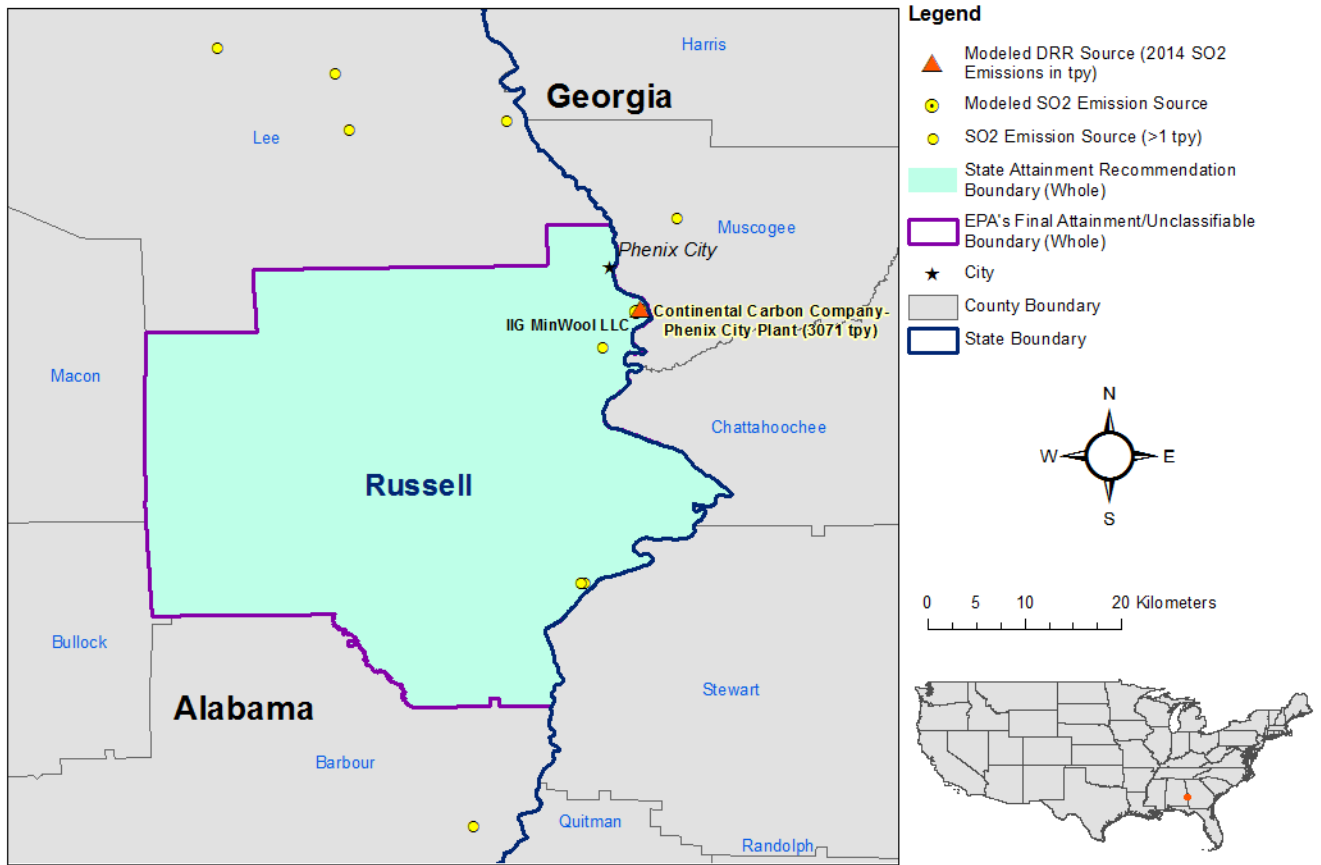
The EPA received additional information from ADEM on October 19, 2017 for the Russell County area in response to the air dispersion modeling issues the EPA identified in the intended designations. ADEM's responses indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA; includes a page from the Continental Carbon permit to demonstrate that the emission rate modeled is federally enforceable; and maintains that the difference in modeled actual emissions for IIG MinWool and the emissions from the EPA's NEI was 0.8 tpy and has no effect on the outcome of Continental Carbon's modeling. ADEM provided AERMET files on November 6, 2017.

The emission rate that was modeled for Continental Carbon was 274.8 g/s (2,181 lbs/hr). In Alabama's October 2017 response to the EPA's intended designations, the permit confirms that the correct emissions rate was used in the modeling and that the Continental Carbon emissions rate that was modeled is permanent and federally enforceable. The EPA agrees that the discrepancy between the IIG MinWool emissions that were modeled and the emissions in the NEI would not adversely affect the modeled concentration results. Additionally, the AERMET files that were provided have been used to confirm that the correct inputs were used to generate the surface and upper air meteorology files. The EPA believes the additional information ADEM submitted in response to the intended designation TSD has resolved all of the EPA's issues for the Russell County Area.

3.5. Summary of Our Final Designation for the Russell County Area

After careful evaluation of the state's recommendation and new supporting information, as well as all available relevant information, the EPA is designating the Russell County area in its entirety as attainment/unclassifiable for the 2010 SO₂ NAAQS because the EPA has determined the area meets the 2010 SO₂ NAAQS and does not contribute to ambient air quality in a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of Russell County in its entirety. Figure 2 shows the boundary of this final designated area.

Figure 2. Boundary of the Final Russell County Attainment/Unclassifiable Area



At this time, our final designations for the state only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

4. Technical Analysis of New Information for the Walker County Area

4.1. Introduction

The EPA must designate the Walker County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Walker County. The area includes Alabama Power Company Gorgas Electric Generating Plant (Plant Gorgas). In its January 2017 submission, Alabama recommended attainment for the entire state including Walker County and the area around Plant Gorgas based in part on a combined modeling assessment based on actual emissions. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Walker County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether area around Plant Gorgas meets or does meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Walker County area in response to the air dispersion modeling issues the EPA identified in the intended designations including processing of meteorological data and surface characteristics. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA, and that an AERSURFACE analysis was performed in accordance with the newest version of AERSURFACE User's Guide and provided by ADEM to the facility. ADEM did not submit a revised modeling analysis for this area. On November 6, 2017, ADEM provided the AERMET and AERSURFACE files to the EPA.

4.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for Walker County area around Plant Gorgas was based on a combined modeling assessment using AERMOD Model Version 15181 and characterization of air quality impacts from the DRR source and one other nearby source, Alabama Power Company Miller Steam Electric Generating Plant (Plant Miller). The modeling considered actual emissions for Plant Gorgas and Plant Miller, and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value is 75.61 µg/m³, equivalent to 28.87 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA’s intended designation and associated boundaries were based on, air dispersion modeling issues EPA identified in the intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files and no documentation to support the State’s use of AERSURFACE to best represent surface characteristics. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3. The following Table 6 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 6. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Walker County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	January 2017	Plant Gorgas Modeling Report	Alabama submittal
Alabama	July 2017	ADEM Response to the EPA DRR Comments	Additional information regarding federal enforceability of Units 6 and 7 at Plant Gorgas

*Alabama submitted modeling assessment by AECOM.

4.3. Assessment of New Air Quality Monitoring Data for the Walker County Area

This factor considers the SO₂ air quality monitoring data in the area of Walker County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

4.4. Assessment of New Technical Information for the Walker County Area Addressing Plant Gorgas

Alabama has requested a designation of attainment for all the areas identified by the DRR. The EPA’s intended unclassifiable designation and associated boundaries were based on, air

dispersion modeling issues the EPA identified in the intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files and no documentation to support the State's use of AERSURFACE to best represent surface characteristics. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

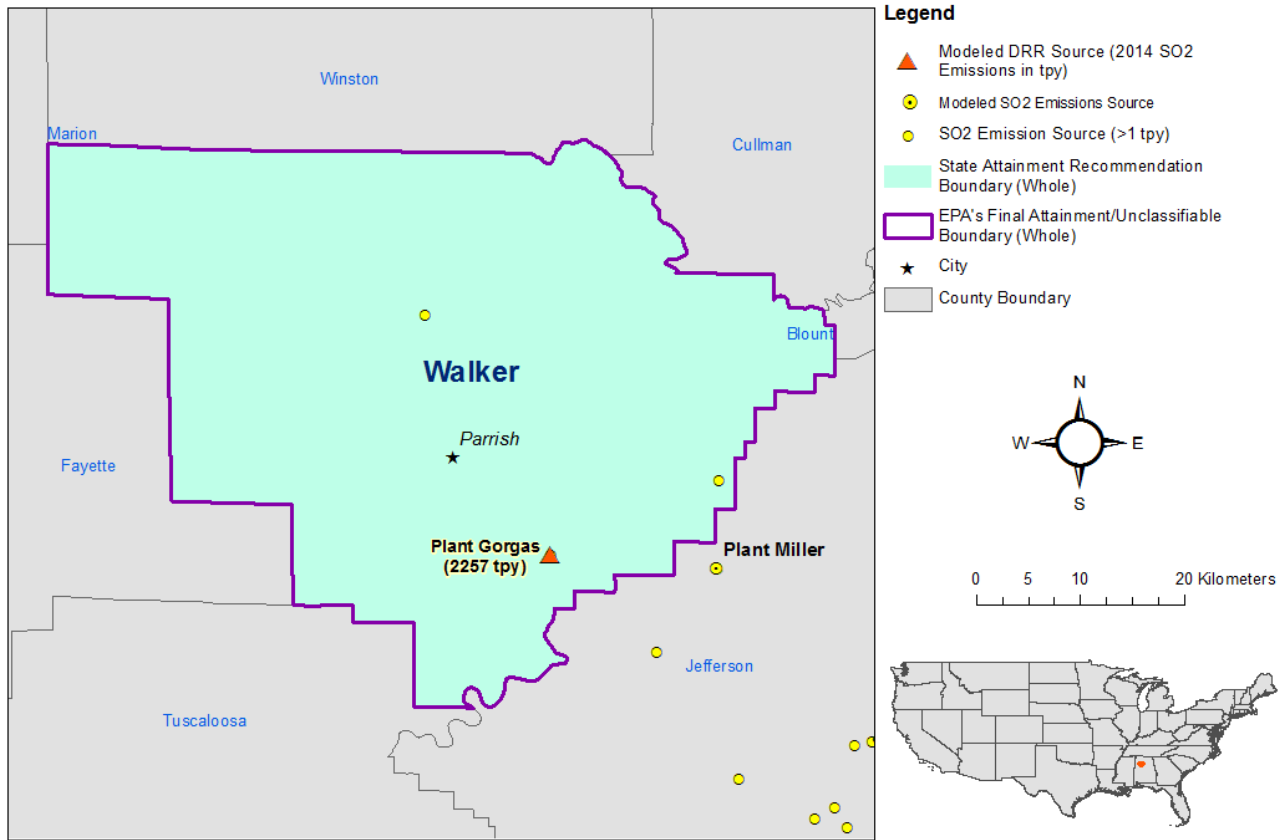
ADEM's October 19, 2017 submittal provided a response to comments for the lack of documentation for the AERMET and AERSURFACE files. The response provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA, and that an AERSURFACE analysis was performed in accordance with the newest version of AERSURFACE User's Guide and provided by ADEM to the facility. ADEM also submitted the AERMET and AERSURFACE files to EPA on November 6, 2017. Following a review of these files, the EPA was able to confirm that the appropriate procedures were used in processing the meteorology data.

