

# PROPOSED

Pennsylvania Department of Environmental Protection Ambient Air Monitoring Network Description

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# **Commonwealth of Pennsylvania Department of Environmental Protection**

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www.depweb.state.pa.us

# Introduction

In 1970, Congress passed the Clean Air Act authorizing the Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants shown to threaten human health and welfare. Primary ambient air quality standards were set according to criteria designed to protect public health, including an adequate margin of safety to protect sensitive populations such as children and asthmatics. Secondary ambient air quality standards were set according to crops, vegetation, and buildings, etc.).

Seven pollutants currently have NAAQS: ozone (O<sub>3</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), particulate matter less than 10 microns ( $PM_{10}$ ), particulate matter less than 2.5 microns ( $PM_{2.5}$ ) and lead (Pb). These are commonly called the "criteria" pollutants. When air quality does not meet the NAAQS, the area is said to be in "nonattainment" with the NAAQS.

# **Requirements for Monitoring Network Descriptions**

In October 2006, the U.S. EPA issued final regulations concerning state and local agency ambient air monitoring networks. In addition, EPA Region III provided guidance in what was to be submitted with the each Network Description. For this description, Region III requested information described in 40 CFR Part 58 §58.10 (a). The Pennsylvania Department of Environmental Protection, Bureau of Air Quality has gone beyond this minimum requested information and has also provided a substantial portion of the information requested in §58.10 (b). The requirements of these two sections are listed as follow:

§58.10 (a) requires for each existing and proposed monitoring site:

- (1) A statement of purpose for each monitor
- (2) Evidence that siting and operation of each monitor meets the requirements of appendices A, C, D, and E of 40 CFR Part 58, where applicable
- (3) Proposals for any State and Local Air Monitoring station (SLAMS) network modifications

Likewise §58.10 (b) requires:

- (1) The Air Quality System (AQS) site identification number.
- (2) The location, including street address and geographical coordinates.
- (3) The sampling and analysis method(s) for each measured parameter.
- (4) The operating schedules for each monitor.
- (5) Any proposals to remove or move a monitoring station within a period of 18 months following plan submittal.
- (6) The monitoring objective and spatial scale of representativeness for each monitor.

- (7) The identification of any sites that are suitable and sites that are not suitable for comparison against the annual  $PM_{2.5}$  NAAQS as described in §58.30.
- (8) The Metropolitan Statistical Area (MSA), Core Based Statistical Area (CBSA), Combined Statistical Area (CSA) or other area represented by the monitor.

# **Commonwealth of Pennsylvania Air Monitoring Network**

The Commonwealth of Pennsylvania has established an air monitoring network to determine the ambient levels of the pollutants for which NAAQS have been established. The 2008 Pennsylvania Air Monitoring Network consists of the sites and monitors listed in Exhibit A. This network is maintained and operated by the Department of Environmental Protection, Bureau of Air Quality, Division of Air Quality Monitoring.

Exhibit A is the heart of the Network Description. As presented, it is also a snapshot of a Microsoft ACCESS<sup>TM</sup> database that contains blocks or files of information related to the location of the site, monitoring parameters at the site, and details about the monitors themselves. It is from these blocks that the requirements of Section 58.10 (a) and (b) noted earlier are fulfilled.

# **Exhibit A Description**

The first block, the Site Information Block, contains information identifying the site by both address and latitude and longitude. This block also contains information regarding inclusion of the monitoring site in any metropolitan statistical area.

Following the Site Information Block, there exists a series of one or more Sensor Information Block(s), containing information for each monitor at the site. Each sensor block contains the following information:

- Sensor Type The name of the pollutant measured by the sampler.
- Sensor Network Designation The name of the designated network:
  - NCore National Core multipollutant monitoring station. (There are currently no NCore sites planned for PA DEP; Allegheny County Health Department and Philadelphia air Management Services are being funded for one NCore station, each)
  - o PAMS Photochemical Assessment Monitoring Station
  - o SLAMS State or Local Ambient Monitoring Station
  - STN PM<sub>2.5</sub> Speciation Trends Network
  - SPM Special Purpose Monitor
- Sensor Purpose Description– The purpose of the sensor:
  - Population Exposure, such as the Air Quality Index
  - Regulatory compliance with Federal or State regulation
  - Research/Scientific Monitoring
  - Specific location characterization

- Sample Frequency Specifies how often a sample is taken.
  - Continuous operates 24/7; applies predominately to gaseous analyzers, although some particulate samplers (TEOM/FDMS and BAMs) operate continuously.
  - Daily a discrete sample is taken every day; applies to manual method particulate samplers.
  - Every Third Day Manual method particulate samplers that run every third day.
  - Every Sixth Day Manual method particulate samplers that run every sixth day.
- Appendix A QA Assessment A "**YES**" indicates the sensor is maintained in accordance with the Quality Assurance (QA) requirements specified in 40 CFR Part 58 Appendix A.
- Appendix C Monitoring Classification Each ambient air monitor is classified using the EPA "List of Designated Reference and Equivalent Methods" (see EPA Transfer Technology Network web page link below)
  - Reference or Federal Reference Method (FRM) a method of sampling that is specified in CFR Part 50.
  - Equivalent or Federal Equivalent Method (FEM) a method that is designated as equivalent to the reference method, in accordance with 40 CFR Part 53.
  - Automated after sampling, the analysis results are available immediately.
  - Manual after sampling, a separate analysis at a laboratory is necessary.
  - On Exhibit A, the above descriptors are combined into the following groupings.
    - o Automated Reference Method,
    - o Manual Reference Method,
    - Automated Equivalent Method,
    - Manual Equivalent Method, or
    - NONE appears where there is no reference or equivalent method.
- Appendix C Monitoring Method Each ambient air monitor is classified by a specific "method number." These numbers can be found in the EPA "List of Designated Reference and Equivalent Methods" (see EPA Transfer Technology Network web page at <u>http://www.epa.gov/ttn/amtic/files/ambient/criteria/reference-equivalent-methods-list.pdf</u>).
- Monitoring Method Description Each individual ambient air monitor type has a specific method of pollutant detection. Common examples are:
  - Ozone monitors Ultraviolet (UV) Absorption
  - o SO<sub>2</sub>- UV Fluorescence
  - CO Non-dispersive Infrared (IR)
  - NO<sub>2</sub> or NOx Chemiluminescence
  - $\circ$  PM<sub>2.5</sub>, PM<sub>10</sub> Gravimetric (or gravimetric by TEOM (tapered element micro balance)), or Beta attenuation
  - PAMS Auto GC (Gas Chromatograph), Dual FID (flame ionization detector)

- Appendix D Design Criteria Appendix D requires a certain number of monitoring samplers per geographic area. A "**YES**" indicates that the number of monitors in that particular area meets or exceeds the requirement of 40 CFR Part 58 Appendix D.
- Appendix D Scale The specific "spatial scales of representation" describes the physical dimensions of the air parcel around the monitoring station throughout which actual pollutant concentrations are reasonably similar.
  - o Microscale Areas ranging from several meters to about 100 meters,
  - Middle scale Areas ranging from 100 meters to 0.5 kilometers,
  - Neighborhood 0.5 to 4.0 kilometers, and uniform land use,
  - Urban scale 4 to 50 kilometers, and
  - Regional ten to hundreds of kilometers.
- Appendix D Objective Describes the purpose/objective for monitoring at a site.
  - Extreme downwind
  - o General/Background concentration
  - Highest concentration
  - o Maximum ozone concentration
  - Population exposure
  - o Regional transport
  - Source oriented
- Appendix E Siting Criteria Describes certain criteria applicable to ambient air quality sampling probes and monitoring paths, such as distances from trees, obstructions, traffic lanes, etc. A "**YES**" indicates that the sensor at the given site meets or exceeds the requirements of 40 CFR Part 58 Appendix E.
- Comments Each monitor has a comments section. Appropriate comments, as necessary, are found in this area.

# Site and Monitor Activity Within the Next 18 Months

To provide a better understanding of Volatile Organic Compounds (VOC) air toxics across the Commonwealth, DEP is proposing to add fourteen air toxic monitors to the ambient air monitoring network. The plan will have VOC monitoring at half of the proposed sites in 2009 and the other half will be done in 2010. When this initial characterization is done, a more defined monitoring plan will be proposed for 2011.

It should be noted that the DEP nitrogen dioxide  $(NO_2)$  monitor also records oxides of nitrogen  $(NO_x)$  concentrations. Therefore, where it is proposed that the NO<sub>2</sub> monitor be discontinued, this will result in a loss of NO<sub>x</sub> data also.

No changes to the routine surveillance ambient monitoring network for ozone,  $PM_{2.5}$ , or lead are being considered for 2009.  $PM_{2.5}$  sampling at the Carlisle West (Macaluso residence) site will have ended in September 2008 to complete the study that was being conducted.

The following changes to the Department's ambient air monitoring sites for 2009 are being proposed:

<u>Bristol</u>, Bucks County: The continuous  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 58, 56, and 52 micrograms per cubic meter (ug/m<sup>3</sup>) which are less than 80% of the  $PM_{10}$  NAAQS in the Philadelphia metropolitan area. Since the Philadelphia 5county area can be considered a low concentration area, the minimum number of required monitors based on population ranges from 2 to 4. With Philadelphia Air Management Services (AMS) operating three (3) monitors and the DEP monitor at Chester (Delaware County) continuing operation, PA DEP is proposing that the Bristol  $PM_{10}$  monitor be discontinued starting in 2009. Based on the 3-year design value for the 24-hour NAAQS from data obtained in 2008, the sampling frequency of the Bristol  $PM_{2.5}$  sampler may be increased to everyday from the 1 in 3 sampling currently due to requirements in 40 CFR Part 58.12(d).

<u>Chester</u>, Delaware County: With the  $PM_{2.5}$  monitor showing attainment for the 3-year annual mean NAAQS at 14.9 ug/m<sup>3</sup> for the years 2005-2007, it is proposed that the  $PM_{2.5}$  speciation monitor be relocated to Johnstown (Cambria County) where the  $PM_{2.5}$  is not showing attainment. The purpose of the  $PM_{2.5}$  speciation monitor is to provide information on what factors are causing an area to not attain the standard. With Chester indicating attainment and Philadelphia AMS operating two speciation monitors the information obtained by relocating the monitor to Johnstown would be more useful in characterizing the particulate matter in that region.

<u>Norristown</u>, Montgomery County: The continuous  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 60, 57, and 48 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS in the Philadelphia metropolitan area. Since the Philadelphia 5-county area can be considered a low concentration area, the minimum number of required monitors based on population ranges from 2 to 4. With Philadelphia Air Management Services (AMS) operating three (3) monitors and the DEP monitor at Chester (Delaware County) continuing operation, PA DEP is proposing that the  $PM_{10}$  monitor be discontinued starting in 2009.

With the requirement for the minimum number of monitors in an area removed for sulfur dioxide, nitrogen dioxide and carbon monoxide based on changes to Appendix D of 40 CFR 58, PA DEP is proposing to discontinue the carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>) monitors from the Norristown site in 2009. The nitrogen dioxide annual means for the years 2005 to 2007 are 0.016, 0.014, and 0.014 parts per million (ppm) respectively, this represents levels that are substantially below the annual NAAQS standard of 0.053 ppm. With carbon monoxide 8-hour averages reading 1.3, 1.5, 1.1 ppm, these also represent concentrations less than 80% of the NAAQS. Carbon monoxide monitoring will remain at Bristol and nitrogen dioxide monitoring will remain at Chester.

PA DEP plans on adding a VOC air toxics sampler at the Norristown site in 2010 for one year.

<u>New Garden (Toughkenamon)</u>, Chester County: As explained above, PA DEP plans on adding a VOC air toxics sampler at the New Garden site in 2009 for one year.

<u>Allentown</u>, Lehigh County: With sulfur dioxide (SO<sub>2</sub>) annual means of 0.008, 0.006, and 0.005 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Allentown SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in Easton providing coverage for the area.

The nitrogen dioxide annual means for the years 2005 to 2007 are 0.014, 0.012, and 0.012 parts per million (ppm) respectively, this represents levels that are substantial below the annual NAAQS standard of 0.053 ppm. PA DEP is proposing that the Allentown NO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for NO<sub>2</sub> and the pollutant will continue to be monitored in Freemansburg providing coverage for the area.

PA DEP plans on adding a VOC air toxics sampler at the Allentown site in 2009 for one year.

<u>Freemansburg</u>, Northampton County: The continuous  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 62, 54, and 55 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS. Since the Allentown-Bethlehem-Easton MSA can be considered a low concentration area, the minimum number of required monitors based on population ranges from 1 to 2. With DEP monitors at Allentown (Lehigh County) and Nazareth (Northampton County) continuing operation, PA DEP is proposing that the Freemansburg  $PM_{10}$  monitor be discontinued starting in 2009.

With sulfur dioxide (SO<sub>2</sub>) annual means of 0.007, 0.005, and 0.004 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Freemansburg SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in Easton providing coverage for the area.

PA DEP plans on adding a VOC air toxics sampler at the Freemansburg site in 2010 for one year.

<u>Scranton</u>, Lackawanna County: The continuous  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 62, 57, and 53 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS. Since the Scranton-Wilkes Barre MSA can be considered a low concentration area, the minimum number of required monitors based on population ranges from 1 to 2. With a DEP monitor at Wilkes-Barre (Luzerne County) continuing operation, PA DEP is proposing that the Scranton PM<sub>10</sub> monitor be discontinued starting in 2009.

With sulfur dioxide  $(SO_2)$  annual means of 0.005, 0.004, and 0.005 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Scranton SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in Wilkes-Barre providing coverage for the area.

PA DEP plans on adding a VOC air toxics sampler at the Scranton site in 2010 for one year.

<u>Wilkes-Barre</u>, Luzerne County: PA DEP is proposing to discontinue the carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>) monitors from the Wilkes-Barre site in 2009. The nitrogen dioxide annual means for the years 2005 to 2007 are 0.013, 0.011, and 0.011 parts per million (ppm) respectively, this represents levels that are substantially below the annual NAAQS standard of 0.053 ppm. With carbon monoxide 8-hour averages reading 1.9, 1.6, 1.7 ppm, these also represent concentrations less than 80% of the NAAQS. Carbon monoxide monitoring and nitrogen dioxide monitoring will remain at Scranton providing coverage for the area. There are no minimum monitoring requirements for CO or NO<sub>2</sub>.

PA DEP plans on adding a VOC air toxics sampler at the Wilkes-Barre site in 2009 for one year.

<u>Reading (Airport)</u>, Berks County: PA DEP plans on to discontinue the hydrogen sulfide ( $H_2S$ ) monitor from the Reading Airport site in 2009. This monitor was originally installed due to odor complaints when the site was located at 234 Morgantown Road.

<u>Reading (Central)</u>, Berks County: The manual filter-based method (sampling every six days)  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 85, 51, and 45 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS. Since the Reading MSA can be considered a low concentration area, the minimum number of required monitors based on population ranges from 1 to 2. With a continuous DEP monitor at the Reading (Airport) site continuing operation, PA DEP is proposing that the Reading (Central)  $PM_{10}$  monitor be discontinued starting in 2009.

