

FEATURE

# Pollution Is Killing Black Americans. This Community Fought Back.

African-Americans are 75 percent more likely than others to live near facilities that produce hazardous waste. Can a grass-roots environmental-justice movement make a difference?

The Philadelphia Energy Solutions refinery. Hannah Price for The New York Times

By Linda Villarosa

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**W**hen Kilynn Johnson walks out the door of the house her parents bought in 1972, where she grew up and lives to this day, she steps into the warm embrace of a community where neighbors feel more like kin. Her home sits across the street from Stinger Square Park, where Johnson passed long days of her childhood playing alongside her siblings and cousins and friends. But by age 8, diagnosed with asthma, she spent more time sitting on the sidelines, watching the other children tumble on playground equipment or rip

and run through the park. Once in a while a neighbor, Ms. Sylvia or any number of Black mother figures whom Johnson and everyone knew never to call by just their first names, might come by and check on her. “You doing all right, Kilynn?” they would ask the quiet little girl.

Near the end of 2015, Johnson felt short of breath and wondered whether the asthma that plagued her when she was a child had flared up once again. By the last week of December, she was able to leave her house on the corner of Dickinson Street and South 32nd Street, in the Grays Ferry neighborhood of South Philadelphia, only once, to drag herself to church on New Year’s Eve. Three nights later, she began vomiting uncontrollably. At sunrise, she managed to call her former partner, Tony, and could get out only one word: “Hospital.”

Several hours and a battery of tests later, doctors at the Hospital of the University of Pennsylvania in West Philadelphia, across the Schuylkill from Grays Ferry, told Johnson that she needed surgery to remove a tumor from her gallbladder — but that she was also suffering from such a severe infection that she would require IV antibiotics and a week in intensive care before doctors could operate. The surgery revealed gallbladder cancer that had spread; the doctors removed her gallbladder, seven lymph nodes and part of her liver. She needed six weeks of both radiation and chemotherapy. “They didn’t know if I was going to make it,” Johnson said.

Shy and reserved by nature, Johnson was slow to tell anyone about the cancer. “I held it to myself,” Johnson recalls. “In the beginning it was private, so I preferred to open up a little at a time.” One day in the spring of 2016, Johnson went out for some fresh air. Leaning heavily on a walker, she passed the familiar rowhouses on Dickinson Street. As she made her way with the walker, she met Sylvia Bennett, whom Johnson still called Ms. Sylvia, and who lived three doors down on the same block.

Bennett, 76, a retired behavioral-health specialist, had raised five children in the tight-knit community of Grays Ferry. Bennett’s youngest daughter was just a little older than Kilynn Johnson; Ms. Sylvia had watched Johnson grow up and raise a family of her own. Now, observing her frail neighbor and the walker, she asked Johnson in her most gentle voice: “Where you been? Haven’t seen you for a while.” “I think I told her, ‘I been sick,’” Johnson says, recalling her reticence. Bennett knew not to pry. This went on for months, until the summer day when Bennett asked, “How you doing?” and Johnson told her, “Ms. Sylvia, I have cancer.”

After she recovered from the initial shock of her diagnosis, Johnson began to wonder why she had such an unusual cancer. The Centers for Disease Control and Prevention estimates that only about 3,700 Americans find out they have gallbladder cancer each year; breast cancer is the most frequently diagnosed cancer in the country, with more than 276,000 new cases annually. Because Johnson’s disease was so uncommon, doctors at University Hospital had to formulate a special treatment plan. Gallbladder cancer occurs mainly in older people, and 72 is the average age at diagnosis. Johnson was 46. “I started thinking, What was I doing with this?”

Bennett had an answer for her. “Look across the highway,” she said, pointing toward the massive 150-year-old refinery, owned by Philadelphia Energy Solutions since 2012, that was so familiar to Grays Ferry residents that it seemed like part of the landscape.



Kilynn Johnson outside her home. She and several members of her family have suffered from various forms of cancer. Hannah Price for The New York Times

Over the next year, Bennett and Johnson began to tally the diseases all around them suffered by the people they loved. Johnson's father's brother, her uncle Robert, who also lived in the neighborhood, died of prostate cancer in 2010, and three of his children, Kilynn's first cousins, had also had different forms of cancer — four out of six people in one household. Those three cousins learned they had cancer earlier than age 66, the average age of a diagnosis. Bennett's daughters Ladeania and Wanda, found out they had breast cancer several months apart and when they were both in their 50s; Wanda then came down with multiple myeloma, a cancer of the blood. "And now me," Johnson said.

Between the two of them, Johnson and Bennett knew two dozen family members, friends and neighbors, a number of them under 50, who'd had cancer. As they tallied their sick and their dead, the two women wondered, "What we gonna do?"

