Allegheny County Health Department
Air Quality Program
301 39th St., Bldg. # 7
Pittsburgh, PA 15201

2010 Air Monitoring Network Review

July 1, 2010

Page	**TABLE OF CONTENTS**

1. EPA REQUIREMENTS FOR AIR 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 first round of a Network Description. Region III requested information described in 40 CFR Part 58 §58.10.

The requirements of 40 CFR Part 58 §58.10 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.

§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 PM2.5 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.

To view EPA's final revisions to the ambient air monitoring regulations, please follow the link below (file size 708 kb).

http://www.epa.gov/ttn/amtic/files/ambient/pm25/pt535806.pdf

(2) CHANGES SINCE THE LAST AIR MONITORING NETWORK REVIEW

(2.1) PM Network

(2.1.1) $PM_{2.5}$ FRM

The Allegheny County $PM_{2.5}$ FRM network continues to operate within EPA parameters at all sites. The eight sites (8 monitors) in operation in 2009 reported greater than 75 percent valid data for all four quarters. The Allegheny County weighing laboratory performed adequately during 2009 but since moving to a new facility there has been occasional difficulty keeping the humidity and temperature within acceptable limits, causing some data loss. It has been determined that supplemental environmental controls are necessary to assure adequate performance. Bid specifications are currently being prepared and installation will proceed as soon as possible. The County laboratory continues to successfully weigh $PM_{2.5}$ filters for the State of Delaware's $PM_{2.5}$ FRM network.

(2.1.2) $PM_{2.5}$ Continuous Monitors

Met One BAM 1020 $PM_{2.5}$ equivalent method monitors were installed at Lawrenceville and Avalon sites for the start of the 2010 monitoring season.

Met One BAM 1020 $PM_{2.5}$ monitors were also installed at North Braddock and Liberty air monitoring stations around the same time on a trial basis, however statistical analysis has revealed an unacceptably high bias at these sites compared to the existing $PM_{2.5}$ FRM samplers. The Air Quality Program decided to move these monitors to areas in the County where they may more closely correlate with the $PM_{2.5}$ reference method.

(2.1.3) PM_{10} Continuous Monitors

The PM10 TEOM continuous monitor was replaced by the Met One BAM 1020 $PM_{2.5}$ at the Avalon air monitoring station. Removal of the TEOM PM_{10} monitor was necessary to meet Appendix E probe siting criteria due to limited space at the Avalon site.

(2.2) Air Toxics Study Monitors

Opsis AR500 UV DOAS open path monitors were installed in downtown Pittsburgh and in the Neville Island area as part of the Pittsburgh Air Toxics Study. Air toxic and criteria pollutant data was successfully captured by both of these monitors from mid May 2006 through November 2009. Hardware failures have become more frequent with both monitors consuming valuable staff hours for service calls and troubleshooting. To assure future successful operation of these monitors, an annual service contract with the manufacturer is necessary. The Department must decide if funding will be allocated to keep these monitors in operation.

(2.3) NCORE Site

During the Year 2007, the Air Quality Program initiated the upgrade of the existing air monitoring station at Lawrenceville to qualify as an NCORE site. The following monitors were installed:

- Trace level NOy monitor
- Trace level CO monitor
- Trace level SO_2 monitor

These analyzers are currently operating. Automated through-the-probe daily zero and span is being successfully implemented for each instrument.

During 2009 a Met One BAM 1020 $PM_{2.5}$ equivalent method monitor and a meteorological tower featuring a sonic wind speed and wind direction sensor were installed at this site. Both instruments have been operating successfully since the start of the 2010 monitoring year.

(2.4) Meteorological Monitoring

As mentioned above, a sonic wind sensor was installed at the Lawrenceville station late in 2009. During the same time an identical sensor was installed at the Liberty site to operate alongside the existing mechanical wind sensors. Analysis of the data has shown excellent correlation between the methods, clearly showing the sonic sensors to be superior in detecting low speed and quickly changing wind speeds and wind directions. The sonic sensors also continued to operate during arctic-like conditions when the mechanical sensors were frozen and out of service.

The Hammerfield meteorological monitoring station was shut down during 2009. Tree growth near the tower was causing increasing problems due to a blockage of air flow. The nearby Lawrenceville meteorological station is appropriately sited and also satisfies the need for local meteorological data.

(2.5) Lead Monitoring Network

On November 12, 2008 EPA substantially strengthened the national ambient air quality standards (NAAQS) for lead. EPA revised the level of the primary (health-based) standard from 1.5 micrograms per cubic meter (μg/m3) to 0.15 μg/m3, measured as total suspended particles (TSP), and revised the secondary (welfare-based) standard to be identical in all respects to the primary standard. In conjunction with strengthening the lead NAAQS, EPA identified the need for states to improve existing lead monitoring networks by requiring monitors to be placed in areas with sources that emit one ton or more per year (tpy) of lead and in urban areas with more than 500,000 people.

The two sources in Allegheny County that emit greater than one ton per year of lead are;

- ATI Allegheny Ludlum Corporation, Natrona
- G.E. Bridgeville Glass, Bridgeville

Modeling of the source emissions from both facilities was conducted to predict the maximum ground level lead concentration. Monitors were established as near as possible to these areas and monitoring was initiated at both locations on January 2, 2010. Sampling continues at the specified frequency of once every six days.

(2.6) Field Staff Shortage

Field staff shortages have been addressed effectively by the Department. A Quality Assurance Analyst was lost in March 2009 due to a non-work related injury. A new staff member was hired as a replacement later in 2009. Additionally, the senior electronic technician retired late in 2009 and interviews have been conducted to find a replacement for this position. Finally, an Engineer III was added to the air monitoring staff during 2009 to act as a quality assurance coordinator and to assist in management of the air monitoring network.

(2.7) Special Study Monitors

A new monitoring station was established at Wilson Elementary School in Imperial, PA. This site currently measures hydrogen sulfide on a continuous basis. A three month SUMMA canister / method TO-15 study was also conducted at this site in 2009. This monitoring site was installed in response to ongoing complaints received from school district employees and local residents regarding odors related to the nearby residential waste landfill. This monitoring site is referred to as “West Allegheny” in this document, due to the school being part of the West Allegheny School District.

(3) PROPOSED CHANGES TO THE AIR MONITORING NETWORK

(3.1) PM Network

(3.1.1) $PM_{2.5}$ FRM Monitors

The Moon PM2.5 FRM monitoring site will be discontinued in 2010 (see section 3.6).

(3.1.2) $PM_{2.5}$ Continuous Monitors

Additional Met One BAM 1020 $PM_{2.5}$ equivalent method monitors will be added to the network during 2010. Sites being considered for the addition of these monitors include North Park and South Fayette air monitoring sites. These monitors would be collocated with $PM_{2.5}$ FRM samplers for one year. After this time the Department will consider removal of the $PM_{2.5}$ FRM samplers at these sites.

The Lawrenceville $PM_{2.5}$ TEOM continuous monitor will be discontinued in 2010. The recently installed Met One BAM 1020 $PM_{2.5}$ equivalent method monitor will serve as a replacement for this parameter and will also be used for daily AQI reporting.

(3.1.3) PM_{10} Continuous Monitors

The Air Quality Program plans to install a continuous PM_{10} monitor at the North Braddock air monitoring site during 2010. This parameter will be added to the daily AQI reporting for that area.

The PM10 continuous monitor will be re-installed at the Avalon station during 2010. After the two co-located lead monitors are moved to the Lawrenceville air monitoring site (see section 3.2), enough space will exist to meet Appendix E probe siting criteria for the operation of this monitor.

A new air monitoring site will be established on Harper Drive in Monroeville. This site is being activated at the request of local residents. Particulates are the primary pollutant of interest. Currently the Department plans to install a continuous PM10 at this site which will be useful in providing daily AQI information to the Monroeville area. Other pollutant parameters may be added at a later date.

(3.1.4) $PM_{10-2.5}$ Coarse Monitoring

An additional Met One BAM 1020 monitor will be added to the Lawrenceville NCORE site during 2010. This monitor will be operated as a PM10 and will be paired with the existing Met One BAM 1020 $PM_{2.5}$ monitor to satisfy $PM_{10-2.5}$ (coarse) requirements for NCORE sites.

(3.2) Lead Monitoring Network

If the recently adopted lead threshold of one tpy or more is lowered to the proposed 0.5 tpy or more, one additional lead monitor may be required to be added to the air monitoring network. If EPA retains the January 1, 2011 date for the installation and operation of the additional lead monitors, the following facility will be a potential site for establishment of a nearby source-oriented lead monitor.

- Hussey Copper LTD, Leetsdale

In the event that dispersion modeling shows that the maximum running 3-month average concentration is less than 50% of the NAAQS, the Department may request a waiver from source-oriented monitoring around the modeled facility.

In addition to the source-oriented monitoring sites, the Department is required under the provisions of 40 CFR Part 58, Appendix D, to monitor in MSAs with populations greater than 500,000 people. Allegheny County is considered as one MSA. The population oriented lead monitor currently being operated at the Avalon air monitoring satisfies this requirement for Allegheny County. This lead monitor, and the associated collocated QA lead monitor, will be moved to the Lawrenceville air monitoring site by January 1, 2011. The Lawrenceville site satisfies criteria for a population oriented lead monitoring site and also satisfies the requirement for lead monitoring at NCORE sites. The Avalon site will retain the HAP metal study TSP monitor so that lead data will still be available for the Avalon area.

(3.3) Meteorological Sensor Upgrades

The remaining two mechanical meteorological sensors at South Fayette and Avalon air monitoring sites will be replaced with newer sonic sensors during 2010.

A relative humidity sensor will be added to the meteorological tower at the Lawrenceville NCORE site during 2010.

(3.4) Special Study Monitors

The West Allegheny air monitoring site will continue to operate during 2010. Hydrogen sulfide will be continuously monitored to further assess the impact by the nearby residential waste landfill. Additional studies will be conducted at this site during 2010, including sampling for carbonyl compounds by method TO-11. Methods are also being developed with the assistance of the Allegheny County Department of laboratories to sample for mercaptans, and various species of amines. Once the laboratory is able to demonstrate acceptable analytical procedures, sampling for these compounds will also be conducted during 2010.

(3.5) Five Year Network Assessment

The U.S. Environmental Protection Agency (EPA) finalized an amendment to the ambient air monitoring regulations on October 17, 2006. As part of this amendment, the EPA added the following requirement for state, or where applicable, local monitoring agencies to conduct a network assessment once every five years [40 CFR 58.10(d)].