<u>Harrisburg</u>, (Dauphin County): With sulfur dioxide (SO<sub>2</sub>) annual means of 0.005, 0.005, and 0.005 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Harrisburg SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in York providing coverage for the south-central region.

PA DEP plans on adding a VOC air toxics sampler at the Harrisburg site in 2010 for one year.

Lancaster, Lancaster County: With sulfur dioxide (SO<sub>2</sub>) annual means of 0.006, 0.005, and 0.005 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Lancaster SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in York providing coverage for the south-central region.

With Lancaster carbon monoxide (CO) 8-hour averages reading 1.6, 1.5, 1.4 ppm, these represent concentrations less than 80% of the NAAQS. PA DEP is proposing that the Lancaster CO monitor be discontinued in 2009. Carbon monoxide monitoring will remain at Harrisburg and York to provide coverage for the south-central region. There are no minimum monitoring requirements for CO.

York, York County: PA DEP plans on adding a VOC air toxics sampler at the York site in 2009 for one year.

<u>Altoona</u>, Blair County: PA DEP is proposing to discontinue the carbon monoxide (CO) and nitrogen dioxide (NO<sub>2</sub>) monitors from the Altoona site in 2009. The nitrogen dioxide annual means for the years 2005 to 2007 are 0.013, 0.012, and 0.011 parts per million (ppm) respectively, this represents levels that are substantially below the annual NAAQS standard of 0.053 ppm. With carbon monoxide 8-hour averages reading 1.2, 1.0, 1.0 ppm, these also represent concentrations less than 80% of the NAAQS. Carbon monoxide monitoring and nitrogen dioxide monitoring will remain at Johnstown providing coverage for the area. There are no minimum monitoring requirements for CO.

PA DEP plans on adding a VOC air toxics sampler at the Altoona site in 2010 for one year.

<u>Montoursville</u>, Lycoming County: With sulfur dioxide (SO<sub>2</sub>) annual means of 0.005, 0.005, and 0.003 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Montoursville SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in State College providing coverage for the area.

PA DEP plans on adding a VOC air toxics sampler at the Montoursville site in 2009 for one year.

<u>Johnstown</u>, Cambria County: As explained earlier, PA DEP is proposing to relocate the PM<sub>2.5</sub> speciation monitor from Chester (Delaware County) to Johnstown in 2009.

PA DEP plans on adding a VOC air toxics sampler at the Johnstown site in 2009 for one year.

<u>Beaver Falls</u>, Beaver County: With sulfur dioxide (SO<sub>2</sub>) annual means of 0.007, 0.007, and 0.008 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Beaver Falls SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored at higher concentration sites in Hookstown and Brighton Township providing coverage for the region.

With Beaver Falls carbon monoxide (CO) 8-hour averages reading 1.5, 1.6, 1.5 ppm, these represent concentrations less than 80% of the NAAQS. PA DEP is proposing that the Beaver Falls CO monitor be discontinued in 2009. There are no minimum monitoring requirements for CO.

PA DEP plans on adding a VOC air toxics sampler at the Beaver Falls site in 2010 for one year.

<u>Charleroi</u>, Washington County: The continuous  $PM_{10}$  monitor will be replaced with a manual monitor that is being relocated from the Monessen site. The manual  $PM_{10}$  monitor sampling frequency will remain the same at once every six days.

PA DEP plans on adding a VOC air toxics sampler at the Charleroi site in 2009 for one year.

## **Ambient Air Monitoring Network Description**

<u>Florence</u>, Washington County: The continuous  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 54, 52, and 53 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS. With a DEP monitor at Charleroi (Washington County) continuing operation, PA DEP is proposing that the Florence  $PM_{10}$  monitor be discontinued starting in 2009.

The nitrogen dioxide annual means for the years 2005 to 2007 are 0.007, 0.005, and 0.006 parts per million (ppm) respectively, this represents levels that are substantial below the annual NAAQS standard of 0.053 ppm. PA DEP is proposing that the Florence  $NO_2$  monitor be discontinued in 2009. There are no minimum monitoring requirements for  $NO_2$  and the pollutant will continue to be monitored in Charleroi providing coverage for the area.

<u>Washington</u>, Washington County: With sulfur dioxide (SO<sub>2</sub>) annual means of 0.009, 0.009, and 0.008 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Washington SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored at Charleroi providing coverage for the region.

The nitrogen dioxide annual means for the years 2005 to 2007 are 0.014, 0.012, and 0.013 parts per million (ppm) respectively, this represents levels that are substantial below the annual NAAQS standard of 0.053 ppm. PA DEP is proposing that the Washington NO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for NO<sub>2</sub> and the pollutant will continue to be monitored in Charleroi providing coverage for the area.

<u>Monessen</u>, Westmoreland County: The manual filter-based method (sampling every six days)  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 73, 50, and 61 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS. Since the Monongahela Valley air basin can be considered a low concentration area, PA DEP is proposing that the Monessen  $PM_{10}$  monitor be relocated to Charleroi (Washington County) starting in 2009 to maintain coverage within the air basin.

<u>Greensburg</u>, Westmoreland County: The continuous  $PM_{10}$  monitor for the years 2005-2007 has recorded maximum 24-hour averages of 74, 57, and 62 ug/m<sup>3</sup> which are less than 80% of the  $PM_{10}$  NAAQS. Since Greensburg is not within an MSA there is no minimum number of required monitors based on population. PA DEP is proposing that the Greensburg  $PM_{10}$  monitor be discontinued starting in 2009.

With sulfur dioxide  $(SO_2)$  annual means of 0.009, 0.009, and 0.008 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Greensburg SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in Charleroi and Florence providing coverage for the region.

With Greensburg carbon monoxide (CO) 8-hour averages reading 0.9, 1.1, 1.0 ppm, these represent concentrations less than 80% of the NAAQS. PA DEP is proposing that the Greensburg CO monitor be discontinued in 2009. The monitor at the Charleroi site will provide coverage for the region. There are no minimum monitoring requirements for CO.

The Greensburg nitrogen dioxide annual means for the years 2005 to 2007 are 0.013, 0.011, and 0.011 parts per million (ppm) respectively. This represents levels that are substantial below the annual NAAQS standard of 0.053 ppm. PA DEP is proposing that the Greensburg NO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for NO<sub>2</sub> and the pollutant will continue to be monitored in Charleroi providing coverage for the region.

PA DEP plans on adding a VOC air toxics sampler at the Greensburg site in 2010 for one year.

<u>Strongstown</u>, Indiana County: The nitrogen dioxide annual means for the years 2005 to 2007 are 0.006, 0.006, and 0.006 parts per million (ppm) respectively, this represents levels that are substantial below the annual NAAQS standard of 0.053 ppm. PA DEP is proposing that the Strongstown NO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for NO<sub>2</sub>.

<u>Holbrook</u>, Greene County: With Holbrook carbon monoxide (CO) 8-hour averages reading 0.7, 1.6, 0.7 ppm, these represent concentrations less than 80% of the NAAQS. PA DEP is proposing that the Holbrook CO monitor be discontinued in 2009. The monitor at the Charleroi site will provide coverage for the region. There are no minimum monitoring requirements for CO.

<u>New Castle</u>, Lawrence County: The nitrogen dioxide annual means for the years 2005 to 2007 are 0.017, 0.016, and 0.015 parts per million (ppm) respectively, this represents levels that are substantial below the annual NAAQS standard of 0.053 ppm. PA DEP is proposing that the New Castle NO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for NO<sub>2</sub>.

<u>Farrell</u>, Mercer County: With sulfur dioxide (SO<sub>2</sub>) annual means of 0.005, 0.005, and 0.005 ppm from 2005 to 2007, the recorded data is substantially below the annual NAAQS of 0.030 ppm. PA DEP is proposing that the Farrell SO<sub>2</sub> monitor be discontinued in 2009. There are no minimum monitoring requirements for SO<sub>2</sub> and the pollutant will continue to be monitored in New Castle and Erie providing coverage for the region.

<u>Warren</u>, Warren County: PA DEP has been operating two sulfur dioxide monitors in the area since 1996 based on the potential for an exceedance of the  $SO_2$  NAAQS. The sites were determined at that time based on modeling projections, with the site located at the Warren High School in the area with the highest projected concentrations. No exceedance of the NAAQS have been observed at either site, with the Warren Overlook site recording higher concentrations. PA DEP is therefore considering relocating or terminating the Warren High School site within the next year.

# **General Description of Criteria Pollutants**

## Ozone (O<sub>3</sub>)

Ground-level ozone, or photochemical smog, is not emitted into the atmosphere as ozone, but rather is formed by the reactions of other pollutants. The primary pollutants entering into this reaction, volatile organic compounds (VOC's) and oxides of nitrogen (NOx), create ozone in the presence of sunlight. Ozone is a strong irritant of the upper respiratory system and also causes damage to crops. Ozone is measured by ultraviolet absorption photometry. Air is drawn through a sample cell where ultraviolet light (254 nm wavelength) passes through it. Any light that is not absorbed by the ozone is then converted into an electrical signal proportional to the ozone concentration.

## Sulfur Dioxide (SO<sub>2</sub>)

Sulfur dioxide is a gaseous pollutant that is emitted primarily by industrial furnaces or power plants burning coal or oil containing sulfur. At high concentrations, breathing can be impaired. Damage to vegetation can also result. Sulfur dioxide is measured with a fluorescence analyzer. Air is drawn through a sample cell where it is then subjected to high intensity ultraviolet light. This causes in the sulfur dioxide molecules in the air to fluoresce and release light. The fluorescence is detected with a photomultiplier tube and converted to an electrical signal proportional to the  $SO_2$  concentration.

# **Carbon Monoxide (CO)**

Carbon monoxide is a poisonous gas that, when introduced into the bloodstream, inhibits the delivery of oxygen to body tissue. The health risk is greatest for individuals with cardiovascular disease. Carbon monoxide is measured by infrared absorption photometry. A continuous flow of air is drawn through a sample cell where infrared light passes through it. The carbon monoxide molecules absorb a portion of the infrared light. This reduces the amount of light getting to the sensor. The light is then converted into an electrical signal related to the concentration of carbon monoxide in the sample cell.

# Lead (Pb)

Lead is a metal that is highly toxic when ingested or inhaled. It is a suspected carcinogen of the lungs and kidneys and has adverse effects on cardiovascular, nervous and renal systems. Lead is emitted into the atmosphere by industrial processes. The amount of lead in ambient air is measured by laboratory analysis of TSP filters by Inductively Coupled Argon Plasma-Optical Emission Spectrometry.

# Nitrogen Dioxide (NO<sub>2</sub>)

Nitrogen dioxide is a highly toxic, reddish brown gas that is created primarily from fuel combustion in industrial sources and vehicles. It creates an odorous haze that causes eye and sinus irritation, blocks natural sunlight and reduces visibility. Nitrogen oxides are measured using the chemiluminescence reaction of nitric oxide (NO) with ozone (O<sub>3</sub>). Air is drawn into a reaction chamber where it is mixed with a high concentration of ozone from an internal ozone generator. Any NO mixes with ozone to produce NO<sub>2</sub>. Light from this reaction is detected with a photomultiplier tube and converted to an electrical signal proportional to the NO concentration. Total nitrogen oxides (NOx) are measured by passing the air through a converter where any NO<sub>2</sub> in the air is reduced to NO before the air is passed to the reaction chamber. By alternately passing the air directly to the reaction chamber, and through the converter before the reaction chamber, the analyzer alternately measures NO and NOx. Nitrogen dioxide (NO<sub>2</sub>) is measured indirectly by a subtraction of the NOx and NO<sub>2</sub> concentrations.

# Fine Particulate Matter (PM<sub>2.5</sub>)

Fine particulate matter with a diameter of 2.5 microns or less is created primarily from industrial processes and fuel combustion. These particles are breathed deeply into the lungs. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.  $PM_{2.5}$  is sampled by drawing air through a specially designed inlet that excludes particles larger than 2.5 microns in diameter. The particles are collected on a Teflon<sup>TM</sup> Microfiber filter that is weighed to determine the particulate mass. The normal sampling schedule varies, as determined by the regulations: some sites sample every day, others sample every 3<sup>rd</sup> day. In addition, DEP has 12 monitors that record PM<sub>2.5</sub> data continuously (TEOM/FDMS and BAM).

# Particulate Matter (PM<sub>10</sub>)

Particulate matter with a mean diameter of 10 microns or less and is emitted from transportation and industrial sources. Exposure to particle pollution is linked to a variety of significant health problems ranging from aggravated asthma to premature death in people with heart and lung disease.  $PM_{10}$  is sampled continuously using a tapered element oscillating microbalance (TEOM). Air is drawn through a specially designed inlet that excludes particles larger than 10 microns in diameter. Particle accumulation causes changes in the microbalance oscillation that are recorded by the instrument (TEOM).