**Black communities like** Grays Ferry shoulder a disproportionate burden of the nation's pollution — from foul water in Flint, Mich., to dangerous chemicals that have poisoned a corridor of Louisiana known as Cancer Alley — which scientists and policymakers have known for decades. A 2017 report from the N.A.A.C.P. and the Clean Air Task Force provided more evidence. It showed that African-Americans are 75 percent more likely than other Americans to live in so-called fence-line communities, defined as areas situated near facilities that produce hazardous waste.

A study conducted by the Environmental Protection Agency's National Center for Environmental Assessment and published in 2018 in the American Journal of Public Health examined facilities emitting air pollution along with the racial and economic profiles of surrounding communities. It found that Black Americans are subjected to higher levels of air pollution than white Americans — regardless of their income level. Black Americans are exposed to 1.5 times as much of the sooty pollution that comes from burning fossil fuels as the population at large. This dirty air is associated with lung disease, including asthma, as well as heart disease, premature death and now Covid-19.

Philadelphia, which is 44 percent Black, received a warning from the American Lung Association in 2019: “If you live in Philadelphia County, the air you breathe may put your health at risk.” According to 2016 E.P.A. data, the refinery that looms over Grays Ferry was responsible for the bulk of toxic air emissions in the city. The E.P.A. found that the refinery had been out of compliance with the Clean Air Act nine of the past 12 quarters through 2019 with little recourse. From 2014 to 2019, P.E.S. was fined almost \$650,000 for violating air, water and waste-disposal rules.

Though Black communities bear disproportionate hardships of the environmental crisis, they historically have been left out of the environmental movement. A 2018 survey conducted by Dorceta Taylor, a professor at the University of Michigan School for Environment and Sustainability, found that white people made up 85 percent of the staffs and 80 percent of the boards of 2,057 environmental nonprofits. Last year, a report released by Green 2.0, an independent advocacy campaign that examines the intersection of environmental issues and race, showed that people of color made up only 20 percent of the staffs of 40 environmental nongovernmental organizations. The face of the environmental movement is more likely to be someone like Greta Thunberg, the Swedish teenager who was Time magazine's 2019 person of the year, than someone like Kilynn Johnson living environmental injustice on the ground. Protests and movement conferences are filled with a sea of mostly young white people and generally not Black people whose families have lived near polluting facilities for generations, their bodies ravaged by the effects of toxic emissions.

The urgency of this environmental crisis has been hastened by climate change and has now gathered speed and attention as a result of the coronavirus pandemic and the current racial-justice movement. The racial disparities that have exposed Black Americans to a disproportionate share of air pollution have risen to the surface to lethal effect during the current pandemic. A study of more than 3,000 U.S. counties released in April but not yet published shows a statistical connection between death rates from Covid-19 and long-term exposure to air pollution. The researchers, from the Harvard T.H. Chan School of Public Health, noted that even a small increase in particulate matter — tiny airborne particles emitted from power plants, industrial facilities and vehicles — corresponded to a significant increase in Covid-19 mortality. Each increased microgram of this kind of pollution per cubic meter of air is associated with an 8 percent increase in death from Covid-19.

The death rate for the city's Black patients is 50 percent higher than for white patients. “You can't understand environmental racism without understanding the legacy and the history of residential segregation, which created the disinvestment that has happened in communities in Philadelphia like Grays Ferry for decades,” says

Sharrelle Barber, an assistant research professor of epidemiology and biostatistics at Drexel University's Dornsife School of Public Health in Philadelphia.



The Grays Ferry neighborhood in Philadelphia, where residents say a nearby oil refinery had catastrophic effects on their health, even before a fire there in 2019. Hannah Price for The New York Times

“The compounded effect of racism is really showing up in the interlocking systems of structural inequality operating in this moment to increase exposure, transmission, severity and the likelihood of death from Covid-19 in communities like Grays Ferry, which have already experienced such devastating environmental racism for so many years,” says Barber, who is the daughter of the Rev. Dr. William Barber, the civil rights activist, and a national adviser for the Covid-19 health-justice advisory committee of his Poor People’s Campaign. “This has all been brought to the surface at this moment.”

**Across the highway** from Grays Ferry, the immense P.E.S. refinery, with its lattice of rusting pipes, smokestacks streaked with soot and mammoth holding tanks, swallows up 1,300 acres of land on the banks of the Schuylkill. It is a city in itself, encircled by a chain-link fence topped with barbed wire — nearly the size of Central Park and Arlington National Cemetery combined. For decades, when the sun set, the facility looked like its own vast metropolis, lights flickering throughout the night. The site was first used as a storage facility in Philadelphia a year after the Civil War ended and began refining oil shortly after that. By 1891, half the world's lighting fuel and more than a third of U.S. petroleum exports came from the refinery.

