



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

December 20, 2022

Rhonda B. Thompson, PE
Chief
Bureau of Air Quality Control
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Dear Ms. Thompson,

Thank you for submitting the state of South Carolina's 2022 annual ambient air monitoring network plan, dated July 1, 2022 (Network Plan). The Network Plan is required by 40 Code of Federal Regulations (CFR) §58.10. Additionally, the South Carolina Department of Health and Environmental Control (SC DHEC) submitted an addendum to the Network Plan (Network Plan Addendum) on October 26, 2022. The U.S. Environmental Protection Agency Region 4 understands that the SC DHEC provided the public with a 30-day review period for the draft Network Plan and Network Plan Addendum and that no comments were received other than comments from the EPA on the draft Network Plan.

The Network Plan Addendum proposes to site a PM₁₀ and PM_{2.5} monitor at the existing Coastal Carolina (AQS ID 45-051-0008) site in 2023. This action will allow the SC DHEC to meet the new minimum monitoring requirements for the Myrtle Beach Metropolitan Statistical Area, as well as save resources by having all the required monitoring for the area at one site. The EPA approves the startup of the PM₁₀ and PM_{2.5} monitors at the Coastal Carolina site.

Also, the Network Plan indicates that the SC DHEC is transitioning its PM_{2.5} network to include more continuous federal equivalent method (FEM) equipment and reducing the number of filter-based, federal reference method (FRM) equipment. The EPA supports this, and this transition will save resources as well as provide higher time resolution PM_{2.5} measurements in more areas of the state. Specifically, the SC DHEC will operate more Teledyne T640 and T640x monitors (AQS method codes 236 and 238 respectively). The EPA staff recently had a discussion with SC DHEC staff on plans to continue to meet regulatory PM_{2.5} collocation requirements in 2023 as FEMs are started up and fewer FRMs are operated. Based on this discussion, the EPA believes that the SC DHEC has a good plan for maintaining compliance with PM_{2.5} collocation requirements.

The Network Plan and Network Plan Addendum do not, on their own, fully demonstrate that collocation requirements are met and will be met. Thus, the EPA requests that next year's network plan indicate the primary monitoring method at each site measuring PM_{2.5} and if the site has a PM_{2.5} QA collocated

monitor or sampler. If this will change over the year following submission of the next network plan, then the SC DHEC should indicate how PM_{2.5} collocation requirements will continue to be met.

The EPA approves the proposed monitoring network changes in the Network Plan and Network Plan Addendum. Detailed comments on South Carolina's Network Plan and Network Plan Addendum are enclosed. Thank you for working with EPA Region 4 to monitor air pollution and safeguard healthy air quality in South Carolina and the nation. If you have any questions or concerns, please contact Katy Lusky at (404) 562-9130 or Ryan Brown at (404) 562-9147.

Sincerely,

Caroline Y. Freeman
Director
Air and Radiation Division

Enclosure

Cc: Micheal Mattocks, Assistant Bureau Chief, BEHS
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2022 State of South Carolina Ambient Air Monitoring Network Plan U.S. EPA Region 4 Comments and Recommendations

This document contains the U.S. Environmental Protection Agency comments and recommendations on the state of South Carolina’s 2022 ambient air monitoring network plan (Network Plan) and the October 26, 2022, addendum to the 2022 ambient air monitoring network plan (Network Plan Addendum). Ambient air monitoring rules, which include regulatory requirements that address network plans, data certification, and minimum monitoring requirements, among other requirements, are found in 40 CFR Part 58. Minimum monitoring requirements for criteria pollutants are listed in 40 CFR Part 58, Appendix D. Minimum monitoring requirements are listed for ozone (O₃), particulate matter less than 2.5 microns (PM_{2.5}), particulate matter less than 10 microns (PM₁₀), nitrogen dioxide (NO₂), sulfur dioxide (SO₂) carbon monoxide (CO), and lead (Pb).

The minimum monitoring requirements are based on core based statistical area (CBSA) boundaries as defined by the U.S. Office of Management and Budget (OMB); July 6, 2021, population estimates from the U.S. Census Bureau, and historical ambient air monitoring data. Minimum monitoring requirements for O₃, PM_{2.5}, and PM₁₀ only apply to metropolitan statistical areas (MSAs), which are a subset of CBSAs. OMB currently defines 10 MSAs in the state of South Carolina. The July 6, 2021, population estimates from the U.S. Census Bureau for each MSA in South Carolina and the total population estimates of MSAs shared with North Carolina and Georgia are shown in Table 1.

Table 1: Metropolitan Statistical Areas and July 6, 2021, Population Estimates

MSA Name	Population
Charlotte-Gastonia-Concord NC-SC	2,701,046
Greenville-Anderson, SC	940,774
Columbia, SC	838,250
Charleston-North Charleston-Summerville, SC	813,052
Augusta-Richmond County, GA-SC	615,933
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	509,794
Spartanburg, SC	335,864
Hilton Head Island-Bluffton, SC	222,072
Florence, SC	199,529
Sumter, SC	135,782

The estimated 2021 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA has surpassed 500,000 people. The Myrtle Beach area is now subject to additional minimum monitoring requirements that are discussed in the pollutant sections below.

Proposed Monitoring Network Changes

The EPA has approval authority for changes to regulatorily required state or local air monitoring stations (SLAMS). SLAMS include the ambient air quality monitoring sites and monitors required by 40 CFR Part 58, Appendix D and are needed to meet the monitoring objectives of Appendix D, including NAAQS comparisons, and may also serve other data purposes. The EPA is not required to approve changes made to special purpose monitors (SPMs). SPMs are monitors designated by the monitoring agency as special purpose and do not count towards minimum monitoring requirements of 40 CFR Part 58. SPMs are required to be identified in the Network Plan for public and the EPA review.

The South Carolina Department of Health and Environmental Control (SC DHEC) proposed changes to its monitoring network for 2022 through 2023. Table 2 summarizes the requested monitor discontinuations and relocations. Information related to each proposed change as well as the EPA’s decision and rationale for approval/disapproval of each proposed change are contained in the following pollutant sections.

Table 2: Monitors Proposed for Relocation or Discontinuation

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0049	Charleston-North Charleston, SC	Irving Street	PM _{2.5} , PM _{2.5} Cont., SO ₂	SPM	Acknowledged. 23-month special purpose monitoring near the Port of Charleston. Discontinued June 30, 2022.
45-019-0046	Charleston-North Charleston, SC	Cape Romaine	SO ₂	SPM	Acknowledged. Monitoring discontinued will not be part of SC DHEC’s special purpose rotating SO ₂ monitoring.
45-019-0049	Charleston-North Charleston, SC	Charleston Public Works	PM _{2.5} , PM _{2.5} Cont.	SLAMS/ SPM	Previously approved relocation to NCFS. Site shut down November 8, 2021.
45-091-0008	Charlotte-Concord-Gastonia, NC-SC	York Landfill	SO ₂	SPM	Acknowledged. Operating 2020-2022 as a rotating background monitor.
45-079-0021	Columbia, SC	Congaree Bluff	SO ₂	SPM	Acknowledged. Monitoring discontinued will not be part of SC DHEC’s special purpose rotating SO ₂ monitoring.
45-041-8001, 45-041-8002, 45-041-8003	Florence, SC	Johnson Controls – Railroad, Entrance, Woods	Pb	SPM	Acknowledged. JCI Railroad and Entrance sites shut down March 22, 2021. JCI woods will continue to sample for Pb until the facility’s permit is revoked and a cleanup plan is in place.
45-019-0020	Charleston-North Charleston, SC	NCFS	PM _{2.5}	SPM	Acknowledged. The PM _{2.5} collocated sampler was moved from the TK Gregg site to NCFS. Since this is meeting requirements, it needs to be classified as a SLAMS.
45-019-0046, (45-025-0001)	multiple	Cape Romain, Chesterfield	precipitation	Other	Acknowledged. The Network Plan Addendum states that precipitation measurements at these sites have been discontinued.

