west virginia department of environmental protection

Division of Air Quality
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Charleston, WV 25304

Austin Caperton, Cabinet Secretary
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WVDEP 2018 Ambient Air Monitoring Annual Network Plan

On October 17, 2006, the US Environmental Protection Agency (EPA) published final amendments to 40 CFR Part 53 and 58 "Revisions to Ambient Air Monitoring Regulations; Final Rule". This rule became effective on December 18, 2006.

Under Part 58, Subpart B-Monitoring Network, § 58.10 Annual Monitoring Network Plan and Periodic Assessments (a)(1): " Beginning July 1, 2007, the State, or where applicable local, agency shall adopt and submit to the Regional Administrator an annual monitoring network plan which shall provide for the establishment and maintenance of an air quality surveillance system that consists of a network of SLAMS monitoring stations including FRM, FEM, and ARM monitors that are part of SLAMS, NCore stations, STN stations, State speciation stations, SPM stations, and/or, in serious, severe and extreme ozone nonattainment areas, PAMS stations, and SPM monitoring stations. The plan shall include a statement of purposes for each monitor and evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of this part, where applicable. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. "

On March 28, 2016 (effective April 27, 2016) EPA finalized revisions to 40CFR Part 58 "Revision to Ambient Monitoring Quality Assurance and Other Requirements; Final Rule".

Under Part 58 §58.10 (a)(1) "Annual monitoring network plan and periodic network assessment" EPA amended the 2006 language to clarify the handling of any public comment received on the plan: "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 include and address, as appropriate, any received comments* (emphasis added).

The purpose of this document is to provide for the public inspection of and obtain comments on, the WV Department of Environmental Protection Division of Air Quality's (DAQ) ambient air monitoring Annual Network Plan (ANP) for 2018. This public inspection period is open for 30 days from the date of posting on our website at www.dep.wv.gov/daq/. Any written comments received during the 30-day public inspection period, regarding the ANP and the DAQ response will be forwarded to USEPA Region 3 along with the ANP. The ANP also documents any changes to the state's $PM_{2.5}$ monitoring that would affect the location of a violating $PM_{2.5}$ monitor. It should be noted that there are no $PM_{2.5}$ monitors in WV that

currently violate either the 24-hour or annual National Ambient Air Quality Standard. Except for circumstances not anticipated during this review period, such as inadequate federal or state funding, leasing issues, site maintenance issues, personnel resource issues or equipment failures no other *intentional* changes are expected to be made to the $PM_{2.5}$ monitoring network or the criteria pollutant monitoring network/stations during the next 12 months except those that are discussed within this document. All the monitoring sites are leased and those leases are subject to periodic renewals which can affect the DAQ's ability to retain a monitoring site location. The proposed changes are listed under the specific air monitoring site so that the public may have an opportunity to comment on any possible network modifications.

In the pages that follow, each individual monitoring site and corresponding photograph, is listed by county along with a statement as to whether it meets the requirements of Part 58, the Air Quality Subsystem (AQS) site ID number, site location information, sampling and analytical method for each parameter, the Metropolitan Statistical Area (MSA) that is represented by the site, proposed site changes and any other general comments regarding the site. Other pertinent information such as latitude/longitude, site purpose, the monitor's objective/site type and representative scale is also listed for each site.

Please send written comments to:

William F. Durham, Director
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West Virginia Department of Environmental Protection
601 57th Street, SE
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Comments may also be submitted via email to: William.F.Durham@wv.gov

For additional information and to view data publicly available from the AQS data system please visit www.epa.gov/airdata/ . For a copy of the latest WVDEP-DAQ annual air monitoring report please visit www.dep.wv.gov/daq/.

To review the September 2006 and April 2016 Monitoring Regulations please visit https://www3.epa.gov/ttn/amtic/monregs.html.

SO_2 Data Requirement Rule (DRR)

On August 10, 2015, the USEPA finalized requirements for air agencies to monitor or model ambient sulfur dioxide (SO_2) levels in areas with large sources of SO_2 emissions to help implement the 1-hour SO_2 National Air Ambient Quality Standard (NAAQS). The rule establishes that, at a minimum, air agencies must characterize air quality around sources that emit 2,000 tons per year (tpy) or more of SO_2. An air agency may avoid the requirement for air quality characterization near a source by adopting enforceable emission limits that ensure that the source will not emit more than 2,000 tpy of SO_2. The rule requires agencies to use either modeling of actual source emissions or appropriately sited ambient air quality monitors to assess local SO_2 concentrations.