The Industrial Revolution and the invention of cars drove an insatiable hunger for oil, which became the dominant fuel of the 20th century. As the refinery continued to be a powerhouse in oil production on the East Coast and expanded operations, Philadelphia experienced a significant demographic shift. During the Great Migration, the Black population exploded with waves of new arrivals from the South, and white people moved out of the city. The city's African-American community went from 251,000 in 1940 to 376,000 in 1950, and peaked at 654,000 residents in 1970.

In 1934 South Philadelphia was redlined: given a D rating — the lowest — by the Home Owners' Loan Corporation, which outlined the community in red on maps used to determine loan eligibility. Agents of the loan group noted "Negro encroachment in certain neighborhoods." The Federal Housing Administration later relied on these maps, and its own underwriting manuals pointed to the condition of housing and the race or ethnicity of residents as characteristics that increased the risk of a community receiving a low rating from the agency. As a result, lending institutions issued fewer mortgages in these areas than in other parts of the city, creating entrenched segregation, disinvestment and decay. In South Philly, the proximity of residential areas to factories, including the refinery, most likely contributed to the neighborhood receiving the lowest grade and a label as "hazardous," making it difficult for residents to get approved for loans to buy homes.

Public housing filled the void. In 1940 the city completed the Tasker Street Homes Project, 125 barracks-like buildings with 1,000 units, taking up 40 acres to the southwest of 30th and Tasker Streets. More followed: Philadelphia received federal funding in 1949 for more than 20,000 low-income public-housing units. The city built Wilson Park, a 650-unit complex across the highway from P.E.S. in 1953, and continued to expand. According to the book "Public Housing, Race and Renewal: Urban Planning in Philadelphia, 1920-1974," by John F. Bauman, from 1956 to 1967 all of this public housing landed in poor or transitional communities. This included more than a thousand additional units in South Philadelphia. "Black leaders accused the [housing] authority of warehousing as well as ghettoizing the Black poor," Bauman, the author of several books about urban planning, wrote.

In 1969, when Johnson, the last of nine children, was born, her family lived in the Tasker Street Homes housing project. Her parents had good, stable jobs: Troy as a mechanic for SEPTA, the city's public-transportation system, Elizabeth as a custodian for the school district. When the couple heard about a good deal on a four-bedroom rowhouse not far away on Dickinson Street with a basement and a yard, they decided to make a move.

Troy Johnson's brother Robert and his wife also bought a home nearby. Sylvia Bennett and her husband, who also lived in the Tasker Street Homes, landed on Dickinson Street as well. At that time, the neighborhood was less than one-third Black; it is now majority Black.

The "hazardous" label the government stamped onto the Johnsons' and Bennetts' community 86 years ago now has a different meaning. The legacy of 150 years of pollution from heavy industry has mounted. Local people have grown used to the poor air quality. Gloria C. Endres, a lifelong resident, described the constant cough and runny nose as the "South Philly postnasal drip" in a letter to *The South Philly Review*, a local publication. Derek Hixon joked that the South Philadelphia High basketball team "always has home-court advantage because opposing players find it hard to breathe." More ominous are the disturbingly frequent accounts of cancer.

According to data collected by the National Cancer Institute, each year 501 people in every 100,000 in Philadelphia will get cancer, compared with 449 in the United States and 485 in Pennsylvania. Data from the E.P.A.'s Toxics Release Inventory shows that contaminants released from the P.E.S. refinery include benzene, hydrogen cyanide, toluene and other hazardous chemicals. An analysis by the University of Pennsylvania's Kleinman Center for Energy Policy notes that the soil and groundwater at the site of P.E.S. have been contaminated with a number of toxic substances, including benzene, a known carcinogen.



Sylvia Bennett in Stinger Square Park. She and Kilynn Johnson tracked the illnesses suffered by their families and neighbors and became active in a local environmental-justice organization. Hannah Price for The New York Times

Despite the data, it's difficult to link individual cases of cancer to the documented dumping of carcinogenic substances into the air and soil in the community adjacent to the refinery. But the danger has long been apparent. "The refinery has a very long history of environmental regulation problems and really old technology," says Peter DeCarlo, a former professor at Drexel University who lived less than two miles from the refinery for eight years and is now an associate professor of environmental health and engineering at Johns Hopkins University. "It sits very close to a densely populated area. If a refinery were trying to get a permit to operate where it is currently, today, right now, it would never be given."