The additional information that ADEM submitted in response to the intended designation TSD has resolved the two outstanding comments for the Walker County Area.

4.5. Summary of Our Final Designation for the Walker County Area

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA is designating Walker County in its entirety as attainment/unclassifiable for the 2010 SO₂ NAAQS because the EPA has determined the area meets the 2010 SO₂ NAAQS and does not contribute to ambient air quality in a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of the entirety of Walker County. Figure 3 shows the boundary of this final designated area.

Figure 3. Boundary of the Final Walker County Attainment/Unclassifiable Area



At this time, our final designations for the State only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

5. Technical Analysis of New Information for the Mobile County Area

5.1. Introduction

The EPA must designate the Mobile County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Mobile County. The area includes two DRR sources: AkzoNobel and Alabama Power Plant Barry. Due to the close proximity of Plant Barry and AkzoNobel to each other, a combined air dispersion modeling analysis was conducted for both facilities pursuant to the DRR. In its January 2017 submission, Alabama recommended attainment for the entire state including Mobile County and the area around Plant Barry and AkzoNobel based in part on a combined modeling assessment using actual emissions for both sources, with the exception of the AC-1 unit at AkzoNobel which was modeled using future PTE rates. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Mobile County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether the area around both Plant Barry and AkzoNobel meets or does meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

On September 5, 2017, the EPA received public comments from Alabama Power for consideration regarding our intended designations for the Mobile County, Alabama area surrounding the AkzoNobel and Alabama Power Plant Barry DRR sources (that were modeled together). The EPA received additional information from ADEM on October 19, 2017 for the Mobile County area in response to the air dispersion modeling issues EPA identified in the intended designations including processing of meteorological data and surface characteristics, federally enforceability of emission reductions, a finding that the State's receptor grid may not adequately characterize the SO₂ impacts from the facilities on other facility's property, and issues with the background concentration chosen. ADEM's new information included an explanation and documentation of the state's receptor grid regarding property access for nearby facilities, documentation of permanent and federally enforceable emission reductions from Plant Barry units 1 thru 3 including a retired unit exemption form for unit 3 and a consent decree requiring Alabama Power to restrict units 1 and 2 to burn only natural gas by January 1, 2017. Neither the State nor Alabama Power submitted a revised modeling analysis for this area.

5.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the Governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, the EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for the Mobile County area around Plant Barry and AkzoNobel was based on a combined modeling assessment using AERMOD Model Version 16216 with and AERMET Version 16216 with Adjusted U* and characterization of air quality impacts from the two DRR sources and one other nearby

source. The modeling considered actual emissions for both DRR sources, with the exception of the AC-1 unit at AkzoNobel which was modeled using future PTE rates, and allowable emissions for one other nearby source, SSAB Alabama Steel Mill, and background concentration data from the Mammoth Cave monitor in Kentucky. Based on these factors, the modeled 1-hour design value resulted in $167.51 \mu\text{g}/\text{m}^3$, equivalent to 63.96 ppb, which is below the level of the 2010 SO₂ NAAQS.

The EPA's intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; no documentation to support the State's use of AERSURFACE to best represent surface characteristics; a potentially inadequate receptor grid that may not adequately characterize SO₂ impacts from the facilities on other facility's property; exclusion from the model analysis emissions from Plant Barry's Units 1, 2, and 3 without complete documentation that the emissions have permanent and federally enforceable emissions restrictions; and, inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3. Alabama Power's September 5, 2017 comment provided documentation regarding the modeling receptor grid for the AkzoNobel and Plant Barry and documentation of permanent and federally enforceable emission reductions at Plant Barry and clarification of modeled emissions for all modeled Alabama Power DRR sources.

The following Table 7 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 7. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Mobile County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	January 2017	Plant Barry and AkzoNobel Modeling Report	State submittal
Alabama	July 2017	ADEM Response to the EPA DRR Comments	Additional information regarding federal enforceability of nearby source

*Alabama forwarded the assessment prepared by AECOM.

5.3. Assessment of New Air Quality Monitoring Data for the Mobile County Area

This factor considers the SO₂ air quality monitoring data in the area of Mobile County. Our TSD for the intended area designations considered available data through 2016 for one monitoring site. Alabama did not include data from the following monitor in its modeling submittal. The Chickasaw SO₂ monitor (AQS ID: 01-097-0003) is located at 30.770155, -88.087773 near the intersection of Iroquois Street and Azalea Drive in Mobile County, and is located 23.0 kilometers (km) SSW of AkzoNobel and 27.2 km SSW of Plant Barry. The most recent three years of complete, quality-assured, certified data from this monitor (2014-2016) indicate a 1-hr SO₂ design value of 19 ppb. This monitor was not sited to characterize the maximum 1-hr SO₂ concentrations near either of these facilities or for the Mobile County area.

We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

5.4. Assessment of New Technical Information for the Mobile County Area Addressing Plant Barry and AkzoNobel Facilities

Alabama has requested a designation of attainment for all the areas identified by the DRR. EPA’s intended designation and associated boundaries were based on air dispersion modeling issues EPA identified in the intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; no documentation to support the State’s use of AERSURFACE to best represent surface characteristics; a potentially inadequate receptor grid that may not adequately characterize SO₂ impacts from the

facilities on other facility's property; exclusion of emissions from the modeling analysis for Plant Barry's Units 1, 2, and 3 without complete documentation that the emissions have permanent and federally enforceable emissions restrictions; and, inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

Alabama Power's September 5, 2017 submittal provided documentation to support the receptor grid used in the modeling for the AkzoNobel and Plant Barry; documentation of permanent and federally enforceable emission reductions at Plant Barry; and clarification of modeled emissions for all modeled Alabama Power DRR sources. Alabama Power's submittal provided letters from both AkzoNobel and Plant Barry indicating that neither facility would allow an ambient SO₂ monitor to be located on their respective properties. The letters assert that since neither affected source would allow an SO₂ ambient monitor to be sited within the modeled ambient air of the facility, that receptors were appropriately excluded from both facilities. This receptor placement approach is consistent with a March 20, 2015 EPA memorandum,⁵ which provides guidance for area designations for the 2010 SO₂ NAAQS, because the memorandum specifically recommends "placing receptors only in locations where a monitor could be placed."

Additionally, Alabama Power provided a retired unit exemption form that documents the official retirement of Plant Barry Unit 3. The submittal also included excerpts from Plant Barry's Title V application which lists natural gas as the only fuel for Units 1 and 2, as established due to a consent decree⁶ requiring Alabama Power to restrict units 1 and 2 to burn only natural gas by January 1, 2017.

ADEM's October 19, 2017 submittal provided a response to comments for the lack of documentation for the AERMET and AERSURFACE files and for the background concentration issue. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA; that an AERSURFACE analysis was performed in accordance with the newest version of AERSURFACE User's Guide and provided by ADEM to the facility; and that the background concentration issue was addressed sufficiently in previous correspondence. These responses do not provide enough information to resolve these issues and they remain outstanding issues. The EPA is still unable to confirm that the procedures used for the processing of the meteorology are appropriate given that ADEM did not provide the AERMET and AERSURFACE files. As discussed in the intended designation TSD, the EPA does not believe the State's justification for determining that the Mammoth Cave SO₂ monitor is a representative background monitor for the area around Plant Barry and AkzoNobel is consistent with the criteria in Appendix W, and thus is not appropriate. The EPA determined that the magnitude of SO₂ emissions sources located

⁵ Memorandum dated March 20, 2015 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. This memorandum superseded earlier designations guidance and identified factors that the EPA intended to evaluate in determining whether areas are in violation of the 2010 SO₂ NAAQS. <https://www.epa.gov/sites/production/files/2016-06/documents/20150320so2designations.pdf>

⁶ United States District Court for the Northern District of Alabama Southern Division; Case No. 2:01-cv—00152-VEH – June 25, 2015.

near the Mammoth Cave monitor differ substantially from the magnitude of emission sources in the area near Plant Barry and AkzoNobel. As a result, the Mammoth Cave monitor is not an acceptable regional site to provide background concentrations for this modeling analysis. Since no new information was provided by ADEM on the background monitor issue, this remains an outstanding issue for the same reasons that were discussed in detail in our intended designation TSD.

