

**May 15-17, 2018**

 <a href="http://www.epaosc.org/rrt6-homepage">www.epaosc.org/rrt6-homepage</a>	<b><u>Meeting Location:</u></b>  US EPA Training Center 16650 Westgrove Drive Addison, Texas	<b><u>RRT Co-Chairs:</u></b>  Ronnie Crossland, EPA <a href="mailto:Crossland.Ronnie@epa.gov">Crossland.Ronnie@epa.gov</a>  Michael Sams, USCG <a href="mailto:Michael.K.Sams@uscg.mil">Michael.K.Sams@uscg.mil</a>	<b><u>RRT Coordinators:</u></b>  Steve Mason, EPA <a href="mailto:Mason.Steve@epa.gov">Mason.Steve@epa.gov</a>  Todd Peterson, USCG <a href="mailto:Todd.M.Peterson@uscg.mil">Todd.M.Peterson@uscg.mil</a>
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## RRT-6 Executive Committee Meeting – Tuesday, May 15, 2018

**1:00 – 4:30 PM Executive Meeting (Invite only)**

## Day 1 -- RRT-6 General Session -- Wednesday, May 16, 2018

Time	Topic	Presenter / Facilitator
8:30 – 8:45 AM	Introductions / Administrative Announcements / Opening Statements	Ronnie Crossland, EPA / Michael Sams, USCG
8:45– 9:15 AM	Review of 2018 RRT Priorities / Status	Michael Sams, USCG
9:15 – 9:30 AM	Open Forum	All
<b>9:30 – 9:45 AM</b>	<b>Break</b>	
9:45 – 10:45 AM	State Reports (NM, TX, AR, OK & LA)	State Agencies
10:45 – 11:15 AM	National Response System (NRS) Planning for Region 6	Steve Mason, EPA
<b>11:15 AM – 12:45 PM</b>	<b>Lunch</b>	
12:45 – 1:30 PM	High Current Oil Dispersion Modelling	Steve Fitzgerald, Intuitive Machines
1:30 – 1:50 PM	MEXUSGULF Seminar Brief	Michael Sams, USCG
1:50 – 2:30 PM	U.S. Energy Information Administration (EIA)	Arup Mallik, DOE EIA
<b>2:30 – 2:50 PM</b>	<b>Break</b>	
2:50 – 3:15 PM	EPA ERT Overview	Greg Powell, EPA ERT
3:15 – 4:00 PM	Federal Agency Reports	Federal Agencies
4:00 – 4:30 PM	Flower Garden Banks National Marine Sanctuary Guidance	Paige Doelling, DOC/NOAA
<b>4:30 PM</b>	<b>Adjourn</b>	
<b>5:00 PM</b>	<b>Networking Session – Location TBD</b>	<b>All</b>

**Adobe Connect:** <https://epawebconferencing.acms.com/region6rrtmeeting/>

**Conference Call: 202-991-0477**

**Pin: 5634699#**

## Day 2 -- RRT-6 General Session -- Thursday, May 17, 2018

Time	Topic		Presenter / Facilitator
8:30 – 9:15 AM	Role of the Dept. of Health and Human Services (HHS) in ESF10 & ESF8 activations		CAPT Mehran Massoudi, HHS
9:15 – 9:45 AM	Marine induced polarization (IP) for Mapping Non-Floating Oil (tentative)		Kevin Hand, IntelliSense Marine
9:45 – 10:00 AM	Break		
10:00 – 10:30 AM	DHS – Protective Security Advisors		Harvey "PT" Perriott, DHS
10:30 – 10:45 AM	Revision of Existing In-Situ Burn Guidance and Preauthorization		Adam Tyndale, USCG
10:45 – 11:15 AM	Tri-Chem Industries Emergency Response		Adam Adams, EPA
11:15 AM – 12:30 PM	Lunch		
12:30 – 1:30 PM	EPA FOSC Reports		EPA FOSCs
1:30 – 2:30 PM	USCG FOSC Reports		USCG FOSCs
2:30 – 2:45 PM	Open Forum		All
2:45 – 3:00 PM	Closing Remarks		Ronnie Crossland, EPA / Michael Sams, USCG
3:00 PM	Adjourn		
3:00 – 5:30 PM	Gulf of Mexico Joint Assessment Team (GOM JAT)		Michael Cave, TCEQ
Adobe Connect: <a href="https://epawebconferencing.acms.com/region6rrtmeeting/">https://epawebconferencing.acms.com/region6rrtmeeting/</a> Conference Call: 202-991-0477 Pin: 5634699#			
Dates for next RRT Meetings:	Confirmed	Fall 2018	08-09 Nov 2018
	Proposed	Spring 2019	08-09 May 2019 or Joint RRT-6/7 Meeting in Oklahoma City March-April 2019 Timeframe
	Proposed	Fall 2019	06-07 Nov 2019





Chairman Christi Craddick  
Commissioner Ryan Sitton  
Commissioner Wayne Christian

May 2018





**Railroad Commission**

**Oil and Gas Division**

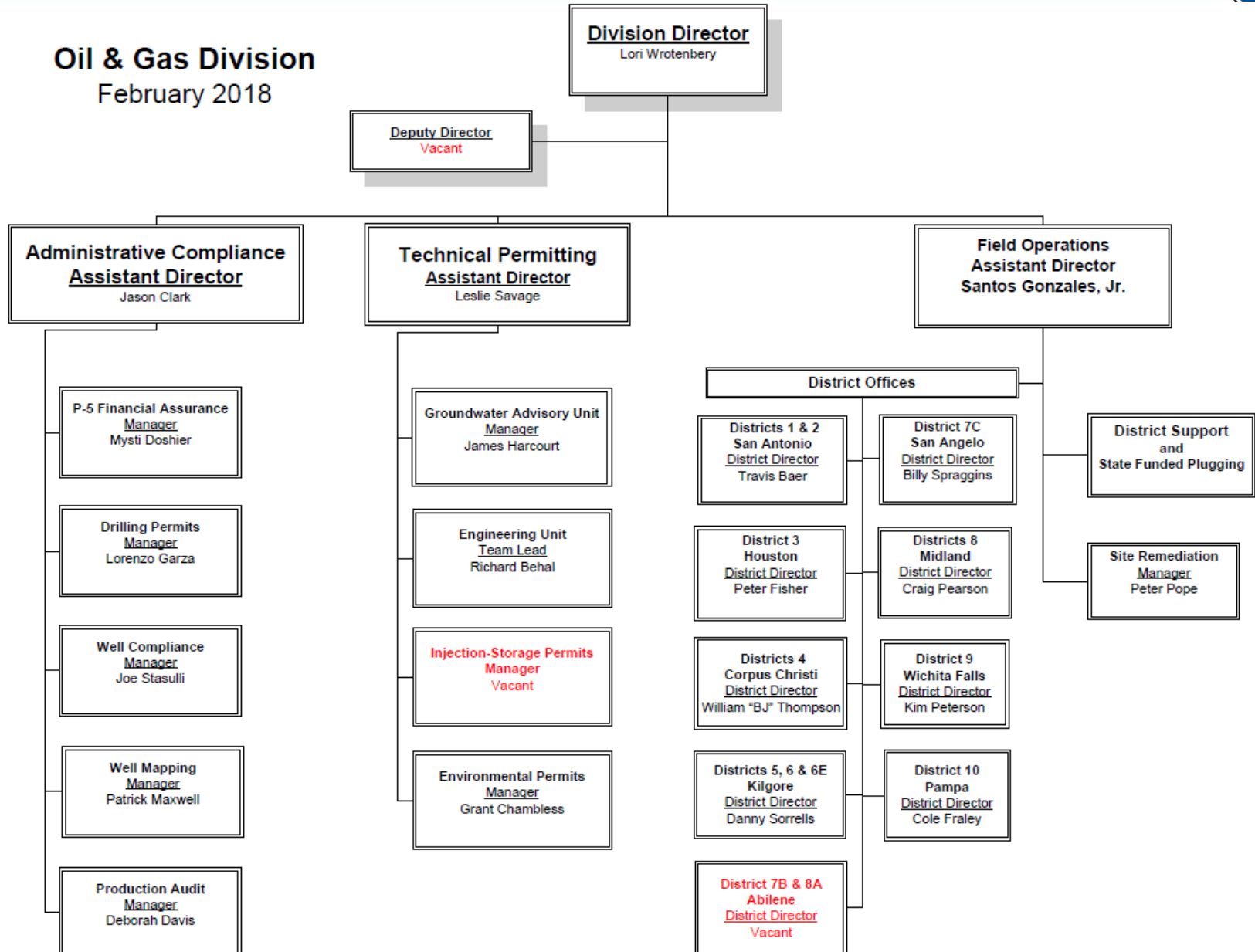
**Field Operations**

**Site Remediation Section**

# Oil & Gas Division



**Oil & Gas Division**  
February 2018



# District Office Contacts - Cleanup



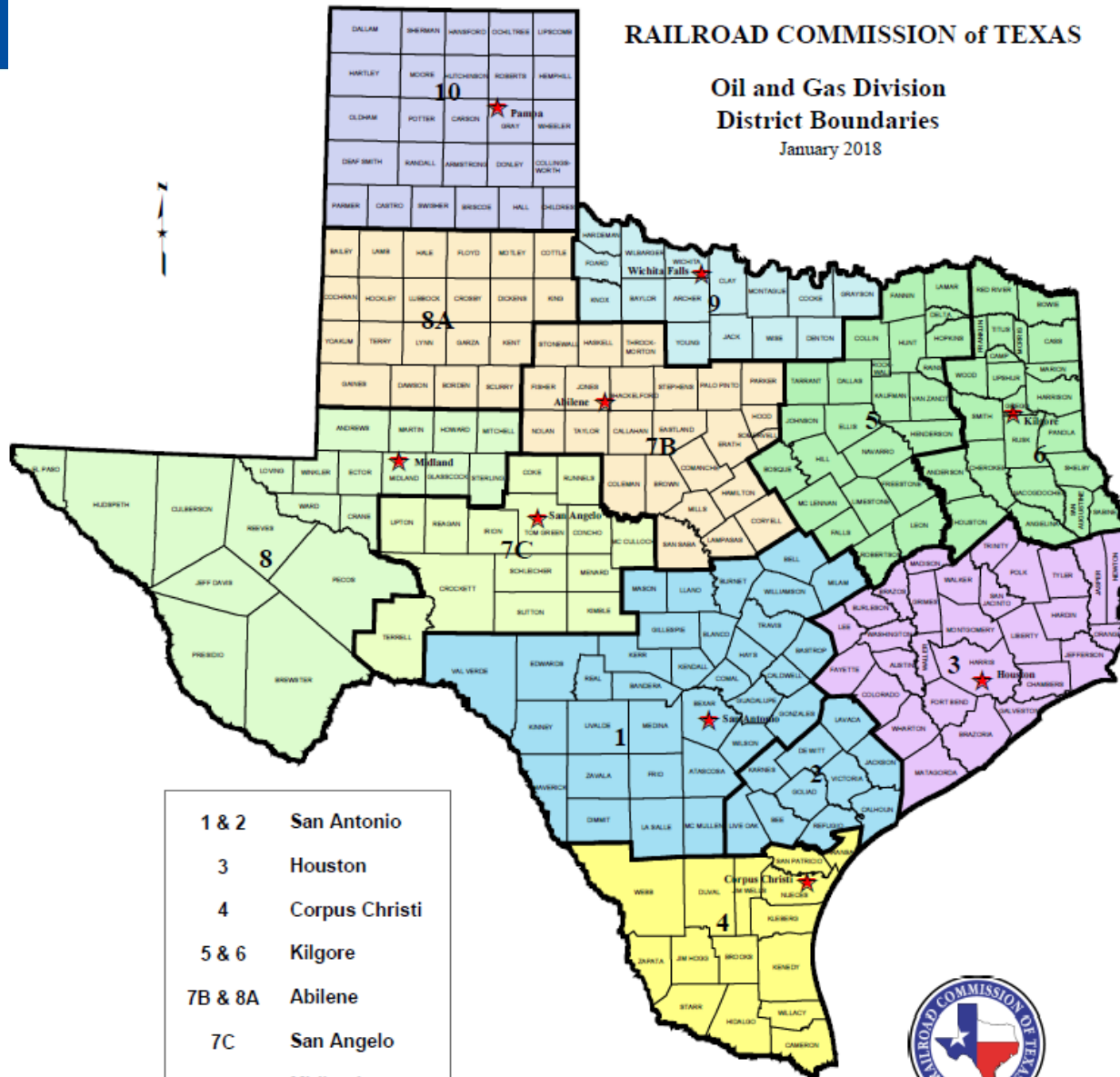
SITE REMEDIATION		
District Directors & District Office Cleanup Coordinators (DOCCs)		
<b>Districts 1 &amp; 2 - SAN ANTONIO</b>		
Director:	Travis Baer [ext. 15]	CLEANUP COORD. - Bill Miertschin [ext. 17]
Asst. Dir:	Diane Beckham [ext. 21]	Cell (210) 296-9387
Phone/FX:	(210) 227-1313 / (210) 227-4822	CLEANUP COORD. - Neil Rosales [ext. 28]
		Cell (210) 216-0871
<b>District 3 - HOUSTON</b>		
Director:	Pete Fisher [ext. 619]	CLEANUP COORD. - Dean Southward [ext. 612]
Asst. Dir:	Audrey Kuklenz [ext. 615]	Cell (832) 465-1911
Phone/FX:	(713) 869-5001 / (713) 869-9621	CLEANUP COORD. - Randall (Randy) Johnson [ext. 611]
		Cell (832) 247-3693
<b>District 4 - CORPUS CHRISTI</b>		
Director:	William "BJ" Thompson	CLEANUP COORD. - Larry Schexnayder
Asst. Dir:	Glen Monette	Cell (361) 438-5770
Phone/FX:	(361) 242-3113 / (361) 242-9613	CLEANUP COORD. - Casey Mibb
		Cell (361) 876-6416
<b>District 5 &amp; 6 - KILGORE</b>		
Director:	Danny Sorrells [ext. 202]	CLEANUP COORD. - Jeff Lauman [ext. 220]
Asst. Dir:	Roger Satterwhite	Cell (903) 522-0993
Phone/FX:	(903) 984-3026 / (903) 983-3413	CLEANUP COORD. - Alex Crutcher [ext. 219]
		Cell (903) 522-1079
<b>District 7B &amp; 8A - ABILENE</b>		
Director:	James (Doug) Allmad [ext. 409]	CLEANUP COORD. - Crystal Denson [ext. 404]
Asst. Dir:	Vacant [ext. 408]	Cell (325) 669-6974
Phone/FX:	(325) 677-3545 / (325) 677-7122	CLEANUP COORD. - David Hudson [ext. 419]
		Cell (325) 669-7315
<b>District 7C - SAN ANGELO</b>		
Director:	Bill Sprague	CLEANUP COORD. - Gerald McCollough
Phone/FX:	(325) 657-7450 / (325) 657-7455	[ 325-657-7458]
		Cell 325-660-3779
<b>District 8 - MIDLAND</b>		
Director:	Craig Pearson [ext. 419]	CLEANUP COORD. - Bo Vizcaino [ext. 429]
Asst. Dir:	Jeffrey Morgan [ext. 408]	Cell (432) 556-8383
Phone/FX:	(432) 684-5581 / (432) 684-6005	CLEANUP COORD. - Carl Vessels [ext. 428]
		Cell (432) 556-8406
<b>District 9 - WICHITA FALLS</b>		
Director:	Kim Peterson [ext. 207]	CLEANUP COORD. - Ray Horton [ext. 205]
Asst. Dir:	Blake Ramon	Cell (940) 636-2811
Phone/FX:	(940) 723-2153 / (940) 723-5088	CLEANUP COORD. - Jeffrey Jacobs [ext. 210]
		Cell (940) 636-2805
<b>District 10 - PAMPA</b>		
Director:	Cole Fraley [ext. 11]	CLEANUP COORD. - Randy Milligan [ext. 50]
Phone/FX:	(806) 665-1653 / (806) 665-4217	Cell (806) 683-4482



