

Local Pollution and Your Health Forum – June 25 at Bay Area Community Center

Submitted Questions and Answers Not Addressed During Meeting

- 1. What were the environmental impacts from Hurricane Harvey, re: flooding of chemical tanks?** Very good investigative journalism by Houston Chronicle series “Silent Spills” in the months after Harvey describe in considerable detail the chemical tank releases by Magellan tanks on Ship Channel.
- 2. What can we do to increase the number of TCEQ monitors in our area?** There is clearly a need for much more monitoring including mobile monitoring. More funding is needed to support increased monitoring. We are woefully underfunded for monitors. We should contact and tell elected officials, TCEQ, industry organizations such as Eastern Harris County Manufacturing Assoc. and employees of local facilities that more monitors are needed throughout the Bay Area. In general, more baseline, non-emergency, monitoring is needed.
- 3. Were ITC and Kirby Inland Marine invited to speak?** ITC and Kirby were not proactively invited. When TCEQ and local state representative hemmed and hawed, it was very doubtful that the poorly staffed communications function at ITC would have responded and Kirby has failed to explain the accident in any public way. But they should be invited, nevertheless.
- 4. What lessons have been learned from the ITC incident in regard to availability of air monitoring, capabilities/response, coordination/communication between Harris County, TCEQ, EPA, etc.?** Need for more monitoring including mobile monitoring. Significant need for greater transparency of information including data for the public and even raw data for more technical types to review. Need to translate risk information into terms the public can understand. As Dr. George Guillen said in his comments, “toxicology for the public” so they can understand and make their decisions on what to do, e.g. change activities to shelter-in-place to evacuate. Also, as Guillen suggested, perhaps a widespread education program is needed to reach out effectively to public about how to prepare for and react to pollution releases, something like the annual updates to the public about hurricane season and steps public to take in preparation. Greater insight into facility locations and chemicals used will be very helpful. Pushing information widely will work better than requiring each individual to find website to sign up for emails in a pull approach.
- 5. Has the state sampled fish, crab, shrimp, and oyster tissue for PFAS?** No, the Texas Department of State Health Services (DSHS) did not sample fish or shellfish for PFAS. Citizens should tell their local, county and state elected officials that DSHS should be properly funded so they can perform regular testing for toxins, including PFAS, in fish and shellfish and inform citizens of the results and any resulting consumption advisories or bans.

Also, note that DSHS did not sample fish or shellfish tissue for volatile organic compounds (VOCs), as they do not bioaccumulate in seafood beyond the levels found in the waters. VOCs do not pose a long-term consumption risk once the VOCs in the water decreased. Using VOC concentrations in the water as their guide, DSHS did modify an existing seafood consumption advisory on the Houston Ship Channel and contiguous waters north of the Highway 146 bridge (<https://galvbay.org/how-we-protect-the-bay/taking-action/seafood-consumption-advisories/>) after the ITC fire and issued a temporary warning not to eat any seafood harvested from Galveston Bay north of a line from the end of the Texas City Dike to Smith

Point after the Bayport Channel ship-barge collision. The modification to the Ship Channel advisory remains, but the temporary warning has been cancelled.

6. While reporting of compounds in air from ITC fire was confusing to the public, were the recommendations/advisories appropriate? The information received and reviewed by Harris County Pollution Control's Dr. Babin indicates the recommendations and advisories have been appropriate.

7. I saw commercial fishing trawler on Galveston Bay on 5/13/19. What rules prevent fishing commercially on Galveston Bay? There are two state agencies involved. In the interest of protecting public health, the Texas Department of State Health Services (DSHS) issues seafood consumption advisories and bans for public waters and designates the harvest areas for molluscan shellfish (oysters, clams, and mussels). The commercial fishing activity itself is regulated by Texas Parks and Wildlife Department (TPWD), which publishes a commercial fishing guide that can be accessed at https://tpwd.texas.gov/publications/pwdpubs/media/pwd_bk_v3400_0074.pdf.

