



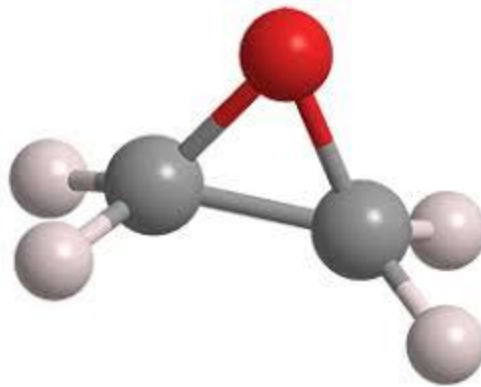
MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Ethylene Oxide and the Viant Case Study

Erin Moran
Enforcement Specialist
State of Michigan
Department of Environment, Great Lakes, and
Energy
Air Quality Division

Overview

- Primer on Ethylene Oxide (EtO) – What's the big deal?
- EtO in Michigan - Enforcement case with Viant



What is EtO?

- Carcinogenic – toxicity is comparable to Arsenic and Beryllium
- Flammable, colorless, odorless
- Primary industrial sources: chemical plants and commercial sterilizers
- One of 187 air toxics EPA regulates under CAA

Why did we become concerned with EtO?

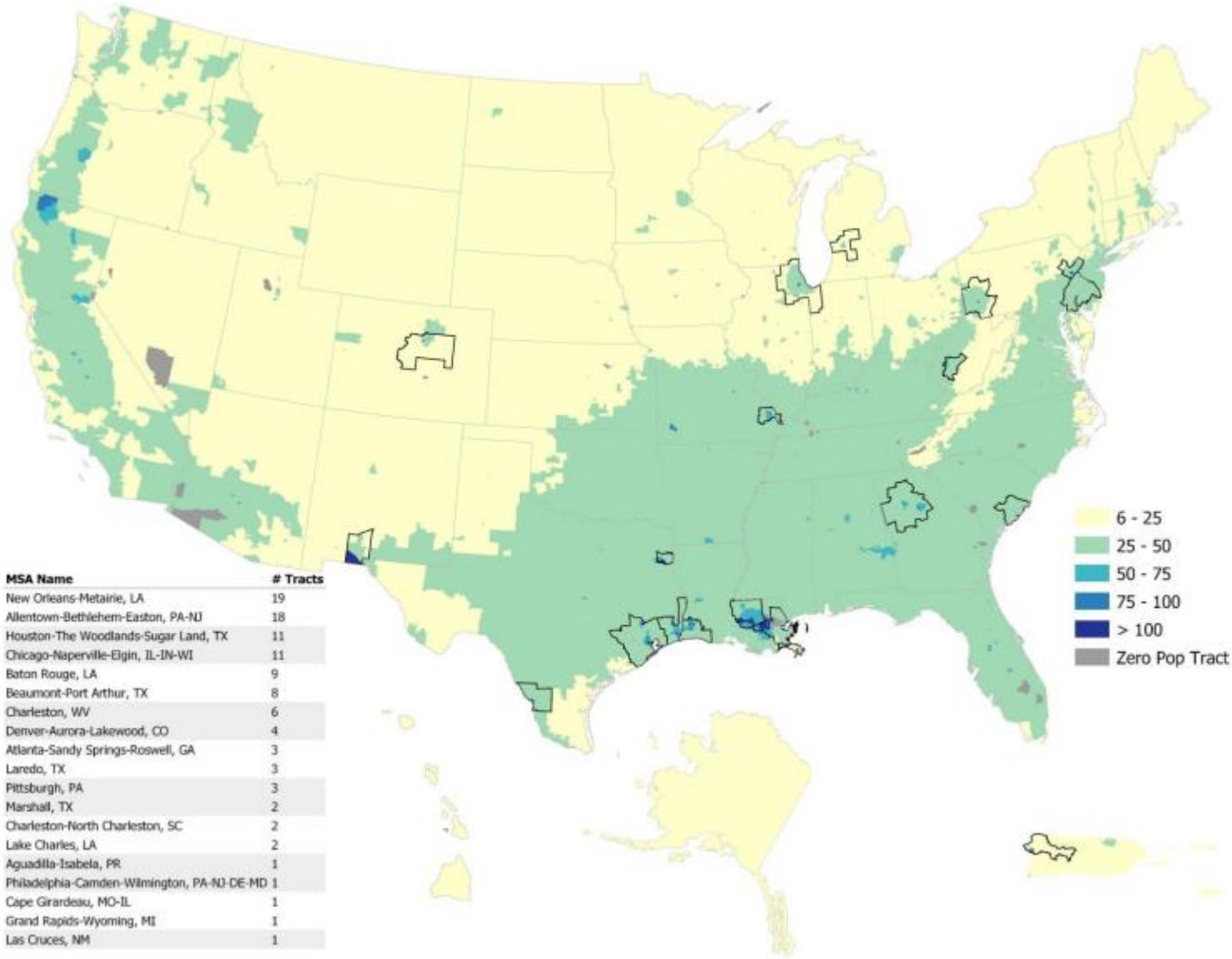
- National Air Toxics Assessment (NATA)
 - EPA's periodic review of air toxics
- Most recent NATA – August 2018
 - Found that EtO was 30 times more potent at causing cancer than previously thought
 - Identified areas that potentially have elevated cancer risks from long-term exposure to EtO