**Three years after** Kilynn Johnson's diagnosis, she had battled back from the aftereffects of the cancer and its harsh treatments — including the loss of her hair, energy, mobility and fragments of her memory — and was in remission. Now she was determined to understand how the refinery across the highway might have contributed to what happened to her. In January 2019, Sylvia Bennett persuaded Johnson to overcome her shyness and attend a meeting of Philly Thrive, a small but energetic local environmental-justice organization. Co-founded by Alexa Ross, a young organizer who moved to Philadelphia in 2013 after graduating from Swarthmore College, the group was determined to rally residents and make a more explicit connection between P.E.S. and the negative health impacts in the surrounding community.

Johnson stayed close to Bennett as they walked into a brightly lit room in a co-working space near the University of Pennsylvania for Philly Thrive's first monthly gathering of the year. She looked around at the swell of people of all ages, most of them Black and some of whom she knew from the neighborhood. Carol White, a retired mental-health worker who lives in Wilson Park, the South Philadelphia public-housing complex adjacent to I-76 and P.E.S., was the first to share. "I got 13 grandchildren, and most of them have asthma; I have inhalers all over the house for when they come to visit," she said. "Then I started thinking about my mother, who had cancer. I looked over at the refinery across the road from my house, and I started thinking, How long do I have to live?"

Bennett stood up. "Both my daughters got breast cancer," she said. "They are in remission from the breast cancer, but now one of them has been diagnosed with blood cancer." Tears pooled in her eyes. "This refinery, I call it a silent killer." She looked down at Johnson. "You want to speak?" Johnson shook her head.

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"My eyes were opening," Johnson recalled later, "but I wasn't ready to speak." By the end of the meeting, the Thrivers had decided to focus on blocking the construction of a new \$60 million plant in southwest Philly capable of producing 120,000 gallons of liquefied natural gas a day on city-owned land close to P.E.S. Though accidents at liquefied-natural-gas plants are infrequent, a 2009 report by the U.S. Congressional Research Service warned that spills can release combustible vapor clouds and trigger fires or explosions.



Many of those who attended that January meeting may not have realized that they were joining a long tradition of on-the-ground environmental activism. The first stirrings of the Black-led environmental-justice movement began in the late 1970s as a convergence of a growing interest in environmental issues and the civil rights and Black-power movements. Alarmed and angry community members began raising concerns about the placement of facilities that contaminate the air, water and soil — including incinerators, oil refineries, smelters, sewage-treatment plants, landfills and chemical plants — near communities of color and, as in the case of Grays Ferry, placing housing that would be mainly occupied by Black citizens close to such facilities.

In 1978, a lawyer named Linda McKeever Bullard brought a lawsuit against the health departments of Houston, Harris County and Texas in federal court, charging these government agencies, as well as a now-defunct private waste-management company, with racial discrimination in the siting of the Whispering Pines municipal landfill in the predominantly middle-class Black neighborhood of Northwood Manor in suburban Houston. Her husband, Robert Bullard, was then a young professor of sociology at Texas Southern University. “My wife said, ‘For this lawsuit, I need somebody who can find out and put on a map where all the landfills, solid-waste facilities and incinerators are in the city,’” recalls Bullard, 73, a distinguished professor of urban planning and environmental policy at T.S.U., who is now regarded as the father of the environmental-justice movement.

Bullard and his students combed state and city records on paper and microfiche and walked through neighborhoods using census-tract maps to locate the waste facilities in the city. They discovered that all five municipal dumps, six of eight city-operated garbage incinerators and three of four private landfills were located in Black communities — though African-Americans made up only 25 percent of the population at the time. “What the data showed was a pattern of racist decisions over years and years by city officials,” Bullard says. “In the case of Whispering Pines, it was the height of disrespect compounded by the fact that the landfill was 1,300 feet from a high school in a Black school district and with at least a half-dozen elementary schools in a two-mile radius. It gets hot in Houston. How can kids learn if they’re smelling garbage? That’s the kind of racism that permeated that particular case.”

**In 1978, North Carolina** residents noticed dark streaks along the shoulders of more than 200 miles of roadway. Over that summer, the Ward Transformer Company dumped more than 30,000 gallons of oil thick with polychlorinated biphenyl (PCBs) — which can cause birth defects, liver and skin disorders and cancer — in the middle of the night, in order to avoid the cost of proper disposal. One of the so-called midnight dumpers went to prison, along with the head of the company, leaving state officials and the E.P.A. to decide where to place 60,000 tons of contaminated soil. They chose Warren County, a predominantly African-American part of the state. The community began to mobilize.

