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Climate



Benzene emissions at shuttered South Philly refinery exceeded federal limits last year, report finds

The PES refinery in South Philadelphia kept emitting benzene into the air at more than three times the EPA's action level even after it was long closed from a 2019 explosion, says a watchdog group.



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Workers disassemble butane tanks in the north yard of the former Philadelphia Energy Solutions refinery in South Philadelphia in fall 2020. The PI ... [Read more](#)
TIM TAI / Staff Photographer



by Frank Kummer

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The Philadelphia Energy Solutions refinery in South Philadelphia last year emitted average airborne benzene levels at triple a federal threshold, even though the site had been closed since 2019 due to an explosion and fire.

been closed since 2019 due to an explosion and fire, [according to a report](#) by a nonprofit advocacy group.

The report by the Texas-based Environmental Integrity Project says that the levels of benzene recorded at the site's fence line air monitors had dropped after the explosion, but that as of the end of 2020, the chemical was still being emitted because of cleanup operations.

However, those involved in the site's cleanup dispute the report's findings that remediation caused benzene emissions. Philadelphia officials say their own nearby air monitor, one of many throughout the city, has continually detected only very low levels of benzene, none of which it says rise to a human health threat. The department also noted that the emissions recorded could be coming from anywhere in the heavily industrialized area rimmed by major highways.

Benzene is linked to human health problems such as drowsiness, dizziness, and headaches with short-term exposure. With long-term exposure, it is linked to blood disorders and reproductive problems. It is classified by the U.S. Environmental Protection Agency as a carcinogen.

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The Environmental Integrity Project report said 13 refineries across the U.S. had benzene monitoring readings at their fence lines in 2020 that averaged above the EPA's level requiring action be taken. The authors said they filtered out low levels of "background" benzene that could be coming

from sources other than the refineries. The report cited environmental justice as a big issue, as about 60% of those living in communities near the refineries were people of color.

In Philly, it noted the neighborhoods within a three-mile radius of the PES site are composed of 61% of people of color with 43% living below poverty level.

“We have President Biden saying that environmental justice will be at the center of everything we do,” said Eric Schaeffer, executive director of the Environmental Integrity Project. “And we are suggesting today the administration start here.”

Schaeffer, a former EPA official, said he believes the levels of benzene pose a health threat.

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Alexa Ross, an organizer with Philly Thrive, an environmental justice advocacy group for neighborhoods in Southwest and South Philly, called the benzene levels “disturbing” and said “we need every single entity that deals with that site to step up and conduct a thorough investigation into all possible sources of benzene.”

The 1,300-acre Philadelphia refinery property [was sold last year](#) in bankruptcy court for \$225.5 million to [Hilco Redevelopment Partners](#), which promised to transform it into a mixed-use industrial park. PES was the East Coast’s largest refinery until the June 2019 accident damaged the plant.

The Inquirer has chronicled the depth of the pollution at the site and found that many compounds, especially benzene, a

natural component of crude oil and other petroleum

products, are found in soil and throughout the sprawling area on the banks of the Schuylkill, as well as in groundwater.

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Hilco did not cause the pollution, and the cleanup is complex, involving the EPA, Pennsylvania Department of Environmental Protection, and Evergreen Resources Group, which is handling a cleanup plan for Sunoco, which owned the refinery for decades until 2012, when it was sold to PES. However, contamination began more than 100 years ago.

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“High benzene concentrations have persisted at the former Philadelphia Energy Solutions (PES) refinery in Pennsylvania where annual benzene levels were more than three times higher than the action level more than a year after the plant closed,” the EIP report states, “ ... These high concentrations are partly the result of emissions released as tanks are drained and gasoline and other petrochemical products are removed from the site.”

The EPA action level is nine micrograms per cubic meter of air. Anything that reaches an action level triggers an investigation into the source and corrective action.

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In 2019 annual average concentrations of benzene reached 49.1 micrograms per cubic meter of air. In 2020, they reached 28.1, according to the report, which used publicly available data reported to the EPA.

“Short-term emissions in 2020 peaked in the first quarter with concentrations that averaged 128 and 189 micrograms over the two-week periods ending on Jan. 15 and Feb. 12, respectively,” the report states. “Even after the site was sold to developers last June, one of the monitors recorded a 14-day average of 80 micrograms in late July.”

James Garrow, a spokesperson for the city’s Department of Public Health, however, cautioned that “action levels” are just benchmarks of an issue that needs to be addressed.

“This is not the point where this becomes a threat to human health,” Garrow said. “That’s dozens and dozens of times higher when it starts to affect public health. We feel that there’s just no threat to public health from benzene coming from PES.”

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The city has a monitor at 24th and Ritner Streets that was installed to help assess the impact of the petroleum refinery on the local community. Garrow said the 2020 average for the monitor was 1.73.

“I would hesitate to say those numbers are even from PES,” Garrow said, noting other industry nearby.

Terri White, an EPA spokesperson, cautioned that benzene levels at the perimeter of refineries do not reflect benzene levels in the community, and that the nine micrograms per cubic meter level is not correlated to health risk.

He said the refinery did submit an analysis in 2019 of the problem with a plan to correct it, and identified measures to reduce emissions. In October, the EPA conducted on-site monitoring an identified Volatile Organic Compounds (VOC) and benzene as pollutants of concern, but they did not rise above a threshold.

“We can’t speak to the report findings or the validity of the report since we haven’t seen it and don’t know how it was conducted, but I can tell you that their claim is false,” said Lisa Coleman, a spokesperson with Energy Transfer, which owns Sunoco, said of the Environmental Integrity Project. “Our site cleanup work would have no impact on the ambient air readings you are referring to.”

Virginia Nurk, a spokesperson for the state DEP, said “it would be difficult to determine the exact source of the benzene emissions.”

She said the DEP is aware that PES was actively working in 2020 to decommission storage tanks but was not “under the impression” that the ground had been disturbed and therefore would not be “kicking contaminated soil into the air.”

Ross, the Philly Thrive official, called the city’s monitor flawed and insufficient, responsible for covering a “humongous” area.

She said there’s been a dearth of public information

regarding the cleanup.

“We know there is major work around asbestos on site right now, and the public really doesn’t know how that is being handled and how it is going,” Ross said. “This report points to and underscores the desperate need for more public information on the contaminants and toxins most residents are still being exposed to even with the refinery shut down.”

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I cover local environmental issues, from the Poconos to the New Jersey Shore.

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Frank Kummer 3 hours ago

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