As stated in the DAQ's 2017 ANP and supplement, there are no WV sources subject to the DRR rule that have elected to conduct ambient air monitoring for SO_2. However, the Verso Paper Corporation Luke Mill, an SO_2 source in Maryland, began conducting SO_2 monitoring in 2017. One of the SO_2 monitoring sites is located in Mineral County, WV. The Maryland Department of the Environment (MDE) will be the Primary Quality Assurance Organization (PQAO). There are also two SO_2 sources in Ohio; American Electric Power's James M. Gavin and the Ohio Valley Electric Corporation Kyger Creek power plants. Both facilities are electric generating utilities that are located within two miles of each other along the Ohio River in Gallia County. These facilities also began conducting SO_2 air monitoring under the SO_2 DRR beginning in 2017 and one of the sites is in Lakin, WV. The Ohio Environmental Protection Agency (OEPA) will be the PQAO. Additional details may be found herein under the specific WV counties. The DAQ will not be responsible for the operation, maintenance, data collection/reporting or quality assurance activities at these sites.

Berkeley County

Site: Martinsburg Ball Field
Location: Martinsburg Ball Field, Martinsburg, Berkeley County, WV
AQS ID: 54-003-0003
MSA: Hagerstown-Martinsburg, MD-WV
Latitude: 39.448001
Longitude:-77.96413

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 1999 to provide air quality monitoring in Berkeley County and the Eastern Panhandle of WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 10/02/2017

Gaseous:
Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/4/2017

Brooke County

Site: Mahan Lane
Location: Mahan Lane, Follansbee, Brooke County, WV
AQS ID: 54-009-0005
MSA: Steubenville-Weirton OH-WV
Latitude 40.34102
Longitude -80.59664

Comment: Site complies with Appendix A, C, D but does not comply with Appendix E of Part 58. There continues to be infringement of tree growth that is outside of site area which is affecting the ideal monitor distance from the tree drip line. The DAQ is also experiencing leasing issues with this site. While the DAQ continues to explore alternate siting options, the availability of sites that are both leasable and meet all the siting criteria is very limited. The site was established in 1983 to provide air quality monitoring in an industrialized area of Brooke County.

Implemented change: The DAQ discontinued the PM_{10} Hi-Volume sampling at this site at the end of 2017. The 2nd maximum 24 hour PM_{10} values have been running below 50% of the NAAQS of 150 $\mu g/m^3$ since 2002. The second maximum PM_{10} concentrations for the period 2013, 2014, 2015, 2016 and 2017 have been 32, 34, 40, 33 and 30 $\mu g/m^3$, respectively. The table below compares the 24 hour 2nd maximum PM10 between the Follansbee PM_{10} Hi-Vol sampler and the Marland Heights continuous PM_{10} TEOM for the period 2013 through 2017.

Site	2013	2014	2015	2016	2017
Follansbee PM_{10} Hi-Vol	32	34	40	33	30
Marland Heights PM_{10} TEOM	35	45	40	33	39

The continuous PM_{10} TEOM FEM monitor would continue to sample at Marland Heights in Brooke County as long as the current equipment is operable.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
PM_{10} Hi-Volume sampler, Size Selective Inlet, Federal Reference Method, utilizes 8”x10” quartz filters, samples once every six days. Collocated PM_{10} Hi-Volume sampler runs once every 12 days. Samples analyzed by gravimetric analysis.
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State audit conducted 4/04/2017 and 9/08/2017

$PM_{2.5}$ sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 9/06/2017
USEPA performance evaluation audit conducted 6/21/2017

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/04/2017

Site: McKims Ridge
Location: McKims Ridge Road, Brooke County, WV
AQS ID: 54-009-0007
MSA: Steubenville-Weirton OH-WV
Latitude 40.38966
Longitude -80.58624

