New Jersey Ambient Air Monitoring Network Plan 2025



July 2025

This document, a description of the New Jersey Ambient Air Monitoring Network plan for 2025, is being made available as a draft for **public comment**.

Please email comments by June 20, 2025, to <u>bamweb@dep.nj.gov</u>

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION Bureau of Air Monitoring <u>https://nj.gov/dep/airmon</u>

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DISCLAIMER

Mention of trade names, manufacturers or commercial products in this document does not constitute New Jersey Department of Environmental Protection endorsement or recommendation for use.

EXECUTIVE SUMMARY

New Jersey's Ambient Air Monitoring Network Plan for 2025 provides a complete description of the air monitoring network operated by the Bureau of Air Monitoring (BAM), and summarizes any changes made in the previous year and those planned for the next year. The New Jersey Department of Environmental Protection (NJDEP) is required to submit a Network Plan to the U.S. Environmental Protection Agency (USEPA) each year. The primary purpose of the air monitoring program is to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) for specific pollutants. It also provides real-time air quality data to the public through its website, and measures concentrations of non-criteria pollutants for the protection of public health.

Changes to the monitoring network that occurred between March 2024 and March 2025 include the replacement of filter-based PM2.5 monitors with continuous PM2.5 analyzers at Atlantic City, Clarksboro and Pennsauken; the addition of a continuous PM2.5 analyzer at Chester; and the replacement of older, continuous PM2.5 analyzers at Columbia WMA, Rutgers and Elizabeth Lab with upgraded ones. In March 2024, the landlord of the leased space in downtown Elizabeth that served as the Elizabeth air monitoring station notified the NJDEP that they were not renewing the lease and requested the NJDEP to vacate the premises by April 30, 2024. NJDEP notified the EPA of the emergency closure, shut down the monitors on March 31, 2024, and vacated the leased space by the deadline.

In February 2023, BAM was also notified that the lease for the Camden Spruce Street monitoring site would be terminated as of June 30, 2024. After BAM identified prospective replacement sites and presented the options to the EPA and to a committee representing community groups in Camden, a parking lot owned by the Camden County Municipal Utilities Authority near the corner of Ferry Street and Jackson Street was selected as the replacement site. The NJDEP successfully completed this transition during the summer of 2024 with Camden Spruce Street closing on June 24, 2024, and South Camden started monitoring on August 1, 2024. To facilitate data continuity in Camden, NJDEP requested permission from EPA to combine data from these two sites. EPA agreed with the request in a letter dated April 2, 2025.

BAM replaced older Thermo 5014i continuous PM2.5 analyzers at Flemington and Rider University with newer MetOneBAM 1022 analyzers.

At the end of 2024, BAM discontinued the use of filter-based $PM_{2.5}$ monitors at these stations: Brigantine, Camden Spruce Street, Chester, Columbia WMA, Jersey City Firehouse and Rutgers University. These stations have existing continuous PM2.5 analyzers. In order to meet quality assurance requirements, filter-based PM2.5 monitors continue operating at Elizabeth Lab collocated with a continuous PM2.5 analyzer. In addition, two continuous PM2.5 analyzers operate side-by-side at the Camden County MUA station, also to meet quality assurance requirements. BAM also replaced the filter-based PM_{10} monitor with a continuous PM_{10} analyzer at South Camden station.

These changes are summarized in Table 1.

| Monitoring Site | Parameter(s) | Action | Date |
|-----------------|-------------------|-----------------------------------|----------|
| Brigantine | PM _{2.5} | Discontinued filter-based monitor | 12/31/24 |

TABLE 1. Air Monitoring Network Changes, March 2024 – March 2025

| Camden Spruce Street | CO, NO _x , SO ₂ , BTEX, Aethalometer | Discontinued continuous monitor | 6/12/24 |
|------------------------------|--|--|----------|
| Camden Spruce Street | PM _{2.5} | Discontinued continuous monitor | 6/19/24 |
| Camden Spruce Street | O ₃ | Discontinued continuous monitor | 6/26/24 |
| Chester | PM _{2.5} | Discontinued filter-based monitor | 12/31/24 |
| Columbia | PM _{2.5} | Discontinued filter-based monitor | 12/31/24 |
| Elizabeth Trailer | PM _{2.5} | Switched from daily to every 6-day filter collection | 12/31/24 |
| Rutgers University | PM _{2.5} | Discontinued filter-based monitor | 12/31/24 |
| South Camden (Camden MUA) | PM _{2.5} | Discontinued filter-based monitor | 12/31/24 |
| South Camden (Camden MUA) | O ₃ , NO _x , CO, PM _{2.5} , Aethalometer, BTEX | Began collection of data from continuous monitor | 8/1/24 |
| South Camden (Camden MUA) | PM _{2.5} | Began collection of data from collocated continuous monitor | 9/18/24 |
| South Camden (Camden MUA) | PM ₁₀ | Began collection of data from continuous monitor | 3/4/25 |

PROPOSED CHANGES

In August of 2022, BAM received notice that construction of a new building was about to begin next to the Newark Firehouse air monitoring station, and that our monitoring equipment would have to be removed as soon as possible. Data collection ended there on September 26, 2022, and the station was subsequently shut down and dismantled. After receiving input from Newark community representatives and from USEPA Region 2, a vacant lot located approximately one mile northeast of the Newark Firehouse site was identified as a suitable location for a replacement monitoring station. The lot, at 42 Chestnut Street, is owned by the Newark Board of Education (NBOE). The NJDEP is currently finalizing the necessary permits for electrical service at the site. Once that is complete, the shelter and instrumentation will be set up. The site is expected to be operational sometime during the second quarter of 2025.

Additional planned updates include adding a continuous PM10 Beta monitor at Jersey City.

REGULATORY REQUIREMENTS

NJDEP is required by 40 CFR Part 58 to submit an Ambient Air Monitoring Network Plan to the USEPA Region 2 Regional Administrator by July 1 of each year, and to have the Plan available for public inspection for at least 30 days prior to its submittal to the USEPA. The plan describes New Jersey's State and Local Air Monitoring Stations (SLAMS), National Core (NCore) stations, Chemical Speciation Network (CSN)

stations, Urban Air Toxics Monitoring Program (UATMP) stations, Special Purpose Monitor (SPM) stations, and Photochemical Assessment Monitoring Stations (PAMS).

This 2025 Network Plan contains information required by the regulations; descriptions of the air monitoring sites; large- and small-scale maps of the monitoring station locations; a summary of the changes to the Air Monitoring Network that NJDEP expects to implement during the year; comments received following the 30-day public comment period; and NJDEP's responses to the comments. This document is available for download from Air Monitoring's website, <u>https://nj.gov/dep/airmon</u>, or as a hard copy by request from <u>bamweb@dep.nj.gov</u>.

THE NEW JERSEY AIR MONITORING NETWORK

As of April 1, 2025, NJDEP operated 28 air monitoring stations throughout the state. Table 2 lists all the monitoring sites, along with the pollutants, pollutant categories, or meteorological parameters that are measured at each site. Figure 1 shows the locations of the monitoring stations across New Jersey.

Data used for comparison to the National Ambient Air Quality Standards (NAAQS) must be measured by USEPA-approved real-time analyzers or USEPA-approved manual samplers. The real-time data is also used to generate a rating of current air quality called the Air Quality Index (AQI), which is updated hourly on the Bureau of Air Monitoring website, <u>https://nj.gov/dep/airmon</u>.

Real-time sampling instruments collect and analyze data continuously and transmit the data to a centralized computer system once every minute. Several parameters, including CO, nitrogen dioxide (NO_2) , ozone (O_3) , sulfur dioxide (SO_2) , fine particulate matter $(PM_{2.5})$, and meteorological data are measured this way.

NJDEP also uses USEPA-approved manual particulate samplers for comparison to the PM NAAQS. Separately, three types of airborne particles can be collected on a filter over a 24-hour period: fine particulate (particles smaller than 2.5 micrometers in diameter, or "PM_{2.5}"); inhalable particulate (particles smaller than 10 micrometers in diameter, or "PM₁₀"); and PM_{coarse} (particles between 2.5 micrometers in diameter). At the end of the 24-hour collection period, the samples are manually retrieved and sent to NJDEP's laboratory for gravimetric analysis (weighing).

NJDEP also monitors non-criteria pollutants, some of which are grouped together into categories by their method of sampling or analysis. These categories are listed in the headings of Table 2. "Toxics" monitoring is part of the USEPA's Urban Air Toxics Monitoring Program (UATMP), in which certain volatile organic compounds (VOCs) and carbonyls are analyzed using whole air samples or adsorbent media (see Appendices A and B). Pollutants in the "PM_{2.5} Speciation" category include trace elements, heavy metals, and carbon compounds (see Appendix C); they are analyzed using PM_{2.5} particles, under the USEPA Chemical Speciation Network (CSN) program.

The site at Rutgers University that monitors for ozone precursors (pollutants that promote ozone formation in the atmosphere) is part of the national Photochemical Assessment Monitoring Station (PAMS) program. Ozone precursors (see Appendix D) are often referred to as PAMS pollutants. The PM_{2.5} speciation, VOC, and carbonyl samples are collected by NJDEP and sent to USEPA-approved contract laboratories for analysis. Five urban monitoring stations measure near-real-time benzene, toluene, ethylbenzene, and xylenes (with a "BTEX" analyzer), and black carbon (with an aethalometer). In addition, NJDEP also measures acid deposition, mercury, and visibility (using a nephelometer) at several sites.