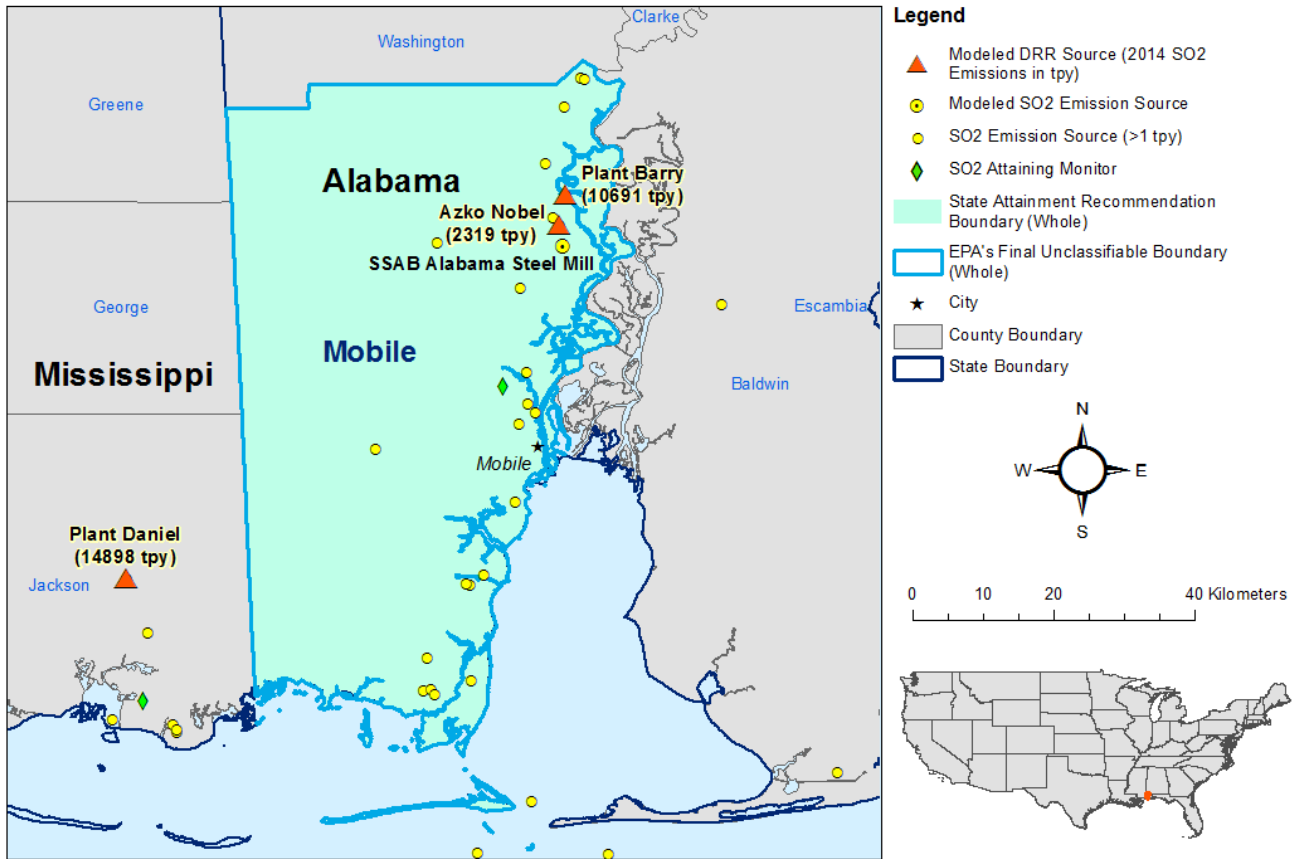
5.5. Other Additional Information Relevant to the Designations for the Mobile County Area

The EPA recognizes that both Alabama Power and the State of Alabama have submitted additional information to resolve the issues identified in the intended designation TSD. While these submittals do resolve a few of the issues including: adequacy of the receptor grid to characterize SO₂ impacts from the facility on other facility's property and the federal enforceability of the emissions modeled for Plant Barry, other issues remain. There is not adequate documentation on the processing of the AERMET and AERSURFACE data used in the modeling and the State did not provide an appropriate alternative for the background monitor. Given that there are still outstanding issues with this area, the EPA affirms its prior assessment that there is not adequate information to designate Mobile County attainment/unclassifiable at this time.

5.6. Summary of Our Final Designation for the Mobile County Area

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA is designating Mobile County as unclassifiable for the 2010 SO₂ NAAQS because the modeling analysis and the additional information provided by Alabama Power and Alabama does not provide sufficient information to determine whether the area meets or does meet the 1-hour SO₂ standard or contributes to a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of the entirety of Mobile County. Figure 4 shows the boundary of this final designated area.

Figure 4. Boundary of the Final Mobile County Unclassifiable Area



At this time, our final designations for the State only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

6. Technical Analysis of New Information for the Escambia County Area

6.1. Introduction

The EPA must designate the Escambia County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Escambia County. The area includes the Big Escambia Creek Plant facility. In its January 2017 submission, Alabama recommended attainment for the entire state including Escambia County and the area around the Big Escambia Creek Plant facility based in part on a combined modeling assessment using a hybrid of actual emissions and PTE emission rates. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Escambia County, AL area to unclassifiable, based on our determination that the State's available information did not enable the EPA to determine whether area around Lowman meets or does meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Escambia County area in response to the air dispersion modeling issues the EPA identified in the intended designation intended designations including processing of meteorological data and surface characteristics, the appropriateness of emissions modeled, and background concentrations. The responses provided by ADEM indicate that the meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA that an AERSURFACE analysis was performed in accordance with the newest version of AERSURFACE User's Guide and provided by ADEM to the facility; that Georgia Pacific Brewton, a nearby source, was not included in the modeling analysis because it was greater than 20 km away, which was the distance that ADEM evaluated for the screening analysis; that startup/shutdown emissions were not included in the modeling because they are not continuous enough nor frequent enough to affect the modeling; and that the background concentration issue was addressed sufficiently in previous correspondence. ADEM did not submit a revised modeling analysis for this area.

6.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for Escambia County area around the Big Escambia Creek Plant facility was based on a combined modeling assessment using AERMOD Model Version 15181 and characterization of air quality impacts from the DRR source and two other nearby sources. The modeling considered actual emission for the thermal oxidizer at Big Escambia and allowable emissions for the remaining units at Big Escambia and the two other nearby sources, Escambia Operating Company-Flomaton and

St. Regis Gas Treating facility (Breitburn Operating, L.P.) located in Santa Rosa County, Florida, and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value is 184.41 $\mu\text{g}/\text{m}^3$, equivalent to 70.41 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designation intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; no documentation to support the State’s use of AERSURFACE to best represent surface characteristics; possible contributions from a nearby source not included in the modeling; lack of documentation to demonstrate that appropriate SO₂ emissions were used in the modeling for Big Escambia Creek Plant; and, inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 8 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 8. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Escambia County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	January 2017	Big Escambia Creek Modeling Report.	State submittal

*Alabama submitted the assessment prepared by Golder Associates.

6.3. Assessment of New Air Quality Monitoring Data for the Escambia County Area

This factor considers the SO₂ air quality monitoring data in the area of Mobile County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

6.4. Assessment of New Technical Information for the Escambia County Area Addressing Big Escambia Creek Plant

Alabama has requested a designation of attainment for all the areas identified by the DRR. The EPA's intended designation and associated boundaries were based on, air dispersion modeling issues the EPA identified in the intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; no documentation to support the State's use of AERSURFACE to best represent surface characteristics; possible contributions from a nearby source not included in the modeling; lack of documentation to demonstrate that appropriate SO₂ emissions were used in the modeling for Big Escambia Creek Plant; and, inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

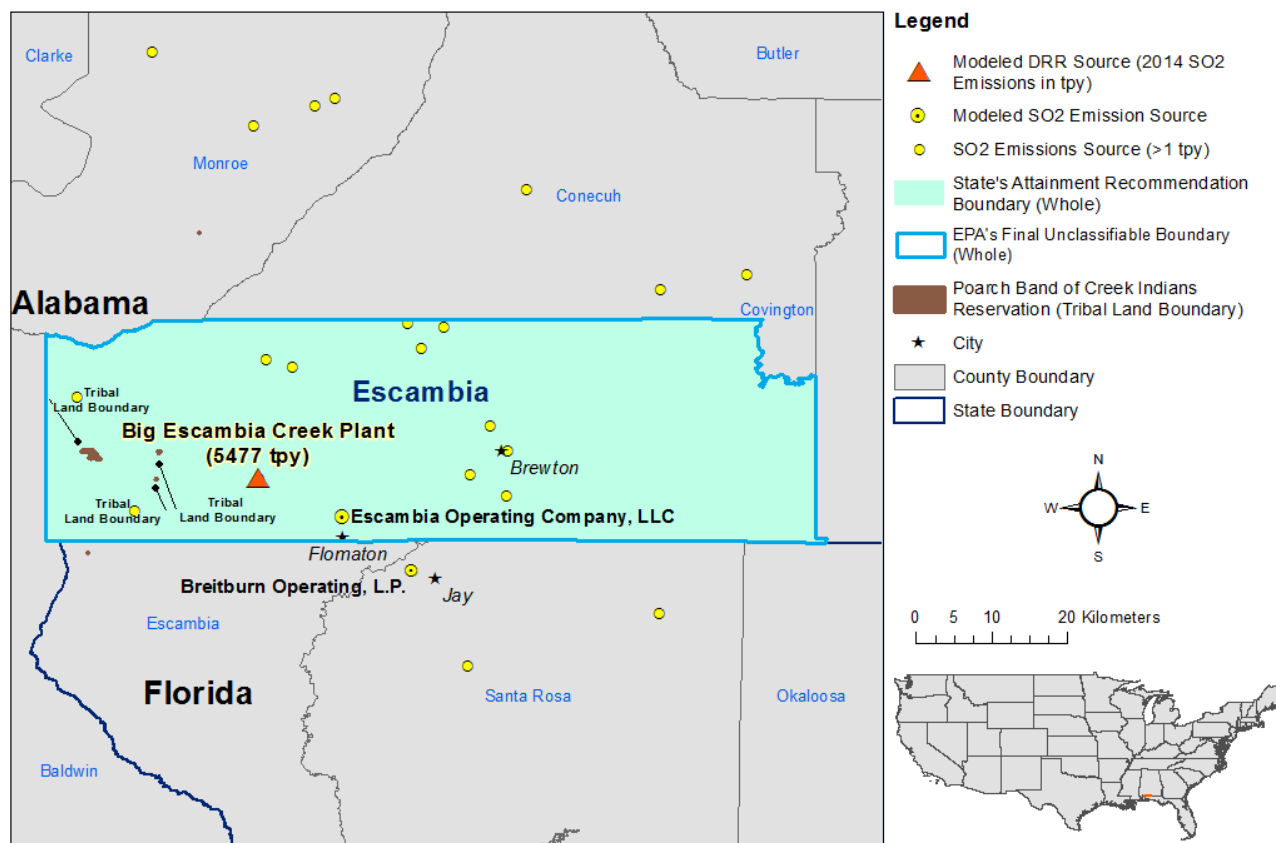
ADEM's October 19, 2017 submittal provided a response to comments addressing the air dispersion modeling issues the EPA identified in the intended designations. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA; that an AERSURFACE analysis was performed in accordance with the newest version of AERSURFACE User's Guide and provided by ADEM to the facility; that Georgia Pacific Brewton, a nearby source, was not included in the modeling analysis because it was greater than 20 km away, which was the distance that ADEM used to screen nearby sources for inclusion in the modeled analysis; that startup/shutdown emissions were not included in the modeling because they are not continuous enough nor frequent enough to affect the modeling; and that the background concentration issue was addressed sufficiently in previous correspondence. ADEM did not submit a revised modeling analysis for this area.