Table 3 summarizes requested monitor startups, as well as the EPA’s decision and rationale for approval/disapproval/acknowledgement of each proposed startup.

Table 3: Monitors Proposed for Startup

AQS ID	CBSA	Site Name	Pollutant	Type	Comments
45-019-0020	Charleston-North Charleston, SC	NCFS	PM _{2.5}	SLAMS	Previously approved monitor startup. Monitor was sited to meet the PM _{2.5} monitoring requirements for the Charleston area and started operating at the end of 2021. This site will also meet PM _{2.5} collocation requirements by operating a primary and collocated FRM sampler.
45-037-0001	Augusta-Richmond County, GA-SC	Trenton	PM _{2.5}	SLAMS	Approved. SPM converted to SLAMS to meet new minimum monitor in the Augusta area.

45-037-0001	Augusta-Richmond County, GA-SC	Trenton	SO ₂	SPM	Acknowledged. Startup of rotating SO ₂ monitor. It will to run for two years.
45-051-0008	Myrtle Beach-Conway-North Myrtle Beach, SC-NC	Coastal Carolina	PM ₁₀ , PM _{2.5}	SLAMS	Approved. Start-up of a Federal Equivalent Method (FEM) monitor that measures both PM _{2.5} and PM ₁₀ (Teledyne T640x) and a PM _{2.5} Federal Reference Method (FRM) sampler at an existing O ₃ site to meet new minimum monitoring requirements triggered by the population increase in the Myrtle Beach MSA. Expected operation in 2023.

Network Plan Public Comments

40 CFR § 58.10 (a)(1)

The requirement for a public comment period and response from the agency in the final Network Plan is found in 40 CFR 58 (a)(1):

“The annual monitoring network plan must be made available for public inspection and comment for at least 30 days prior to submission to the EPA and the submitted plan shall also include and address, as appropriate, any received comments.”

The public comment period for the 2022 Network Plan was held from April 22, 2022, through May 23, 2022, and the public comment period for the Network Plan Addendum was held from September 23, 2022, to October 24, 2022. EPA made public comments on the draft Network Plan and appreciates the SC DHEC’s responses and updates included in the final Network Plan. No other comments on the draft Network Plan or draft Network Plan Addendum were received. The Network Plan and Network Plan Addendum meet the public comment requirements of 40 CFR § 58.10.

Operating Schedules

40 CFR § 58.12

The operating schedules for all of the monitors proposed by the SC DHEC in its Network Plan meet the requirements continuous analyzers and all manual Pb, PM₁₀, PM_{2.5}, and PM_{2.5} Speciation Trends Network (STN).

Air Quality Index (AQI) Reporting

40 CFR § 58.50

AQI reporting is required in MSAs with populations over 350,000. Six MSAs in the state of South Carolina have populations over 350,000 (see Table 4). The SC DHEC reports AQI values for these MSAs and one additional MSA. Mecklenburg County Air Quality reports AQI values for the Charlotte-Concord-Gastonia, NC-SC MSA. Both the Georgia Environmental Protection Division (GA EPD) and the SC DHEC report AQI values for the Augusta-Richmond County GA-SC MSA.

Table 4: AQI Reporting

MSAs Reporting
Greenville-Anderson, SC

Columbia, SC
Charleston-North Charleston, SC
Augusta-Richmond County, GA-SC
Myrtle Beach-Conway-North Myrtle Beach, SC-NC
Florence, SC
Charlotte-Concord-Gastonia, NC-SC

The South Carolina monitoring network satisfies the minimum AQI reporting requirements in 40 CFR Part 58.

National Core (NCore) Monitoring Network
40 CFR Part 58, Appendix D, Section 3.0

A requirement that each state operate at least one NCore site is found in 40 CFR Part 58, Appendix D, Section 3. The NCore site must measure, at a minimum, PM_{2.5} particulate mass using continuous and integrated/filter-based samplers, speciated PM_{2.5}, PM_{10-2.5} particle mass, O₃, SO₂, CO, NO/NO_y, wind speed, wind direction, relative humidity, and ambient temperature. This section requires each state to operate at least one NCore site. The SC DHEC meets the NCore requirement by operating the Parklane site in Columbia.

Table 5: NCore Monitoring Sites

AQS ID	Site Name	CBSA	Requirement Met (Y/N)
45-079-0007	Parklane	Columbia, SC	Y

The NCore monitoring network described in the Network Plan and listed in Table 5 meets all design criteria of 40 CFR Part 58.

O₃ Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.1 and Table D-2

Ambient air monitoring network design criteria for O₃ are found in 40 CFR Part 58, Appendix D, Section 4.1. This section requires state agencies to operate O₃ sites at various locations depending upon area size and typical peak concentrations.

Table 6: Ozone Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	4	0	Jackson Middle School (AQS ID: 45-003-0003) Trenton (AQS ID: 45-037-0001) Evans (AQS ID 13-073-0001) ¹ Augusta (AQS ID 13-245-0091) ¹	Y
Charleston-North Charleston, SC	2	2	0	Moncks Corner National Guard (AQS ID: 45-015-1002) Cape Romain (AQS ID: 45-019-0046)	Y

Charlotte-Concord-Gastonia, NC-SC	2	4	3	York Landfill (AQS ID: 45-091-0008) Crouse (AQS ID: 37-109-0004) ² Garinger (AQS ID: 37-119-0041) ³ University Meadows (AQS ID: 37-119-0046) ³ Rockwell (AQS ID: 37-159-0021) ¹	Y
Columbia, SC(NCore)	2	2	1	Parklane (AQS ID: 45-079-0007) Sandhill (AQS ID: 45-079-1001)	Y
Florence, SC	0	1	0	Pee Dee Exp. Station (AQS ID: 45-031-0003)	Y
Greenville-Anderson, SC	2	2	0	Garrison Arena (AQS ID: 45-007-0006) Hillcrest (AQS ID: 45-045-0016)	Y
Myrtle Beach-Conway-North Myrtle Beach, SC-NC	1	1	0	Coastal Carolina (AQS ID: 45-051-0008)	Y
Spartanburg, SC	1	1	0	North Spartanburg Fire Station #2 (AQS ID: 45-083-0009)	Y

1. Evans and Augusta sites are operated by the Georgia Environmental Protection Division
2. Crouse and Rockwell sites are operated by the North Carolina Department of Air Quality
3. Garinger and University Meadows sites are operated by Mecklenburg County Air Quality

The Coastal Carolina site (AQS ID: 45-051-0008) does not have a valid O₃ design value (DV) due to data completeness issues over the years. An analysis of the incomplete data indicates that it is possible that the MSA could have a 2021-2023 DV over 85% of the NAAQS. If so, then the Myrtle Beach MSA would need a second O₃ monitor in accordance with Table D-2 of Appendix D to 40 CFR Part 58.

The EPA requests that the SC DHEC and the NC DAQ collaborate to characterize the area of highest O₃ concentration in the MSA, and to present the results of this investigation in their 2023 Network Plans. The results of this investigation could indicate that the expected maximum concentration is located in an area other than the area near the Coastal Carolina site. EPA is willing to also participate in the discussions and help with this analysis. If the next valid DV is above 85% of the NAAQS, this characterization of O₃ concentrations in the MSA would be used to propose a new O₃ monitoring site in the MSA.