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1997 as part of a dispersion model evaluation study and to provide additional air quality monitoring in Brooke and Hancock Counties in WV.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State accuracy audit conducted 11/08/2017

Site: Marland Heights
Location: Marland Heights, Weirton, Brooke County, WV
AQS ID: 54-009-0011
MSA: Steubenville-Weirton, OH-WV
Latitude 40.394583
Longitude -80.612017

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1992 to provide air quality monitoring in an industrial area of Brooke and Hancock Counties in WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
Tapered Element Oscillating Micro-Balance (TEOM) Series 1400/1400a continuous PM_{10} monitor.
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State flow rate audit conducted 5/07/2017 and 11/16/2017

$PM_{2.5}$ sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. A collocated $PM_{2.5}$ monitor samples every 12th day. Samples analyzed by gravimetric analysis.
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 9/06/2017
USEPA performance evaluation audit conducted 8/23/2017

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State accuracy audit conducted 2/09/2017
USEPA through the probe audit conducted 8/23/2017

Cabell County

Site: Huntington
Location: Marshall University, Henderson Center, Huntington, Cabell County, WV
AQS ID: 54-011-0006
MSA: Huntington-Ashland
Latitude 38.424133
Longitude -82.425900

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 1982 to provide air quality monitoring in an industrial area of Cabell County and the state's second most populous city in WV.

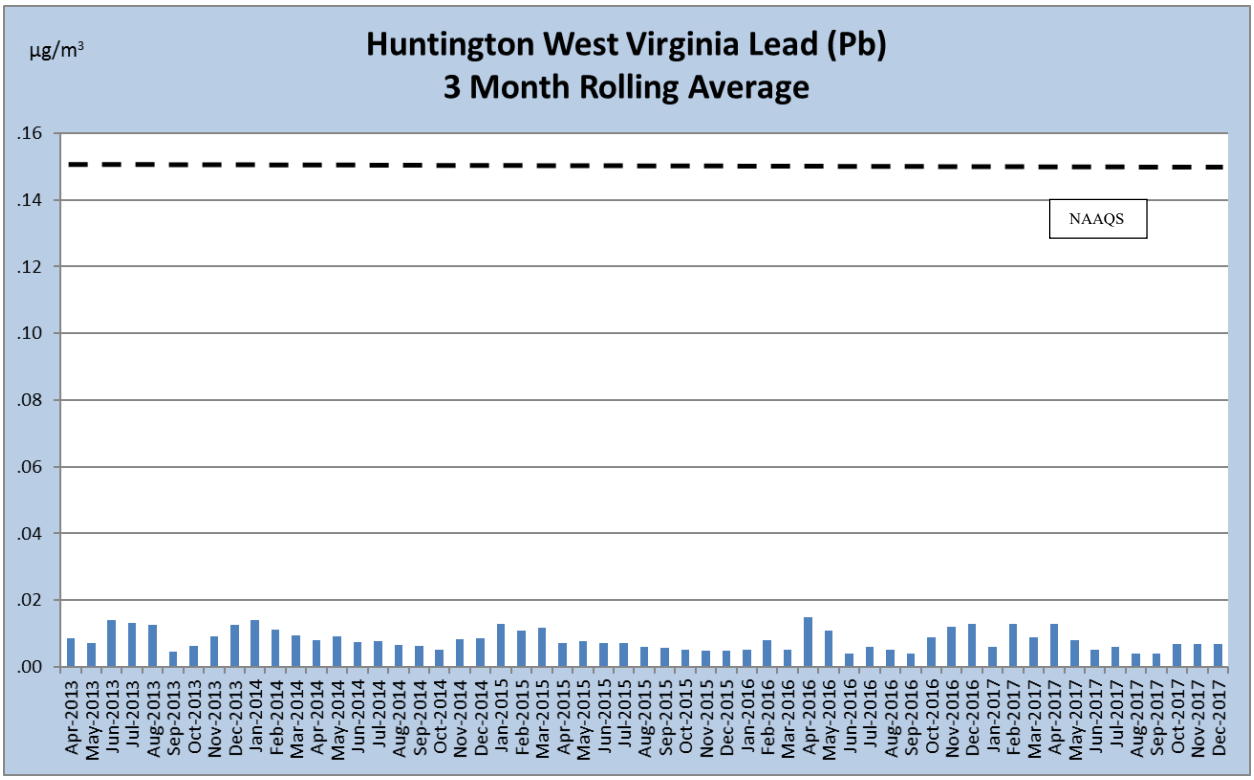
Proposed changes: As stated in the 2014 Annual Network Plan, due to operator safety and site access difficulties, the DAQ is working to relocate this site to a nearby USEPA approved location in 2017. All but the Pb samplers (see next paragraph) would be moved. The $PM_{2.5}$ monitor is in compliance with both the 24 hour and annual NAAQS. The new location will be named Prindle Field.

