Naphthalene

- Data quality issue (statewide)
- Results prior to April 2023 were biased high due to a laboratory hardware issue.
- Interlaboratory comparisons of samples and standards
  - Rhode Island Department of Public Health
  - Ohio Environmental Protection Agency
  - U.S. EPA
  - Pace Analytical (commercial laboratory)

Naphthalene interlaboratory comparison timeline

- Early 2025
  - DEP sent RI 3 samples = all results matched well in all
  - DEP sent OH 3 samples = all results matched well in all
  - DEP sent RI and OH standards = both results matched well
- Fall 2025
  - DEP sent OH 2 samples = both results matched well
- April/May 2026
  - EPA sent DEP 2 standards = DEP was low [EPA was also low on follow-up analysis]
  - DEP sent OH 1 sample = DEP was low compared to OH
- June 2026
  - EPA sent 2 standards (3rd sample low and not sent) = DEP was low
  - DEP sent 4 samples to a commercial laboratory (Pace Analytical) = 2 results matched well, DEP was high on 2.

Naphthalene

- Continued concerns about the use of TO-15 for the assessment of low concentrations of naphthalene
- Reporting limits
  - Maine DEP: 0.05 ppb (share at detection limit: 0.02 ppb)
  - Ohio EPA = 1 ppb
- TO-15 for measurement of VOCs in ambient and indoor air
  - Naphthalene is a semi-volatile organic compound (SVOC)
- TO-17 is specifically for the measurement of SVOCs
  - Samples at West Commercial & Mechanic Street
  - EPA analyzing samples
- Continue to report TO-15 results = flagged informational

Next phase of VOC study

- Discontinue HAPs canister monitoring
  - Exceptions:
    - Portland Ocean Gateway (statewide network)
    - Mechanic Street (for one more year)
    - Fenceline location (quality check)

- Shift to fenceline monitoring (July 2024)

Petroleum Storage Facility Fenceline Air Monitoring Data Summary

(July 2024 – March 2026)

Legislation & rule

- 130th Maine Legislature enacted Public Law 2021, chapter 294, An Act Concerning the Regulation of Air Emissions at Petroleum Storage Facilities
  - Required facilities statewide with certain aboveground petroleum storage tanks implement fenceline monitoring programs

- Department adopted rule Chapter 171, *Control of Petroleum Storage Facilities*
  - Effective August 4, 2023
  - Established requirements for fenceline monitoring programs among other provisions
  - Submission of fenceline monitoring plans for Department approval
  - EPA Method 325A & 325B
  - Quarterly submission of fenceline monitoring data

Method

- Method 325A: Volatile Organic Compounds from Fugitive and Area Sources: Sampler Deployment and VOC Sample Collection
- Method 325B: Volatile Organic Compounds from Fugitive and Area Sources: Sampler Preparation and Analysis

- VOCs: benzene, toluene, ethylbenzene, m,p-xylenes, o-xylene (BTEX)
- Independent third party (field operations and laboratory analysis)
- Passive tube samplers deployed at pre-approved locations (12 – 18 per facility)
- Height requirement: 4.9 – 9.8 ft above ground level
- 14-day sampling period



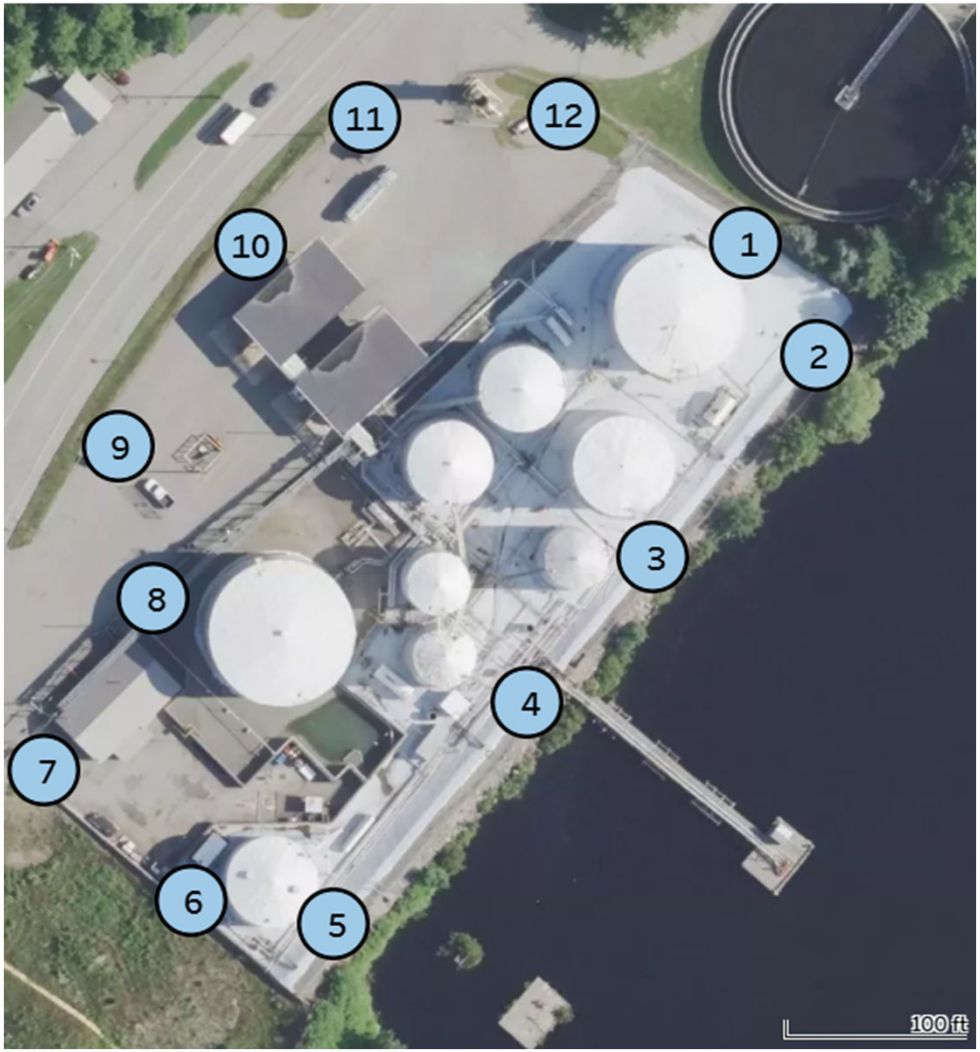

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Example of monitoring locations and spacing along a facility fenceline



