

WEEKLY AIR MONITORING REPORT

Vo-Toys Removal Action

Site Name: Vo-Toys Site, Harrison, New Jersey

CERCLA Docket No.: 02-2019-2028

Report No.: 119

Report Date: July 21, 2023

Reporting Period: July 17 to July 21, 2023

1 Introduction

This report summarizes the Vo-Toys Removal Action (RA) air monitoring program conducted between July 17 to July 21, 2023, at the Vo-Toys site located at 400 South 5th Street, Harrison, New Jersey (the site). Air monitoring for particulates less than 10 microns in diameter (PM₁₀) and mercury vapor was conducted in accordance with the U.S. Environmental Protection Agency (USEPA)-approved Community Air Monitoring Plan (CAMP). PM₁₀ and mercury vapor results were compared with action levels presented in the CAMP.

Air monitoring during the week of July 17, 2023, included the following monitoring tasks:

- Meteorological monitoring
- Work area perimeter air monitoring
- Site perimeter air monitoring
- Off-site/community air monitoring

A summary of the monitoring activities that were conducted is presented in Section 3.

2 Meteorological Monitoring

Meteorological monitoring was conducted to measure wind speed, wind direction, and air temperature. Meteorological readings were recorded on a data logging device and evaluated at least three times per day to determine the upwind and downwind boundaries of the site.

Table 2-1 presents a summary of the meteorological monitoring during the week of July 17, 2023. The attached site air monitoring figures show the locations of the meteorological sensors.

Table 2-1
Meteorological Monitoring Summary

Date	Weather
July 17, 2023	Partly sunny; High in the Low 90s °F; Winds: 0-10 mph SW; AQI High of 120 around 3pm (online)
July 18, 2023	Showers and thunderstorms in the AM; High in the high 80s °F; Winds: 0-10 mph S; AQI High of 107 around 10am (online)
July 19, 2023	Partly cloudy, showers in the AM; High in the low 80s °F; Winds: 0-10 mph ESE; AQI High of 107 around 10am (online)
July 20, 2023	Mostly sunny; High in the high 80s °F; Winds: 0-5 mph N; AQI High of 116 around 7am (online)
July 21, 2023	Mostly cloudy; High in the low 80s °F; Winds: 5-10 mph S (Online)

3 PM₁₀ and Mercury Vapor Monitoring

3.1 Work Area Perimeter Air Monitoring

Air monitoring was performed at the perimeter of the RA work areas and the RA activities were modified as necessary so that particulates and mercury vapors above action levels were not migrating to the site perimeter and off-site/community air monitoring locations. The work area perimeter monitoring locations were in or adjacent to the building footprints and were determined based on the location and extent of RA activities and the prevailing wind direction. Readings were recorded and maintained on site by the Engineer.

During the week of July 17, 2023, air quality at the site was affected by wildfire smoke. During the day, background PM₁₀ readings were in excess of 100 ug/m³. On July 17, 19, and 20, PM₁₀ readings exceeded the action level and the elevated readings were attributed to the wildfire smoke. All other work area perimeter readings were less than the CAMP action levels.

A summary of work area perimeter air monitoring data is presented in the table below.

Summary of Anchor QEA's Work Area Perimeter Air Monitoring for PM₁₀ and Mercury Vapor

Date	PM ₁₀ 15-Minute Average Range (ug/m ³) <i>Action Level <125 ug/m³</i>	Mercury Vapor 15-Minute Average Range (ug/m ³) <i>Action Level <10 ug/m³</i>
Building A East End Removals		
July 17, 2023 ⁵	14.0 - 190.0	0.0 - 2.0
July 18, 2023 ⁵	61.0 - 101.0	0.0 - 2.0
July 19, 2023 ⁵	83.0 - 146.0	0.0 - 1.0
July 20, 2023 ⁵	17.0 - 139.0	0.0 - 1.0
July 21, 2023	15.0 - 38.0	0.0 - 0.0

Notes:

1. $\mu\text{g}/\text{m}^3$: micrograms per cubic meter.
2. PM_{10} action levels: Normal operations if 15-minute average of PM_{10} readings is $<125 \mu\text{g}/\text{m}^3$. If readings $>125 \mu\text{g}/\text{m}^3$ additional actions would be required per CAMP.
3. Mercury vapor action level: Normal operations if mercury vapor for a single reading is $<10 \mu\text{g}/\text{m}^3$.
4. See CAMP for further details on action levels.
5. AQI for these dates were elevated due to wildfire smoke.