Location: 1313 14th Street, Huntington, Cabell County, WV
Latitude 38.243663

Longitude -82.255676

The highest three month rolling average for Pb for the period April 2012 through December 2015 was a 0.0140 µg/m^3 in 2014. The Pb NAAQS standard is 0.15 µg/m^3. Because the concentrations are approximately 93% below the NAAQS for Pb, the DAQ discontinued Pb sampling at the end of 2017. The chart below provides the rolling 3-month average since sampling began in 2012.

The DAQ discontinued SO_2 monitoring at this site upon approval of the previous ANP. There are limited resources and equipment to support the numerous SO_2 sites across the state especially at those sites where SO_2 has not been an issue. Minor resource savings from discontinuing SO_2 monitoring would allow resources to be shifted to more important monitoring activities. Since 2006-2008, the 1 hour SO_2 Design Values for Cabell County are well below the NAAQS standard of 75 ppb. The DV's are also similar to nearby SO_2 monitoring sites.



Parameters monitored, sampling method, scale, and purpose:

<u>Particulates:</u>
$PM_{2.5}$ sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. A collocated sequential $PM_{2.5}$ monitor samples every 12th day. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/18/2017 and 10/03/2017

Gaseous:
Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 5/23/2017

Lead (Pb):
A Total Suspended Particulate (TSP) lead monitor was installed at this site and the first sample was collected in February 2012.

A TSP Pb Tisch Hi-Volume TSP sampler collects samples once every six days on an 8”x10” glass fiber filter. A collocated Pb Hi-Volume TSP sampler runs once every twelve days. Samples analyzed for Pb using USEPA Region 9 Federal Equivalent Method for ICP-MS.
Representative siting scale: Middle scale
Monitoring objective/site type: Source oriented
State audit conducted 4/27/2017 and 10/19/2017

Greenbrier County

Site: Sam Black Church
Location: Department of Highway Garage, Sam Black Church, Greenbrier County, WV
AQS ID: 54-025-0003
MSA: NA
Latitude 37.908533
Longitude -80.632633

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 1999 to continue historical background ozone air quality monitoring that started in 1984 in Greenbrier County, a rural area of WV.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:
Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/11/2017
USEPA through the probe audit conducted 10/04/2017

Hancock County

Site: New Manchester
Location: New Manchester Elementary School, New Manchester, Hancock County, WV
AQS ID: 54-029-0005
MSA: Steubenville-Weirton, OH-WV
Latitude 40.529021
Longitude -80.576067

Comment: Site complies with Appendix A, C, D, of Part 58. Due to infringement of tree growth outside of leased area, the site does not comply with Appendix E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1972 to provide air quality monitoring in Hancock County, WV.

Implemented change: This 45-year-old site, running a single 30-year-old SO_2 analyzer, was well beyond its useful life. The siting conditions and infrastructure continued to deteriorate as trees and shrubbery outside the leased area continue to infringe upon the site. The site is poorly situated below a roadway and is very difficult to access in inclement weather. The SO_2 sources that once impacted the site have either closed or significantly reduced their emission such that the monitored values are well below the NAAQS. The DAQ decommissioned the entire New Manchester site after the end of 2017. Currently there are six sites that monitor SO_2 in Hancock County. Four miles south of the New Manchester, at approximately the same elevation, is the New Cumberland site. Six miles NNE of New Manchester at near the same elevation is the Lawrenceville SO_2 monitoring site. All three similarly situated sites are located in the approximate middle and northern areas of Hancock County. The table below indicates that the SO_2 Design Values are similar at all 3 site locations.