Ozone monitors located 5-10 miles downwind from concentrated NO_x emissions areas are often representative of expected O₃ maximum concentrations in the Southeast. The characterization of the Myrtle Beach MSA could consider current population dynamics, traffic, and frequent afternoon wind directions during O₃ season. More information about O₃ site selection can be found in the EPA's Guideline on Ozone Monitoring Site Selection, which can be found at:

<https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000D45M.TXT>.

The O₃ monitoring network outlined in the Network Plan and Table 6 meets the minimum monitoring requirements found in 40 CFR Part 58, Appendix D, Table D-2 for all MSAs in South Carolina.

CO Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.2

Ambient air monitoring network design criteria for CO are found in 40 CFR Part 58, Appendix D, Section 4.2. CBSAs with populations over one million are required to operate one CO monitor collocated with a near-road NO₂ site. The MCAQ meets the requirement in the one CBSA with a

population over 1,000,000, the Charlotte-Concord-Gastonia, NC-SC CBSA, by operating a CO monitor at its Remount near-road site.

Table 7: CO Design Criteria – Minimum Required SLAMS Near-Road Monitors

CBSA	Minimum Required Near-road CO Monitors	Number of Near-road CO Monitors	Site Names (AQS IDs) of Existing Near-road CO Monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	1	1	Remount (37-119-0045) ¹	Y

1. Remount site is operated by Mecklenburg County Air Quality.

The Regional Administrator monitoring requirements for CO are found in 40 CFR Part 58, Appendix D 4.2.2. The section states, “The Regional Administrators, in collaboration with states, may require additional CO monitors above the minimum number of monitors required in 4.2.1.” The Regional Administrator is not requiring the SC DHEC to operate an additional CO monitor at this time.

Table 8: CO Design Criteria – Minimum Required SLAMS RA Required Monitors

CBSA	Minimum Required RA CO Monitors	Number of RA Required CO Monitors	Site Names (AQS IDs) of Existing RA Required CO Monitors	Requirement Met (Y/N)
None	0	0	None	Y

The CO monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58 for both near-road and RA required monitors as identified in Tables 7 and 8.

NO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.3

Ambient air monitoring network design criteria for NO₂ are found in 40 CFR Part 58, Appendix D, Section 4.3. Three types of NO₂ monitoring are required: near-road, area-wide, and Regional Administrator. These types of NO₂ monitoring are described in Sections 4.3.2, 4.3.3, and 4.3.4, respectively.

Ambient air monitoring design criteria for near-road NO₂ monitoring sites are found in 40 CFR Part 58, Appendix D, Section 4.3.2.

In the Charlotte-Gastonia-Concord, NC-SC CBSA, the MCAQ operates one near-road monitoring site at the Remount site (AQS ID: 37-119-0045). When the initial near-road monitoring network was funded by EPA and established, the Charlotte area was below the 2.5 million population threshold for a second near-road NO₂ monitoring site. However, the recent census population estimate for the Charlotte-Concord-Gastonia, NC-SC CBSA is over 2.5 million people. Mecklenburg County has identified a location for the additional near-road site and is preparing to install and operate it. This site should be operational in 2023.

Table 9: NO₂ Design Criteria – Minimum Required SLAMS Near-road Monitors

CBSA	Minimum Required Near-road NO ₂ Monitors	Number of Near-road NO ₂ Monitors	Site Names (AQS IDs) of Existing NO ₂ Near-road Monitors	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	2	2	Remount (AQS ID: 37-119-0045) ¹ Equipment Drive (AQS ID 37-119-0050) ¹	Y

1. The Remount and Equipment Drive sites are operated by Mecklenburg County Air Quality.

Ambient air monitoring network design criteria for area-wide NO₂ sites are found in Section 4.3.3 of Appendix D to 40 CFR Part 58. The MCAQ operates a NO₂ monitor at its Garinger site to meet the minimum requirement for the Charlotte-Gastonia-Concord, NC-SC CBSA.

Table 10: NO₂ Design Criteria – Minimum Required SLAMS Area-Wide Monitors

CBSA	Minimum Required Area-Wide NO ₂ Monitors	Number of Area-Wide NO ₂ Monitors	Site Names (AQS IDs) of Existing NO ₂ Area-Wide Monitors	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Garinger (AQS ID: 37-119-0041) ¹	Y

1. The Garinger site is operated by Mecklenburg County Air Quality.

Ambient air monitoring network design criteria for Regional Administrator required NO₂ monitoring, often referred to as RA-40 monitoring, are found in 40 CFR Part 58, Appendix D, Section 4.3.4. Under these provisions, Regional Administrators must require a minimum of 40 additional NO₂ monitoring stations nationwide, with a primary focus on siting these monitors in locations to protect susceptible and vulnerable populations. The full list of NO₂ monitors identified by the EPA’s Regional Administrators can be found on EPA’s website at <http://www.epa.gov/ttnamti1/svpop.html>. The SC DHEC operates one RA-40 monitor at its Greenville ESC site in the Greenville-Anderson, SC CBSA.

Table 11: NO₂ Design Criteria – Minimum Required SLAMS RA-40 Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Monitors	Requirement Met (Y/N)
Greenville-Anderson, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y

Except for near-road NO₂ monitoring in the Charlotte area, the NO₂ monitoring network described by the Network Plan meets all design criteria of 40 CFR Part 58.

SO₂ Monitoring Requirements

40 CFR Part 58, Appendix D, Section 4.4

Ambient air monitoring network design criteria for SO₂ are found in 40 CFR Part 58, Appendix D, Section 4.4. This section requires that a population weighted emissions index (PWEI) be calculated by states for each CBSA. As a result, the SO₂ monitoring site(s) required in each CBSA will satisfy minimum monitoring requirements if the monitor(s) is sited within the boundaries of the parent CBSA and is one of the following site types: population exposure, maximum concentration, source-oriented,

general background, or regional transport. A SO₂ monitor at an NCore station may satisfy minimum monitoring requirements if that monitor is located within a CBSA with minimally required monitors consistent with Appendix D, Section 4.4

Based upon PWEIs calculated using 2021 population estimates and 2017 emission inventory data, the minimum numbers of monitors required for the CBSAs in South Carolina are summarized in Table 12.

Table 12: SO₂ Design Criteria – Minimum Required SLAMS PWEI Monitors

CBSA	2021 Population Estimate	2017 NEI Emissions (tons per year)	PWEI	Number of Minimum Required PWEI SO ₂ Monitors	Number of SO ₂ SLAMS	Site Names (AQS IDs) of Existing SO ₂ Monitors	Requirement Met (Y/N)
Charlotte-Concord-Gastonia, NC-SC	2,701,046	5,648	15,255	1	1	Garinger (AQS ID:37-119-0041) ¹	Y
Columbia, SC	830,767	3,709	3,081	0	1	Parklane (AQS ID: 45-079-0007)	Y
Charleston-North Charleston, SC	813,052	8,173	6,645	1	1	Jenkins Ave. (AQS ID: 45-019-003)	Y
Greenville, SC	940,774	728	684	0	1	Greenville ESC (AQS ID: 45-045-0015)	Y

1. The Garinger site is operated by Mecklenburg County Air Quality.

The SO₂ monitoring network outlined in the Network Plan meets the SO₂ PWEI requirements specified in 40 CFR Part 58, Appendix D, Section 4.4.

The EPA finalized the SO₂ Data Requirements Rule (DRR) on August 10, 2015 (40 CFR Part 51, Subpart BB). This rule requires air quality near sources with SO₂ emissions 2,000 tons per year (tpy) or greater be characterized using ambient air monitoring or modeling. On January 15, 2016, the SC DHEC submitted to the EPA a list of eight sources in the state around which SO₂ air quality must be characterized. These eight sources were characterized using modeling and/or took federally enforceable emissions limits. The SC DHEC does not operate any SO₂ monitoring sites to meet the DRR requirements.