3.2 Site Perimeter Air Monitoring Summary

Site perimeter monitoring was performed to document that particulates (PM_{10}) or mercury vapor above action levels were not migrating beyond the site boundary. Four air monitoring stations were located outside the building footprints around the site perimeter: one upwind and three downwind. Figures SP-1 through SP-5 show the locations of the site perimeter stations each day. Readings were recorded and maintained on site by the Engineer.

The National Weather Service issued Air Quality Alerts during the week due to elevated particulate in the air caused by wildfire smoke. Numerous exceedances to the PM_{10} action level were observed on July 17, 18, 19, and 20, 2023 and during those days background PM_{10} readings were in excess of $100 \mu\text{g}/\text{m}^3$.

All other PM_{10} and mercury vapor site perimeter air monitoring data were below action levels defined in the CAMP. A summary of site perimeter air monitoring data is presented in Table 3.

Table 3-1
Summary of PM_{10} and Mercury Vapor Site Perimeter Air Monitoring

Date	Air Monitoring Station/Location	Upwind/Downwind	PM_{10} 15-Minute Average Range ($\mu\text{g}/\text{m}^3$) Action Level $<100 \mu\text{g}/\text{m}^3$	Mercury Vapor 15-Minute Average Range ($\mu\text{g}/\text{m}^3$) Action Level $<10 \mu\text{g}/\text{m}^3$
7/17/2023 ⁴	Station 1 – West	Downwind	22.7 – 188.0	0.10 – 0.37
	Station 2 – East	Downwind	15.6 – 182.5	0.10 – 0.28
	Station 3 – Southeast	Upwind	11.8 – 148.0	0.10 – 0.20
	Station 4 – North	Downwind	10.9 – 387.0	0.10 – 0.60
7/18/2023 ⁴	Station 1 – West	Downwind	80.3 – 107.0	0.10 – 0.18
	Station 2 – East	Downwind	39.9 – 132.1	0.10 – 0.25
	Station 3 – Southeast	Upwind	25.0 – 96.7	0.10 – 0.13
	Station 4 – North	Downwind	95.1 – 156.0	0.11 – 0.29
7/19/2023 ⁴	Station 1 – West	Downwind	Note 5	0.10 – 0.98
	Station 2 – East	Upwind	84.9 – 146.9	0.10 – 0.25
	Station 3 – Southeast	Downwind	66.7 – 113.0	0.10 – 0.14
	Station 4 – North	Downwind	43.0 – 155.0	0.11 – 0.51
7/20/2023 ⁴	Station 1 – West	Downwind	12.9 – 57.0	0.10 – 0.44
	Station 2 – East	Downwind	30.6 – 178.0	0.10 – 0.29
	Station 3 – Southeast	Downwind	52.7 – 126.0	0.10 – 0.34
	Station 4 – North	Upwind	29.6 – 172.0	0.11 – 0.40

Date	Air Monitoring Station/Location	Upwind/ Downwind	PM ₁₀ 15-Minute Average Range (ug/m ³) Action Level < 100 ug/m ³	Mercury Vapor 15-Minute Average Range (ug/m ³) Action Level < 10 ug/m ³
7/21/2023	Station 1 – West	Downwind	3.0 – 18.5	0.10 – 0.30
	Station 2 – East	Downwind	14.5 – 40.7	0.10 – 0.27
	Station 3 – Southeast	Upwind	16.9 – 89.5	0.10 – 0.18
	Station 4 – North	Downwind	2.0 – 27.5	0.10 – 0.59

Notes:

1. PM₁₀ action level: Normal operations if PM₁₀ < 100 ug/m³.
2. Mercury vapor action level: Normal operations if 15-minute average of MVA readings is < 10 ug/m³.
3. See CAMP for further details on action levels.
4. AQI for these dates were elevated due to wildfire smoke.
5. Rental Dust Trak meter from Pine Environmental would not pass Zero Calibration. A replacement rental unit was delivered and installed on the site on 07/20/2022.