> "(e) The State or, where applicable, local agency shall perform and submit to the EPA Regional Administrator an assessment of the air quality surveillance system every 5 years to determine, at a minimum, if the network meets the monitoring objectives defined in appendix D to this part, whether new sites are needed, whether existing sites are no longer needed and can be terminated, and whether new technologies are appropriate for incorporation into the ambient air monitoring network. The network assessment must consider the ability of existing and proposed sites to support air quality characterization for areas with relatively high populations of susceptible individuals (e.g., children with asthma), and, for any sites that are being proposed for discontinuance, the effect on data users other than the agency itself, such as nearby States and Tribes or health effects studies. For PM2.5, the assessment also must identify needed changes to population-oriented sites. The State or, where applicable, local agency must submit a copy of this 5-year assessment, along with a revised annual network plan, to the Regional Administrator. The first assessment is due July 1, 2010."

The five year network assessment for the Air Quality Program has been recently completed. As a result of the five year network assessment the following decisions have been made;

- The five year network assessment indicates that data produced by the Moon Township $PM_{2.5}$ FRM monitor is statistically insignificant. As a result, the air quality program plans to discontinue this monitoring site.

- The five year network assessment indicates that data produced by the Stowe Township continuous PM_{10} and sulfur dioxide monitors is statistically insignificant. As a result, the air quality program plans to discontinue this monitoring site.

- The five year network assessment indicates that data produced by the Flag Plaza carbon monoxide monitor is statistically insignificant. As a result, the air quality program plans to discontinue this monitor. The remaining two carbon monoxide monitors in the network satisfy current EPA network design requirements for this parameter.

(3.6) Public Review

Draft copies of the 2010 Air Monitoring Network Review and the Five Year Network Assessment were posted on the Air Quality Program's website to solicit public comments during June 2010. Presentations of both documents were also made to the program's air monitoring and criteria pollutant subcommittee. No public comments were received during the 30 day comment period.

(4) AIR MONITORING NETWORK SUMMARY

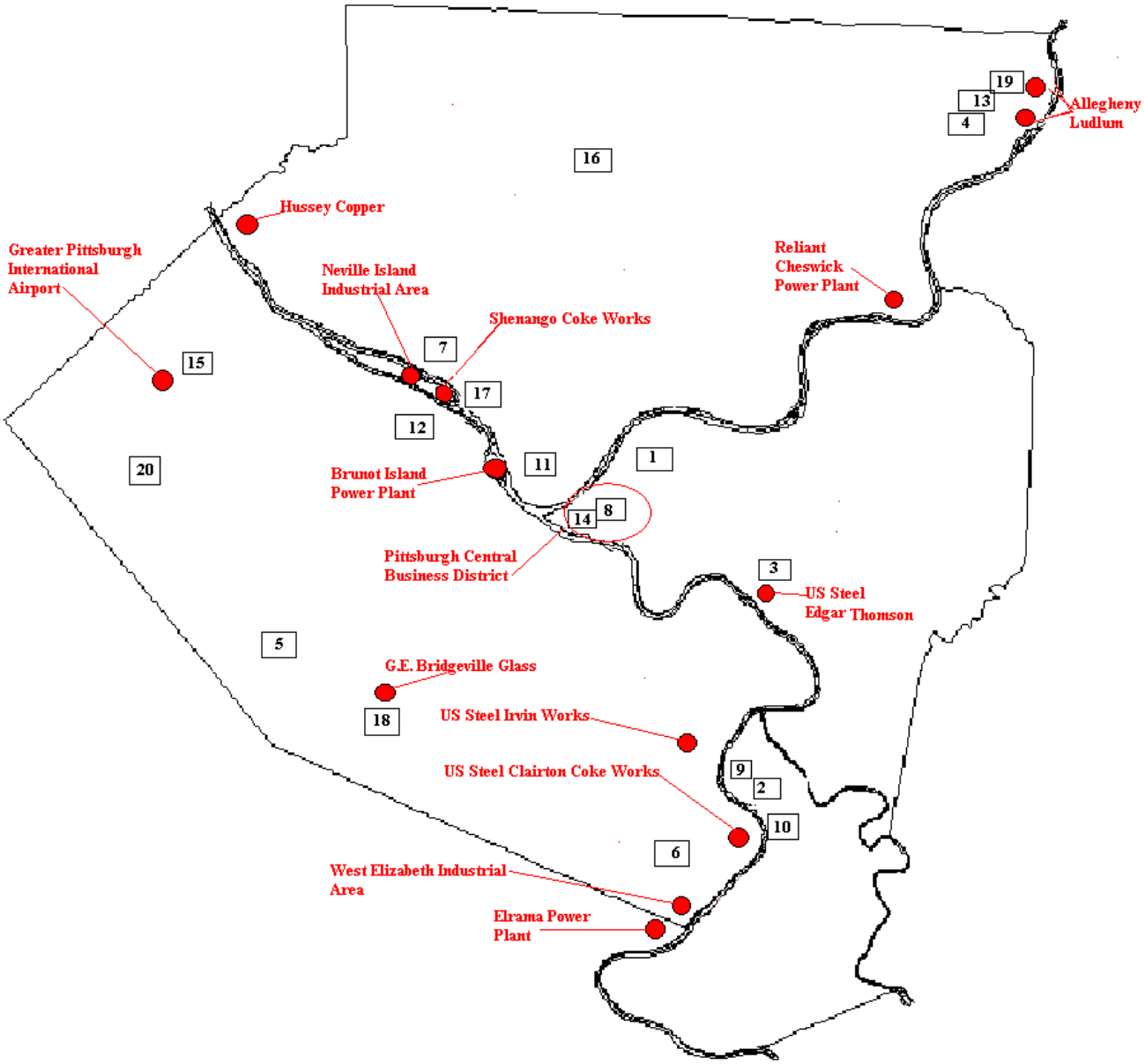
This quick summary is provided as an overview of the air monitoring network, and is presented here to show at a glance the numbers and general types of air monitors currently maintained by the Air Quality Program. To vie live data for all continuous monitors listed below, see the Air Quality Program website; http://www.achd.net/air/air.html

	SO_2	CO	NO_x	NOy	O_3	PM_{10}	$PM_{2.5}$	Pb	H_2S	Air Toxic	Met
Lawrenceville	CT	CT	C	CT	C		C, C I(1), I(6) SPC(3)				C
Liberty Boro	C					C I(3) I(6)	C I(1), I(6) SPC(6)		C	B	C
North Braddock						I(6), I(6)	I(3)				
Harrison 2							I(3)				
South Fayette	C				CS		I(3)				C
Clairton						I(6)	I(6)				
Avalon	C					I(6)	C	I(6), I(6)	C		C
Flag Plaza		C				C				UV T15(6) T11(6)	
Glassport High Street						C					
Lincoln						C					
Pittsburgh 8 (Manchester)						I(6)					
Stowe	C					C					
Harrison			C		C						
Downtown		C									
Moon							I(6)				
North Park							I(6)				
West View										UV	
Bridgeville								I(6)			
Natrona								I(6)			
West Allegheny									C		
	SO_2	CO	NO_x	NOy	O_3	PM_{10}	$PM_{2.5}$	Pb	H_2S	Air Toxic	Met
Total	C = 4 CT = 1	C = 2 CT = 1	C = 2	CT = 1	C = 2 CS = 1	C = 5 I = 7	C =4	I = 4	C = 3	C = 2	C = 4

CHART KEY

C = Continuous **I** = Intermittent or Filter-Based **SPC** = PM2.5 Speciation **(S)** = Seasonal Monitor
(T) = Trace Level Monitor **(1), (3), or (6)** = Sampling Frequency [for example, (3) means every third day]
UV = UV DOAS Open Path **B** = Benzene Monitor **T15** = SUMMA TO15 **T11** = Carbonyl TO11

(Figure 1) Allegheny County / Air Pollution Sources and Air Monitoring Sites



Site Number	Monitoring Site Name	Site Number	Monitoring Site Name
1	Lawrenceville	11	Pittsburgh 8
2	Liberty Boro	12	Stowe
3	North Braddock	13	Harrison
4	Harrison 2	14	Downtown
5	South Fayette	15	Moon
6	Clairton	16	North Park
7	Avalon	17	West View
8	Flag Plaza	18	Bridgeville Lead Monitor
9	Glassport High Street	19	Natrona Lead Monitor
10	Lincoln	20	West Allegheny (Wilson Elementary)

(5) GLOSSARY OF TERMS AND ABBREVIATIONS

NAAQS	National Ambient Air Quality Standards. These standards apply only to the six criteria pollutants
Criteria Pollutants	Air pollutants considered as harmful to public health and the environment (carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, particulate matter PM10, PM2.5)
FRM	Federal Reference Method. Primary measurement methods designated by the USEPA for measurement of criteria pollutants and determination of compliance with NAAQS.
FEM	Federal Equivalent Method. Secondary methods approved by the USEPA for measurement of criteria pollutants and determination of compliance with NAAQS.
Hourly	Refers to continuous operating monitors which produce hourly averaged telemetered data.
SSI	Size selective inlet. The term is used here to indicate the presence of a high volume PM_{10} sampler.
TSP	Total suspended particulates. This pollutant is measured using high volume sampler operated without a size selective inlet.
PM_{10}	All suspended particles equal to or smaller than 10 microns.
$PM_{2.5}$	All suspended particles equal to or smaller than 2.5 microns. Also frequently referred to as fine particulates.
Lead (Pb)	Lead Monitor. Data is obtained by County laboratory analysis of TSP filters. This analysis measures lead that is trapped in suspended particles and is performed according to the federal reference method for lead monitoring.
Speciation	PM2.5 speciation monitor. Multiple filter based samples which yield a breakdown of PM2.5 composition. Analytes include heavy metals, sulfates, nitrates and various species of carbon. Analysis is conducted by the US EPA national contract lab, known as Research Triangle Institute, which is located in North Carolina.
IMPROVE	Interagency Monitoring of Protected Visual Environments. Analysis of these samples is conducted by University of California at Davis. This is an alternate method of $PM_{2.5}$ speciation.
HAP Metals (TSP)	Analysis of special quartz TSP filter samples for metals considered hazardous air pollutants as specified by the EPA implemented toxic metals study. Samples are collected every six days and are analyzed by the Guthrie Laboratory, operated by the West Virginia Department of Environmental Protection.
B(a)P	Benzoalphapyrene. Data is obtained by Allegheny County laboratory analysis of high volume PM_{10} SSI based filters.

