Technical Support Document:

Chapter 4
Intended Round 4 Area Designations for the 2010 1-Hour SO_2 Primary National Ambient Air Quality Standard for Maryland and West Virginia

1. Summary

Pursuant to section 107(d) of the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA, we, or us) must designate areas as either "nonattainment," "attainment," or "unclassifiable" for the 2010 1-hour sulfur dioxide (SO_2) primary national ambient air quality standard (NAAQS) (2010 SO_2 NAAQS). The CAA defines a nonattainment area as an area that does not meet the NAAQS or that contributes to a nearby area that does not meet the NAAQS. An attainment area is defined by the CAA as any area that meets the NAAQS and does not contribute to a nearby area that does not meet the NAAQS. Unclassifiable areas are defined by the CAA as those that cannot be classified on the basis of available information as meeting or not meeting the NAAQS. See CAA section 107(d)(1)(A)(i)-(iii).

In this action, EPA defines a nonattainment area as an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA has determined either: (1) does not meet the 2010 SO_2 NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS. An attainment/unclassifiable area is defined as an area that, based on available information including (but not limited to) appropriate monitoring data and/or modeling analyses, EPA has determined meets the NAAQS and does not likely contribute to ambient air quality in a nearby area that does not meet the NAAQS. An unclassifiable area is defined as an area for which the available information does not allow EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.

EPA is under a December 31, 2020, deadline to designate all remaining undesignated areas as required by the U.S. District Court for the Northern District of California.[1] This deadline is the final of three deadlines established by the court for EPA to complete area designations for the 2010 SO_2 NAAQS. The remaining undesignated areas are: 1) those areas which, under the court order, did not meet the criteria that required designation in Round 2 and also were not required to be designated in Round 3 due to installation and operation of a new SO_2 monitoring network by January 2017 in the area meeting EPA's specifications referenced in EPA's SO_2 Data Requirements Rule (DRR)[2], and 2) those areas which EPA has not otherwise previously designated for the 2010 SO_2 NAAQS. EPA previously issued guidance on how to appropriately

[1] *Sierra Club v. McCarthy*, No. 3-13-cv-3953 (SI) (N.D. Cal. Mar. 2, 2015).
[2] *See* 80 FR 51052 (August 21, 2015), codified at 40 CFR part 51 subpart BB.

and sufficiently monitor ambient air quality in the "SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document" (SO_2 NAAQS Designations Monitoring TAD).[3]

In previous final actions, EPA has issued designations for the 2010 SO_2 NAAQS for most areas of the country.[4] As mentioned, EPA is under a deadline of December 31, 2020, to designate the areas addressed in this technical support document (TSD) as required by the U.S. District Court for the Northern District of California. We are referring to the set of designations being finalized by the deadline of December 31, 2020, as "Round 4" or the final round of the designations process for the 2010 SO_2 NAAQS. After these Round 4 designations are completed, there will be no remaining undesignated areas for the 2010 SO_2 NAAQS.

This TSD addresses designations for all remaining undesignated areas in Maryland and a portion of West Virginia for the 2010 SO_2 NAAQS. Areas with monitored violations of the NAAQS are explicitly evaluated in this TSD. As explained in Section 3 of this document, there is a source located in Allegany County, Maryland, on the border with Mineral County, West Virginia. Therefore, EPA is addressing this multistate area in a single TSD.

Maryland submitted its first recommendation regarding designations for the 2010 1-hour SO_2 NAAQS on April 19, 2011 and recommended that all counties, including Allegany County, be unclassifiable. The state submitted updated air quality analysis and updated recommendations several times between November 20, 2015 and EPA's final action designating areas for Round 2 on July 12, 2016. (*See* 81 FR 45039.) Maryland updated its recommendations for EPA's Round 3 designations on December 19, 2016. (*See* 83 FR 1098.) Maryland's updated recommendations for Rounds 2 and 3 did not change its recommendation of unclassifiable for Allegany County. Finally, the state submitted updated recommendations on May 29, 2020 to address more recent air quality monitoring data for monitors that were installed pursuant the DRR, and to request that EPA designate Allegany County attainment. In our intended designations, we have considered all the submissions from the state, except where a later submission indicates that it replaces an element of an earlier submission.

West Virginia submitted its first recommendation regarding designations for the 2010 1-hour SO_2 NAAQS on May 23, 2011. In that submittal, West Virginia recommended 34 counties be designated attainment, 16 counties, including Mineral County, be designated unclassifiable, and 5 counties be designated nonattainment. West Virginia submitted updated recommendations on January 22, 2013 which did not change its recommendation of unclassifiable for Mineral County. Finally, the state submitted updated recommendations on June 16, 2020 to address more recent air quality monitoring data for monitors that were installed pursuant the DRR, and to request that EPA designate Mineral County attainment. In our intended designations, we have considered all the submissions from the state, except where a later submission indicates that it replaces an element of an earlier submission.