3.3 Off-Site/Community Air Monitoring

Off-site/community air monitoring for mercury vapors was performed during specific phases of the RA to document that mercury vapor above action levels were not migrating beyond the site boundary. In accordance with the CAMP, each day that included a qualifying mercury vapor monitoring event, four 8-hour off-site air samples were collected for mercury vapor analysis (one upwind and three downwind). Off-site/community air monitoring for mercury vapors was performed on July 18, 2023, and July 20, 2023. Figures SP-1 through SP-5 show the off-site/community air sample locations for the days when sampling was performed.

A summary of off-site community air monitoring is presented in Table 3-2.

Table 3-2
Summary of Mercury Vapor Off-Site/Community Air Monitoring

Date	Mercury Vapor Monitoring Event	Air Monitoring Station/Location	Upwind/ Downwind	Mercury Vapor 8-Hour Sample (ug/m ³) Action Level < 4 ug/m ³
7/13/2023	Courtyard Pipe Removals	Station 1 - West	Downwind	Results pending from laboratory
		Station 2 - East	Downwind	Results pending from laboratory
		Station 3 – South	Upwind	Results pending from laboratory
		Station 4 - North	Downwind	Results pending from laboratory
7/18/2023	Main Sewer Removal	Station 1 - West	Downwind	Results pending from laboratory
		Station 2 - East	Downwind	Results pending from laboratory

Date	Mercury Vapor Monitoring Event	Air Monitoring Station/Location	Upwind/ Downwind	Mercury Vapor 8-Hour Sample (ug/m ³) Action Level <4 ug/m ³
7/20/2023	Main Sewer Removal	Station 3 – South	Upwind	Results pending from laboratory
		Station 4 - North	Downwind	Results pending from laboratory
		Station 1 - West	Downwind	Results pending from laboratory
		Station 2 - East	Downwind	Results pending from laboratory
		Station 3 – South	Downwind	Results pending from laboratory
		Station 4 - North	Upwind	Results pending from laboratory

4 Monitoring Equipment

Table 4-1 presents the air monitoring devices used.

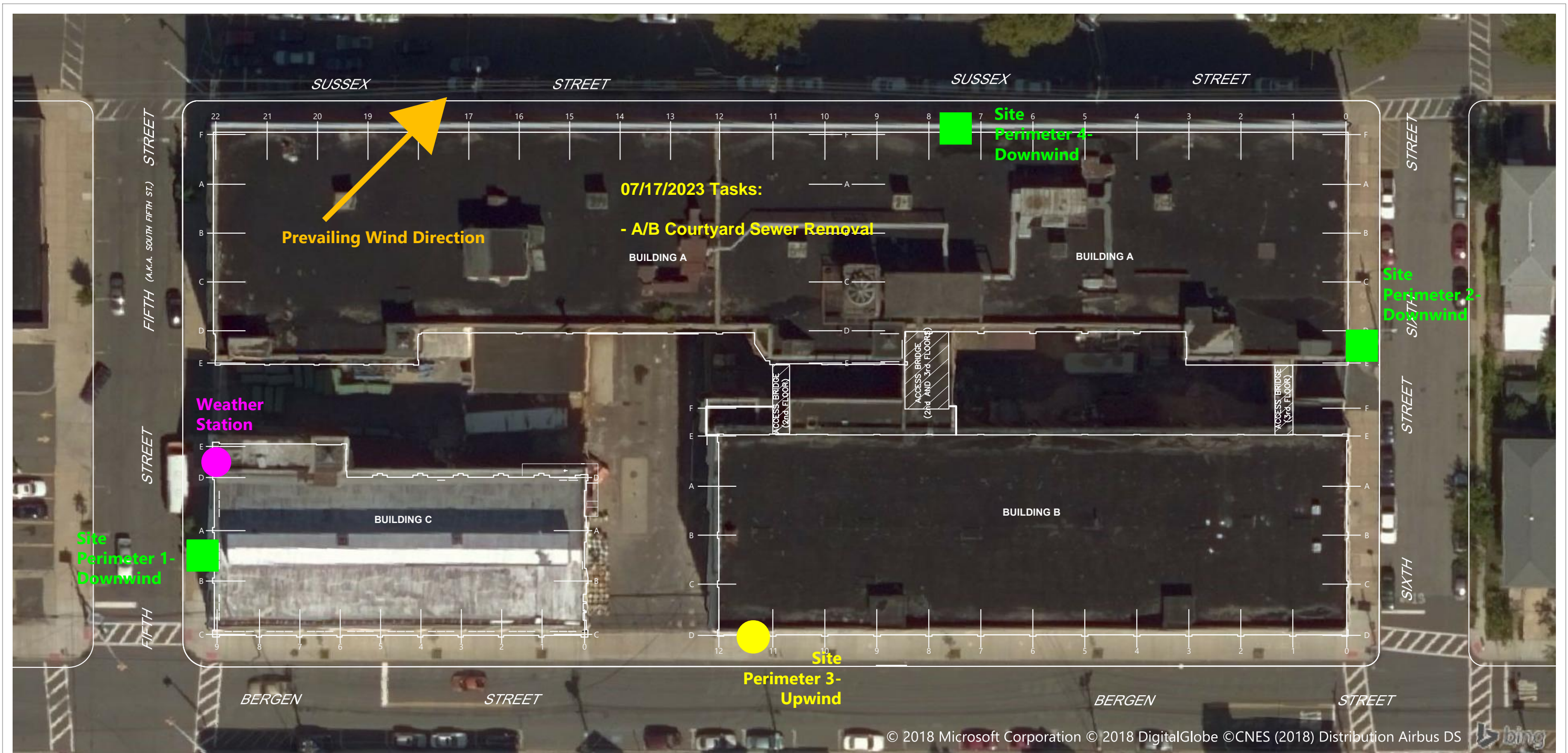
Table 4-1
Monitoring Equipment and Calibration