Four years later, hundreds of Warren County residents and environmental and civil rights activists were arrested as they rallied to stop construction of the landfill. A line of protesters lay in the street, blocking dump trucks full of the toxic soil. A group of mostly women and children clung to each other while being wrenched apart and dragged into buses by state troopers who had been summoned to break up the rallies. The evening news featured video of Black leaders, flanked by highway-patrol officers, marching arm and arm with the local organizers and singing “Ain’t No Stoppin’ Us Now” to the tune of the old protest song “Which Side Are You On?”

The rallies, marches, arrests and media attention weren't enough to stop the landfill, but they did galvanize a growing movement against environmental racism, a term coined by the Rev. Dr. Benjamin Chavis, a leader of the protest in North Carolina. The following year, the U.S. General Accounting Office examined hazardous-waste-landfill placement and found that Black residents made up a majority in three of the four communities with hazardous-waste landfills in the eight Southern states that make up E.P.A. Region IV.

In 1987, the United Church of Christ Commission for Racial Justice, then headed by Chavis, issued a report, "Toxic Wastes and Race in the United States," that was the first to examine race, class and the environment on a national level. The study revealed that three out of five Black and Hispanic-Americans, or more than 23 million people, resided in communities blighted by toxic-waste sites and found that while socioeconomic status was an important correlation, race was the most significant factor.

Bullard continued his research after the Whispering Pines lawsuit in Houston, finding the same correlation. In his 1990 book, "Dumping in Dixie: Race, Class and Environmental Quality," using case studies including Sumter County, Ala., the site of the nation's largest hazardous-waste landfill, Bullard argued that pollution from solid-waste facilities, hazardous-waste landfills, toxic-waste dumps and chemical emissions from industrial facilities was exacting a heavy toll on Black communities across the country. His book became a bible for the nascent environmental-justice movement.

In 2007, the United Church of Christ updated its research, this time with Bullard as a principal author, in "Toxic Wastes and Race at Twenty: 1987-2007," finding that racial disparities in the location of toxic-waste facilities were "greater than previously reported." People of color made up a majority of the population in communities within 1.8 miles of a polluting facility, and race — not income or property values — was the most significant predictor. The following year, a study by two University of Colorado social scientists published in the journal *Sociological Perspectives* found that African-American families with incomes of \$50,000 to \$60,000 were more likely to live in environmentally polluted neighborhoods than white households with incomes below \$10,000.

As more research established such disparities, frustration grew with the mainstream environmental movement. In March 1990, more than 100 grass-roots activists, almost all of them people of color, signed an accusatory letter to 10 of the most prominent environmental groups. "Racism is a root cause of your inaction around addressing environmental problems in our communities," they wrote, demanding that the organizations increase staffing of people of color to 35 to 40 percent (the demand was not met). The following year, more than 500 people gathered in Washington, D.C., for the First National People of Color Environmental Leadership Summit, dispelling the assumption that Black and brown people are not interested in or involved with environmental issues.

The federal government was shamed into action. Early in 1990, the Congressional Black Caucus met with E.P.A. officials to discuss the polluting of communities of color and why the government agency was not addressing the needs of their constituents. In November 1992, the E.P.A. created the Office of Environmental Equity (later changed to Environmental Justice). In 1994, President Bill Clinton issued an executive order to address adverse health and environmental conditions in minority and low-income populations. The government also established a multimillion-dollar grant program to support grass-roots organizations working on environmental-justice

issues. A local nonprofit in Spartanburg, S.C., leveraged an initial grant of \$20,000 in 1997 into \$270 million to clean up and revitalize three neighborhoods near an operating chemical-fertilizer manufacturing plant, two Superfund sites and six brownfield sites.



Alexa Ross, co-founder of Philly Thrive, a local environmental-justice organization. Hannah Price for The New York Times

The changes at the E.P.A. dovetailed with the growing environmental-justice movement on the ground. Mustafa Ali, then a young Black staff member in the Office of Environmental Justice, had a foot in both worlds. “It was an exciting time, because there was so much energy,” Ali recalls. “It was a paradigm shift, but it was also tough back then. There were still folks in senior positions in the Environmental Protection Agency and other places who believed that the impacts that were happening in these communities weren’t real, that these folks had to be making this stuff up. They were also uncomfortable using the federal space to honor the voices and the innovation coming out of the communities.”

In 2008, Ali was named the associate director of the Office of Environmental Justice and senior adviser to the E.P.A. administrator on environmental-justice issues. The E.P.A. was criticized during this time for not doing enough to combat environmental disparities in communities of color and the Flint water catastrophe unfolded as well, but Ali and his colleagues also assisted 1,500 communities with small grants to address local environmental issues.