GLOSSARY OF TERMS AND ABBREVIATIONS (continued)

SUMMA Canister	Samples collected for 24 hours every six days using an evacuated stainless steel canister. Analysis for multiple volatile organic compounds is performed by Maryland Department of Environmental Protection.
Carbonyl	Samples collected for 24 hours every six days. Sample media is a DNPH cartridge. Analysis by method TO-11a is performed by the Philadelphia Health Department for formaldehyde and other related carbonyl compounds.
Ch. Tube	Charcoal tube. Samples are collected for 24 hours every six days. Analysis is performed by the County laboratory for benzene, toluene, ethyl benzene, xylenes and other volatile organic compounds.
UV- DOAS	Ultra Violet Differential Optical Absorbance Spectrophotometer. This is an open path monitor that has the ability to perform continuous analysis of a variety of air toxic and criteria pollutant gases at a very high level of sensitivity. The path length of these monitors may vary from 100 to 800 meters.
CO	Carbon Monoxide. Measured using a continuous automated analyzer.
SO_2	Sulfur Dioxide. Measured using a continuous automated analyzer.
NOx	Oxides of nitrogen, including nitric oxide and nitrogen dioxide. Measured using a continuous automated analyzer.
O_3	Ozone. Measured using a continuous automated analyzer.
H_2S	Hydrogen Sulfide. Measured using a continuous automated analyzer.
NCORE	National Core Monitoring Network, consisting of multi-pollutant ambient air monitoring sites, and specializing in $PM_{2.5}$ precursor gases.
TEOM	(Tapered Element Oscillating Microbalance) this technology is used by the Thermo Environmental model 1400ab continuous particulate monitor, which has FEM designation for PM10 measurement.
BAM	(Beta Attenuation Monitor) this technology is used by the Met One BAM1020 continuous particulate monitor, which has FEM designation for $PM_{2.5}$ and PM_{10} measurement.

(6) AIR MONITORING NETWORK DESCRIPTION INTRODUCTION

The following air monitoring network description discusses each monitoring site in detail. The first information block is labeled with the site name. Inside of the block is listed site specific information as follows:

- **Street Address**
- **AIRS #** - unique 9 digit number used to identify the site in the national data base.
- **Municipality** where site is located.
- **MSA**- Metropolitan Statistical Area.
- **Elevation**- Feet above mean sea level.
- **Latitude (N), Longitude (W)** – Site coordinates, given in WGS84 datum coordinates as taken from Google Earth.
- **Comments**- Specific site information of importance.

The next blocks are designed to list details of each monitor at the site. Each monitor present at the time of the review is assigned its own block. The following information is listed:

Sensor Type – The name of the pollutant measured by the sampler.

Sensor Network Designation – The name of the designated network:

- SLAMS - State or Local Ambient Monitoring Station
- STN – $PM_{2.5}$ Speciation Trends Network
- SPM – Special Purpose Monitor
- NATTS- National Air Toxics Trends Site
- NCORE – National Core Multi-pollutant Monitoring
- QA CO-LOCATED – Quality Assurance Duplicate Monitoring

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
- Quality Assurance (Collocated)

Sample Frequency – Specifies how often a sample is taken.

- Continuous - operates 24/7; applies predominately to gaseous analyzers, although some particulate samplers (TEOM, BAM) 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"

- Reference Method – a method of sampling that is specified in 40 CFR Part 50.
- Equivalent Method – 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.
- N/A – 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"

For detailed descriptions of each method number listed in this review, please follow the link below to access the EPA's Technology Transfer Network (file size 492 kb).

http://www.epa.gov/ttn/amtic/files/ambient/criteria/reference-equivalent-methods-list.pdf

Monitoring Method Description – Each individual ambient air monitor type has a specific method of pollutant detection. Common examples are:

- Ozone monitors – Ultraviolet (UV) Absorption
- SO_2- UV Fluorescence
- CO - Non-dispersive Infrared (IR)
- NO_2 or NOx - Chemiluminescence
- $PM_{2.5}$, PM_{10} - Gravimetric (or gravimetric by TEOM tapered element microbalance)
- UV-DOAS- Ultra Violet Differential Optical Absorbance Spectrometer. This is a high sensitivity, automated open path monitor with an optional path length of up to 1 km. Analytes include SO_2, NO_2, O_3 and assorted air toxics.
- Gas Chromatograph- Portable instrument that uses gas separation technology and a carrier gas of high purity nitrogen. The photo ionization detector is capable of low ppb levels of detection. Used by the Air Quality Program to continuously monitor for benzene.

Appendix D Design Criteria – Appendix D requires a certain number of 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.

- 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
- General/Background Concentration
- Highest Concentration
- Maximum Ozone Concentration
- Maximum Precursor Emissions
- Population Exposure
- Regional Transport
- Source Oriented
- Quality Assurance
- Welfare Related

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.

(7) Detailed Air Monitoring Site Tables

(7.1) Lawrenceville

Address	Allegheny County Health Department 301 39th Street Pittsburgh, PA		
AIRS#	42-003-0008	MSA	Pittsburgh
Municipality	Pittsburgh	Elevation	918 feet above MSL
Latitude (N)	40 27 56	Longitude (W)	79 57 38
Comments	This is a population-based, community oriented monitoring site that is located in an urban area, downwind of Central Business District. The Lawrenceville monitoring site was selected as a PM2.5 National Trends Site. The most significant local pollution is generated from mobile sources, but light industry scattered throughout the area is also a contributing factor. Lawrenceville is a core PM2.5 site that will be used to determine compliance with national standards.		

Sensor Type	**Ozone**	Appendix C Method Code	EQOA-0880-047
Network Designation	SLAMS	Method Description	UV Absorption
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**Oxides of Nitrogen**	Appendix C Method Code	RFNA-0691-082
Network Designation	SLAMS	Method Description	Chemiluminescence
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Reference Method	Appendix E Siting Criteria	Yes

Lawrenceville, Continued

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	TEOM (non-equivalent)
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	N/A	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	EQPM-0308-170
Network Designation	SLAMS	Method Description	Beta Attenuation Monitor
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SLAMS	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Daily	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	QA CO-LOCATED	Method Description	Gravimetric
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every six days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Quality Assurance
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Lawrenceville, Continued

Sensor Type	**$PM_{2.5}$ Speciation**	Appendix C Method Code	N/A (Met One SASS +URG3000n)
Network Designation	STN	Method Description	Gravimetric
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Appendix C Classification	N/A	Appendix E Siting Criteria	Yes

Sensor Type	**Carbon Monoxide Trace Level**	Appendix C Method Code	RFCA-1093-093
Network Designation	NCORE	Method Description	Non-dispersive Infrared
Purpose	Research/Scientific Monitoring Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	yes	Appendix D Objectives	Population Exposure
Appendix C Classification	Automated Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide Trace Level**	Appendix C Method Code	EQSA-0495-100
Network Designation	NCORE	Method Description	UV-Fluorescence
Purpose	Research/Scientific Monitoring Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	yes	Appendix D Objectives	Population Exposure
Appendix C Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**Oxides of Nitrogen (NOy) Trace Level**	Appendix C Method Code	N/A T-API 200EU/501NOy
Network Designation	NCORE	Method Description	Chemiluminescence
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	yes	Appendix D Objectives	Population Exposure
Appendix C Classification	N/A	Appendix E Siting Criteria	Yes

(7.2) Liberty

Address	South Allegheny High School 2743 Washington Blvd McKeesport, PA		
AIRS#	42-003-0064	MSA	Pittsburgh
Municipality	Liberty	Elevation	1100 feet above MSL
Latitude (N)	40 19 26	Longitude (W)	79 52 05
Comments	This site is population oriented but is also about 3 km downwind of the US Steel Clairton Coke Works, which is a major source of particulates and precursor gases as well as sulfur dioxide and air toxics. The area around this monitoring site has a long history of high levels of PM2.5, PM10 and sulfur dioxide. Liberty Boro consistently yields the highest Significant ambient levels of benzene have also been measured and documented at this site. Liberty Boro is a core PM2.5 site that will be used to determine compliance with national standards.		

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	TEOM (non-equivalent)
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	N/A	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SLAMS	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Daily	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Liberty, Continued

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	QA CO-LOCATED	Method Description	Gravimetric
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Quality Assurance
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	EQPM-1090-079
Network Designation	SPM	Method Description	TEOM
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1087-062
Network Designation	SLAMS	Method Description	Gravimetric and B(a)P analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1087-062
Network Designation	QA CO-LOCATED	Method Description	Gravimetric and B(a)P analysis
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Quality Assurance
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Liberty, Continued

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	EQAS-0193-092
Network Designation	SLAMS	Method Description	UV-Fluorescence
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**$PM_{2.5}$ Speciation**	Appendix C Method Code	N/A (Met One SASS +URG3000n)
Network Designation	STN	Method Description	Gravimetric
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Appendix C Classification	N/A	Appendix E Siting Criteria	Yes

Sensor Type	**Hydrogen Sulfide**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	ML8850 with converter
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	N/A	Appendix E Siting Criteria	Yes

Sensor Type	**Benzene**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	Gas Chromatograph
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	N/A	Appendix E Siting Criteria	Yes

(7.3) North Braddock

Address	North Braddock Borough Building 600 Anderson Street Braddock, PA		
AIRS#	42-003-1301	MSA	Pittsburgh
Municipality	North Braddock	Elevation	885 feet above MSL
Latitude (N)	40 24 12	Longitude (W)	79 51 37
Comments	This site is population oriented and it is located within an urban environmental justice area. The population around this site is impacted by the Edgar Thomson Works, which is a large steel production facility, and is located about 1.5 km away from the monitoring site. North Braddock is a core PM2.5 site that will be used to determine compliance with national standards.		

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SLAMS	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1087-062
Network Designation	SLAMS	Method Description	Gravimetric and B(a)P analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

North Braddock, Continued

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1087-062
Network Designation	QA CO-LOCATED	Method Description	Gravimetric
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Quality Assurance
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

(7.4) Harrison 2

Address	Highlands Senior High School Pacific & Idaho Streets Natrona, PA		
AIRS#	42-003-1008	MSA	Pittsburgh
Municipality	Harrison Township	Elevation	1020 feet above MSL
Latitude (N)	40 37 03	Longitude (W)	79 43 39
Comments	This site is located within 1 km of the Harrison ozone monitoring station, and it is population-based and community oriented. Harrison 2 is a core PM2.5 site that will be used to determine compliance with national standards.		