Parameter	Monitoring Equipment
Mercury Vapors – Real Time and Average Concentrations	<ul style="list-style-type: none"> Jerome Mercury Vapor Analyzer J405 – Arizona Instruments, LLC (work area monitoring, regenerated prior to daily use) VM 3000 – Mercury Instruments (site perimeter stations, auto zeroed prior to daily use)
Airborne Particulates	<ul style="list-style-type: none"> TSI Dusttrak Particulate Monitor (site perimeter stations, zeroed prior to daily use)
Meteorological Monitoring	<ul style="list-style-type: none"> Vantage Pro 2 weather station
Mercury Vapors – 8-hour Average Concentrations via NIOSH 6009	<ul style="list-style-type: none"> Sensidyne Gilian GilAir 3 air sampling pump (low flow module) Mesa Labs Defender 500 series air sampling pump flow calibrator Solid sorbent glass tubes containing Hopcalite

5 Issues or Potential Modifications to the CAMP

None

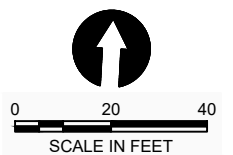
Figures



SOURCE: Floor plans compiled from CAD file entitled: "FIG05-REV071615" provided by AMEC Foster Wheeler, Inc. on March 31, 2016. Subsurface utilities and features compiled from CAD file entitled: "NUMBERED_SITEMAP_20101" provided by General Electric Company on March 3, 2016.
HORIZONTAL DATUM: New Jersey State Plane, North American Datum 1983, U.S. Feet (NJ83F).
VERTICAL DATUM: (None).