# Acronyms

BAMBeta Attenuation MonitorCBSACore based statistical areaCSACombined Statistical AreaCOCarbon MonoxidePA DEPPennsylvania Department of Environmental ProtectionEPAU. S. Environmental Protection AgencyFEMFederal Equivalent MethodFIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H <sub>2</sub> SHydrogen Sulfide	AQS	Air Quality System
CSACombined Statistical AreaCOCarbon MonoxidePA DEPPennsylvania Department of Environmental ProtectionEPAU. S. Environmental Protection AgencyFEMFederal Equivalent MethodFIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H_2SHydrogen Sulfide	BAM	Beta Attenuation Monitor
COCarbon MonoxidePA DEPPennsylvania Department of Environmental ProtectionEPAU. S. Environmental Protection AgencyFEMFederal Equivalent MethodFIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H_2SHydrogen Sulfide	CBSA	Core based statistical area
PA DEPPennsylvania Department of Environmental ProtectionEPAU. S. Environmental Protection AgencyFEMFederal Equivalent MethodFIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H_2SHydrogen Sulfide	CSA	Combined Statistical Area
EPAU. S. Environmental Protection AgencyFEMFederal Equivalent MethodFIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H_2SHydrogen Sulfide	CO	Carbon Monoxide
FEMFederal Equivalent MethodFIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H_2SHydrogen Sulfide	PA DEP	Pennsylvania Department of Environmental Protection
FIDFlame Ionization DetectorFRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H <sub>2</sub> SHydrogen Sulfide	EPA	U. S. Environmental Protection Agency
FRMFederal Reference MethodGCGas ChromatographIRInfrared (radiation)H <sub>2</sub> SHydrogen Sulfide	FEM	Federal Equivalent Method
GCGas ChromatographIRInfrared (radiation)H2SHydrogen Sulfide	FID	Flame Ionization Detector
IRInfrared (radiation)H2SHydrogen Sulfide	FRM	Federal Reference Method
H <sub>2</sub> S Hydrogen Sulfide	GC	Gas Chromatograph
	IR	Infrared (radiation)
	$H_2S$	Hydrogen Sulfide
MSA Metropolitan Statistical Area	MSA	Metropolitan Statistical Area
NAAQS National Ambient Air Quality Standards	NAAQS	National Ambient Air Quality Standards
NCore National Core multi-pollutant monitoring stations	NCore	National Core multi-pollutant monitoring stations
nm nanometers	nm	nanometers
NO The gaseous pollutant Nitrogen Oxide	NO	The gaseous pollutant Nitrogen Oxide
NO <sub>2</sub> The gaseous pollutant Nitrogen Dioxide	$NO_2$	The gaseous pollutant Nitrogen Dioxide
NOx Oxides of Nitrogen	NOx	Oxides of Nitrogen
O <sub>3</sub> The gaseous pollutant Ozone	O <sub>3</sub>	The gaseous pollutant Ozone
PAMS Photochemical Assessment Monitoring Station	PAMS	Photochemical Assessment Monitoring Station
Pb Lead	Pb	Lead
PM <sub>2.5</sub> Particulate matter with an aerodynamic diameter less then or equal to a nominal 2.5 micrometers	PM <sub>2.5</sub>	
PM <sub>10</sub> Particulate matter with an aerodynamic diameter less then or equal to a	$PM_{10}$	
nominal 10 micrometers		•
QA Quality Assurance	QA	Quality Assurance
SLAMS State or Local Air Monitoring Stations	-	-
SO <sub>2</sub> The gaseous pollutant Sulfur Dioxide	$SO_2$	
SPM Special Purpose Monitor	SPM	
STN PM <sub>2.5</sub> Speciation Trends Network	STN	PM <sub>2.5</sub> Speciation Trends Network
TSP Total Suspended Particulate	TSP	
TTN* EPA's Technology Transfer Network	TTN*	EPA's Technology Transfer Network
TEOM Tapered Element Oscillating Microbalance	TEOM	Tapered Element Oscillating Microbalance
UV Ultraviolet	UV	
VOC's Volatile Organic Compounds	VOC's	Volatile Organic Compounds

\* <u>http://www.epa.gov/ttn/</u>

# Exhibit A

# **Pennsylvania Monitoring Network Plan**

COUNTY: LEHIGH MUNICIPALITY: ALLENTOWN MSA: ALLENTOWN-BI	THLEHEM-EASTON	LATITUDE: 40.61194 LONGITUDE: -75.4326 ADDRESS: STATE HOSPIT	AL REAR 1600 HANOVER AVE
Sensor Type:	Nitrogen Dioxide	Appendix C Monitoring Method:	RFNA-1194-099
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Chemiluminescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
opendix C Monitoring Classification:	Automated Reference Method	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Ozone	Appendix C Monitoring Method:	EQOA-0992-087
	SLAMS	Monitoring Method Description:	UV Absorption
Sensor Network Designation:			
Sensor Network Designation: Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
0	Regulatory Compliance Continuous		
Sensor Purpose Designation:	, , , , , , , , , , , , , , , , , , ,	Appendix D Design Criteria*: Appendix D Scale: Appendix D Objectives:	Yes Neighborhood Population Exposure

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	3
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

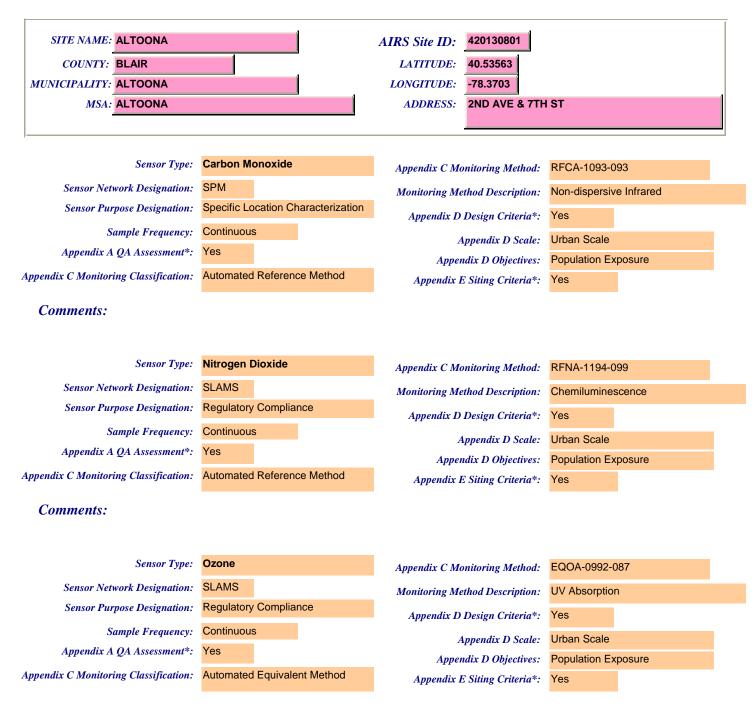
Comments:

Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification: Automated Equivalent Method

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

**Population Exposure** 

Urban Scale

Yes

Yes

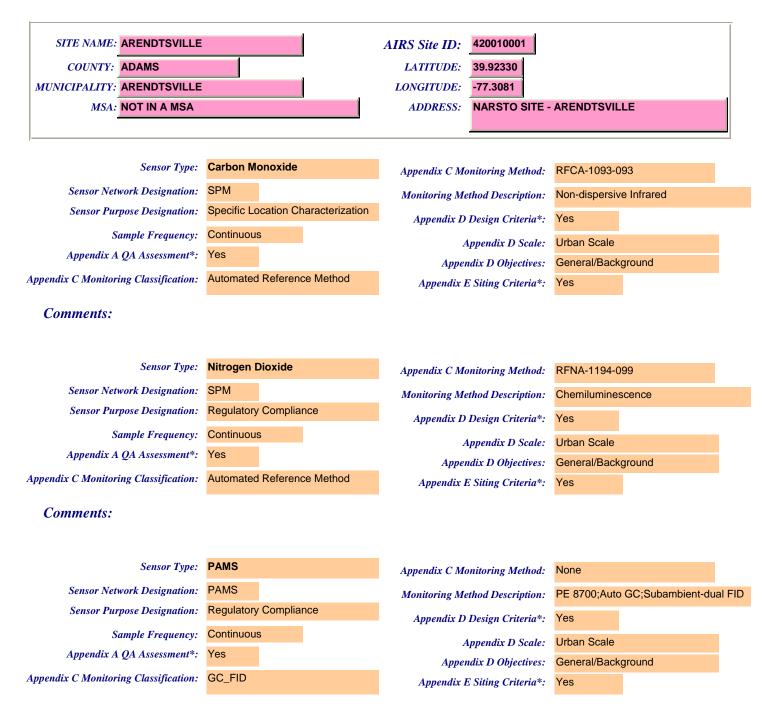
Comments:

Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification: Automated Equivalent Method

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	General/Background
Appendix C Monitoring Classification:	TEOM	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix E Siting Criteria\*:

Appendix D Scale:

Appendix D Objectives:

RFPS-0498-118

Gravimetric

**Urban Scale** 

General/Background

Yes

Yes

S	Sensor Network Designation:
F	Sensor Purpose Designation:
C	Sample Frequency:
Y	Appendix A QA Assessment*:
Ν	Appendix C Monitoring Classification:

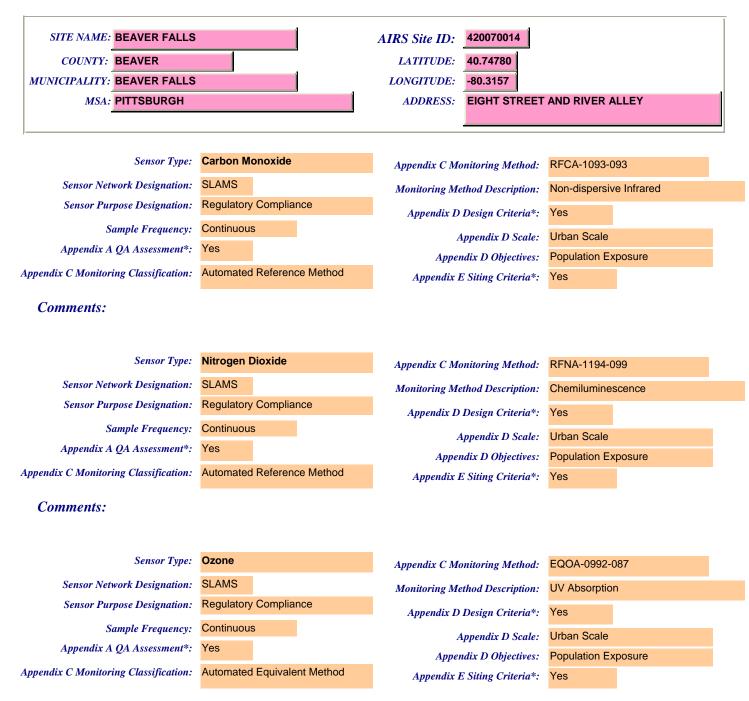
# Sensor Type:Particulate Matter PM2.5Designation:SLAMSDesignation:Regulatory Compliancele Frequency:DailyAssessment\*:YesClassification:Manual Reference Method

## Comments:

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	-
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Type: Sensor Network Designation:	Particulate Matter PM2.5	Appendix C Monitoring Method: Monitoring Method Description:	None Gravimetric
~1			Gravimetric

Appendix D Scale: Urban Scale

Yes

**Population Exposure** 

Appendix D Objectives:

Appendix E Siting Criteria\*:

Appendix A QA Assessment\*: Yes Appendix C Monitoring Classification: FDMS

## Comments:

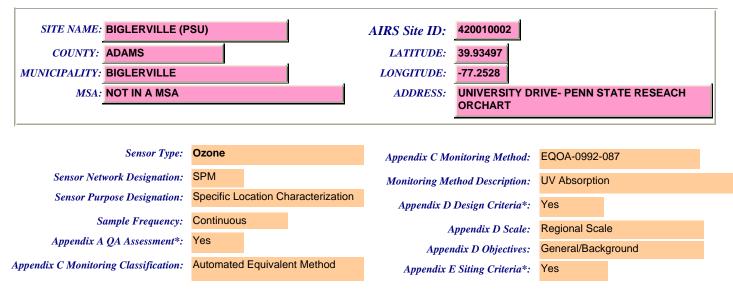
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	EQPM-0202-145
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Manual Equivalent Method	Appendix E Siting Criteria*:	Yes

Comments:

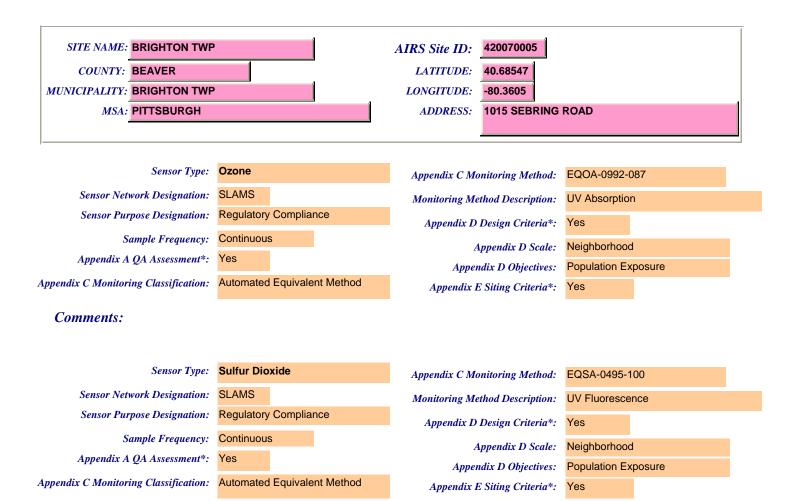
\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

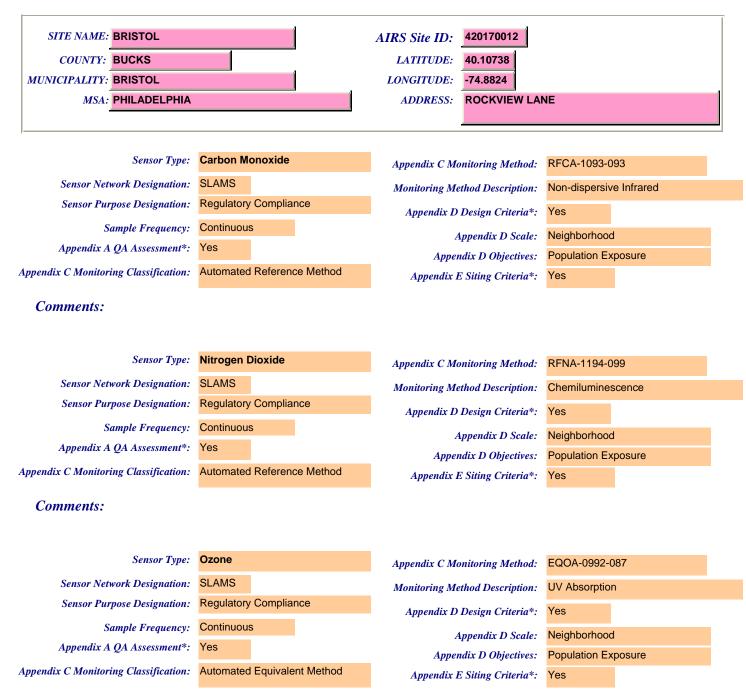
\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:		•	

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

RFPS-0498-118

Gravimetric

Neighborhood

**Population Exposure** 

Yes

Yes

Sensor Network Designation: Sensor Purpose Designation: Regulatory Compliance Sample Frequency: Every 3rd day Appendix A QA Assessment\*: Appendix C Monitoring Classification: Manual Reference Method

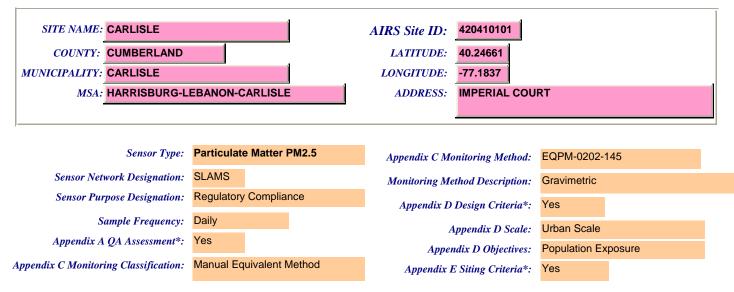
Sensor Type: Particulate Matter PM2.5 SLAMS Yes

## Comments:

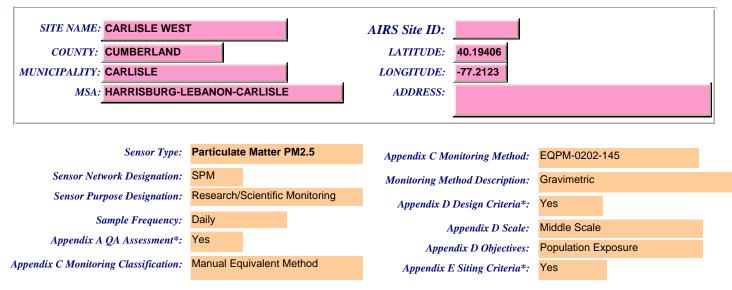
Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

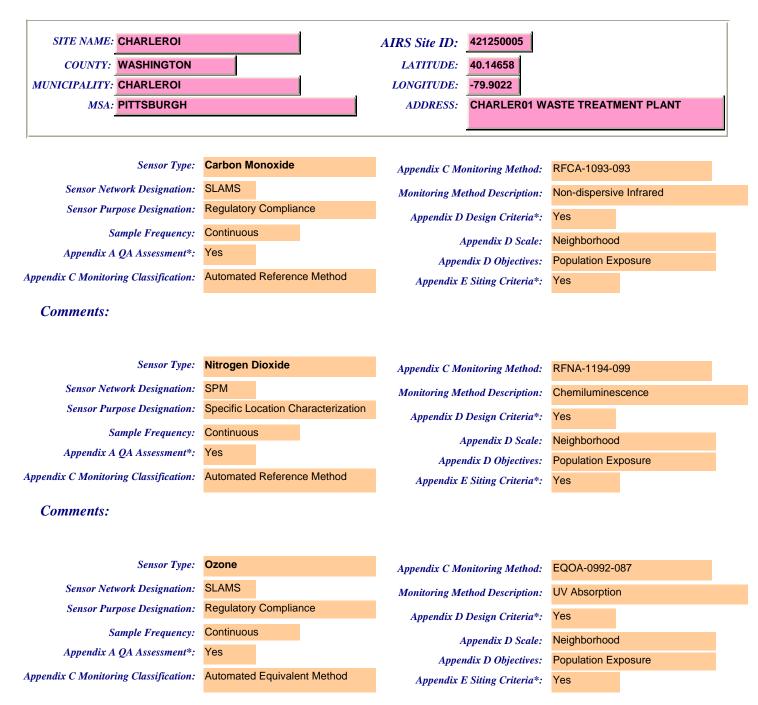


\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



Comments: Sampling will be continued until Sep, 2008.