TABLE 2. New Jersey Air Monitoring Sites & Parameters Operating March 2024 – March 2025

| | Monitoring Parameters: | | | | | | | 2 | Real-Time PM _{2.5} | Real-Time PM ₁₀ | PM coarse | PM _{2.5} -Speciation ^a | O ₃ Precursors ^b | cs ^c | Urban Pollutants ^d | Acid Deposition | Mercury | Visibility | Meteorological ^e | Overburdened Community ^f |
|----|---------------------------|---|-----|---|----|-----|------|-------------------|-----------------------------|----------------------------|-----------|--|--|---------------------|-------------------------------|-----------------|---------|------------|-----------------------------|--|
| | Station Name | 8 | NO2 | Ň | ő | SO2 | Lead | PM _{2.5} | Real | Real | ΡM | PM ₂ . | 03 PI | Toxics ^c | Urba | Acid | Mer | Visib | Met | Over Com |
| 1 | Ancora | | | | Х | | | | | | | | | | | | | - | | |
| 2 | Atlantic City | | | | | | | Х | Х | | | | | | | | | | | Х |
| 3 | Bayonne | | х | | х | Х | | | | | | | | | х | | | | Х | Х |
| 4 | Brigantine | | | | Х | Х | | Х | Х | | | | | | | | | Х | | |
| 5 | Cattus Island | | | | | | | | | | | | | | | Х | | | | |
| 6 | Camden Spruce St. (1) | Х | Х | | Х | Х | | Х | Х | | | Х | | Х | Х | | | | Х | Х |
| 7 | Chester | | Х | | Х | Х | | Х | Х | | | Х | | Х | | | | | | |
| 8 | Clarksboro | | | | Х | | | Х | Х | | | | | | | | | | | |
| 9 | Colliers Mills | | | | Х | | | | | | | | | | | | | | | |
| 10 | Columbia | | Х | | Х | Х | | Х* | Х | | | | | | | | | | Х | |
| 11 | Elizabeth Lab | Х | Х | | | Х | | X* | Х | | | Х | | Х | х | | Х | | Х | Х |
| 12 | Flemington | | | | Х | | | | Х | | | | | | | | | | Х | |
| 13 | Fort Lee Near Road | Х | Х | | | | | | х | | | | | | X | | | | Х | Х |
| 14 | Jersey City | Х | Х | | | Х | | | | | | | | | | | | | | Х |
| 15 | Jersey City Firehouse | | | | | | | X* | Х | | | | | | | | | | | Х |
| 16 | Leonia | | | | X | | | | | | | | | | | | | | | Х |
| 17 | Millville | | Х | | X | | | | Х | | | | | | | | | | | Х |
| 18 | Monmouth University | | | | x | | | | | | | | | | | | | | | |
| 19 | Paterson | | | | | | | | X | | | | | | | | | | | Х |
| 20 | Pennsauken | | | | | | | х | X | | | | | | | | | | | Х |
| 21 | Rahway | | | | | | | | Х | | | | | | | | | | | Х |
| 22 | Ramapo | | | | х | | | | | | | | | | | | | | | |
| 23 | Rider University | | | | х | | | | Х | | | | | | | | | | Х | |
| 24 | Rutgers University | | х | Х | Х | | | х | x | | | Х* | Х | х | | | Х | | Х | Х |
| 25 | South Camden (1) | X | Х | | Х | X | | X | Х | X(2) | | Х | | Х | Х | | | | Х | Х |
| 26 | Toms River | | | | | | | | х | | | | | | | | | | | |
| 27 | Trenton | | | | | | | | X | | | | | | | | | | | Х |
| 28 | Union City High School | | | | | | | | х | | l | l | | | l | | | | | Х |
| 29 | Washington Crossing | | | | | | | | | | | | | | | Х | | | | |
| | TOTAL CURRENT SITES | 4 | 9 | 1 | 15 | 7 | 0 | 10 | 19 | 1 | 0 | 4 | 1 | 4 | 4 | 2 | 2 | 1 | 8 | 15 |

* Indicates that there is a collocated monitor at the site (for quality assurance purposes, as required by USEPA).

(1) Camden Spruce St. closed in June of 2024 and was replaced by South Camden in August 2024.

(2) PM₁₀ continuous monitor began operation 3/4/25.

a – See Appendix C

b – See Appendix D

c – See Appendices A and B

d – Urban pollutants include black carbon and select volatile organic compounds (BTEX compounds; see Appendix E).

e – Meteorological parameters include temperature, barometric pressure, relative humidity, rain, wind direction, and wind speed. Rutgers has additional parameters (see site description).

 $\mathsf{f}-\mathsf{Overburdened}$ Community - as designated in accordance with the New Jersey Environmental Justice Law,

N.J.S.A. 13:1D-157 and the New Jersey Environmental Justice Mapping Tool

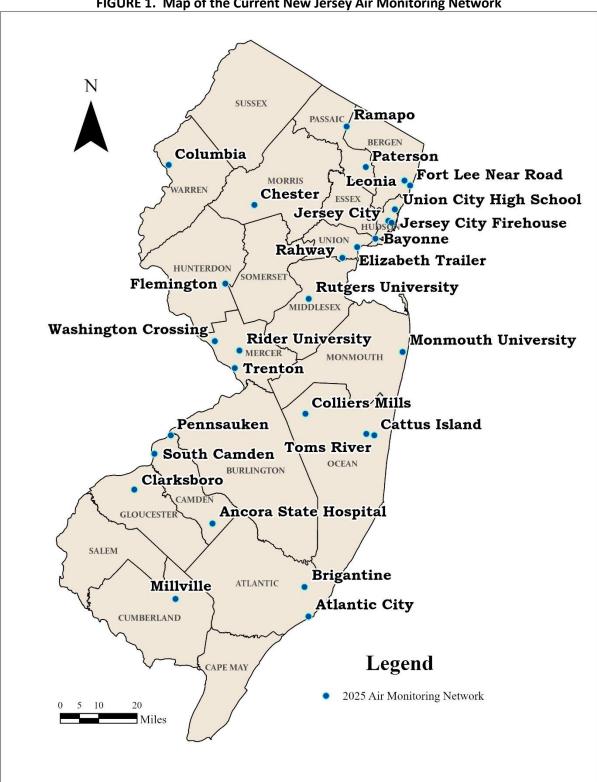


FIGURE 1. Map of the Current New Jersey Air Monitoring Network

NEW JERSEY AIR MONITORING SITE DESCRIPTIONS

KEY

Parameters

| BTEX | Benzene, toluene, ethylbenzene & xylenes |
|-------------------|--|
| CO | Carbon monoxide |
| NO | Nitric oxide |
| NO ₂ | Nitrogen dioxide |
| NOx | Oxides of nitrogen |
| NOy | Total reactive oxides of nitrogen |
| O ₃ | Ozone |
| PM _{2.5} | Fine particulate matter |
| PM ₁₀ | Inhalable particulate matter |
| SO ₂ | Sulfur dioxide |
| VOCs | Volatile organic compounds |

AQS Spatial Scales (Scale)

| М | Middle | 100 m to 0.5 km |
|----|--------------|-----------------|
| MS | Microscale | Up to 100 m |
| Ν | Neighborhood | 0.5-4.0 km |
| U | Urban | 4-50 km |

AQS Monitoring Objectives (Objective)

| В | Background |
|----|------------------------------|
| HC | Highest Concentration |
| PE | Population Exposure |
| SO | Source-Oriented |
| | HC PE |

Overburdened Community – As designated in accordance with the New Jersey Environmental Justice Law, N.J.S.A. 13:1D-157 and the New Jersey Environmental Justice Mapping Tool (<u>https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=34e507ead25b4aa5a5051dbb85e5</u> <u>5055</u>)

ANCORA STATE HOSPITAL

| Site Name | Ancora State Hospital |
|---|------------------------------------|
| Address | 301 Spring Garden Road |
| City, State, Zip | Hammonton, NJ 08037 |
| AQS Code | 34 007 1001 |
| NJ County | Camden |
| UAR/CSA | Philadelphia-Camden-Wilmington CSA |
| Latitude | 39.684250 |
| Longitude | -74.861491 |
| Date Established | 1/1/1966 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | No |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|----------------|-------------------|------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Thermo 49iQ | 2019 | Ultraviolet | 047 | Continuous | U | PE |

| Site | Purpose |
|------|---------|
|------|---------|

During O_3 season, to measure background O_3 concentrations for the southern part of New Jersey. May also measure maximum O_3 concentrations downwind from the Philadelphia metropolitan area.

Plans for the next 18 months Other Comment

No changes.

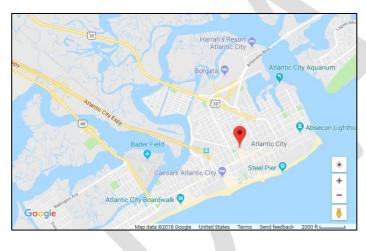
| MIAN F | These and the total and |
|--------|---|
| Google | Map data ©2018 Google United States Terms Send feedback 2000 ft |

ATLANTIC CITY

| Site Name | Atlantic City |
|---|---|
| Address | Atlantic Cape Community College, 1535 Bacharach Boulevard |
| City, State, Zip | Atlantic City, NJ 08401 |
| AQS Code | 34 001 1006 |
| NJ County | Atlantic |
| UAR/CSA | Atlantic City, NJ UA |
| Latitude | 39.363260 |
| Longitude | -74.431000 |
| Date Established | 7/27/2001 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| AMETER SUMMARY | |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|------------------------|----------------|---------------------------|----------------|---------------------|-------|----------------|
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2023 | Beta particle attenuation | 209 | Continuous | N | PE |

| | | oncentrations in the commercial area of Atlantic City. | |
|---------------------------------|-------------|--|--|
| Plans for the next 18 months | No changes. | | |
| Other Comment | | | |





BAYONNE

| Site Name | Bayonne |
|---|--|
| Address | Veterans Park, Park Road at end of W. 25 th St. |
| City, State, Zip | Bayonne, NJ 07002 |
| AQS Code | 34 017 0006 |
| NJ County | Hudson |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.670250 |
| Longitude | -74.126081 |
| Date Established | 1/1/1983 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | Yes |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- -tive |
|------------------------|-------------------|-------------------------------------|----------------|---------------------|----------------|---------------------|-------|-----------------|
| O ₃ | 44201 | Thermo 49i | 2017 | Ultraviolet | 047 | Continuous | Ν | PE |
| NO ₂ | 42602 | Thermo 42i | 2017 | Chemiluminescence | 074 | Continuous | U | PE |
| NO | 42601 | Thermo 42i | 2017 | Chemiluminescence | 074 | Continuous | U | PE |
| NOx | 42603 | Thermo 42i | 2017 | Chemiluminescence | 074 | Continuous | U | PE |
| SO ₂ | 42401 | Thermo 43iQ | 2021 | Pulsed fluorescence | 060 | Continuous | N | PE |
| Black Carbon | 84313 | Teledyne API 633 Aethalometer | 2012 | Optical absorption | 894 | Continuous | N | PE |
| BTEX | Appendix E | Syntech Spectras GC 955 | 2011 | Auto GC-PID | 092 | Continuous | N | PE |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

Site Purpose Plans for the next 18 months Other Comment

Site Purpose To measure population exposure in the Hudson County area.

No changes.