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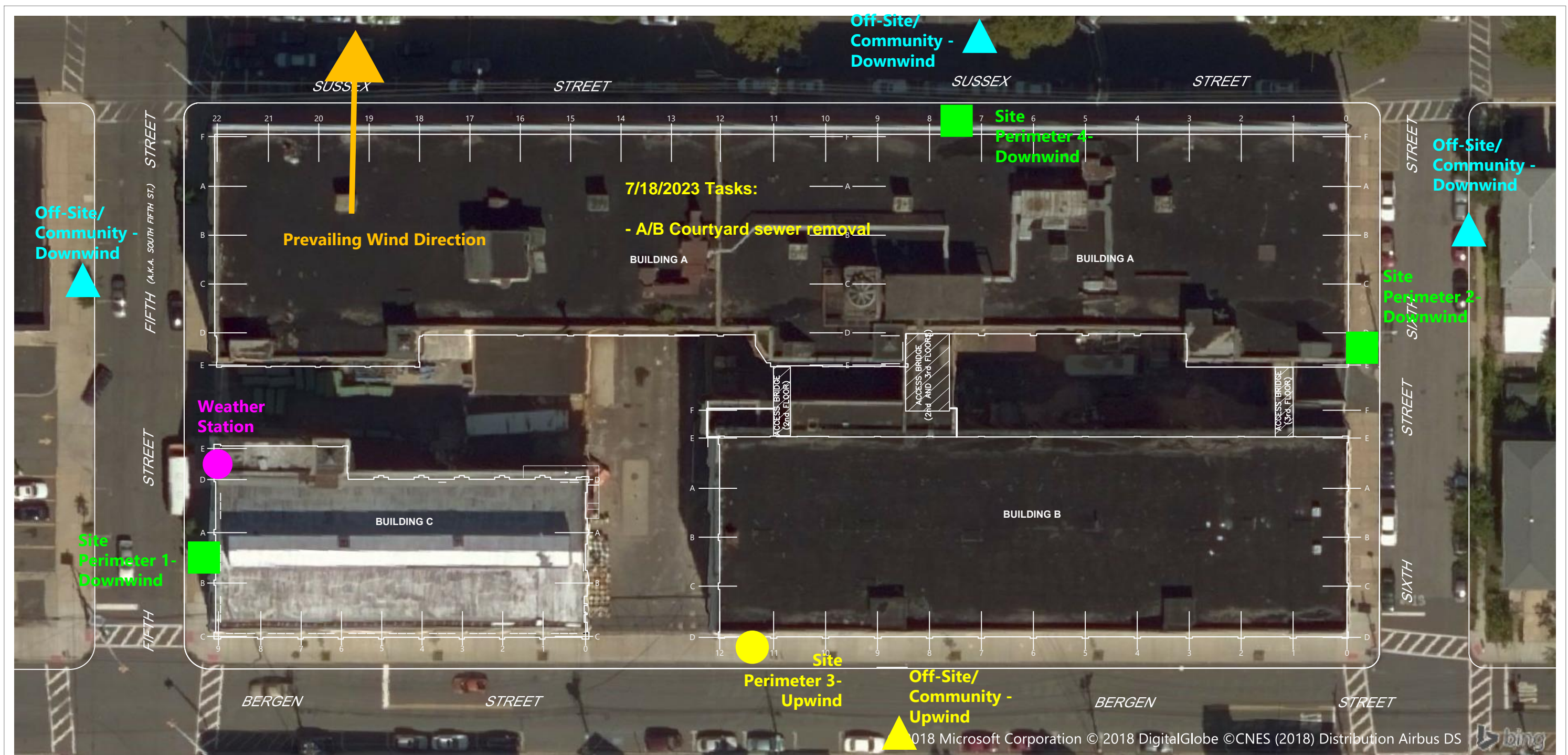
- Site Perimeter Air Monitoring Location
- Upwind Site Perimeter Monitoring Location



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Figure SP-1
07/17/2023
Air Monitoring Station Locations
 Vo Toys Removal Action
 General Electric Company



SOURCE: Floor plans compiled from CAD file entitled: "FIG05-REV071615" provided by AMEC Foster Wheeler, Inc. on March 31, 2016. Subsurface utilities and features compiled from CAD file entitled: "NUMBERED_SITEMAP_20101" provided by General Electric Company on March 3, 2016.

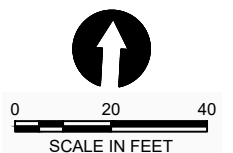
HORIZONTAL DATUM: New Jersey State Plane, North American Datum 1983, U.S. Feet (NJ83F).

VERTICAL DATUM: (None).