Table 13: SO₂ Design Criteria – Data Requirement Rule Monitors

CBSA	Minimum Required DRR Monitors	Number of DRR Monitors	Site Names (AQS IDs) of Existing DRR Sites	Requirement Met (Y/N)
None	0	0	None	Y

The DRR also requires annual emissions reporting for sources that used modeling to show attainment with the standard under the rule. Forty (40) CFR § 51.1205 (b) requires that:

“For any area where modeling of actual SO₂ emissions serve as the basis for designating such area as attainment for the 2010 SO₂ NAAQS, the air agency shall submit an annual report to the EPA Regional Administrator by July 1 of each year, either as a stand-alone document made available for public inspection, or as an appendix to its Annual Monitoring Network Plan (also due on July 1 each year under 40 CFR §58.10), that documents the annual SO₂ emissions of each applicable source in each such area and provides an assessment of the cause of any emissions increase from the previous year.”

The SC DHEC submitted its 2021 annual emission report with its 2022 Network Plan to meet this requirement. The report applies to areas designated attainment/unclassifiable based on modeling of actual SO₂ emissions for Santee Cooper Cross Generating Station, New-Indy Catawba (formerly Resolute Industries), Sylvamo Eastover Mill (formerly International Paper – Eastover), and Dominion Wateree Station (formerly SCE&G Wateree Station.)

For the DRR 2021 annual emissions report found in Appendix I of the Network Plan, the EPA responded in a separate correspondence on September 19, 2022. The next annual SO₂ emissions report for these facilities is due July 1, 2023.

The Regional Administrator may require additional SO₂ monitoring stations above the minimum number of monitors required in 40 CFR Part 58, Appendix D, Section 4.4.2, where the minimum monitoring requirements are not sufficient to meet monitoring objectives. The SC DHEC is not required to operate a SO₂ monitor by the Regional Administrator at this time.

Table 14: SO₂ Design Criteria – Minimum Required SLAMS RA Monitors

CBSA	Minimum Required RA-40 Monitors	Number of RA-40 Monitors	Site Names (AQS IDs) of Existing RA-40 Monitors	Requirement Met (Y/N)
None	0	0	None	Y

The SC DHEC operates an additional SO₂ monitoring network to provide background concentration data. Two years of data are collected every four years at these sites. These are SPMs and do not require approval from the EPA for startup or shutdown. In order to be usable to support the SC DHEC’s prevention of significant deterioration (PSD) modeling and permitting activities, the rotating SO₂ monitoring network must meet the requirements in Appendix B to 40 CFR Part 58. Section 8.3 of Appendix W to 40 CFR Part 51 discusses using air monitoring data for background concentrations and Appendix B to 40 CFR Part 58 discusses quality assurance requirements for PSD air monitoring that must be followed for the data to be useable for PSD and permitting purposes.

Table 15 lists the two SO₂ monitors that the SC DHEC includes in its rotating background monitoring network that are currently operating. EPA recommends that the SC DHEC evaluate the listed monitoring objective for the Trenton monitor, which is currently listed as “source oriented.” The Trenton monitor began operating in 2022 as a part of the SC DHEC’s rotating background monitoring network. If the SC DHEC believes the Trenton monitor is best classified as source-oriented, EPA requests that it provide information supporting this position in its 2023 Network Plan, such as the identity of the nearby SO₂ source.

Table 15: SO₂ Rotating Background Monitoring

CBSA	Site Name (AQS ID)	Frequency of Operation	Next Expected Years of Operation	Monitoring Objective in Network Plan
Charlotte-Concord-Gastonia, NC-SC	York Landfill (AQS ID: 45-091-0008)	Every other 2 years	2020-2022	Upwind Background
August-Richmond County, GA-SC	Trenton (AQS ID: 45-037-0001)	Every other 2 years	2022-2023	Source-oriented

The South Carolina SO₂ monitoring network meets the monitoring requirements in 40 CFR Part 58.

Pb Monitoring Requirements
40 CFR Part 58, Appendix D, Section 4.5

The monitoring requirements for Pb found at 40 CFR Part 58, Appendix D, Section 4.5 require that at a minimum, there must be one source-oriented SLAMS site located to measure the maximum Pb concentration in ambient air resulting from each non-airport Pb source which emits 0.50 or more tons per year and from each airport which emits 1.0 or more tons per year.

Although South Carolina has no sources that exceed the emissions thresholds for Pb monitoring, the SC DHEC and Clarios, LLC (formerly Johnson Controls Battery Group) conduct source-oriented ambient Pb monitoring at three sites around the Florence Recycling Center in Florence. These monitoring data are comparable to the NAAQS. The company and SC DHEC conduct this monitoring under terms of a settlement agreement reached with several petitioners who commented on the construction permit for the facility. Locations for the monitoring sites were selected based upon an agreement between the company and stakeholders. As of March 22, 2021, Clarios ceased production at the recycling center.

After production ceased, the EPA requested that the SC DHEC continue to monitor for Pb near the facility at the JCI Woods site. The SC DHEC discontinued monitoring at the other two sites – JCI Entrance (AQS ID: 45-041-8002) and JCI Railroad (AQS ID: 45-041-8001). The JCI Woods (AQS ID: 45-041-8001) site is still operating with a primary and collocated sampler. The Pb monitoring should continue as long as there is a possibility of Pb emissions or re-entrainment of Pb dust. That is, monitoring should continue until the following occurs:

- The permit should be revoked, so that operations cannot restart, and
- A cleanup plan that addresses suppression and/or monitoring of potentially Pb containing dust should be in place.

EPA requires that the SC DHEC provide documentation of the permit being revoked and of a cleanup plan that addresses minimizing the re-entrainment of Pb containing dust. The EPA will consider the monitor shutdown request once the SC DHEC provides sufficient information to support a conclusion that ambient Pb concentrations are not expected to exceed the NAAQS given the current and future disposition of the site.

Table 16: Pb Design Criteria – Minimum Required Source-Oriented Monitors

Source	CBSA	Minimum Required Source-Oriented Pb Sites	Number of Source-Oriented Pb Sites	Site Names (AQS IDs) of Existing Source-Oriented Sites	Requirement Met (Y/N)
Clarios ¹	Florence, SC	0	1	JCI Woods (AQS ID: 45-041-8003)	Y

1. This monitoring is not required by EPA rules, but is part of a settlement agreement between the SC DHEC, the facility, and community groups. The SC DHEC operates these samplers as SPMs to evaluate Pb NAAQS compliance.

The Pb monitoring collocation requirements are found in 40 CFR Part 58, Appendix A, 3.4.4. These requirements include that: 15 percent of the primary monitors are collocated and have at least one collocated quality control monitor (if the total number of monitors is less than three). These collocation requirements are assessed at the PQAQ level. The SC DHEC is required to operate one collocated Pb monitor and it operates it at the JCI Woods (AQS ID: 45-041-8003) site (see Table 17).

Table 17: Pb Design Criteria – Minimum Required Collocated Monitors

PQAQ	Minimum Required	Number of	Site Names (AQS IDs) of Existing Collocated Sites	Requirement Met (Y/N)
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	Collocated Monitors	Collocated Monitors		
SC DHEC	1	1	JCI Woods (AQS ID: 45-041-8003)	Y

The Pb monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM₁₀ Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.3

40 CFR Part 58, Appendix D, Section 4.6 and Table D-4

Ambient air monitoring network design criteria for PM₁₀ are found in 40 CFR Part 58, Appendix D, Section 4.6. Table D-4 in this section indicates the approximate number of PM₁₀ stations required in MSAs with populations exceeding 100,000 to characterize national and regional PM₁₀ air quality trends and geographical patterns. The SC DHEC, GA EPD and MCAQ are required to operate six PM₁₀ monitors at five sites in CBSAs in or abutting the state (see Table 18).