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter	PM10	Appendix C Monitoring Method:	EQPM-1090-0	)79
Sensor Network Designation:	SLAMS		Monitoring Method Description:	TEOM Gravin	netric
Sensor Purpose Designation:	Regulatory Complia	nce	Appendix D Design Criteria*:	Yes	
Sample Frequency:	Continuous		Appendix D Scale:	Neighborhood	I
Appendix A QA Assessment*:	Yes		Appendix D Scale.	Reighborhood	
	100		Appendix D Objectives:	Population Ex	cposure
Appendix C Monitoring Classification:	TEOM Automated E	quivalent	Appendix E Siting Criteria*:	Yes	
Comments:					

Sensor Type:	Particulate Matter PM2.5
Sensor Network Designation:	SLAMS
Sensor Purpose Designation:	Regulatory Compliance
Sample Frequency:	Every 3rd day
Appendix A QA Assessment*:	Yes
Appendix C Monitoring Classification:	Manual Equivalent Method

Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Beta Attenuation
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	BAM	Appendix E Siting Criteria*:	Yes

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix E Siting Criteria\*:

Appendix D Objectives:

EQPM-0202-145

Population Exposure

Gravimetric

Yes

Yes

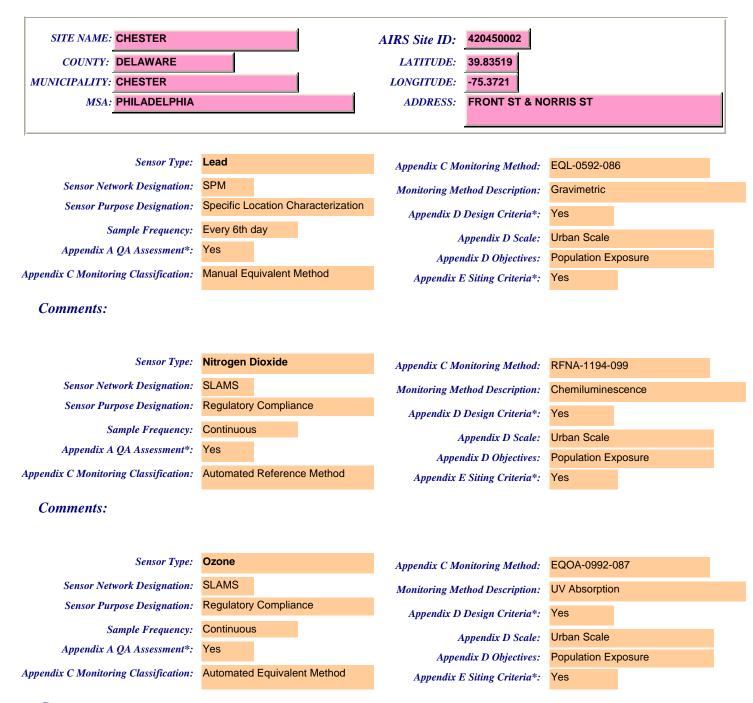
Appendix D Scale: Neighborhood

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	5
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html



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Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Type: Sensor Network Designation:	Particulate Matter PM2.5	Appendix C Monitoring Method: Monitoring Method Description:	None Beta Attenuation
~1			Beta Attenuation

Appendix D Scale: Urban Scale

Appendix E Siting Criteria\*:

Appendix D Objectives: Population Exposure

Yes

Appendix A QA Assessment\*: Yes Appendix C Monitoring Classification: BAM

## Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	RFPS-0498-118
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Manual Reference Method	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

**Population Exposure** 

Urban Scale

Yes

Yes

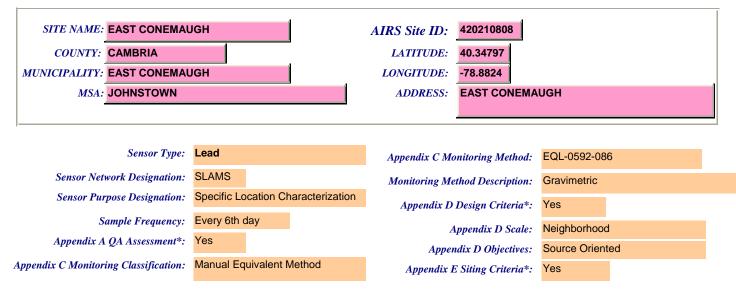
Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

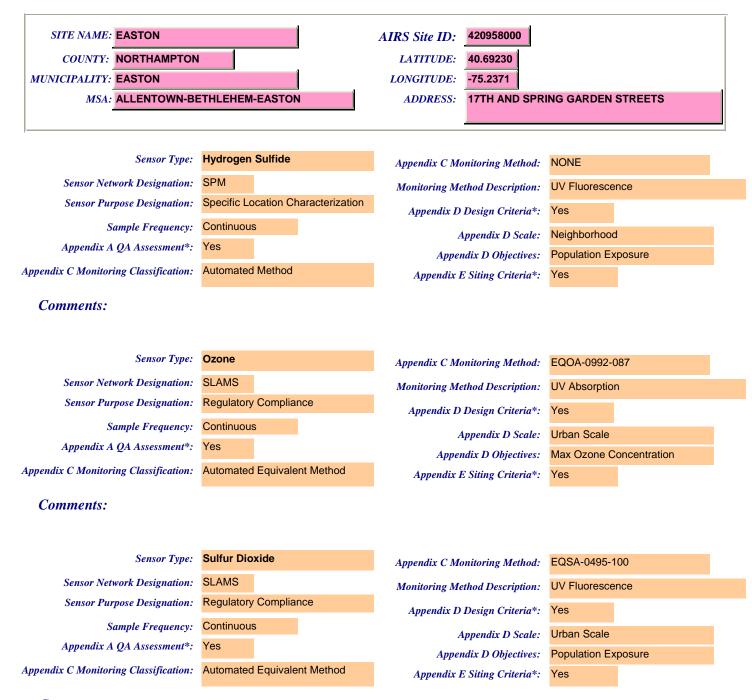
Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Automated Equivalent Method



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\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

	ERIE		AIRS Site ID:	420490003	
COUNTY:	ERIE		LATITUDE:	42.14197	
MUNICIPALITY:	ERIE		LONGITUDE:	-80.0386	
MSA:	ERIE		ADDRESS:	10TH AND MAR	RNE STREETS
	Sensor Type:	Carbon Monoxide	Appendix C Mo	nitoring Method:	RFCA-1093-093
Sensor Netw	work Designation:	SLAMS	Monitoring Me	thod Description:	Non-dispersive Infrared
Sensor Purp	pose Designation:	Regulatory Compliance		Design Criteria*:	Yes
Sa	ample Frequency:	Continuous		ppendix D Scale:	Neighborhood
Appendix A	QA Assessment*:	Yes		ppenaix D Scale: dix D Objectives:	Population Exposure
Appendix C Monitori	ing Classification:	Automated Reference Method		<i>E Siting Criteria</i> *:	Yes
Comments:			-		
	Sensor Type:	Nitrogen Dioxide	Appendix C Mo	nitoring Method:	RFNA-1194-099
	work Designation:	SLAMS		nitoring Method: thod Description:	RFNA-1194-099 Chemiluminescence
Sensor Pur	work Designation: pose Designation:	SLAMS Regulatory Compliance	Monitoring Me	-	
Sensor Purj So	work Designation: pose Designation: ample Frequency:	SLAMS Regulatory Compliance Continuous	Monitoring Met Appendix D	thod Description:	Chemiluminescence
Sensor Purj So Appendix A	work Designation: pose Designation: ample Frequency: QA Assessment*:	SLAMS Regulatory Compliance Continuous Yes	Monitoring Met Appendix D	thod Description: Design Criteria*:	Chemiluminescence Yes
Sensor Purj So	work Designation: pose Designation: ample Frequency: QA Assessment*:	SLAMS Regulatory Compliance Continuous	Monitoring Met Appendix D A Appen	thod Description: Design Criteria*: ppendix D Scale:	Chemiluminescence Yes Neighborhood
Sensor Purj So Appendix A	work Designation: pose Designation: ample Frequency: QA Assessment*:	SLAMS Regulatory Compliance Continuous Yes	Monitoring Met Appendix D A Appen	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives:	Chemiluminescence Yes Neighborhood Population Exposure
Sensor Purj Sa Appendix A Appendix C Monitori	work Designation: pose Designation: ample Frequency: QA Assessment*:	SLAMS Regulatory Compliance Continuous Yes	Monitoring Met Appendix D A Appen	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives:	Chemiluminescence Yes Neighborhood Population Exposure
Sensor Purj So Appendix A Appendix C Monitori	work Designation: pose Designation: ample Frequency: QA Assessment*:	SLAMS Regulatory Compliance Continuous Yes	Monitoring Met Appendix D A Appen Appendix E	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives:	Chemiluminescence Yes Neighborhood Population Exposure
Sensor Pur <sub>j</sub> So Appendix A Appendix C Monitori <b>Comments:</b>	vork Designation: pose Designation: ample Frequency: QA Assessment*: ing Classification:	SLAMS Regulatory Compliance Continuous Yes Automated Reference Method	Monitoring Met Appendix D A Appen Appendix E Appendix C Mo	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives: Siting Criteria*:	Chemiluminescence Yes Neighborhood Population Exposure Yes
Sensor Purj So Appendix A Sppendix C Monitori <b>Comments:</b> Sensor Netw	work Designation: pose Designation: ample Frequency: QA Assessment*: ing Classification: Sensor Type:	SLAMS Regulatory Compliance Continuous Yes Automated Reference Method	Monitoring Met Appendix D A Appen Appendix E Appendix C Mo Monitoring Met	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives: Siting Criteria*: Siting Criteria*: nitoring Method: thod Description:	Chemiluminescence Yes Neighborhood Population Exposure Yes EQOA-0992-087
Sensor Purj Sc Appendix A ppendix C Monitori <b>Comments:</b> Sensor Netw Sensor Purj	vork Designation: pose Designation: ample Frequency: QA Assessment*: ing Classification: Sensor Type: vork Designation:	SLAMS Regulatory Compliance Continuous Yes Automated Reference Method <b>Ozone</b> SLAMS	Monitoring Met Appendix D A Appen Appendix E Appendix C Mo Monitoring Met Appendix D	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives: Siting Criteria*: nitoring Method: thod Description: Design Criteria*:	Chemiluminescence Yes Neighborhood Population Exposure Yes EQOA-0992-087 UV Absorption Yes
Sensor Pur <sub>j</sub> So Appendix A Oppendix C Monitori <b>Comments:</b> Sensor Netw Sensor Pur <sub>j</sub> So	vork Designation: pose Designation: ample Frequency: QA Assessment*: ing Classification: Sensor Type: vork Designation: pose Designation:	SLAMS Regulatory Compliance Continuous Yes Automated Reference Method <b>Ozone</b> SLAMS Regulatory Compliance	Monitoring Met Appendix D J A Appen Appendix E Appendix C Mo Monitoring Met Appendix D J A	thod Description: Design Criteria*: ppendix D Scale: dix D Objectives: Siting Criteria*: Siting Criteria*: nitoring Method: thod Description:	Chemiluminescence Yes Neighborhood Population Exposure Yes EQOA-0992-087 UV Absorption

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:		-	
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	EQPM-0202-145

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix E Siting Criteria\*:

Appendix D Objectives:

Gravimetric

**Population Exposure** 

Yes

Yes

Appendix D Scale: Neighborhood

Sensor Network Designation: S Sensor Purpose Designation: F Sample Frequency: C Appendix A QA Assessment\*: Y Appendix C Monitoring Classification: M

i aiticulate	matter	1112.5	
SLAMS			
Regulatory	Complia	nce	
Daily			
Yes			
Manual Equ	uivalent N	Method	

# Comments:

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes

Comments:

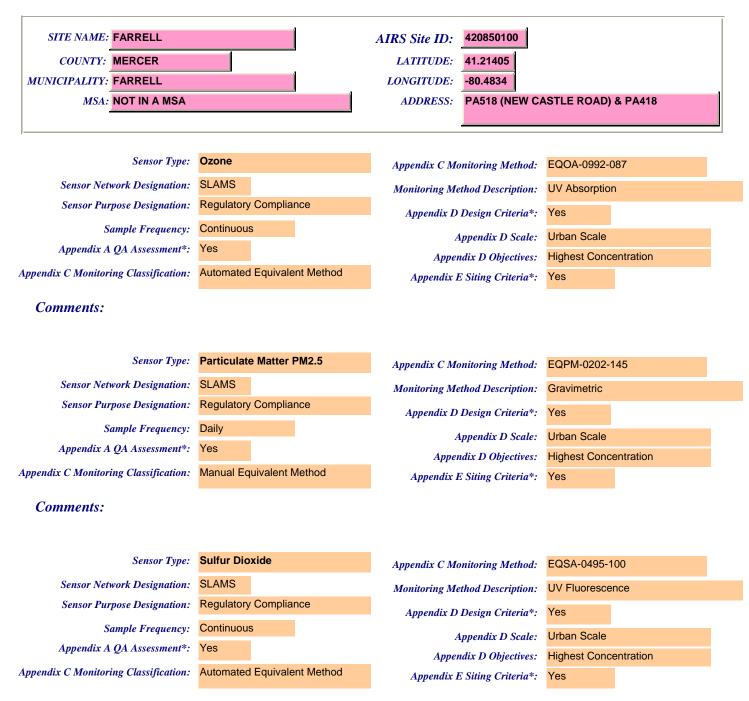
\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	<b>.</b>
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