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SLAMS	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

(7.5) South Fayette

Address	South Fayette Elementary School 2254 Old Oakdale Road McDonald, PA		
AIRS#	42-003-0067	MSA	Pittsburgh
Municipality	McDonald	Elevation	1278 feet above MSL
Latitude (N)	40 22 34	Longitude (W)	80 10 14
Comments	This is a population-based, community oriented site that is the regional transport site for ozone and PM2.5. Location in the western portion of the county makes this an excellent site to access pollution levels entering the County on prevailing winds. South Fayette is a core PM2.5 site that will be used to determine compliance with national standards.		

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SLAMS	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Three Days	Appendix D Scale	Regional
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background, Regional Transport
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1287-063
Network Designation	SLAMS	Method Description	Gravimetric and B(a)P analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Regional
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

South Fayette, Continued

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	EQAS-0193-092
Network Designation	SLAMS	Method Description	UV-Fluorescence
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Regional
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**Ozone**	Appendix C Method Code	EQOA-0880-047
Network Designation	SLAMS	Method Description	UV Absorption
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Regional
Appendix A QA Assessment	Yes	Appendix D Objectives	General/Background, Regional Transport
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

(7.6) Clairton

Address	Clairton Education Center 501 Waddel St, Clairton, PA		
AIRS#	42-003-3007	MSA	Pittsburgh
Municipality	Clairton	Elevation	975 feet above MSL
Latitude (N)	40 17 40	Longitude (W)	79 53 09
Comments	This is a population-oriented site that is located within an environmental justice area. Site selection was based on this location being on the edge of the Monongahela Valley, generally upwind of the Clairton Coke Works. During times of temperature inversions and anomalous wind direction, the Coke Works and other sources in the Monongahela River valley impact this site.		

Clairton, Continued

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SPM	Method Description	Gravimetric
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Welfare Concerns
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1087-062
Network Designation	SLAMS	Method Description	Gravimetric and B(a)P analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Welfare Concerns
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

(7.7) Avalon

Address	520 Orchard St Pittsburgh, PA		
AIRS#	42-003-0002	MSA	Pittsburgh
Municipality	Avalon	Elevation	845 feet above MSL
Latitude (N)	40 29 59	Longitude (W)	80 04 17
Comments	This site is population oriented and is impacted by several sources on Neville Island, including Shenango Coke Works and Neville Chemical. Many air pollution and odor complaints received by the Department originate from the communities near this monitoring site.		

Avalon, Continued

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	EQPM-0308-170
Network Designation	SLAMS	Method Description	Beta Attenuation Monitor
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1287-063
Network Designation	SLAMS	Method Description	Gravimetric and B(a)P analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

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

Sensor Type	**Hydrogen Sulfide**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	EQSA-0495-100 with converter
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Hydrogen Sulfide	Appendix E Siting Criteria	Yes

Avalon, Continued

Sensor Type	**Lead (Pb)**	Appendix C Method Code	FRL-1087-001
Network Designation	SLAMS	Method Description	Gravimetric and Lead analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method 40 CFR Part 50, Appendix G	Appendix E Siting Criteria	Yes

Sensor Type	**Lead (Pb)**	Appendix C Method Code	FRL-1087-001
Network Designation	QA CO-LOCATED	Method Description	Gravimetric and Lead analysis
Purpose	QA/Co-located Monitor	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method 40 CFR Part 50, Appendix G	Appendix E Siting Criteria	Yes

Sensor Type	**TSP / HAP Metals**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	Gravimetric and Metals Analysis By W. Va DEP
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	N/A	Appendix E Siting Criteria	Yes

(7.8) Flag Plaza

Address	Boy Scouts of America Building 1275 Bedford Avenue Pittsburgh, PA		
AIRS#	42-003-0031	MSA	Pittsburgh
Municipality	Pittsburgh	Elevation	910 feet above MSL
Latitude (N)	40 26 36	Longitude (W)	79 59 25
Comments	This is an urban-based monitoring site that is located on the edge of Central Business District. In respect to prevailing winds, it is perfectly positioned downwind of Central Business District and upwind of a densely populated environmental justice area.		

Sensor Type	**PM_{10}**	Appendix C Method Code	EQPM-1090-079
Network Designation	SPM	Method Description	TEOM
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**Carbon Monoxide**	Appendix C Method Code	RFCA-1093-093
Network Designation	SLAMS	Method Description	Non-dispersive Infrared
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
mAppendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Reference Method	Appendix E Siting Criteria	Yes

Sensor Type	**Air Toxics**	Appendix C Method Code	N/A
Network Designation	NATTS	Method Description	SUMMA canister, TO-15 analysis
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual SUMMA Canister Sampler	Appendix E Siting Criteria	Yes

Flag Plaza, Continued

Sensor Type	**Air Toxics**	Appendix C Method Code	N/A
Network Designation	NATTS	Method Description	Carbonyl Cartridge, TO-11 analysis
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Carbonyl Cartridge Sampler	Appendix E Siting Criteria	Yes

Sensor Type	**Air Toxics, Ozone, Sulfur Dioxide, Nitrogen Dioxide**	Appendix C Method Code	EQOA-0495-103 EQSA-0495-101 EQNA-0495-102
Network Designation	SPM	Method Description	Open Path Monitor, UVDOAS Path (length: 648 meters)
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method (O3, SO2, NO2)	Appendix E Siting Criteria	Yes

(7.9) Glassport High Street

Address	Water Tower on High Street Glassport, PA		
AIRS#	42-003-3006	MSA	Pittsburgh
Municipality	Glassport	Elevation	1200 feet above MSL
Latitude (N)	40 19 34	Longitude (W)	79 52 54
Comments	Located in a residential area, this site is population oriented, and is impacted by the US Steel Clairton Coke Works, the Irvin Works and other sources in the Monongahela River valley. Glassport High Street is the site of the County"s last documented exceedance of the federal 24-hour PM10 standard of 150ug/m^3, which occurred in October of 1997.		

Glassport High Street, Continued

Sensor Type	**PM_{10}**	Appendix C Method Code	EQPM-1090-079
Network Designation	SPM	Method Description	TEOM
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

(7.10) Lincoln

Address	Bellbridge Road Lincoln, PA		
AIRS#	42-003-7004	MSA	Pittsburgh
Municipality	Lincoln	Elevation	1135 feet above MSL
Latitude (N)	40 18 30	Longitude (W)	79 52 09
Comments	This is a special purpose-monitoring site, located on an elevated location, directly across the Monongahela River and downwind from the US Steel Clairton Coke Works. Although this area is not populated, it is upwind of populated areas and it is known to be the maximum impact area of air emissions from the plant. At the request of US Steel, a telemetry device has been installed on this PM 10 monitor that transmits continuous readings via radio signals to a location within the US Steel facility. Two other such devices are also in use at the Glassport High Street (see site # 9) and Liberty (see site # 2) monitoring sites. This real-time data allows US Steel to minimize fugitive particulate emissions and to adjust production levels to keep particulate levels within allowable ambient levels in downwind communities.		

Sensor Type	**PM_{10}**	Appendix C Method Code	EQPM-1090-079
Network Designation	SLAMS	Method Description	TEOM
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Middle
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

(7.11) Pittsburgh 8 (Manchester School)

Address	Manchester Elementary School 1000 Fulton Street Pittsburgh, PA		
AIRS#	42-003-0092	MSA	Pittsburgh
Municipality	Pittsburgh	Elevation	805 feet above MSL
Latitude (N)	40 27 24	Longitude (W)	80 01 34
Comments	Located to the north west of downtown Pittsburgh, this site is population-based and community oriented. This is also an environmental justice area. Sources of influences are numerous, as this community is located near various warehouse/light-industrial facilities along Ohio River valley. There is also a significant contribution by mobile sources.		

Sensor Type	**PM_{10}**	Appendix C Method Code	RFPS-1287-062
Network Designation	SLAMS	Method Description	Gravimetric and B(a)P analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure, Welfare Related
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

(7.12) Stowe

Address	405 Wheeler Street McKee's Rocks, PA		
AIRS#	42-003-0116	MSA	Pittsburgh
Municipality	McKees Rocks	Elevation	1080 feet above MSL
Latitude (N)	40 29 07	Longitude (W)	80 04 38
Comments	This site is population oriented, and it is located near Neville Island on the upwind side of the prevailing winds. Historically, this has been the site of high sulfur dioxide peak readings.		

Stowe Twp., Continued

Sensor Type	**PM_{10}**	Appendix C Method Code	EQPM-1090-079
Network Designation	SPM	Method Description	TEOM
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**Sulfur Dioxide**	Appendix C Method Code	EQAS-0193-092
Network Designation	SLAMS	Method Description	UV-Fluorescence
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

(7.13) Harrison

Address	Highlands School Administration Building California Ave. & 11th Street Natrona, PA		
AIRS#	42-003-1005	MSA	Pittsburgh
Municipality	Harrison Twp.	Elevation	1003 feet above MSL
Latitude (N)	40 36 50	Longitude (W)	79 43 46
Comments	Located in the northeast portion of Allegheny County, Harrison is downwind of Central Business District for prevailing winds. This location has consistently produced the highest ozone concentrations of the monitoring network. It is a population-based, community oriented monitoring site.		

Harrison, Continued

Sensor Type	**Ozone**	Appendix C Method Code	EQOA-0992-087
Network Designation	SLAMS	Method Description	UV Absorption
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method	Appendix E Siting Criteria	Yes

Sensor Type	**Oxides of Nitrogen**	Appendix C Method Code	RFNA-0691-082
Network Designation	SLAMS	Method Description	Chemiluminescence
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Reference Method	Appendix E Siting Criteria	Yes

(7.14) Downtown

Address	City County Building Grant Street Pittsburgh, PA		
AIRS#	42-003-0038	MSA	Pittsburgh
Municipality	Pittsburgh	Elevation	775 feet above MSL
Latitude (N)	40 36 50	Longitude (W)	79 43 46
Comments	This monitoring site is located in Central Business District and is impacted predominantly by mobile sources. The probe inlet is mounted in a street canyon, which has the potential to concentrate mobile emissions.		