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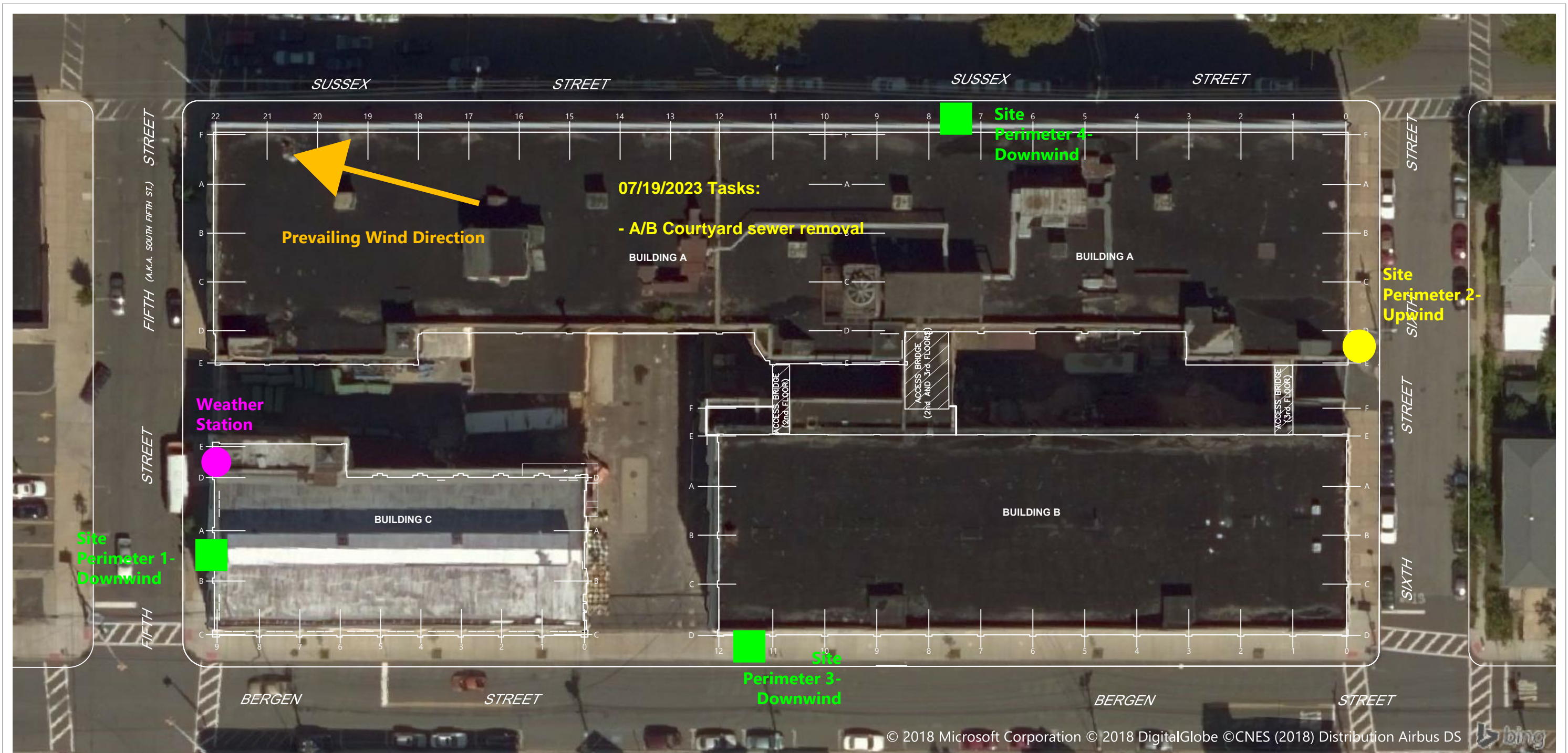
- Site Perimeter Air Monitoring Location
- Upwind Site Perimeter Monitoring Location
- ▲ Community Monitoring Location



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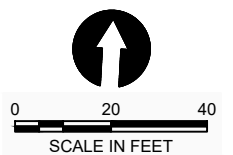
Figure SP-2
07/18/2023
Air Monitoring Station Locations
Vo Toys Removal Action
General Electric Company



SOURCE: Floor plans compiled from CAD file entitled: "FIG05-REV071615" provided by AMEC Foster Wheeler, Inc. on March 31, 2016. Subsurface utilities and features compiled from CAD file entitled: "NUMBERED_SITEMAP_20101" provided by General Electric Company on March 3, 2016.
HORIZONTAL DATUM: New Jersey State Plane, North American Datum 1983, U.S. Feet (NJ83F).
VERTICAL DATUM: (None).