Table 18: PM₁₀ Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS	Number of SPMs or Other Regulatory Monitors	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	0	Augusta (AQS ID: 13-245-0091) ¹	Y
Charleston-North Charleston, SC	1	1	0	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	Y
Charlotte-Concord-Gastonia, NC-SC	2	2	0	Garinger (AQS ID: 37-119-0041) ² Ramblewood Park (AQS ID: 37-119-0047) ²	Y
Columbia, SC (NCORE)	1	1	1	Cayce City Hall (AQS ID: 45-063-0010)	Y
Greenville-Anderson, SC	1	1	0	Greenville ESC (AQS ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	0	Coastal Carolina (AQS ID 45-051-0008) ³	Y

1. The Augusta site is operated by the GA EPD
2. The Garinger and Ramblewood Park sites are operated by the MCAQ
3. The Coastal Carolina PM₁₀ monitoring is expected to start in 2023

The estimated 2021 census numbers indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA has surpassed 500,000 people. The Myrtle Beach area is now subject to additional minimum monitoring requirements of 40 CFR Part 58, Appendix D, Table D-4 for one PM₁₀ monitor.

The Network Plan Addendum, received on October 26, 2022, proposes to meet this requirement by operating a T640x monitor, which measures both PM₁₀ and PM_{2.5}, at the existing Coastal Carolina (AQS ID 45-051-0008) site. The EPA's evaluation of this proposed startup was based primarily on analysis of PM_{2.5} in the Myrtle Beach MSA. This is discussed in the PM_{2.5} section. The EPA supports PM₁₀ and PM_{2.5} requirements being met at the same site because PM₁₀ levels in the MSA are typically not near the NAAQS and having one site to measure both PM₁₀ and PM_{2.5} will save the SC DHEC resources. Thus,

the EPA approves the startup of PM₁₀ monitoring at the Coastal Carolina site to meet the new PM₁₀ minimum requirement.

The PM₁₀ collocation requirements for manual methods are found in 40 CFR Part 58, Appendix A, 3.3.4. Those requirements include that: 15 percent of each network of manual PM₁₀ methods (at least one site) must be collocated and the sites with collocated monitors should be among those measuring annual mean concentrations in the highest 25 percent of the network. These collocation requirements are assessed at the PQAQO level. The SC DHEC is not required to operate any PM₁₀ collocated monitors.

Table 19: PM₁₀ Design Criteria – Minimum Required Collocated Monitors

PQAQO	Sites with Manual PM ₁₀ Method	Minimum Required Collocated Monitors	Number of Collocated PM ₁₀ Monitors	Site Names (AQS IDs) of Collocated Sites	Requirement Met (Y/N)
SC DHEC	0	0	0	None	Y

The proposed PM₁₀ monitoring network described in the Network Plan meets all design criteria of 40 CFR Part 58.

PM_{2.5} Monitoring Requirements

40 CFR Part 58, Appendix A, Section 3.2

40 CFR Part 58, Appendix D, Section 4.7 and Table D-5

Ambient air monitoring network design criteria for PM_{2.5} are found in 40 CFR Part 58, Appendix D, Section 4.7. This section requires that state and, where applicable, local agencies must operate the minimum number of required PM_{2.5} SLAMS sites listed in Appendix D, Table D-5. The SC DHEC, GA EPD and MCAQ operate PM_{2.5} SLAMS monitors at eight sites in CBSAs in or abutting the state. (see Table 20).

Table 20: PM_{2.5} Design Criteria – Minimum Required SLAMS Monitors

CBSA	Minimum Required SLAMS	Number of SLAMS Sites	Number of SPMs or Other Regulatory Monitoring Sites	Site Names (AQS IDs) of SLAMS	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	2	2	0	Augusta (AQS ID: 13-245-0091) ¹ Trenton (AQS ID: 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	1	NCFS (AQS ID: 45-019-0020) Cape Romain (AQS ID: 45-019-0046)	Y
Charlotte-Concord-Gastonia, NC-SC	2	3	2	Garinger (AQS ID: 37-119-0041) ² Remount (AQS ID: 37-119-0045) ² Friendship Park (AQS ID: 37-119-0048) ²	Y
Columbia, SC (NCore)	1	2	0	Irmo (AQS ID: 45-063-0008) ³ Irmo DJJ (AQS ID: 45-079-0022) ³ Parklane (AQS ID: 45-079-0007)	Y
Greenville-Anderson, SC	1	2	0	Greenville ESC (AQS ID: 45-045-0015) Hillcrest (AQS ID: 45-045-0016)	Y
Florence, SC	0	1	0	Williams Middle School (AQS ID: 45-041-0003)	Y
Spartanburg, SC	0	1	0	T.K. Gregg (AQS ID: 45-083-0011)	Y
Myrtle Beach-Conway-North	1	1	0	Coastal Carolina (AQS ID: 45-051-0008) ⁴	Y

Myrtle Beach SC-NC					
None	0	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

1. The Augusta site is operated by the GA EPD
2. The Garinger, Remount, and Friendship Park sites are operated by the MCAQ
3. SC DHEC will relocate the Irmo site to Irmo DJJ due to site access issues.
4. The Coastal Carolina PM_{2.5} monitoring is expected to start in 2023

The SC DHEC previously proposed relocating the Irmo monitoring site (AQS ID: 45-063-0008) to the Irmo Department of Juvenile Justice (DJJ) monitoring site (AQS ID: 45-079-0022). In 2019, the owners of the property where the Irmo site is located requested the monitoring site be removed from their property. After working with EPA Region 4, the SC DHEC was able to locate a suitable site 2.4 miles northeast from the Irmo site. The demographics and location of the new Irmo DJJ site are similar to the original Irmo site, and meet the requirements of 40 CFR Part 58, Appendix E. As such, the EPA previously approved relocating of the Irmo site to the Irmo DJJ PM_{2.5} monitoring site.

The estimated 2021 census data indicate that the population of the Myrtle Beach-Conway-North Myrtle Beach, SC-NC MSA has surpassed 500,000 people. The Myrtle Beach area is now subject to additional minimum monitoring requirements of 40 CFR Part 58, Appendix D, Table D-5 for one PM_{2.5} monitor.

The Network Plan Addendum, received on October 26, 2022, proposes to meet this requirement by operating a T640x monitor, which measures both PM₁₀ and PM_{2.5}, and a PM_{2.5} FRM sampler at the existing Coastal Carolina site (AQS ID 45-051-0008).

PM_{2.5} network design criteria in 40 CFR Part 58, Appendix D, Section 4.7 require that “(1) At least one monitoring station is to be sited at neighborhood or larger scale in an area of expected maximum concentration.” Since this would be the first PM_{2.5} monitoring site in the Myrtle Beach MSA, the EPA considered these criteria when evaluating the Network Plan Addendum request.

The SC DHEC provided information that the Coastal Carolina site would be spatially representative of mobile and stationary source emissions in the area. Additionally, the EPA looked at the Fused Air Quality Surface Using Downscaling (FAQSD) 2019 output file that is based on Community Multiscale Air Quality (CMAQ) and ambient PM_{2.5} measurements¹. The receptor near the Coastal Carolina site is one of the 10 highest modelled annual average PM_{2.5} concentrations. The highest modeled PM_{2.5} concentrations are mostly inland along the US 501 corridor. The Coastal Carolina site is five miles inland from downtown Myrtle Beach and near US 501.