Downtown, Continued

Sensor Type	**Carbon Monoxide**	Appendix C Method Code	RFCA-0981-054
Network Designation	SLAMS	Method Description	Non-dispersive Infrared
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Middle
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Reference Method	Appendix E Siting Criteria	Yes

(7.15) Moon

Address	Moon Township Municipal Building 1000 Beaver Grade Road Coraopolis, PA		
AIRS#	42-003-0095	MSA	Pittsburgh
Municipality	Coraopolis	Elevation	1145 feet above MSL
Latitude (N)	40 30 19	Longitude (W)	80 12 25
Comments	This is a population-based community oriented site located near the Greater Pittsburgh International Airport.		

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SPM	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

(7.16) North Park

Address	Golf course clubhouse roof Pearce Mill Road North Park, PA		
AIRS#	42-003-0093	MSA	Pittsburgh
Municipality	North Park	Elevation	1225 feet above MSL
Latitude (N)	40 36 24	Longitude (W)	80 01 17
Comments	Located in the less populated northern portion of the County, this site was created as a PM2.5 background site and also to provide for even geographical distribution of the PM2.5 monitoring network.		

Sensor Type	**$PM_{2.5}$**	Appendix C Method Code	RFPS-0498-188
Network Designation	SPM	Method Description	Gravimetric
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Urban
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Manual Reference Method	Appendix E Siting Criteria	Yes

(7.17) West View

Address	West View Water Authority 200 Neville Road Neville Island, PA		
AIRS#	42-003-0117	MSA	Pittsburgh
Municipality	Neville Island	Elevation	730 feet above MSL
Latitude (N)	40 29 36	Longitude (W)	80 04 19
Comments	This monitoring site was established as part of the Pittsburgh Air Toxics Study. It is planned to keep this site as part of the regular air monitoring network. The site is impacted by various stationary sources on Neville Island and is positioned to access pollutant levels as they enter Bellevue and Avalon.		

West View, Continued

Sensor Type	**Air Toxics, Ozone, Sulfur Dioxide, Nitrogen Dioxide**	Appendix C Method Code	EQOA-0495-103 EQSA-0495-101 EQNA-0495-102
Network Designation	SPM	Method Description	Open Path Monitor, UVDOAS Path length 455 meters
Purpose	Research/Scientific Monitoring	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	Automated Equivalent Method (O3, SO2, NO2)	Appendix E Siting Criteria	Yes

(7.18) Bridgeville

Address	1311 Union Street Bridgeville PA		
AIRS#	42 003 0070	MSA	Pittsburgh
Municipality	Bridgeville	Elevation	824 feet above MSL
Latitude (N)	40 21 46.85	Longitude (W)	80 06 07.80
Comments	New site established as a requirement of updated lead standards. Air Quality Program modeling showed this location to be close to the modeled lead hot spot due to impact by G.E. Bridgeville Glass Corp.		

Sensor Type	**Lead (Pb)**	Appendix C Method Code	FRL-1087-001
Network Designation	SLAMS	Method Description	Gravimetric and Lead Analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Microscale
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Classification	Manual Reference Method 40 CFR Part 50, Appendix G	Appendix E Siting Criteria	Yes

(7.19) Natrona

Address	79 North Canal Street Natrona, PA		
AIRS#	42 003 1009	MSA	Pittsburgh
Municipality	Natrona	Elevation	775 feet above MSL
Latitude (N)	40 37 08.05	Longitude (W)	79 43 09.83
Comments	New site established as a requirement of updated lead standards. Air Quality Program modeling showed this location to be close to the modeled lead hot spot due to impact by Allegheny Ludlum Corp.		

Sensor Type	**Lead (Pb)**	Appendix C Method Code	FRL-1087-001
Network Designation	SLAMS	Method Description	Gravimetric and Lead analysis
Purpose	Regulatory Compliance	Appendix D Design Criteria	Yes
Sample Frequency	Every Six Days	Appendix D Scale	Microscale
Appendix A QA Assessment	Yes	Appendix D Objectives	Highest Concentration
Monitor Classification	Manual Reference Method 40 CFR Part 50, Appendix G	Appendix E Siting Criteria	Yes

(7.20) West Allegheny

Address	Wilson Elementary School 100 Bruno Lane Imperial, PA		
AIRS#	N/A	MSA	Pittsburgh
Municipality	Imperial	Elevation	1119 feet above MSL
Latitude (N)	40 26 39.50	Longitude (W)	80 16 02.52
Comments	Special study monitoring location to determine the community impact of a nearby residential waste landfill. Numerous odor complaints have been received from this vicinity.		

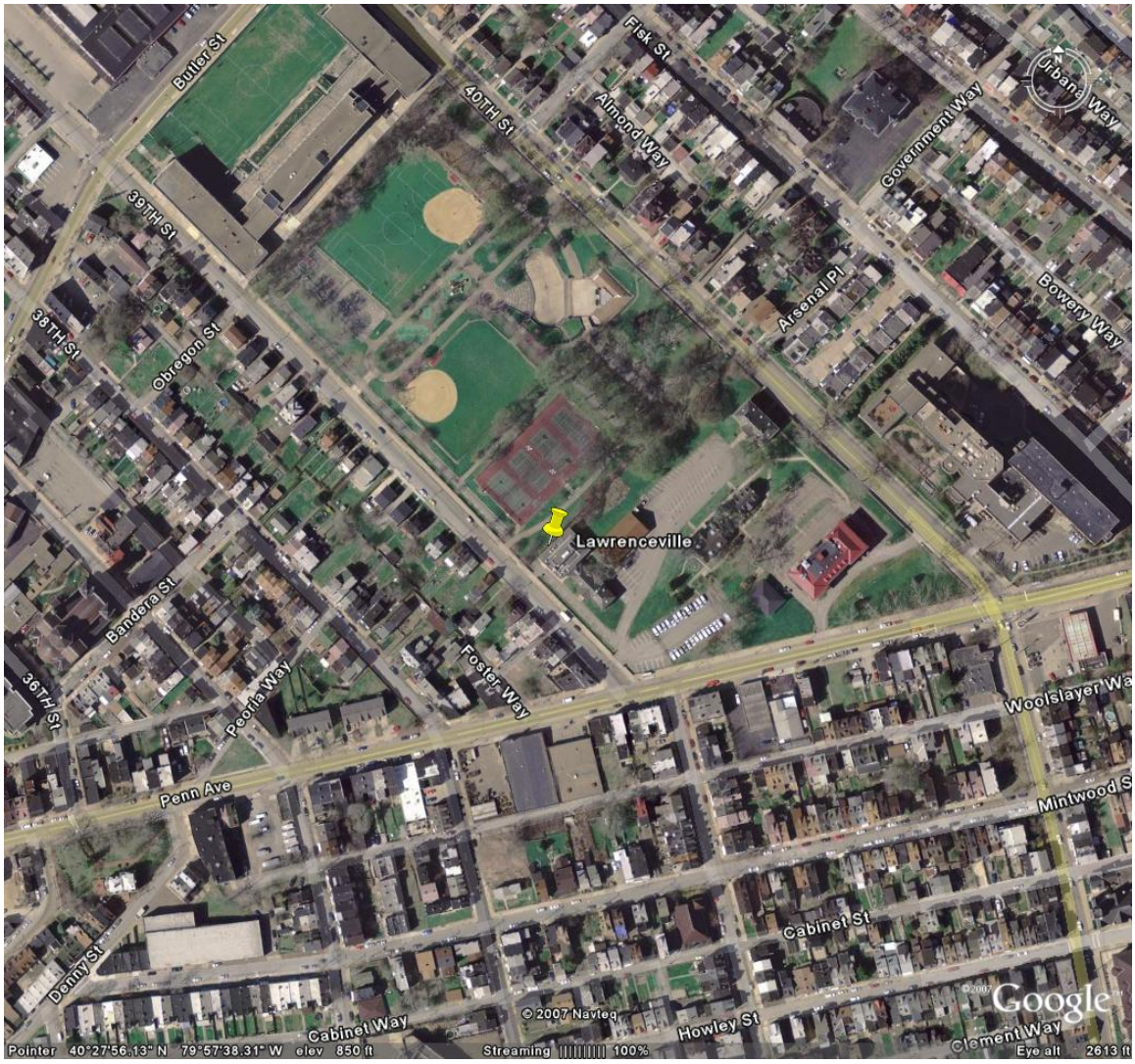
West Allegheny, Continued

Sensor Type	**Hydrogen Sulfide**	Appendix C Method Code	N/A
Network Designation	SPM	Method Description	Teledyne API 100 EU with H2S converter
Purpose	Population Exposure	Appendix D Design Criteria	Yes
Sample Frequency	Continuous	Appendix D Scale	Neighborhood
Appendix A QA Assessment	Yes	Appendix D Objectives	Population Exposure
Monitor Classification	N/A	Appendix E Siting Criteria	Yes