When Donald Trump's administration arrived in 2017, his new E.P.A. administrator, Scott Pruitt, was a climate-change denier and an ally of the fossil-fuel industry who, as Oklahoma's attorney general, sued the E.P.A. several times. Pruitt proposed gutting the agency's budget by 25 percent, to just under \$6 billion from \$8 billion. As reported in *The Oregonian* newspaper, an internal memo called for dismantling the Office of Environmental Justice and reducing related funding by 79 percent, to \$1.5 million from \$6.7 million. Most painful for Ali, the proposed budget eliminated the small-grants program. "When I saw them talking about the elimination of certain air and clean-power-plant programs and cutting dollars to deal with lead, I knew how it would play out in our communities," he says. "I knew I couldn't be a part of what was happening."

In March 2017, Ali resigned, just short of 25 years at the agency, forfeiting his full government pension, and now serves as vice president for environmental justice, climate and community revitalization for the National Wildlife Federation. His three-page resignation letter to Pruitt pleaded for the E.P.A. not to turn its back on marginalized communities. "Communities have shared with me over the past two decades how important the enforcement work at the Agency is in protecting their often forgotten and overlooked communities," he wrote. "By ensuring that there is equal protection and enforcement in these communities, E.P.A. plays a significant role in addressing unintended impacts and improving some of the public health disparities that often exist from exposure to pollution."

**On June 1, 2019**, about 60 Philly Thrive members gathered in front of P.E.S. as tanker trucks passed in and out of the facility's gates. For the past four months, the group had attended planning meetings, spoken at City Hall and circulated petitions opposing the proposed South Philadelphia gas plant. Kilynn Johnson joined Alexa Ross, Sylvia Bennett, Carol White and others to distribute hundreds of fliers throughout Grays Ferry for the protest they organized for that day, two weeks before the City Council vote.

Holding a sign with her mother's name on it, Johnson stepped forward to the front of the assembly. Like the others, she wore Philly Thrive's signature T-shirt, bright yellow with two sunflowers bursting with kaleidoscopic colors. Since attending that first Thrive meeting in January, she had gone to more environmental-justice gatherings, participated in a public-speaking workshop and finally got up her nerve to address those assembled at the rally — her first time ever speaking before a crowd. She looked over at Bennett, wearing sunglasses and holding a sign with her daughter Wanda's name on it, who nodded. "Many of you may not know about the dangers of the oil refinery, with so many illnesses caused by air pollution," Johnson began, reading haltingly from a sheath of papers that she held before her face. "I was nonchalant about the refinery, but then Alexa was mentioning things like asthma. And I'm like, 'Check.' And cancer, and I'm like, 'Check,'" she continued. "That made me more aware of how the refinery is making our people not just sick — but killing our communities all over a dollar."

She asked the crowd to join her in a chant: "We're fired up! Can't take it no more!" As the sun got hotter and some of the older folks began to wilt, the protesters marched behind a banner that read "Philly Thrive Right to Breathe" as the refinery's security guards eyed them. There was little coverage of the protest. "Where were the TV crews?" Bennett asked after the rally. "What do we have to do to get anybody to pay attention? Why doesn't anybody care?"

In mid-June, the Philadelphia City Council voted 13 to 4 in favor of developing the gas plant. But even as Johnson, Bennett and the other Philly Thrivers nursed their defeat in the days afterward and feared for the future, a more imminent danger was at hand.



Irene Russell, the president of the nonprofit group Friends of Stinger Square. She tapes up memorials for deceased residents. Hannah Price for The New York Times

Just one week later, on June 21, Johnson was startled awake when she felt her bed move. She bolted upright, wrestled herself from a snarl of sheets, reached for her glasses and tried to figure out what was going on. It wasn't just her bed shaking, but her entire house. Johnson grabbed hold of the edge of her mattress, dropped her head, closed her eyes and prayed. "Father, Lord, God," she said out loud. "Protect my family, watch over my neighbors. Please help us."

Johnson's prayers were interrupted by the phone. On the other end of the line, she heard the panicked voice of her daughter Michelle, who lived about a mile and a half away in Southwest Philly. Her house was shaking, too, and she had lost power and was sitting in the dark holding tight to her two young children. "Mommy, turn on the news," she said, her voice trembling. "It's the refinery."

Johnson would later learn that at 4 that morning, a corroded pipe fitting appeared to have given way, triggering a series of explosions that set off a three-alarm inferno that would burn for more than a full day. A smaller fire erupted 11 days earlier at the refinery, but the heat this time was so intense that the National Weather Service

was able to capture it on satellite from space, using infrared imagery. Large chunks of debris tumbled through the air, landing heavily on city streets as sirens sounded throughout Grays Ferry and the city's emergency-management department issued a shelter-in-place order for residents living near the refinery.