11 Subject Facilities

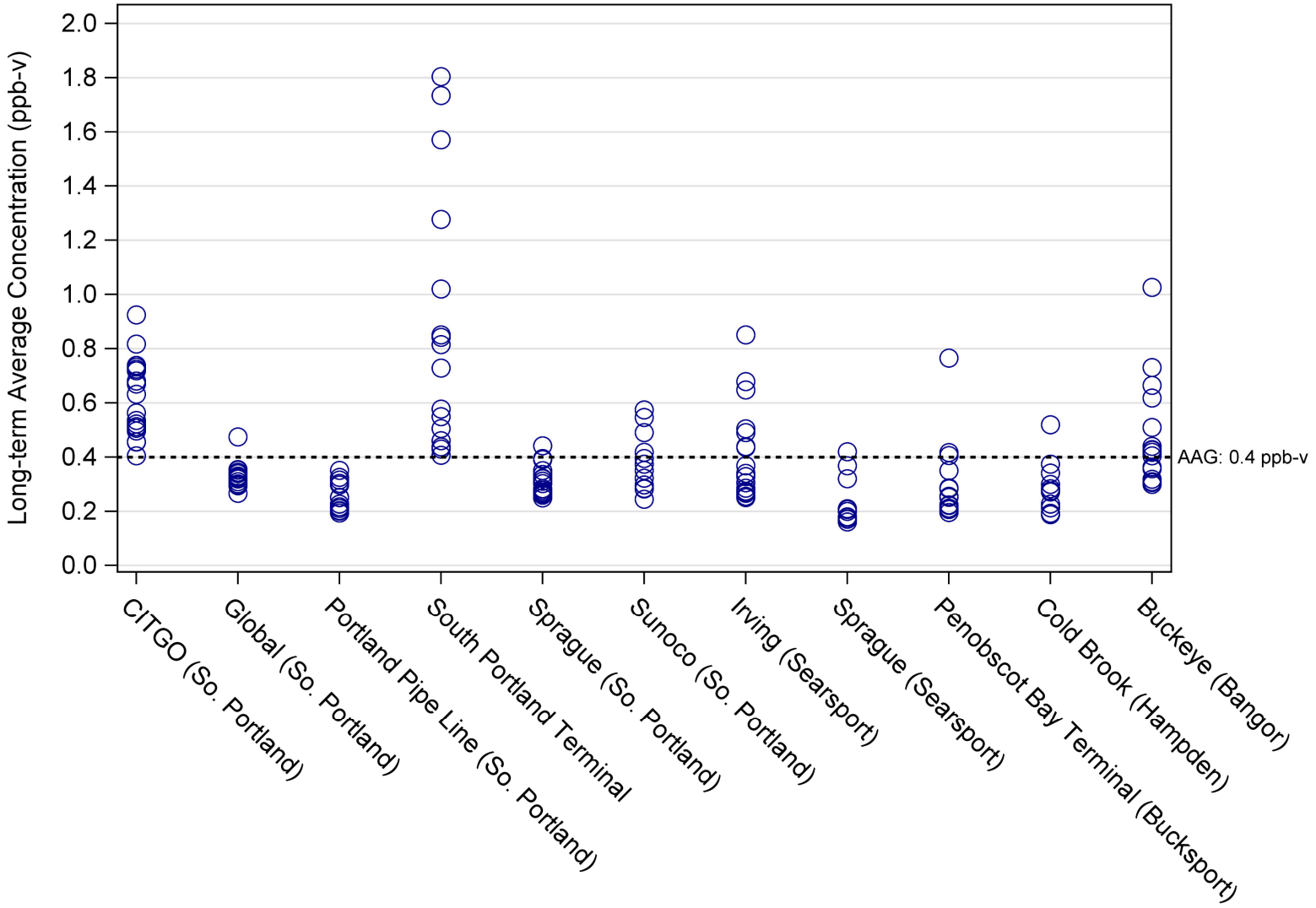
Location	Facility name	Monitoring start date	Number of active monitoring locations
South Portland	CITGO Petroleum Corporation	8/27/2024	18
	Global Companies LLC	8/21/2024	17
	Portland Pipe Line Corporation	7/17/2024	13
	South Portland Terminal LLC	8/28/2024	16
	Sprague Operating Resources LLC	9/3/2024	16
	Sunoco Midstream LLC (formerly Portland Terminals LLC and Gulf Oil Limited Partnership)	7/25/2024	12
Searsport	Irving Oil Terminals Inc.	9/19/2024	17
	Sprague Operating Resources LLC (d.b.a. Sprague Searsport Terminal)	9/19/2024	12
Bucksport	Penobscot Bay Terminals, Inc. (d.b.a. Webber Tanks)	9/12/2024	15
Hampden	Cold Brook Energy, Inc.	7/10/2024	12
Bangor	Buckeye Terminals, LLC; Down East Emulsions, Limited Liability Company	8/16/2024	16

Long-term Average Concentrations

- 1.5-year average
- Average for each monitoring location around each facility
- AAGs used as reference for comparison
  - These comparisons are intended to provide context for the monitoring results and do not, by themselves, constitute a health risk assessment or indicate the level of exposure experienced by individuals living or working near a facility.