As indicated on page 2 of the guide, commercial fishermen cannot harvest fish and/or shellfish from waters with consumption *bans*. However, there are no outright consumption *bans* on fish or shellfish in any waters of the Galveston Bay System. Rather, at the current time, there are consumption *advisories* on certain species in some waters of the Galveston Bay System. These consumption advisories *recommend* limited or no consumption of certain species of fish or shellfish from a certain body of water because tests found contaminants at unsafe levels. Eating more fish or shellfish than recommended by a consumption advisory may pose potential human health risks. However, commercial (or for that matter, recreational) harvest of fish and/or shellfish from a body of water with a consumption *advisory* is not illegal as long as TPWD regulations are followed. As far as *molluscan* shellfish (oysters, clams, and mussels), there multiple areas in the Galveston Bay System where harvest is prohibited; such prohibited area waters are in proximity to sewage treatment plant discharge locations, known contaminated areas, or other area with a high potential of containing unsafe levels of a pollutant. Commercial fishing within the limits and confines of these regulations is allowed and is a significant economic driver of the region.

For more information on the current advisories, advisory maps and links to DSHS' online Fish Consumption Advisory Viewer and Shellfish Harvest Area Viewer, please go to Galveston Bay Foundation's Seafood Consumption Advisory webpage at <https://galvbay.org/how-we-protect-the-bay/taking-action/seafood-consumption-advisories/>.

8. Is sheltering in place as good as leaving the area, or how good is sheltering in place? Evacuation is certainly more protective than shelter-in-place when toxic pollution is in your immediate area. However, elected officials and governments judge the threat across multiple jurisdictions and typically are cautious to avoid unnecessary upset to communities. Clearly, a better informed public, armed with knowledge of risks could be able to make decisions to stay or evacuate, as Dr. Guillen suggested, if there is much better transparency and near-real time information about petrochemical pollution incidents.

9. What are adverse health impacts, and do they multiply with multiple exposures? Air pollution is one of the world's largest killers, responsible for 6.4 million deaths per year (1 in 9 deaths), of which 600,000 are children. This is more than the number of deaths from AIDS, Malaria and tuberculosis combined. The World Health Organization estimates that 2 billion

children live in areas where outdoor air pollution exceeds international limits and 300 million children live in areas where outdoor air pollution exceeds 6 times international limits. Children, the elderly, and people with heart or lung disease, diabetes, minority and low - income communities are particularly vulnerable to adverse health outcomes from exposure to air pollution, including cardiovascular disease, asthma and other respiratory diseases, and cancer. Recent evidence suggests that air pollution is also linked to higher risk of diabetes, autism, and lower IQ.

What we typically think of as "air pollution" is actually a mixture of small particles (such as: black carbon gases like nitrogen oxides, ozone, and sulfur dioxide.

<https://www.edf.org/health/health-impacts-air-pollution>

Considering the ITC fire, Bayport barge collision and toxic releases, Environmental Defense Fund's Elena Craft in an editorial piece titled *What's the safe level of benzene in the air? None. Absolutely none*, she wrote in part, "I am a toxicologist, and let me be clear: Any exposure to benzene is too much. She also wrote, "Benzene is a key ingredient in gasoline — a compound so potent that even the American Petroleum Institute, a trade group for the oil and gas industry, acknowledged in 1948 "the only absolutely safe concentration ... is zero." It can cause cancer. Breathing high doses also can affect the nervous system, causing dizziness and headaches, and result in suppression of the immune system."

<https://www.houstonchronicle.com/opinion/outlook/article/What-s-the-safe-level-of-benzene-in-the-air-13902177.php>

Related to the ITC fire and overflows of fire suppression liquids into the Ship Channel and Galveston Bay, according to the Texas Department of State Health Services cited by TCEQ in a long-term dioxin study, "Dioxin is a generic term for a suite of toxic and environmentally persistent compounds. Overexposure to dioxin can cause a variety of harmful health problems, including cancer, birth defects, diabetes, developmental delays, and immune system abnormalities." <https://www.tceq.texas.gov/waterquality/tmdl/26-hscdioxin.html>

The World Health Organization reports about effects of dioxins on human health summarizing: Short-term exposure of humans to high levels of dioxins may result in skin lesions, such as chloracne and patchy darkening of the skin, and altered liver function. Long-term exposure is linked to impairment of the immune system, the developing nervous system, the endocrine system and reproductive functions.