# RAILROAD COMMISSION of TEXAS

## Oil and Gas Division District Boundaries

January 2018



1 & 2	San Antonio
3	Houston
4	Corpus Christi
5 & 6	Kilgore
7B & 8A	Abilene
7C	San Angelo
8	Midland
9	Wichita Falls
10	Pampa



# State Funded Cleanups and Well Plugging



- Plugging Goals for FY18-FY19 (biennium)
  - 3,000 orphaned wells with \$67 million (ESF)
- Site Remediation Goals for FY18 only
  - 259 cleanup activities with \$9 million (OGRC)
  - \$6.3 million earmarked for abandoned reclamation facilities

# State Funded Cleanups and Well Plugging



- Plugging: Currently 940 wells at an estimated cost of \$15.6M
- Site Remediation: As of May 7 - Completed and closed 73 cleanup activities at cost of \$673K. Additional 27 completed in the field.



# Reclamation Facility



- Waste Piles
- Pits
- Storage Tanks
- Frac Tanks





# Reclamation Facility



# Reclamation Facility





1986



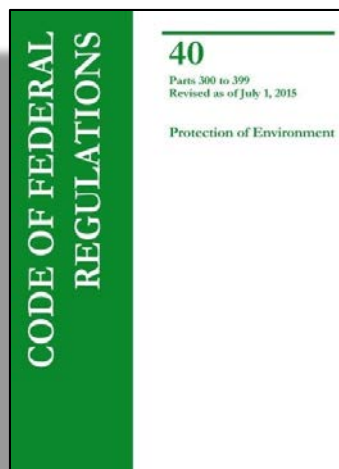
# National Response System – HazMat Planning



2018

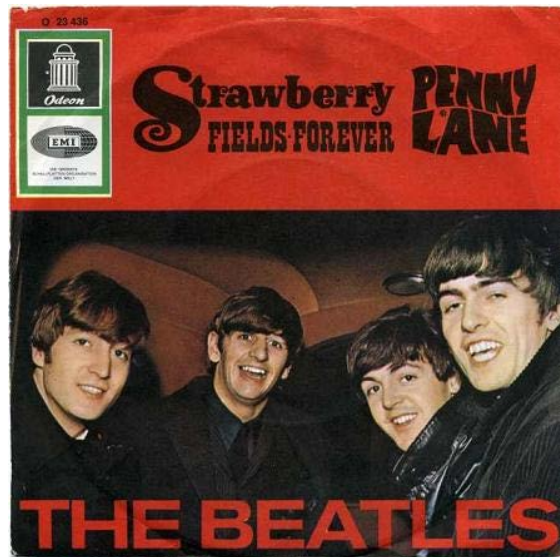
## NATIONAL OIL & HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN (NCP)

- The NCP, 40 CFR Part 300, is administered by EPA



- NCP describes the national preparedness and response system (NRS) for oil and hazardous substances
  - Includes chemical, biological, radiological, and nuclear (CBRN) releases to the environment
  - Both accidental and intentional (including terrorist) releases

March, 1967



## Where We Came From



In March, 1967, Torrey Canyon, carrying 119,000 tons of crude oil, struck reef off coast of England, spilling over 37 million gallons.

Resulting oil slick was 35 miles long and nearly 20 miles wide.

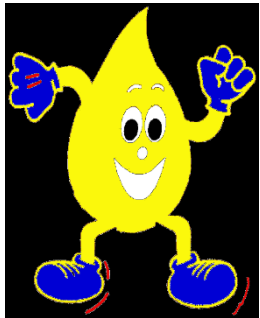
Cleanup, by United Kingdom forces, involved detergent, bombs, kerosene, and rockets.

Total cleanup bill exceeded \$4 million, which would be \$26,400,000 in today's money.

## Where We Came From

*"It is imperative that we take prompt action to prevent similar catastrophes in the future and to insure that the Nation is fully equipped to minimize the threat from such accidents to health, safety and our natural resources."*

President Lyndon Johnson, May 26, 1967  
referring to the *Torrey Canyon* Oil Spill



Actually, it was his daughter who asked how U.S. would handle a spill, which planted seed in Johnson's mind.

## Where We Came From

**Report to President outlined status of U.S. spill technology, vessel designs, available equipment, and skilled manpower.**

**In June of 1968, Johnson asked Defense, Interior, and Transportation to assume special responsibilities to complete multi-agency contingency plan to strengthen Nation's preparedness to act in the event of an oil spill along coast and waterways.**





**Late in 1968, first NCP completed:**

- **First comprehensive system of accident reporting, spill containment, and cleanup**
- **National reaction response team and regional response coordinators**
- **Addressed oil spills only; other hazardous substances not covered under original plan**

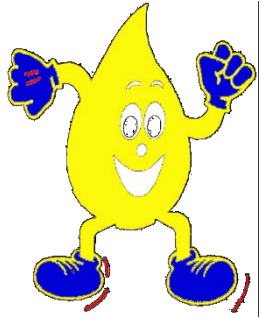


## Where We Came From

*"I have today approved a plan to reduce damage from the 2,000 or more spills of oil and other hazardous materials that occur each year in this country and along its shores..."*



## Where We Came From



**First test of new NCP on January 28, 1969, when Union Oil offshore drilling platform experienced blowout off coast of Santa Barbara, CA.**

**By February 16, 1969, estimated 3.3 million gallons discharged**



## Where We Came From

*"I don't like to call it a disaster, because there has been no loss of human life; I am amazed at the publicity for the loss of a few birds"*

Fred Hartley, President, Union Oil



**Actually, over 3,600 birds killed, as well as countless mammals, including seals and sea lions.**

**Federal, State, and local officials, as well as volunteer organizations, worked together to mitigate consequences of spill.**

## Where We Came From

**1972 revisions to CWA required NCP address releases of hazardous substances, as well as oil spills**

**NCP revised to establish NRS with its 3 primary core components: NRT, RRTs, and OSCs**



**CERCLA applies to releases to any environmental media and to cover releases at hazardous waste sites requiring emergency removal actions.**

**EPCRA expands EPA enforcement authority and establishes chemical emergency response planning infrastructure at state and local levels.**

**RCRA gives EPA authority to control hazardous waste from "cradle to grave", including generation, transportation, treatment, storage, and disposal.**





**Stafford Act (PL-93-288)**  
provides authority for federal government to respond to disasters and emergencies.

**CWA and OPA** includes response to releases of hazardous substances, as well as oil, to any navigable waters of U.S. OPA broadened response and enforcement authorities of federal government.



## AUTHORITIES

**Clean Water Act (CWA)  
Section 311,  
as amended by Oil Pollution Act  
(OPA 90)**



**Comprehensive Environmental  
Response, Compensation, and Liability  
Act (CERCLA)  
(aka Superfund)**



- ❖ Response
- ❖ Planning and Preparedness
- ❖ Enforcement

## National Oil & Hazardous Substances Pollution Contingency Plan (NCP)

Regulation at **40 CFR part 300** that implements the oil/hazmat response authorities in these laws




## ABOUT THE NRS

- NRS divided into local, regional, and national organizational levels
- Participants include federal, state, local, and private sector agencies and organizations, with interests in or responsibilities for oil and hazardous substances emergencies
- Federal agencies in NRS provide on-site response capability at local level