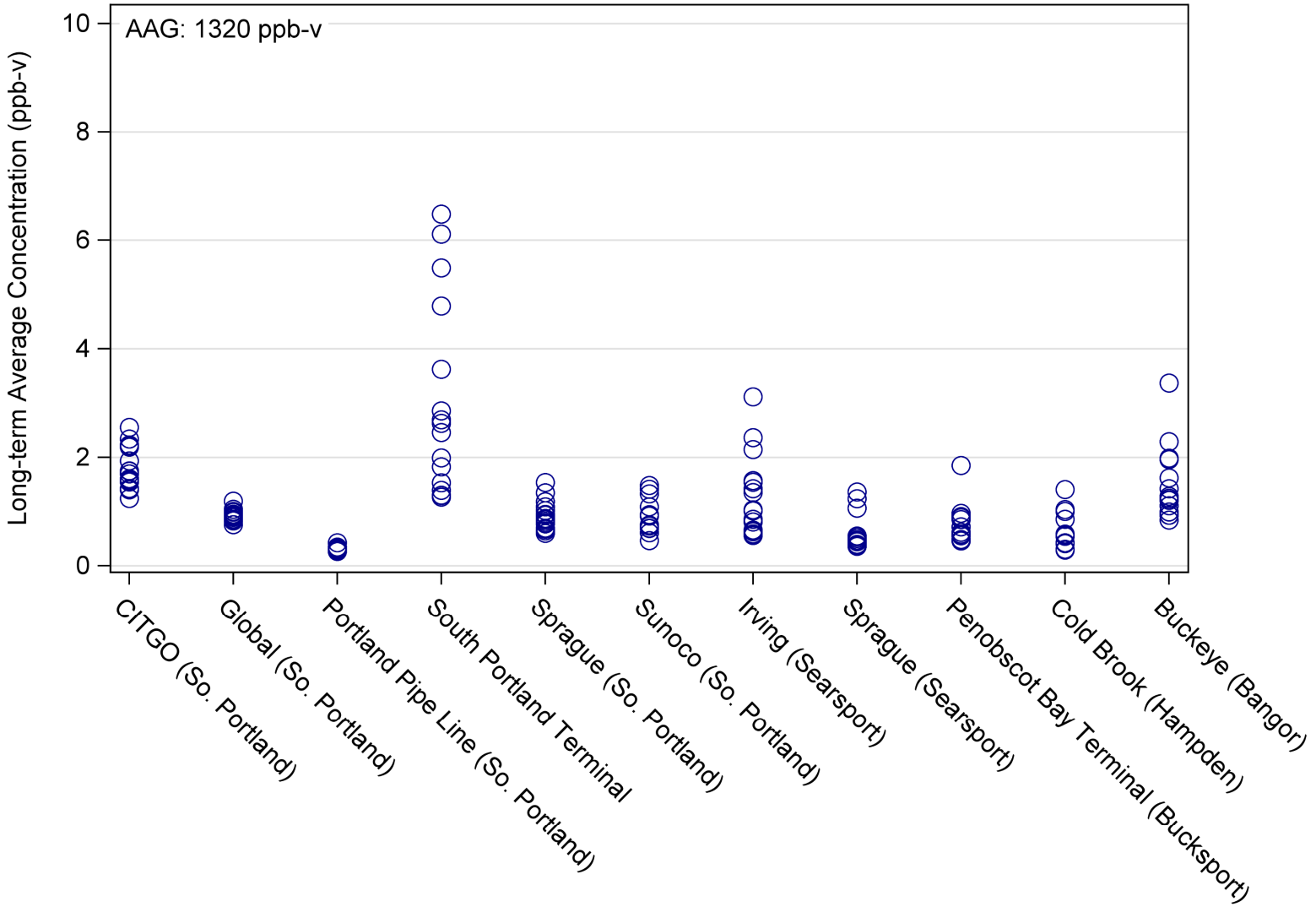
Benzene

Long-term average concentrations (1.5-year avg.)