Continued

Bayonne, continued



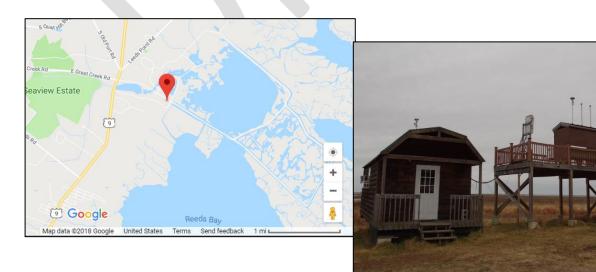


BRIGANTINE

| Site Name | Brigantine |
|---|--|
| Address | Edwin B. Forsythe National Wildlife Refuge Visitor Center, |
| Address | 800 Great Creek Road |
| City, State, Zip | Galloway, NJ 08205 |
| AQS Code | 34 001 0006 |
| NJ County | Atlantic |
| UAR/CSA | Atlantic City, NJ UA |
| Latitude | 39.464872 |
| Longitude | -74.448736 |
| Date Established | 9/18/1991 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | No |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|---|----------------|------------------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Teledyne T400 | 2019 | Ultraviolet | 047 | Continuous | U | В |
| PM _{2.5} | 88101 | Thermo 2025i low- volume sequential sampler | 2018 | Gravimetric | 145 | Every 3 days | U | В |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2021 | Beta particle attenuation | 209 | Continuous | U | В |
| SO ₂ | 42401 | Thermo 43i-TLE | 2007 | Pulsed fluorescence | 060 | Continuous | U | В |
| Visibility | 88347 | Ecotech Nephelometer | 2007 | Light-scattering | 011 | Continuous | U | В |

| Site Purpose | To measure background pollutant concentrations in a southern coastal area, and visibility in a Class I protected area. |
|---------------------------------|---|
| Plans for the next 18 months | Discontinue Thermo 2025 PM2.5 sampler on 1/1/25. |
| Other Comment | SO ₂ is measured by a "trace-level" analyzer. Site is also an IMPROVE station, part of NESCAUM visibility network. Real-time PM _{2.5} nephelometer data is not submitted to USEPA's AQS database. The US Fish & Wildlife Service collects a weekly acid deposition sample which is sent to the National Atmospheric Deposition Program (NADP) for analysis. |



CATTUS ISLAND

| Site Name | Cattus Island |
|---|---|
| Address | Cattus Island County Park, end of Bandon Road |
| Municipality | Toms River NJ 08753 |
| AQS Code | None |
| NJ County | Ocean |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 39.989636 |
| Longitude | -74.134132 |
| Date Established | 10/23/2012 |
| Suitable for Comparison to PM2.5 NAAQS? | Not Applicable |
| Overburdened Community? | No |
| | |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------|-------------------|--------------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| Acid Deposition | | Wet Deposition Collector | 2015 | lon Chromatography | | Weekly | N | PE |

Site Purpose Plans for the next 18 months To measure acid deposition near Barnegat Bay.

No changes.

Other Comment

Weekly acid deposition samples are sent to the National Atmospheric Deposition Program (NADP) for analysis. Acid deposition data are not submitted by NJDEP or NADP to USEPA's AQS database.





CHESTER

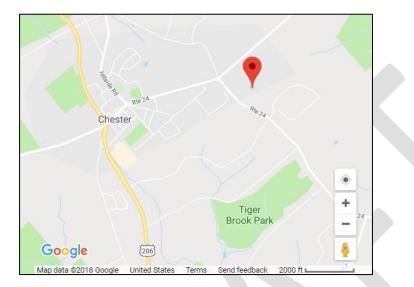
| Site Name | Chester |
|---|--|
| Address | Department of Public Works Bldg. #1, 50 North Road |
| City, State, Zip | Chester, NJ 07930 |
| AQS Code | 34 027 3001 |
| NJ County | Morris |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.787628 |
| Longitude | -74.676301 |
| Date Established | 1/1/1978 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | No |

PARAMETER SUMMARY

| | Parameter | Sampling | Manuf. | | Method | Sample | | Objec- |
|---------------------------------|------------|------------------------|--------|------------------------------|------------|-----------------|-------|--------|
| Parameter | Code | Instrument | Date | Method of Analysis | Code | Frequency | Scale | tive |
| O ₃ | 44201 | Teledyne T400 | 2015 | Ultraviolet | 087 | Continuous | U | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2023 | Beta Particle attenuation | 209 | Continuous | U | PE |
| NO ₂ | 42602 | Teledyne T200 | 2023 | Chemiluminescence | 099 | Continuous | U | В |
| NO | 42601 | Teledyne T200 | 2023 | Chemiluminescence | 099 | Continuous | U | В |
| NOx | 42603 | Teledyne T200 | 2023 | Chemiluminescence | 099 | Continuous | U | В |
| SO ₂ | 42401 | Teledyne T100 | 2016 | Pulsed fluorescence | 100 | Continuous | U | В |
| PM _{2.5} Speciation | Appendix C | Met One & URG-3000N | 2009 | XRF, IC, TOR | Appendix C | Every 6 days | N | PE |
| VOCs | Appendix A | Canister | 2009 | TO-15 | Appendix.A | Every 6 days | N | PE |
| Carbonyls | Appendix B | DNPH cartridge | 2009 | TO-11A | Appendix B | Every 6 days | N | PE |

| Site Purpose | To measure background concentrations of NOx & SO_2 , and population exposure to O_3 and $PM_{2.5}$, in northern New Jersey. |
|---------------------------------|--|
| Plans for the next 18 months | Discontinue Thermo 2025i PM _{2.5} sampler on 1/1/25. |
| Other Comment | See Appendices A, B and C for more information on PM _{2.5} speciation, volatile organic compounds and carbonyls. |
| | |

Continued





CLARKSBORO

| Site Name | Clarksboro |
|---|---|
| Address | Shady Lane Complex, 256 County House Road |
| City, State, Zip | Clarksboro, NJ 08020 |
| AQS Code | 34 015 0002 |
| NJ County | Gloucester |
| UAR/CSA | Philadelphia-Camden-Wilmington CSA |
| Latitude | 39.800339 |
| Longitude | -75.212119 |
| Date Established | 1/1/1981 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | No |
| RAMETER SUMMARY | |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|---|----------------|---------------------------|----------------|---------------------|-------|----------------|
| 03 | 44201 | Teledyne T400 | 2016 | Ultraviolet | 087 | Continuous | U | HC |
| PM _{2.5} | 88101 | Thermo 2025i low-volume sequential sampler | 2014 | Gravimetric | 145 | Every 3 days | N | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2023 | Beta particle attenuation | 209 | Continuous | N | PE |



COLLIERS MILLS

| Site Name | Colliers Mills |
|---|--|
| Address | JPTD Training Center, south of Success Rd., east of Hawkin Rd. |
| City, State, Zip | Jackson, NJ 08527 |
| AQS Code | 34 029 0006 |
| NJ County | Ocean |
| UAR/CSA | Philadelphia-Camden-Wilmington CSA |
| Latitude | 40.064830 |
| Longitude | -74.444050 |
| Date Established | 1/1/1985 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | No |

PARAMETER SUMMARY

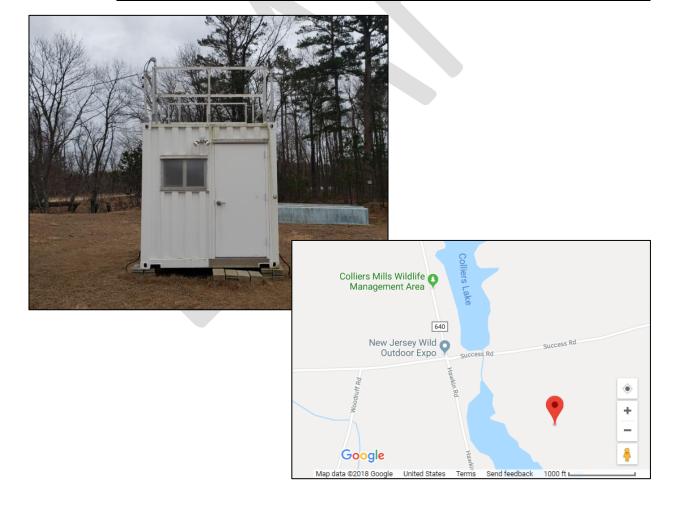
| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|----------------|-------------------|------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Teledyne T400 | 2022 | Ultraviolet | 087 | Continuous | U | HC |

Site Purpose

During O₃ season, to measure highest concentrations of O₃ downwind from the Philadelphia metropolitan area and central New Jersey.

Plans for the next 18 months Other Comment

No changes.



COLUMBIA

| Site Name | Columbia |
|---|--------------------------------------|
| Address | 105 Delaware Avenue (approximate) |
| City, State, Zip | Columbia, NJ 07832 |
| AQS Code | 34 041 0007 |
| NJ County | Warren |
| UAR/CSA | Allentown-Bethlehem-Easton, PA-NJ UA |
| Latitude | 40.924580 |
| Longitude | -75.067815 |
| Date Established | 9/23/2010 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | No |
| RAMETER SUMMARY | |

PARAMETER SUMMARY

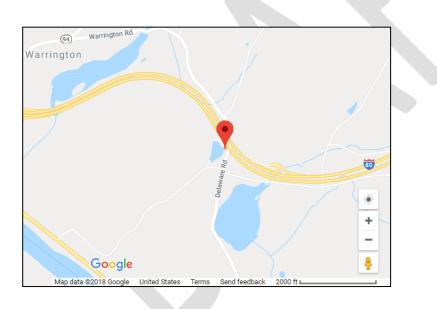
| | Para- meter | Sampling | Manuf. | | Method | Sample | | Objec- |
|--------------------------------|----------------|---------------------|--------|------------------------------|--------|------------|-------|--------|
| Parameter | Code | Instrument | Date | Method of Analysis | Code | Frequency | Scale | tive |
| O ₃ | 44201 | Thermo 49i | 2007 | Ultraviolet | 047 | Continuous | N | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2022 | Beta particle attenuation | 209 | Continuous | N | PE |
| NO ₂ | 42602 | Telydyne T200 | 2013 | Chemiluminescence | 074 | Continuous | N | PE |
| NO | 42601 | Telydyne T200 | 2013 | Chemiluminescence | 074 | Continuous | N | PE |
| NOx | 42603 | Telydyne T200 | 2013 | Chemiluminescence | 074 | Continuous | N | PE |
| SO ₂ | 42401 | Thermo 43i- TLE | 2009 | Pulsed fluorescence | 060 | Continuous | N | HC |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

| Site Purpose | Established in 2010 to measure the SO_2 impact of a coal-burning facility a mile away in Pennsylvania (closed in 2014). Additionally, it measures population exposure for NO_2 , O_3 and $PM_{2.5}$ in the northwestern area of NJ. |
|---------------------------------|---|
| Plans for the next 18 months | Discontinue Thermo 2025i PM2.5 sampler on 1/1/25. |
| Other Comment | Gravimetric PM _{2.5} sampler is collocated for comparison with real-time sampler. |