Based on this information, the EPA believes that the Coastal Carolina site could be considered an area of expected maximum concentration for PM_{2.5} in the Myrtle Beach MSA. Because the Coastal Carolina site is an established site, the SC DHEC would save resources by having all the required monitoring for the area at one site instead of spending additional funds to establish a second site in the area. The EPA approves the establishment of PM_{2.5} monitoring at the Coastal Carolina site (AQS ID 45-051-0008) to meet minimum monitoring requirements for the area.

The proposed PM_{2.5} monitoring network described in the Network Plan and Network Plan Addendum meets the minimum monitoring requirements described in 40 CFR Part 58, Appendix D, Section 4.7 and Table D-5.

¹ <https://www.epa.gov/hesc/rsig-related-downloadable-data-files>; FAQSD technical information https://www.epa.gov/sites/production/files/2016-07/documents/data_fusion_meta_file_july_2016.pdf

PM_{2.5} Collocation Requirements
40 CFR Part 58, Appendix A, Section 3.2

Forty (40) CFR Part 58, Appendix A, Section 3.2.3 states that 15 percent of each network of manual PM_{2.5} methods (at least one site) must be collocated. Section 3.2.3.1 states that for each distinct monitoring method designation (FRM or FEM) that a PQAQO is using for a primary monitor, the PQAQO must have 15 percent of the primary monitors of each method designation collocated, and have at least one collocated quality control monitor. The first collocated monitor must be a designated FRM monitor.

Section 3.2.3.2 states that for each primary monitor designated as an FEM used by the PQAQO, 50 percent of the monitors designated for collocation (or the first if only one collocation is necessary) shall be collocated with a FRM quality control monitor and 50 percent of the monitors shall be collocated with a monitor having the same method designation as the FEM primary monitor.

The SC DHEC is transitioning its PM_{2.5} network to include more continuous FEM equipment and reducing the number of filter-based, FRM equipment. Specifically, the SC DHEC will operate more Teledyne T640 and T640x monitors (AQS method codes 236 and 238 respectively). EPA staff recently discussed with SC DHEC staff their plans to continue to meet regulatory collocation requirements in 2023 as FEM methods are started up and less FRM samplers are run. The EPA believes that the SC DHEC has a good plan for maintaining compliance with the PM_{2.5} collocation requirement.

The Network Plan and Network Plan Addendum do not, on their own, fully demonstrate that collocation requirements are met. Thus, the EPA requests that next year’s network plan indicate the primary monitoring method at each site measuring PM_{2.5} and if the site has a PM_{2.5} QA collocated monitor or sampler. If this will change over the year following submission of the next network plan, then the SC DHEC should indicate how PM_{2.5} collocation requirements will continue to be met.

The table below shows the SC DHEC collocated monitors and requirements for the PM_{2.5} network as currently set up in AQS for four PM_{2.5} measurement methods. Currently there is a gap in collocation for the Teledyne T640 FEM measurements (AQS method code 236). However, the SC DHEC will address this issue by switching the existing T640 monitor to the primary monitor at the Chesterfield site (AQS ID 45-025-0001) and the existing FRM sampler to the QA collocated sampler in AQS.

Additionally, in the Network Plan, the SC DHEC has designated the NCFS site (AQS ID: 45-019-0020) as a collocated QA SPM. However, because it is a monitor required by 40 CFR Part 58, Appendix A, Section 3.2.3.2, the collocated monitor at NCFS, or at any other required collocated site, should be classified a SLAMS. The EPA requests that SC DHEC change the monitor type of any required collocated samplers to SLAMS in AQS.

Table 21: PM_{2.5} Design Criteria – Minimum Required Collocated Monitors

PQAQO	Method	AQS Method Code	Number of Primary Monitors	Minimum Required Collocated Monitors	Number of Collocated Monitors	Site Names (AQS IDs) of Collocated Sites	Requirements Met (Y/N)
SC DHEC	FDMS w/ VSCC	581	1	1	1	Irmo ¹ (AQS ID: 45-063-0008) Irmo DJJ ¹ (AQS ID: 45-079-0022)	Y

SC DHEC	FRM Gravimetric w/ VSCC	145	6	1	3	Hillcrest (AQS ID: 45-045-0016) Parklane (AQS ID: 45-079-0007) NCFS (AQS ID 45-019-0020)	Y
SC DHEC	Teledyne T640X at 16.67 LPM	238	2	1	2	Greenville ESC (AQS ID: 45-045-0015)	Y
SC DHEC	Teledyne T640 at 5.0 LPM	236	1	1	0 ²		N ²

1. The EPA has approved relocating the Irmo site to the Irmo DJJ site due to access issues.
2. The SC DHEC will address this in AQS by switching the T640 at the Chesterfield site to the primary monitor and the FRM already operating to the collocated monitor.

The PM_{2.5} monitoring network, after the updates in AQS to the Chesterfield site, will meet all design criteria of 40 CFR Part 58.

PM_{2.5} Near-Road Monitoring Requirements 40 CFR Part 58, Appendix D, Section 4.7.1(b)(2)

Regulatory requirements in 40 CFR Part 58, Appendix D, Section 4.1.1(b)(2) require that in CBSAs with populations of 1,000,000 or more persons, at least one PM_{2.5} monitor is to be collocated at a near-road NO₂ station. One CBSA with a population of 1,000,000 or more persons is partially in the State of South Carolina, the Charlotte-Gastonia-Concord, NC-SC CBSA, and the MCAQ operates the required PM_{2.5} near-road monitor at its Remount site.

Table 22: PM_{2.5} Design Criteria – Minimum Required SLAMS Near-Road Monitors

CBSA	Minimum Required Near-road PM _{2.5}	Number of Near-road PM _{2.5}	Site Names (AQS IDs) of Existing PM _{2.5} Near-Road	Requirement Met (Y/N)
Charlotte-Gastonia-Concord, NC-SC	1	1	Remount (37-119-0045) ¹	Y

1. The Remount site is operated by the MCAQ

The near-road PM_{2.5} monitoring network described in the Network Plan meets the design criteria of 40 CFR Part 58.

PM_{2.5} Continuous Monitoring Requirements 40 CFR Part 58, Appendix D, Section 4.7.2

Regulatory requirements for continuous PM_{2.5} continuous monitoring require that "...State, or where appropriate, local agencies must operate continuous PM_{2.5} analyzers equal to at least one-half (round up) the minimum required sites listed in Table D-5 of this appendix.

At least one required continuous analyzer in each MSA must be collocated with one of the required FRM/FEM/ARM (federal reference method/federal equivalent method/approved regional method) monitors, unless at least one of the required FRM/FEM/ARM monitors is itself a continuous FEM or ARM monitor in which case no collocation requirement applies."

Six MSAs listed in Table 23, below, are required to have continuous monitors. Eight MSAs in or partially in South Carolina have continuous PM_{2.5} monitors as does one site not in an MSA. The requirements are met in all MSAs in the state.