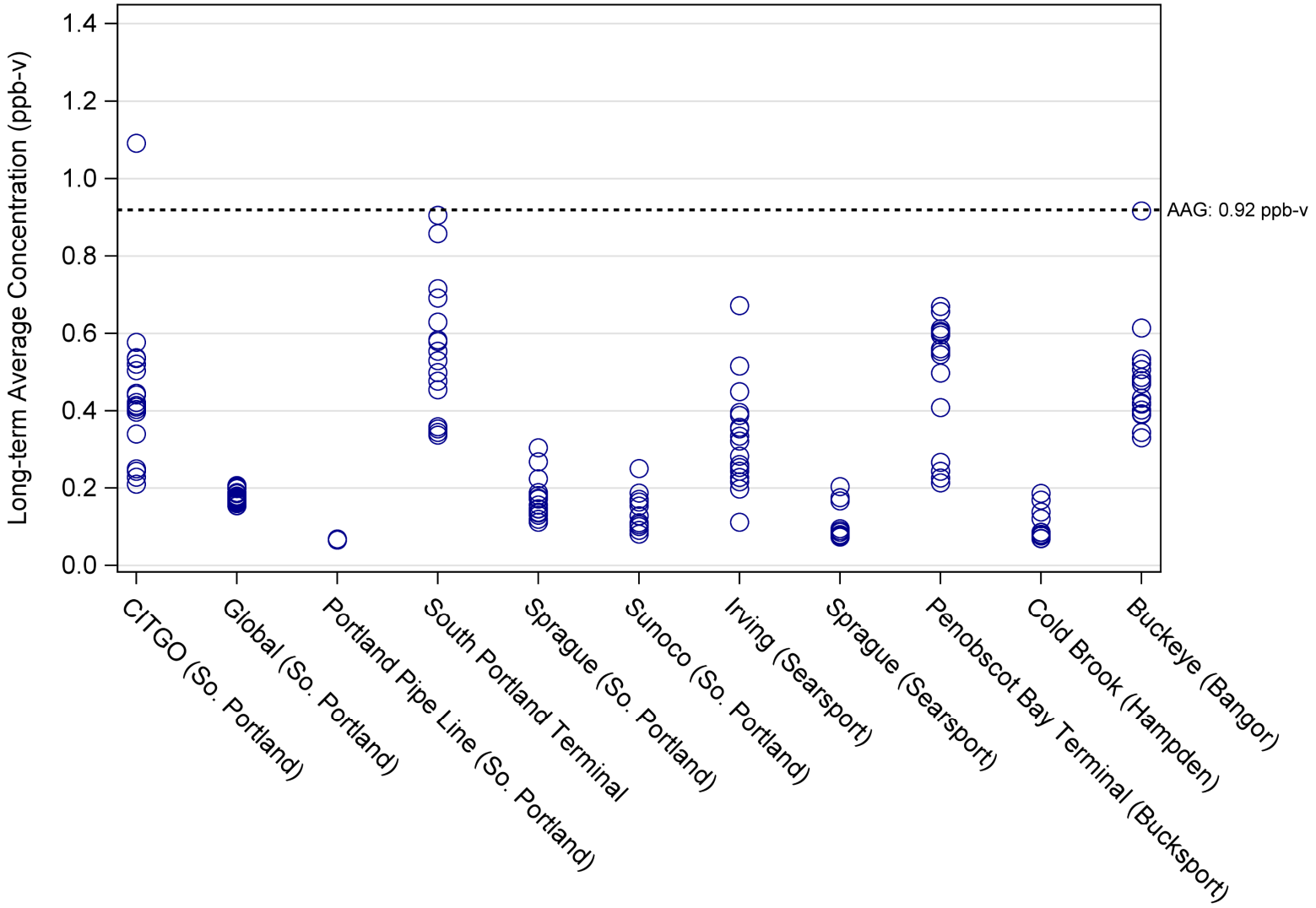
Toluene

Long-term average concentrations (1.5-year avg.)



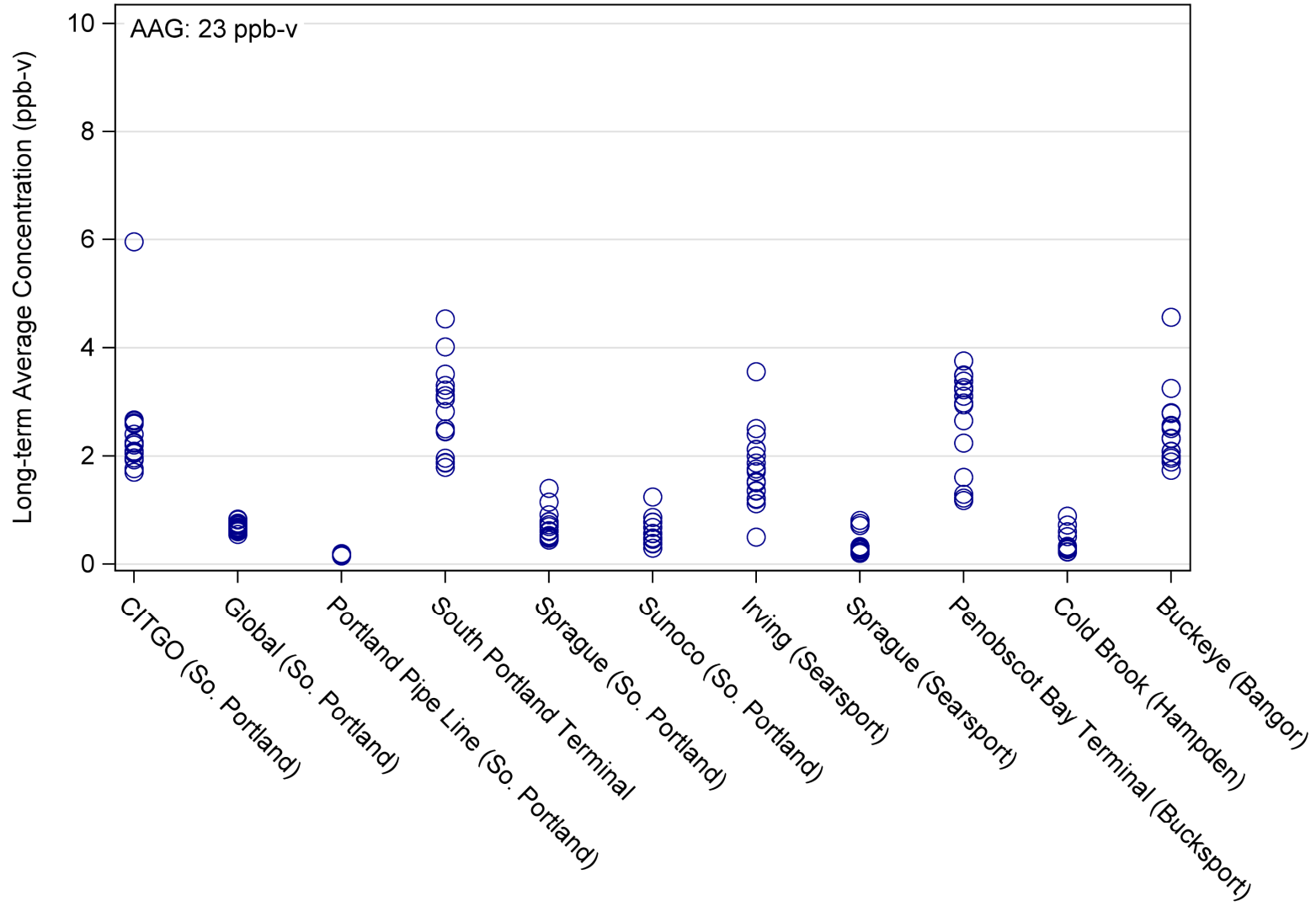
Ethylbenzene

Long-term average concentrations (1.5-year avg.)



Xylenes

Long-term average concentrations (1.5-year avg.)