# THE OIL RESPONSE LANDSCAPE



>135,000 MILES  
OF PIPELINE  
> 7 M B/D  
TRANSPORTED



>16,000  
OIL SPILLS IN  
2016\*



>140,000 MI  
OF RAIL  
>700 TH B/D  
TRANSPORTED



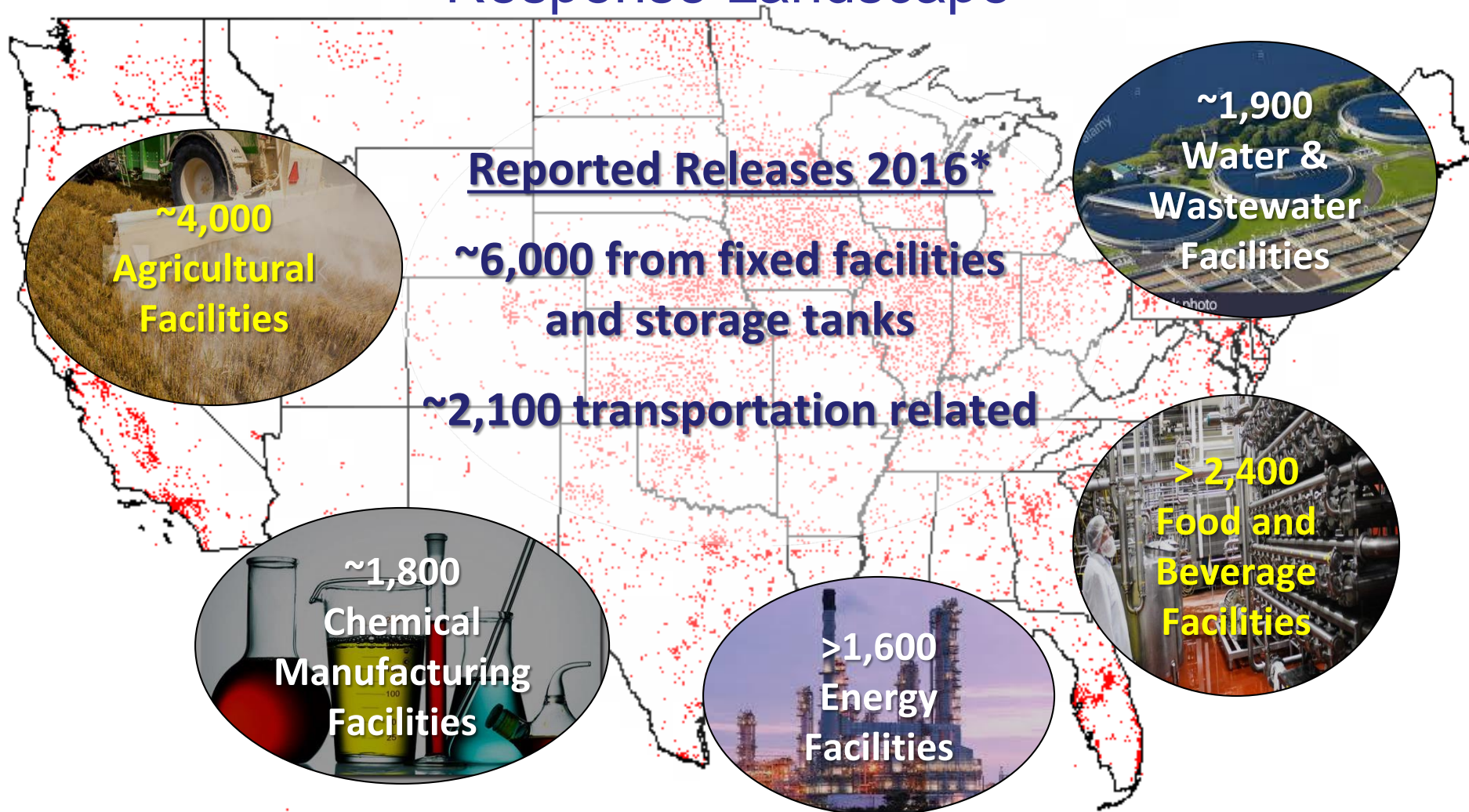
>1.5M B/D  
TRANSPORTED  
BETWEEN U.S.  
PORTS



>2,000 PLATFORMS  
OUTER  
CONTINENTAL SHELF  
17% TOTAL U.S.  
CRUDE PRODUCTION

CRUDE OIL IMPORTS > 9 M B/D  
CRUDE OIL EXPORTS >4.5 M B/D

# The Hazardous Substances Response Landscape

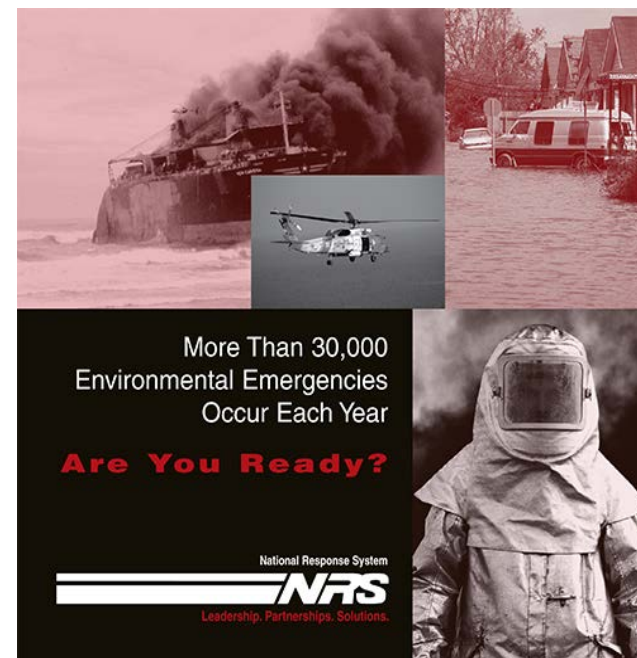


\*Reports of “non-oil” releases to National Response Center

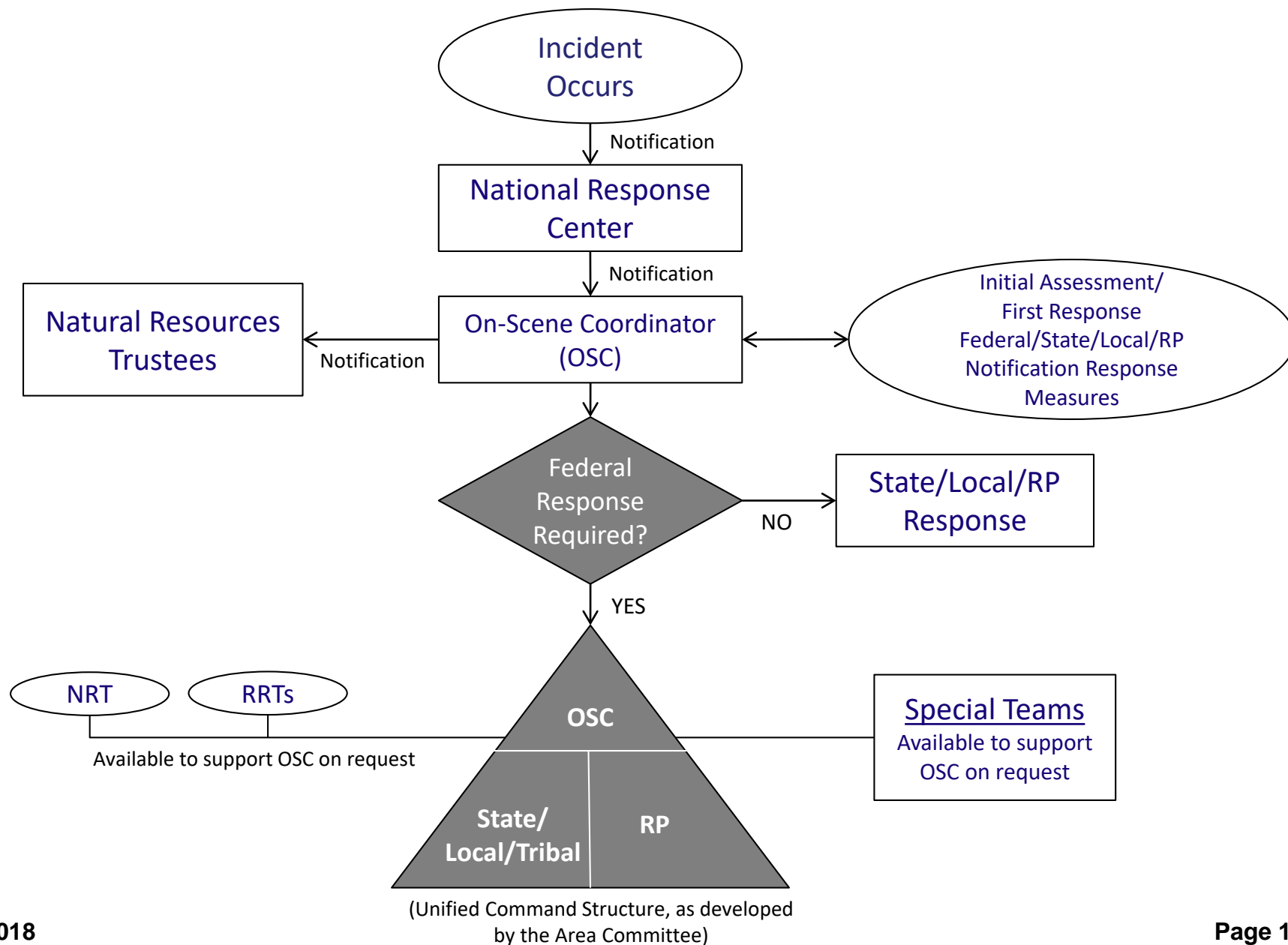


## KEY NRS COMPONENTS

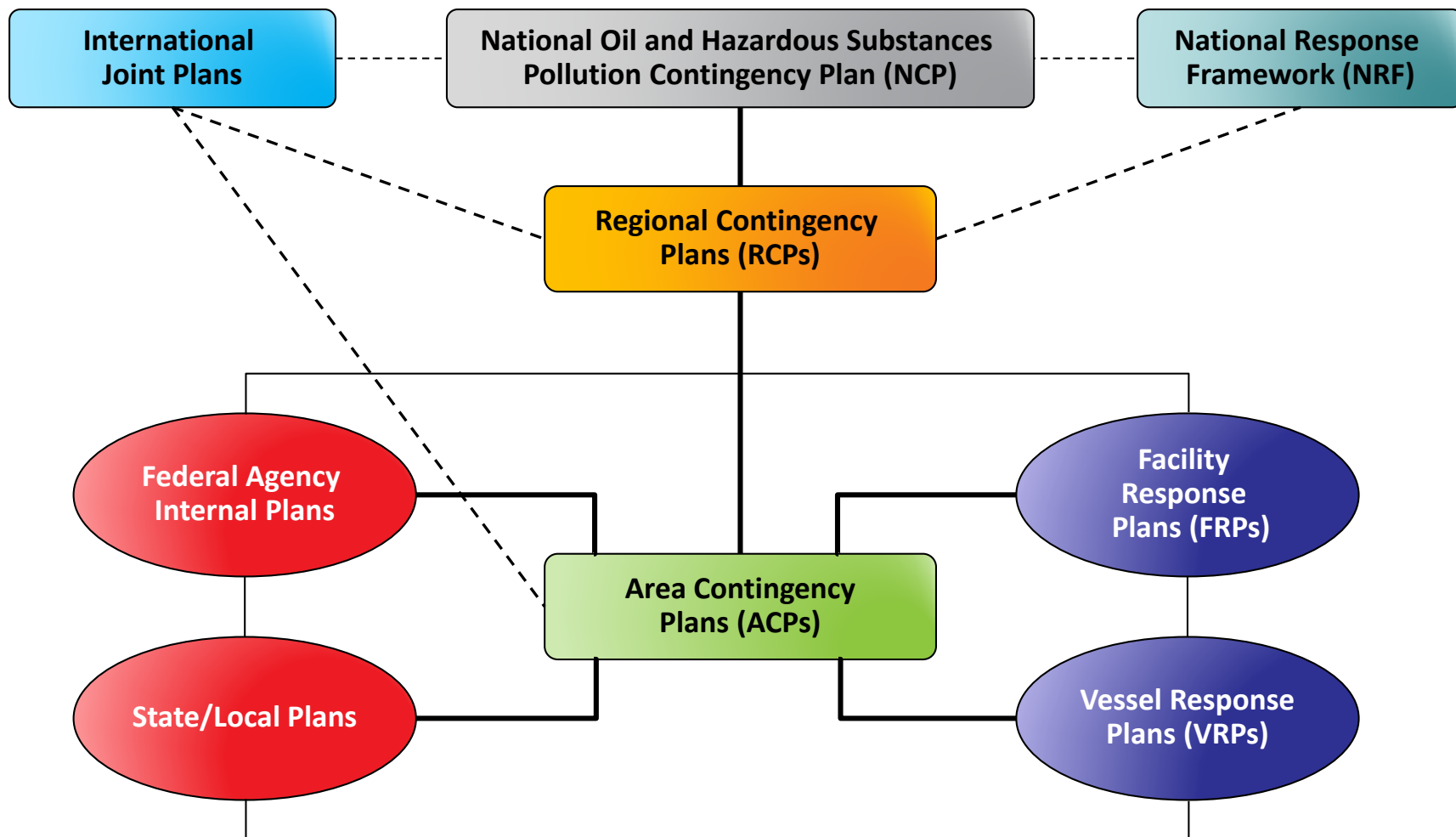
- **National Response Center (NRC)**
- **Federal On-Scene Coordinators (OSCs)**
- **13 Regional Response Teams (RRTs)**
- **National Response Team (NRT)**
- **Area Committees**
- **State/Local Governments**
- **Special Teams**
- **Joint Response Teams with neighboring countries**
- **Regulated Industry**



# NRS NOTIFICATION & DECISION PROCESS



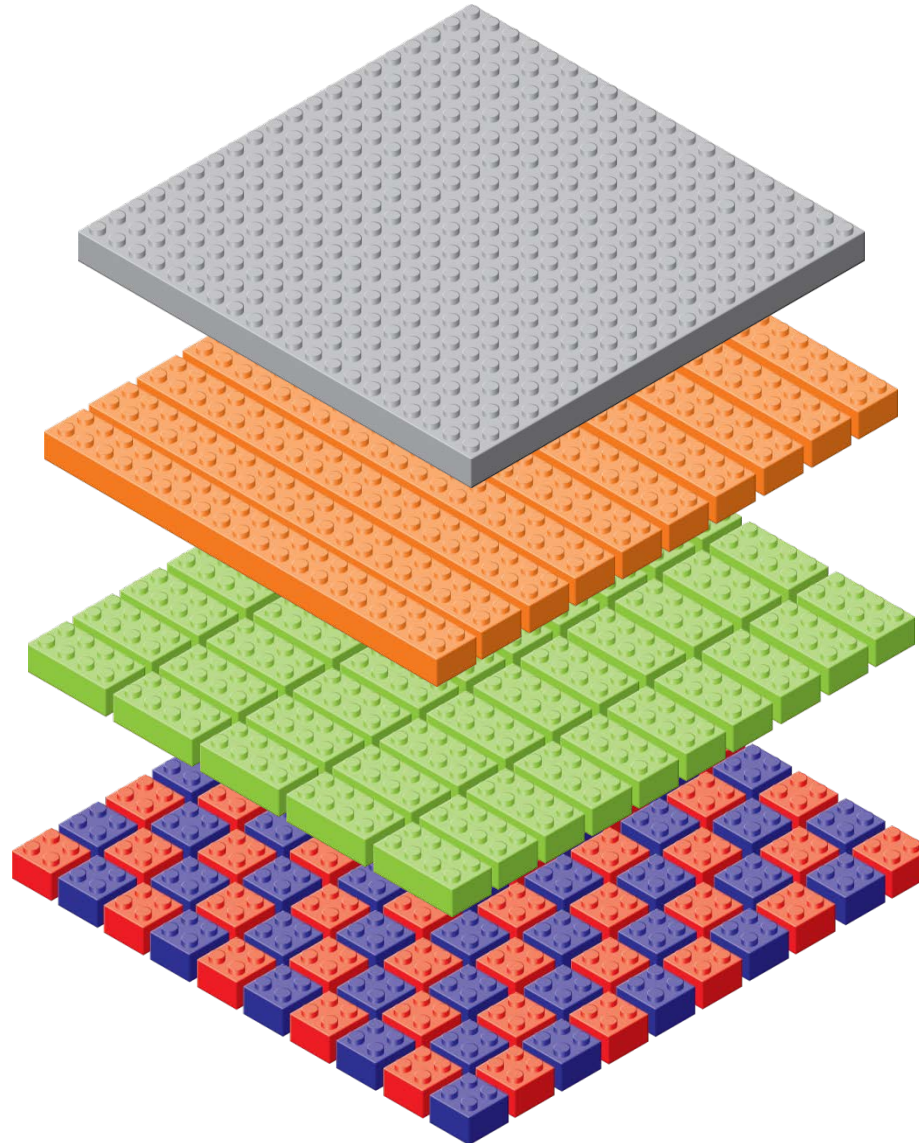
## NRS FAMILY OF PLANS



# NRS Plans and Planning Groups

## NRS Plans

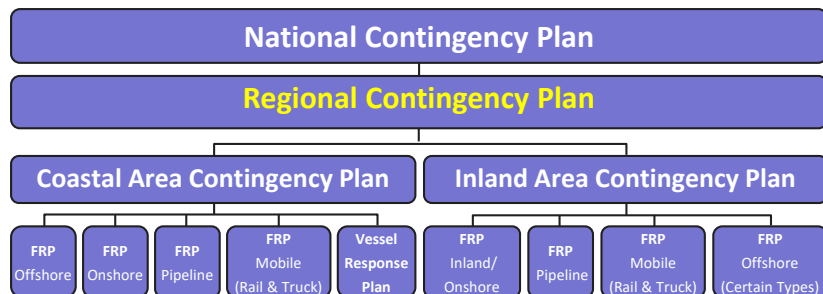
- National Contingency Plan
- Regional Contingency Plans
- Area Contingency Plans
- Local Emergency Planning Committee Plans
- Industry Plans