The responses provided by ADEM did not resolve any of the outstanding issues the EPA identified in the intended designation. The EPA is still unable to confirm that the procedures used for the processing of the meteorology are appropriate given that the AERMET and AERSURFACE files were not provided. ADEM has not addressed whether the nearby source that was not modeled, Georgia Pacific Brewton, could contribute to SO₂ modeled concentrations within the vicinity of Big Escambia Creek. No additional information was provided to demonstrate that appropriate SO₂ emissions rates were used in the modeling for the Big Escambia Creek Plant. A comparison of the emissions used in the modeling with the emissions for the facility contained in the 2014 NEI showed a discrepancy and further clarification was needed from the State. Finally, no additional information was provided to address the inappropriate use of the Centreville SEARCH and Mammoth Cave ambient monitoring sites for the background concentrations. Additional rationale explaining the EPA's concern is contained in the EPA's intended designations TSD, Chapter 3.

6.5. Summary of Our Final Designation for the Escambia County Area

After careful evaluation of the State's recommendation and supporting information, as well as all available relevant information, the EPA is designating Escambia County in its entirety as unclassifiable for the 2010 SO₂ NAAQS because the modeling analysis and the additional information provided by Alabama does not provide sufficient information to determine whether the area meets or does not meet the 1-hour SO₂ standard or contributes to a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of the entirety of Escambia County. As noted in the intended designation TSD, the EPA's intended unclassifiable designation for Escambia County includes the Poarch Creek Indian trust lands.⁷ Figure 5 shows the boundary of this final designated area.

Figure 5. Boundary of the Final Escambia County Unclassifiable Area



⁷ The Poarch Creek Band of Indians has three non-contiguous areas of off-reservation trust land in Escambia County, Alabama, within the State's area of analysis. There are two small areas of trust land, both approximately 11.5 km west and northwest of the Big Escambia Creek facility. A third area of trust land is located adjacent to the Poarch Creek Indian Reservation. The primary Poarch Creek Indian Reservation is approximately 19 km west-northwest of the Big Escambia Creek facility. There are no SO₂ sources within any of the Poarch Creek tribal land boundaries; therefore, no sources on the tribal reservation trust lands were included in the modeling analysis for Big Escambia Creek. The Poarch Band of Creek Indian Nation did not provide a designation recommendation for this round of SO₂ designations.

At this time, our final designations for the State only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

7. Technical Analysis of New Information for the Morgan County Area

7.1. Introduction

The EPA must designate the Morgan County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Morgan County. The area includes Ascend Performance Materials – Decatur Plant (Ascend). In its January 2017 submission, Alabama recommended attainment for the entire state including Morgan County and the area around Ascend based in part on a combined modeling assessment based on actual emissions. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Morgan County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether area around Ascend meets or does meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Morgan County area in response to the air dispersion modeling issues EPA identified in the intended designations including processing of meteorological data and surface characteristics and ambient air concerns. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA, include supporting documentation of the state's receptor grid regarding property access for nearby facilities, and indicate that the background concentration issue was addressed sufficiently in previous correspondence. ADEM did not submit a revised modeling analysis for this area. Attachment A in the October 19, 2017 submittal by ADEM includes letters from the following four facilities that are in the same industrial complex as Ascend: Decatur Energy Center, LLC ("LS Power"), INEOS Styrolution, Linde Gas Corporation, and Toray Chemical stating that these facilities would not allow an ambient air monitor on their property. This documentation is provided to support not including receptors on those properties in the modeling analysis.

7.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, the EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for Morgan County area around Ascend was based on a combined modeling assessment using AERMOD Model Version 16216r and characterization of air quality impacts from the DRR source and one other nearby source, Nucor Steel Decatur. The modeling considered actual emissions for Ascend and Nucor Steel, and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value is 188.85 µg/m³, equivalent to 72.11 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations TSD including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; a potentially inadequate receptor grid that may not appropriately characterize SO₂ impacts from the facilities on other facility’s property; and, inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 9 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 9. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Morgan County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
RTP Environmental	December 9, 2016	December 2016 RTP Environmental Modeling Report	Final Modeling Report
RTP Environmental	January 25, 2017	Revised Modeling	Updated modeling with AERMOD version 16216r
Alabama	July 2017	ADEM Response to EPA DRR Comments	Additional information regarding federal enforceability of nearby source

7.3. Assessment of New Air Quality Monitoring Data for the Morgan County Area

This factor considers the SO₂ air quality monitoring data in the area of Morgan County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

7.4. Assessment of New Technical Information for the Morgan County Area Addressing Ascend

Alabama has requested a designation of attainment for all the areas identified by the DRR. The EPA's intended unclassifiable designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designation designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; a potentially inadequate receptor grid that may not appropriately characterize SO₂ impacts from the facilities on other facility's property; and, inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

ADEM's October 19, 2017 submittal provided a response to comments to the air dispersion modeling issues EPA identified in the intended designations. The responses provided by ADEM indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA and that the background concentration issue was addressed sufficiently in previous correspondence. The submittal by ADEM includes letters from the following four facilities that are in the same industrial complex as Ascend: Decatur Energy Center, LLC ("LS Power"), INEOS Styrolution, Linde Gas Corporation, and Toray Chemical stating that these facilities would not allow an ambient air monitor on their property. This documentation supports ADEM's exclusion of receptors on these properties in the modeling analysis. This receptor placement approach is consistent with a March 20, 2015 EPA memorandum,⁸ which provides guidance for area designations for the 2010 SO₂ NAAQS, because the memorandum specifically recommends "placing receptors only in locations where a monitor could be placed." ADEM did not submit a revised modeling analysis for this area.

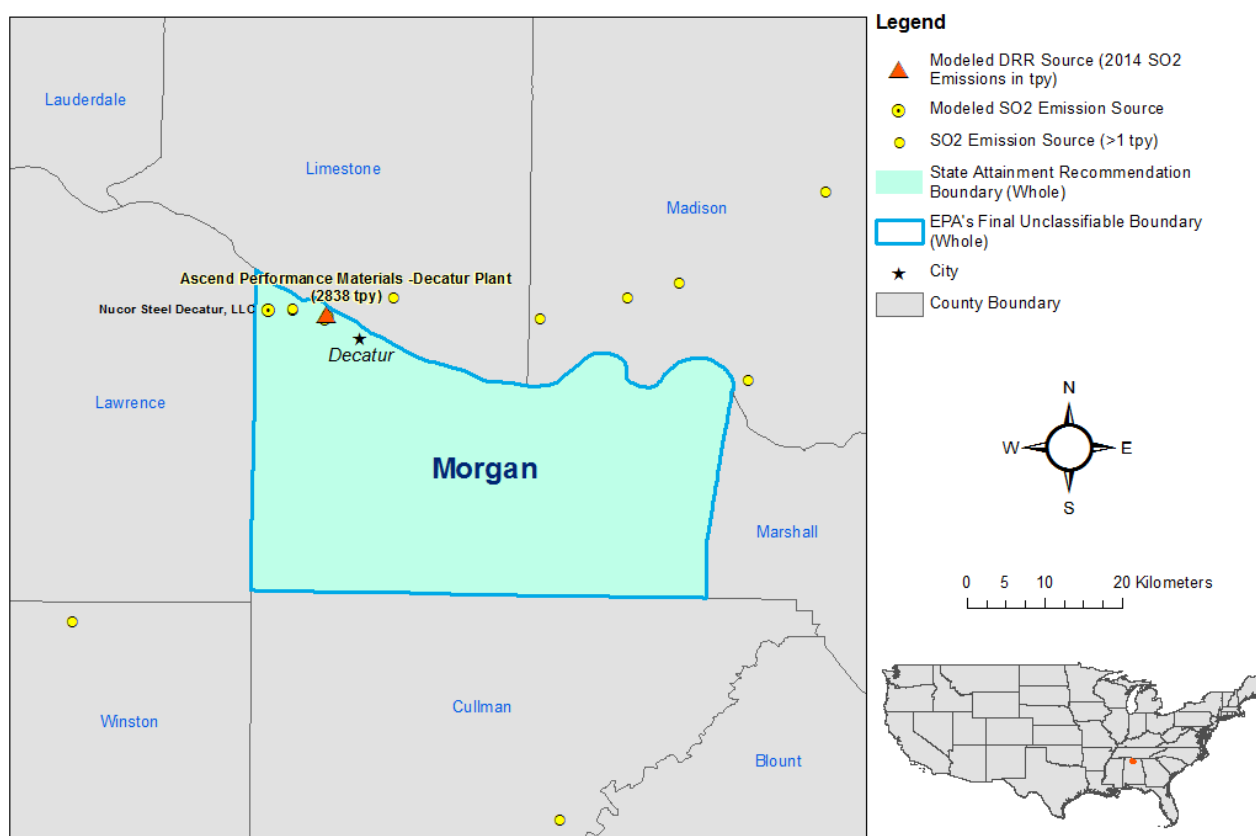
The EPA concurs that ADEM's October 19, 2017 response related to the placement of receptors resolves the receptor grid issue identified in the intended designation. The EPA believes the letters from three nearby industrial facilities asserting that air quality monitors are not allowed to be placed on their property supports the state's exclusion of those receptors from the modeling analysis for the Ascend facility. The EPA notes, however, two additional outstanding issues that have not been resolved notwithstanding the additional information provided by ADEM. The EPA is still unable to confirm that the procedures used for the processing of the meteorology are appropriate given that the AERMET files were not provided. No additional information was provided to address the inappropriate use of the Centreville SEARCH and Mammoth Cave ambient monitoring sites for background concentrations.