Chronic exposure of animals to dioxins has resulted in several types of cancer. TCDD was evaluated by the WHO's International Agency for Research on Cancer (IARC) in 1997 and 2012. Based on animal data and on human epidemiology data, TCDD was classified by IARC as a "known human carcinogen". However, TCDD does not affect genetic material and there is a level of exposure below which cancer risk would be negligible.

Due to the omnipresence of dioxins, all people have background exposure and a certain level of dioxins in the body, leading to the so-called body burden. Current normal background exposure is not expected to affect human health on average. However, due to the high toxic potential of this class of compounds, efforts need to be undertaken to reduce current background exposure.

For sensitive groups, the developing fetus is most sensitive to dioxin exposure. Newborn, with rapidly developing organ systems, may also be more vulnerable to certain effects. Some people or groups of people may be exposed to higher levels of dioxins because of their diet (such as high consumers of fish in certain parts of the world) or their occupation (such as workers in the pulp and paper industry, in incineration plants, and at hazardous waste sites).

<https://www.who.int/en/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health>

- 10. If I smell something, who do I call?** Harris County Pollution Control Interim Director Latrice Babin said to call 713.920.2831, their complaint number, if you smell an odor, and they will send out an investigator. “The public is their eyes and ears for odor surveillance.”
- 11. The bulk of discussion and government interest in these pollution events address response to pollution events – compliance, monitoring, clean up, etc. What can we do to prevent these events rather than just react to them?** As described in the event Q&A session, much more preventative monitoring is required. Tank terminals can be can use drones and other imaging capabilities for leak detection by facility owner or a government agency. In many ways, the lack of prevention is an economic decision by the companies that compare the cost of prevention to the cost of occasional penalties. They will always go with lowest estimated cost. If penalties were sure and more expensive, then companies would respond. Also, local government needs to have, and to use, greater authority to demand safe operations.
- 12. Dr. Latrice Babin: Why was ITC allowed to start up without a modern fire suppression system?** TCEQ allowed them to start up after the fire and recovery.
- 13. Why isn’t EPA and TCEQ here?** TCEQ was invited both from Austin HQ and Houston Region 12. Initially Houston said they would probably send someone and would figure out who based on topics. Austin HQ reviewed our request and declined. We persisted, offering to adjust topics down to even just an overview of TCEQ roles. Additional requests resulted in more declinations, including telling Houston office not to support the event. EPA relies on TCEQ to enforce its regulations, and it would simply direct request to TCEQ.
- 14. What is process for deciding evacuation or shelter in place, what criteria?** For a hurricane, or other weather events, this would be called by a local mayor or county judge. A HazMat Shelter-in-place or evacuation could be called by a local IC (incident command) i.e. fire department.
- 15. Has anyone taken tissue samples from either spill?** Galveston Bay Foundation took sample fish that died after the barge collision release, but it does not yet have funds to pay for analyses. As discussed above, since volatile organic compounds (VOCs) do not bioaccumulate in tissue, the Texas Department of State Health Services (DSHS) did not test any tissue for these compounds and instead based any actions on VOC concentrations in the water. We are not completely certain of the reason why DSHS did not collect or sample tissue for PFAS after the ITC fire. Citizens should tell their local, county and state elected officials that DSHS should be properly funded so they can perform regular testing for toxins, including PFAS, in fish and shellfish and inform citizens of the results and any resulting consumption advisories or bans.
- 16. Why are warnings/alerts so slow, not real-time? We need to know right away where cancer-causing pollution is. How much and how close to my family?** These are emergency situations and there can be a lack of integration across different government agencies, limited information coming from private corporations and a desire not to make mistakes. Again, more

monitors are needed and more real-time information that help public make smart decisions on how to react. Perhaps should release preliminary information with the caveat that it is preliminary.