## Planning Groups

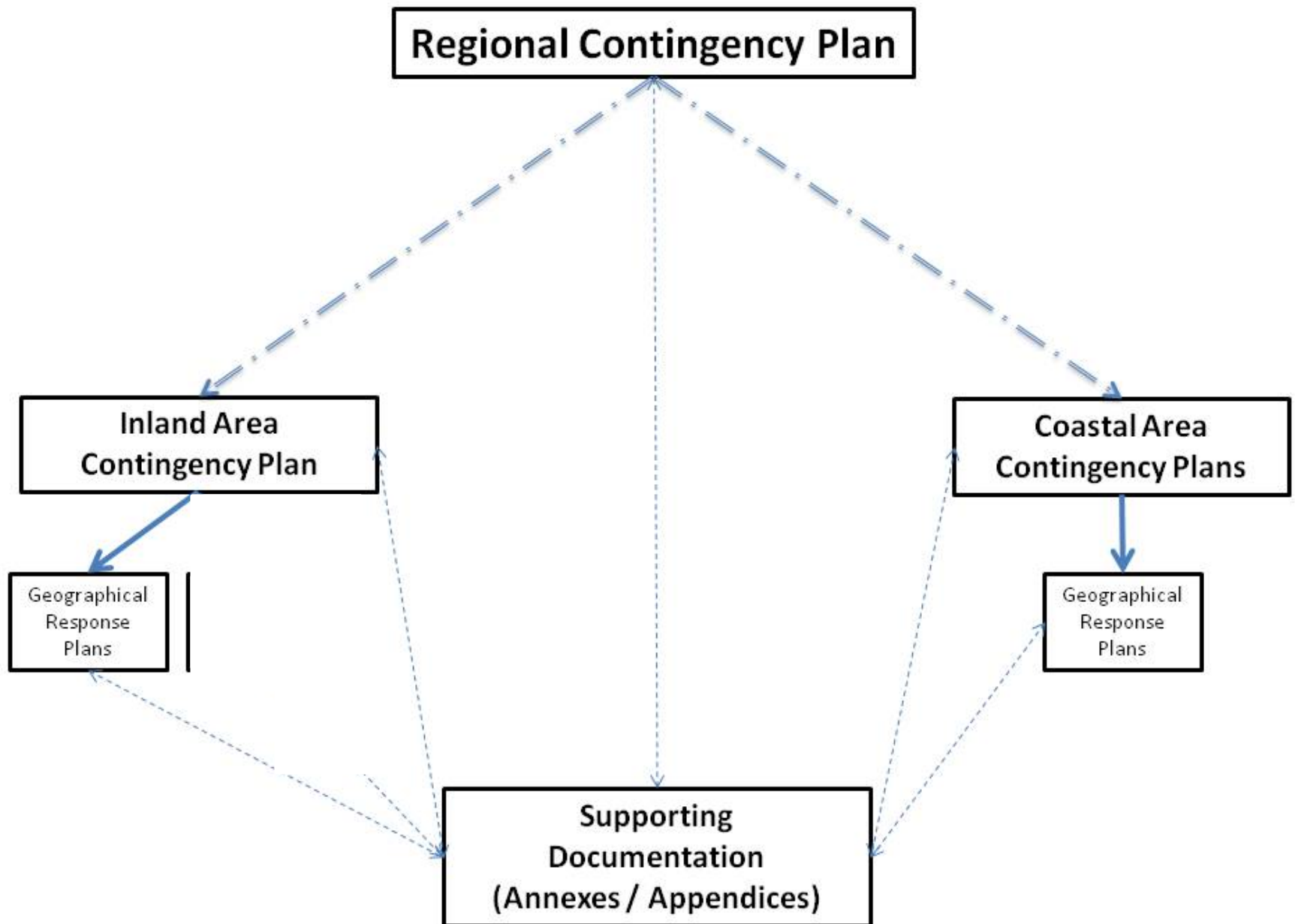
- National Response Team
- Regional Response Teams
- Area Committees
- State Emergency Response Commissions
- Local Emergency Planning Committees
- Industry

## REGIONAL CONTINGENCY PLANS (RCPs)



- Developed by multiagency RRTs
- Provide for effective regional response coordination
- Ensure clear roles and responsibilities
- Follow NCP format



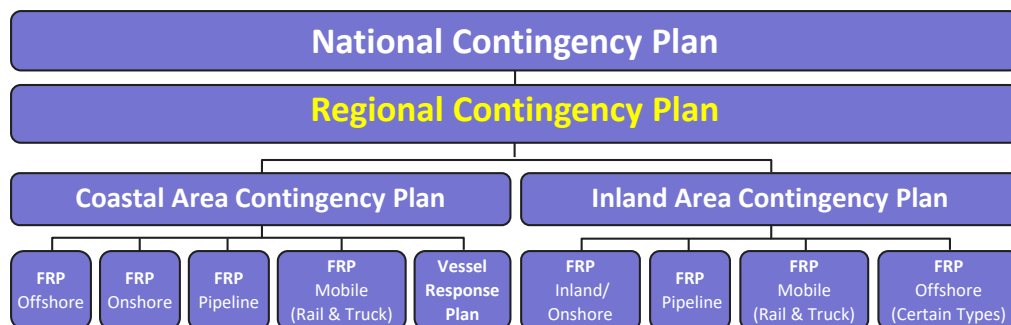


## REGIONAL CONTINGENCY PLANS (RCPs)



- Include information on government, commercial, and academic facilities and resources in each region
- Coordinate with ACPs and LEPC plans
- Designate boundary between the coastal and inland zones
- Include applicable preauthorization plans for use of dispersants and other oil spill control agents listed on NCP Product Schedule, and burning agents for in-situ burn operations

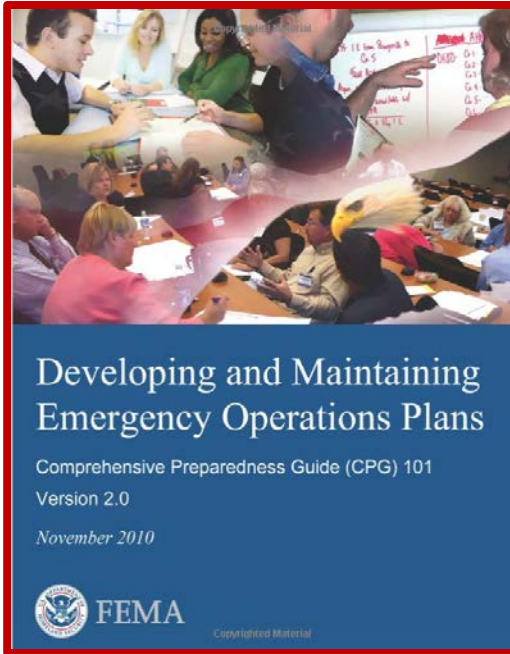
## AREA CONTINGENCY PLANS (ACPs)



- Developed by Area Committees led by OSCs
- Provides for effective response coordination for worst case discharges
- There are 36 Coastal ACPs and 13 Inland ACPs

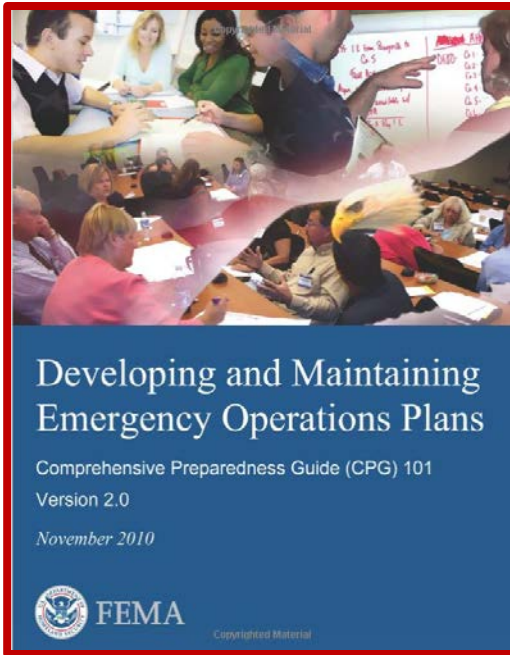


## STATE, TERRITORIAL, TRIBAL, AND LOCAL PREPAREDNESS – ALL HAZARD PLANNING



- **Emergencies and disasters such as hurricanes, floods, tornadoes, terrorist activities, fires, explosions, transportation accidents, infectious diseases and other potential hazards continuously threaten Region 6 and its citizens.**
- **In response to such threats, each state law requires political subdivisions in the State to prepare and keep current a local or interjurisdictional emergency operations plan.**

## STATE, TERRITORIAL, TRIBAL, AND LOCAL PREPAREDNESS – ALL HAZARD PLANNING



- **Emergency operations planning activities at the state, regional and local levels are shaped by State legislation as well as national policies, doctrine and guidance.**



## STATE, TERRITORIAL, TRIBAL, AND LOCAL PREPAREDNESS



### Emergency Planning and Community Right-to-Know Act (EPCRA) (or SARA Title III)

- Help communities prepare for chemical emergencies
- Resulted in SERCs , TERCs and over 3,000 LEPCs
- Requires development of local emergency response plans for responding to chemical releases
- Under the NCP, RCPs/ACPs are integrated with state and local plans

## **FEDERAL FACILITY REQUIREMENTS FOR HAZMAT / OIL PLANNING**

- **EPA's Oil Pollution Prevention Regulation (SPCC and Facility Response Plan Requirements) - 40 CFR part 112.7(d) and 112.20-.21;**
- **BSEE's Facility Response Plan Regulation - 30 CFR part 254;**
- **PHMSA's Pipeline Response Plan Regulation - 49 CFR part 194; part 195**
- **USCG's Facility Response Plan Regulation - 33 CFR part 154, Subpart F; part 156**
- **EPA's Risk Management Programs Regulation - 40 CFR part 68**

## **FEDERAL FACILITY REQUIREMENTS FOR HAZMAT / OIL PLANNING**

- **OSHA's Emergency Action Plan Regulation - 29 CFR 1910.38(a);**
- **OSHA's Process Safety Standard - 29 CFR 1910.119;**
- **OSHA's HAZWOPER Regulation - 29 CFR 1910.120;**
- **EPA's Resource Conservation and Recovery Act Contingency Planning Requirements - 40 CFR part 264, Subpart D, 40 CFR part 265, Subpart D, and 40 CFR 279.52**
- **DHS Chemical Facility Anti-Terrorism Standards Site Security Plan -- 6 CFR 27.225**

## SPCC / FRP Planning Requirements

- **Facilities which pose threat of substantial harm to environment by discharging oil into navigable waters or adjoining shorelines required to prepare and submit response plans to EPA**
- **FRP demonstrates facility's preparedness to respond to a worst case oil discharge.**
- **A facility is covered if:**
  - **total oil storage capacity greater than or equal to 42,000 gallons and it transfers oil over water to/from vessels; or**
  - **total oil storage capacity greater than or equal to 1 million gallons and can threaten waters of the U.S.**

## SPCC / FRP Planning Requirements



- **Emergency Action Plan Contents**
  1. **Qualified Individual Information**
  2. **Emergency Notification Phone List**
  3. **Spill Response Notification Form**
  4. **Response Equipment List and Location**
  5. **Response Equipment Testing and Deployment**
  6. **Facility Response Team**
  7. **Evacuation Plan**
  8. **Immediate Actions**
  9. **Facility Diagram**



## DOT PHMSA Facility Response Plans

- **49 CFR Part 194 – Response Plans for Onshore Oil Pipelines**
- **Applies to an operator of an onshore oil pipeline that, because of its location could reasonably be expected to cause... harm to the environment by discharging oil into or on any navigable waters of the United States...**
- **Requires operator to submit an FRP before oil can be transported**
- **Operators can certify they have sufficient response resources and operate up to two years without an approval**



## Key Elements in an FRP

- **Responsible Party's Qualified Individuals**
- **Worst case discharge (WCD) calculation and location**
- **Identification of environmentally sensitive areas consistent with Area Contingency Plans**
- **Evidence of response resource**
- **Understanding of the National Response System**
- **Federal, state and county/parish contacts**
- **Drill and exercise program**



## RMP Facility Response Planning Requirements

**For facilities required to complete and submit an RMP, the facility must complete an emergency response program that spells out:**

- **emergency health care**
- **employee training measures**
- **procedures for informing the public and response agencies (e.g the fire department) should an accident occur.**



## RMP Facility Response Planning Requirements

- Procedures for informing public and local emergency response agencies about accidental releases
- Proper first-aid and emergency medical treatment necessary to treat accidental human exposures; and
- Procedures and measures for emergency response after accidental release of regulated substance;
- Procedures for the use of emergency response equipment and for its inspection, testing, and maintenance;
- Training for all employees in relevant procedures; and
- Review and update emergency response plan to reflect changes at the stationary source and ensure that employees are informed of changes.

## RMP Facility Response Planning Requirements

- Emergency response plan developed under paragraph (a)(1) of RMP shall be coordinated with community emergency response plan developed under EPCRA
- Upon request of LEPC or emergency response officials, owner or operator shall promptly provide to local emergency response officials information necessary for developing and implementing community emergency response plan.





## RCRA Facility Planning Requirements



- **LARGE** quantity generator must attempt to make arrangements with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, and local hospitals, taking into account the types and quantities of hazardous wastes handled at the facility
- Arrangements may be made with LEPC, if it is determined to be appropriate organization to make arrangements

## RCRA Facility Planning Requirements

- Large quantity generator must have contingency plan for the facility
- Contingency plan must be designed to minimize hazards to human health or environment from fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water



## RCRA Facility Planning Requirements



- **LARGE** quantity generator must time submit quick reference guide to emergency responders or LEPC
  - 1) **Types/names of hazardous wastes and associated hazard**
  - 2) **Estimated maximum amount of each hazardous waste**
  - 3) **Identification of any wastes where exposure would require unique or special treatment**
  - 4) **Map of facility showing wastes locations**
  - 5) **Evacuation map**
  - 6) **Locations of water supply**
  - 7) **Notification systems**
  - 8) **Name of emergency coordinator(s)**

# OSHA Facility Emergency Action Plan Requirements



**Plan must include, but is not limited to:**

- **Means of reporting fires and other emergencies**
- **Evacuation procedures and emergency escape route assignments**
- **Procedures for employees who remain to operate critical plant operations before they evacuate**
- **Accounting for all employees after an emergency evacuation has been completed**
- **Rescue and Medical Duties for Employees Performing Them**
- **Names or job titles of persons who can be contacted**

# DHS CFATS Facility Response Planning Requirements

## Crisis Management Plan

Facilities should develop and maintain comprehensive crisis management plan that contains strategies for responding to different types of security incidents, including:

- Security Response
- Emergency Response
- Post-Incident Security
- Evacuation
- Notification Control
- Contingency Plans





# DHS CFATS Facility Response Planning Requirements

## Crisis Management Plan

Crisis management plans generally include documented agreements with offsite responder services, including:

- Ambulance/Medical Support
- Firefighting Support
- Marine Support
- Environmental Restoration Support
- Hazardous Spill Support
- Explosive Device Disposal Support



# DHS CFATS Facility Response Planning Requirements

## Crisis Management Plan

- Training, drills, and exercises play vital role in maximizing and testing efficiency of response plan to security incident
- Involving local first responders when preparing plan and conducting drills can carry significant benefits for facility in event of incident



## Conclusion

- **National Response System is comprised of various levels of contingency plans**
- **These plans must be coordinated to ensure effectiveness and efficiency**





Applying the best of human  
space flight engineering to  
Aerospace, Energy & Medical