Long-term average benzene concentrations at CITGO



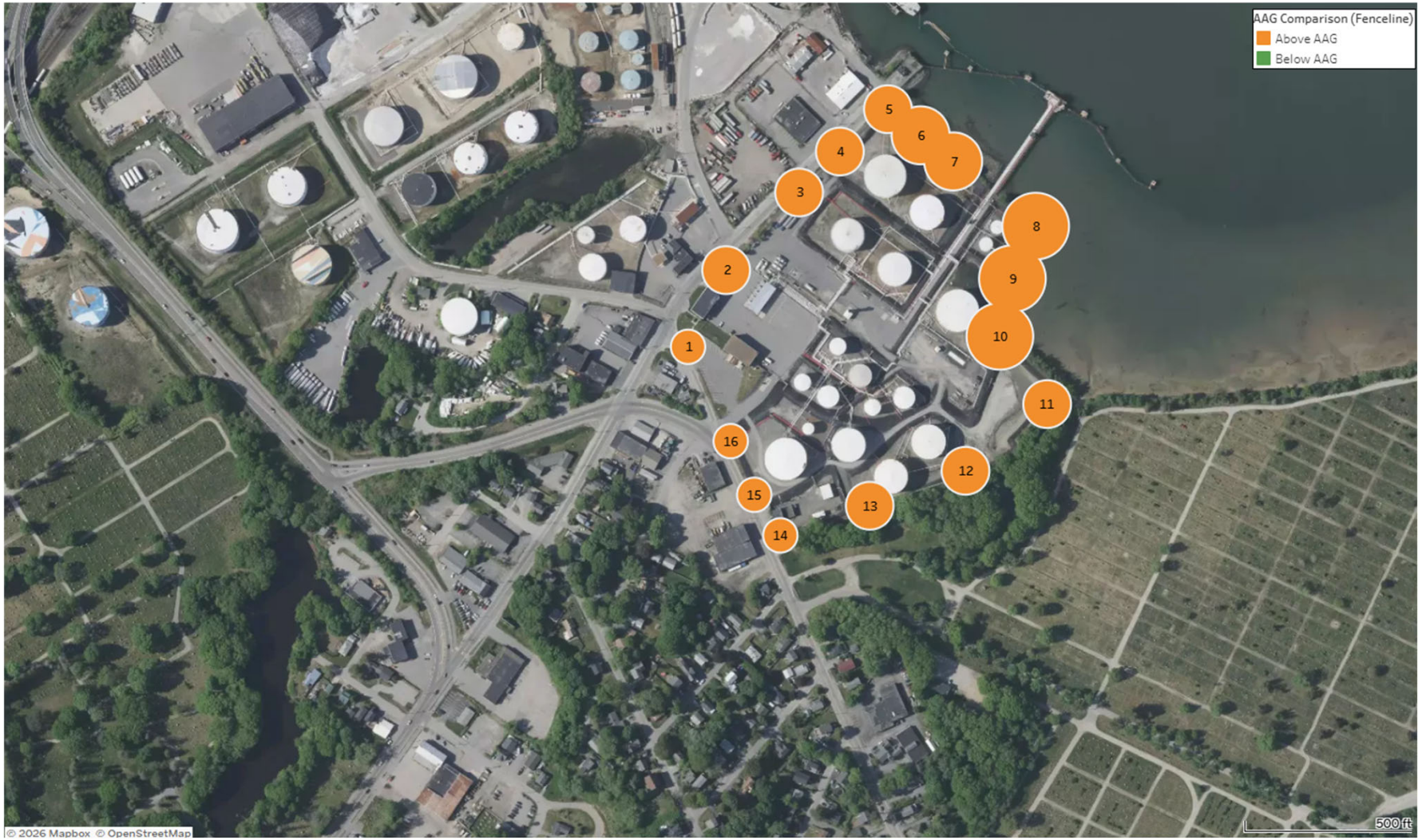
Long-term average benzene concentrations at Global



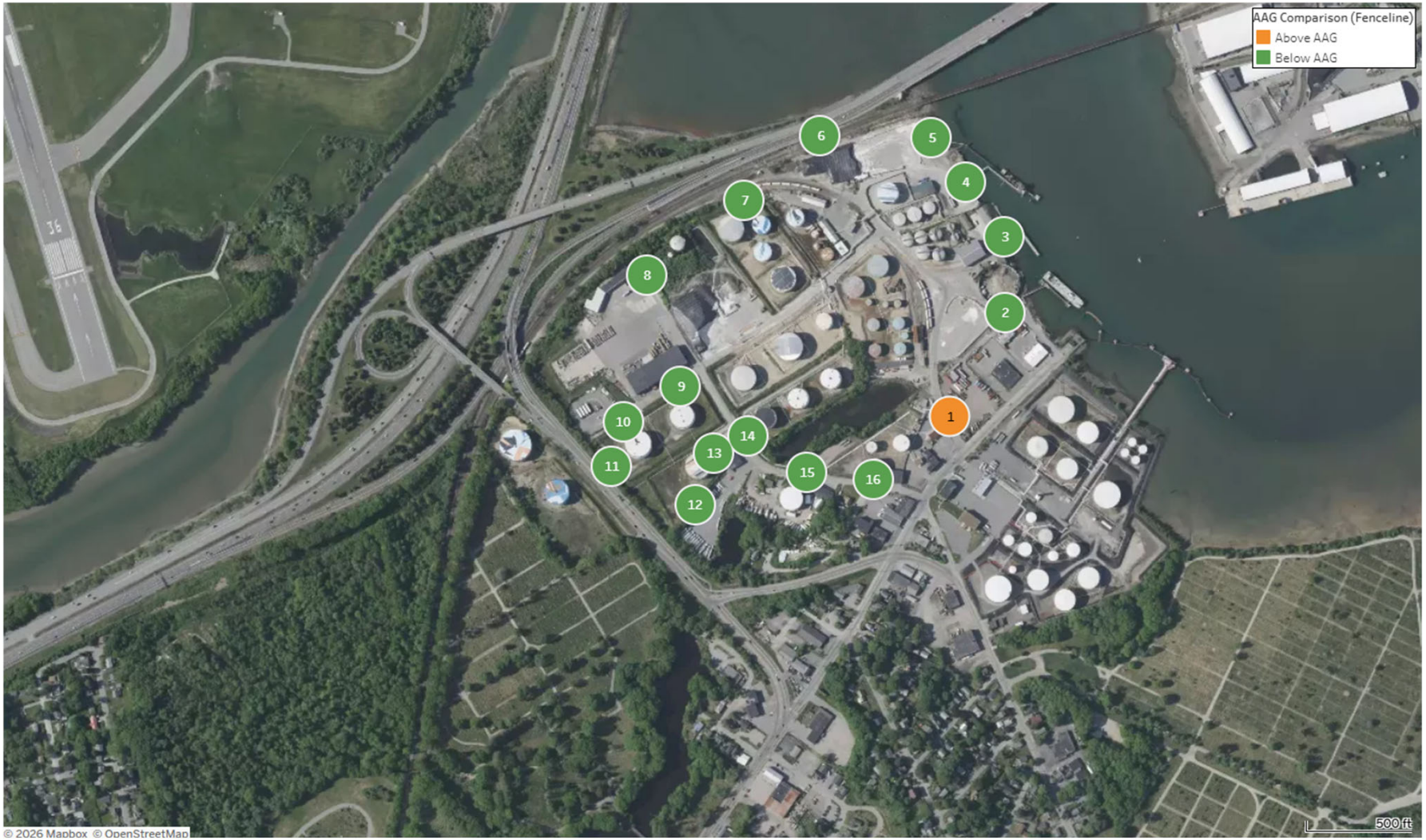
Long-term average benzene concentrations at Portland Pipe Line