By 7 a.m., even with the refinery still engulfed in flames and clouds of smoke belching into the atmosphere, the shelter-in-place order was lifted. A few hours later, James Garrow, a spokesman from the Philadelphia Department of Public Health, released a statement assuring local residents that the fire posed no "immediate danger." Johnson, with that asthma diagnosis 40 years earlier, felt skeptical. She made certain all of her windows were closed to block out the rank odor that would hang in the air for weeks. And then, as Johnson traded calls with family and neighbors, watched the news and checked Facebook for updates, her breathing became more labored. By early afternoon she was lightheaded and struggling to catch her breath.

An hour later, as she sat on an examining table at Penn's University Hospital with a breathing mask strapped to her face, she thought of the thick black smoke that city officials insisted was safe to inhale and remembered the noxious odor that had singed her nostrils and irritated her airways. With oxygen filling her lungs through a machine, she thought about how often she had been in hospital rooms like these, suffering from asthma throughout her childhood and the rare cancer that was diagnosed three and a half years earlier. "I was tired of them saying that the refinery didn't affect people," Johnson says, "that it was doing no harm."

**Four days after** the explosion, some 100 Thrivers gathered at a small playground a few blocks from P.E.S. This time, the media was out in full force, jostling to get comments from members of Philly Thrive about the blast and fire. "The chemicals that they use, it's, like, really killing us," Johnson told a reporter from a local radio station. "It's killing us slowly. That's what it's doing."

As the Thrivers marched toward the refinery, they were met by a dozen police officers lined up in front of 17 police cars parked before the gates of P.E.S., where hard-hatted employees watched behind the metal fence as the protesters advanced. Chanting "What do we want? Clean air!" the Thrivers held up traffic for a half mile in either direction. Behind them, a large billboard sponsored by the local chapter of the United Steelworkers, the union representing the plant workers, rising over the highway, reminding drivers and neighbors that "Healthy communities need good jobs!"

After months attending Philly Thrive meetings and learning about the environmental dangers created by the refinery, after the explosion and her emergency trip to the hospital, Johnson had changed. The painful death of her first cousin Sharon, a longtime Grays Ferry resident, in late spring from pancreatic cancer was the final blow. This time Johnson, a yellow flower entwined in her braids, didn't speak from the edge of the crowd, but stepped straight into the middle. "I was born in South Philadelphia, a few blocks over," she said firmly. "The pollution and chemicals, they have been here 150 years. I have been here for a half century. I don't know how long asthma has been in my system, but in 2016 the doctor didn't even know if I was going to make it or not. They told my family to pray."



Irene Russell maintains a repository of memorial programs from the funeral services of local residents, including many, like her brother, who died prematurely of cancer. Hannah Price for The New York Times

Turning in a circle to face all sides of the crowd, she continued, her voice rising: “P.E.S. must go. They are taking our people away. By droves. By droves!” Johnson seemed to have shed any hint of the social anxiety that had been with her all her life. “I used to be a real quiet person, until I ran into Philly Thrive. Guess what? My voice will carry for the person down the street, for the person up the street. For the baby that cannot speak, for the senior citizen who cannot speak. My voice will travel. They will know my name and they will know my voice.” As she spoke, the crowd snapped their fingers, clapped and showered her with amens.

In late June, the chief executive of P.E.S., Mark Smith, announced that the explosion and fire made it impossible to keep the plant open. A month later, P.E.S. filed for bankruptcy. The company would receive an advance of up to \$65 million in bankruptcy financing in order to wind down current operations and potentially access \$1.25 billion in insurance coverage. The goal, according to a statement from P.E.S., was to rebuild the refinery’s fire-damaged infrastructure in order to position it for a sale and restart in the oil-refining business. (Representatives for the company did not respond to repeated requests for comment.) The city of Philadelphia formed an advisory group of environmental experts, business leaders, city officials, organized labor and community members who would hold six meetings to address the fallout from the P.E.S. fire, collect information about the future of the company and the site and hear public comments.

After the refinery closed, some 1,000 employees were dismissed without severance pay or extended health benefits; P.E.S. executives received \$4.5 million in retention bonuses. At the third meeting of the city’s advisory group in late August, convened to address labor issues, Philly Thrive members found themselves outnumbered by recently laid-off P.E.S. workers, mainly white men, some in tears, pleading for P.E.S. to remain in business. At the meeting, it was clear the distressed and angry former refinery employees didn’t know the mostly Black Thrivers though they had coexisted in the same corner of the city, breathing the same dirty air at work and at

home, for years and years. When Sylvia Bennett stood at the microphone and told the advisory panel about her daughter Wanda, who was now in so much pain from cancer treatments that she could no longer walk, one worker shouted, “If you don’t like the refinery, then move!”