⁸ Memorandum dated March 20, 2015 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. This memorandum superseded earlier designations guidance and identified factors that the EPA intended to evaluate in determining whether areas are in violation of the 2010 SO₂ NAAQS. <https://www.epa.gov/sites/production/files/2016-06/documents/20150320so2designations.pdf>

7.5. Summary of Our Final Designation for the Morgan County Area

After careful evaluation of the State's recommendation and supporting information, as well as all available relevant information, the EPA is designating Morgan County in its entirety as unclassifiable for the 2010 SO₂ NAAQS because the modeling analysis and the additional information provided by Alabama does not provide sufficient information to determine whether the area meets or does meet the 1-hour SO₂ standard or contributes to a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of the entirety of Morgan County. Figure 6 shows the boundary of this final designated area.

Figure 6. Boundary of the Final Morgan County Unclassifiable Area



At this time, our final designations for the state only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

8. Technical Analysis of New Information for the Pike County Area

8.1. Introduction

The EPA must designate the Pike County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Pike County. The area includes Sanders Lead. In its January 2017 submission, Alabama recommended attainment for the entire state including Pike County and the area around Sanders Lead based in part on a combined modeling assessment based on allowable emissions. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Pike County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether area around Sanders Lead meets or does meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Pike County area in response to the air dispersion modeling issues the EPA identified in the intended designation intended designations. ADEM's new information included a page from the January 2017 modeling protocol that has information on the property boundary indicating that the property boundary is encircled by a chain link fence and that the facility is routinely patrolled and maintains security cameras at multiple key locations along the property boundary. Additionally, on November 20, 2017, ADEM provided a final air construction permit for Sanders Lead (issued November 17th) authorizing the installation of an ammonia injection scrubber to reduce SO₂ emissions. According to ADEM, the facility must complete installation by October 2019 including compliance with a new enforceable SO₂ emission limit of 315 lb/hr.

8.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, the EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for Pike County area around Sanders Lead was based on a combined modeling assessment using AERMOD Model Version 16216r and characterization of air quality impacts from the DRR source and no other nearby sources. The modeling considered allowable emissions for Sanders Lead and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value of 171.76 µg/m³, equivalent to 65.58 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA's intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designation intended designations including federally enforceability of emission reductions and whether the receptor grid is adequate to assess potential impacts in ambient air locations. Additional, detailed rationale, analyses, and

other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 10 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 10. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Pike County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	January 2017	Sanders Lead Modeling Report	Alabama Submittal
Alabama	May 2017	Revised modeling Report for Sanders Lead	None

*Alabama submitted modeling assessment prepared by AECOM.

8.3. Assessment of New Air Quality Monitoring Data for the Pike County Area

This factor considers the SO₂ air quality monitoring data in the area of Pike County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

8.4. Assessment of New Technical Information for the Pike County Area Addressing Sanders Lead

Alabama has requested a designation of attainment for all the areas identified by the DRR. The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations including federally enforceability of emission reductions and ambient air issues. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

ADEM's October 19, 2017 submittal provided a response to comments to the air dispersion modeling issues the EPA identified in the intended designation intended designations including federally enforceability of emission reductions and ambient air issues. In Attachment A of ADEM's submission, the state provided documentation that the Sanders Lead property boundary is encircled by a chain link fence and is routinely patrolled and maintains security cameras at multiple key locations along the property boundary. The EPA believes that the additional information provided by ADEM demonstrates that the general public does not have access to the property and that the property would not be considered ambient air. ADEM did not submit a revised modeling analysis for this area.

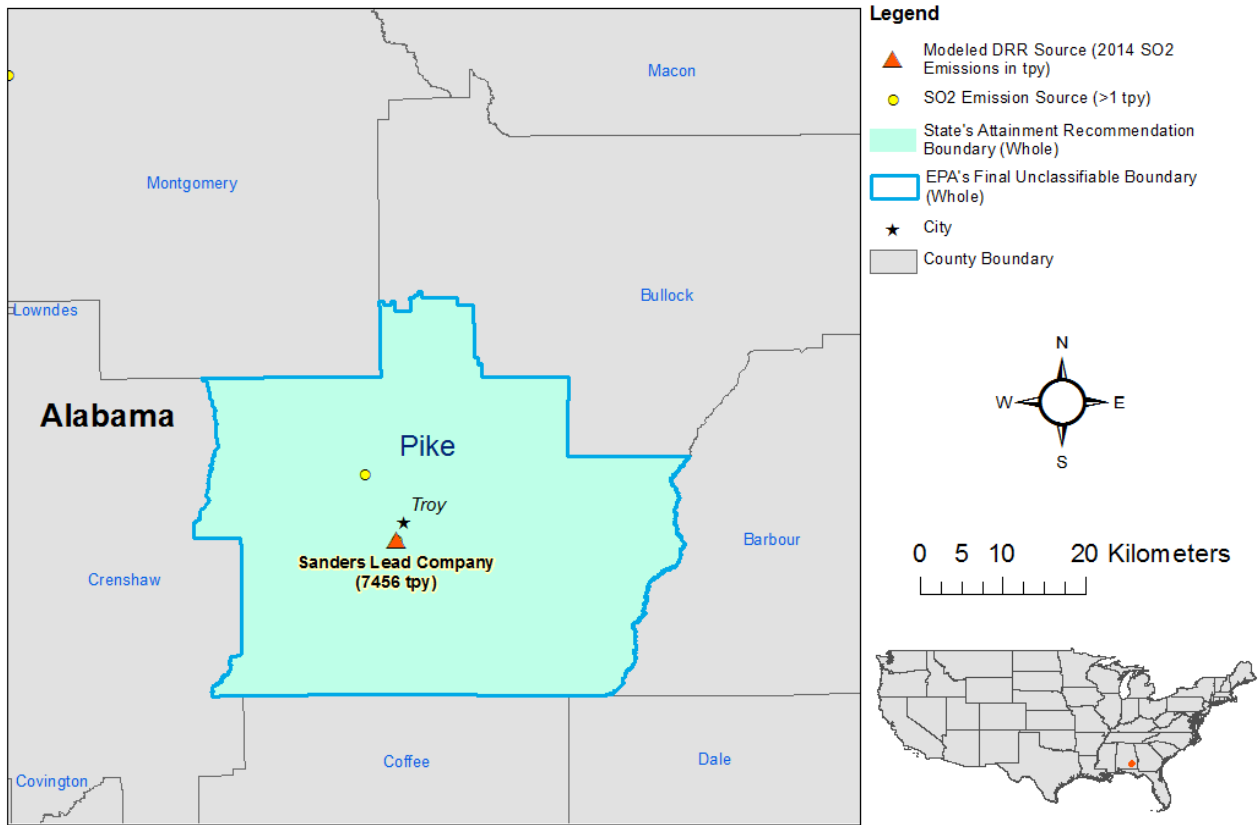
Regarding the federal enforceability of the emission rate used in the modeling, ADEM issued an air construction permit on November 20, 2017 authorizing Sanders Lead to install an ammonia injector scrubber. ADEM intends to issue a title V renewal operating permit no later than January 2018 establishing a compliance schedule requiring Sanders Lead to complete installation of the scrubber by October 2019 as well as compliance with 315 lb/hr SO₂ emission limit which demonstrates modeled attainment of the 2010 SO₂ NAAQS.⁹ The EPA notes, Sanders Lead won't be subject to the new allowable SO₂ emission limit until possibly October 2019, after the EPA is required to finalize designations. For the reasons already explained in Chapter 3 of our TSD for the Intended Designations, the EPA has therefore determined that since Sanders Lead's new allowable emission limit requiring installation of scrubbers and reducing SO₂ emissions will not be federally-enforceable against the source in time to inform our air quality assessment for the area as of the date of our final designation, we cannot rely on it at this time to support an attainment/unclassifiable designation. Furthermore, ADEM has not provided additional calculations, including actual hourly emissions data, demonstrating how the limit was determined. Therefore, the 315 lb/hr emission limit is not federally-enforceable and effective for Sanders Lead, and cannot at this time be relied upon for modeling of allowable emissions to show that the area is now meeting the NAAQS. Given that there is still an outstanding issue from the intended designation, the EPA affirms its prior assessment that there is not sufficient information to determine whether the area meets or does meet the 1-hour SO₂ standard or contributes to a nearby area that does not meet the NAAQS.

8.5. Summary of Our Final Designation for the Pike County Area

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA is designating Pike County in its entirety as unclassifiable for the 2010 SO₂ NAAQS because the modeling analysis and the additional information provided by Alabama does not provide sufficient information to determine whether the area meets or does meet the 1-hour SO₂ standard or contributes to a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of Pike County in its entirety. Figure 7 shows the boundary of this final designated area.

⁹ Emails from James Carlson, P.E., Chief Industrial Minerals Section, Energy Branch, Air Division, Alabama Department of Environmental Management to Beverly Banister, APTMD Air Director dated November 14th and 21st.

Figure 7. Boundary of the Final Pike County Unclassifiable Area



At this time, our final designations for the state only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

9. Technical Analysis of New Information for the Washington County Area

9.1. Introduction

The EPA must designate the Washington County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Washington County. The area includes PowerSouth Energy Cooperative – Charles R. Lowman Power Plant (Lowman). In its January 2017 submission, Alabama recommended attainment for the entire state including Washington County and the area around Lowman based in part on a modeling assessment using actual emissions. The EPA’s August 22, 2017 intended designations modified Alabama’s designation recommendation for the Washington County, AL area to unclassifiable, based on our determination that the state’s available information did not enable the EPA to determine whether the area around Lowman meets or does not meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

On October 5, 2017, the EPA received public comments from PowerSouth Energy Cooperative (PowerSouth) for the Washington County area surrounding the Lowman facility on a number of modeling issues the EPA identified in the intended designations. PowerSouth provided additional information regarding the ambient air boundary for the Lowman facility, provided letters from both Boise White Paper and PowerSouth (Lowman facility) stating that neither facility would allow ambient SO₂ monitoring equipment to be placed on their properties, indicated that ADEM would be providing information to the EPA on the processing of the met data, provided further justification to support the exclusion of the American Midstream Chatom facility from the modeling, and provided further justification that the emissions that were modeled for Lowman are appropriate despite being based on the current configuration and not the configuration during the years that were modeled (2012-2014).