Continued

Columbia, continued





ELIZABETH LAB

| Site Name | Elizabeth Lab |
|---|---|
| Address | NJ Turnpike Interchange 13 Toll Plaza |
| City, State, Zip | Elizabeth, NJ 07201 |
| AQS Code | 34 039 0004 |
| NJ County | Union |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.641440 |
| Longitude | -74.208365 |
| Date Established | 1/1/1972 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |

PARAMETER SUMMARY

| | Parameter | Sampling | Manuf. | | Method | Sample | | Objec- |
|---------------------------------|---------------|---|--------|------------------------------|---------------|-----------------|-------|--------|
| Parameter | Code | Instrument | Date | Method of Analysis | Code | Frequency | Scale | tive |
| PM _{2.5} | 88101 | Thermo 2025i low-volume sequential sampler | 2015 | Gravimetric | 145 | Daily | N | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2021 | Beta particle attenuation | 209 | Continuous | N | PE |
| NO ₂ | 42602 | Telydyne T200 | 2012 | Chemiluminescence | 074 | Continuous | N | HC |
| NO | 42601 | Telydyne T200 | 2012 | Chemiluminescence | 074 | Continuous | N | HC |
| NOx | 42603 | Telydyne T200 | 2012 | Chemiluminescence | 074 | Continuous | Ν | HC |
| SO ₂ | 42401 | Thermo 43i | 2016 | Pulsed fluorescence | 060 | Continuous | Ν | HC |
| CO | 42101 | Telydyne T300 | 2022 | Nondispersive infrared | 054 | Continuous | N | HC |
| Black Carbon | 84313 | Maggie Scientific AE36 | 2012 | Optical absorption | 894 | Continuous | N | PE |
| BTEX | Appendix E | Syntech Spectras GC 955 | 2011 | Auto-GC PID | 092 | Continuous | N | PE |
| PM _{2.5} Speciation | Appendix C | Met One & URG-3000N | 2016 | XRF, IC, TOR | Appendix C | Every 3 days | N | HC |
| VOCs | Appendix A | Canister | 2016 | TO-15 | Appendix A | Every 6 days | N | PE |
| Carbonyls | Appendix B | DNPH cartridge | 2016 | TO-11A | Appendix B | Every 6 days | N | PE |
| Mercury (Hg) | | Tekran 2537x | 2016 | CVAF Spectrometry | | Hourly | Ν | PE |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

Continued

Elizabeth Lab, continued

| Site Purpose | A comprehensive air monitoring site for the northeast metropolitan region of New Jersey. |
|--------------------|---|
| Plans for the next | Discontinue the primary Thermo 2025i PM2.5 sampler on 1/1/25. The collocated Thermo 2025i |
| 18 months | PM2.5 sampler will continue operating for precision. |
| | Site is also referred to as Elizabeth Trailer. PM _{2.5} gravimetric sampler is collocated for precision. |
| Other Comment | Collocated sample taken every 6 days. See Appendices A, B and C for more information on PM _{2.5} |
| | speciation, volatile organic compounds and carbonyls. |





| Site Name | Flemington |
|---|---|
| Address | Raritan Township Municipal Utilities Authority, 365 Old York Road |
| City, State, Zip | Flemington, NJ 08822 |
| AQS Code | 34 019 0001 |
| NJ County | Hunterdon |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.515262 |
| Longitude | -74.806671 |
| Date Established | 1/1/1980 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | No |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|------------------------|----------------|------------------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Thermo 49i | 2013 | Ultraviolet | 047 | Continuous | U | PE |
| Real-time PM _{2.5} | 88101 | Thermo Beta 5014i | 2013 | Beta particle attenuation | 183 | Continuous | N | PE |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

 Site Purpose
 To measure O3 and PM2.5 concentrations in the northwestern region of New Jersey.

 Plans for the next 18 months
 Replace continuous PM2.5 monitor with MetOneBAM 1022

 Other Comment
 Image: Comment in the northwestern region of New Jersey.



FORT LEE NEAR ROAD

| Fort Lee Near Road |
|---|
| Hoyt Ave & Hudson St, south of toll plaza |
| Fort Lee, NJ 07024 |
| 34 003 0010 |
| Bergen |
| New York-Northeast New Jersey-Connecticut CSA |
| 40.853550 |
| -73.966180 |
| 4/1/2014 |
| Yes |
| Yes |
| |
| |

PARAMETER SUMMARY

| Davaaratav | Parameter | Sampling | Manuf. | Restand of Anglusia | Method | Sample | Casla | Objec- |
|---|----------------------|-----------------------------------|---------------------|--|--------------------|--------------------------------|-------------|------------|
| Parameter Real-time PM _{2.5} | Code 88101 | Instrument Met One BAM 1022 | Date 2021 | Method of Analysis Beta particle attenuation | Code 209 | Frequency Continuous | Scale MS | tive SO |
| NO ₂ | 42602 | Thermo 42i | 2010 | Chemiluminescence | 074 | Continuous | MS | SO |
| NO | 42601 | Thermo 42i | 2010 | Chemiluminescence | 074 | Continuous | MS | SO |
| NOx | 42603 | Thermo 42i | 2010 | Chemiluminescence | 074 | Continuous | MS | SO |
| CO | 42101 | Thermo 48i | 2013 | Nondispersive infrared | 054 | Continuous | MS | SO |
| Black Carbon | 84313 | Maggie Scientific AE36 | 2012 | Optical absorption | 894 | Continuous | MS | SO |
| BTEX | Appendix E | Syntech Spectras GC 955 | 2014 | Auto-GC PID | 092 | Continuous | N | PE |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

Site Purpose Plans for the next 18 months **Other Comment**

Established in 2014 as NJ's designated NEAR-ROAD site; to measure near-road exposure for NO₂, CO and PM_{2.5}. No changes.

Continued

Fort Lee Near Road, continued





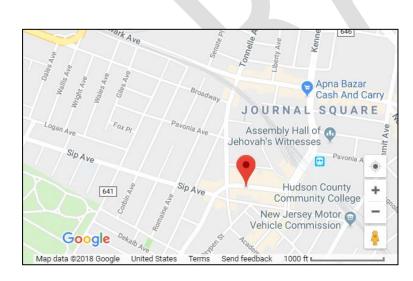
| Site Name | Jersey City |
|---|---|
| Address | 2828 John F. Kennedy Boulevard |
| City, State, Zip | Jersey City, NJ 07306 |
| AQS Code | 34 017 1002 |
| NJ County | Hudson |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.731645 |
| Longitude | -74.066308 |
| Date Established | 1/1/1970 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | Yes |
| | |
| AMETER SUMMARY | |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec tive |
|-----------------|-------------------|------------------------|----------------|---------------------------|----------------|---------------------|-------|---------------|
| NO_2 | 42602 | Teledyne T200 | 2023 | Chemiluminescence | 099 | Continuous | N | PE |
| NO | 42601 | Teledyne T200 | 2023 | Chemiluminescence | 099 | Continuous | N | PE |
| NOx | 42603 | Teledyne T200 | 2023 | Chemiluminescence | 099 | Continuous | N | PE |
| SO ₂ | 42401 | Teledyne T100 | 2016 | Pulsed fluorescence | 100 | Continuous | N | HC |
| CO | 42101 | Thermo 48itle | 2017 | Nondispersive infrared | 054 | Continuous | MS | HC |

Site Purpose Plans for the next 18 months **Other Comment**

To measure highest concentrations in the central commercial area of Jersey City. No changes.





JERSEY CITY FIREHOUSE

| Site Name | Jersey City Firehouse |
|---|---|
| Address | JCFD Engine 5/Ladder 6, 355 Newark Avenue |
| City, State, Zip | Jersey City, NJ 07302 |
| AQS Code | 34 017 1003 |
| NJ County | Hudson |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.725454 |
| Longitude | -74.052290 |
| Date Established | 1/1/1967 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| ETER SUMMARY | |

| | Parameter | | Manuf. | Method of | Method | Sample | | Objec- |
|--------------------------------|-----------|--|--------|---------------------------|--------|--------------|-------|--------|
| Parameter | Code | Sampling Instrument | Date | Analysis | Code | Frequency | Scale | tive |
| PM _{2.5} | 88101 | Thermo 2025 low- volume sequential sampler | 2018 | Gravimetric | 145 | Daily | Ν | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2019 | Beta particle attenuation | 209 | Continuous | Ν | PE |
| PM ₁₀ | 81102 | Thermo 2000 low- volume single sampler | 2013 | Gravimetric | 126 | Every 6 days | Ν | HC |
| PM ₁₀ | 81102 | Thermo 2000 low- volume single sampler | 2013 | Gravimetric | 126 | Every 6 days | Ν | HC |

| Site Purpose | To measure population exposure to particulate matter in the Jersey City area. | | | | | |
|---------------------------------|---|--|--|--|--|--|
| Plans for the next 18 months | Replace the primary filter-based PM10 sampler with a continuous PM10 analyzer. | | | | | |
| Other Comment | Gravimetric PM _{2.5} and PM ₁₀ samplers are collocated for precision measurements. Collocated samples taken every 6 days. | | | | | |



LEONIA

| Site Name | Leonia |
|---|---|
| Address | Overpeck Park, 40 Fort Lee Road |
| City, State, Zip | Leonia, NJ 07605 |
| AQS Code | 34 003 0006 |
| NJ County | Bergen |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.870436 |
| Longitude | -73.991994 |
| Date Established | 12/7/2007 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | Yes |
| RAMETER SUMMARY | |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|----------------|-------------------|------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Thermo 49i | 2008 | Ultraviolet | 047 | Continuous | Ν | PE |

Site Purpose Plans for the next 18 months Other Comment

During O₃ season, to measure population exposure in the Leonia and Teaneck areas. No changes.