Region 6 RRT Meeting  
May 16, 2018



# High Current Oil Dispersion Modeling MC20 case history

Steve Fitzgerald  
Intuitive Machines  
Houston, Tx

# Outline

- Who is IM
  - Oil & Gas related complex modeling
- Task overview
- Data and models utilized
- MC20 results
- Sheen modeling lessons learned
- Conclusions

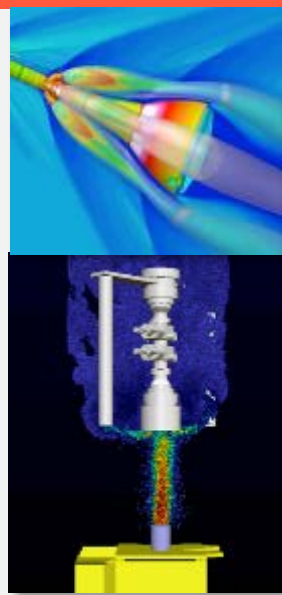
# Intuitive Machines

- Founded in 2013 by NASA innovators & leaders to apply NASA technologies & thinking in the commercial world
- ~40 engineers and growing
- We develop intelligent autonomous systems and subsystems
- We offer a broad spectrum of products and services from analysis to integrated systems

Solving Our Customers' Most Difficult Technical Challenges using Fresh Eyes and Orthogonal Thinking

## Current Customers

- Energy & Construction:
  - Transocean
  - Halliburton
  - Mears HDD
  - Digital Oil Tools
  - X-energy
  - Apollo Fusion
  - Taylor Energy
  - Scientific Drilling
- Commercial Space:
  - Axiom Space
  - Exos Aerospace
- Civil Space (NASA Related):
  - Lockheed Martin
  - Jacobs Engineering





# IM Oil&Gas Related Complex Modeling

- Common Threads

- Complexity
- High value
- Uncertainty
- Significance



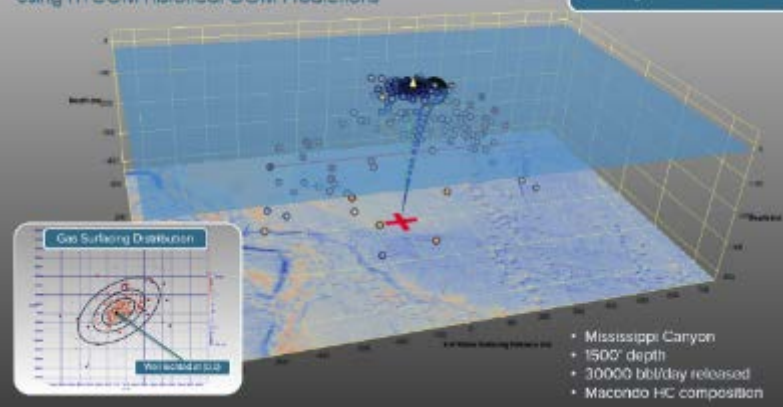
- IM's solutions

- Change the paradigm
- Provide understanding
- Withstand examination



Prediction of Blowout Surfacing Location Distribution  
Using HYCOM Historical GOM Predictions

Subsurface trapping of oil  
during summer months

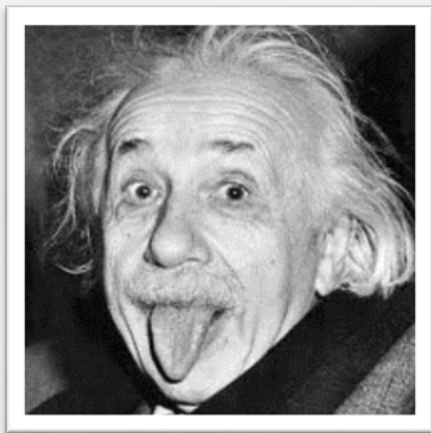


# Definitive Modeling Guidelines

“all models are wrong, but some are useful”

George Box

English Statistician



“as simple as possible but no simpler”

(attributed to) A. Einstein

## Basic Task Description

- Utilize release simulations to correlate candidate release locations by comparing predicted surfacing location against observed sheen locations
- Provide explanations for what “is seen”; introduce a “history of histories” paradigm
- Exercise Gov’t approved modeling techniques and sound engineering practice
  - NGOFS met-ocean model
  - TAMOC plume model
  - Develop additional models, as required
- Model the full history of observations from 2/27/17-5/13/17
- Incorporate field measured ADCP data
  - TAMOC runs
  - New Rapid Plume Surfacing Tool
  - New Volumetric Release Tool

# Pilot Observations

- Regular overflights during field measurement period
- Dropbox delivery of pilot observations
  - Pilot observation sheet
  - Aerial photography
- Additional observations retrieved from NRC database
  - Incomplete information much of the time
  - Lat/Lon information of insufficient resolution
  - Bulk observations filtered
    - Out of family results
    - 3 NRC observations retained until final analyses
    - Ultimately eliminated as non-physical once ADCP data evaluated

TAYLOR ENERGY SERVICES COMPANY  
SHEEN OBSERVATION REPORT  
Please Fill Completed Report to the O'Donnell Compliance Center 866-781-3883  
10/10/11 update

Date: 7-8-17 Time: 10:00  
Pilot Name: B. Kelly  
Observer Name: Will Perre  
If other than pilot

**SKEETCH OF SHEEN:**

Sheen Length: 7.5'  
Disrupt

Sheen Width: 1.75'  
Disrupt

Percent Coverage: 5

Sheen Appearance: Sheen Visible: 70 Shiny: 5  
Slightly Opaque: 5 Brightly Colored: 20  
Dark: noted Dark: noted

Sheet Beginning (Origination Point) Lat: 34 43.58 Long: 88 37.76  
Known End (Lasting Edge) Lat: 34 41.10 Long: 88 42.85

WAS A CONVERGENCE LINE SHEEN IN AREA OF SHEEN Yes Yes No No

Direction Sheen is Facing: 210° / 280°

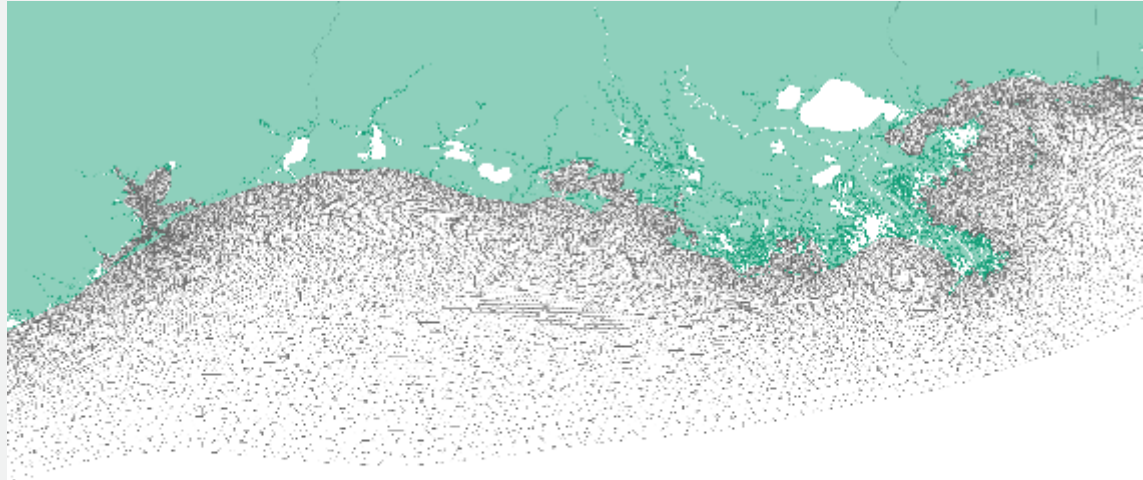
**WEATHER CONDITIONS:**

Visibility: clear Ceiling: clear  
Sea: choppy Wind Speed: 10-15  
(0-100 knots scale)



# NGOFS Met-Ocean Data

- Provides highest resolution NOAA predictions for the Gulf
- FVCOM driven model
- Hourly updates for forecasting and nowcast
- NGOFS downloaded every hour from 2/27/2017-5/13/2017
- Provides current, temp, salinity, pressure, and wind for simulation inputs
- Real-time field observations (NBDC)
  - 9 platforms in MC20 vicinity with ADCP sensors
  - ADCP measurements every 10 minutes for full 2017 data series
  - Available for NGOFS accuracy assessment





# Texas A&M Oil Spill Calculator (TAMOC)

- Authored by Scott Socolofsky, Prof Ocean Engineering, with contributions from many
- Lagrangian plume modeling toolset with chemistry, incorporations of netCDF environmental data
- Incorporated in upcoming Py-Gnome toolset (NOAA-ERD) and widely recognized
- Exercise single bubble model
  - API gravity 30.3 oil
  - Methane gas bubbles
- Assumptions
  - Oil droplets modeled as insoluble and incompressible
  - NGOs provides full modeling environment
  - ADCP provides currents from 125m depth.... Lowest ADCP measurement projected to sea floor seafloor
  - Environments constant in time, variable in space for duration of TAMOC simulations
- Droplet rise velocity updated for shape and external environment
  - TAMOC provides slip velocity calculation for spherical, ellipsoidal, and spherically capped drops
  - Slip varies with environmental conditions

## Texas A&M Oilspill Calculator (TAMOC): Modeling Suite for Surface Spills

Scott A. Socolofsky<sup>1</sup>, Ananta L. Dimantayake<sup>1</sup>, Jack Kim<sup>1</sup>,  
Joana Goss<sup>2</sup>, J. Samuel Arce<sup>3</sup>, and Christopher M. Hobdy<sup>1</sup>

<sup>1</sup>Marine Department of Civil Engineering, Texas A&M University,  
College Station, Texas, USA  
ssocolof@tamu.edu

<sup>2</sup>Environmental Chemistry Modelling Laboratory,  
Ecole Polytechnique, Palaiseau de Lorraine,  
Lorraine, Switzerland

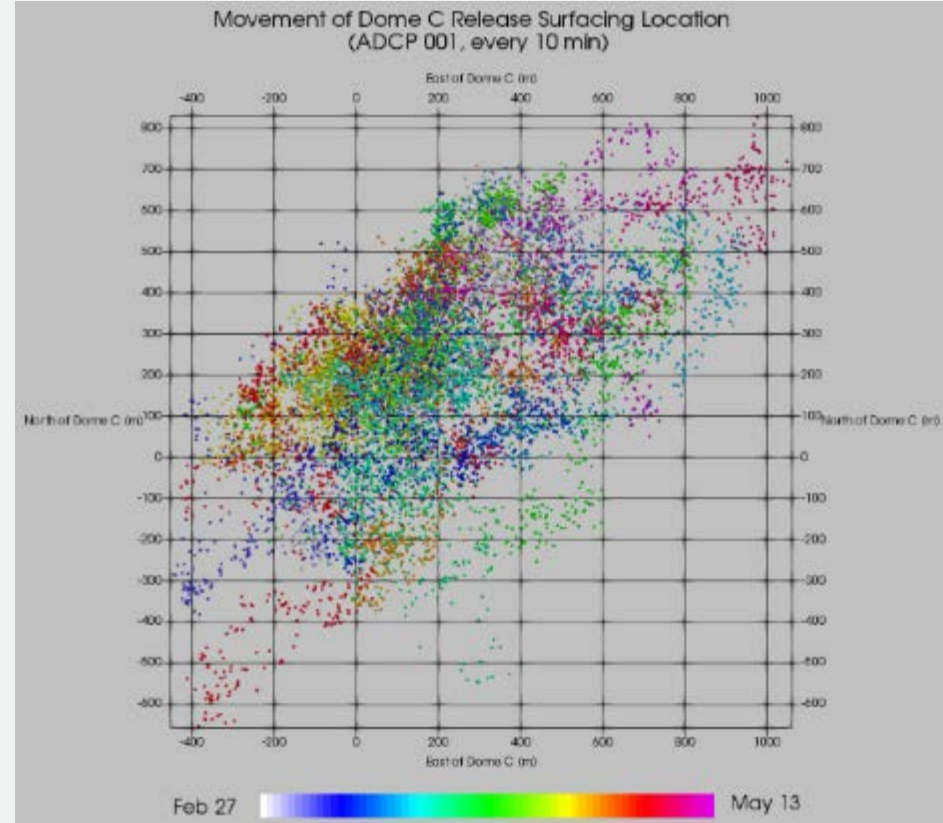
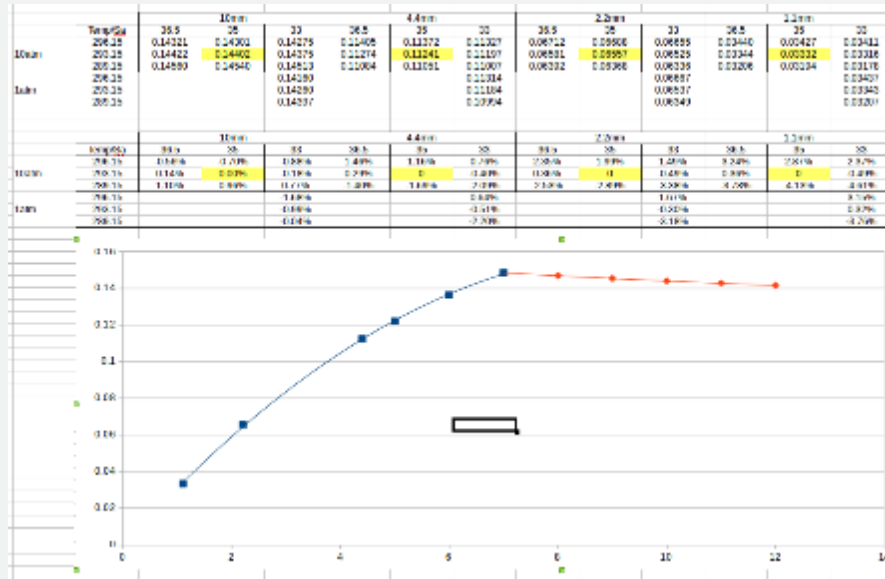
<sup>3</sup>Department of Marine Chemistry and Geochemistry,  
Woods Hole Oceanographic Institution,  
Woods Hole, Massachusetts, USA

### Abstract

The Texas A&M Oilspill Calculator (TAMOC) is a new, freely available modeling suite for predicting fate and transport of oil and gas released from offshore accidents. The model is coded in Python and Fortran and is freely available from <http://github.com/ssocolof/tamoc>. The model contains several modules for handling surface water column data, hydrocarbon equations of state, and bubble and droplet dynamics, including particle rise velocity, shape, surface area, and heat and mass transfer rates. Three simulation modes are included with the modeling suite. The Single Bubble Model (SBM) models the fate of a single bubble or droplet as it rises through the water column, dominated by the three-dimensional velocity vector, and undergoing deformation and heat transfer. For larger scale releases, two different integral plume models are provided. In weak currents, the Stratified Plume Model (SPM) predicts multiple subsurface intrusions; when currents are stronger the plume trajectory is deflected in the downstream direction, the suite applies the Three Phase Model (TPM), which predicts one intrusion layer and bubble separation between the released oil droplets and gas bubbles and the entrained seawater. Additional components have been thoroughly validated to scientific laboratory and field data. This paper demonstrates some of the low order data metrics and applies the model to explore the dynamics of the Deepwater Horizon accident. The hot oil and gas released from the well head quickly cooled to near ambient temperature (within 20 m above the seafloor), and dissolution is generally faster than gas ebullition. Model predictions agree well with observations from 2010, including estimates for the depth of the intrusion layer and the flux of chemical components to the atmosphere.