Appendix A

Aerial Photos of Air Monitoring Sites and Surrounding Areas

Lawrenceville

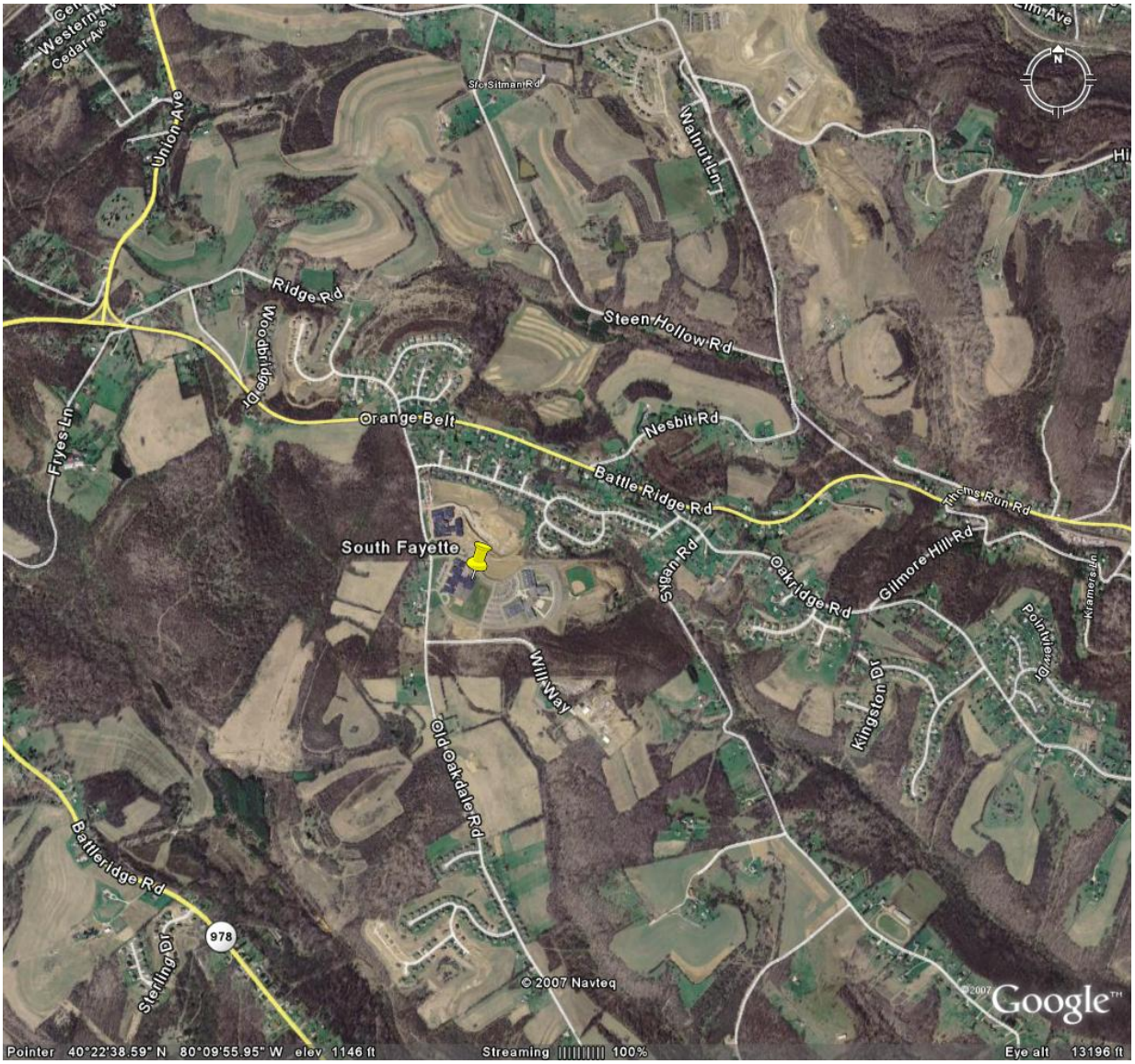


Liberty / Lincoln / Glassport High Street

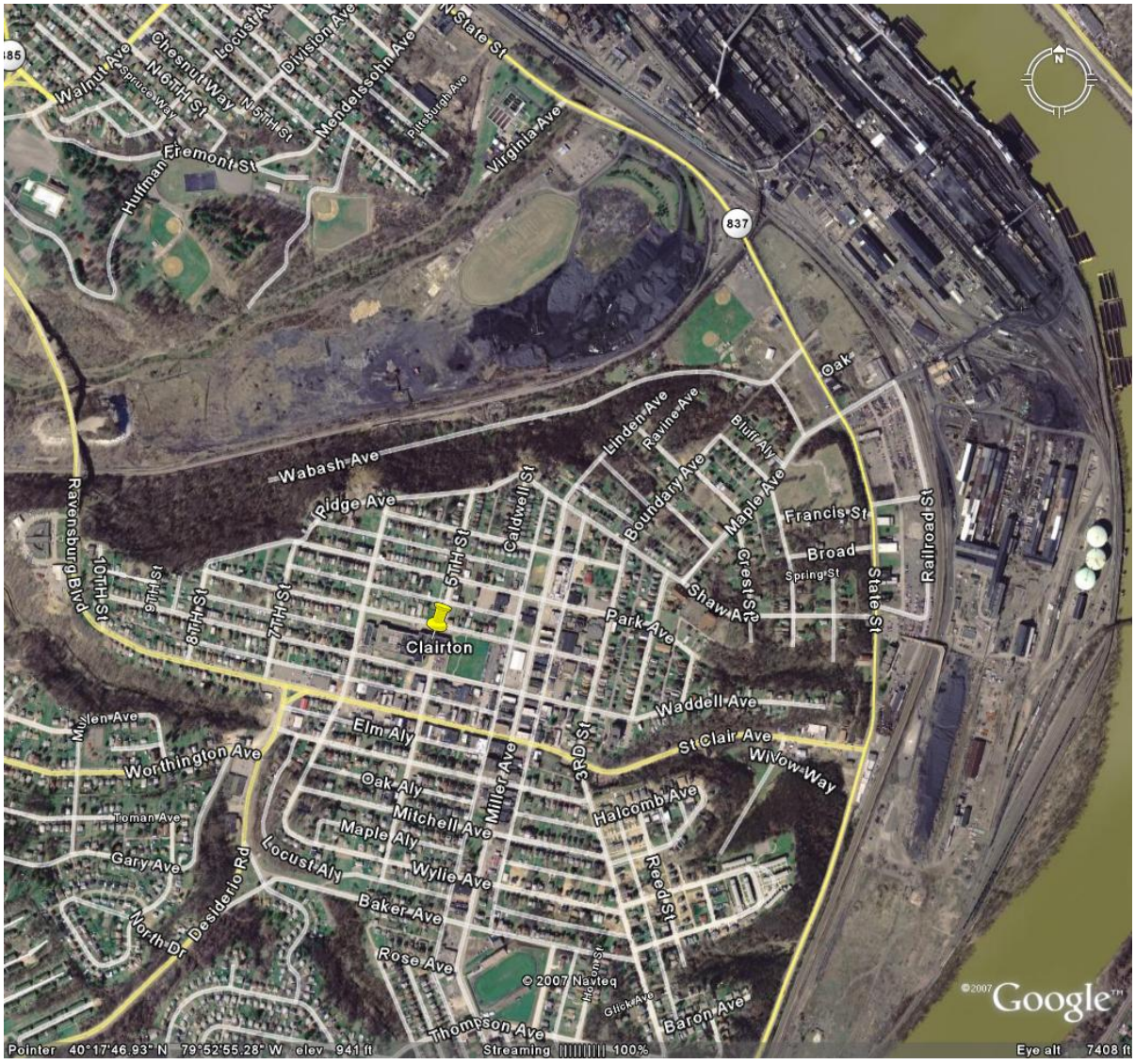
North Braddock

Harrison / Natrona

South Fayette



Clairton


Clairton
Wabash Ave
Ridge Ave
Park Ave
Waddell Ave
St Clair Ave
Elm Aly
Oak Aly
Maple Aly
Locust Aly
Baker Ave
Wylie Ave
Mitchell Ave
Miller Ave
Halcomb Ave
Rose Ave
Thompson Ave
Baron Ave
Worthington Ave
Gary Ave
Toman Ave
Mullen Ave
Ravensburg Blvd
10TH St
9TH St
8TH St
7TH St
6TH St
5TH St
3RD St
Caldwell St
Boundary Ave
Linden Ave
Ravine Ave
Bluff Aly
Maple Ave
Crest St
Shaw Ave
Francis St
Broad
Spring St
State St
Railroad St
Oak
Virginia Ave
Fremont St
Huffman
Mendelssohn Ave
Division Ave
Locust Ave
Chestnut Way
N 6TH St
N 5TH St
Walnut Ave
Spruce Way
Pittsburgh Ave
N State St
837
Reed St
Willow Way
North Dr
Desiderio Rd
© 2007 Navteq
©2007 Google
Pointer 40°17'46.93" N 79°52'55.28" W elev 941 ft
Streaming 100%
Eye alt 7408 ft

Moon Twp.


Moon
Lozer Dr
Grosvenor Dr
Riders Way
Springer Dr
Stocker Dr
Sanlin Dr
Noffinghill Dr
Thorn Run Rd
Parkridge Ln
Snyder Rd
McKinney Dr
Patton Dr
Chaplin Dr
Hyeholder Dr
McGarrey Dr
Crawford Dr
S Patton Dr
University Blvd
Port Vue Dr
Commerce Dr
Thorn Run Rd Ext
Coraopolis Heigh
Marshall Dr
Maple Ln
Rouser Rd
Soldiers Ln
Airport Belt
60
Cliff Mine Rd
Gentry Rd
Nyelimber Pky
Lindbergh Dr
Coraopolis Rd
Gladwood Dr
Great Oaks Dr
Timberyoke Dr
Fairway Dr
Defense Ave
Cherrington Pky
Beaver Grade
© 2007 Navteq
©2007 Google
Pointer 40°30'01.50" N 80°12'31.94" W elev 1106 ft
Streaming 100%
Eye alt 8599 ft

Avalon


Monitor Ave
Fisk Ave
Alley B
Cleveland Ave
Alley C
Harrison Ave
Alley D
S Ohio St
Duff Aly
Traylor Ave
Ohio River Blvd
Eugene Ave
Orchard Ave
Spruce St
Avalon Monitoring Site
65
Peach Aly
© 2007 Navteq
©2007 Google
Pointer 40°29'57.43" N 80°04'27.27" W elev 724 ft
Streaming 100%
Eye alt 3219 ft