The EPA received additional information from ADEM on October 19, 2017 for the Washington County area in response to the air dispersion modeling issues the EPA identified in the intended designations. ADEM’s responses indicate that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA. Additionally, ADEM’s new information included supporting documentation of the State’s receptor grid regarding property access for nearby facilities; additional information supporting Lowman’s facility boundary; additional documentation regarding the configuration at Lowman in response to the EPA’s comment on inappropriate emissions data being used in the modeling; and ADEM’s criteria for screening for additional sources to support the exclusion of the American Midstream Chatom facility.

9.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, the EPA recommended a designation of unclassifiable based on all available information, including modeling and all relevant monitoring information. Alabama's attainment recommendation for the Washington County area around Lowman was based on a combined modeling assessment using AERMOD Model Version 15181 and characterization of air quality impacts from the DRR source and one other nearby source, Boise White Paper. The modeling considered actual emissions for both modeled sources and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value is $188.96 \mu\text{g}/\text{m}^3$, equivalent to 72.15 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA's intended designation and associated boundaries were based on air dispersion modeling issues EPA identified in the intended designation intended designations including lack of adequate documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; a potentially inadequate receptor grid that may not appropriately characterize SO₂ impacts from the Lowman facility on Boise White Paper's property; lack of adequate information to demonstrate that the ambient air boundary at Lowman restricts access to the general public; inappropriate emissions data used for modeling the Lowman facility; and inadequate information to support the exclusion of a nearby source, the American Midstream Chatom facility. Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 11 identifies all the modeling assessments evaluated for the intended designation letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 11. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Washington County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	January 2017	PowerSouth Charles R. Lowman Power Plant Modeling Report	Alabama Submittal
Alabama	July 2017	ADEM Response to the EPA DRR Comments	Additional information regarding federal enforceability of Unit 1 at PowerSouth

*Alabama submitted modeling assessment prepared by Black & Veatch

9.3. Assessment of New Air Quality Monitoring Data for the Washington County Area

This factor considers the SO₂ air quality monitoring data in the area of Washington County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

9.4. Assessment of New Technical Information for the Washington County Area Addressing Lowman

Alabama requested a designation of attainment for all the areas identified by the DRR. The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designation designations including lack of adequate documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; a potentially inadequate receptor grid that may not sufficiently characterize SO₂ impacts from the Lowman facility on Boise White Paper’s property; lack of adequate information to demonstrate that the ambient air boundary at Lowman restricts access to the general public; inappropriate emissions data used for modeling the Lowman facility; and inadequate information to support not including a nearby source, the American Midstream Chatom facility.

ADEM submitted additional documentation on October 19, 2017 that the state maintains addresses the issues the EPA identified in the intended designations TSD. ADEM indicated that the meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA. However, the State did not provide the EPA with the actual AERMET files, therefore the EPA is still unable to confirm that the procedures used for the processing of the meteorology are appropriate.

ADEM provided letters from both PowerSouth (Lowman) and Boise White Paper the stating that neither facility would allow ambient SO₂ monitoring equipment to be placed on their properties. The letters support ADEM's exclusion of receptors on these properties in the modeling analysis, with respect to assessing the impacts of SO₂ emissions from each source on the other source. This receptor placement approach is consistent with a March 20, 2015 EPA memorandum,¹⁰ which provides guidance for area designations for the 2010 SO₂ NAAQS, because the memorandum specifically recommends "placing receptors only in locations where a monitor could be placed."

ADEM provided an update of Section 2.8.1 Facility Property of the Modeling Report that contains additional information regarding Lowman's facility property. The information states that the ambient air boundary follows the facility's property line that is bounded to the north and west by heavy dense forested and swamp lands that restrict public access to the facility. The facility is bounded to the east and southern edges by the Tombigbee River and the river's bank is steep with heavy vegetation in multiple areas along the facility's property. PowerSouth has placed "No Trespassing" signs along the boundary that borders the river, heavy forested areas and marsh/swamp areas. The updated information also indicates that all areas of the facility are under regular surveillance in accordance with the site's U.S. Department of Homeland Security Site Security Plan. The Site Security Plan includes video cameras operating at all times, an intruder alarm, and specific training for security employees regarding trespassers. Alabama has determined that the Site Security Plan is sufficient to prevent unauthorized access to the facility. The EPA agrees that the additional information provided by ADEM sufficiently addresses the previous concern that the general public could access the facility property.

ADEM's October 19, 2017 submission indicates that the documentation ADEM provided in July associated with the configuration at Lowman is sufficient to address the issue of inappropriate emissions data used for modeling the Lowman facility. The intended designation TSD indicated that this information was still being assessed by the EPA. The EPA has now had time to fully assess the additional information provided by ADEM on July 18, 2017, which contains a letter from PowerSouth regarding the current configuration at Lowman. The letter, dated April 19, 2017, indicated that as part of PowerSouth's compliance plan for the Mercury and Air Toxics Standards, Lowman officially ceased operations of the Unit 1 Stack MS001 on April 15, 2016. Plant personnel physically blank plated and air gapped duct work from Unit 1 to Stack MS001.

¹⁰ Memorandum dated March 20, 2015 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. This memorandum superseded earlier designations guidance and identified factors that the EPA intended to evaluate in determining whether areas are in violation of the 2010 SO₂ NAAQS. <https://www.epa.gov/sites/production/files/2016-06/documents/20150320so2designations.pdf>

Unit 1 can no longer bypass the JBR scrubber which reduces SO₂ emissions in excess of 90%. All Unit 1 flue gas emissions are now exhausted and monitored through common stack CS004 with Unit 2. The operational changes have been updated in PowerSouth's monitoring plan in EPA's ECMPS database. As mentioned in the Chapter 3 of the intended designation TSD and also based on the EPA's assessment of ADEM's additional information, the EPA believes modeling the units in the current configuration while using three years of past actual emissions is still inappropriate. Since three years of past actual emissions were used for the modeling, they must reflect the actual configuration at the time the emissions occurred from 2012-2014. Since ADEM has not provided additional information that would resolve this issue, it remains an outstanding issue.

Finally, in the intended designations TSD, the EPA indicated that there was inadequate information to support not including a nearby source, the American Midstream Chatom facility. EPA commented that based upon the high level of emissions from the American Midstream Chatom facility (1,141 tons in 2014), the potential impacts from this facility should be further investigated. ADEM did not provide further analysis to support the exclusion of this facility. Rather, ADEM provided the rationale for excluding this facility which was based solely on this distance from the DRR facility. Since the American Midstream Chatom facility was greater than 20 km away from Lowman (46 km west of Lowman in Washington County), ADEM did not further investigate the facility's potential impacts.

In conclusion, ADEM's October 19, 2017 submission did resolve two of the EPA's previous comments by providing additional documentation to support excluding receptors over the Boise White Paper facility and by providing additional documentation on Lowman's property boundary supporting that the general public would not have access to the property. However, ADEM did not provide the AERMET files and did not resolve the comments on the inappropriateness of Lowman's modeled emissions and the exclusion of a nearby source; therefore, those issues remain unresolved at this time.

9.5. Other Additional Information Relevant to the Designations for the Washington County Area

On October 5, 2017, the EPA received public comments from PowerSouth for the Washington County area surrounding the Lowman facility on a number of modeling issues the EPA identified in the intended designations. PowerSouth provided additional information regarding the ambient air boundary for the Lowman facility; provided letters from both Boise White Paper and PowerSouth (Lowman facility) stating that neither facility would allow ambient SO₂ monitoring equipment to be placed on their properties; indicated that ADEM would be providing information to the EPA on the processing of the met data; provided further justification to support the exclusion of the American Midstream Chatom facility from the modeling; and provided further justification that the emissions that were modeled for Lowman are appropriate despite being based on the current configuration and not the configuration during the years that were modeled (2012-2014).

The additional information that PowerSouth provided regarding the property boundary indicates that in addition to terrain barriers (heavily forested areas and swamp lands to the north and west and the Tombigbee River to the east and south) the facility is under regular surveillance in accordance with the sites' U.S. Department of Homeland Security Site Security Plan. This plan includes video cameras operating at all times, an intruder alarm, and specific training for security employees regarding trespassers. PowerSouth indicates that the facility is adequately controlled/patrolled to prevent access to the general public. The EPA agrees that the additional information provided by PowerSouth supports that the property boundary sufficiently restricts public access.

PowerSouth provided letters from both PowerSouth (Lowman) and Boise White Paper indicating that neither facility would allow ambient SO₂ monitoring equipment to be placed on their properties. These letters state because no actual monitors would be placed within the ambient air boundary of either facility, the modeling receptors were appropriately excluded from the controlled and/or patrolled areas of both facilities. As discussed in Section 9.4 above, the EPA agrees that these letters provide adequate justification for excluding receptors over the Boise White Paper facility property. This comment has been resolved and is no longer an outstanding issue.

PowerSouth indicated that ADEM would be providing additional information to the EPA on the processing of the AERMET surface and upper air meteorology files used in the modeling analysis. However, ADEM did not provide the AERMET files that the EPA requested in the intended designation TSD and this remains an outstanding comment.

PowerSouth indicated that constant values were used for exhaust temperatures for the Lowman units because the units exhaust through a wet scrubber that limits the exit temperatures. PowerSouth states that even though the Lowman Plant utilizes CEMS, that the CEMS information does not include temperature data; therefore, the modeling analysis used temperatures from stack test data, which was a constant temperature. Additionally, PowerSouth indicated that the four emergency generators were not modeled because they do not have continuous enough emissions to contribute significantly to the annual distribution of the maximum daily 1-hour concentrations and that the generators typically only run for reliability testing. The EPA agrees that PowerSouth has provided adequate justification for using constant exhaust temperatures and excluding the emergency generators from the modeling analysis.