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[3] https://www.epa.gov/sites/production/files/2016-04/documents/so2monitoringtad.pdf

[4] Most areas of the U.S. were previously designated in actions published on August 5, 2013 (78 FR 47191), July 12, 2016 (81 FR 45039), December 13, 2016 (81 FR 89870), January 9, 2018 (83 FR 1098) and April 5, 2018 (83 FR 14597). EPA is not reopening these previous designation actions in this current Round 4 of designations under the 2010 SO_2 NAAQS, except where specifically discussed.

Table 1 identifies EPA's intended Round 4 designations and the areas in Maryland and West Virginia to which they would apply. It also lists Maryland's and West Virginia's current recommendations. EPA intends to designate these areas by December 31, 2020, through an assessment and characterization of air quality based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data from January 2017 forward, pursuant to the DRR; however, other available evidence and supporting information, such as air dispersion modeling in certain situations, may also be considered.[5]

Table 1. Summary of EPA's Intended Designations and the Designation Recommendations by Maryland and West Virginia

Area/County	**Maryland's Recommended Area Definition**	**Maryland's Recommended Designation**	**EPA's Intended Area Definition**	**EPA's Intended Designation**
Allegany County	Allegany County	Attainment	Allegany County	Attainment/ Unclassifiable
Area/County	**West Virginia's Recommended Area Definition**	**West Virginia's Recommended Designation**	**EPA's Intended Area Definition**	**EPA's Intended Designation**
Mineral County	Mineral County	Attainment	Mineral County	Attainment/ Unclassifiable

Areas that EPA previously designated in Round 1 (*see* 78 FR 47191), Round 2 (*see* 81 FR 45039 and 81 FR 89870), and Round 3 (*see* 83 FR 1098 and 83 FR 14597) are not affected by the designations in Round 4 unless otherwise noted.

[5] Detailed SO_2 monitor information may be found in either the 2016 or 2017 ambient monitoring network plans, or associated addenda, for each state.

2. General Approach and Schedule

An updated designations guidance document was issued by EPA through a September 5, 2019, memorandum from Peter Tsirigotis, Director, U.S. EPA, Office of Air Quality Planning and Standards, to Regional Air Division Directors, U.S. EPA Regions 1-10.[6] To better reflect the Round 4 designations process, this memorandum supplements, where necessary, prior designations guidance documents on area designations for the 2010 primary SO_2 NAAQS issued on March 24, 2011, March 20, 2015, and July 22, 2016. This memorandum identifies factors that EPA intends to evaluate in determining whether areas are in violation of the 2010 SO_2 NAAQS. The document also contains the factors that EPA intends to evaluate in determining the boundaries for all remaining areas in the country. These factors include: 1) air quality characterization via ambient monitoring and/or dispersion modeling results; 2) emissions-related data; 3) meteorology; 4) geography and topography; and 5) jurisdictional boundaries.

In EPA's September 2019 memorandum, we note that Round 4 area designations will be based primarily on ambient monitoring data, including data from existing and new EPA-approved monitors that have collected data at least from January 2017 forward, pursuant to the DRR. In addition, EPA may evaluate air dispersion modeling submitted by state air agencies for two specific circumstances. First, states may submit air dispersion modeling to support the geographic extent of a nonattainment boundary. Second, states may submit air dispersion modeling to demonstrate that new permanent and federally enforceable SO_2 emissions limits provide for attainment of the NAAQS and represent a more accurate characterization of current air quality at the time of designation than does monitoring of past air quality.

EPA does not plan to revise this intended designations TSD after consideration of state and public comment on our intended designation. A separate final TSD will be prepared as necessary to document how we have addressed such comments in the final designations.

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

1) 2010 SO_2 NAAQS – The primary NAAQS for SO_2 promulgated in 2010. This NAAQS is 75 ppb, based on the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations. See 40 CFR 50.17.
2) Design Value - a statistic computed according to the data handling procedures of the NAAQS (in 40 CFR part 50 Appendix T) that, by comparison to the level of the NAAQS, indicates whether the area is violating the 2010 SO_2 NAAQS.
3) Intended designated nonattainment area –an area that, based on available information including (but not limited to) monitoring data and/or appropriate modeling analyses, EPA intends to determine either: (1) does not meet the 2010 SO_2 NAAQS, or (2) contributes to ambient air quality in a nearby area that does not meet the NAAQS.
4) Intended designated attainment/unclassifiable area – an area that, based on available information including (but not limited to) appropriate monitoring data and/or appropriate modeling analyses, EPA intends to determine meets the 2010 SO_2 NAAQS and does not likely contribute to ambient air quality in a nearby area that does not meet the NAAQS.

[6] https://www.epa.gov/sites/production/files/2019-09/documents/round_4_so2_designations_memo_09-05-2019_final.pdf

5) Intended designated unclassifiable area – an area for which the available information does not allow EPA to determine whether the area meets the definition of a nonattainment area or the definition of an attainment/unclassifiable area.
6) Modeled violation – a modeled design value impact above the 2010 SO_2 NAAQS demonstrated by air dispersion modeling.
7) Recommended attainment area – an area that a state, territory, or tribe has recommended that EPA designate as attainment.
8) Recommended nonattainment area – an area that a state, territory, or tribe has recommended that EPA designate as nonattainment.
9) Recommended unclassifiable area – an area that a state, territory, or tribe has recommended that EPA designate as unclassifiable.
10) Recommended attainment/unclassifiable (or unclassifiable/attainment) area – an area that a state, territory, or tribe has recommended that EPA designate as attainment/unclassifiable (or unclassifiable/attainment).
11) Violating monitor – an ambient air monitor meeting 40 CFR parts 50, 53, and 58 requirements whose valid design value exceeds 75 ppb, based on data analysis conducted in accordance with Appendix T of 40 CFR part 50.
12) We, our, and us – these refer to EPA.

