SPod Deployment Plan

EPA is investigating high levels of chloroprene in LaPlace, LA, that were discovered during a national screening assessment of air toxics in the United States.

The purpose of air monitoring has been to determine if these levels were present in the air and if so, identify opportunities to reduce them.

Background

- Chloroprene is used to manufacture neoprene rubber, used in car door seals, wetsuits, and medical applications, etc.
- IRIS assessment for chloroprene was completed in 2010.
- National Air Toxics Assessment (2011 NATA, released 2015) modeling indicated potentially high cancer risks from the one operating facility ("Denka") in Louisiana.
- In 2016, EPA began monitoring ambient air for chloroprene at six locations in the community.
- Denka's regenerative thermal oxidizer, two condensers, and equipment upgrades and controls for vents and fugitive emissions to reduce emissions of chloroprene became fully operational in March 2018.
- Since March 2018, air sampling results have shown a substantial reduction in chloroprene emissions from all monitoring locations.
- Chloroprene concentrations trend down; however, periodic spikes continue to occur.
- Understanding the magnitude and frequency of spikes may identify possible actions to further reduce concentrations of chloroprene in the community.

Monitoring Program Comparison

|	Current Monitoring	SPod Monitoring
Objective	Measure chloroprene levels in the community for at least one year post RTO installation (March 2018)	Measure short-term concentrations of chloroprene and identify possible sources within the facility
Instrumentation	Canister Sampling and laboratory analysis	Photoionization detection of VOC to trigger canister sampling and laboratory analysis
Monitoring Frequency	24 hour sample once every 6 days	Continuous detection with 24 hour sample when triggered
Pollutant	Chloroprene	Chloroprene
Location	6 established community sites	Same 6 established community sites
Duration	May 2016 to June 2020	6 Months

SPod

- The SPod or Sensor Pod is a commercially available solar-powered sensor system comprised of existing proven technology:
  - Meteorological (MET) station to continuously measure wind speeds and directions;
  - Photoionization detector (PID) to continuously measure total VOC concentrations;
  - Canister sampling
  - Data processing

SPod Deployment Plan

- EPA will deploy six SPods at the six existing EPA air monitoring locations.
- Deployment tentatively scheduled for March 2020.
- EPA's current plan is to conduct SPod monitoring for six months.

Air Monitoring Locations
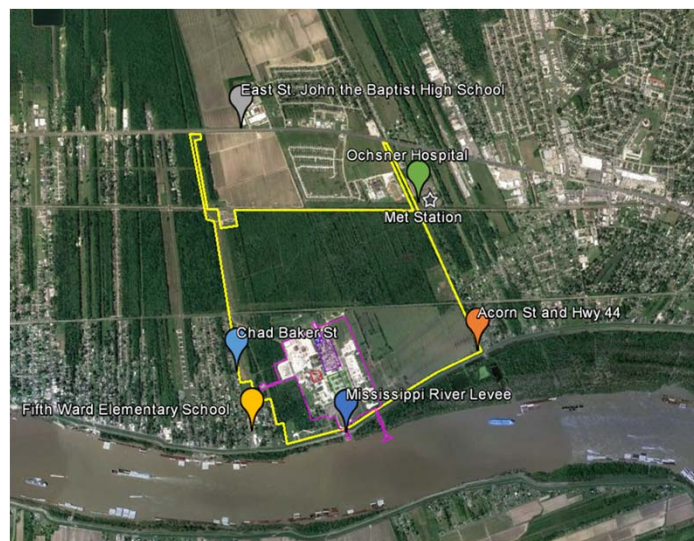
SPod Deployment: Initial Phase

- Initial phase consists of six SPods deployed for approximately two months.
- During this phase, the community monitoring will continue to operate.
- Data gathered in this phase will be processed and used to assess the sampling equipment performance and develop a VOC trigger concentration for canister samples and averaging period for that concentration.
- VOC can be many compounds and the activation of the trigger does not necessarily mean excessive chloroprene levels.
- Canister samples will be sent to laboratory for chloroprene analysis.

SPod Deployment: Operational Phase

- Operational phase consists of six SPods deployed for up to four months.
- During this phase, the plan is to collect continuous SPod data and collect event triggered 24-hour canister samples.
- The VOC trigger concentration is subject to change as more data becomes available.
- The entire project will be evaluated monthly to determine if it should continue for a longer duration and estimate how much more sample collection time will be required.

Website & Data

- https://www.epa.gov/la/laplace-st-john-baptist-parish-louisiana
- Chloroprene data will continue to be posted to EPA's public website.
- Website will be updated to include a description of the Spod monitoring program.