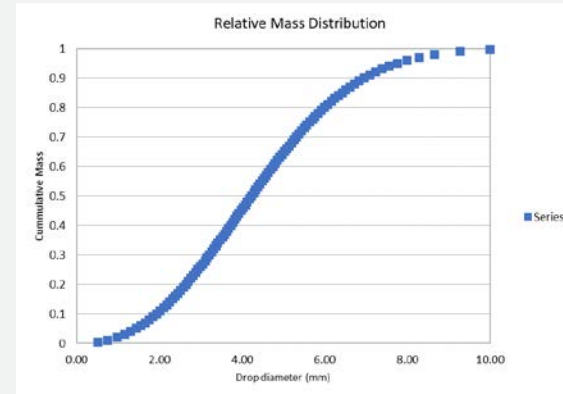
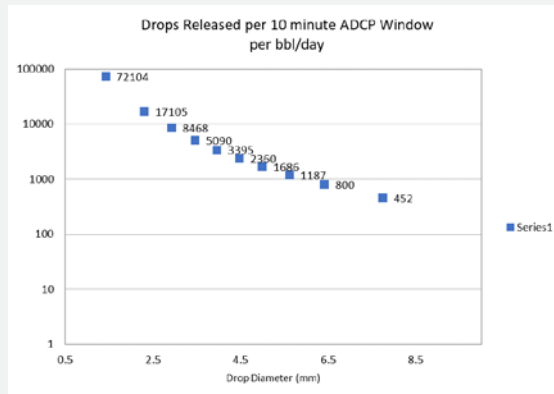
# Rapid Surfacing Analysis Tool

- Developed to process full ADCP history for a single release location
- Derived from knowledge of TAMOC



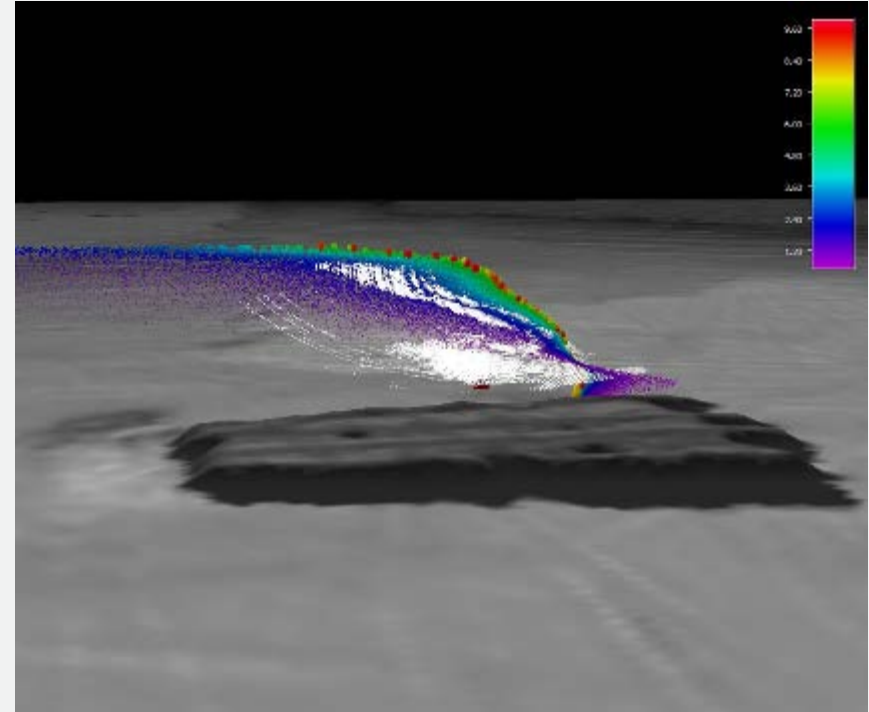
# Volumetric Particle Sampling and Simulation

- The prior two methods assume that the currents are constant over the duration of the droplet surfacing
- ADCP varies significantly between 10 minute records
- Visualization methods available for significant particle populations
- Sample Rosin-Rammler droplet diameter distribution (SMD= 6.955,  $n=2.45$ ) in 10% volumetric flow bins



# Volumetric Release Simulation Capabilities

- Tool developed specifically to take advantage of ADCP measurements
  - Sampled particle volumes, sizes and numbers per size, are volumetrically appropriate for **X** flow per day
  - Area release: presently 2mx2m at Dome C location
  - Simulate continuous releases (3.5 hours prior to .5-1hr after pilot observations)
  - Subsea and surface tracking
  - Single ADCP sensor source per run, can be modified for x,y interpolation of ADCP sensors
  - Ultimately results in 250000+ particles per simulation
- Field validated against acoustic anomaly surveys

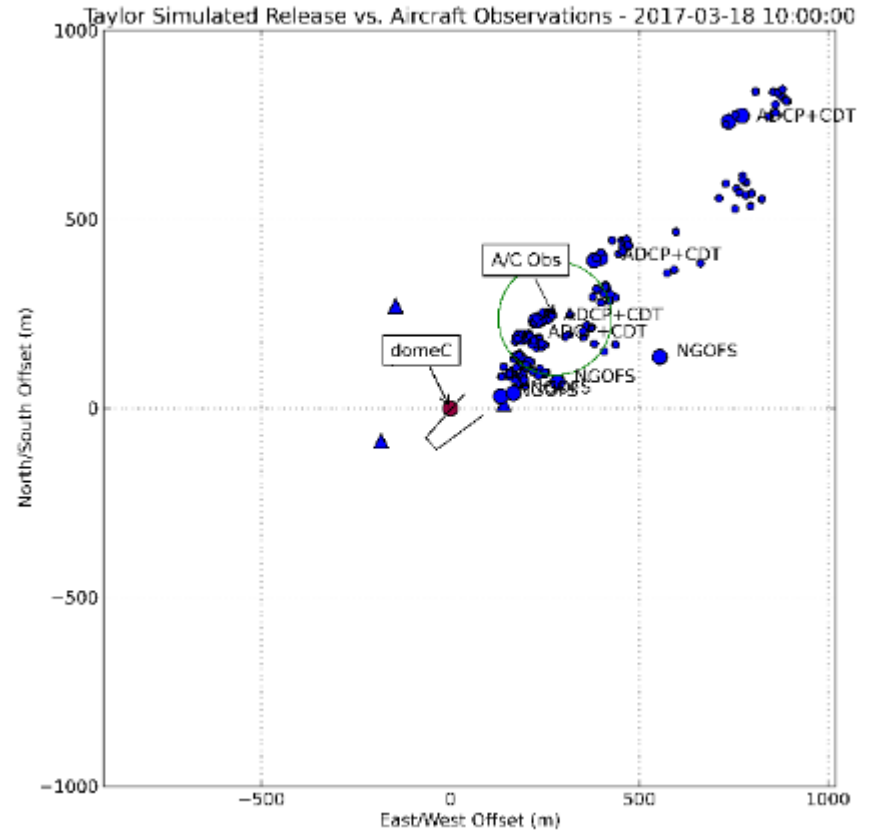


# Modeling Results

- IM has performed 3 sets of runs with TAMOC releases of 0.5mm-10mm oil drops and 10mm gas
  - Full TAMOC runs with NGOFS nowcast values at time of observation (currents and density)
  - Full TAMOC runs with ADCP measured velocities and NGOFS density at time of observation
  - Full TAMOC runs with ADCP measured velocities and CTD measured density
  - Releases from Dome A and Dome C locations
- Droplet size distribution independently developed and validated with field samples
  - Development of Rosin-Rammler distribution assuming  $3\sigma$  from 0.5 to 10mm
- 3 field deployed ADCP sensor locations, ADCP measurement logs received from Fugro
  - *ADCP raw magnitude and direction for each bin are used to compute ambient x,y velocity*
  - *10000+ profiles per sensor*
  - *Every 10 minutes from 2/27-5/13*

# What you will see

- Result presented graphically for several models
- Symbols represent surfacing location of droplet diameters of 10mm, 4.4mm, 2.2mm, 1.1mm, 0.5mm
  - TAMOC with NGOFS (NGOFS)
  - TAMOC with ADCP currents, NGOFS density (ADCP)
  - TAMOC with ADCP/CDT (CDT)
  - Rapid Surfacing analysis points
- Pilot observation uncertainty circle around field observation point
- ADCP sensors- blue triangles
- DOMC location- red circle





# March 18<sup>th</sup>, 2017

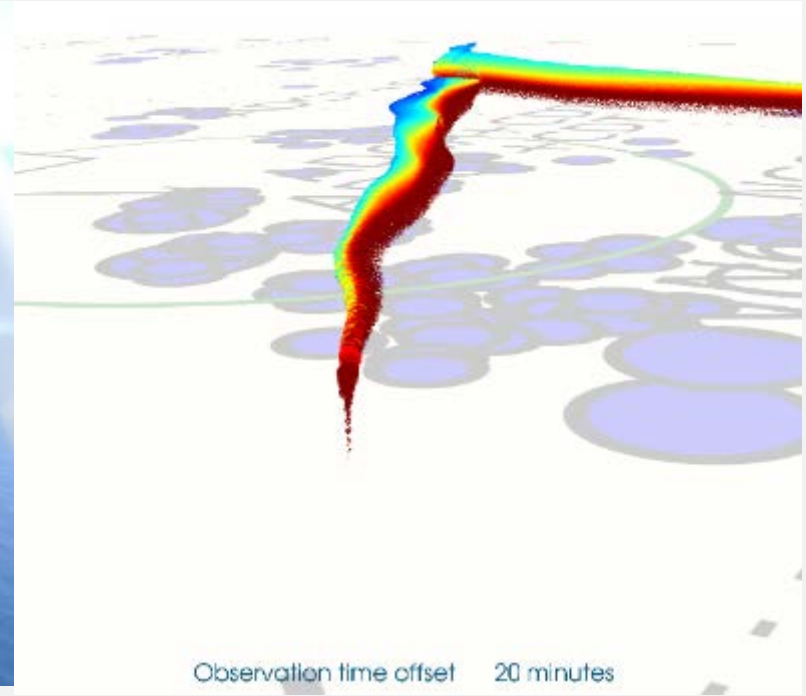
- ADCP based methods cluster
  - TAMOC ran with 156m depth
  - NGOFS bathymetry
- Addition of CTD data yield minor change in surfacing location
- Use of measured currents makes it work
- Predictive results are typical across the observational period
- Where is the sheen?
- What direction is it moving?

# March 18<sup>th</sup>, 2017

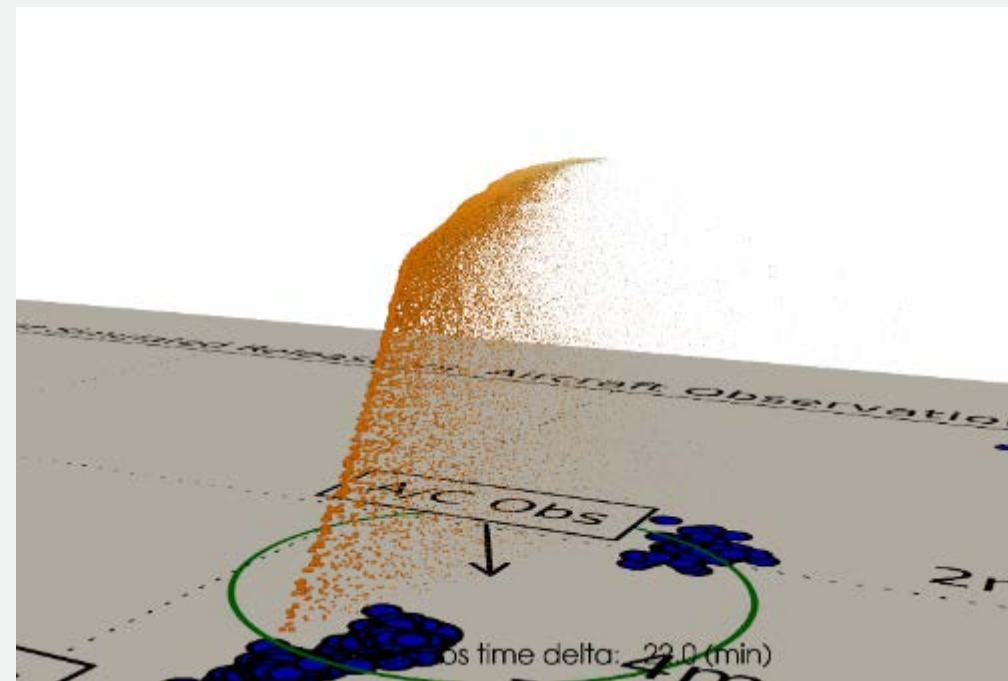
- Subsea currents change rapidly
- Smaller particles more greatly impacted
- Visualizing what you can't see is useful and provides insight
- Lots of “surprises” and “Aha’s”