3. Technical Analysis for Allegany County, MD and Mineral County, WV

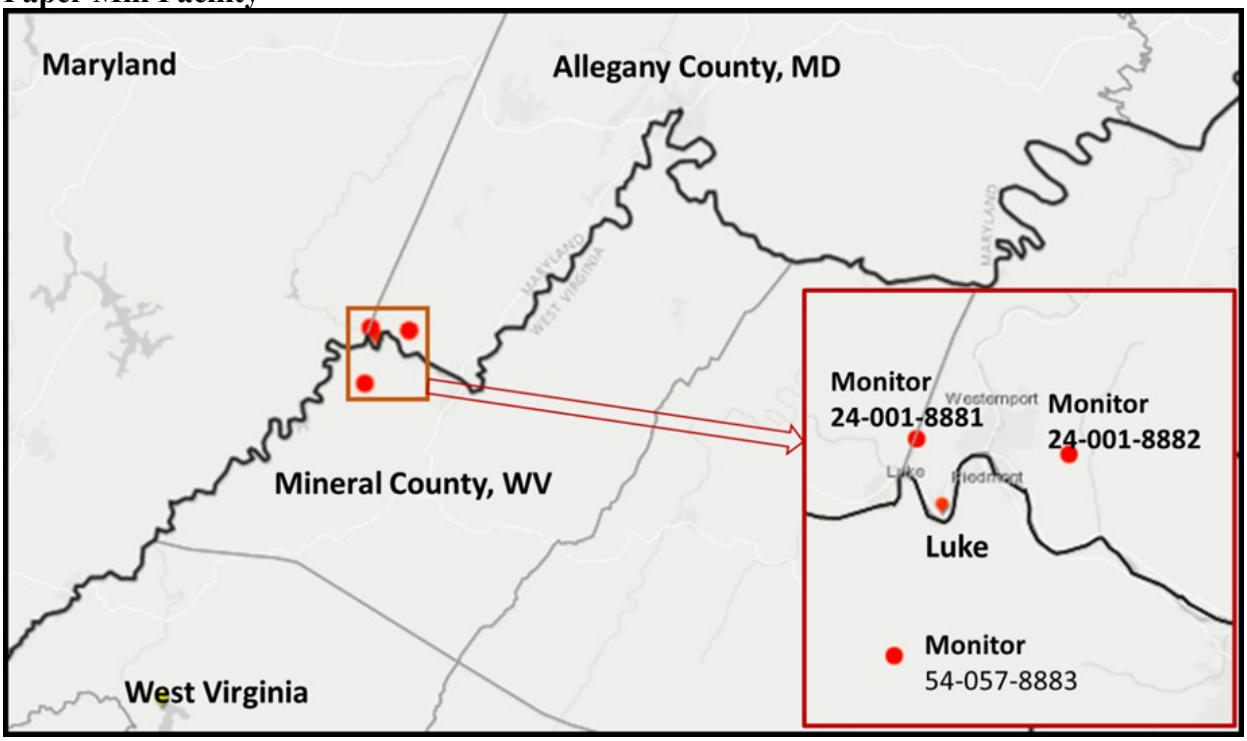
3.1. Introduction

EPA must designate Allegany County, MD and Mineral County, WV by December 31, 2020, because the counties have not been previously designated and the Maryland Department of the Environment (MDE) installed and began operating a new EPA-approved monitors pursuant to the DRR. This section presents all the available air quality information for the portion of Allegany County, MD and Mineral County, WV that includes the following SO_2 source around which the DRR required the state to characterize air quality:

- The Verso Corporation's Luke Mill Facility (Luke) emitted 2,000 tons or more of SO_2 annually. Specifically, Luke emitted 16,999.39 tons of SO_2 in 2014. This source meets the DRR criteria and thus is on the SO_2 DRR Source list, and MDE has chosen to characterize it via monitoring. The source has since shut down and has surrendered its air quality permits. Therefore, current allowable and actual SO_2 emissions are now zero.

As seen in Figure 1 below, the Luke facility is located in Allegany County in the western panhandle region of Maryland. Luke is located along the Potomac River, which separates Maryland and West Virginia. The Luke facility is adjacent to Mineral County, West Virginia, and is only separated from Mineral County by the Potomac River.