PowerSouth indicates that the American Midstream Chatom facility was not included in the modeling analysis because it is located 46 km west of Lowman and is not likely to have the potential to cause concentration gradient impacts within the area of analysis. PowerSouth restates ADEM's analysis of nearby emissions sources (developing a Q/d for all sources within 20 km of Lowman Plant). PowerSouth also indicated that the American Midstream Chatom facility is over twice the distance ADEM deemed a reasonable cutoff for the area and that the maximum predicted value occurred just north of the Lowman facility. Finally, PowerSouth discusses that

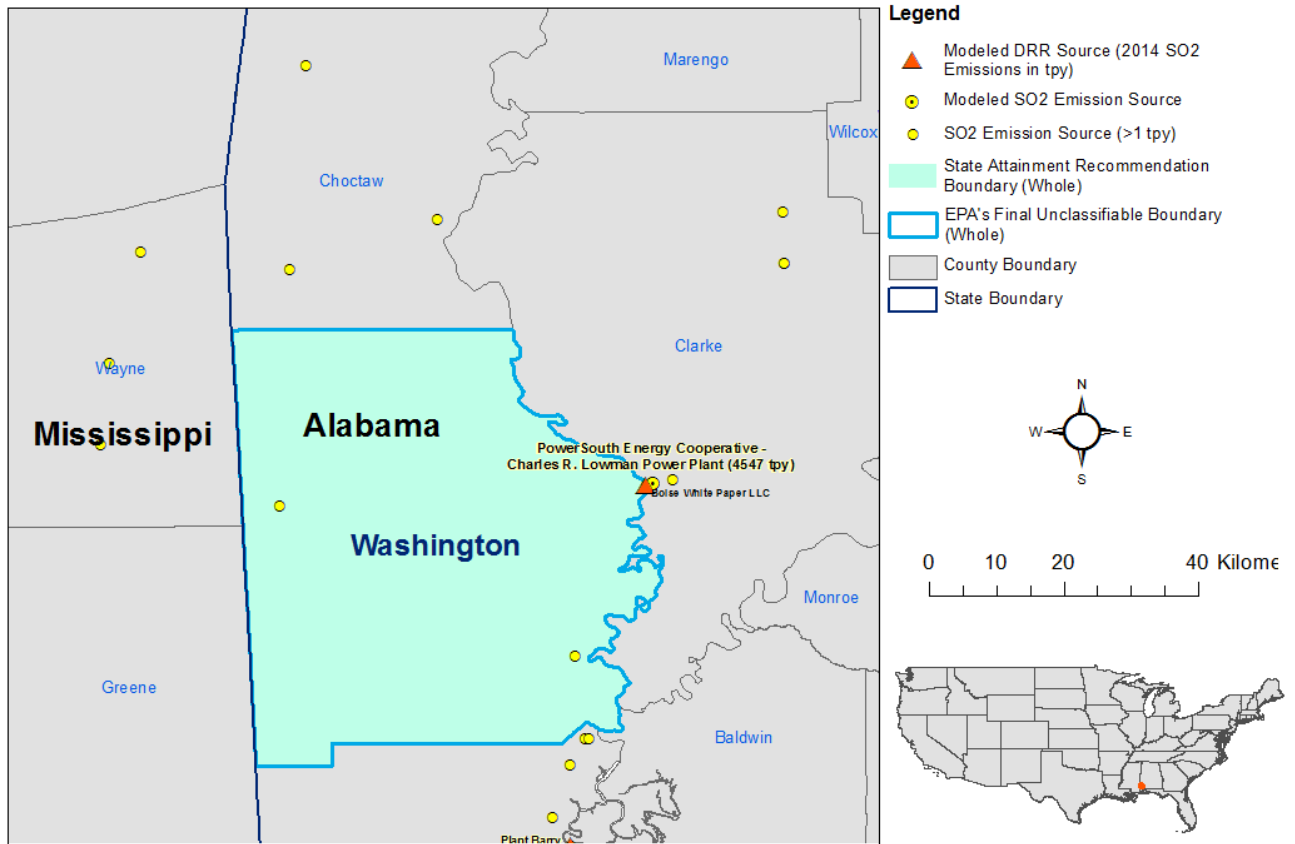
the units at Lowman were modeled in their current configuration using three years of past actual emissions data because adjusting the emissions data to reflect the current configuration provides the most accurate characterization of emissions for the area. PowerSouth installed a permanent damper within the Unit 1 exhaust duct in 2016, which has resulted in exhaust gases from Unit 1 flowing through CS004, the exhaust stack shared with Unit 2. The letter from PowerSouth goes on to say that because the emissions can no longer be routed through the old Unit 1 stack, PowerSouth adjusted the emissions data to reflect the current and permanent configuration in order to most accurately characterize relevant emissions from Unit 1. The EPA disagrees that this additional information provides adequate justification for excluding the nearby source because no information was provided that the background concentration used in the modeling adequately accounts for potential impacts from the American Midstream Chatom facility. Also, the EPA disagrees with the modeling procedure which includes Lowman with past actual emissions and the current physical stack configuration. Therefore, for the reasons explained in Chapter 3 of our Intended Designations TSD, these two comments remain outstanding.

In conclusion, PowerSouth's October 5, 2017 submission resolved the EPA's comments on Lowman's property boundary, excluding receptors over the Boise White Paper property, using constant exhaust temperatures for Lowman, and excluding emergency generators from the modeling analysis. However, EPA still has the following outstanding issues that remain unresolved: lack of adequate documentation to support the AERMET processing used to generate the surface and upper air meteorology files; inappropriate emissions data used for modeling the Lowman facility; and inadequate information to support not including a nearby source, the American Midstream Chatom facility.

9.6. Summary of Our Final Designation for the Washington County Area

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA is designating Washington County in its entirety as unclassifiable for the 2010 SO₂ NAAQS because the modeling analysis and the additional information provided by Alabama does not provide sufficient information to determine whether the area meets or does meet the 1-hour SO₂ standard or contributes to a nearby area that does not meet the NAAQS. Specifically, the boundaries are comprised of Washington County in its entirety. Figure 8 shows the boundary of this final designated area.

Figure 8. Boundary of the Final Washington County Unclassifiable Area



At this time, our final designations for the state only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.

10. Technical Analysis of New Information for the Shelby County Area

10.1. Introduction

The EPA must designate the Shelby County area by December 31, 2017, because the area has not been previously designated and Alabama has not installed and begun timely operation of a new, approved SO₂ monitoring network to characterize air quality in the vicinity of any source in Shelby County. The area includes Ernest C. Gaston Electric Generating Plant (Plant Gaston). In its January 2017 submission, Alabama recommended attainment for the entire state including Shelby County and the area around Plant Gaston based in part on a combined modeling assessment using a mix of actual and allowable emissions. The EPA's August 22, 2017 intended designations modified Alabama's designation recommendation for the Shelby County, AL area to unclassifiable, based on our determination that the state's available information did not enable the EPA to determine whether the area around Plant Gaston meets or does not meet the 1-hour SO₂ standard or is contributing to a nearby area that does not meet the standard.

The EPA received additional information from ADEM on October 19, 2017 for the Shelby County area in response to the air dispersion modeling issues EPA identified in the intended designation intended designations. ADEM's new information included brief statements addressing the processing of the AERMET and AERSURFACE meteorological data, a statement regarding the appropriateness of the Centreville and Mammoth Cave as ambient background monitoring sites, additional information on the PTE limit for firing natural gas in Plant Gaston Units 1-4, additional information on the emission rate for the nearby source Resolute Coosa Pines, and the rationale behind not including the L'hoist facility in the modeling analysis.

10.2. Summary of Information Reviewed in the TSD for the Intended Round 3 Area Designations

In the intended designation letter notification to the governor of Alabama, and further explained in Chapter 3 of the TSD for the intended Round 3 area designations, the EPA proposed a designation of unclassifiable based on all available information, including modeling information and all relevant monitoring information. Alabama's attainment recommendation for Shelby County area around Plant Gaston was based on a combined modeling assessment using AERMOD Model Version 15181 and characterization of air quality impacts from Plant Gaston and one other nearby source, Resolute Coosa Pines. The modeling considered actual emissions for Plant Gaston Unit 5 and Combustion Turbine and allowable emissions for Plant Gaston Units 1-4 nature fired gas boilers and the nearby source, Resolute Coosa Pines, and background concentration data from the Mammoth Cave monitor in Kentucky. The modeled 1-hour design value is 136.36 µg/m³, equivalent to 52.07 ppb which is below the level of the 2010 SO₂ NAAQS.

The EPA's intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; no

documentation to support the State’s use of AERSURFACE to best represent surface characteristics; inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites; inappropriate use of the allowable PTE limit for firing natural gas in Plant Gaston Units 1-4; no documentation regarding how the allowable emission rate was calculated for the Resolute Coosa Pines nearby source; and potential contribution to an area that may not be meeting the NAAQS (the area around the L’hoist facility that will be addressed in the Round 4 designations). Additional, detailed rationale, analyses, and other information supporting our intended designation for this area can be found in the TSD for the Intended Round 3 Area Designations for Alabama, Chapter 3.

The following Table 12 identifies all the modeling assessments evaluated for the intended designations letters and discussed in the TSD for the intended Round 3 area designations. Additional details can be found in the TSD for the Intended Round 3 Area Designations, Chapter 3.

Table 12. Modeling Assessments Evaluated in the TSD for the Intended Designation for the Shelby County Area

Organization Submitting Assessment	Date of the Assessment	Identifier used in the TSD for the Intended Round 3 Area Designations, Chapter 3	Distinguishing or Otherwise Key Features
Alabama*	January 2017	Plant Gaston Modeling Report	Final Modeling Report

*Alabama submitted modeling assessment prepared by AECOM.