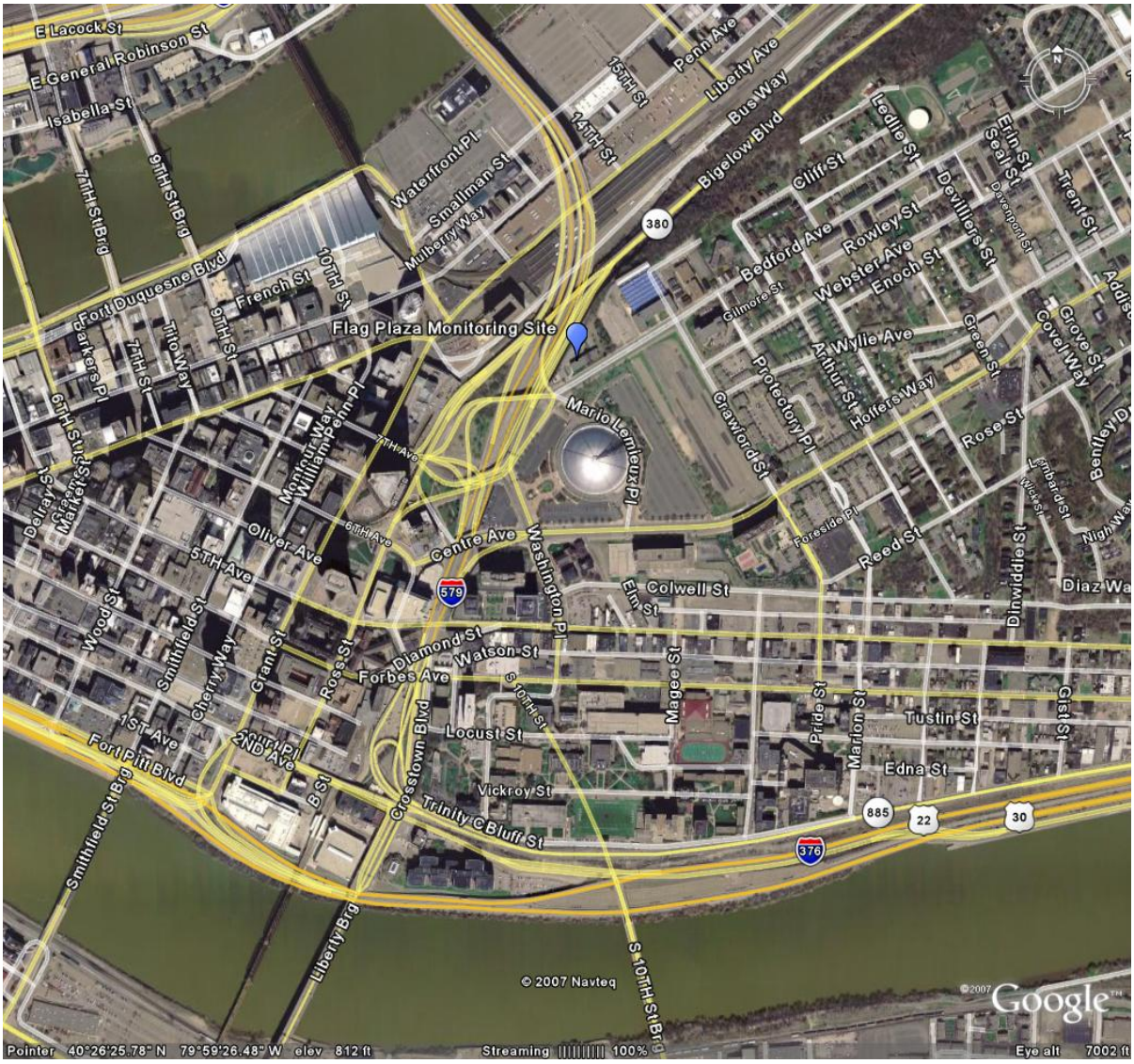
Stowe


Neville Island Brg
Coles St
Glenn Way
Erie St
51
Parkway St
Park Ave
Island Ave
Nevillle Island Ave
Stowe Monitoring Site
Roosevelt Ave
Wheeler Ave
Orr St
© 2007 Navteq
Google
Pointer 40°29'16.52" N 80°04'23.76" W elev 718 ft
Streaming 100%
Eye alt 4701 ft

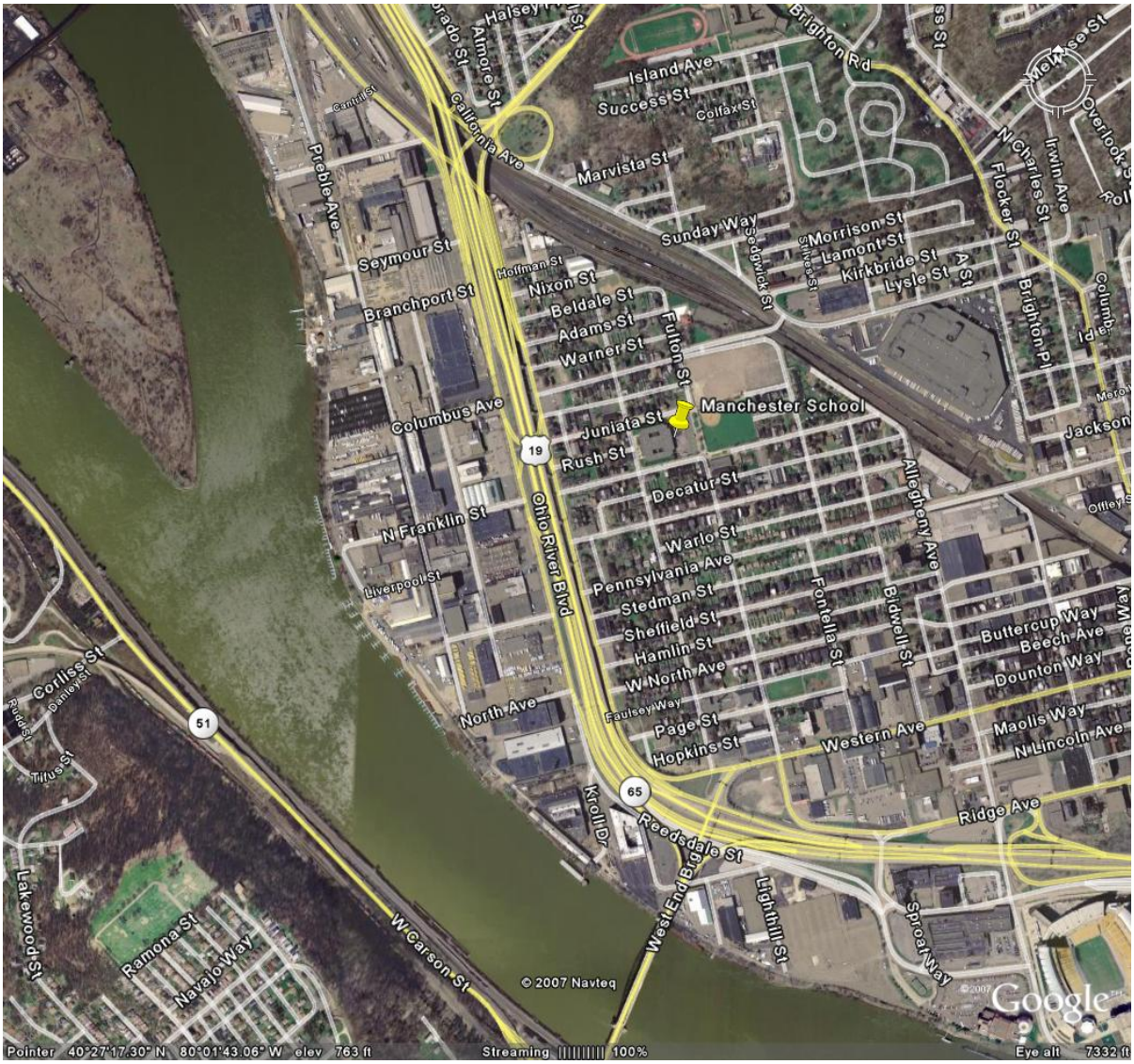
North Park


Pearce Mill Rd
Service Group Rd
McKinney Rd
Pierce Mill Rd
N Ridge Rd
Gass Rd
North Park
Walters Rd
Lake Shore Dr
Deer View Pl
Beauty Dr
Kummer Rd
Hideaway Ln
Grubbs Rd
© 2007 Navteq
Google
Pointer 40°36'27.30" N 80°01'11.31" W elev 1125 ft
Streaming 100%
Eye alt 7872 ft