Long-term average benzene concentrations at South Portland Terminal



Long-term average benzene concentrations at Sprague South Portland



Long-term average benzene concentrations at Sunoco

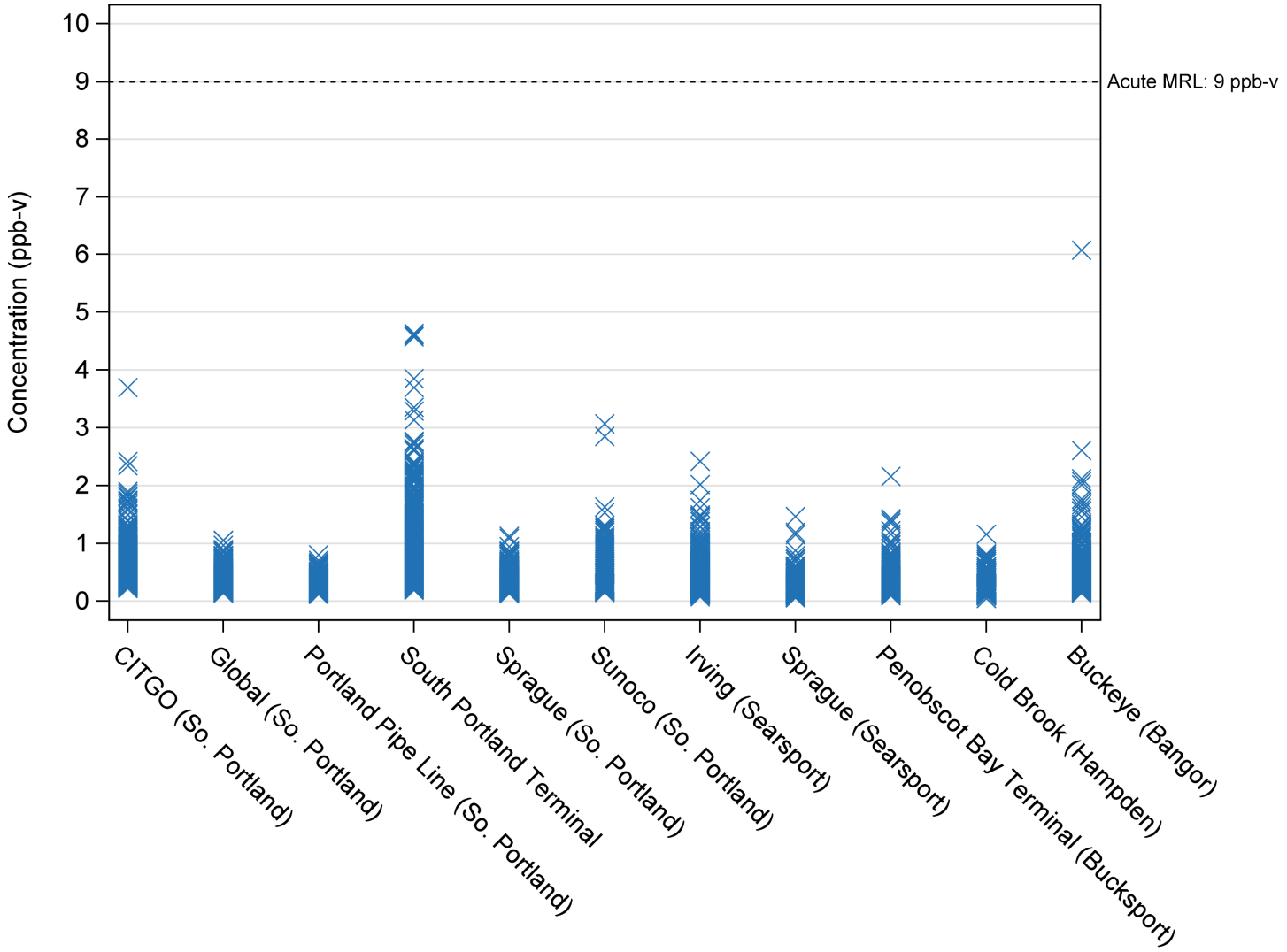


14-day sample results

- Individual results for each monitoring location around each facility
- MRLs used as reference for comparison
  - These comparisons are intended to provide context for the monitoring results and do not, by themselves, constitute a health risk assessment or indicate the level of exposure experienced by individuals living or working near a facility.