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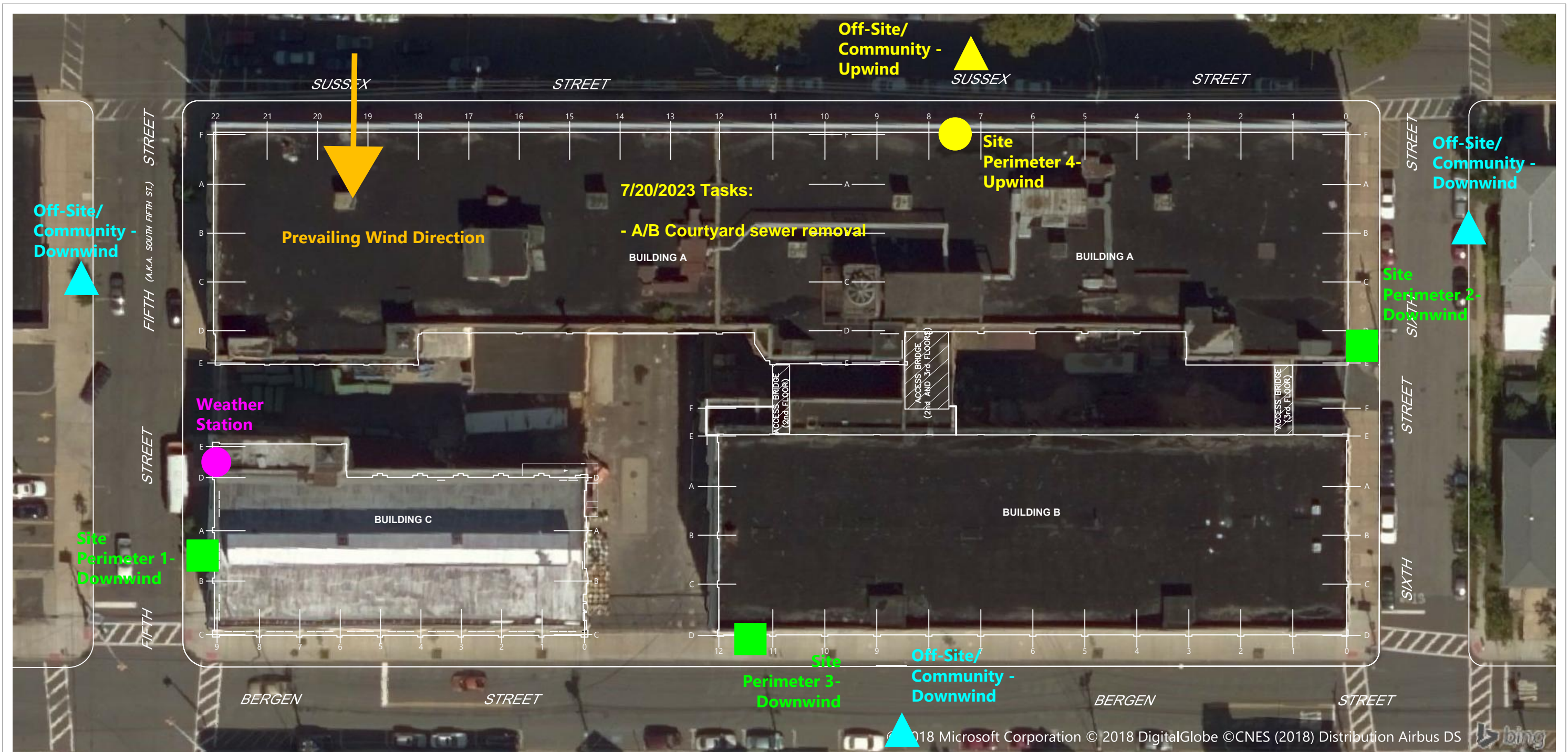
- Site Perimeter Air Monitoring Location
- Upwind Site Perimeter Monitoring Location



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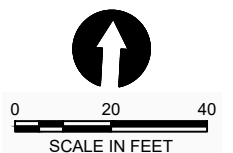
Figure SP-3
07/19/2023
Air Monitoring Station Locations
 Vo Toys Removal Action
 General Electric Company



SOURCE: Floor plans compiled from CAD file entitled: "FIG05-REV071615" provided by AMEC Foster Wheeler, Inc. on March 31, 2016. Subsurface utilities and features compiled from CAD file entitled: "NUMBERED_SITEMAP_20101" provided by General Electric Company on March 3, 2016.
HORIZONTAL DATUM: New Jersey State Plane, North American Datum 1983, U.S. Feet (NJ83F).
VERTICAL DATUM: (None).