Figure 1. Map of Allegany County, MD and Mineral County, WV Addressing the Luke Paper Mill Facility



In its May 29, 2020, recommendation letter, Maryland recommended that Allegany County be designated as attainment for the 2010 SO_2 NAAQS. In its recommendation, Maryland supports its recommendation with the following statements:

- On May 7, 2020, Verso Luke LLC officially notified the MDE of its request for a complete closure of the Luke Mill Facility and termination of all associated air quality permits. The notification letter also acknowledged that Verso or any potential new owner of the facility must apply for and obtain all new air quality permits in order for this facility to begin operations any time in the future.
- The Luke Paper Mill is the only major source of SO_2 emissions in the area, and with its shutdown, there are no other major SO_2 sources emitting into the ambient air in the area.

Specifically, the state's recommended boundaries consist of the whole county. EPA agrees with Maryland's recommendation as to the designation category, and intends to designate all of Allegany County, MD, as described below, as attainment/unclassifiable for the 2010 SO_2 NAAQS based upon the most currently available information. Our intended boundaries are consistent the state's recommended boundaries and are described below.

In its June 16, 2020 recommendation letter, West Virginia recommended that Mineral County be designated as attainment for the 2010 SO_2 NAAQS. Specifically, the state's recommended boundaries consist of the whole county. EPA agrees with West Virginia's recommendation as to the designation category, and intends to designate all of Mineral County, WV as described below, as attainment/unclassifiable for the 2010 SO_2 NAAQS based upon the most currently available information. Our intended boundaries are consistent the state's recommended boundaries and are described below.

3.2. Air Quality Monitoring Data for Allegany County, MD and Mineral County, WV

EPA considered design values for air quality monitors in Allegany County, MD and Mineral County, WV by assessing the most recent 3 consecutive years (i.e., 2017-2019) of quality-assured, certified ambient air quality data in the EPA Air Quality System (AQS) using data from Federal Reference Method and Federal Equivalent Method monitors that are sited and operated in accordance with 40 CFR parts 50 and 58.[7] Procedures for using monitored air quality data to determine whether a violation has occurred are given in 40 CFR part 50 Appendix T, as revised in the 2010 SO_2 NAAQS rulemaking. The 2010 1-hour SO_2 NAAQS is met when the design value is 75 ppb or less. Whenever several monitors are located in an area, the design value for the area is determined by the monitor with the highest valid design value. In the absence of other information that persuasively better represents current air quality in an area, the presence of one or more violating monitors (i.e., monitors with design values greater than 75 ppb) in a geographic area would form the basis for designating that area as nonattainment. The remaining factors, described in the next section, would then be used as the technical basis for determining the spatial extent of the designated nonattainment area surrounding the violating monitors.

Table 2 contains the 2017-2019 design values for the area of analysis.

[7] SO_2 air quality data are available from EPA's website at https://www.epa.gov/outdoor-air-quality-data. SO_2 air quality design values are available at https://www.epa.gov/air-trends/air-quality-design-values.

Table 2. 2010 SO_2 NAAQS Design Values for Allegany County, MD and Mineral County, WV

AQS Site ID	Monitor Name / Location	2017 99th Percentile (ppb)	2018 99th Percentile (ppb)	2019 99th Percentile (ppb)	2017-2019 Design Value (ppb)
24-001-8881	Moran / Rock Street SW, Allegany County, MD	88.8	105.7	71.7	**89**
24-001-8882	Horse Rock / Horse Rock Road, Allegany County, MD	152.3	172.5	144.1	**156**
54-057-8883	Bean / Old WV 46. Mineral County, WV	186.8	203.3	134.9	**175**

Data collected at these monitors indicate that 2017-2019 design values at all three monitors in Allegany County, MD and Mineral County, WV violate the 2010 SO_2 NAAQS.

Maryland provided a modeling protocol in June of 2016[8] outlining procedures it would use to identify SO_2 monitoring sites following procedures outlined in SO_2 NAAQS Designations Monitoring TAD. Given the isolated location of Luke, no other sources were identified to be included in this modeling analysis. Results from the modeling analysis were further discussed in Appendix B of an AECOM prepared report *Verso Luke Mill Stationary Ambient Air Quality Measurements Program, Quality Assurance Project Plan.* Monitor site selection was based on this modeling analysis to ensure the sites were chosen "*…with the ultimate goal of characterizing the 1-hour concentrations of SO_2 in the vicinity of the Verso facility."* EPA believes the modeling analysis was conducted properly and the monitoring network surrounding the Luke plant adequately characterizes the air quality around the facility.

Therefore, without any additional information, a portion of the area would have to be designated nonattainment because of the violating monitors. However, EPA has additional information, as explained in section 3.3 of this TSD.

3.3. Other Information Relevant to the Designation of Allegany County, MD and Mineral County, WV

EPA received additional information relevant to the designation of this area in Maryland's May 29, 2020 updated recommendation letter. That new information is summarized, below.

The Verso Corporation announced the closure of Luke on April 30, 2019 and the last day of employment at the facility was June 30, 2019. On May 7, 2020, Verso Luke LLC officially notified MDE of its request for a complete closure of Luke and termination of all associated air quality permits. The notification letter also acknowledged that Verso or any potential new owner of the facility must apply for and obtain all new air quality permits in order for this facility to begin operations and emissions of SO_2 any time in the future.