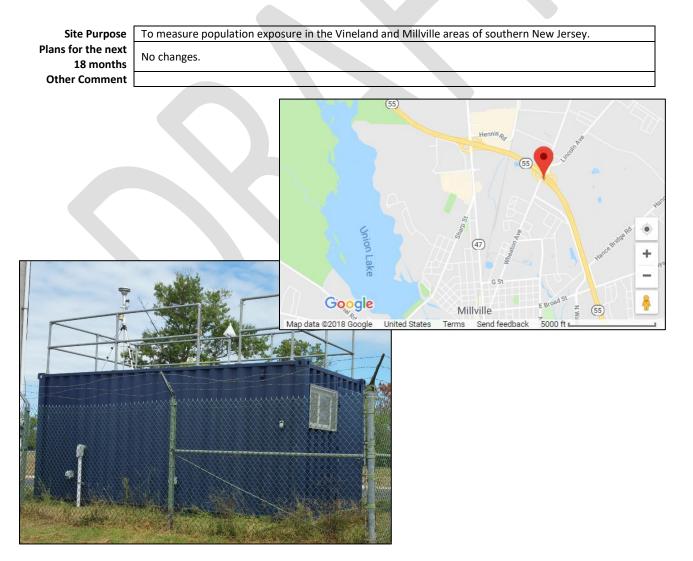


MILLVILLE

| Site Name | Millville |
|---|--|
| Address | End of S. Lincoln Ave., s. of Rt. 55-S entrance ramp |
| City, State, Zip | Millville, NJ 08332 |
| AQS Code | 34 011 0007 |
| NJ County | Cumberland |
| UAR/CSA | Vineland-Millville, NJ UA |
| Latitude | 39.422273 |
| Longitude | -75.025204 |
| Date Established | 1/1/1983 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| AMETER SUMMARY | |

PARAMETER SUMMARY

| | Parameter | Sampling | Manuf. | | Method | Sample | | Objec- |
|--------------------------------|-----------|---------------------|--------|------------------------------|--------|------------|-------|--------|
| Parameter | Code | Instrument | Date | Method of Analysis | Code | Frequency | Scale | tive |
| O ₃ | 44201 | Teledyne T400 | 2015 | Ultraviolet | 087 | Continuous | Ν | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2018 | Beta particle attenuation | 209 | Continuous | N | PE |
| NO ₂ | 42602 | Teledyne T200 | 2022 | Chemiluminescence | 099 | Continuous | Ν | PE |
| NO | 42601 | Teledyne T200 | 2022 | Chemiluminescence | 099 | Continuous | Ν | PE |
| NOx | 42603 | Teledyne T200 | 2022 | Chemiluminescence | 099 | Continuous | N | PE |



NEW JERSEY AMBIENT AIR MONITORING NETWORK PLAN 2025

MONMOUTH UNIVERSITY

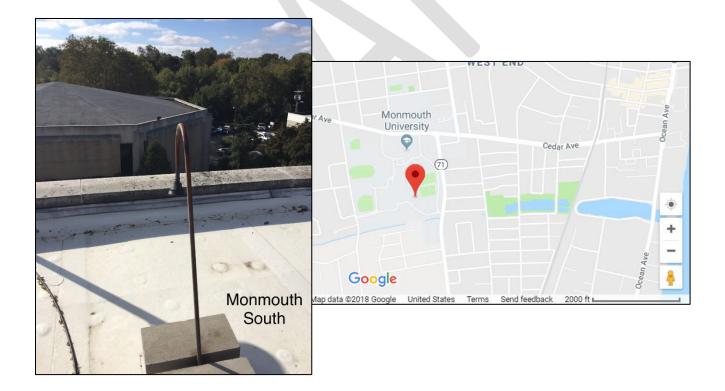
| Site Name | Monmouth University |
|---|---|
| Address | Edison Science Hall, off of 400 Cedar Avenue |
| City, State, Zip | West Long Branch, NJ 07764 |
| AQS Code | 34 025 0005 |
| NJ County | Monmouth |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.277647 |
| Longitude | -74.005100 |
| Date Established | 5/13/1989 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | No |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|----------------|-------------------|------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Thermo 49i | 2017 | Ultraviolet | 047 | Continuous | Ν | HC |

Site Purpose Plans for the next 18 months Other Comment

During O₃ season, to measure highest concentrations of O₃ in the eastern Monmouth County coastal area. No changes.



PATERSON

| Site Name | Paterson |
|---|---|
| Address | Paterson Board of Health, 176 Broadway |
| City, State, Zip | Paterson, NJ 07505 |
| AQS Code | 34 031 0005 |
| NJ County | Passaic |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.918381 |
| Longitude | -74.168092 |
| Date Established | 1/1/1978 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| | |
| AMETER SUMMARY | |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|------------------------|----------------|---------------------------|----------------|---------------------|-------|----------------|
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2023 | Beta particle attenuation | 209 | Continuous | N | PE |

| Site Purpose | To measure population exposure to PM _{2.5} in the Paterson area. | | | | | | | | |
|---------------------------------|---|--|--|--|--|--|--|--|--|
| Plans for the next 18 months | No changes. | | | | | | | | |
| Other Comment | | | | | | | | | |



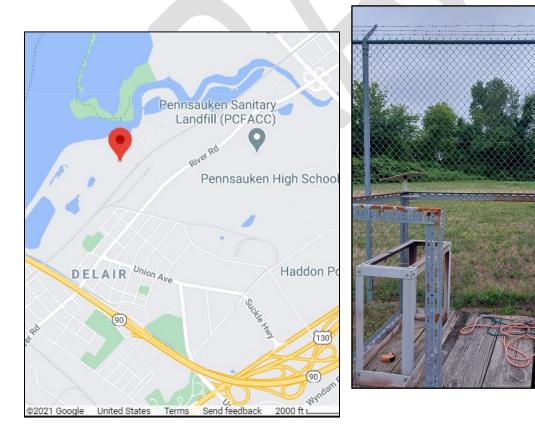


PENNSAUKEN

| Site Name | Pennsauken |
|---|--|
| Address | Camden Water Inc., 8999 Zimmerman Avenue |
| City, State, Zip | Pennsauken, NJ 08110 |
| AQS Code | 34 007 1007 |
| NJ County | Camden |
| UAR/CSA | Philadelphia-Camden-Wilmington CSA |
| Latitude | 39.989036 |
| Longitude | -75.050008 |
| Date Established | 9/1/1983 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| | |
| METER SUMMARY | |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|--|----------------|---------------------------|----------------|---------------------|-------|----------------|
| PM _{2.5} | 88101 | Thermo 2025 low- volume sequential sampler | 2015 | Gravimetric | 145 | Every 3 days | N | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2023 | Beta particle attenuation | 209 | Continuous | N | PE |

| Site Purpose | To measure population exposure to PM _{2.5} in the Pennsauken area. | | | | | | |
|---------------------------------|---|--|--|--|--|--|--|
| Plans for the next 18 months | None. | | | | | | |
| Other Comment | | | | | | | |
| | | | | | | | |



RAHWAY

| Site Name | Rahway |
|---|---|
| Address | Rahway Fire Department, 1300 Main Street |
| City, State, Zip | Rahway, NJ 07065 |
| AQS Code | 34 039 2003 |
| NJ County | Union |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.603943 |
| Longitude | -74.276174 |
| Date Established | 12/11/1999 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| RAMETER SUMMARY | |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|-----------------------------|-------------------|------------------------|----------------|---------------------------|----------------|---------------------|-------|----------------|
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2021 | Beta particle attenuation | 209 | Continuous | Ν | PE |

| Site Purpose | To measure population exposure to PM _{2.5} in the Rahway area. | | | | | |
|---------------------------------|---|--|--|--|--|--|
| Plans for the next 18 months | No changes. | | | | | |
| Other Comment | | | | | | |





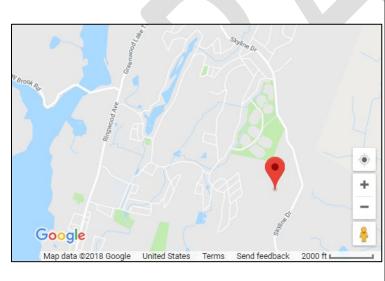
| Site Name | Ramapo |
|---|---|
| Address | Ramapo Station Fire Tower, Ramapo Park Drive |
| City, State, Zip | Wanaque, NJ 07465 |
| AQS Code | 34 031 5001 |
| NJ County | Passaic |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 41.058617 |
| Longitude | -74.255544 |
| Date Established | 6/5/1998 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | No |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|----------------|-------------------|------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| O ₃ | 44201 | Thermo 49i | 2010 | Ultraviolet | 047 | Continuous | U | В |

Site Purpose Plans for the next 18 months Other Comment

During O₃ season, to measure background, transport and upwind concentrations of ozone. No changes.





RIDER UNIVERSITY

| Site Name | Rider University | | | | |
|---|---|--|--|--|--|
| Address | Athletic Fields, off of 2083 Lawrenceville Road | | | | |
| City, State, Zip | Lawrenceville, NJ 08648 | | | | |
| AQS Code | 34 021 0005 | | | | |
| NJ County | Mercer | | | | |
| UAR/CSA | Trenton, NJ-PA UA | | | | |
| Latitude | 40.283092 | | | | |
| Longitude | -74.742644 | | | | |
| Date Established | 6/1/1981 | | | | |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes | | | | |
| Overburdened Community? | No | | | | |

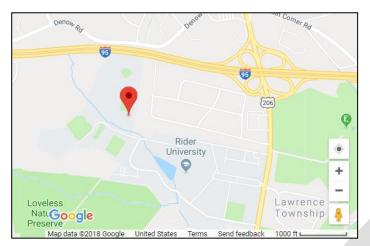
PARAMETER SUMMARY

| Downstein | Parameter | Sampling | Manuf. | Method of | Method | Sample | Casla | Objec- |
|-----------------------------|-----------|----------------------|--------|---------------------------|--------|------------|-------|--------|
| Parameter | Code | Instrument | Date | Analysis | Code | Frequency | Scale | tive |
| O ₃ | 44201 | Thermo 49i | 2012 | Ultraviolet | 047 | Continuous | Ν | PE |
| Real-time PM _{2.5} | 88101 | Thermo Beta 5014i | 2019 | Beta particle attenuation | 183 | Continuous | N | PE |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

Site Purpose Plans for the next 18 months Other Comment To measure population exposure in the Mercer County area.