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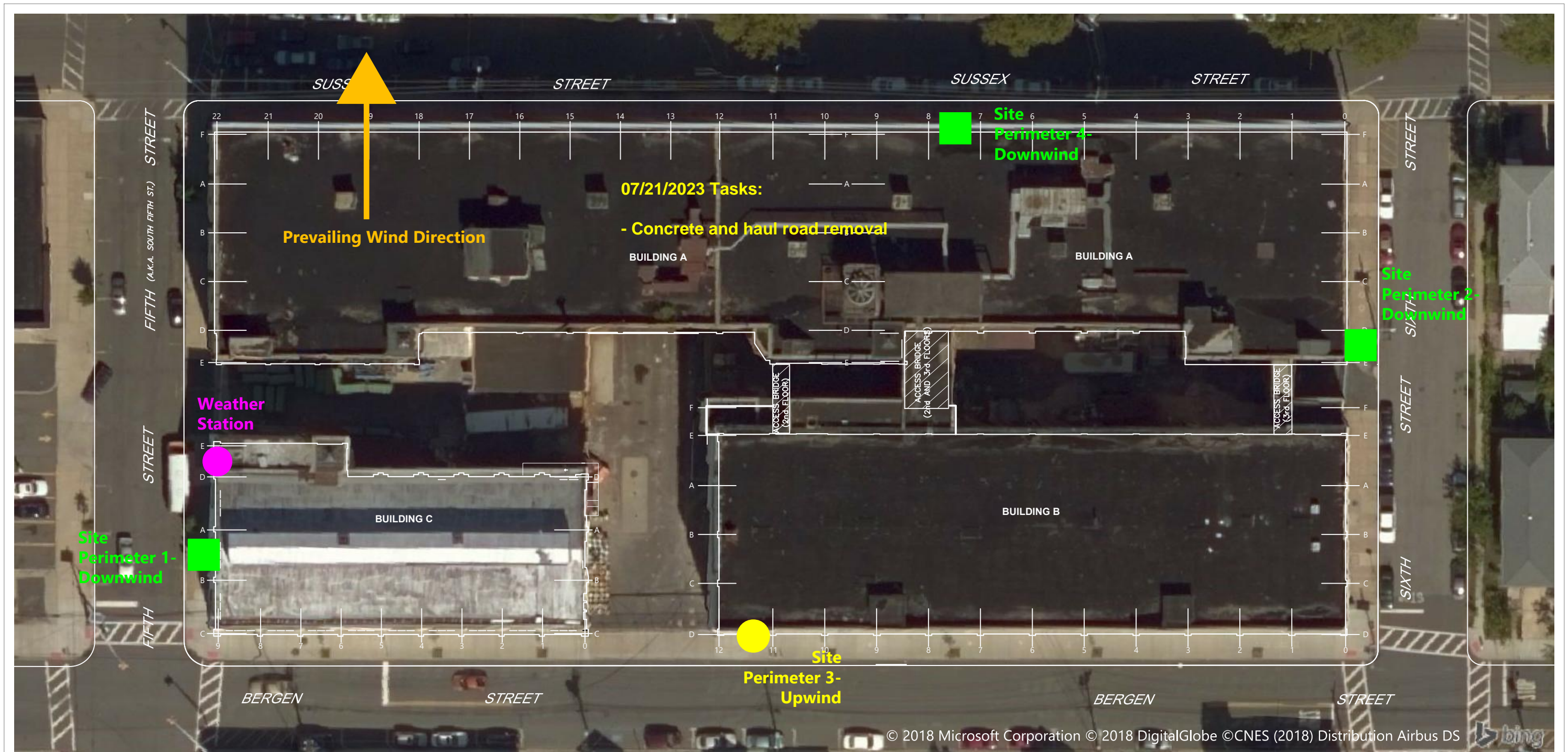
- Site Perimeter Air Monitoring Location
- Upwind Site Perimeter Monitoring Location
- Community Monitoring Location



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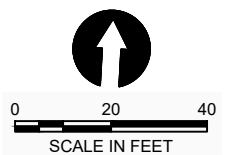
Figure SP-4
07/20/2023
Air Monitoring Station Locations
 Vo Toys Removal Action
 General Electric Company



SOURCE: Floor plans compiled from CAD file entitled: "FIG05-REV071615" provided by AMEC Foster Wheeler, Inc. on March 31, 2016. Subsurface utilities and features compiled from CAD file entitled: "NUMBERED_SITEMAP_20101" provided by General Electric Company on March 3, 2016.
HORIZONTAL DATUM: New Jersey State Plane, North American Datum 1983, U.S. Feet (NJ83F).
VERTICAL DATUM: (None).

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- Site Perimeter Air Monitoring Location
- Upwind Site Perimeter Monitoring Location



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Figure SP-5
07/21/2023
Air Monitoring Station Locations
 Vo Toys Removal Action
 General Electric Company