August 2018 NATA Results

MSA	#Tracts ≥100- in-1 million	Highest Risk Tract in MSA (-in-1 million)	MSA	#Tracts ≥100- in-1 million	Highest Risk Tract in MSA (-in-1 million)
New Orleans-Metairie, LA ^{**} , [†]	19	2,000	Pittsburgh, PA ^{**} , [†]	3	100
Allentown-Bethlehem-Easton, PA-NJ	18	600	Charleston-North Charleston, SC	2	100
Chicago-Naperville-Elgin, IL-IN-WI [†]	11	300	Lake Charles, LA	2	100
Houston-The Woodlands-Sugar Land, TX	11	300	Marshall, TX	2	200
Baton Rouge, LA	9	200	Aguadilla-Isabela, PR	1	300
Beaumont-Port Arthur, TX	8	300	Cape Girardeau, MO-IL	1	200
Charleston, WV	6	400	Grand Rapids-Wyoming, MI	1	100
Denver-Aurora-Lakewood, CO [†]	4	500	Las Cruces, NM	1	200
Atlanta-Sandy Springs-Roswell, GA	3	200	Philadelphia-Camden- Wilmington, PA-NJ-DE-MD [†]	1	100
Laredo, TX	3	100			

^{**} With the exception of New Orleans-Metairie, LA (chloroprene) and Pittsburgh, PA (coke oven emissions), the primary risks are driven by emissions of ethylene oxide from point sources.

[†] The following 5 MSAs were also in the 2011 NATA as MSAs with elevated cancer risks: Chicago-Naperville-Elgin, IL-IN-WI; Denver-Aurora-Lakewood, CO; New Orleans-Metairie, LA; Philadelphia-Camden-Wilmington, PA-NJ-DE-MD, and Pittsburgh, PA.