17. Dr. Babin: What is the source of the compliance requirements? How large is staff and budget for compliance department? Our source for compliance requirements is adherence to the regulations within the Texas Water Code, Texas Administrative Code, and at times the Texas Health and Safety Code for the business/constituent. Harris County Pollution Control currently has a staff of three in our compliance section who are responsible for reviewing violations of WWTP, air, water, and solid waste.

18. Lucy Randel: Whose responsibility is it to tell the public results of monitoring? The Harris County Office of Homeland Security and Emergency (HCOHSEM) took the lead on communicating information to the public during the ITC fire event. The Ready Harris website provides links to data from other parties in the Unified Incident Command. ITC and TCEQ websites were linked to the Harris County website. <http://prepare.readyharris.org/#Home>

Facilities should have emergency response plans that detail how they will respond in case of fire, spill, explosion or another incident. The county cannot respond until they are made aware of an emergency.

19. Sarah Robinson: Was the monitoring done on surface or in depth? Galveston Bay Foundation collected our samples at the surface.

20. How many air monitors are permanent? Where are they and how can we see data? The number of monitors varies depending on the parameter. The TCEQ website has many sorting options to generate data reports/ Houston is located in Region 12. Many monitors track ozone and nitrogen oxides. Houston does not meet federal ozone standards and therefore needs a wide network of monitors to evaluate whether controls being put in place are working. A full list of monitors can be found at the TCEQ website:

<https://www17.tceq.texas.gov/tamis/index.cfm>

Map of ozone monitors in Houston-Galveston-Brazoria

https://www.tceq.texas.gov/cgi-bin/compliance/monops/select_curlev.pl?user_param=44201&user_metro=1&user_average=1

Benzene is detected by monitors that have auto GC.

TCEQ has 10 monitors for benzene in Houston:

https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc_daily_average.pl

You can select a parameter and a date to see data. You can also select a specific monitor to see multiple parameters for a given date.

TCEQ has six monitors in Houston for particulates, PM2.5.

https://www.tceq.texas.gov/cgi-bin/compliance/monops/select_curlev.pl?user_param=88502&user_metro=1&user_average=1

Purple Air is an independent network not used for regulatory purposes. It provides real time data for PM2.5. A map can be found here:

<https://www.purpleair.com/map#10.21/29.785/-95.3908>

21. Why can't companies and agencies stop the increasing number of accidents? The number of "accidents" can be reduced by greater emphasis on baseline monitoring by industry, more monitoring for instance of tanks and operational facilities to identify weak or worn out components that have failed or are close to failing. Investing more money into failure prevention.

22. It appears EPA did not respond properly. Did ITC have an incident command set up by EPA? EPA was part of the Unified Incident Command with multiple entities collecting data, including ITC, Harris County, TCEQ, and EPA.

23. Did EPA include benzene in the parameters for sampling, and if not, do you know why not?

The EPA response history and documents can be found at

https://response.epa.gov/site/site_profile.aspx?site_id=14150

The TCEQ website hosts data from TCEQ, and EPA:

<https://www.tceq.texas.gov/response/itc-monitoring-air-quality>

ITC has their own website with monitoring results from their contractor:

<https://itcresponse.com/air-monitoring/>

EPA became involved on March 17, 2019 the day the fire started, at the request of TCEQ. The first response from EPA was to use their ASPECT (Airborne, Spectral Photometric Environmental Collection Technology). This technology maps the plume and measures for a variety of chemicals. It is an emergency screening tool. ASPECT does not have the capability of measuring benzene. Mobile monitors and Gas Chromatographs in the TCEQ air monitoring network provided data on benzene.

EPA did include benzene in their ground level monitoring. It appears that when benzene was detected by hand held monitors or the TCEQ network, that EPA deployed the TAGA-Trace Atmospheric Gas Analyzer, which is mounted in a van that traverses the area of interest measuring air contaminants. Benzene, toluene and xylene were among the chemicals measured by the TAGA.

