Logistics

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**Handouts**
3 UST Finder Handouts →

**Questions Tool:**
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Agenda & Speakers

- **Mark Barolo**, Acting Director, U.S. EPA Office of Underground Storage Tanks
- **Matthew Jones**, Oil Compliance & Enforcement Subsection Chief, New Hampshire Department of Environmental Services - ASTSWMO Tanks Subcommittee Chair
- **Fran Kremer, Ph.D.**, Senior Scientist, EPA Office of Research and Development
- **Alex Hall**, EPA Office of Research and Development
US EPA's UST Finder: National UST and Releases Web Map

Alex Hall and Fran Kremer
US EPA Office of Research and Development

Association of State and Territorial Solid Waste Management Officials Webinar

https://gispub.epa.gov/ustfinder
Overview

• Utility of national data
• Data sources
• Example uses of the data
• Demonstration of the app

The views expressed in this presentation are those of the author(s) and do not necessarily represent the views or policies of the U.S. Environmental Protection Agency
Underground Storage Tanks in the U.S.

• Scope of the tanks universe
  • 550,000 underground storage tanks
  • 200,000 facilities
  • 64,000 leaking underground storage tank cleanups remaining

• Potential impact
  • Ground water contamination principal concern, also petroleum vapor intrusion
  • Extreme weather conditions can increase the extent of contamination, spatially and temporally
Utility of National Tanks Data
Readily Accessible Information for Routine Operations and Emergency Response

• Infrastructure data provides key information on:
  • Age of the infrastructure
  • Type of infrastructure
  • Potential vulnerabilities

• Fuel
  • Volumes
  • Type

• Geospatial data provides potential impacts to water supplies and public health. Examples include:
  • Identify USTs/LUSTs potential impact to public drinking water supplies
  • Identify USTs/LUSTs in proximity to private domestic wells
  • Identify facilities in 100-year floodplain
  • Identify land use types for potential PVI risk
  • Identify population in proximity to facilities
• Spatial/temporal changes in ground water levels create challenges to USTs and LUSTs
  • Plume impacts
  • Corrosion
• Fluvial flooding
• Saltwater intrusion can impact plumes and corrosion
  • Extreme weather
  • Sea level rise
Coastal Flooding
Potential for Coastal Saltwater Intrusion

2019 Midwest Flooding

"There's a gas station here, and his tanks are floating down the river,"

https://www.marketplace.org/2019/03/18/business/its-mess

Sustained Flooding


- Loss of product
- Corrosion of infrastructure
- Extended contaminant plumes
- Inability to access sites to stabilize facilities
America’s Water Infrastructure Act 2018
Overview

• Applies to all community water systems serving more than 3,300 people

• Conduct Risk and Resilience Assessments and update Emergency Response Plans

• Submit certifications to EPA by specified deadlines

• Review risk assessments and ERPs every five years

• Coordinate with local emergency planning committees

• Maintain records
Roles of Federal, State, and Local Govts in Preparing for Floods National Response Framework, National Preparedness System

• Federal
  • Precipitation and flood forecasts
  • Flood hazard and analysis maps
  • Outreach/education

• State/Local
  • Infrastructure improvements
  • Storm water system design and maintenance
  • Land use policies and plans
  • Building codes, development plans
Fueling Stations are Critical in Disaster Response

• Categories of Critical Facilities includes
  • Facilities involved in the production, storage and/or transport of corrosives, explosives, flammable materials, radioactive materials and toxins.

• Systematically assess the storm risk and identifying protection strategies to “harden” facilities against damage for each location

• Essential for providing
  • Adequate fuel for evacuees
  • Assistance for first responders
    • After Hurricane Harvey, responders found a convenience store on higher ground
      “every one of the roughly 120 fueling pumps had an emergency response vehicle stationed at it”
    • “Eye of the Storm, Report of the Governor’s Commission to Rebuild Texas”, 2018
Approach to Flood Resilience – How We can Assist the States

• STEP 1 Understand the Threat of Flooding
• STEP 2 Identify Vulnerable Assets & Determine Consequences
• STEP 3 Identify & Evaluate Mitigation Measures
• STEP 4 Develop Plan to Implement Mitigation Measures
Common Supply Chain Impacts

- Post-hurricane bottlenecks and disruptions arose more frequently at the distribution level
  - damage to critical infrastructure including municipal water, transportation (fuel)
- The ability of emergency managers to understand post-storm supply chain bottlenecks was constrained by *limited pre-storm assessment of vulnerable and critical supply chain nodes*
- Confusion in multiple regions on priorities and practices of FEMA and other emergency management officials for *providing* generators and *fuel* to parties in need of assistance
Programmatic Importance of Database

Prevention
- Corrosion
  - Identify components early
  - Identify facilities vulnerable to corrosion
- Flooding
  - Prediction to minimize impacts
  - Identify inundation
  - Assist emergency response

Cleanup
- Triage cleanups
- Identify drinking water sources
- Land use – risk
- Population
- Screen technology selection
- Flooding
  - Identify facilities
  - Potential new releases
  - Characterize and remediate sites releases

Database
Database Structure

National UST and LUST Geospatial Database

UST Databases: 49 States & D.C.
- Installation Date
- Removal Date
- Status (open/closed/temp)
- Double/single walled
- Facility ID

Facility Databases: 50 State & D.C.
- Coordinates
- Count of open/closed/temp USTs

Compartment Database
- UST Capacity
- Fuel Type

LUST Databases: 50 states & D.C.
- Coordinates
- Release Date
- NFA or Active
- Substance Released
Leaking Underground Storage Tanks in the US
Underground Storage Tank Removal Trend

- UST age at the time of removal has doubled from 1985 (average age = 17) to today (average age = 33)
Fluvial Flooding: National UST Flood Vulnerability

• 34,000 USTs within FEMA estimated 100 yr. floodplain

• Totaling a potential of 250 million gallons of fuel/hazardous substance

• With an average UST age of 25 years
No flood data for AK and HI
NATIONAL UST FLOOD VULNERABILITY
Coastal Flooding: Hurricane Harvey

- Approx. 500 UST Facilities and 1,200 USTs were inundated
- Up to 15.4 millions of gallons of fuel/hazardous substance were inundated
Coastal Flooding: Hurricane Harvey

AGE OF FLOOD INUNDATED USTs DURING HURRICANE HARVEY

FUELING STATION AFTER HARVEY
Private Domestic Well Vulnerability

- Estimated 250,000 private domestic wells within 1,500 feet of all active UST releases

Count of Private Domestic Wells Within 1,500 FT of Active LUSTs—By State

Estimated Wells within 1,500 ft of an active LUST:
- ≤1000
- ≤5000
- ≤60000
Data App Demo

https://gispub.epa.gov/ustfinder
National Tanks and Releases Database V2

Incoming Data

Dynamic Database

Applying Data - Tanks Prevention/Cleanup

Applying Data - Water Utilities, PDWs

Applying Data - Emergency Response

State Data Pull

State Data Push
Join ASTSWMO and our partners for several upcoming Tanks program webinars:


- ITRC Petroleum Vapor Intrusion [https://clu-in.org/conf/itrc/PVI/](https://clu-in.org/conf/itrc/PVI/)