

Aerial view of Houston
during the Hurricane
Harvey flooding

Mobile air quality monitoring in Houston after Hurricane Harvey

Local air quality monitoring can be helpful in any region. It provides leaders insight into which parts of the community are at higher-risk to the health impacts of pollution and gives residents (and prospective residents) a data-driven assessment of how healthy the area's air is.

But in areas with high concentrations of pollution sources and increased risk of accidents or natural disasters, **local monitoring can provide critical information that can protect residents from dangerous toxins in emergency situations and hold polluters responsible** for poor planning or negligence.

MONITORING LOCAL AIR QUALITY IN HIGH-RISK AREAS

Houston is home to massive petrochemical facilities and, less than 50 miles away from the Gulf of Mexico, is at perennial risk of hurricanes. Those two facts collided in September 2017 when Hurricane Harvey devastated portions of the Texas coast.

Most industrial facilities were woefully unprepared for the storm and employed emergency measures that, according to industry's own reports, released seven million pounds of pollutants in just one week. To make matters worse, state and federal regulatory monitors were offline during this critical period – state air officials systematically shut off air monitors to protect the instruments from the storm. As a result, area residents and officials with the City of Houston Health Department were in the dark about potential exposures during and in the days following Harvey.

Together with EDF, the City of Houston Health Department dispatched a mobile air quality effort to document toxic hotspots around the Houston Ship Channel, where scores of petrochemical facilities and neighborhoods are located. In Manchester, which borders a Valero facility that suffered a collapsed oil

tank, monitors registered benzene concentrations up to 324 parts per billion (ppb). Benzene is a toxic carcinogen. There is no safe level of recommended exposure, but California has established a health threshold of 8.45 ppb for an acute exposure. Levels in Manchester were 38 times that amount.

Preparation and Protection Where It's Needed Most

Air monitoring in emergency response situations like this can provide critical transparency that informs local officials, community groups and individuals of urgent threats to public health (such as toxic releases of benzene) and allows them to take concrete action to protect local residents from exposure. Generating data where there was none also provides critical documentation of toxic air pollution releases that local leaders can use later to better prepare for future disasters and advocate for improved preparedness by industry and regulators.

In the wake of Harvey, the City of Houston Health Department has since purchased two movable monitoring units to improve its ability to rapidly monitor for benzene and other air toxics in disaster response situations. The city is also working with EDF and other local government agencies to implement detailed emergency response protocols to prioritize public health in the event of acute air pollution events and to expand and systematize the region's ability to collect air pollution data and act quickly in disaster situations.

**Aerial view of Houston during
ITC Petrochemical fire (AP Photo,
David J. Phillip)**