EPA handheld monitoring first detected benzene on March 20. It appears, however, that they were only reporting detection at a sample point that exceeded the TCEQ Air Monitoring Comparison Value (AMCV) -180 ppb for benzene-which TCEQ considers a hazardous level for 24 hr. exposure. In some other states, the level considered hazardous is below 180 ppb.

<https://response.epa.gov/sites/14150/files/ITC%20AIR%20MONITORING%20AND%20ASPECT%20MAP%20032019%20PM.pdf>

The first TAGA report found was from March 21, 2019. Below are links to the maps showing where EPA TAGA monitored and the results for several days when benzene levels were elevated.

<https://response.epa.gov/sites/14150/files/VIPER%20DATA%20MAP%203-21-19.pdf>

<https://response.epa.gov/sites/14150/files/ITC%20TAGA%20MAP%203-22-19.pdf>

<https://response.epa.gov/sites/14150/files/ITC%20TAGA%20MAP%203-23-19.pdf>

<https://response.epa.gov/sites/14150/files/ITC%20TAGA%20MAP%203-25-19%202.pdf>

24. Did anyone test animal tissue samples for PFAs? Texas Parks and Wildlife took samples of fish that died at site near barge collision and resulting spill, but results have not yet been shared. Some sample fish have been frozen, and organization is waiting for funding to test. Texas does

not test seafood for toxins on a regular basis. Instead, the Texas Department of State Health Services (DSHS) relies on grants from Galveston Bay Estuary Program, EPA, or other federal source to test on an unscheduled basis when funding becomes available. After the ITC fire, DSHS did modify an existing seafood consumption advisory on the Houston Ship Channel and contiguous waters north of the Highway 146 bridge (<https://galvbay.org/how-we-protect-the-bay/taking-action/seafood-consumption-advisories/>). After the Bayport Channel collision, DSHS issued a temporary warning not to eat any seafood harvested from Galveston Bay north of a line from the end of the Texas City Dike to Smith Point. However, neither of these actions was based on testing of actual seafood tissue, but rather using concentrations of volatile organic compounds in the water.

- 25. What is Harris County lawsuit(s) concerning ITC, Exxon and Valero?** The linked Houston Public Media story highlights ongoing lawsuits by Harris County and provides links to additional related stories. <https://www.houstonpublicmedia.org/articles/news/energy-environment/2019/06/27/337828/harris-county-continues-to-pressure-polluters/>

Also, another late June article, this one by Perla Trevizo of Houston Chronicle about the Harris County suit against Valero provides insights to pro-active suits by the County. It was approved by Commissioners Court to proceed. <https://www.houstonchronicle.com/news/houston-texas/houston/article/Harris-County-may-turn-to-federal-courts-to-crack-14039759.php>.

- 26. What are your organizations doing to control everyday pollution from industry, motor vehicles, power plants, etc?** Air Alliance Houston is a local watchdog on air pollution using applied research, education and advocacy to shine light on pollution issues and work collaboratively toward solutions. We are currently involved in a campaign for a more sustainable solution to traffic congestion than the I-45 expansion and recently completed a large study of potential health and community impacts from the current plan. Our advocacy has also been involved in helping shape regulations on industry through education of public and lawmakers. <http://airalliancehouston.org/>

- 27. Do you advocate renewable energy (closing coal plants, electrification of transit)?** YES!

- 28. As petrochemical industry explodes in growth, will dangerous accidents increase in parallel?** It is expected that the number of serious petrochemical accidents will increase as the overall size and number of facilities and transportation congestion increase, unless new operation safety measures and effective enforcement reduce accident rates.

- 29. Latrice Babin: Who at the EPA was responsible for not testing for benzene even though it was well known it was released into the environment? Did compliance standards not require a system (foam) that automatically puts out fires? This may be a question for the Fire Department. Did anyone do an analysis of chemicals adsorbed into the smoke particles from the ITC fire?** I am not sure if particulate matter was absorbed onto filters and speciated to accomplish this task. I have not been made aware of any such results.