Phase 1 Sampling

NOVEMBER 28-29, 2018

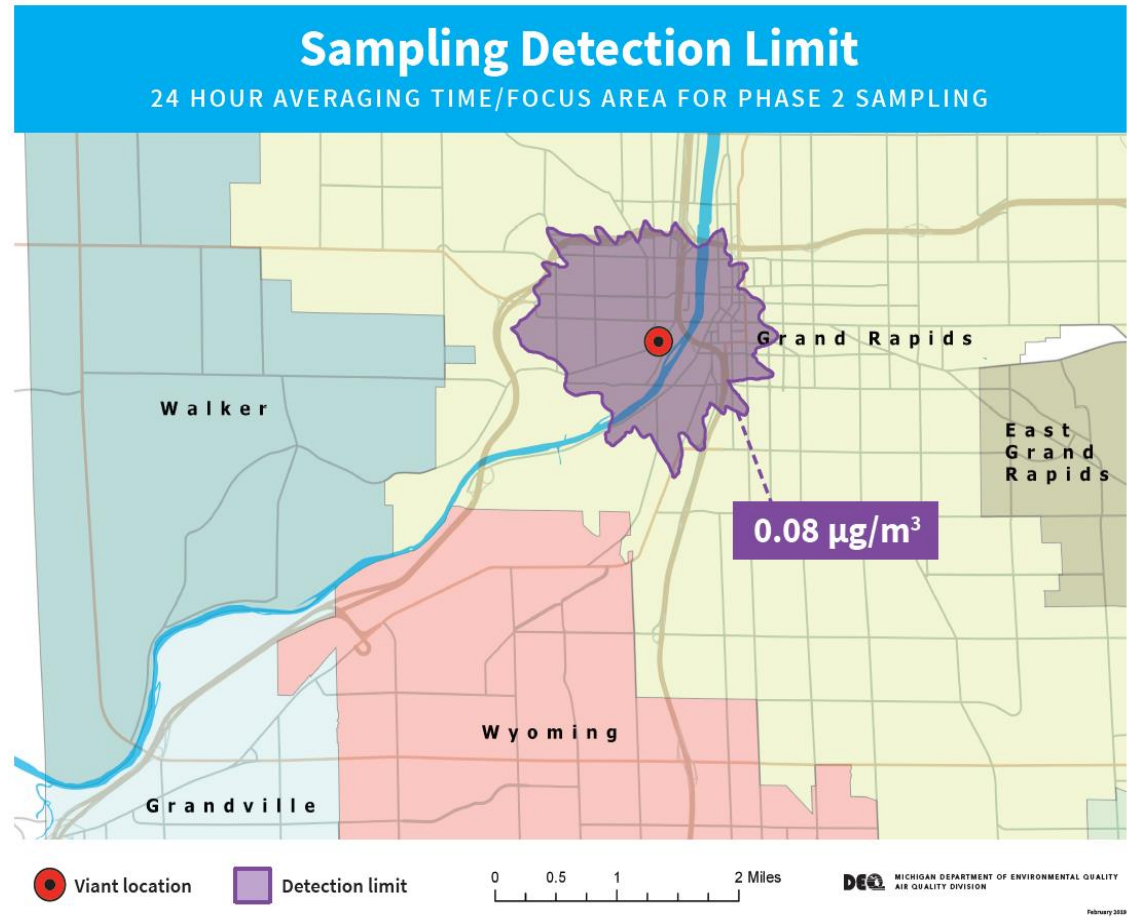


 Viant location

 Canister sites

Phase II Sampling

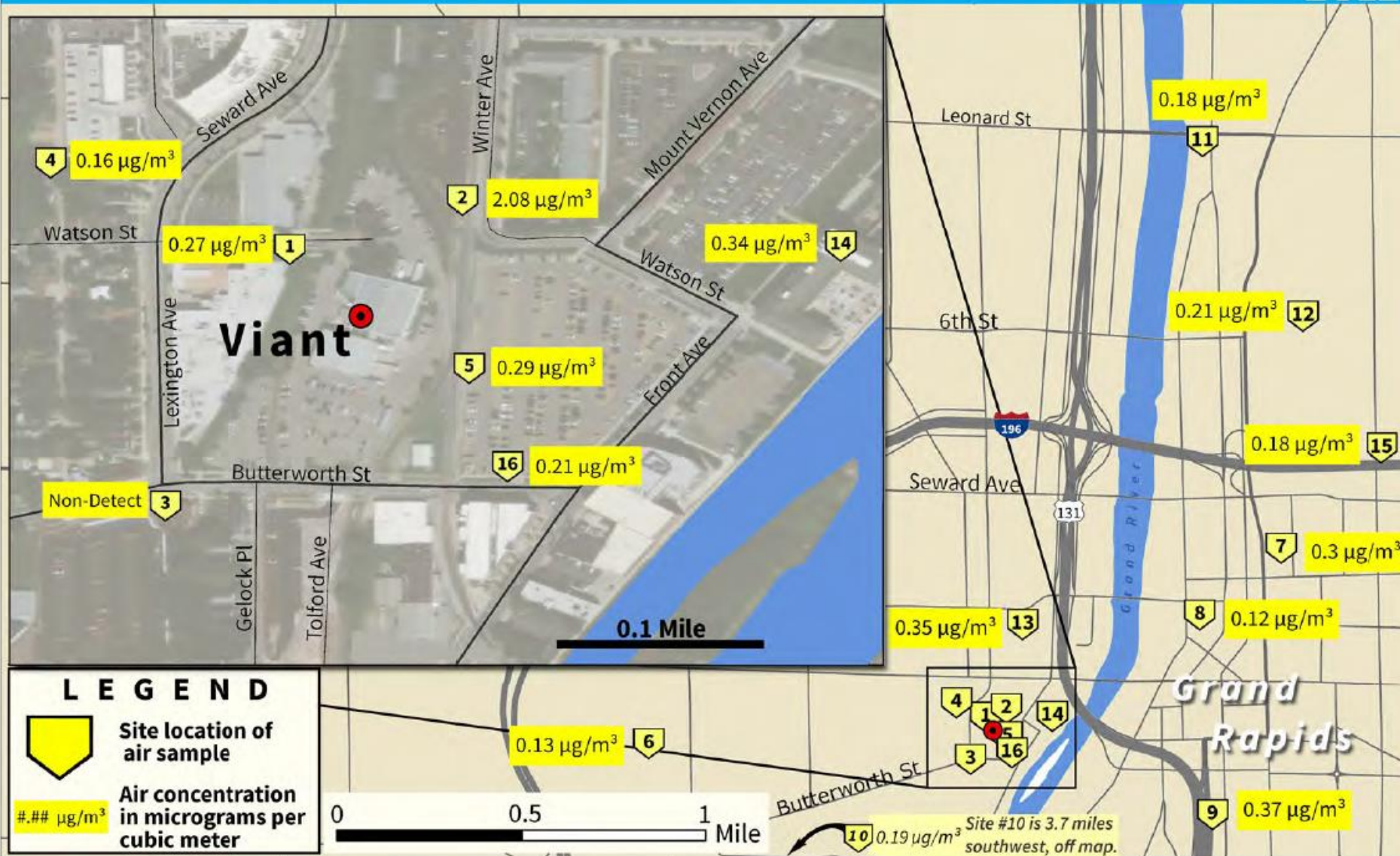
- 16 samples taken over 24 hours
- Sampling done in the community and on GVSU campus
- Sampling focus on area where computer models show potential finding of EtO