Replace continuous PM2.5 monitor with MetOneBAM 1022





RUTGERS UNIVERSITY

| Site Name | Rutgers University | | | | |
|---|---|--|--|--|--|
| Address | Vegetable Farm 3, 67 Ryders Lane | | | | |
| City, State, Zip | East Brunswick, NJ 08816 | | | | |
| AQS Code | 34 023 0011 | | | | |
| NJ County | Middlesex | | | | |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA | | | | |
| Latitude | 40.462182 | | | | |
| Longitude | -74.429439 | | | | |
| Date Established | 10/1/1994 | | | | |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes | | | | |
| Overburdened Community? | Yes | | | | |
| RAMETER SUMMARY | | | | | |
| | | | | | |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|---|-------------------|------------------------------|----------------|----------------------------------|----------------|-----------------------|-------|----------------|
| O ₃ | 44201 | Teledyne T400 | 2014 | Ultraviolet | 087 | Continuous | N | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2016 | Beta particle attenuation | 209 | Continuous | N | PE |
| True-NO ₂ | 42602 | Teledyne T500U | 2018 | Cavity attenuated phase shift | 212 | Continuous | N | PE |
| NOy-NO Difference | 42612 | Thermo 42i-Y | 2018 | Chemiluminescence | 674 | Continuous | N | PE |
| NO | 42601 | Thermo 42i-Y | 2018 | Chemiluminescence | 674 | Continuous | N | PE |
| Total Reactive Oxides of Nitrogen (NOy) | 42600 | Thermo 42i-Y | 2018 | Chemiluminescence | 674 | Continuous | N | PE |
| PM _{2.5} Speciation | Appendix C | Met One & URG-3000N | 2017 | XRF, IC, TOR | Appendix C | Every 3 days | N | PE |
| VOCs | Appendix A | Canister | 2017 | TO-15 | Appendix A | Every 6 days | N | PE |
| Carbonyls | Appendix B | DNPH cartridge | 2017 | TO-11A | Appendix B | Every 6 days | N | PE |
| Ozone Precursors (PAMS) | Appendix D | Agilent-Markes | 2018 | Auto GC-FID | Appendix D | Hourly | U | В |
| PAMS Carbonyls | Appendix B | Atec 8000 | 2018 | TO-11A | Appendix B | 8-hr, every 3 days | U | В |
| Mercury (Hg) | | Tekran 2537x | 2016 | CVAF Spectrometry | | Hourly | Ν | PE |
| Barometric Pressure | 64101 | RM Young 61402V | 2021 | Capacitive sensor | 060 | Continuous | Ν | PE |
| Relative Humidity | 62201 | Campbell Sci. HygroVUE 10 | 2021 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Campbell Sci. HygroVUE 10 | 2021 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | MetOne 375D | 2020 | Rain gauge | 012 | Continuous | N | PE |
| Wind Direction | 61102 | Gill Windmaster HS 3D | 2014 | Ultrasonic sensor | 060 | Continuous | N | PE |

Continued

RUTGERS UNIVERSITY, continued

| | Parameter | Sampling | Manuf. | | Method | Sample | | Objec- |
|--------------------------|-----------|--------------------------|--------|--------------------|--------|------------|-------|--------|
| Parameter | Code | Instrument | Date | Method of Analysis | Code | Frequency | Scale | tive |
| Wind Speed | 61101 | Gill Windmaster HS 3D | 2014 | Ultrasonic sensor | 060 | Continuous | Ν | PE |
| Solar Radiation | 63301 | Kipp & Zonen CMP22 | 2011 | Pyranometer | 011 | Continuous | N | PE |
| Ultraviolet Radiation | 63302 | Kipp & Zonen SUV5 | 2020 | UV Radiometer | 011 | Continuous | N | PE |
| Mixing Height | 61301 | Vaisala CL51 | 2017 | Ceilometer | 011 | Continuous | N | PE |
| | | | | | | | | |

| Site | To measure population exposure and O_3 precursors, downwind for Philadelphia metropolitan area and |
|---------------------------------|---|
| Purpose | upwind for New York metropolitan area. |
| Plans for the next 18 months | Discontinue Thermo 2025i PM2.5 sampler on 1/1/25. |
| Other Comment | PAMS sampling period is June 1 to August 31. EPA OAQPS Pandora spectrometer operates as part of the ozone Enhanced Monitoring Plan. Upper air and surface meteorological measurements collected at this site by Rutgers University are integrated into DEP's database. See Appendix D for more information on ozone precursors, also known as PAMS. See Appendices A, B and C for more information on PM _{2.5} speciation, volatile organic compounds and carbonyls. A PM _{2.5} speciation sampler is collocated for QA/QC. |



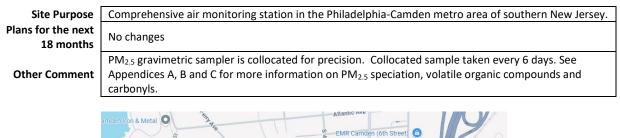


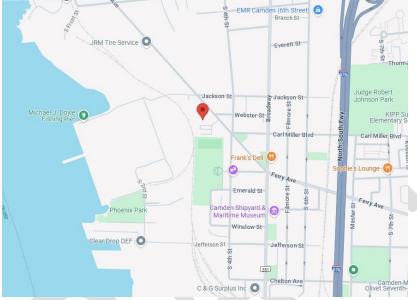
SOUTH CAMDEN

| Site Name | South Camden |
|---|------------------------------------|
| Address | 1645 Ferry Ave. |
| City, State, Zip | Camden, NJ 08104 |
| AQS Code | 34 007 0010 |
| NJ County | Camden |
| UAR/CSA | Philadelphia-Camden-Wilmington CSA |
| Latitude | 39.924768 |
| Longitude | -75.123214 |
| Date Established | 8/1/2025 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |
| ARAMETER SUMMARY | |

| | Parameter | Sampling | Manuf. | | Method | Sample | | Objec- |
|---------------------------------|---------------|-------------------------------------|--------|------------------------------|---------------|-----------------|-------|--------|
| Parameter | Code | Instrument | Date | Method of Analysis | Code | Frequency | Scale | tive |
| O ₃ | 44201 | Teledyne T400 | 2016 | Ultraviolet | 087 | Continuous | N | PE |
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2016 | Beta Particle attenuation | 209 | Continuous | N | PE |
| Real-time PM ₁₀ | | | | Beta Particle attenuation | | Continuous | N | PE |
| NO ₂ | 42602 | Thermo 42iQ | 2019 | Chemiluminescence | 074 | Continuous | N | PE |
| NO | 42601 | Thermo 42iQ | 2019 | Chemiluminescence | 074 | Continuous | N | PE |
| NOx | 42603 | Thermo 42iQ | 2019 | Chemiluminescence | 074 | Continuous | N | PE |
| SO ₂ | 42401 | Thermo 43iTLE | 2007 | Pulsed fluorescence | 060 | Continuous | Ν | PE |
| СО | 42101 | Thermo 48i-TLE | 2007 | Nondispersive infrared | 054 | Continuous | N | PE |
| Black Carbon | 84313 | Teledyne API 633 Aethalometer | 2012 | Optical absorption | 894 | Continuous | N | PE |
| BTEX | Appendix E | Syntech Spectras GC 955 | 2011 | Auto GC-PID | 092 | Continuous | N | PE |
| PM _{2.5} Speciation | Appendix C | Met One & URG- 3000N | 2001 | XRF, IC, TOR | Appendix C | Every 6 days | N | PE |
| VOCs | Appendix A | Canister | 2001 | TO-15 | Appendix A | Every 6 days | N | PE |
| Carbonyls | Appendix B | DNPH cartridge | 2001 | TO-11A | Appendix B | Every 6 days | N | PE |
| Barometric Pressure | 64101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Relative Humidity | 62201 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Temperature | 62101 | Vaisala WXT | 2010 | Capacitive sensor | 060 | Continuous | N | PE |
| Precipitation | 65102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Direction | 61102 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |
| Wind Speed | 61101 | Vaisala WXT | 2010 | Ultrasonic sensor | 060 | Continuous | N | PE |

South Camden, continued







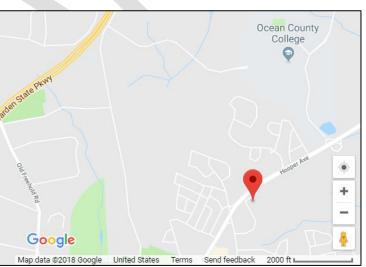
TOMS RIVER

| Site Name | Toms River |
|---|---|
| Address | Hooper Avenue Elementary School, 1517 Hooper Avenue |
| City, State, Zip | Toms River, NJ 08753 |
| AQS Code | 34 029 2002 |
| NJ County | Ocean |
| UAR/CSA | Philadelphia-Camden-Wilmington CSA |
| Latitude | 39.994908 |
| Longitude | -74.170447 |
| Date Established | 2/11/1999 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | No |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|-----------------------------|-------------------|------------------------|----------------|------------------------------|----------------|---------------------|-------|----------------|
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2018 | Beta particle attenuation | 209 | Continuous | Ν | PE |

| Site Purpose | To measure population exposure to PM _{2.5} in the Toms River area. | | | | | | |
|---------------------------------|---|--|--|--|--|--|--|
| Plans for the next 18 months | No changes. | | | | | | |
| Other Comment | | | | | | | |





TRENTON

| Site Name | Trenton |
|---|--|
| Address | Trenton Public Library, 120 Academy Street |
| City, State, Zip | Trenton, NJ 08608 |
| AQS Code | 34 021 0008 |
| NJ County | Mercer |
| UAR/CSA | Trenton, NJ-PA UA |
| Latitude | 40.222411 |
| Longitude | -74.763167 |
| Date Established | 9/1/1982 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|------------------------|----------------|---------------------------|----------------|---------------------|-------|----------------|
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2019 | Beta particle attenuation | 209 | Continuous | Ν | PE |

Site Purpose Plans for the next 18 months Other Comment To measure population exposure to PM_{2.5} in the downtown commercial district of Trenton. No changes.