# March 18<sup>th</sup>, 2017

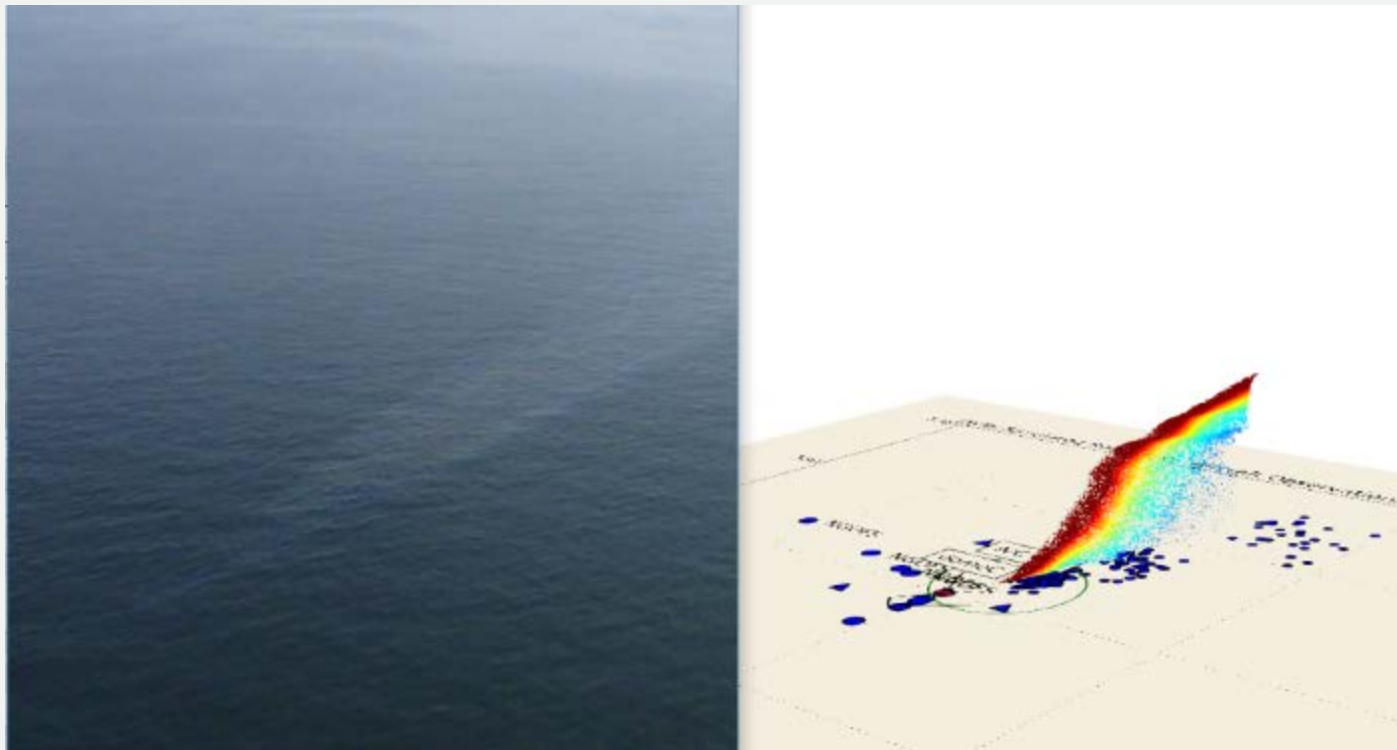
- Comparisons with pilot observations include origin, direction, and photographic



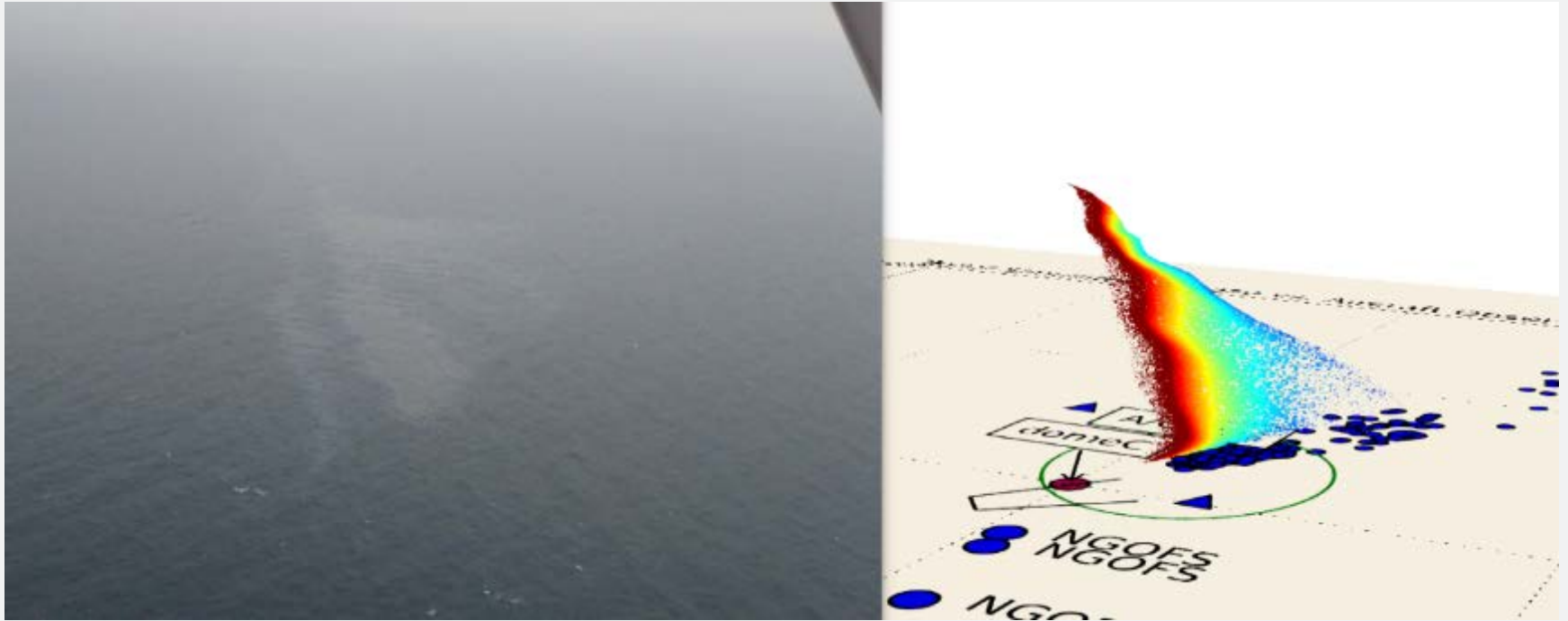
March 17<sup>th</sup>, 2017



# Additional Examples

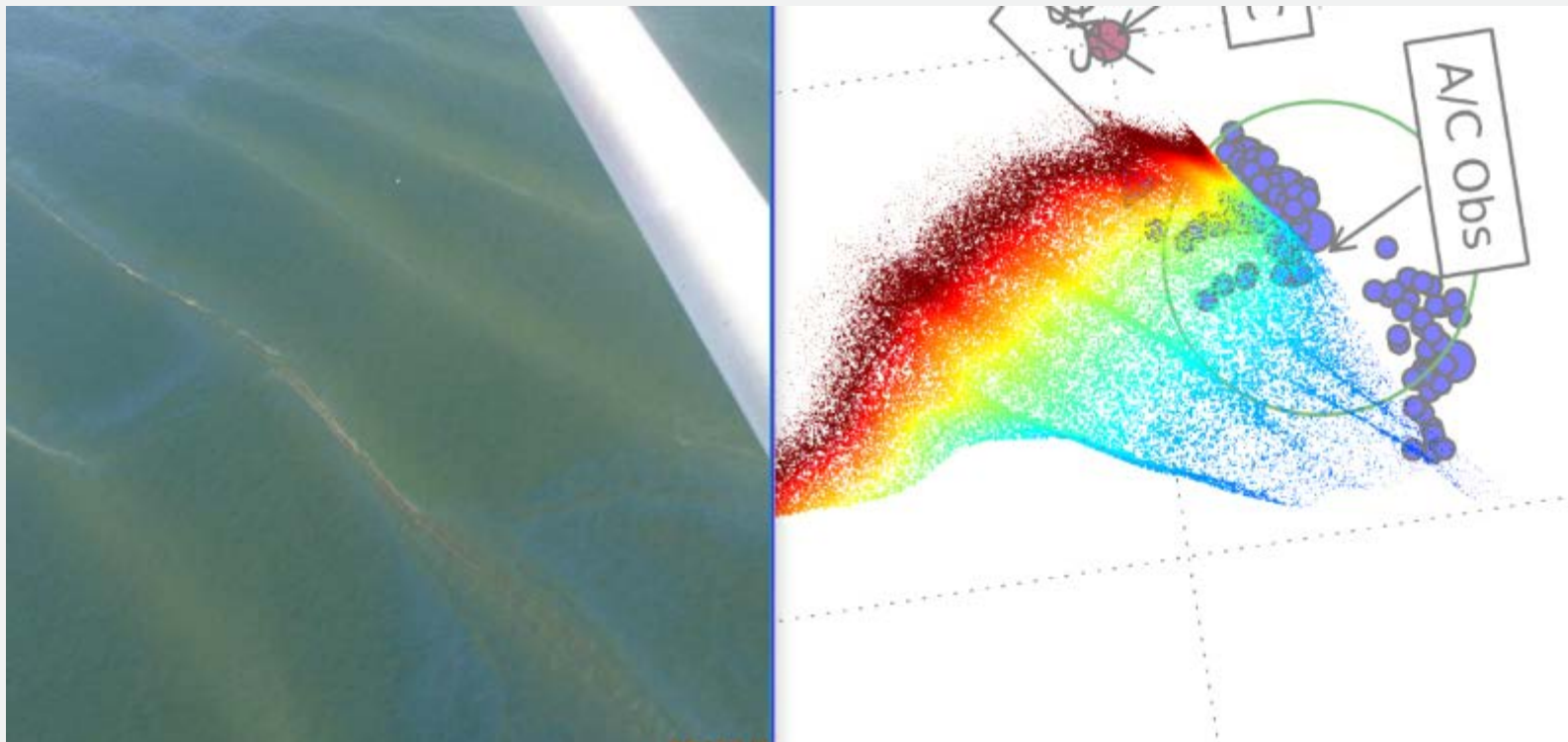


## Additional Examples





## Additional Examples



# “The Scorecard”

- We have proposed several measures of the validity of the tool set
  - Surfacing location
  - Sheen shape
  - Sheen direction
  - Sheen dimensions
- Scoring the methodology allows prediction of droplet diameter range that holistically provides the best correlation to surfacing location and sheen shape
- Investigate conditions that did not match and develop testable scenarios
- Scorecard captures analytical justification for conclusions

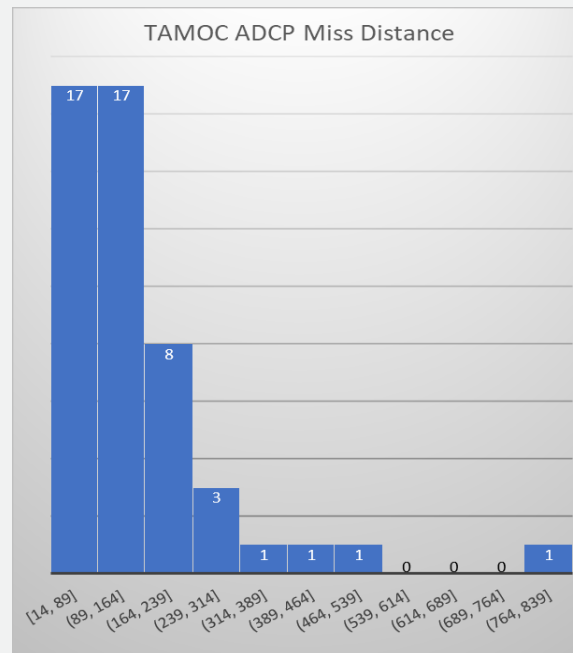
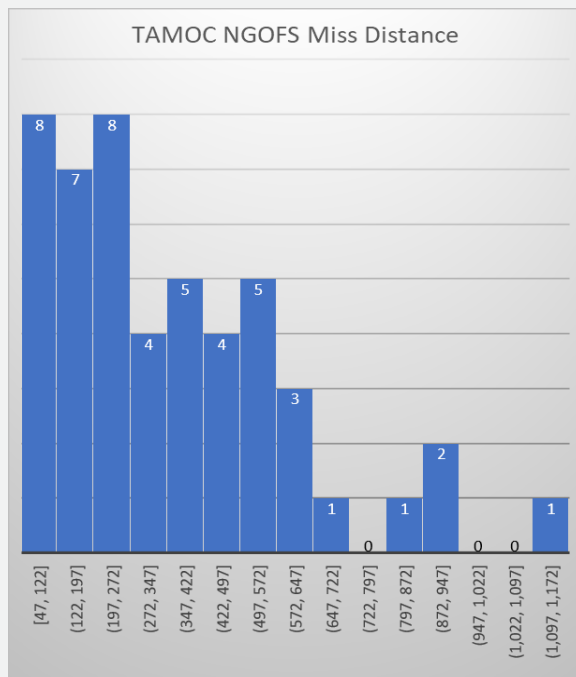
# Scorecard

- Pilot observations for surface sheen origin location, direction, and dimensions extracted for comparison
- Pilot observation photographs assessed for sheen shape
- Surfacing location miss distances per droplet diameter utilized to derive most likely droplet diameter bounds
- Each observation compared with predictions and scored green if within observation uncertainty (OU), yellow if within  $1.5 \times \text{OU}$ , red if outside
- Each case individually addressed and comments noted for potential causes of “miss”
- Final analysis results will utilize spatial and temporal interpolation of ADCP measured currents

[illegible]