3-year Period	New Manchester Design Value ppb	New Cumberland Design Values ppb	Lawrenceville Design Values ppb
2010-2012	47	40	43
2011-2013	29	40	34
2012-2014	29	29	34
2013-2015	34	26	35
2014-2016	37	35	30
2015-2017	31	31	24

Parameters monitored, sampling method, scale, and purpose:

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 2/9/2017

Site: New Cumberland
Location: RD#1, Carothers Road, New Cumberland, Hancock County, WV
AQS ID: 54-029-0007
MSA: Steubenville-Weirton, OH-WV
Latitude 40.460138
Longitude -80.576567

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1990 as part of a multi-state SO_2 study (PA-WV-OH) and to provide air quality monitoring in Hancock County, WV.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 6/09/2017

Site: Chester
Location: Allison Elementary School, 647 Railroad Street, Chester, Hancock County, WV
AQS ID: 54-029-0008
MSA: Steubenville-Weirton, OH-WV
Latitude 40.615720
Longitude -80.560000

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1991 to provide air quality monitoring in northern Hancock County, WV.

Implemented change: The DAQ operated a special purpose TSP sampler at the Chester site that was used to capture particulate matter for subsequent analysis for metals. The sampler was installed in the early 1990's in response to the installation of the Waste Technology Industries incinerator in East Liverpool, OH. For several years DAQ would collect a monthly sample at the site. Beginning in the fall of 2015, TSP sampling was increased to once every 12 days as part of a special project. In April. 2016 a sequential PM_{10} sampler was installed at the site to collect respirable particulates ≤ 10 microns in diameter for metal analysis. The PM_{10} samples are collected on a once every 6-day schedule. The DAQ has been working closely with EPA Region 3 in conducting the TSP and PM_{10} metals sampling. The DAQ discontinued the TSP metals sampling at the end of 2017 and retained the current PM_{10} metals sampling at Chester.

The DAQ also discontinued operation of the SO_2 monitor at Chester at the end of 2017. The SO_2 monitoring site at Lawrenceville is located 1 mile ENE of the Chester site and has similar Design Value concentrations as the Chester site. Recent design values at both sites are < 50% of the NAAQS for SO_2.

3-year Period	Chester SO_2 Design Value ppb	Lawrenceville SO_2 Design Values ppb
2009-2011	69	68
2010-2012	35	43
2011-2013	28	34
2012-2014	26	34
2013-2015	22	35
2014-2016	22	30
2015-2017	18	24

Parameters monitored, sampling method, scale, and purpose:

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State accuracy audit conducted 8/10/2017

Other
Special purpose monitoring for the collection of PM_{10} samples for metals analysis is conducted at this site. PM_{10} samples are collected over a 24-hour period on a once every 6-day schedule.

Site: Summit Circle
Location: Summit Circle, Weirton, Hancock County, WV
AQS ID: 54-029-0009
MSA: Steubenville-Weirton, OH-WV
Latitude 40.427372

Longitude -80.592318

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1992 provide air quality monitoring in an industrial area of Hancock County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
Tapered Element Oscillating Micro-Balance (TEOM) Series 1400/1400a continuous PM_{10} monitor.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/17/2017 and 11/16/2017

$PM_{2.5}$ sequential sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 4/05/2017 and 9/06/2017

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/18/2017

Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/18/2017

Site: Lawrenceville
Location: Community Park and Tyrone Road, Lawrenceville, Hancock County, WV

AQS ID: 54-029-0015
MSA: Steubenville-Weirton, OH-WV
Latitude 40.618353
Longitude -80.540618

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site also operates a 10-meter meteorological tower. Site established in in 1995 in response to the 1992 installation of Waste Technology Industries (WTI), now known as Heritage Thermal Services, and to provide air monitoring in upper Hancock County, WV.

Implemented change: The DAQ operated a special purpose TSP sampler at the Lawrenceville site that was used to capture particulate matter for subsequent analysis for metals, until the end of 2017. The sampler was installed in the early 1990's in response to the installation of the Waste Technology Industries incinerator in East Liverpool, OH. DAQ discontinued the TSP sampling at Chester and Lawrence with EPA concurrence.