UNION CITY HIGH SCHOOL

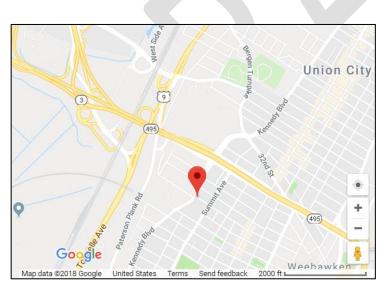
| Site Name | Union City High School |
|---|---|
| Address | 2500 John F. Kennedy Blvd. |
| City, State, Zip | Union City, NJ 07087 |
| AQS Code | 34 017 0008 |
| NJ County | Hudson |
| UAR/CSA | New York-Northeast New Jersey-Connecticut CSA |
| Latitude | 40.770908 |
| Longitude | -74.036218 |
| Date Established | 1/1/2016 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Yes |
| Overburdened Community? | Yes |

PARAMETER SUMMARY

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------------------|-------------------|------------------------|----------------|---------------------------|----------------|---------------------|-------|----------------|
| Real-time PM _{2.5} | 88101 | Met One BAM 1022 | 2021 | Beta particle attenuation | 209 | Continuous | Ν | PE |

Site Purpose Plans for the next 18 months Other Comment

To measure population exposure to PM_{2.5} in the Union City and Hudson County areas. No changes.





WASHINGTON CROSSING

| Site Name | Washington Crossing |
|---|--|
| Address | Washington Crossing State Park, Philips Farm Group Area, 1239 Bear |
| Address | Tavern Road |
| City, State, Zip | Titusville, NJ 08560 |
| AQS Code | |
| NJ County | Mercer |
| UAR/CSA | Trenton, NJ-PA UA |
| Latitude | 40.315359 |
| Longitude | -74.853613 |
| Date Established | 1/1/1989 |
| Suitable for Comparison to PM _{2.5} NAAQS? | Not Applicable |
| Overburdened Community? | No |

| Parameter | Parameter Code | Sampling Instrument | Manuf. Date | Method of Analysis | Method Code | Sample Frequency | Scale | Objec- tive |
|--------------------|-------------------|--------------------------------|----------------|-----------------------|----------------|---------------------|-------|----------------|
| Acid Deposition | | Wet Deposition Collector | 2015 | lon Chromatography | | Weekly | N | PE |

| Site Purpose | To measure acid deposition on the western border of New Jersey. |
|---------------------------------|---|
| Plans for the next 18 months | No changes. |
| Other Comment | Weekly acid deposition samples are sent to the National Atmospheric Deposition Program (NADP) for analysis. The event acid deposition samples are analyzed by the Bureau of Air Monitoring. The weekly and event acid deposition data are not submitted by NJDEP or NADP to USEPA's AQS database. |
| | |





GLOSSARY OF ABBREVIATIONS AND TERMS

ABBREVIATIONS

AQS – Air Quality System, USEPA's database for air quality data nationwide

CSA – Combined Statistical Area, defined by U.S. Office of Management and Budget as a geographic area having 2 or more Metropolitan Statistical Areas

CSN – Chemical Speciation Network

CFR – Code of Federal Regulations

CO – Carbon monoxide

CVAF Spectrometry – Cold Vapor Atomic Fluorescence Spectrometry, method for analyzing mercury

FEM – Federal Equivalent Method; monitoring method that is not FRM but is approved by USEPA

FRM – Federal Reference Method; primary monitoring method recommended by USEPA for a specific pollutant

DNPH cartridge - Di-Nitro-Phenyl-Hydrazine, an adsorbent for trapping carbonyls in air

auto GC-FID – automated gas Chromatograph Flame Ionization Detection

auto GC-PID – automated gas Chromatograph Photoionization Detection

Hg – Mercury

IC – Ion Chromatography, a method for analyzing for ionic compounds from fine particles

IMPROVE – Interagency Monitoring of Protected Visual Environments

NAAQS – National Ambient Air Quality Standard

NADP – National Atmospheric Deposition Program

NCore – National Core, a monitoring site required by USEPA to measure particles, O3, SO2, CO, NOx and meteorology, for compliance with the NAAQS and to support research

NESCAUM – Northeast States for Coordinated Air Use Management

NJDEP – New Jersey Department of Environmental Protection

NO – Nitric oxide

NO₂ – Nitrogen dioxide

NO_x – Oxides of nitrogen

NO_y – Total reactive oxides of nitrogen

O₃ – Ozone

PAMS – Photochemical Assessment Monitoring Station; site which measures ozone precursors **Pb** – Lead

PM_{2.5} – Fine particles, 2.5 micrometers in aerodynamic diameter or smaller

PM10 – Inhalable particles, 10 micrometers in aerodynamic diameter or smaller

PM_{10-2.5} – Coarse particles, between 10 and 2.5 micrometers in aerodynamic diameter

PM_{2.5}-**Speciation** – a group of elements, ionic compounds and carbon compounds that are analyzed from fine particles

RRF – Resource Recovery Facility; trash incineration facility

SLAMS – State and Local Air Monitoring Station; designation for monitoring site or sampler from which data can be used for comparison to the National Ambient Air Quality Standards

SO₂ – Sulfur dioxide

SPM – Special Purpose Monitor; designation for monitoring site or sampler from which data are not used for comparison to the National Ambient Air Quality Standards

TLE – Trace Level Enhanced; type of analyzer which measures very low concentrations

TO-11A - a standard method approved by USEPA to analyze carbonyls

TO-15 – a standard method approved by USEPA to analyze volatile organic compounds

UAR – Urban Areas Represented; 1 or more counties having a population greater than 50,000

UATMP - Urban Air Toxics Monitoring Program

USEPA - United States Environmental Protection Agency

VOC – Volatile organic compound, a carbon-based chemical that is gaseous

XRF – X-ray fluorescence, a method for analyzing elements from fine particles

<u>TERMS</u>

Acid deposition – acid rain, the phenomenon by which air pollutants raise the acidity of rain and snow Ambient air – air in areas that are accessible to the general public **Background** – a monitor situated in an area which is not expected to be affected by specific air pollution sources **Canister** – a stainless-steel container used for collecting an air sample to be analyzed f or VOCs **Capacitive sensor** – an instrument used for measuring relative humidity **Carbonyls** – a group of aldehydes, or a carbon chain with an oxygen molecule at one end **Chemiluminescence** – the method used for analyzing for NO, NO₂ and NO_x **Coarse particles** – also PM_{10-2.5}; particles between 10 and 2.5 micrometers in aerodynamic diameter **Collocated** – two samplers operating side-by-side in order to collect data used for precision statistics **Continuous** – an instrument that collects data instantaneously, without stopping, throughout the year, and transmits the data to a central data acquisition system every minute Fine particles – also PM_{2.5}; particles 2.5 micrometers in aerodynamic diameter or smaller **Gravimetric** – weighing a filter in a controlled environment by a highly accurate balance **Highest concentration** – a monitor situated to measure the expected maximum concentrations of a pollutant in a given area Inhalable particles – also PM₁₀; particles 10 micrometers in aerodynamic diameter or smaller **Ion chromatography** – also IC, a method used for analyzing for ionic compounds Manual sampler – an instrument that collects an air sample over a 24-hour filter on a filter, adsorbent cartridge or canister which is then manually retrieved for subsequent analysis Met One – a manufacturer of PM_{2.5} speciation samplers Microscale - the spatial scale of a monitoring site, up to 100 meters from the monitor **Middle-scale** – the spatial scale of a monitoring site, from 100 meters to 0.5 km from the monitor Neighborhood-scale – the spatial scale of a monitoring site, from 0.5 to 4 km from the monitor **Nephelometer** – an instrument that measures fine particles through light scattering Nondispersive infrared – the method used for analyzing for carbon monoxide **Overburdened Community** – community subject to environmental and public health stressors, designated in accordance with the New Jersey Environmental Justice Law, N.J.S.A. 13:1D-157 and the New Jersey Environmental Justice Mapping Tool Ozone precursors – a group of volatile organic compounds that affect ozone formation and destruction in the atmosphere; also called PAMS pollutants **Population exposure** – a monitor situated to measure typical concentrations of a pollutant in a densely populated area **Pulsed fluorescence** – the method used for analyzing for sulfur dioxide Pyrometer – the method used for measuring solar radiation **Real-time PM_{2.5}** – PM_{2.5} concentrations that are measured continuously **Regional scale** – the spatial scale of a monitoring site, from 100-1000 km around the monitor Solar radiation – the intensity of energy from sunlight **Source-oriented** – a monitor situated to measure the impact of significant sources or source categories Ultraviolet - the method used for analyzing ozone **Urban Scale** – the spatial scale of a monitoring site, from 4 to 50 km from the monitor

REFERENCES

New Jersey Department of Environmental Protection. Environmental Justice. <u>https://dep.nj.gov/ej/</u> Accessed 5/7/25.

IMPROVE – Interagency Monitoring of Protected Visual Environments. <u>http://vista.cira.colostate.edu/Improve/</u>. Accessed 5/7/25.

National Atmospheric Deposition Program. <u>http://nadp.slh.wisc.edu/</u>. Accessed 5/7/25.

Northeast States for Coordinated Air Use Management. <u>www.nescaum.org/</u>. Accessed 5/7/25.

U.S. Environmental Protection Agency (USEPA). Ambient Monitoring Technology Information Center (AMTIC). <u>https://www.epa.gov/amtic</u>. Accessed 5/7/25.

USEPA/AMTIC. Air Toxics. https://www3.epa.gov/ttnamti1/airtoxpg.html. Accessed 5/7/25.

USEPA/AMTIC. Chemical Speciation Network. <u>www.epa.gov/amtic/chemical-speciation-network-csn</u> Accessed 5/7/25.

USEPA/AMTIC. NO2 Monitoring – Near Road Monitoring. https://www.epa.gov/amtic/no2-monitoring-near-road-monitoring. Accessed 5/7/25.

USEPA/AMTIC. PAMS Network and Enhanced Monitoring Plan Guidance. <u>https://www.epa.gov/amtic/photochemical-assessment-monitoring-stations-pams-network-and-enhanced-monitoring-plan-emp</u>. Accessed 5/7/25.

USEPA/AMTIC. Regulations, Guidance and Monitoring Plans. <u>www.epa.gov/amtic/regulations-guidance-and-monitoring-plans</u>. Accessed 5/7/25.

USEPA. Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program. EPA-454/B-17-001. January 2017. https://www3.epa.gov/ttnamti1/files/ambient/pm25/qa/Final%20Handbook%20Document%201_17.pd f. Accessed 5/7/25.