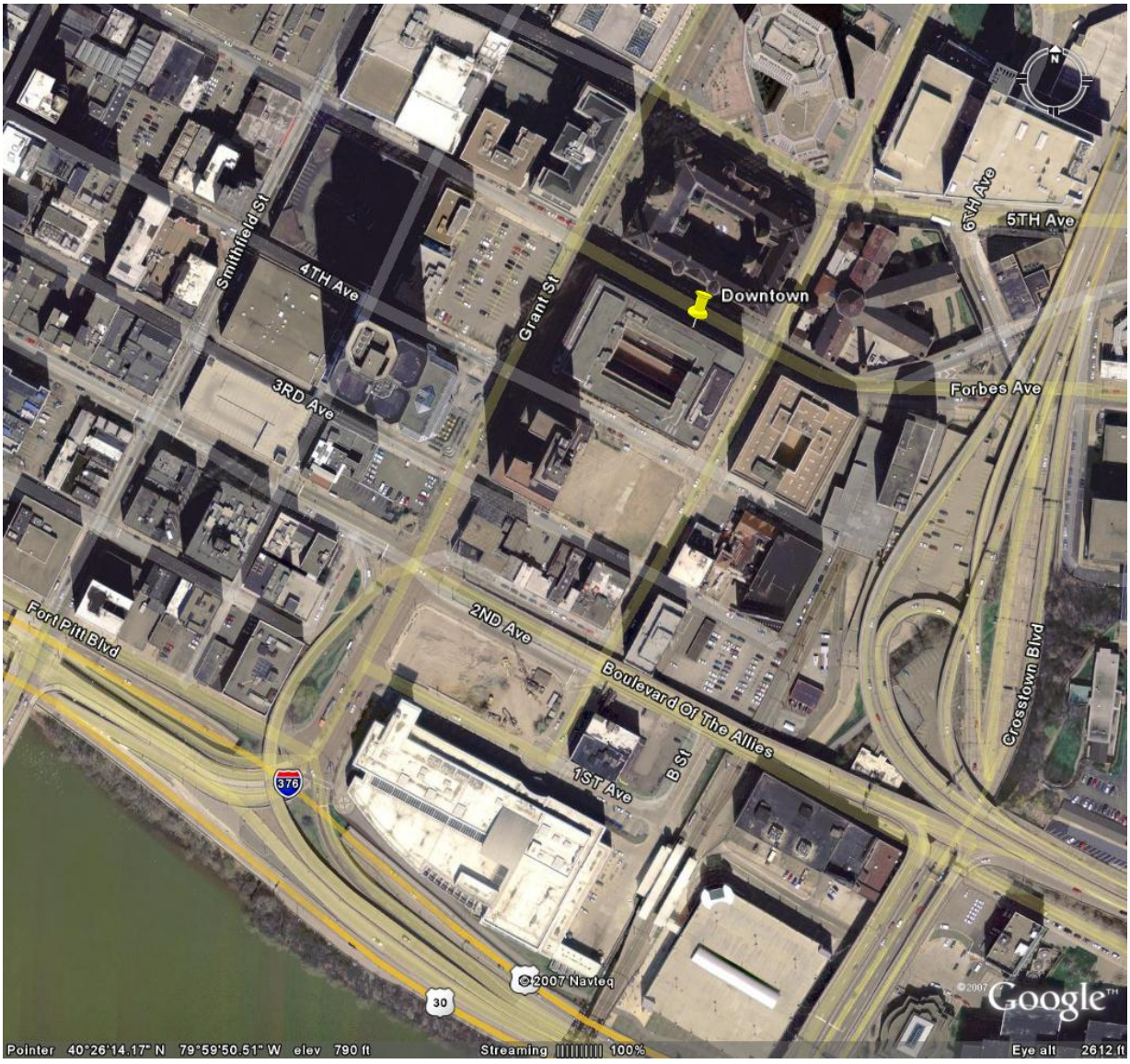
Flag Plaza


Flag Plaza Monitoring Site
E Lacock St
E General Robinson St
Isabella St
7THH St Brg
9THH St Brg
Waterfront Pl
Smallman St
Mulberry Way
15THH St
14TH St
Penn Ave
Liberty Ave
Bus Way
Bigelow Blvd
380
Cliff St
Leadle St
Erin St
Seal St
Trent St
Bedford Ave
Rowley St
Devilliers St
Webster Ave
Enoch St
Gilmore St
Fort Duquesne Blvd
French St
10TH St
9TH St
7TH St
Tito Way
Parkers Pl
6TH St
Market St
Delray St
Morandi Way
William Penn Pl
7TH Ave
Mario Lemieux Pl
Arthur St
Holfers Way
A Wylie Ave
Green St
Grove St
Covel Way
Rose St
Crawford St
Protectory Pl
Poreside Pl
Reed St
Dinwiddie St
Oliver Ave
6TH Ave
5TH Ave
Centre Ave
Washington Pl
579
Colwell St
Elm St
Wood St
Smithfield St
Cherry Way
Grant St
Ross St
Diamond St
Watson St
Forbes Ave
S 10TH St
Magee St
Pride St
Marion St
Tustin St
Gist St
1ST Ave
2ND Ave
Fort Pitt Blvd
Locust St
Edna St
Vickroy St
Crosstown Blvd
Trinity Bluff St
885
22
30
376
Smithfield St Brg
Liberty Brg
S 10TH St Brg
© 2007 Navteq
Google
Pointer 40°26'25.78" N 79°59'26.48" W elev 812 ft
Streaming 100%
Eye alt 7002 ft

Pittsburgh 8 (Manchester School)

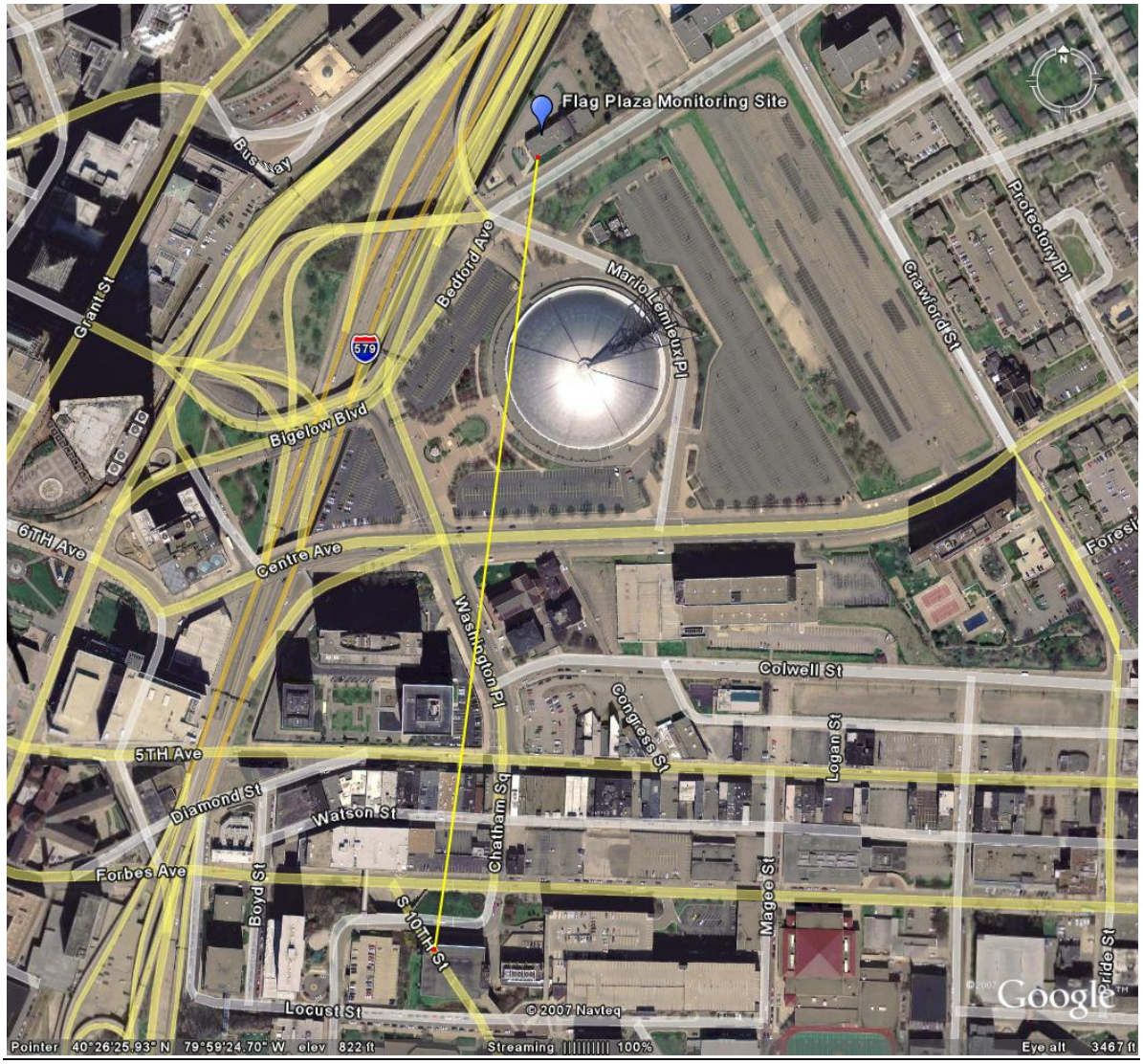


Downtown

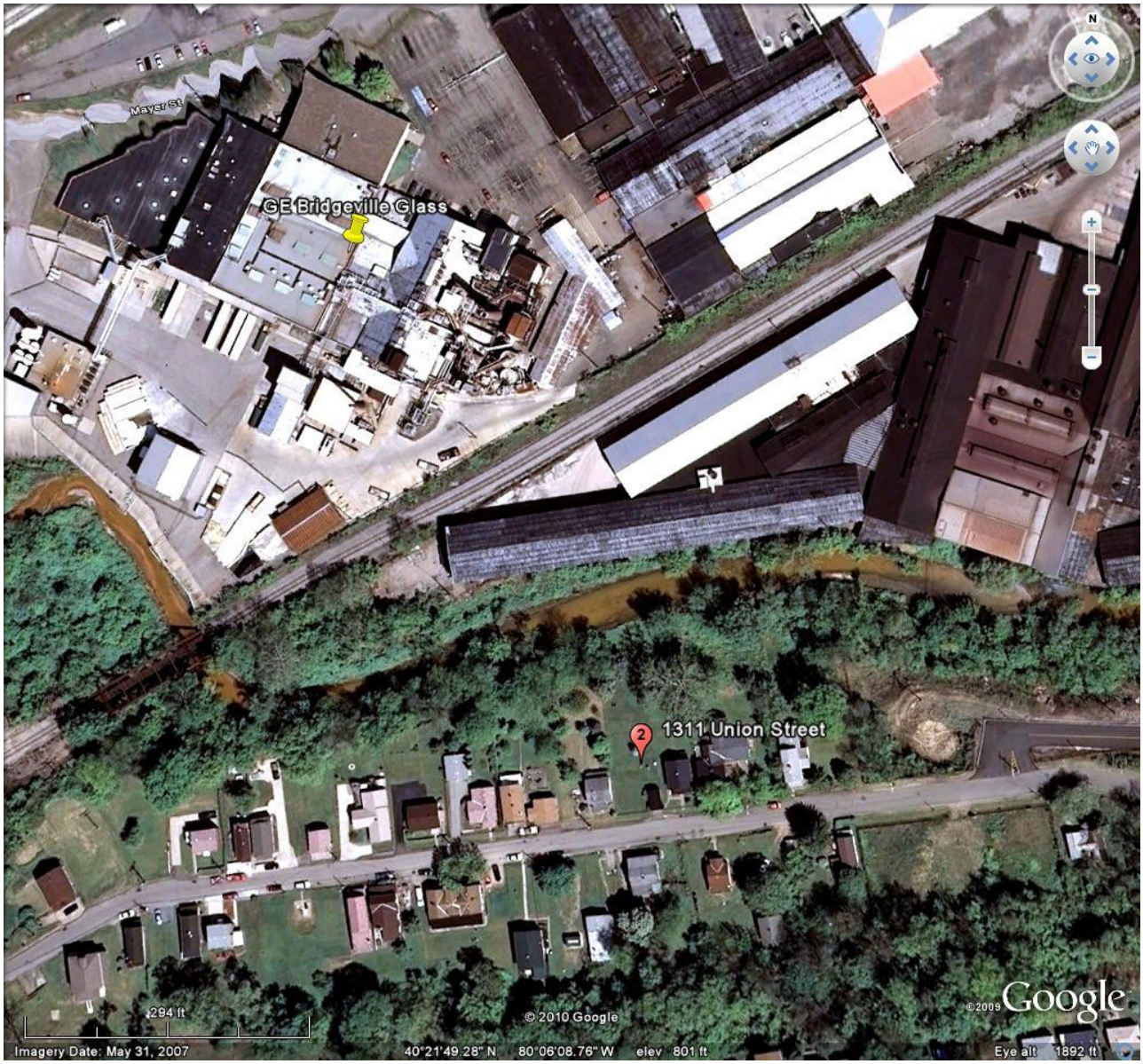

Smithfield St
4TH Ave
Grant St
Downtown
6TH Ave
5TH Ave
3RD Ave
Forbes Ave
Fort Pitt Blvd
2ND Ave
Boulevard Of The Allies
Crosstown Blvd
1ST Ave
B St
376
30
©2007 Navteq
©2007 Google
Pointer 40°26'14.17" N 79°59'50.51" W elev 790 ft
Streaming 100%
Eye alt 2612 ft

West View Open Path Monitor Site

Flag Plaza Open Path Monitor Site



Bridgeville Lead Monitor



Natrona Lead Monitor

West Allegheny Special Study Monitor