Parameters monitored, sampling method, scale, and purpose:

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 8/10/2017

Harrison County

Site: Clarksburg
Location: Washington Irving Junior High School, Clarksburg, Harrison County, WV
AQS ID: 54-033-0003

MSA: NA
Latitude 39.278117
Longitude -80.342250

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1997 to monitor $PM_{2.5}$ in Harrison County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 10/03/2017

Kanawha County

Site: NCore
Location: 1436 Dixie St., Charleston, Kanawha County, WV
AQS ID: 54-039-0020
MSA: Charleston, WV
Latitude 38.346258
Longitude -81.621161

Comment: Site complies with Appendix A, C, D, E of Part 58. Site required to be established by USEPA as part of the national NCore multi-pollutant monitoring network. This site replaces Baptist Temple site.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
Met One BAM 1020 continuous $PM_{2.5}$ monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/14/2017 and 10/18/2017

$PM_{2.5}$ sequential sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/20/2017 and 10/02/2017

PM_{10} sequential sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis. Data is used only to calculate and report PM Coarse which equals PM_{10} minus $PM_{2.5}$.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented

Gaseous:
Sulfur Dioxide – UV fluorescent continuous trace gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 12/30/2017

Ozone – UV absorption continuous trace gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 5/19/2017

NO/NO_y – Chemiluminescence continuous trace gas monitor

Representative siting scale: Urban
Monitoring objective/site type: Population oriented
Note: This instrument has not functioned properly since installation. The agency has requested contract assistance through EPA to fix and maintain it.

Carbon Monoxide –Gas filter correlation continuous trace gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 11/02/2017

$PM_{2.5}$ Speciation
Speciation Trends Network (STN) site equipped with Met One Super SASS and URG 3000N Carbon sampler. Both sample on a once every three-day schedule.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State flow rate audit conducted 4/28/2017 and 10/05/2017

Toxics
TSP metals, certain Volatile Organic Compounds, and Carbonyls
Representative siting scale: Neighborhood
Samples once every 12 days
Monitoring objective/site type: Population oriented

Other
Ultra-Sonic meteorological sensor

Site: South Charleston
Location: South Charleston Public Library 312 4th Ave., South Charleston, Kanawha County, WV
AQS ID: 54-039-1005
MSA: Charleston, WV
Latitude 38.366183
Longitude -81.69372717

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1974 to provide air quality monitoring in Kanawha County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates
$PM_{2.5}$ sequential Low-Volume sampler, Federal Reference Method. Samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/20/2017 and 10/02/2017

Marion County

Site: Fairmont
Location: 401 Guffey Street, Fairmont, Marion County, WV
AQS ID: 54-049-0006
MSA: NA
Latitude 39.481483
Longitude -80.134667

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 2000 to monitor $PM_{2.5}$ in Marion County, WV.

Comment: Site operation was discontinued from October 2016 through January 19, 2017 so that a new roof could be installed on the facility. The facility did allow DAQ to re-establish site operations after construction. The $PM_{2.5}$ monitor complies with the both the 24 hour and annual NAAQS.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential sampler, Federal Reference Method, samples once every three days.
Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 10/03/2017
USEPA performance evaluation audit conducted 8/23/2017

Marshall County

Site: Moundsville
Location: Moundsville National Guard Armory, Moundsville, Marshall County, WV
AQS ID: 54-051-1002
MSA: Wheeling, WV-OH
Latitude 39.915961
Longitude -80.733858

Comment: Site complies with Appendix A, C, D, E of Part. This site is suitable for NAAQS comparisons except for the $PM_{2.5}$ continuous Special Purpose Monitor FDMS TEOM, which is not an FRM or FEM sampler nor is the data used for attainment/non-attainment determinations. The FDMS data is used solely for AQI and Air Now reporting. Site established in 1983 to provide air quality monitoring in Marshall County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential sampler, Federal Reference Method. Samples once every three days. Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 9/06/2017
USEPA performance evaluation audit conducted 6/21/2017