10.3. Assessment of New Air Quality Monitoring Data for the Shelby County Area

This factor considers the SO₂ air quality monitoring data in the area of Shelby County. Our TSD for the intended area designations considered available data through 2016 for no monitoring sites. We do not have certified data for any additional complete calendar years at any site, and we have no new monitoring information of any other type that warrants revising our prior analysis of available monitoring data.

10.4. Assessment of New Technical Information for the Shelby County Area Addressing Plant Gaston

Alabama has requested a designation of attainment for all the areas identified by the DRR. The EPA’s intended designation and associated boundaries were based on air dispersion modeling issues the EPA identified in the intended designations TSD including no documentation to support the AERMET inputs used to generate the surface and upper air meteorology files; no

documentation to support the State's use of AERSURFACE to best represent surface characteristics; inappropriate use of background concentrations from the Centreville SEARCH and Mammoth Cave ambient monitoring sites; inappropriate use of the allowable PTE limit for firing natural gas in Plant Gaston Units 1-4; no documentation regarding how the allowable emission rate was calculated for the Resolute Coosa Pines nearby source; and potential contribution to a Round 4 DRR source.

ADEM submitted additional documentation on October 19, 2017 that the State felt addressed the issues the EPA identified in the intended designations TSD. ADEM's new information included brief statements addressing the processing of the AERMET and AERSURFACE meteorological data and a statement regarding the appropriateness of the Centreville and Mammoth Cave as ambient monitoring sites. ADEM indicated that meteorological data was processed consistent with the newest version of AERMET guidelines and in consultation with the EPA; that an AERSURFACE analysis was performed in accordance with the newest version of AERSURFACE User's Guide and provided by ADEM to the facility; and that the background concentration issue was addressed sufficiently in previous correspondence. The EPA is still unable to confirm that the procedures used for the processing of the meteorology are appropriate given that ADEM did not provide the AERMET and AERSURFACE files. Since no new information was provided by ADEM on the background monitor issue, this remains an outstanding issue as well.

The additional information on the PTE limit for firing natural gas in Plant Gaston Units 1-4 states that Alabama Power has indicated that natural gas is the primary fuel and that coal will be utilized for only emergency purposes. Alabama Power has a permit that limits their coal usage to less than 15% on an annual basis of 10 percent on a three-year average. A page from the permit was provided along with ADEM's submittal. In the intended designations TSD, the EPA compared the emissions rates used in the modeling to the emissions in the EPA's Clean Air Market's Division (CAMD) database. CAMD shows that Units 1-4 emitted a total of 49,511 tons in 2012, 30,106 tons in 2013, 29,274 tons in 2014, 17,225 tons in 2015, and 1,806 tons of SO₂ in 2016. While there is a downward trend in emissions and the emissions have decreased substantially in 2015 and 2016, these values are much higher than the modeled PTE rate of 28.4 tpy that is based upon firing natural gas. It is also important to note that these units switched their listed primary fuel type to natural gas starting in 2016 (coincident with significant reductions in emissions from previous years); however, coal is still listed as a secondary fuel type and is clearly still being used at times. When using allowable, PTE emissions in the modeling, the emissions rate should reflect the maximum hourly allowable emissions limit. Despite the additional information that was provided, the EPA still finds that the emissions rate used in the modeling for Units 1-4 appears to be inappropriate and therefore causes uncertainty in the modeling results and conclusions.

Regarding the emission rate for the nearby source Resolute Coosa Pines, ADEM indicated that on August 13, 2015, Resolute Coosa Pines conducted an SO₂ emissions test and the resultant emission rate was 3.8 lb./hr. and that ADEM determined the value to be a representative

maximum annual for the source in question. The emissions rate for Resolute Coosa Pines was based on a stack test from 2015; however, the modeling was done using emissions data from years 2012-2014. ADEM did not provide information to support that this emission rate is representative of the time period that was modeled.

Alabama chose different pathways to characterize the SO₂ impacts for the two DRR sources in Shelby County. For L'hoist, Alabama chose to deploy a new SO₂ air quality monitor in the maximum area of concentration to inform SO₂ designations by December 31, 2020. For Plant Gaston, air dispersion modeling was chosen to characterize SO₂ impacts to inform final designations by December 31, 2017. Alabama's modeling analysis for Plant Gaston included 2012-2014 actual emissions for the DRR source and allowable PTE emissions for the nearby non-DRR source Resolute Coosa Pines in neighboring Talladega County. ADEM indicated that L'hoist was not considered in the modeling analysis for Plant Gaston based on the distance of L'hoist from Plant Gaston, approximately 35 km. ADEM only looked at SO₂ emitting sources within 20 km of the DRR source. The EPA believes ADEM has not provided additional information that justifies excluding L'hoist from the modeling analysis for Plant Gaston, because no specific information was provided that the background concentration used in the modeling adequately accounts for potential impacts from the L'hoist facility.

In this final action, the EPA is clarifying that it interprets the phrase "does not indicate the area contributes to ambient air quality in a nearby area that does not meet the NAAQS" within the definition of "attainment/unclassifiable area" (refer to Chapter 1 for more information). This clarification, in turn, reverses the EPA position in Alabama's intended TSD where the EPA posited that the modeling was deficient due to a lack of available information regarding whether Plant Gaston contributes to a NAAQS violation in the vicinity of the L'hoist facility.

In conclusion, ADEM's October 19, 2017 submission did not resolve any of the issues identified in the intended designation TSD. ADEM did not provide the AERMET or AERSURFACE files and did not provide additional information on the background monitor. The information on the PTE limit for Plant Gaston Units 1-4 does not account for the discrepancy between the PTE rate in the modeled and the emissions in the CAMD database. The emissions rate for Resolute Coosa Pines was based on a stack test from 2015; however, the modeling was done using emissions data from years 2012-2014. ADEM did not provide information to support that this emission rate is representative of the time period that was modeled.

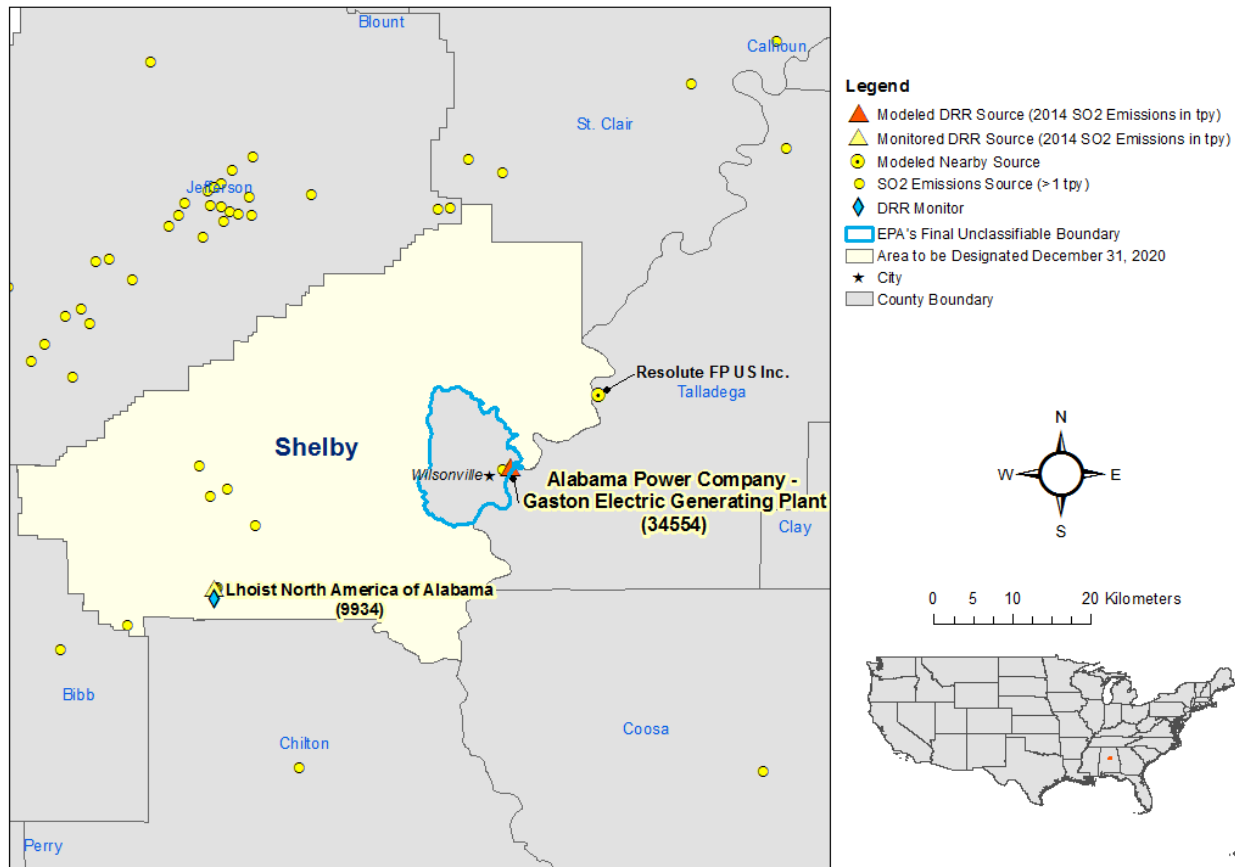
10.5. Summary of Our Final Designation for the Shelby County Area

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, the EPA is designating a portion of Shelby County around Plant Gaston as unclassifiable (based on census block groups) for the 2010 SO₂ NAAQS because the EPA assessment of the 1-hour SO₂ DRR AERMOD modeling for Plant Gaston finds that the modeling does not demonstrate that the area meets or does not meet the 1-hour SO₂ NAAQS and is not contributing to a nearby area that may not meet the NAAQS. Specifically, the unclassifiable boundary is comprised of a portion of Shelby County contained within the 2016 U.

S Census Block Groups 011170308001 and 011170308002. The remaining portion of Shelby County including the L'hoist facility the DRR monitor will be designated by December 31, 2020.

Figure 9 shows the boundary of this final designated area.

Figure 9. Boundary of the Final Shelby County Unclassifiable Area



At this time, our final designations for the State only apply to this area and the other areas presented in this chapter. The EPA intends in a separate action to evaluate and designate all remaining undesignated areas in Alabama by December 31, 2020.