

Texas plants spewed 8 million pounds of air pollutants as Hurricane Harvey hit

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Floodwater caused most of the damage when Hurricane Harvey slammed into the Texas coast a year ago. But that region's air quality was also harmed when the Category 4 hurricane swept through the U.S. oil refining and chemical heartland.

Using state data, the Environmental Integrity Project determined that Hurricane Harvey was responsible for 8.3 million pounds of unauthorized air pollution late last summer. Most were the result of industrial plants suddenly shutting down as Harvey struck, including some emergencies involving flooding, sudden power outages or lightning strikes.

The large-scale pollution could have been averted if refineries and chemical plants in the region had prepared for a planned shutdown, according to an Environmental Integrity Project [report](#) released Thursday. And the state's decision to suspend pollution reporting requirements in the aftermath of the storm makes it difficult assess health effects.

"A year after Hurricane Harvey wreaked havoc on Houston, we still don't know the storm's toll on human health and the environment," said Loren Raun, chief environmental science officer for the Houston Health Department and assistant research professor at Rice University. "The danger is not over when the waters recede ... There's no doubt that Harvey had wide, short-term health consequences."

The pollution released included volatile organic compounds—precursors to smog that irritate the eyes and respiratory system—and benzene—a cancer-causing chemical that can cause rapid heart rates, tremors and vomiting even with short-term exposure.

A Hurricane Harvey Registry has already been created to track the impacts of the storm, including health effects. That collaboration includes local governments, Rice University, the National Institutes of Health and the Environmental Defense Fund.

The Hurricane Harvey-related pollution accounted for 44 percent of "unpermitted incidents" statewide between Aug. 23 and Sept. 30, according to the Environmental Integrity Project. Industrial companies have air permits allowing them to release limited amounts of pollution. But the report focuses on emissions that weren't allowed in those permits.

The pollution calculation may be an underestimation, the report says, because Texas suspended pollution reporting requirements in the immediate aftermath of the storm, so an "unknown number of industrial plant operators may have opted not to report emissions." Still many plant operators reported emissions; federal reporting rules were not suspended.

Gov. Greg Abbott suspended at least 214 Texas regulations—some of them environmental—as a way to expedite that region's recovery from one of the nation's most damaging hurricanes.

The Environmental Integrity Project's report also found that 18 companies revised their state reports to remove 1.7 million pounds of unpermitted emissions from their totals.

"Industry often justified their alteration of the numbers by arguing that flexible state permits, and Gov. Abbott's disaster declaration, made the

pollution legal," the report said. "This is questionable, however, because—under the state's program—such reclassification should only be allowed for planned shutdowns, startups and maintenance, not storms and other emergencies."

The Environmental Protection Agency's Office of Inspector General is looking into whether the EPA's and Texas environmental regulators' monitoring after Hurricane Harvey "(1) addressed potential high-risk areas, (2) indicated any potential health concerns, and (3) were accurately communicated to the public with respect to monitoring results and potential health concerns."

The Environmental Integrity Project criticized Texas companies for not taking earlier action to shut down as Hurricane Harvey advanced. The governor declared a "State of Disaster" for 30 counties about two days before the storm reached land.

A slower, controlled shutdown releases less pollution than faster shutdowns, like some of those connected to Hurricane Harvey.

"In these areas, shutdowns and other emissions events happened only after heavy rain, flooding, and sometimes power outages had already descended upon the area, with some plants caught off guard when their power went out," according to the report.

The Washington D.C.-based environment group, which has an office in Austin, singled out for praise the Flint Hills refinery in Corpus Christi, near where the storm made landfall. The report said the facility—along with others in the Corpus Christi area—shutdown before the storm reached land, "illustrating that it was preparing in advance to minimize emissions and the chance of an accidental release."

The report is based on industry-supplied numbers rather than actual air

monitoring. About 75 percent of air monitoring stations around Houston, Corpus Christi and the Beaumont-Port Arthur area were removed to protect them from storm damage.

"The levels the community was exposed to are unknown," Raun said at a news conference Thursday held by the Environmental Integrity Project. "What can be said is that many of the chemicals released are toxic ... These releases were of serious concern for the protection of the health of Houstonians."

In an April 3 report, the TCEQ said that it used aerial and portable air quality monitoring, with "all measuring air toxics concentrations below levels of health concern."

"Because every event is unique, and every plant is unique, development of a 'one size fits all' enforceable protocol or rules specifying measures for each plant, unit or facility to minimize adverse impacts of shut down emissions due to a hurricane or similar event while ensuring safety of workers and surrounding areas would be a virtually impossible task," said TCEQ spokeswoman Andrea Morrow via email.

Morrow also said that the TCEQ is "currently and will continue to conduct investigations following standard agency protocols for assessing compliance and pursuing potential enforcement actions when appropriate against regulated entities regarding incidents related to Hurricane Harvey."

The federal Environmental Protection Agency and the Texas Commission on Environmental Quality used mobile air monitors starting Sept. 5, nearly two weeks after the [hurricane](#) reached land. The report said that by then, much of the air pollution had already been released.

The best-known industrial accident connected to Hurricane Harvey was

the explosion and fire at the Arkema chemical plant in Crosby, which sickened first responders and led to the evacuation of everyone within a mile and half of the facility.

A Harris County grand jury indicted Arkema North America, its CEO Rich Rowe and Crosby plant manager Leslie Comardelle for reckless emission of an air contaminant and endangering first responders.

Also following the storm, Houston had three high ozone days, including the worst of 2017, according to the report.

Reporting by The Associated Press and the Houston Chronicle looked at more than 100 Hurricane Harvey-related "toxic releases," including chemical spills. The March story found that most soil testing was confined to Superfund sites and skipped other spills, raising questions about the storm's environmental impact.

Damage to storage facilities spilled petroleum products and dangerous chemicals into floodwaters, while at least 150 million gallons of wastewater were released, according to the report.

"While some pollution releases during natural disasters may be unavoidable, improvements such as coordinated and staged shutdowns of petrochemical plants, improved maintenance, and equipment better designed to withstand heavy rainfall could help improve the response next time there's a major storm in the region," the Environmental Integrity Project report concluded.

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