APPENDIX A: VOLATILE ORGANIC COMPOUNDS

Sampling Instrument: Canister Method of Analysis: TO-15 AQS Method Code: 101

| Parameter1Acetonitrile2Acetylene | Code 43702 |
|----------------------------------|----------------------|
| 2 Acetylene | 43702 |
| | |
| | 43206 |
| 3 Acrolein | 43505 |
| 4 Acrylonitrile | 43704 |
| 5 tert-Amyl Methyl Ether | 43373 |
| 6 Benzene | 45201 |
| 7 Bromochloromethane | 43836 |
| 8 Bromodichloromethane | 43828 |
| 9 Bromoform | 43806 |
| 10 Bromomethane | 43819 |
| 11 1,3-Butadiene | 43218 |
| 12 Carbon Disulfide | 42153 |
| 13 Carbon Tetrachloride | 43804 |
| 14 Chlorobenzene | 45801 |
| 15 Chloroethane | 43812 |
| 16 Chloroform | 43803 |
| 17 Chloromethane | 43801 |
| 18 Chloroprene | 43835 |
| 19 Dibromochloromethane | 43832 |
| 20 1,2-Dibromoethane | 43843 |
| 21 m-Dichlorobenzene | 45806 |
| 22 o-Dichlorobenzene | 45805 |
| 23 p-Dichlorobenzene | 45807 |
| 24 Dichlorodifluoromethane | 43823 |
| 25 1,1-Dichloroethane | 43813 |
| 26 1,2-Dichloroethane | 43815 |
| 27 1,1-Dichloroethene | 43826 |
| 28 cis-1,2-Dichloroethylene | 43839 |
| 29 trans-1,2-Dichloroethylene | e 43838 |
| 30 Dichloromethane | 43802 |
| 31 1,2-Dichloropropane | 43829 |
| 32 cis-1,3-Dichloropropene | 43831 |
| 33 trans-1,3-Dichloropropene | e 43830 |
| 34 Dichlorotetrafluoroethane | |
| 35 Ethyl Acrylate | 43438 |
| 36 Ethyl tert-Butyl Ether | 43396 |
| | |
| 37 Ethylbenzene | 45203 |

Continued

APPENDIX A: VOLATILE ORGANIC COMPOUNDS (Continued)

| | Parameter | Parameter Code |
|----|---------------------------|----------------|
| 39 | Methyl tert-Butyl Ether | 43372 |
| 40 | Methyl Isobutyl Ketone | 43560 |
| 41 | Methyl Methacrylate | 43441 |
| 42 | n-Octane | 43233 |
| 43 | Propylene | 43205 |
| 44 | Styrene | 45220 |
| 45 | 1,1,2,2-Tetrachloroethane | 43818 |
| 46 | Tetrachloroethylene | 43817 |
| 47 | Toluene | 45202 |
| 48 | 1,2,4-Trichlorobenzene | 45810 |
| 49 | 1,1,1-Trichloroethane | 43814 |
| 50 | 1,1,2-Trichloroethane | 43820 |
| 51 | Trichloroethylene | 43824 |
| 52 | Trichlorofluoromethane | 43811 |
| 53 | Trichlorotrifluoroethane | 43821 |
| 54 | 1,2,4-Trimethylbenzene | 45208 |
| 55 | 1,3,5-Trimethylbenzene | 45207 |
| 56 | Vinyl Chloride | 43860 |
| 57 | m,p-Xylene | 45109 |
| 58 | o-Xylene | 45204 |

APPENDIX B: CARBONYLS

Sampling Instrument: DNPH Cartridge Method of Analysis: TO-11A AQS Method Code: 202

| | | Parameter |
|----|--------------------------|-----------|
| | Parameter | Code |
| 1 | Acetaldehyde | 43503 |
| 2 | Acetone | 43551 |
| 3 | Benzaldehyde | 45501 |
| 4 | 2-Butanone | 43552 |
| 5 | Butyraldehyde | 43329 |
| 6 | Crotonaldehyde | 43528 |
| 7 | 2,5-Dimethylbenzaldehyde | 45503 |
| 8 | Formaldehyde | 43502 |
| 9 | Hexaldehyde | 43517 |
| 10 | Isovaleraldehyde | 43513 |
| 11 | Propionaldehyde | 43504 |
| 12 | Tolualdehydes | 45504 |
| 13 | Valeraldehyde | 43518 |

APPENDIX C: SPECIATED FINE PARTICLES

| | | Parameter | | | Method |
|----|--------------|-----------|---------------------|---------------------------|--------|
| | Parameter | Code | Sampling Instrument | Method of Analysis | Code |
| 1 | Aluminum | 88104 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 2 | Ammonium | 88301 | Met One SASS Nylon | Ion Chromatography | 812 |
| 3 | Antimony | 88102 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 4 | Arsenic | 88103 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 5 | Barium | 88107 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 6 | Bromine | 88109 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 7 | Cadmium | 88110 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 8 | Calcium | 88111 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 9 | Cerium | 88117 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 10 | Cesium | 88118 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 11 | Chloride | 88203 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 12 | Chlorine | 88115 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 13 | Chromium | 88112 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 14 | Cobalt | 88113 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 15 | Copper | 88114 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 16 | EleCarbTor | 88380 | URG 3000N | EC1+EC2+EC3-(OP(TOR)) | 838 |
| 17 | EleCarbTot | 88357 | URG 3000N | EC1+EC2+EC3-OP | 838 |
| 18 | Indium | 88131 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 19 | Iron | 88126 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 20 | Lead | 88128 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 21 | Magnesium | 88140 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 22 | Manganese | 88132 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 23 | Nickel | 88136 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 24 | Nitrate | 88306 | Met One SASS Nylon | Ion Chromatography | 812 |
| 25 | OrgCarbTor | 88370 | URG 3000N | OC1+OC2+OC3+OC4+(OP(TOR)) | 838 |
| 26 | OrgCarbTot | 88355 | URG 3000N | OC1+OC2+OC3+OC4+OP | 838 |
| 27 | Phosphorus | 88152 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 28 | Potassium | 88180 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 29 | Potassium IC | 88303 | Met One SASS Nylon | Ion Chromatography | 812 |
| 30 | Rubidium | 88176 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 31 | Selenium | 88154 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 32 | Silicon | 88165 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 33 | Silver | 88166 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 34 | Sodium | 88184 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 35 | Sodium IC | 88302 | Met One SASS Nylon | Ion Chromatography | 812 |
| 36 | Strontium | 88168 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 37 | Sulfate | 88403 | Met One SASS Nylon | Ion Chromatography | 812 |
| 38 | Sulfur | 88169 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 39 | Tin | 88160 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 40 | Titanium | 88161 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 41 | Vanadium | 88164 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 42 | Zinc | 88167 | Met One SASS Teflon | Energy Dispersive XRF | 811 |
| 43 | Zirconium | 88185 | Met One SASS Teflon | Energy Dispersive XRF | 811 |

APPENDIX D: OZONE PRECURSORS

Sampling Instrument: Agilent-Markes Method of Analysis: Auto-GC-FID AQS Method Code: 227

| | Parameter | AQS Parameter Code |
|----|-----------------------|--------------------------|
| 1 | Sum of PAMS Compounds | 43000 |
| 2 | Total NMOC | 43102 |
| 3 | Acetylene | 43206 |
| 4 | Benzene | 45201 |
| 5 | 1,3-Butadiene | 43218 |
| 6 | n-Butane | 43212 |
| 7 | 1-Butene | 43280 |
| 8 | cis-2-Butene | 43217 |
| 9 | trans-2-Butene | 43216 |
| 10 | Cyclohexane | 43248 |
| 11 | Cyclopentane | 43242 |
| 12 | n-Decane | 43238 |
| 13 | m-Diethylbenzene | 45218 |
| 14 | p-Diethylbenzene | 45219 |
| 15 | 2,2-Dimethylbutane | 43244 |
| 16 | 2,3-Dimethylbutane | 43284 |
| 17 | 2,3-Dimethylpentane | 43291 |
| 18 | 2,4-Dimethylpentane | 43247 |
| 19 | n-Dodecane | 43141 |
| 20 | Ethane | 43202 |
| 21 | Ethylbenzene | 45203 |
| 22 | Ethylene | 43203 |
| 23 | m-Ethyltoluene | 45212 |
| 24 | o-Ethyltoluene | 45211 |
| 25 | p-Ethyltoluene | 45213 |
| 26 | n-Heptane | 43232 |
| 27 | n-Hexane | 43231 |
| 28 | 1-Hexene | 43245 |
| 29 | Isobutane | 43214 |
| 30 | Isopentane | 43221 |
| 31 | Isoprene | 43243 |
| 32 | Isopropylbenzene | 45210 |
| 33 | Methylcyclohexane | 43261 |
| 34 | Methylcyclopentane | 43262 |
| 35 | 2-Methylheptane | 43960 |
| 36 | 3-Methylheptane | 43253 |
| 37 | 2-Methylhexane | 43263 |
| 38 | 3-Methylhexane | 43249 |

Continued

APPENDIX D: OZONE PRECURSORS (Continued)

| | | AQS Parameter |
|----|------------------------|------------------|
| | Parameter | Code |
| 39 | 2-Methylpentane | 43285 |
| 40 | 3-Methylpentane | 43230 |
| 41 | n-Nonane | 43235 |
| 42 | n-Octane | 43233 |
| 43 | n-Pentane | 43220 |
| 44 | 1-Pentene | 43224 |
| 45 | cis-2-Pentene | 43227 |
| 46 | trans-2-Pentene | 43226 |
| 47 | alpha-Pinene | 43256 |
| 48 | beta-Pinene | 43257 |
| 49 | Propane | 43204 |
| 50 | n-Propylbenzene | 45209 |
| 51 | Propylene | 43205 |
| 52 | Styrene | 45220 |
| 53 | Toluene | 45202 |
| 54 | 1,2,3-Trimethylbenzene | 45225 |
| 55 | 1,2,4-Trimethylbenzene | 45208 |
| 56 | 1,3,5-Trimethylbenzene | 45207 |
| 57 | 2,2,4-Trimethylpentane | 43250 |
| 58 | 2,3,4-Trimethylpentane | 43252 |
| 59 | n-Undecane | 43954 |
| 60 | m/p-Xylene | 45109 |
| 61 | o-Xylene | 45204 |

APPENDIX E: BTEX COMPOUNDS

Sampling Instrument: Syntech Spectras BTEX Analyzer GC 955 Method of Analysis: Gas Chromatography AQS Method Code: 092

| | Parameter | | |
|--------------|-----------|--|--|
| Parameter | Code | | |
| Benzene | 45201 | | |
| Toluene | 45202 | | |
| Ethylbenzene | 45203 | | |
| m,p-Xylene | 45109 | | |
| o-Xylene | 45204 | | |