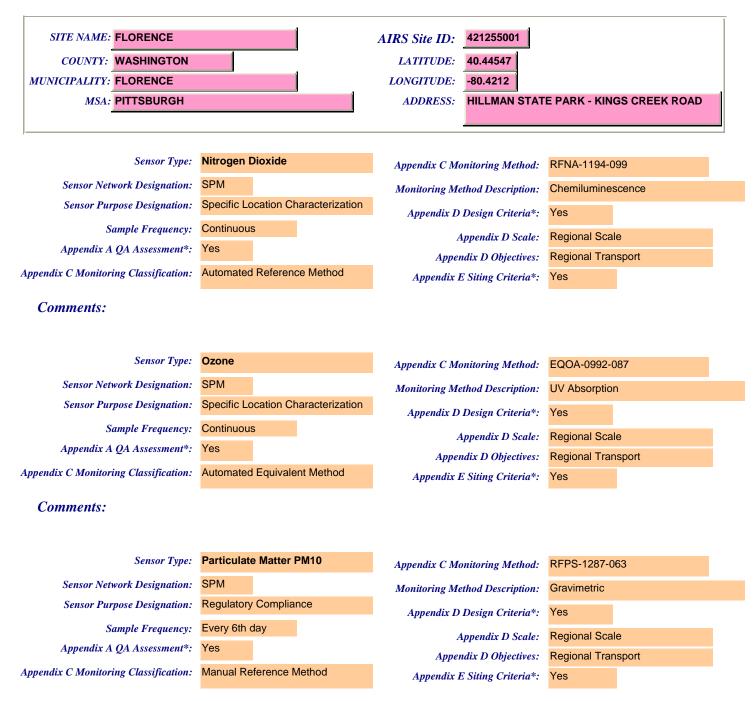
\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	EQPM-0202-145
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Daily	Appendix D Scale:	Regional Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Regional Transport
Appendix C Monitoring Classification:	Manual Equivalent Method	Appendix E Siting Criteria*:	<b>.</b>
Comments:			
Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day		
	Every our day	Appendix D Scale:	Regional Scale

Appendix D Objectives: Regional Transport

Appendix E Siting Criteria\*: Yes

Appendix C Monitoring Classification: Speciation

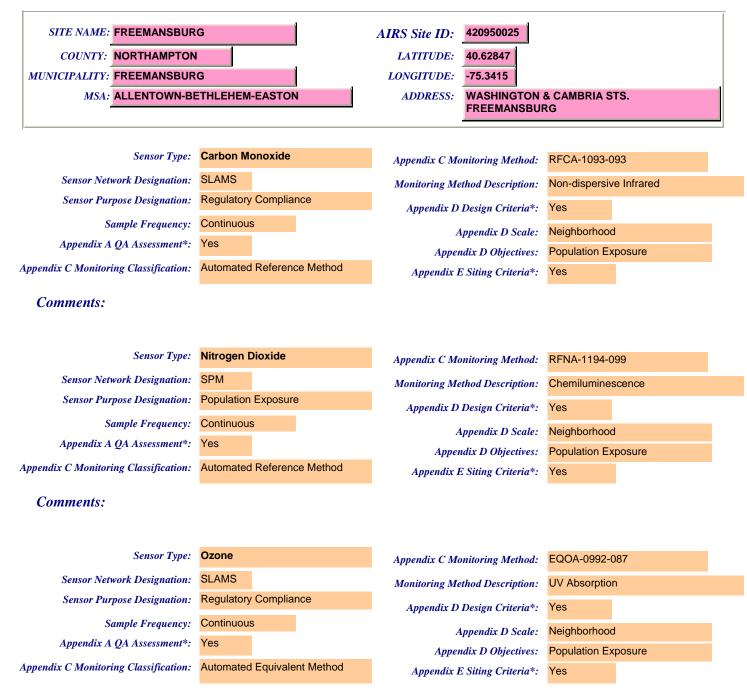
Appendix A QA Assessment\*: Yes

# Comments:

Sensor Type:	Sulfur Dioxide		Appendix C Monitoring Method:	EQSA-0495-1	00
Sensor Network Designation:	SPM		Monitoring Method Description:	UV Fluoresce	ence
Sensor Purpose Designation:	•	characterization	Appendix D Design Criteria*:	Yes	
Sample Frequency:	Continuous		Appendix D Scale:	Pogional Sca	
	Vee		Appendix D Scale.	Regional Scal	IE
Appendix A QA Assessment*:	res		Appendix D Objectives:	Regional Trar	nsport
Appendix C Monitoring Classification:	Automated Equival	ent Method	Appendix E Siting Criteria*:	Yes	

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	EQPM-0202-145

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix E Siting Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Gravimetric

Neighborhood

**Population Exposure** 

Yes

Yes

Sensor Network Designation: SLAMS Sensor Purpose Designation: Regulatory Compliance Sample Frequency: Daily Appendix A QA Assessment\*: Appendix C Monitoring Classification: Manual Equivalent Method

# Yes

## Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	ТЕОМ	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neiahborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	5
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

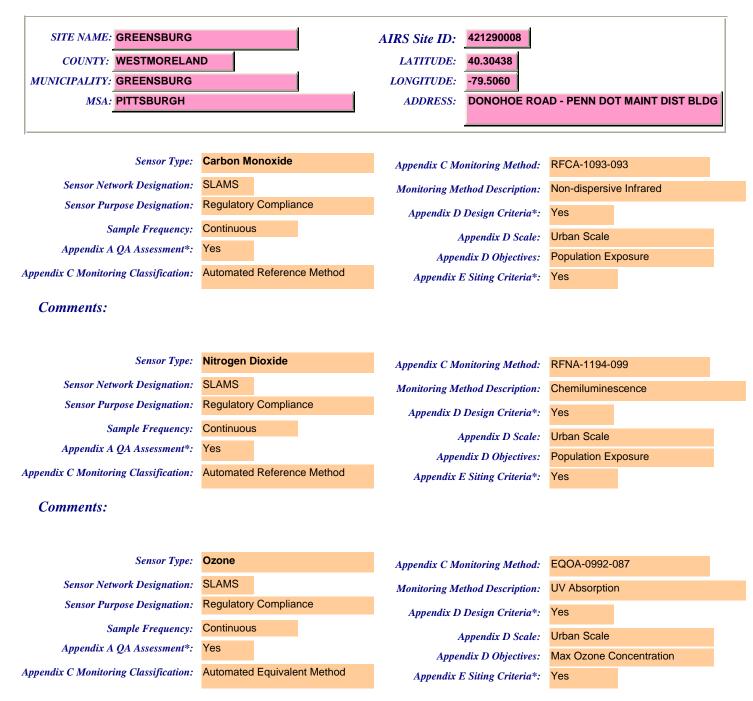
Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Automated Equivalent Method



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes		
		Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			

Sensor Network Designation: Sensor Purpose Designation: Regulatory Compliance Sample Frequency: Every 3rd day Appendix A QA Assessment\*: Appendix C Monitoring Classification: Manual Equivalent Method

Sensor Type: Particulate Matter PM2.5 SLAMS Yes

# Monitoring Method Description: Appendix D Design Criteria\*: Appendix D Scale: Appendix D Objectives: Appendix E Siting Criteria\*:

Appendix C Monitoring Method:

EQPM-0202-	145	
Gravimetric		
Yes		
Urban Scale		
Population Ex	cposure	
Yes		

# Comments:

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes

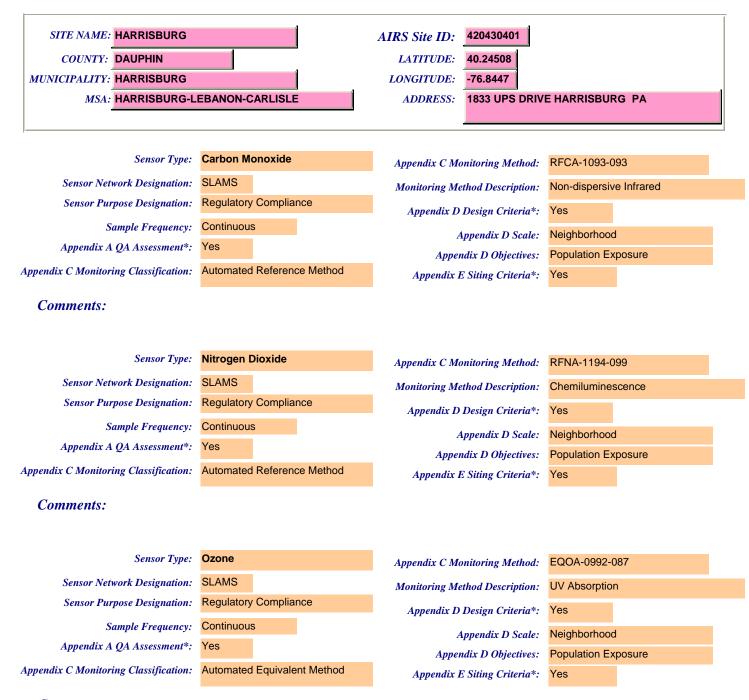
Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

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http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5		
Sensor Type.		Appendix C Monitoring Method:	RFPS-0498-118

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

Gravimetric

Neighborhood

**Population Exposure** 

Yes

Yes

None

Yes

Yes

**Beta Attenuation** 

Neighborhood

**Population Exposure** 

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Network Designation:

Sensor Purpose Designation:

Appendix A QA Assessment\*:

Sensor Network Designation:

Sensor Purpose Designation:

Appendix A QA Assessment\*:

Appendix C Monitoring Classification: BAM

Sample Frequency:

Comments:

Comments:

Sample Frequency:

Appendix C Monitoring Classification: Manual Reference Method

Sensor Type:

**SLAMS** 

Daily

Yes

**SLAMS** 

Yes

Continuous

**Regulatory Compliance** 

Particulate Matter PM2.5

**Population Exposure** 

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

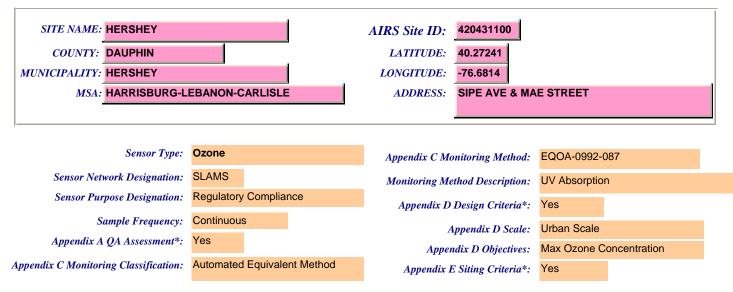
Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

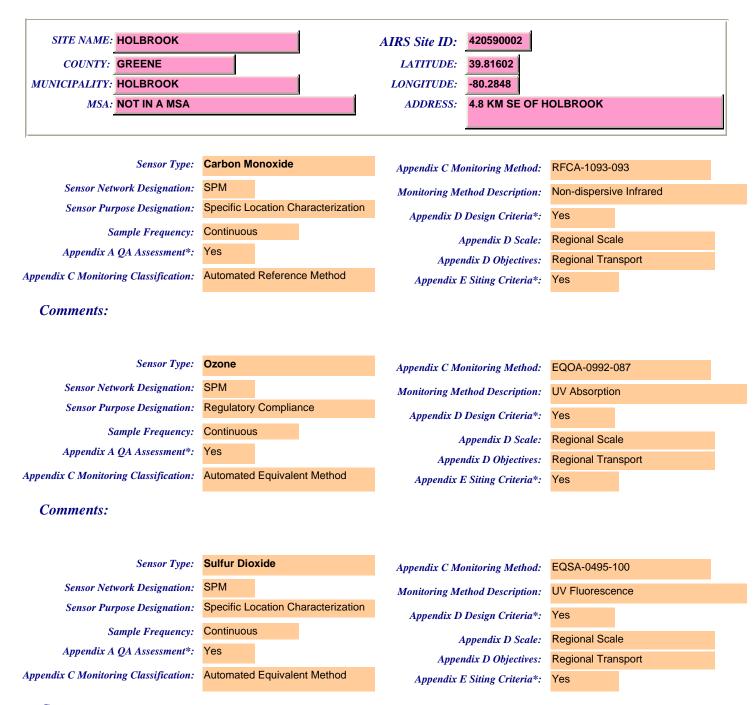
Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Automated Equivalent Method

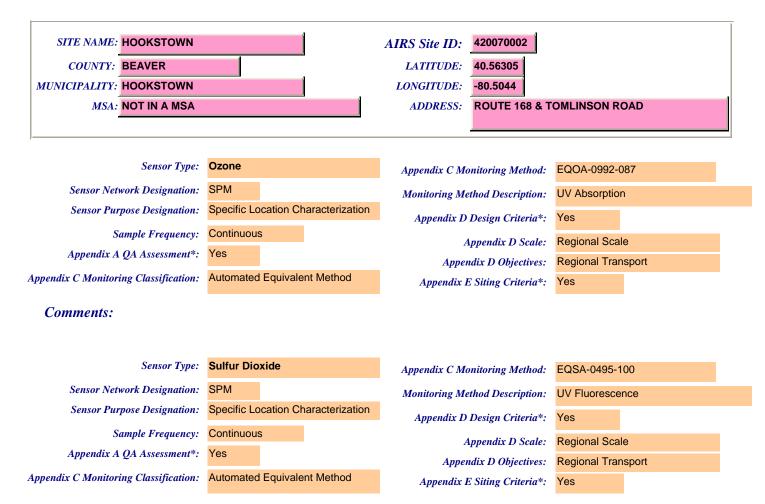


\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

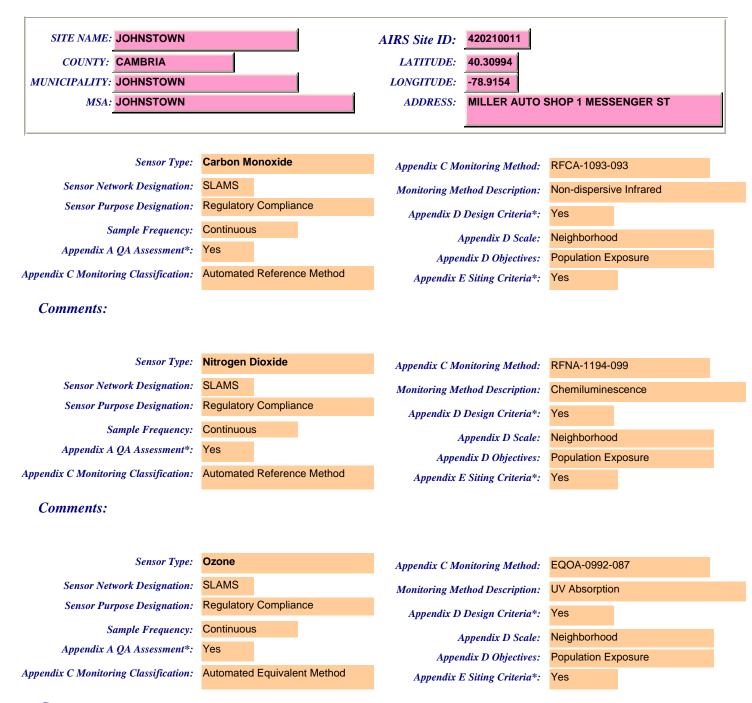


\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Beta Attenuation
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes

