

## In the wake of Hurricane Harvey flooding

# “Chemical coast” residents to be tested for toxic exposures in Houston, Texas

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Professor Kim Anderson, environmental scientist at Oregon State University (OSU) in Corvallis, Oregon, is partnering with investigators at Baylor College of Medicine in Houston, Texas to study the exposures of residents in that city to petrochemical toxins in the post-Hurricane Harvey period.

Dr. Anderson and her team traveled to Houston September 19 to meet with 50 residents in the Highlands neighborhood, where 36 persons received a porous silicone wrist band that absorbs organic chemicals from the individuals' surroundings. They will wear the wrist bands, developed according to Dr. Anderson over the last 20 years, for one week and return them to OSU for analysis.

After researchers spoke at a meeting, everyone requesting a wrist band received one after filling out a personal questionnaire and signing a consent form for the study. Volunteers will receive an individual confidential report from Dr. Anderson's group, as well as an invitation to a return meeting to review community-wide results.

The Baylor College of Medicine received several hundred of the wrist bands and will distribute them to area residents to be worn for one week and then return them to OSU. The wrist bands will be tested for over 1,500 chemicals, including pesticides, PCBs, hydrocarbons from fossil fuel burns, as well as benzene, toluene and other industrial solvents.

Professor Anderson operates as part of the Superfund Research Program in Corvallis, which is funded by the National Institute of Environmental Health Sciences. She is seeking funding from the National Institutes of Health for a follow-up study in 6 months to a year to track the changes in the Houston exposures. She and her team traveled to the Gulf Coast in 2010 following the Deepwater Horizon catastrophe to study the resulting air and water quality consequences.

Last month, the Associated Press reported that the US Environmental Protection Agency acknowledged the flooding of all 13 of the Houston-area Superfund sites by

Hurricane Harvey, including one of the city's most toxic, the US Oil Recovery site that is brimming with cancer-causing compounds. The AP reviewed aerial photos of darkened water surrounding the site, which flows through Vince Bayou and into the Houston Ship Channel.

US Oil Recovery is a former petroleum waste processing plant, whose flooded cement tanks were photographed August 29 by a county pollution control team that in turn sent the photos to the US EPA. The PRP Group, a private firm “managing” the site, called an EPA hotline to report the spill. In the ensuing several days, further spills were emitted from US Oil Recovery, according to Coast Guard hotline logs obtained by AP. The EPA requires spills of toxic substances into US waterways or into the environment be reported on the 24-hour hotline. The National Oceanic and Atmospheric Administration also photographed and confirmed the spills on August 31.

Former and retired EPA official Thomas Voltaggio, who supervised Superfund cleanups and emergency responses for 20 years, told AP after reviewing the photos, “It is intuitively obvious that the rains and floods of the magnitude that occurred during Hurricane Harvey would have resulted in some level of contamination having been released to the environment.” The Houston Ship Channel is so polluted with dioxins and PCBs that humans cannot safely consume fish or crabs caught from the waterway.

The PRP Group reported that subsequent testing of storm water runoff from the affected tanks met federal drinking water standards, but refused the AP requests for copies of the test results, or a list of the chemicals for which tests were conducted.

In 2010, pollution regulators closed US Oil Recovery after finding its operations posed a severe threat to Vince Bayou, which flows through Pasadena. The pollutants were determined to be so foul that Texas prosecutors charged the company owner, German native Klaus Genssler, with five felonies. Genssler fled and today remains a fugitive. He did

not respond to AP attempts at contacting him via his social media and email accounts.

Over 100 companies dumped hazardous substances and waste oils for “processing” at US Oil Recovery, including Baker Hughes Oilfield Operations, Dow Chemical Co., and US Steel Corp. A court-ordered settlement now mandates these companies pay for the Superfund site’s cleanup.

Testing at the site before Harvey had confirmed the presence of carcinogens, including benzene, ethylbenzene, and trichloroethylene, as well as the heavy metals mercury and arsenic.