Table 23: PM_{2.5} Design Criteria – Continuous Monitors

MSA	Minimum Required Continuous PM _{2.5}	Number of Continuous PM _{2.5} Monitors	Site Names (AQS IDs) of Existing PM _{2.5} Monitors	Requirement Met (Y/N)
Augusta-Richmond County, GA-SC	1	1	Trenton (AQS ID: 45-037-0001)	Y
Charleston-North Charleston, SC	1	2	Cape Romain (AQS ID: 45-019-0046) NCFS (AQS ID: 45-019-0020)	Y
Charlotte-Concord-Gastonia, NC-SC	1	5	Garinger (AQS ID: 37-119-0041) ¹ Friendship Park (AQS ID: 37-119-0048) ¹ Remount (AQS ID: 37-119-0045) ¹ Rockwell (AQS ID: 37-159-0021) ² Catawba Longhouse (AQS ID: 45-091-8801) ³	Y
Columbia, SC (NCore)	1	2	Irmo (AQS ID: 45-063-0008) ⁴ Irmo DJJ ⁴ (AQS ID: 45-079-0022) Parklane (AQS ID: 45-079-0007)	Y
Florence, SC	0	1	Williams Middle School (AQS ID: 45-041-0003)	Y
Greenville-Anderson, SC	1	1	Greenville ESC (AQS ID: 45-045-0015)	Y
Myrtle Beach-Conway-North Myrtle Beach SC-NC	1	1	Coastal Carolina (AQS ID 45-051-0008) ⁵	
Spartanburg, SC	0	1	T.K. Gregg (AQS ID: 45-083-0011)	Y
Remainder of State	0	1	Chesterfield (AQS ID: 45-025-0001)	Y

1. The Garinger, Friendship Park, and Remount sites are operated by the MCAQ
2. The Rockwell site is operated by North Carolina Department of Air Quality
3. The Catawba Longhouse site is operated by Catawba Indian Nation (CIN)
4. SC DHEC will relocate the Irmo continuous monitor to Irmo DJJ
5. The Coastal Carolina PM_{2.5} monitoring is expected to start in 2023

PM_{2.5} Background and Transport Sites 40 CFR Part 58, Appendix D, Section 4.7.3

Monitoring requirements in 40 CFR Part 58, Appendix D, Section 4.7.3 state that each state shall install and operate at least one PM_{2.5} site to monitor for regional background concentrations and at least one PM_{2.5} site to monitor for regional transport concentrations.

Table 24: PM_{2.5} Regional Background and Transport Monitors

Requirement	Minimum Required Continuous PM _{2.5} Monitors	Number of Continuous PM _{2.5} Monitors	Site Names (AQS IDs) of PM _{2.5} SLAMS	Requirement Met (Y/N)
Background	1	1	Cape Romain (AQS ID: 45-019-0046)	Y
Transport	1	1	Chesterfield (AQS ID: 45-025-0001)	Y

On April 10, 2020, the SC DHEC temporarily replaced the Chesterfield (AQS ID: 45-025-0001) continuous PM_{2.5} TEOM sampler with a T640, redesignating the monitor as an SPM in AQS. Use of the TEOM sampler resumed on April 23, 2021, but the monitor was not returned to a SLAMS in AQS. The

EPA requests that the SC DHEC update the monitor’s designation in AQS to reflect what is represented in the Network Plan.

As identified in Table 24, the SC DHEC meets the requirements of 40 CFR Part 58 by operating one background site and one transport site.

PM_{2.5} Chemical Speciation Network (CSN)
40 CFR Part 58, Appendix D, Section 4.7.4

Monitoring requirements in 40 CFR Part 58, Appendix D, Section 4.7.4 require that each state shall conduct chemical speciation monitoring and analyses at sites designated to be part of the PM_{2.5} Speciation Trends Network (STN). The selection and modification of these STN sites must be approved by the Administrator. The PM_{2.5} CSN includes STN stations and supplemental speciation stations that provide chemical species data of fine particulate.

The EPA funds one STN monitor in South Carolina at the Parklane site (see Table 25).

Table 25: PM_{2.5} Chemical Speciation Network – Non-SLAMS Monitors

CBSA	Site Name (AQS ID) of CSN Monitor
Columbia, SC	Parklane (AQS ID: 45-079-0007)

Photochemical Assessment Monitoring Stations (PAMS)
40 CFR Part 58, Appendix D, Section 5.0

With the promulgation of a new O₃ NAAQS on October 1, 2015, the EPA finalized changes to the PAMS requirements. The 2015 regulations required the new PAMS network to begin operating by June 1, 2019. On December 20, 2019, the EPA revised the start date for the updated stations. The revision was published in the Federal Register on January 8, 2020, and extended the date by which the stations are to begin operating to June 1, 2021. South Carolina’s NCore site at Parklane is not required to operate PAMS monitoring since the Columbia, SC CBSA’s population is less than one million. Thus, the state is not required to meet the PAMS requirement.

Air Toxics Monitoring Network

As part of the National Air Toxics Trends Station (NATTS) network, the SC DHEC samples for metals, semi-volatile organic compounds, carbonyls, and volatile organic compounds (SVOCs) at the Chesterfield monitoring site (AQS ID: 45-025-0001). The SC DHEC added ethylene oxide (EtO) sampling as part of the Tier 1 target analytes at the Chesterfield site in November 2020. The SC DHEC entered into a direct contract with Eastern Research Group (ERG) to analyze EtO samples. All other NATTS analytes are analyzed by the SC DHEC. The collection and analysis of NATTS samples from the Chesterfield site are conducted in accordance with an EPA-approved quality assurance project plan (QAPP).

The SC DHEC was awarded a Community-Scale Air Toxics Monitoring grant to collect air samples for a one-year period at three locations in several North Charleston area environmental justice communities, and one location that is high traffic outside of the North Charleston area. The sampling started May 11, 2022, and the samples will be analyzed for EtO. The sites are: Irving (45-019-0021), Rosemont (45-019-0009), and Gethsemane (45-019-0022), and FAA (45-019-0048) (high traffic site). The results will be

uploaded to AQS. The EPA appreciates the SC DHEC’s efforts on this study and for the NATTS program.

The SC DHEC also collects samples for SVOCs in the Columbia, SC MSA at the Parklane (AQS ID: 45-079-0020) site. Air toxics sampling at Parklane is conducted at the SC DHEC’s discretion and according to SC DHEC, it is not collected using EPA or state-match funds. The EPA recommends that the SC DHEC develop and approve a QAPP for air toxics sampling in order to have data of sufficient quality for SC DHEC's intended use of the data, such as risk screening analysis and/or sharing concentrations measured with the public.

Non-SLAMS Monitoring

The Network Plan also includes the following non-SLAMS monitoring summarized in Table 26. These monitors include criteria pollutant monitoring comparable to the NAAQS, continuous PM_{2.5} monitoring used for the AQI, air toxics monitoring, and/or tribal air monitoring.

Table 26: Non-SLAMS Monitors

CBSA	Pollutant(s)	Site Name (AQS ID) of Non-SLAMS Monitor	Monitor Type	NAAQS Comparable?
Augusta-Richmond County, GA-SC	SO ₂	Trenton (AQS ID: 45-037-0001)	SPM – 2yr rotating	Y - but operating for only 2 years
Charleston-North Charleston, SC	NO ₂	Jenkins Ave. Fire Station (AQS ID: 45-019-0003)	SPM	Y
Charleston-North Charleston, SC	NO ₂	Cape Romain (AQS ID: 45-019-0046)	SPM	Y
Charleston-North Charleston, SC	PM _{2.5}	FAA (AQS ID: 45-019-0048)	SPM	Y
Charleston-North Charleston, SC	SO ₂	York Landfill (45-091-0008)	SPM – 2yr rotating	Y - but operated for only 2 years
Charlotte-Concord-Gastonia, NC-SC	PM _{2.5} Cont., O ₃	Catawba Longhouse (AQS ID: 45-091-8801) ¹	Tribal	Y
Columbia, SC	PM _{2.5} Cont.	Irmo (AQS ID: 45-063-0008)	SPM	Y
Columbia, SC	SVOC, Precipitation, PM ₁₀ , Chemicals	Parklane (AQS ID: 45-079-0007)	SPM	Y – only for PM ₁₀
Columbia, SC	O ₃	Congaree Bluff (AQS ID: 45-079-0021)	SPM	Y for Congaree National Park Only
Columbia, SC	NO ₂	Sandhill Experimental Station (AQS ID: 45-079-1001)	SPM	Y
Florence, SC	Pb	JCI Entrance (AQS ID: 45-041-8002) JCI Woods (AQS ID: 45-041-8003)	SPM	Y
Greenville-Anderson, SC	PM _{2.5} Continuous	Greenville ESC (AQS ID: 45-045-0015)	SPM	Y
Spartanburg, SC	PM _{2.5} Continuous for AQI	T.K. Gregg (AQS ID: 45-083-0011)	SPM	N
Not in an MSA	O ₃ , Metals, Carbonyls, SVOCs, VOCs, Precipitation	Chesterfield (AQS ID: 45-025-0001)	SPM	Y for O ₃ , N/A for all else