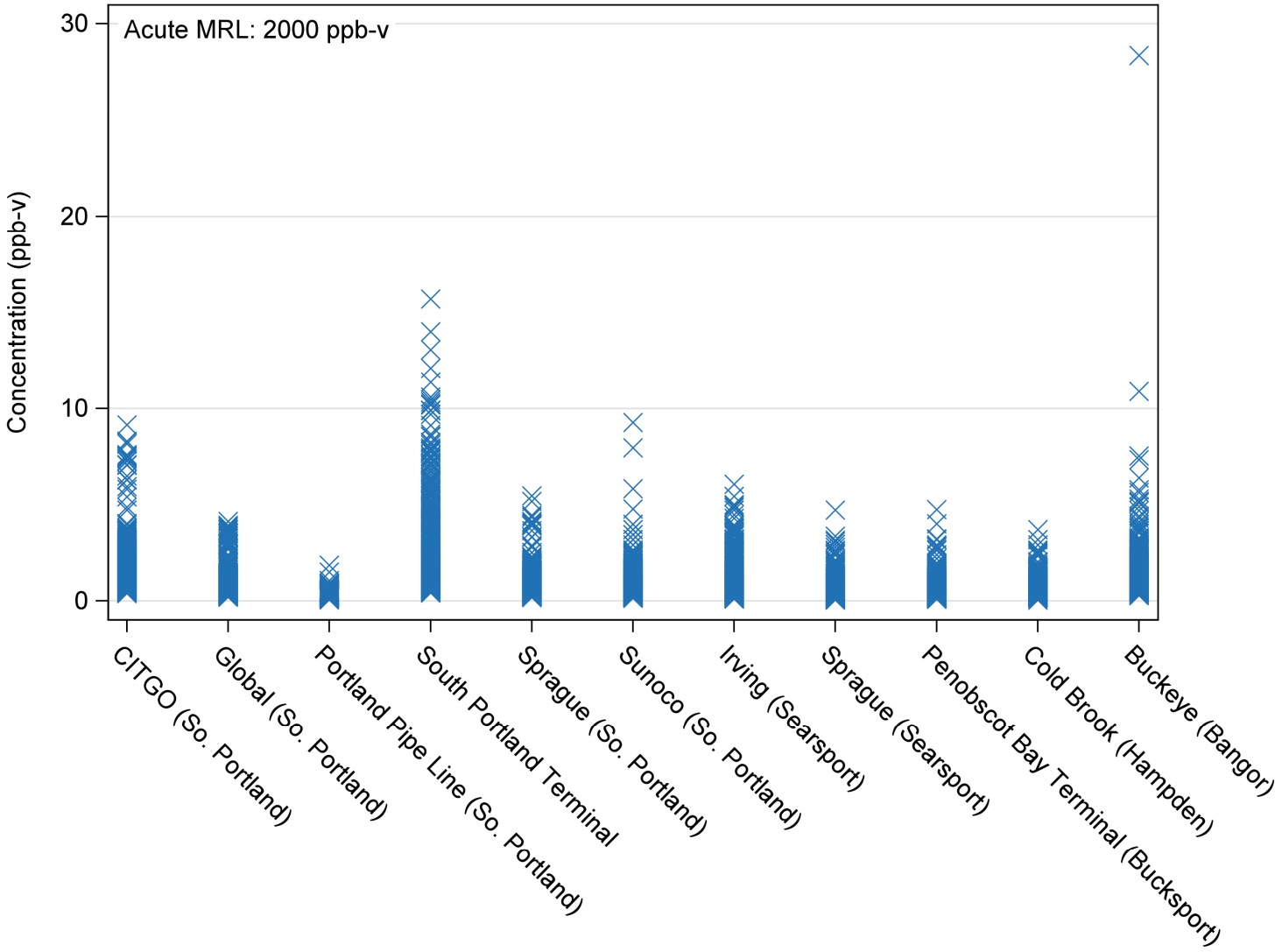
Benzene

Individual 14-day sample results



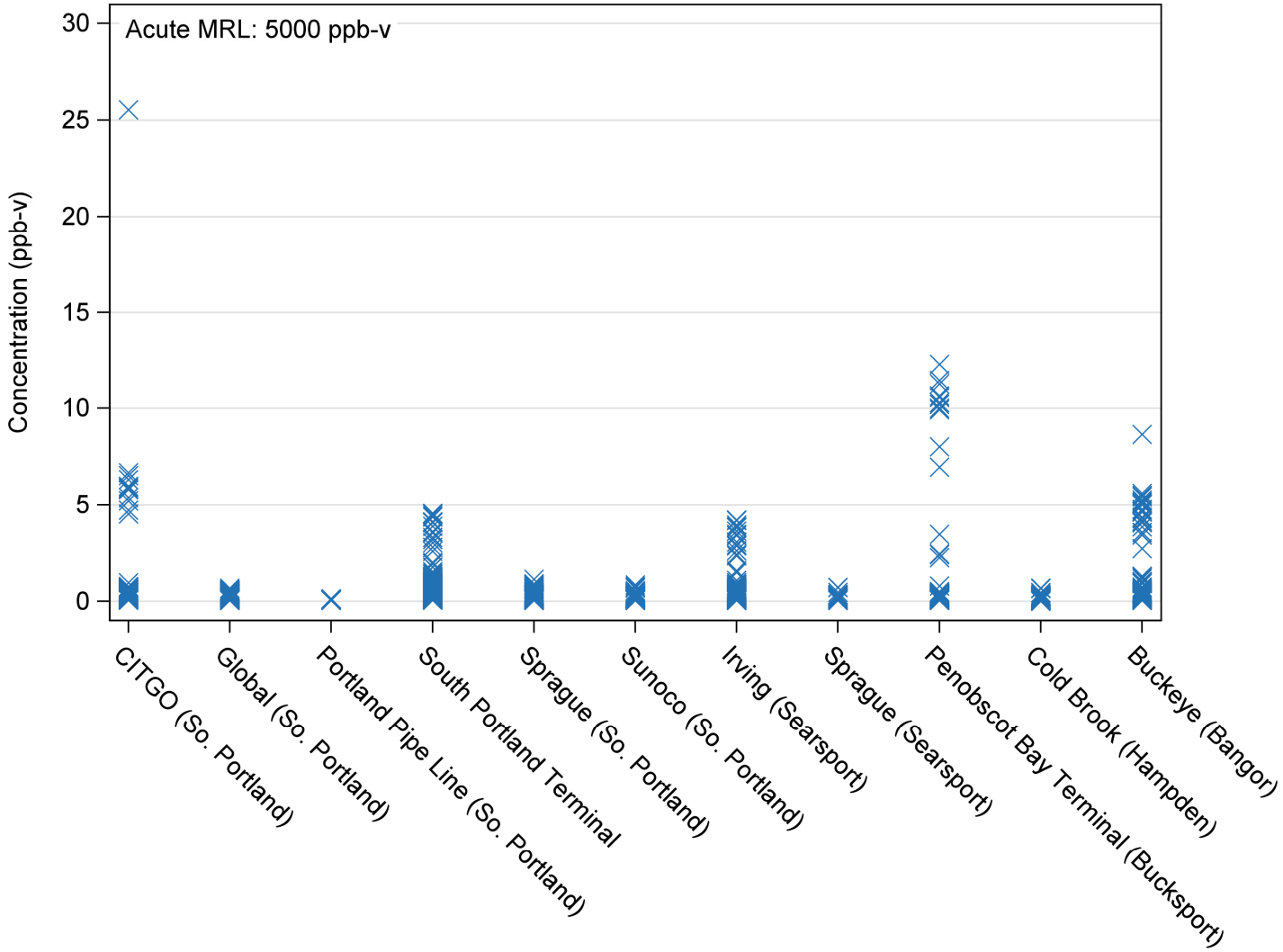
Toluene

Individual 14-day sample results



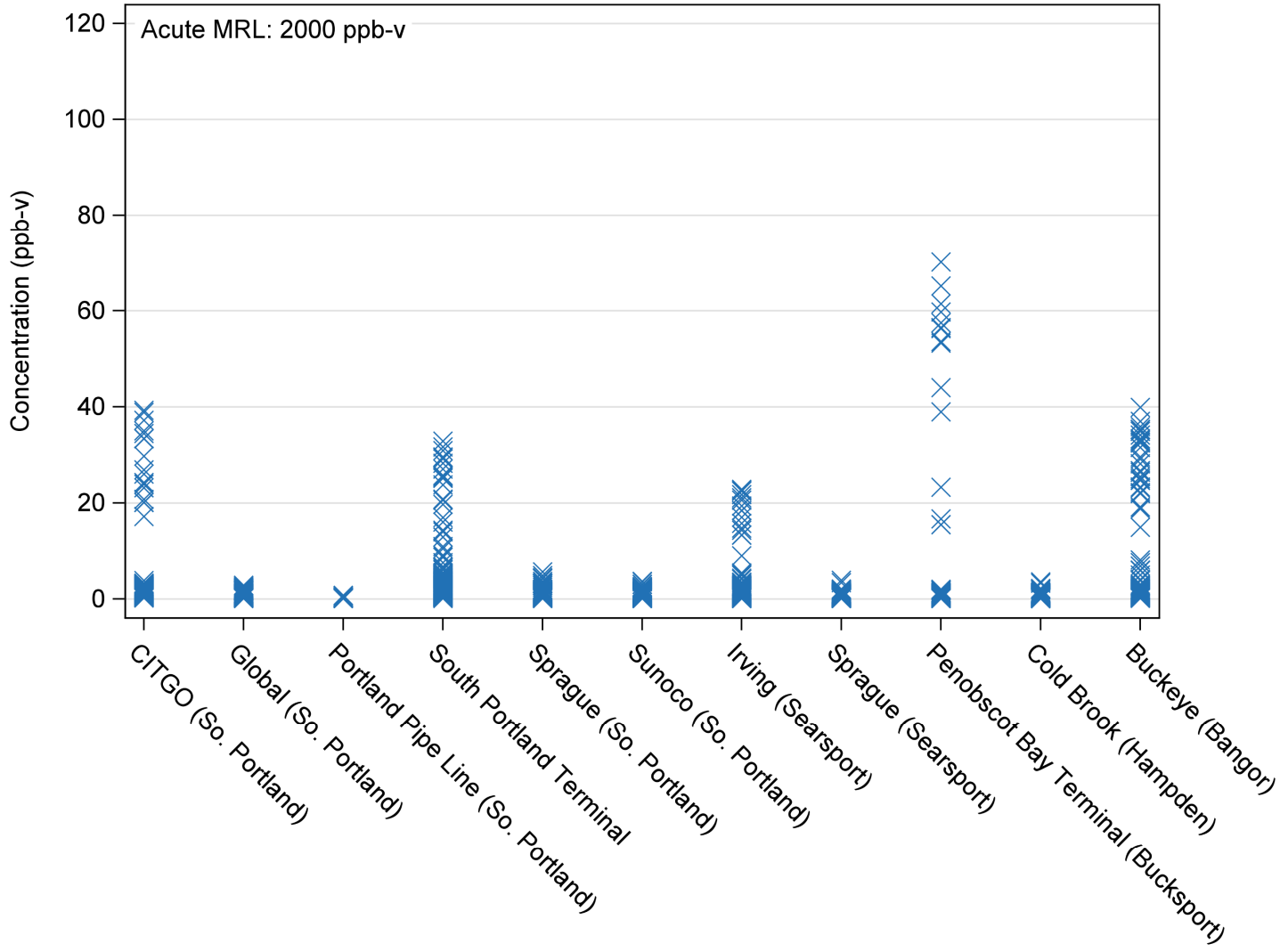
Ethylbenzene

Individual 14-day sample results



Xylenes

Individual 14-day sample results



Summary of results

- All individual **14-day sample** results at all sampling locations for each of the 11 facilities were well below the short-term health guidelines for all compounds.

- Long-term average concentrations
  - **Toluene** and **xylenes** long-term concentrations were below the AAGs at all facilities.
  - **Ethylbenzene** concentrations were below the AAG at most facilities. Three facilities had one monitoring location each with ethylbenzene concentrations slightly above or near the AAG.
  - **Benzene** had the most monitoring locations with long-term average concentrations above the AAG. Portland Pipe Line was the only facility where concentrations were below the AAG at all locations. At other facilities, at least one location was above the AAG. Where the AAG was exceeded, the benzene concentration at most locations was no more than 2.5 times the AAG. The exception was South Portland Terminal, where the benzene concentration was as high as 4.5 times the AAG.

Next steps

- Recommendation to the city: fenceline step-out study
- SENSIT SPODs (total VOC sensors)
- Tank headspace monitoring
- Optical gas imaging (OGI) camera surveys



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