When the EPA was asked whether US Oil Recovery toxins had migrated offsite with the recent floods, the EPA issued a press release: “An EPA On-scene coordinator conducted an inspection of Vince Bayou to follow up on a rumor that material was offsite and did not find any evidence of a black oily discharge or material from the US Oil Recovery site.”

The Harris County Pollution Control Services office in Houston is located a few hundred yards from US Oil Recovery. Bob Allen, the director, told AP that his team photographed the site during the flood on August 29, when the hazardous waste tanks were submerged in surging floodwaters, but his office declined to release the photos. Allen’s team also did not obtain water samples from the site.

EPA administrator Scott Pruitt told AP that safe-guarding the intensely polluted Superfund sites is among his top priorities, while he and President Trump have weakened the safe-guarding regulations, proposed a 30 percent decrease in management funding for Superfund sites, and voiced industry-serving skepticism as to the realities of climate change.

On September 2 the EPA acknowledged, after reviewing pertinent aerial photos, that all of its 13 Houston-area Superfund sites were underwater, in some cases many feet deep, and damaged by the storm.

In the last 6 years, workers at US Oil Recovery addressed the abandonment of 1,000 containers of hazardous waste and 500 tons of toxic sludge and removed 1.5 million gallons of liquid waste. After Harvey, workers vacuumed out 63 truck loads, about 315,000 gallons, of hazardous waste.

Beginning on August 23, petrochemical plants owned by ExxonMobil, Chevron, Shell and others hurriedly burned off compounds at risk for explosion during a refinery shutdown and released over 1.5 million pounds of “extraordinary emissions” (un-permitted except in emergencies). The emissions included 13 tons of benzene, a carcinogen identified as causing childhood leukemia and associated with the occurrence of spina bifida, a congenital and disabling spinal canal defect.

The American Lung Association ranks Houston as one of the most polluted cities in the country. The Center for

Biological Diversity reported last month that the petrochemical industry along the Texas and Louisiana coast released an estimated 5 million pounds of toxic materials into the environment during the recent storm.

In 2012, the EPA assessed the threat to 1,600 Superfund sites nationally and noted that 521 were in 1-in-100- and 1-in-500-year flood zones. Fifty sites were in vulnerable coastal locations. Two dozen Superfund sites were noted to be exceptionally at risk given low-lying locations, including the Bailey Waste Disposal site south of Beaumont, Texas, where Harvey raised the waters to 21 feet over the flood level, or 8 feet over a prior record.

In Crosby, Texas across the San Jacinto River and northeast of Houston, a small working class neighborhood had one house still standing, a residential area located between two Superfund sites, French LTD and the Sike Disposal Pits. A sink hole, said by AP to be the size of a swimming pool, opened and swallowed two cars. Resident Rafael Casas and his family lived there and reports they were never told of the hazardous waste risk.

Twenty miles southeast of downtown Houston, the community of Friendswood flooded together with the Superfund sites Brio Refining, Inc. and Dixie Oil Processors. After the floods receded, nearby roads were silt covered. The rising waters of Mud Gully stream came out of its banks between the two sites. The sites’ manager, John Danna, reported to AP that he’d visited the sites and observed “no erosion.”

Kara Cook-Schultz studies Superfund sites for TexPIRG, an environmental advocacy group, and said, “If floodwaters have spread chemicals in the waste pits, then dangerous chemicals like dioxin could be spread around the wider Houston area. Superfund sites are known to be the most dangerous places in the country, and they should have been properly protected against flooding.”

In Crosby, where organic peroxides by the tanker truckloads at the Arkema company exploded and burned with the floods, an executive cavalierly told the *Guardian*, “The smoke is noxious. Toxicity is a relative thing.”

In regard to the Arkema explosions and fires, EPA administrator Pruitt told the *Guardian*, “Information indicates that there are no concentrations of concern for toxic materials reported at this time.”



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