[8] See *Luke Mill Allegany County, Maryland 1-hour SO_2 Modeling Protocol – Monitoring Support* by AECOM.

Luke is the only DRR source (i.e. source with emissions of SO_2 over 2,000 tons per year) in Allegany County, MD or Mineral County, WV. With its shutdown, there are no other large SO_2 sources in the area. For more information about emissions sources in Allegany County, MD and Mineral County, WV, please see Section 3.3.1 Emissions-Related Data.

MDE and Verso elected the monitoring pathway to characterize the air quality in Allegany County, MD and Mineral County, WV around Luke. MDE determined the location of three SO_2 monitors in the Luke area in accordance with EPA's SO_2 NAAQS Designations Source-Oriented Monitoring TAD. Dispersion modeling, using the EPA-approved AERMOD model, assisted in determining the appropriate locations of the three SO_2 monitors. Luke was the sole source of SO_2 emissions included in the modeling. This is consistent with EPA's March 11, 2011 clarification memo that states "…the modeling analysis should focus on the area within about 10 kilometers of the project location in most cases."[9]

In Maryland's May 29, 2020 recommendation letter, MDE states that removing Luke emissions from that modeling would result in only background levels of concentration of SO_2 and thus attainment of the standard. Also, in its May 29, 2020 recommendation letter, MDE states that the 1-hour SO_2 background concentration between June 1 and December 31, 2019 was 3.51 ppb. This background concentration of 3.51 ppb was calculated by taking an average of the three 99th percentile daily maximum 1-hour concentrations for the three Luke Paper Mill SO_2 monitors (Moran (AQS ID 24-001-8881), Horse Rock (AQS ID 24-001-8882) and Bean (54-057-8883)) using data collected between June 1 and December 31, 2019. [10] Data after June 1st were used to represent regional background without impact from the Luke Paper Mill since the facility had ceased operations on May 31, 2019. The 3.51 ppb value is in line with representative regional background values that are not directly influenced by impacting source emissions. For example, the 99th percentile daily maximum 1-hour SO_2 concentration at Maryland's Piney Run monitor (AQS ID 24-023-0002), located in Garrett County, MD 26.3 km north of Luke, was 3.8 ppb in 2019.

From June 2019, when the facility ceased operations, through May 8, 2020, the three SO_2 monitors associated with Luke have measured hourly concentrations no greater than 6.3 ppb. In addition, MDE calculated the average of all available hourly data from June 1, 2019 through May 8, 2020 at each monitor in the Luke area. The hourly averages for this period were 0.3 ppb, 1.1 ppb and 1.4 ppb for the Moran (AQS ID 24-001-8881), Horse Rock (AQS ID 24-001-8882) and Bean (54-057-8883) monitors, respectively. See Table 4 for more details on recent air quality data in Allegany County, MD and Mineral County, WV.

[9] See page 16 of March 11, 2011 EPA clarification memo: https://www3.epa.gov/ttn/scram/guidance/clarification/Additional_Clarifications_AppendixW_Hourly-NO2-NAAQS_FINAL_03-01-2011.pdf

[10] MDE provided EPA with additional clarification regarding the background concentration in email correspondence dated August 5, 2020.