1. The Catawba Longhouse site is operated by the CIN

**Memoranda of Agreement (MoA) with Neighboring State and Local Air Monitoring Agencies
40 CFR Part 58, Appendix D, 2(e)**

Section 2(e) of Appendix D to 40 CFR Part 58 states:

“The EPA recognizes that State or local agencies must consider MSA/CSA boundaries and their own political boundaries and geographical characteristics in designing their air monitoring networks. The EPA recognizes that there may be situations where the EPA Regional Administrator and the affected State or local agencies may need to augment or to divide the overall MSA/CSA monitoring responsibilities and requirements among these various agencies to achieve an effective network design. Full monitoring requirements apply separately to each affected State or local agency in the absence of an agreement between the affected agencies and the EPA Regional Administrator.”

The SC DHEC maintains MoAs to address minimum monitoring requirements with the GA EPD, NC DAQ, and MCAQ. These MoAs are summarized in Table 27.

Table 27: MoAs to Meet Monitoring Requirements for CBSAs Crossing Jurisdictional Boundaries

CBSA	Agencies on the MoA	Pollutants	Date of Agreement	Expiration
Augusta-Richmond County, GA-SC	SC DHEC, GA EPD	PM ₁₀ , PM _{2.5} , O ₃ , and other criteria pollutants as necessary	January 2017	Every 10 years
Charlotte-Concord-Gastonia, NC-SC	SC DHEC, NC DAQ, MCAQ	Criteria pollutant monitoring required by 40 CFR 58, Appendix D	July 1, 2016	Every 10 years
Myrtle Beach-Conway-North Myrtle Beach, SC MSA	SC DHEC, NC DAQ	O ₃ and other criteria pollutants as necessary	July 1, 2015	Every 10 years

The EPA approves of the SC DHEC agreements to share regulatory monitoring requirements for the Charlotte, Myrtle Beach, and Augusta CBSAs. The EPA encourages the SC DHEC to work with the NC DAQ to investigate possible locations for a second required O₃ monitor in the Myrtle Beach-Conway-North Myrtle Beach, SC MSA. Preference should be given to possible O₃ maximum concentration areas in the MSA. The EPA requests that findings of this investigation be included in the state’s 2023 Network Plan. The EPA also encourages the SC DHEC to begin investigating locations for a possible PM₁₀ and PM_{2.5} monitoring site in the Myrtle Beach-Conway-North Myrtle Beach, SC MSA. Finally, the EPA recommends working with the GA EPD to establish a second PM_{2.5} monitoring site in the Augusta-Richmond County, GA-SC MSA.

**Monitoring Siting Criteria and Site Assessments
40 CFR Part 58, Appendix E**

In reference to the Network Plan, 40 CFR § 58.10(a)(1) states:

“The plan shall include a statement of whether the operation of each monitor meets the requirements of appendices A, B, C, D, and E of this part, where applicable. The Regional Administrator may require additional information in support of this statement.”

The Network Plan includes assessment information for all monitoring sites. The EPA appreciates the inclusion of this information and the work that the SC DHEC has done to evaluate siting criteria at all of its monitoring sites. The EPA understands that the SC DHEC is still working to resolve siting criteria issues identified by its own assessments and in recent EPA audits and appreciates the SC DHEC’s continued progress in resolving these issues.

Areas with Environmental Justice Concerns

The EPA recognizes that the Network Plan submitted in 2022 meets the federal regulatory requirements outlined at 40 CFR §58.10 and Appendices A through E (with the exceptions noted in above sections), including consideration of areas with susceptible and vulnerable populations. For future plans, including next year’s plan, we encourage the SC DHEC to continue evaluating areas with environmental justice concerns² related to ambient air monitoring. Where possible, please add detail to the discussion of environmental justice considerations taken into account and related to the ambient air quality network.

American Rescue Plan

The primary objective of American Rescue Plan (ARP) Ambient Air Monitoring Network Upgrades funding is to enhance monitoring of PM_{2.5} or other national ambient air quality standard (NAAQS) pollutants in and near communities with environmental justice concerns which face disproportionate exposure to these pollutants and health risks and are also associated with increased vulnerability to COVID-19. These funds will primarily be used to replace existing filter-based monitors or otherwise enhance existing monitors in and near those communities to provide 24/7, real-time reporting of air quality concentrations. The funds may be used to address other considerations in and near communities with environmental justice concerns including upgrading other NAAQS pollutant monitoring sites, upgrading certain NAAQS gas monitors and/or equipment not meeting performance or completeness goals, and other possible PM monitoring investments.

The SC DHEC and the CIN received funding under the ARP. As recipients of this funding, they will prepare and initiate procurement requests for equipment purchases, purchase the equipment, and plan for timely set-up and installation of equipment consistent with the goal of enhancing air monitoring activities in EJ and underserved communities (see Table 28 below). Quarterly reports will be submitted as well as a final progress report within 120 days of the project end date. Prior to beginning environmental information operations, the SC DHEC and the CIN must submit to the EPA a QAPP for all new pollutants to be monitored and methods to be used, if applicable, for approval 180 days prior to collection of environmental data.

Table 28. ARP Monitoring Equipment Upgrades

PQAO	Equipment Upgrades
SC DHEC	Teledyne T640 PM _{2.5} FEM monitor upgrades – 6 Teledyne T640 PM _{2.5} and PM ₁₀ FEM monitor upgrades – 5 QA collocated T640 PM _{2.5} FEM monitor – 1 PM _{2.5} monitor enclosures – 6 Data loggers – 4 Ozone calibrators - 3

² Executive Order 14008, January 27, 2021. Federal Register / vol. 86, No. 19, February 1, 2021, p. 7619. Securing Environmental Justice and Spurring Economic Opportunity. Section 219. Policy.

Catawba Indian Nation (CIN)	Ozone analyzer – 1 Wind speed and direction sensor – 1 FEM PM _{2.5} monitor – 1 Flow calibrator - 1 Flow meter – 1 Zero air generator - 1
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Waivers of Requirements

The EPA’s air monitoring regulations allow for the waiver of requirements in specific instances. The EPA requires ongoing waivers to be renewed every five years as part of the network assessment. The EPA granted a renewal of the waiver for the tree obstruction requirement at Congaree Bluff in an addendum to the state’s 2020 Network Plan.

Table 29: Summary of EPA Approved Waivers of Requirements

CBSA	Monitoring Site (s) Affected	Pollutant (s)	CFR Requirement Waived	EPA Waiver Authority/Rationale	Year Waiver First Granted	Waiver Expiration Date	Comments
Columbia, SC	Congaree Bluff (AQS ID: 45-079-0021)	O ₃ , SO ₂	40 CFR Part 58, Appendix E, Section 4 & 11	40 CFR Part 58, Appendix E, Section 10.1.2	2016	2025	Approval of spacing from trees requirements
Florence, SC	JCI Woods (AQS ID: 45-041-8003)	Pb	40 CFR Part 58, Appendix E, Section 4	40 CFR Part 58, Appendix E, Section 10.1.1	2020	2025	Approval of spacing from obstacles