Ethylene Oxide Phase II Sampling

MARCH 27 - 28, 2019

EGLE

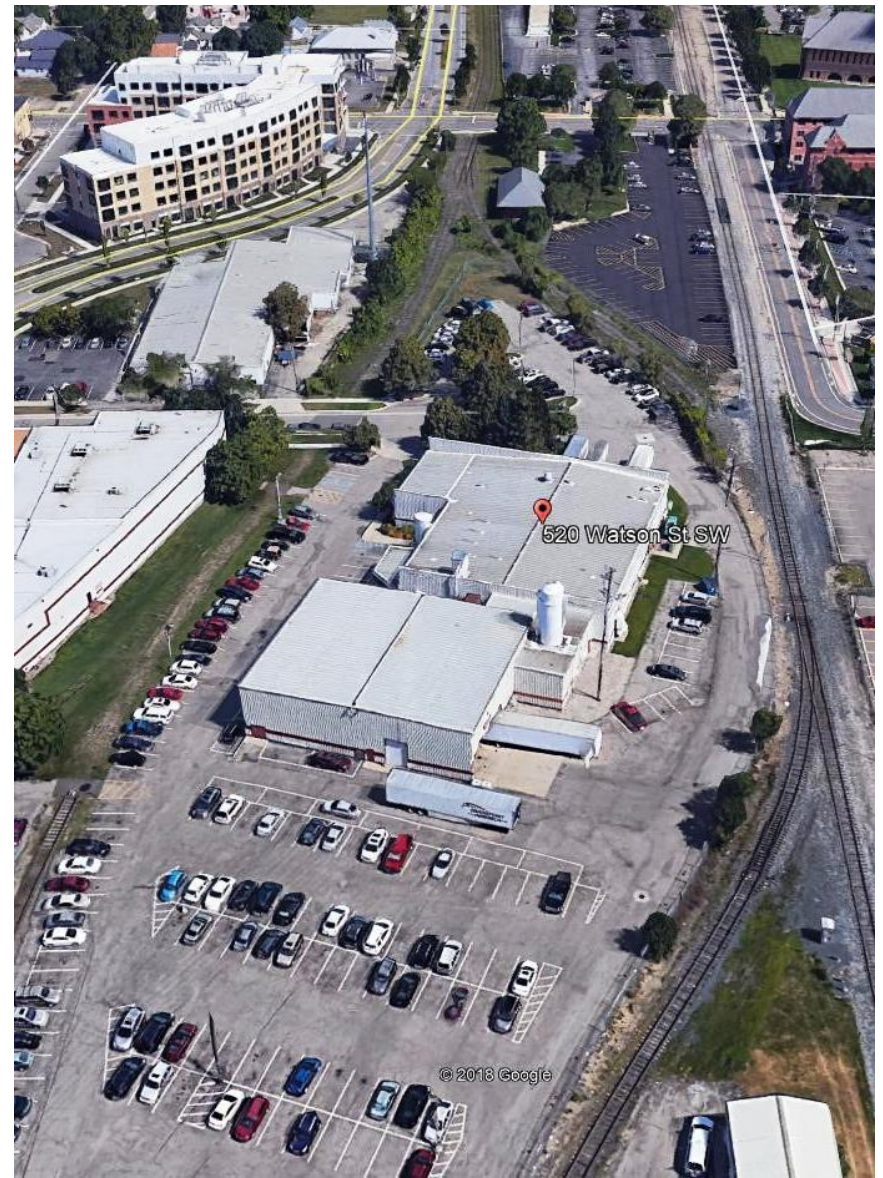


Escalated Enforcement Action

- Settlement (Administrative Consent Order) includes:
 - Monthly monitoring of EtO around the facility
 - Shut down sterilization process
 - Penalty of \$110,000
 - Stipulated fines for violations of the Consent Order
- Formal Public Hearing – October 23, 2019
 - Well attended by the community and students
 - Provided Q&A sessions that included state, federal, and local agencies

Significant Events Since Settlement Signed

- Viant has shut down sterilization operations
- EGLE staff have confirmed that all containers of EtO have been removed from the facility
- Penalty paid



Michigan's Outreach Efforts

- AQD notified the community of the EtO issue
- Public information meeting in March 2019
- Website created – www.Michigan.gov/viant
- Coordinated with local and county health officials



Questions?

- For more info:
 - Viant Website – www.Michigan.gov/Viant
 - morane@Michigan.gov