Bennett was hurt deeply by the hostility, but she also recognized that P.E.S. had caused harm to its workers, too. “We are not against workers or against workers having a job to support their families,” she said. “What we want is the air cleaned up so we can *all* breathe.”

**The community of** Grays Ferry, still more Southern than Northern, is full of people bound together by history, memories, struggle, dreams, blood, love and death. These residents may have landed there because of options limited by the structural discrimination created by redlining. But even as they pray for the sick and count their dead, they have stayed. The homes that their parents bought or that they bought, and the families they raised in them, all this is their legacy.

That legacy also remains in their bodies.

In a report last October, the Chemical Safety and Hazard Investigation Board noted that the P.E.S. explosion released more than 5,000 pounds of hydrofluoric acid. Ingesting even a thimbleful can prove deadly, and when discharged into the air in gas form, the chemical can irritate the eyes, nose and respiratory tract at low concentrations and cause irregular heartbeat and lung complications at higher levels.

In January 2020, an investigation by the environmental and energy-reporting organization E&E News, NBC and American University’s Investigative Reporting Workshop revealed that even before the June explosion, P.E.S. had released the cancer-causing chemical benzene into the air at 21 times the federal limit, though the city failed to let the public know. The report said: “The fence-line benzene emission data, which E.P.A. began posting early last year, shows the refinery exceeded the benzene emissions limit for all but 12 weeks from the end of January 2018 to late September 2019 — an 86-week span. That may have exposed thousands of Philadelphians to troubling levels of benzene, including children like those who often play in the streets of Grays Ferry.”

In February, a U.S. Bankruptcy Court approved the sale of P.E.S. to Chicago-based Hilco Redevelopment Partners for \$252 million (the final sale was for \$225.5 million). The Trump administration made one last lobbying effort to restart P.E.S.’s oil-refining business. “Look, these are great jobs for Philly,” Peter Navarro, the president’s director of the office of trade and manufacturing policy, told *The Philadelphia Inquirer* in January. “This is a way to advance the energy-policy agenda, the economic-policy agenda and the national-security agenda. So we’d love to see that remain as a refinery.”

The community was concerned. But Hilco announced plans to demolish the refinery, clean up the site and rebuild the property as a mixed-use industrial park. “This will be welcome environmental progress for neighborhoods that have suffered from the effects of the refinery,” said Roberto Perez, the chief executive of Hilco Redevelopment Partners, “and an exciting new chapter for Philadelphia.” The news, however welcome, could not erase 150 years of pollution or the fears of the toxins that remain.



The death of P.E.S. cannot bring back Grays Ferry's dead, not those from cancer and not the 54 residents who lived in Grays Ferry's ZIP codes who have died of Covid-19, a virus known to prey on those exposed to long-term air pollution.

Irene Russell, 68, who has lived in Grays Ferry all her life, helps the community remember. She was raised on South 32nd Street and now lives a few blocks away on South Napa Street in a rowhouse she bought in 1980. On 50 white boards, Russell, the president of the nonprofit group Friends of Stinger Square, has taped memorial programs from the community's funeral services, six or seven per board. If she doesn't have a program, she attaches a photograph. Deceased residents, sometimes their younger selves, smile from the yellowed programs, encircled in roses or floating in a sea of blue sky and fluffy clouds. They wear military uniforms, towering hats, graduation caps and gowns or simple Sunday best.

This spring, Russell rested a lime green fingernail on the face of George Scott, who died in 2010 at age 57. "That's my brother," she said softly. "He died of liver cancer; left behind eight kids." Russell's sister Sandy also died of cancer, at age 42. Her son George, named after her brother, developed lymphoma in his late 20s and survived. Russell shuffled through the boards until she found Sharon, Kilynn Johnson's cousin, whose program she taped to a board a few months earlier. Next to the words "it is with deep sorrow, that we regret to inform you of the passing of our beloved Sharon E. Johnson" superimposed over a rose, Sharon looked off to the side, her lips pursed as if she were whistling a song.

Russell found out she had uterine cancer in 2018 and had a hysterectomy in January 2019. Last September her doctor discovered cancer in her lungs. She tried hard to keep the boards, stored in plastic garbage bags in her Stinger Square office, up to date, but the pile of memorials stacked on top of her computer, waiting to be attached, has grown larger since the coronavirus struck in February. "Between the cancer and the Covid, the loss is crazy," Russell, who recently finished chemotherapy treatments for her lung cancer, said in June. "It's just a lot of people who have died. It's been kind of devastating, but all we can do is just keep living. And keep remembering."

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