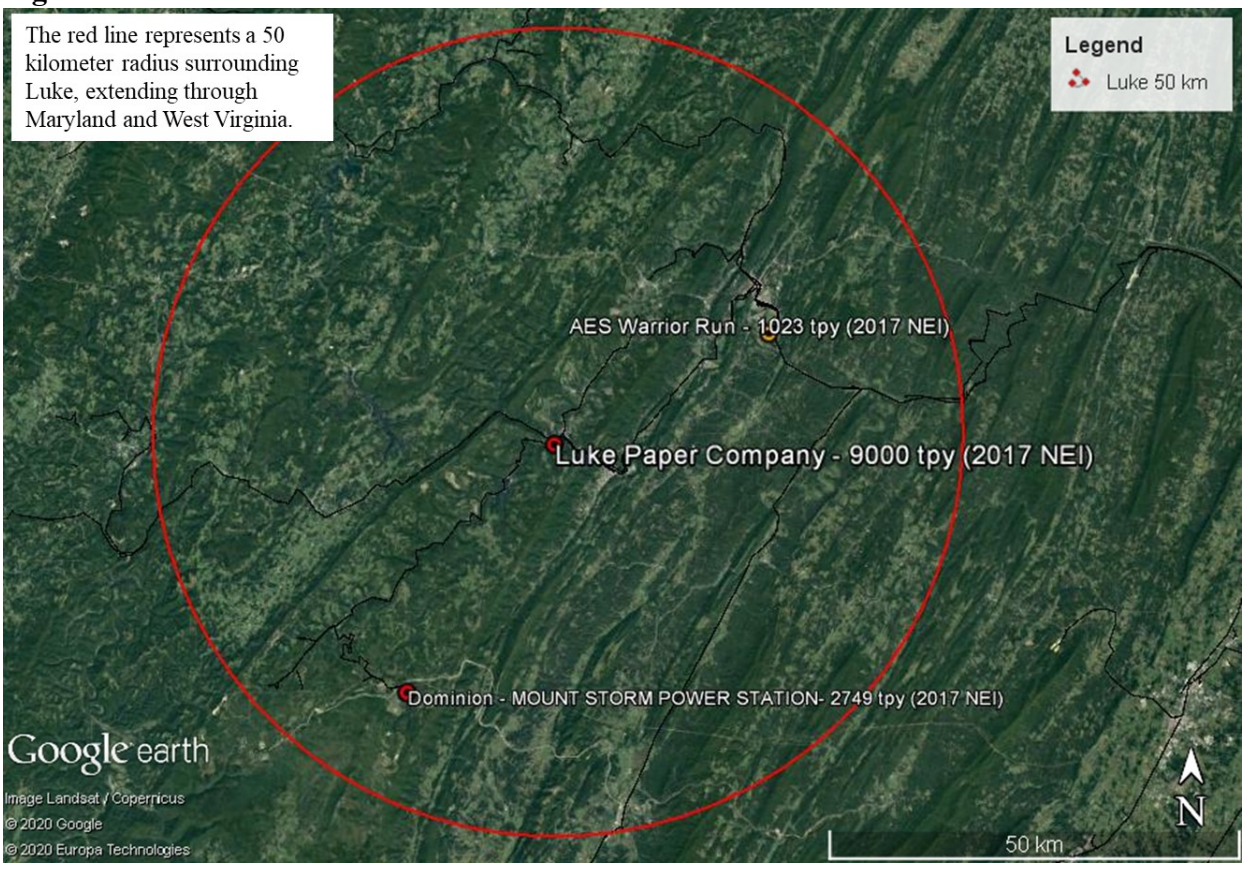
3.3.1. Emissions-Related Data

Table 3 shows the most recent 3 years of emissions data for Luke, the facility being characterized by the SO_2 monitors described previously. Table 3 also includes emissions for the SO_2 sources within 50 kilometers (km) of Luke. Figure 2 depicts a 50 km radius around Luke, and shows two other SO_2 sources, AES Warrior Run, 30 km to the northeast of Luke, and Dominion Mount Storm Power Station (Mt. Storm), 34 km to the southwest. EPA used the 2017 NEI to obtain 2017 emissions data for all three sources. EPA used EPA's Emission Inventory System (EIS) to obtain 2016 and 2018 emissions data for Luke.

Table 3. SO_2 Emissions of Sources in Allegany County, MD and Mineral County, WV

Facility Name	2016 SO_2 Emissions (tons)	2017 SO_2 Emissions (tons)	2018 SO_2 Emissions (tons)
Luke Paper Mill	9,604.14	9,132.16	8,999.49
AES Warrior Run	891	1,023	1,048
Dominion Mount Storm	3,427	2,749	2,189

Figure 2. SO_2 Sources Within 50 km of Luke



Mt. Storm is not in Allegany County, MD or Mineral County, WV. It's approximately 34 km away from Luke, in neighboring Grant County, WV. West Virginia was required to characterize Mt. Storm pursuant the DRR, and the state chose to use modeling for the characterization. The

modeling projected the peak impacts from Mt. Storm to be south of the facility, away from the area around Luke. Furthermore, EPA found that the modeling results show that the area around Mt. Storm is not violating the 1-hour SO_2 NAAQS and is not contributing to NAAQS violations in nearby areas. Therefore, in EPA's Round 3 SO_2 designations, EPA designated the area around Mt. Storm as attainment/unclassifiable based on the modeling performed by West Virginia.[11]

AES Warrior Run is in Allegany County, Maryland, about 30 km northeast of Luke. As shown in Table 3, SO_2 emissions from AES Warrior Run are around 1,000 tons per year. Based on the distance between AES Warrior Run and Luke, this source is not likely to generate a significant concentration gradient in the vicinity of Luke and, therefore, was not included in the monitor siting modeling (but was rather accounted for via the background monitor concentration).

In its May 7, 2020 letter to MDE requesting complete closure of Luke and termination of all associated air quality permits, the Verso Corporation acknowledged that it or any potential new owner of the facility must apply for and obtain all new air quality permits for this facility to begin operations in the future. In other words, the Luke facility would be treated as a new source, and the owner would have to obtain a new source permit under the prevention of significant deterioration (PSD) requirement of the CAA section 165.

With the Luke shutdown and permit surrender, allowable and actual emissions at Luke are now zero.

3.3.2. Additional Ambient Air Quality Data

The last day of employment at the facility was June 30, 2019. As shown below, hourly ambient air quality monitoring data since Luke ceased operations are well below the level of the 2010 SO_2 NAAQS. The Verso Corporation ceased operation of the ambient air quality monitors around Luke on May 8, 2020, the day after MD terminated its air quality permits.