Tapered Element Oscillating Micro-Balance (TEOM) Series 1400ab continuous $PM_{2.5}$ Non-FRM/FEM monitor with Filter Dynamic Measurement System (FDMS).
Representative siting scale: Urban
Monitoring objective/site type: Population oriented (used solely for AQI and Air Now reporting)
State flow rate audit conducted 5/17/2017 and 11/16/2017

$PM_{2.5}$ Speciation
Chemical Speciation Network site. Met One Super SASS and URG 3000N Carbon sampler. Both sample on a once every six-day schedule
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State flow rate audit conducted 2/21/2017, 4/20/2017, 8/14/2017 and 11/16/2017

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/04/2017
USEPA through the probe audit conducted 6/21/2017

Mason County

Site: Lakin
Location: HWY 62, Lakin, WV
AQS ID: 54-053-0001
CBSA: Point Pleasant WV-OH
Latitude 38.956476
Longitude -82.088693

Comment: American Electric Powers' (AEP) James M. Gavin and Ohio Valley Electrical Corporation (OVEC) Kyger Creek electric generating facilities located in Gallia County, Ohio have elected to conduct air monitoring under the SO_2 Data Requirements Rule. One of the SO_2 air monitoring sites is in Lakin, Mason County, WV and is included herein for reference. The site is operated by Shell Engineering on behalf of AEP and OVEC. The Ohio Environmental Protection Agency is the responsible Primary Quality Assurance Organization. The DAQ does not have any role in the sites operation, data reporting or quality assurance.

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Source-oriented

Mineral County

Site: Bean Site
Location: Old WV 46, Keyser
AQS ID: 54-057-8883
CBSA: Cumberland, MD
Latitude 39.4452
Longitude -79.0691

The Verso Luke Mill, located in Alleghany County, MD has elected to perform air monitoring under the SO_2 DRR. One of the SO_2 air monitoring sites will be in Mineral County, WV. The Maryland Department of the Environment is the responsible Primary Quality Assurance Organization. The DAQ does not have any role in the site operation, data reporting or quality assurance.

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Neighborhood
Monitoring objective/site type: Source-oriented

Monongalia County

Site: Morgantown
Location: Morgantown Airport, Morgantown, Monongalia County, WV
AQS ID: 54-061-0003
MSA: NA
Latitude 39.649367
Longitude -79.920897

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1983 to provide air quality monitoring in Monongalia County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential sampler, Federal Reference Method. Samples once every three days.
Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 10/03/2017
USEPA performance evaluation audit conducted 8/23/2017

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 8/30/2017

Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 8/29/2017

Ohio County

Site: Wheeling
Location: Warwood Water Treatment Plant, Wheeling, Ohio County, WV
AQS ID: 54-069-0010
MSA: Wheeling, WV-OH
Latitude 40.11476
Longitude -80.700972

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Current site established in 2005 to continue to provide air quality monitoring in Ohio County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential sampler, Federal Reference Method, samples once every three days.
Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 9/06/2017
USEPA performance evaluation audit conducted 8/23/2017

Gaseous:
Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 2/24/2017 and 8/31/2017

Toxics
TSP metals, certain Volatile Organic Compounds, and Carbonyls.
Representative siting scale: Neighborhood
Samples once every 12 days
Monitoring objective/site type: Population oriented

Wood County

Site: Vienna
Location: Neale Elementary School, Wood County, WV
AQS ID: 54-107-1002
MSA: Parkersburg-Marietta, WV-OH

Latitude 39.323553
Longitude -81.552367

Comment: Site complies with Appendix A, C, D, E of Part 58. This site is suitable for NAAQS comparisons. Site established in 1975 to provide air quality monitoring in Wood County, WV.

Parameters monitored, sampling method, scale, and purpose:

Particulates:
$PM_{2.5}$ sequential sampler, Federal Reference Method. Samples once every three days.
Samples analyzed by gravimetric analysis.
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State audit conducted 4/05/2017 and 10/02/2017
USEPA performance evaluation audit conducted 4/05/2017

Gaseous:
Sulfur Dioxide – UV fluorescent continuous gas monitor
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 11/06/2017

Ozone – UV absorption continuous gas monitor operated during ozone season March – October
Representative siting scale: Urban
Monitoring objective/site type: Population oriented
State accuracy audit conducted 5/03/2017 and 7/10/2017