Appendix D Scale: Neighborhood

Appendix E Siting Criteria\*:

Appendix D Objectives: Population Exposure

Yes

Appendix C Monitoring Classification: BAM

Appendix A QA Assessment\*:

Sample Frequency:

Continuous

Yes

# Comments:

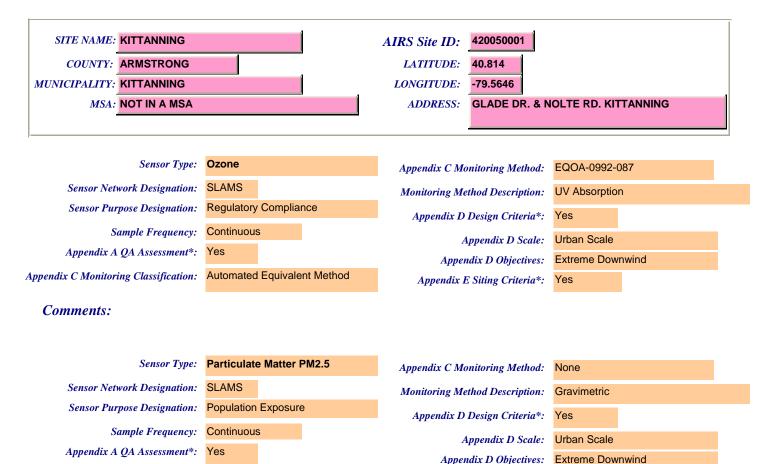
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	RFPS-0498-118
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Neiahborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	<b>.</b>
Appendix C Monitoring Classification:	Manual Reference Method	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	5
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



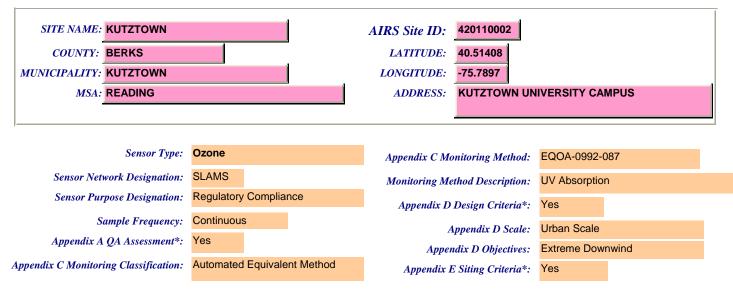
Appendix E Siting Criteria\*:

Yes

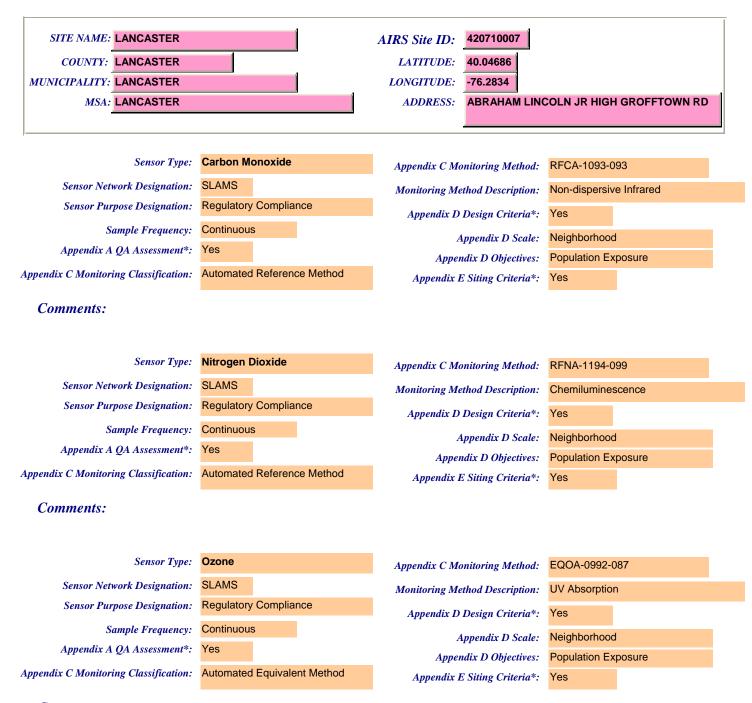
Appendix C Monitoring Classification: TEOM

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



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http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Annendir D Seale:	Neighborhood

Appendix D Scale: Neighborhood

Appendix E Siting Criteria\*:

Appendix D Objectives: Population Exposure

Yes

Appendix A QA Assessment\*: Yes Appendix C Monitoring Classification: FDMS

# Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	RFPS-0498-118
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Manual Reference Method	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	5
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

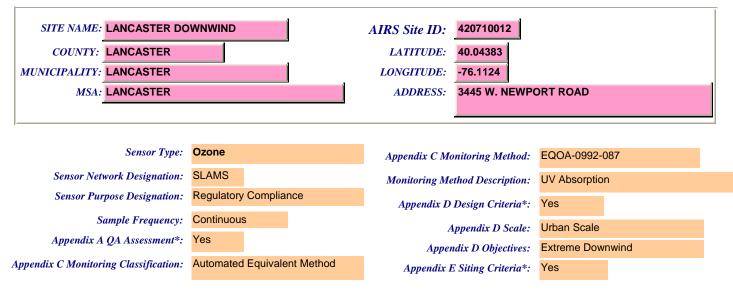
Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

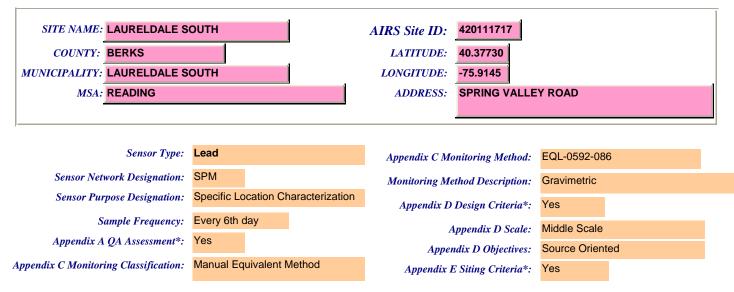
Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

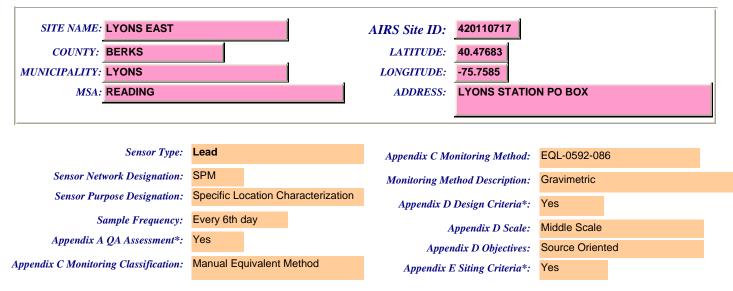
Automated Equivalent Method



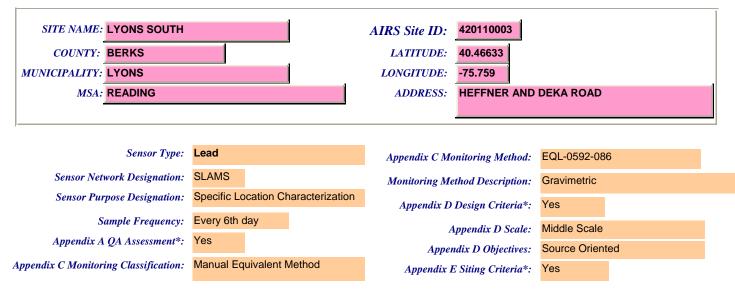
\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at



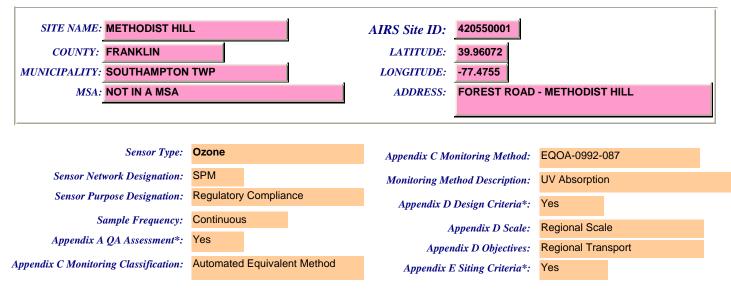
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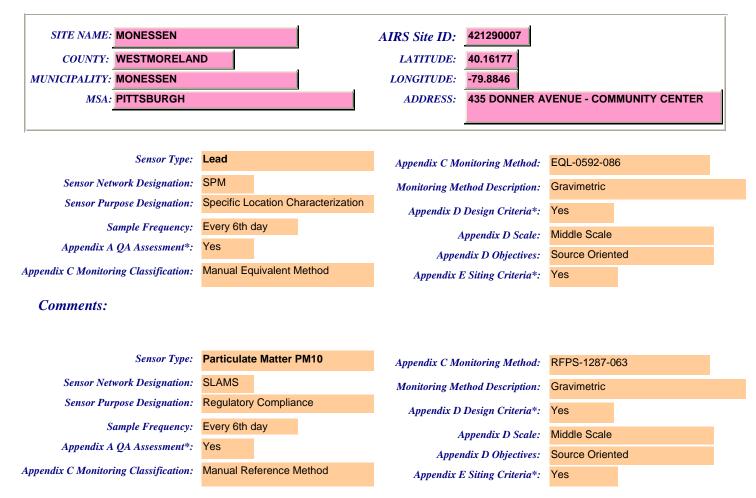
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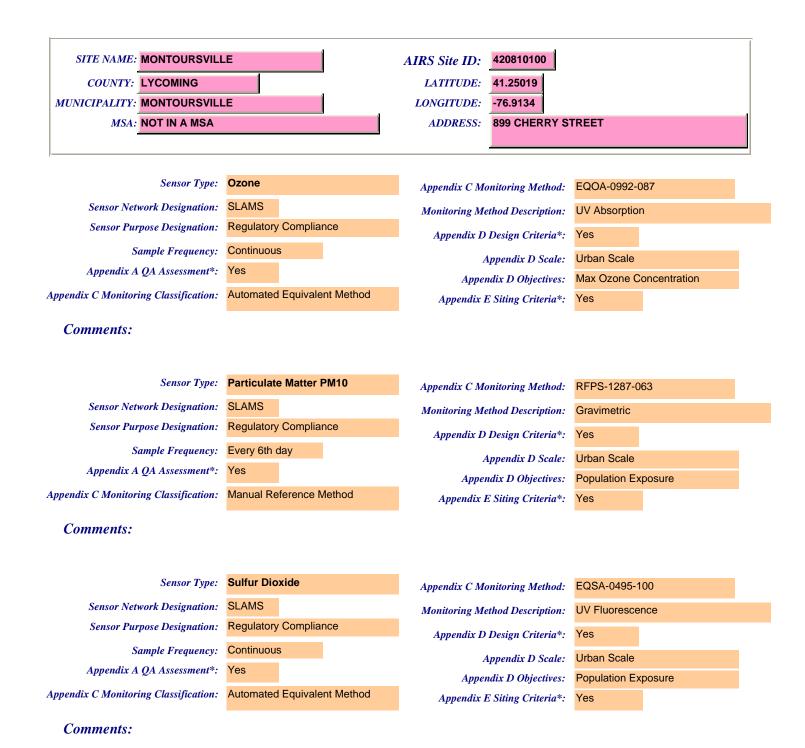
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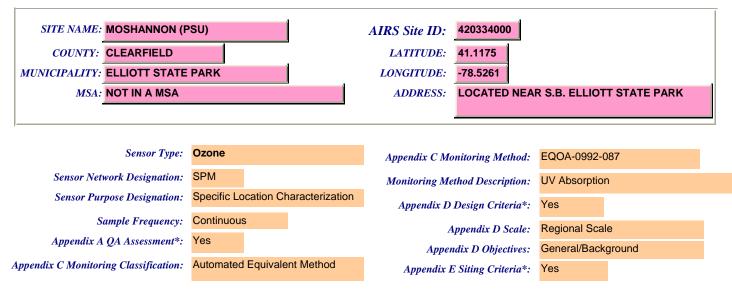


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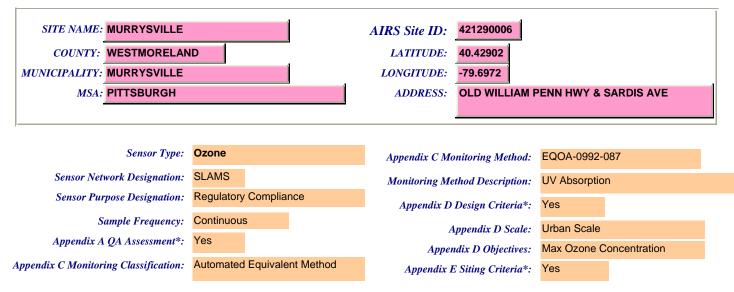


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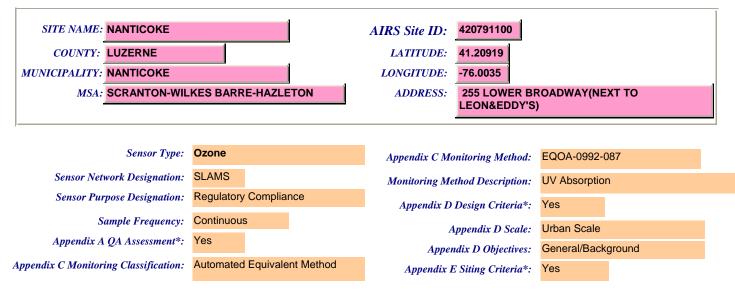
http://www.gpoaccess.gov/cfr/index.html