Table 4. SO_2 Concentrations from June 1, 2019 through May 8, 2020* for Allegany County, MD and Mineral County, WV

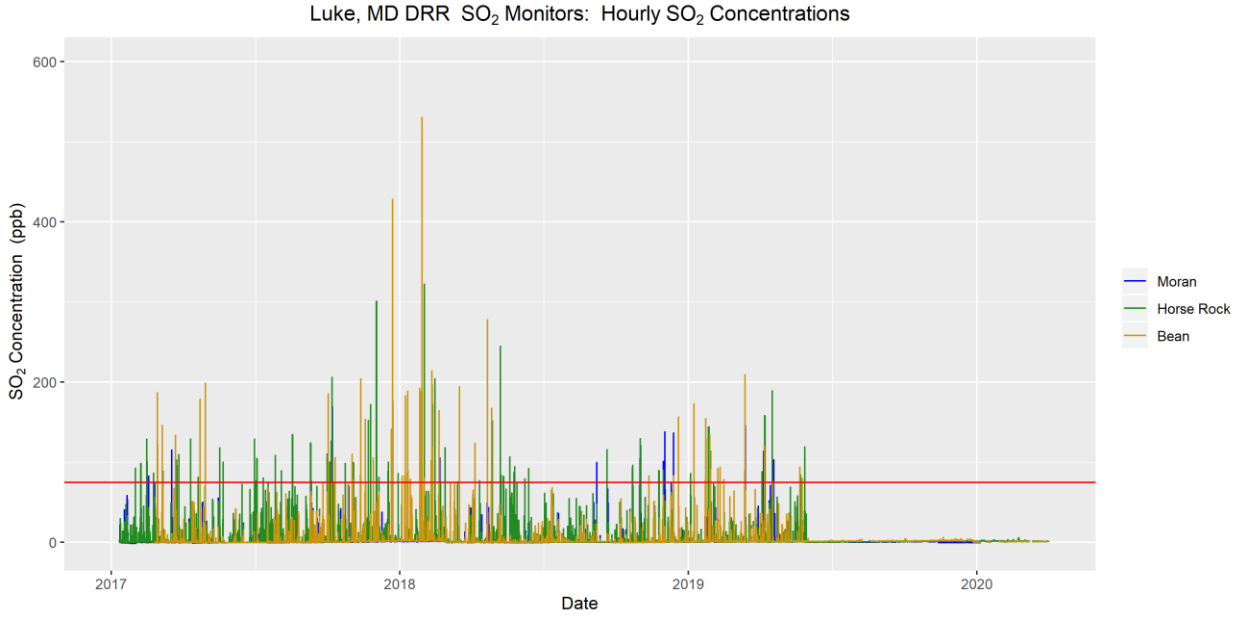
AQS Site ID	Monitor Name / Location	Maximum 1-Hour Concentration (ppb)	99th Percentile** (ppb)
24-001-8881	Moran / Rock Street SW, Allegany County, MD	4.3	3
24-001-8882	Horse Rock / Horse Rock Road, Allegany County, MD	6.3	5
54-057-8883	Bean / Old WV 46. Mineral County, WV	5.8	5

[11] See "Technical Support Document: Chapter 43 Intended Round 3 Area Designations for the 2010 1-Hour SO_2 Primary National Ambient Air Quality Standard for West Virginia" at https://www.epa.gov/sites/production/files/2017-08/documents/43_wv_so2_rd3-final.pdf. See also "Technical Support Document: Chapter 43 Final Round 3 Area Designations for the 2010 1-Hour SO_2 Primary National Ambient Air Quality Standard for West Virginia" at https://www.epa.gov/sites/production/files/2017-12/documents/43-wv-so2-rd3-final.pdf

*Data from June 1, 2019 through May 8, 2020 was presented in Maryland's May 29, 2020 designation recommendation letter.
**The 99th percentile was calculated with data available in EPA's Air Quality System (AQS), which was from June 1, 2019 through March 31, 2020.

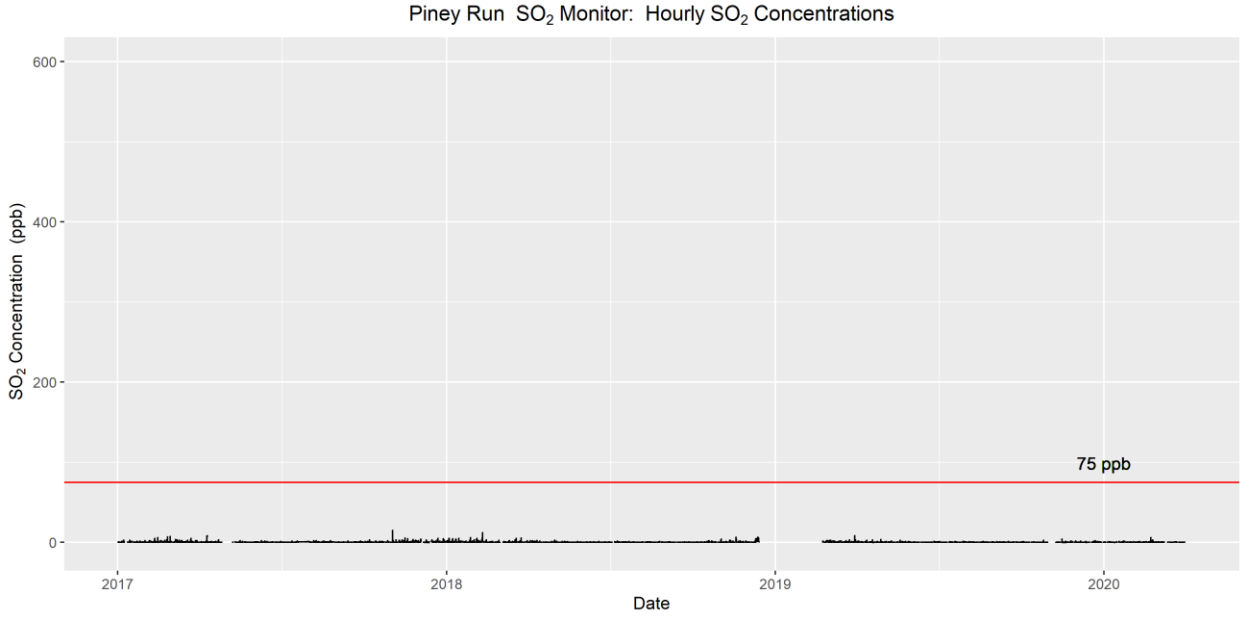
Figure 3 displays the hourly concentrations from each of the three monitors surrounding the Luke plant. Hourly concentrations are noticeably lower after the plant ceased operations in May 2019. For comparison, Figure 4 displays hourly SO_2 concentrations over the same period from the Piney Run monitor in Garret County, MD, adjacent to and west of Allegany County. According to Maryland's 2020 Ambient Air Network Plan[12], Piney Run (located near the Frostburg Reservior) is "*...an NCore station located in a rural setting...*" that is used to collect background air quality and gauge regional transport at the regional scale. All of the DRR monitors surrounding Luke post closure appear to mimic concentrations at Maryland's Piney Run monitor indicating that the Luke plant was the sole source impacting these monitors.

Figure 3. Hourly SO_2 Concentrations (in ppb) at the Luke Monitors



[12] https://mde.maryland.gov/programs/Air/AirQualityMonitoring/Documents/MDNetworkPlanCY2020.pdf

Figure 4. Hourly SO_2 Concentrations (in ppb) at the Piney Run Monitor



3.4. Jurisdictional Boundaries for Allegany County, MD and Mineral County, WV

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

In Maryland's May 29, 2020 letter, the state recommended that EPA designate the entirety of Allegany County as attainment. In West Virginia's June 16, 2020 letter, the state recommended that EPA designate the entirety of Mineral County as attainment. The states did not provide any additional information to define the area boundaries.

3.5. EPA's Assessment of the Available Information for Allegany County, MD and Mineral County, WV

The primary emission source in this area, Luke Paper, has shut down and is subject to an enforceable requirement to remain shut down unless restarting is authorized by a new source permit (which would include provisions assuring continued attainment). The monitors around Luke were sited to characterize 1-hour SO_2 concentrations surrounding Luke. These monitors, in Allegany County, MD and Mineral County, WV, were violating the NAAQS based on the 2017-2019 design value. However, the 2017-2019 design values are based on data collected while Luke was still operating. When Luke stopped operating, the monitors began recording significantly lower SO_2 concentrations. As shown in Table 4, after operations ceased at Luke

(from June 1, 2019 through May 8, 2020), the maximum monitored SO_2 concentration recorded at any of the monitors around Luke was 6.3 ppb and the 99th percentile among daily maximum concentrations were well below the level of the NAAQS. Thus, these data support the view that the shutdown of Luke Paper has resulted in the area attaining the standard.

As explained in section 3.3.1, Luke is the only DRR source in Allegany County, MD or Mineral County, WV. On May 7, 2020, the Verso Corporation surrendered all air quality permits for Luke, therefore, emissions at Luke will be held at zero unless a new owner/operator applies for and is granted a Prevention of Significant Deterioration (PSD) permit.

EPA has evaluated all available data, including emissions data and the most recent ambient air quality data, and intends to designate both Allegany County, MD and Mineral County, WV as attainment/unclassifiable because this information provides a more representative characterization of current air quality than is indicated by the 2017-2019 design value. Specifically, this information represents a more accurate characterization of current air quality at the time of designation than does monitoring of past air quality, as outlined in the September 2019 Round 4 SO_2 designations memorandum. EPA believes that our intended attainment/unclassifiable areas, bounded by the borders of Allegany County, MD, and Mineral County, WV, respectively, will have clearly defined legal boundaries, and we intend to find these boundaries to be a suitable basis for defining our intended attainment/unclassifiable areas.

3.6. Summary of EPA's Intended Designation for Allegany County, MD and Mineral County, WV

After careful evaluation of the state's recommendation and supporting information, as well as all available relevant information, EPA intends to designate Allegany County, MD and Mineral County, WV as attainment/unclassifiable for the 2010 SO_2 NAAQS. Specifically, the boundaries are comprised of the entire Counties of Allegany, MD and Mineral, WV. Figure 5 shows the boundary of this intended designated area.

Figure 5. Boundaries of the Intended Allegany County, MD and Mineral County, WV Attainment/Unclassifiable Areas