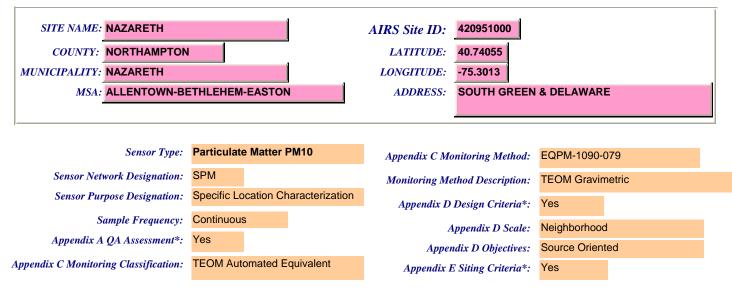
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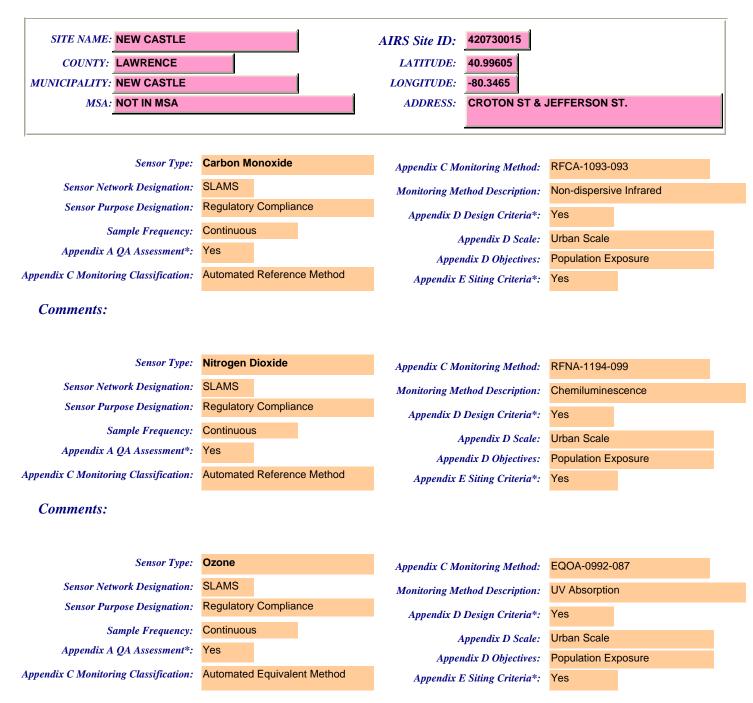
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Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

**Population Exposure** 

Urban Scale

Yes

Yes

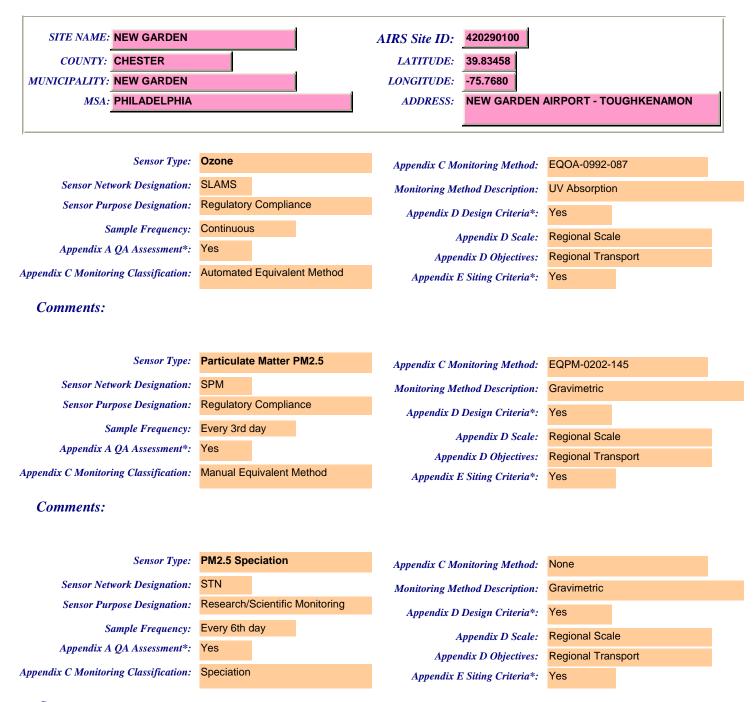
Comments:

Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification: Automated Equivalent Method

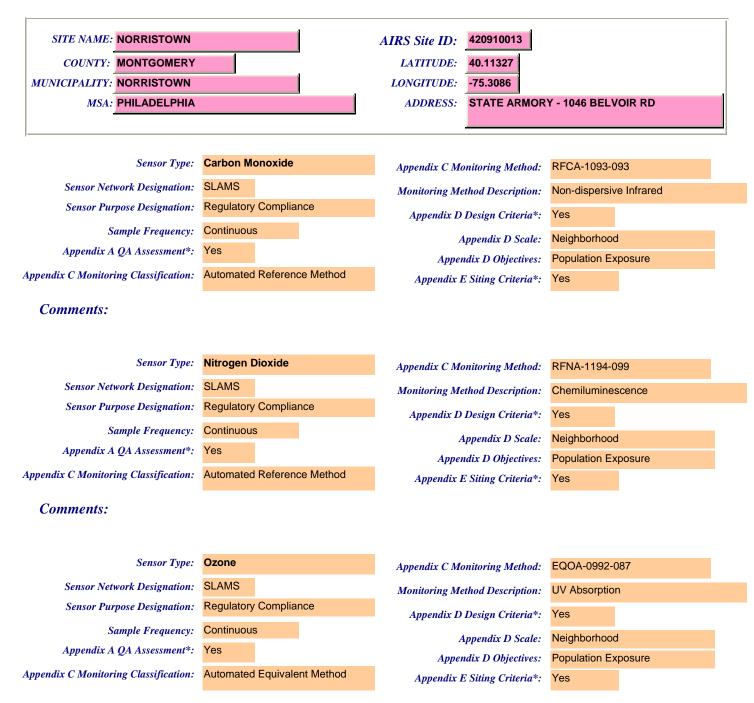
Comments:

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http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Annendir D Seale:	Neighborhood

Appendix D Scale: Neighborhood

Appendix E Siting Criteria\*:

Appendix D Objectives: Population Exposure

Yes

Appendix A QA Assessment\*: Yes Appendix C Monitoring Classification: FDMS

# Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	RFPS-0498-118
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Manual Reference Method	Appendix E Siting Criteria*:	Yes

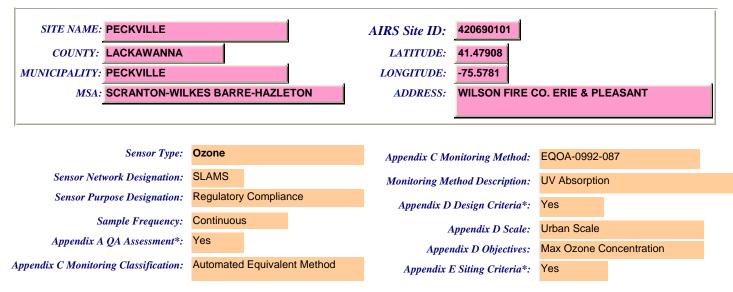
Comments:

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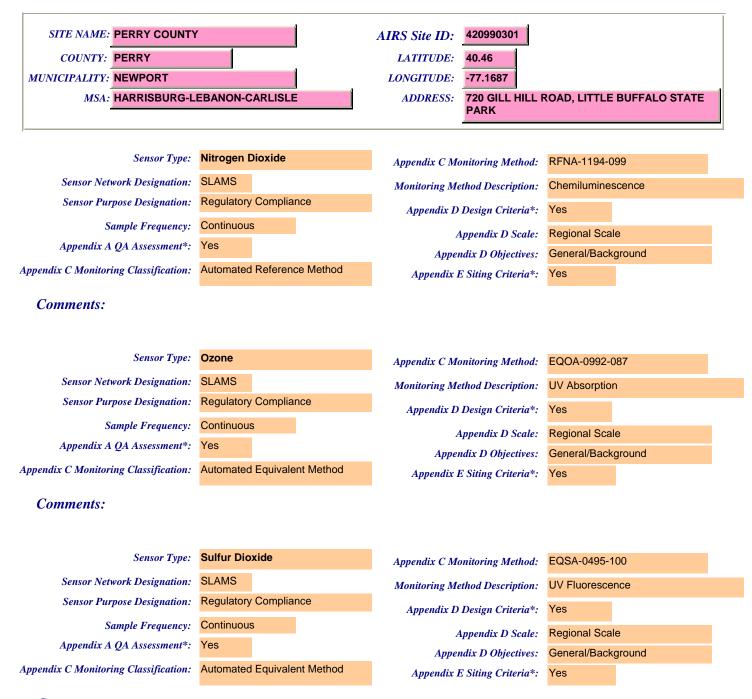
Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	3
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

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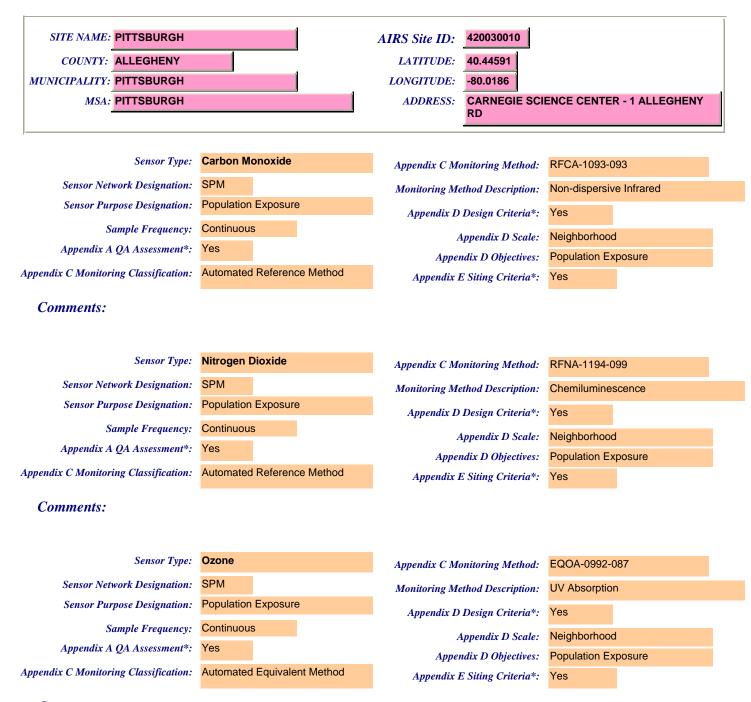


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http://www.gpoaccess.gov/cfr/index.html



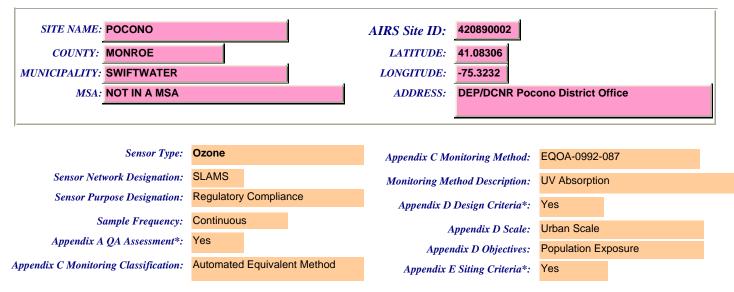
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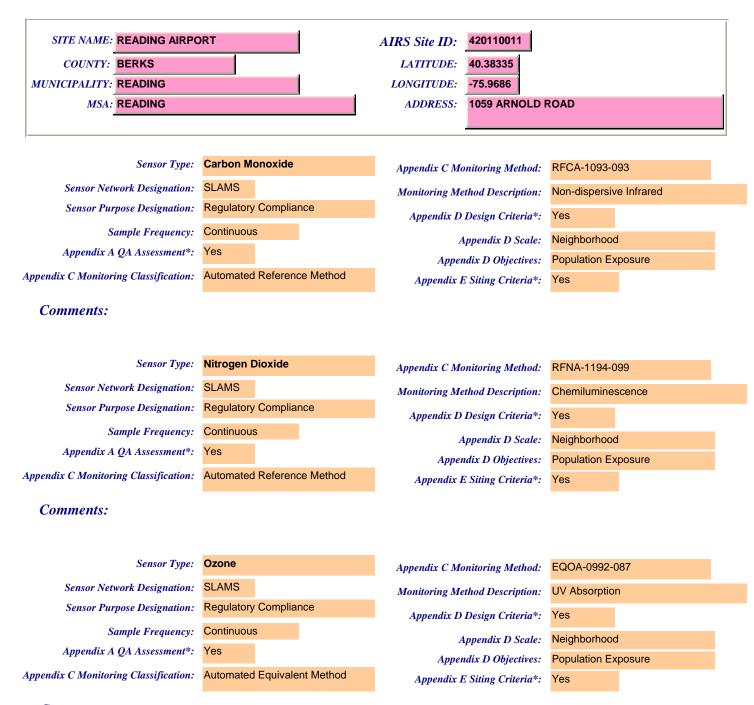
Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SPM	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	, Contraction of the second se
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

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Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	· · · · · · · · · · · · · · · · · · ·
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Population Exposure	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Annendix D Scale:	Neighborbood

Appendix D Scale: Neighborhood

Appendix E Siting Criteria\*:

Appendix D Objectives: Population Exposure

Yes

Appendix A QA Assessment\*: Yes Appendix C Monitoring Classification: FDMS

# Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	RFPS-0498-118
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Neiahborhood
Appendix A QA Assessment*:	Yes	11	Ŭ
Appendix C Monitoring Classification:	Manual Reference Method	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

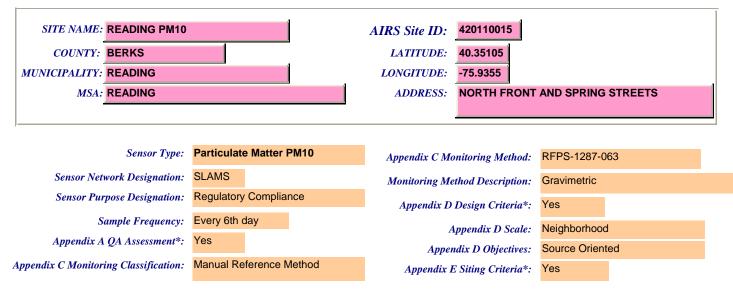
Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Population ExposureSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

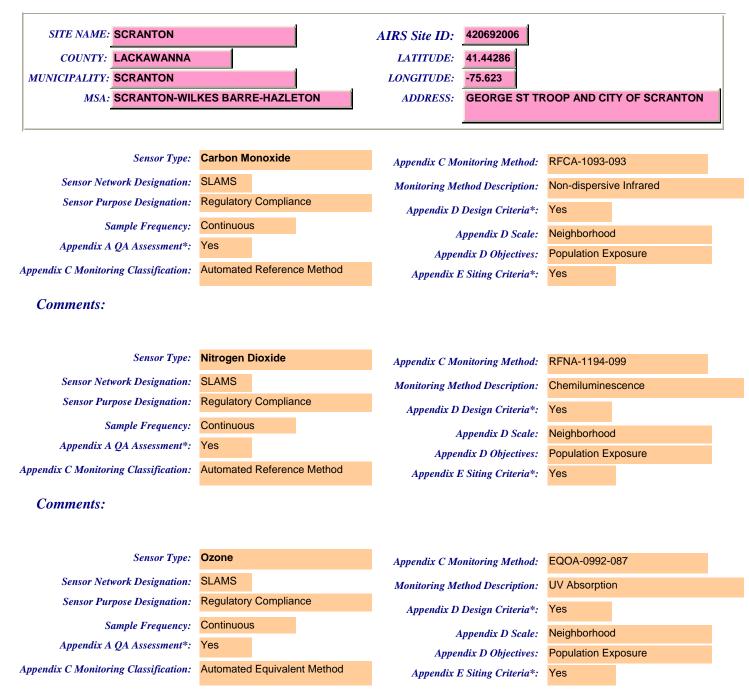
Comments:

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Automated Equivalent Method



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Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	EQPM-0202-145

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix E Siting Criteria\*:

Appendix D Objectives:

Gravimetric

**Population Exposure** 

Yes

Yes

Appendix D Scale: Neighborhood

Sensor Network Designation: S Sensor Purpose Designation: R Sample Frequency: D Appendix A QA Assessment\*: Y Appendix C Monitoring Classification: N

i alticulate	matter	1112.5
SLAMS		
Regulatory	Complia	nce
Daily		
Yes		
Manual Equ	uivalent N	Method

### Comments:

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	J.
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes

Comments:

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Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	3
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

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Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	5
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

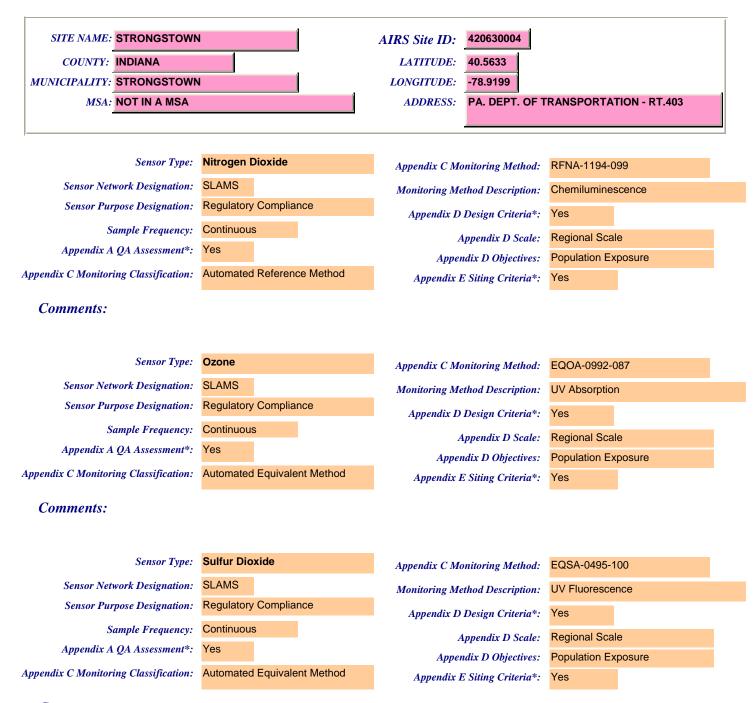
Sensor Type:Sulfur DioxideSensor Network Designation:SPMSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

Comments:

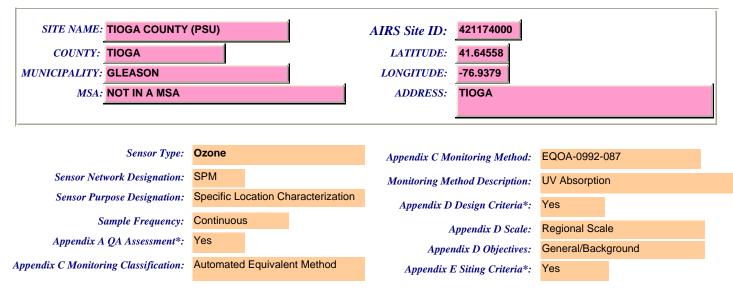
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Automated Equivalent Method

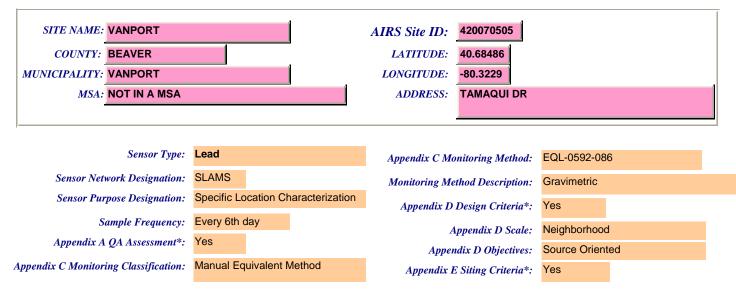


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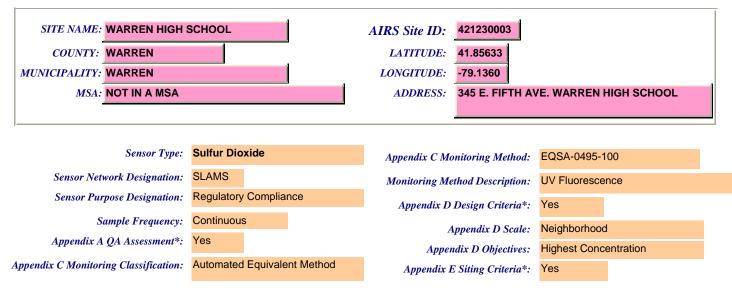
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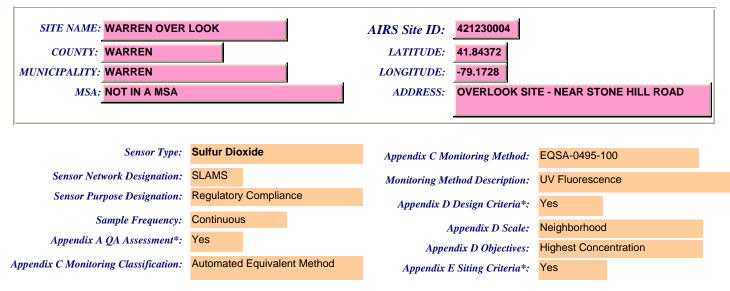
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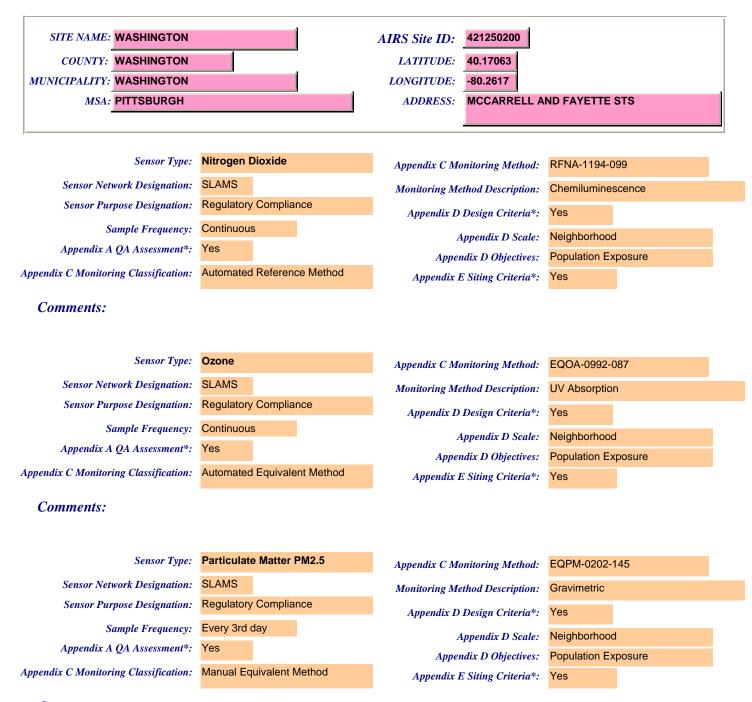
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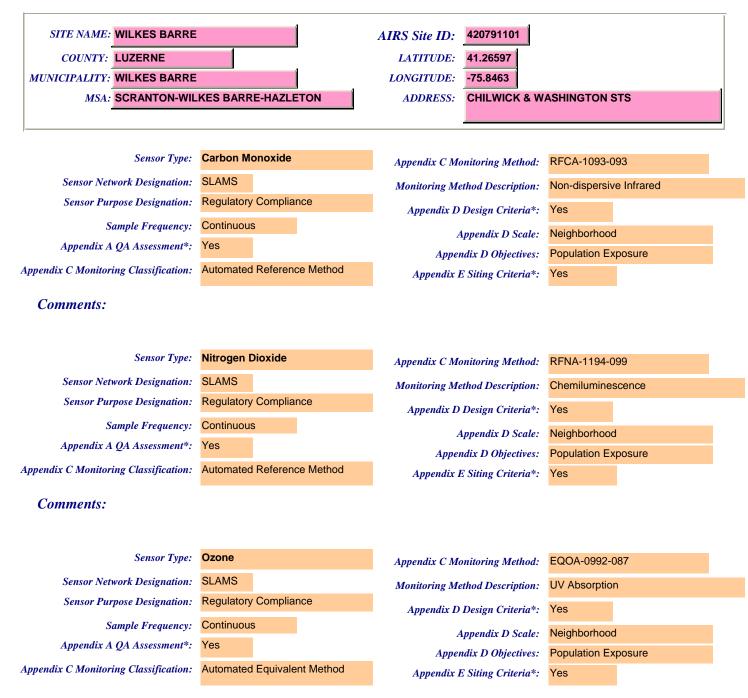


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Sensor Type:	Sulfur Dioxide	Appendix C Monitoring Method:	EQSA-0495-100
Sensor Network Designation:	SLAMS	Monitoring Method Description:	UV Fluorescence
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Neighborhood
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	, Contraction of the second se
Appendix C Monitoring Classification:	Automated Equivalent Method	Appendix E Siting Criteria*:	Yes

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http://www.gpoaccess.gov/cfr/index.html

Sensor Type:	Particulate Matter PM10		Appendix C Monitoring Method:	EQPM-1090-0	)79
Sensor Network Designation:	SLAMS		Monitoring Method Description:	TEOM Gravim	netric
Sensor Purpose Designation:	Regulatory Complia	nce	Appendix D Design Criteria*:	Yes	
Sample Frequency:	Continuous		Appendix D Scale:	Neighborhood	I
Appendix A QA Assessment*:	Yes		Appendix D Objectives:	Ū	
Appendix C Monitoring Classification:	TEOM Automated E	quivalent	Appendix E Siting Criteria*:	Yes	

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

Neighborhood

**Population Exposure** 

Yes

Yes

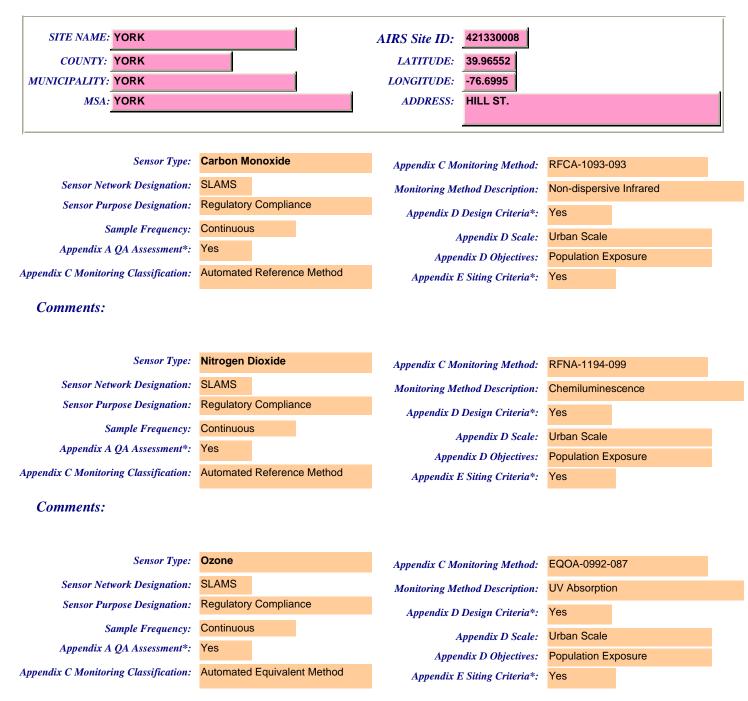
Comments:

Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification: Automated Equivalent Method

Comments:

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Sensor Type:	Particulate Matter PM10	Appendix C Monitoring Method:	EQPM-1090-079
Sensor Network Designation:	SLAMS	Monitoring Method Description:	TEOM Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Continuous	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	TEOM Automated Equivalent	Appendix E Siting Criteria*:	Yes
Comments:			
Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	None
Sensor Type: Sensor Network Designation:	Particulate Matter PM2.5	Appendix C Monitoring Method: Monitoring Method Description:	None Gravimetric

Appendix D Scale: Urban Scale

Appendix E Siting Criteria\*:

Appendix D Objectives: Population Exposure

Yes

Appendix A QA Assessment\*: Yes Appendix C Monitoring Classification: FDMS

Sample Frequency:

Continuous

# Comments:

Sensor Type:	Particulate Matter PM2.5	Appendix C Monitoring Method:	RFPS-0498-118
Sensor Network Designation:	SLAMS	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Regulatory Compliance	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 3rd day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Manual Reference Method	Appendix E Siting Criteria*:	Yes

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Sensor Type:	PM2.5 Speciation	Appendix C Monitoring Method:	None
Sensor Network Designation:	STN	Monitoring Method Description:	Gravimetric
Sensor Purpose Designation:	Research/Scientific Monitoring	Appendix D Design Criteria*:	Yes
Sample Frequency:	Every 6th day	Appendix D Scale:	Urban Scale
Appendix A QA Assessment*:	Yes	Appendix D Objectives:	Population Exposure
Appendix C Monitoring Classification:	Speciation	Appendix E Siting Criteria*:	Yes
Comments:			

Appendix C Monitoring Method:

Monitoring Method Description:

Appendix D Design Criteria\*:

Appendix D Scale:

Appendix D Objectives:

Appendix E Siting Criteria\*:

EQSA-0495-100

**UV Fluorescence** 

**Population Exposure** 

Urban Scale

Yes

Yes

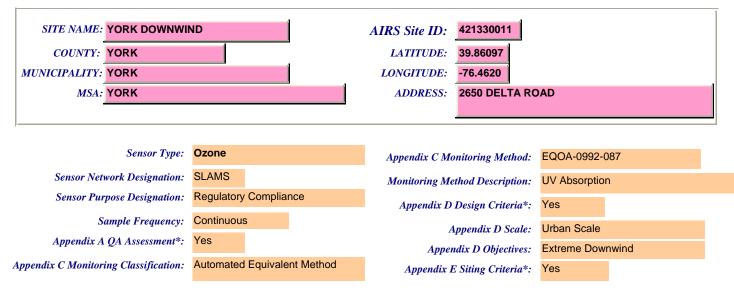
Sensor Type:Sulfur DioxideSensor Network Designation:SLAMSSensor Purpose Designation:Regulatory ComplianceSample Frequency:ContinuousAppendix A QA Assessment\*:Yes

Appendix C Monitoring Classification:

Comments:

\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at

Automated Equivalent Method



\*The Pennsylvania Department of Environmental Protection, Bureau of Air Quality, maintains its ambient air monitoring network in accordance with the quality assurance requirements of 40 CFR Part 58, Appendix A, designs its network in accordance with Appendix D, and locates it sites to meet all requirements of Appendix E. Detailed Appendix A, D and E requirements appear at