# Lessons Learned

- Accurate current modeling is required to match observations



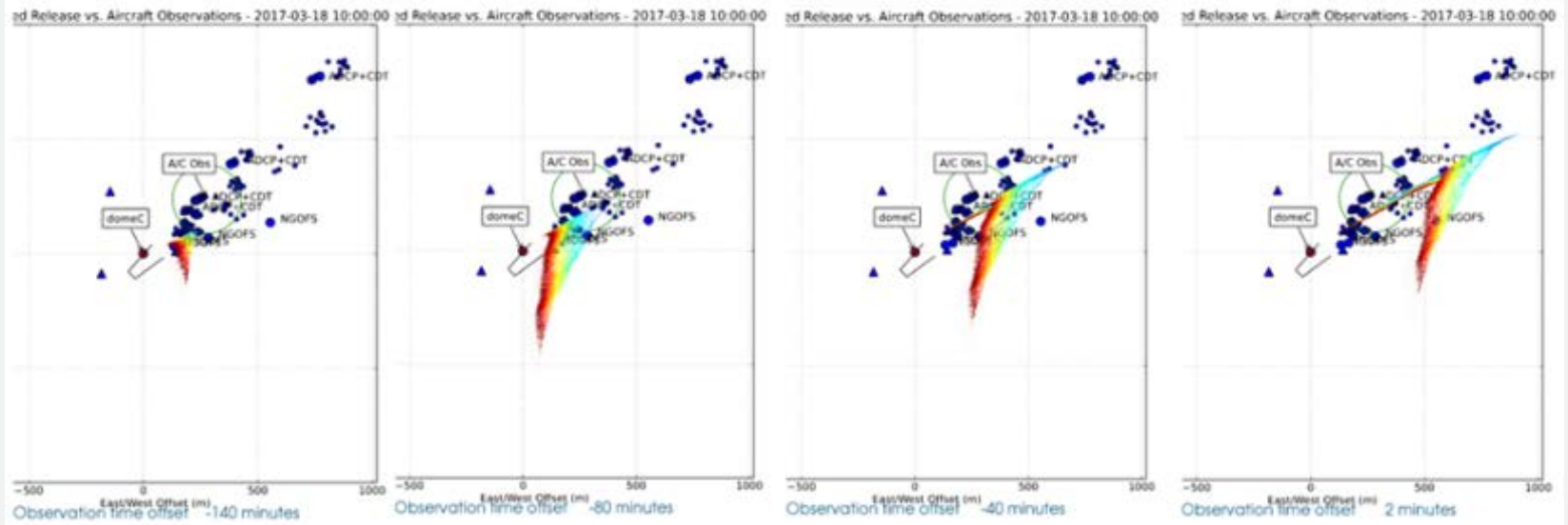
# Lessons Learned

- Sheens are not Point Sources at the Surface



# Lessons Learned

- Sheens can Reverse Direction



# Lessons Learned

- Multiple Size Particles Can Surface at the Same Location at the Same Time



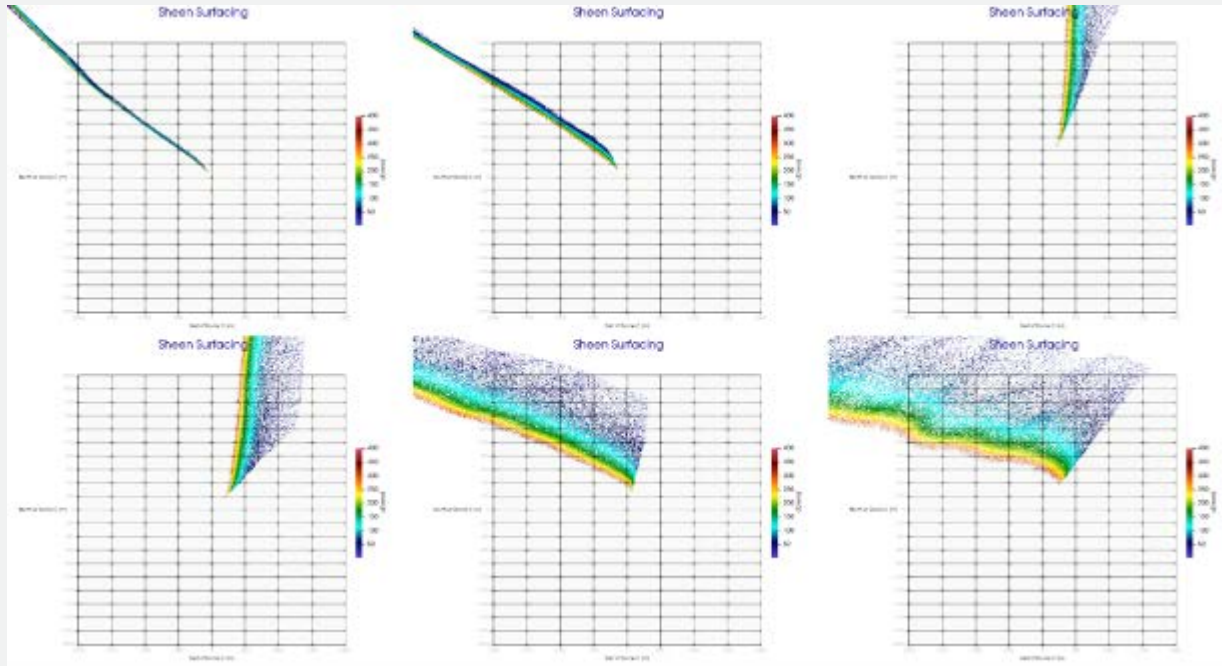


# Lessons Learned

- A Single Release Can Surface at Two (or more) Distinct Locations

# Lessons Learned

- Sheen Width is a Function of Relative Current Direction/Strength



# Lessons Learned

- Sheen Length is a Function of Surface Current and Wind

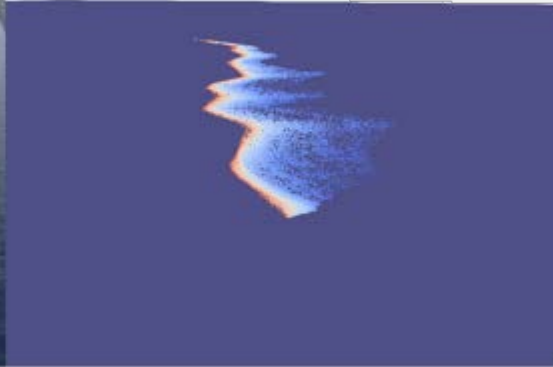


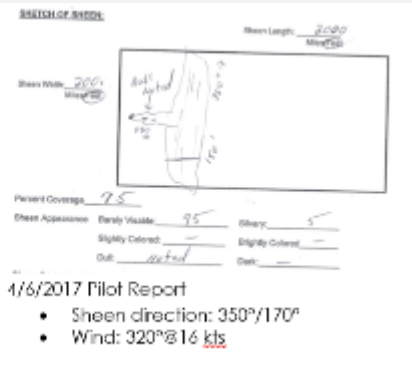
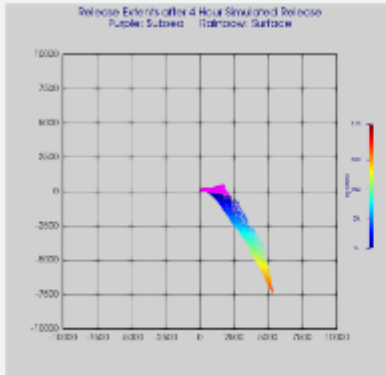
TABLE 3-4: SUBSET OF SIMULATED AND RECORDED LENGTHS

Date	Simulated Length (4hr)	Wind Speed	Reported Length
3/3/17	5 miles	15 knots	0.6 miles
3/6/17	5 miles	15-20 knots	1.0 miles
3/7/17	5.6 miles	15 knots	1.0 miles
3/8/17	8 miles	5 knots	7.5 miles
3/10/17	1.5 miles	Calm	7.7 miles
3/14/17	12.5 miles	15-20 knots	2.6 miles
3/17/17	7.5 miles	5-7 knots	9.8 miles
3/20/17	8.8 miles	4 knots	13.4 miles
3/24/17	6 miles	7-15 knots	0.7 miles
3/25/17	6 miles	20 knots	1.0 miles
3/29/17	5 miles	10-15 knots	0.5 miles
3/31/17	8 miles	5-7 knots	5.8 miles
4/4/17	3 miles	4 knots	5.9 miles
4/12/17	6 miles	7-10 knots	8.0 miles
5/8/17	1.25 miles	Calm	8.6 miles
5/10/17	4.4 miles	3-5 knots	18.6 miles

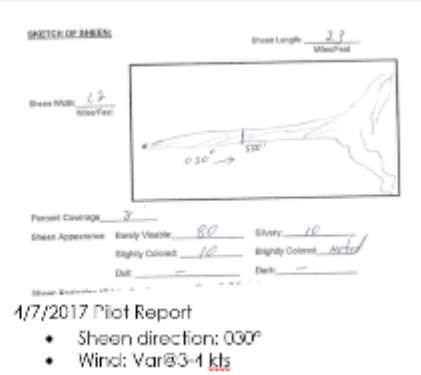
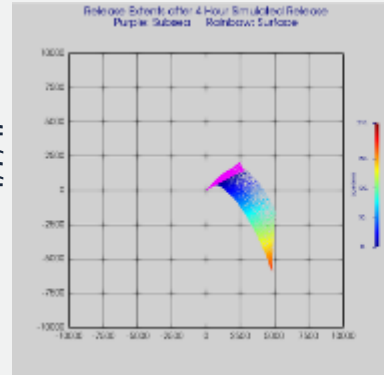
# Lessons Learned

- Sheens need to be assessed in light of the history of the met-ocean environment

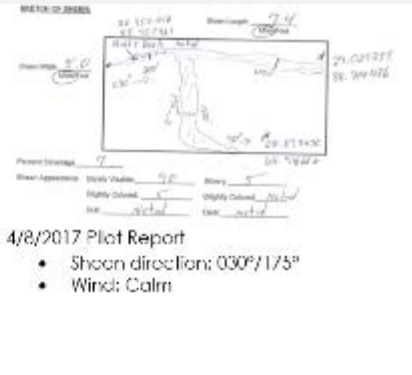
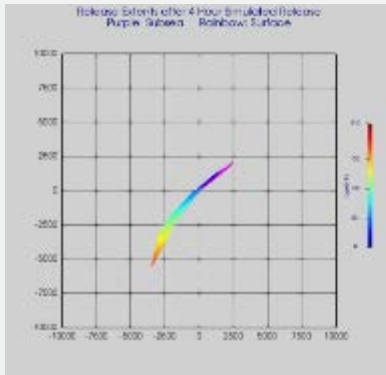
4/6/17



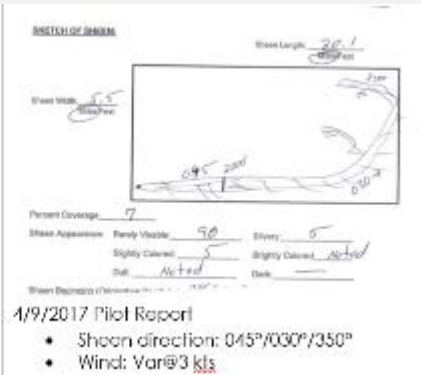
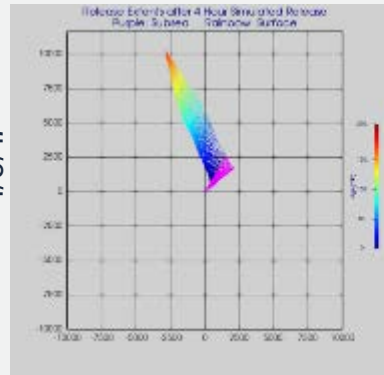
4/7/17



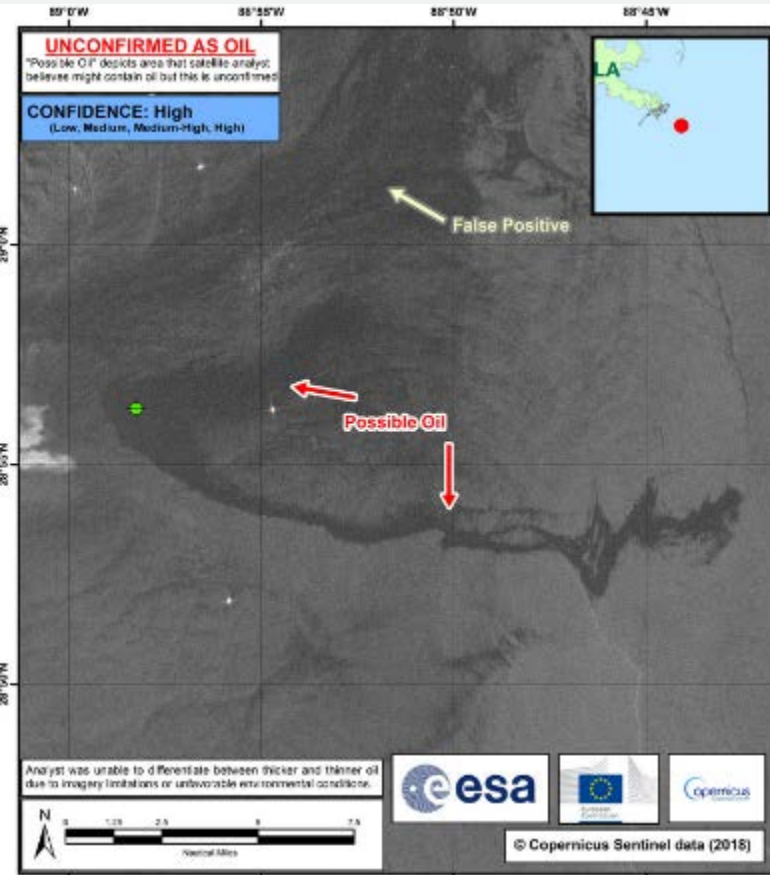
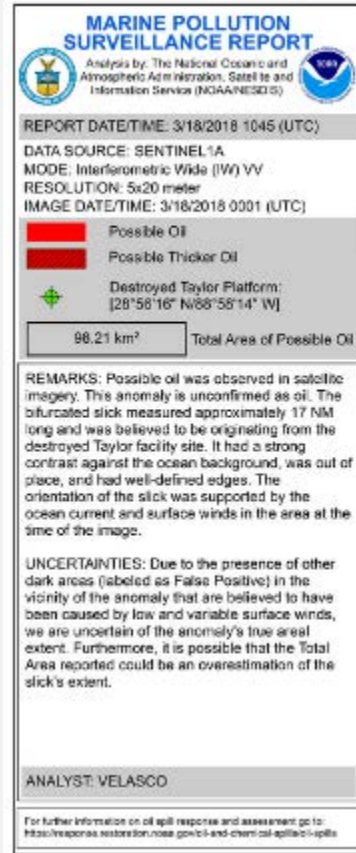
4/8/17



4/9/17



How can we use these insights to improve release imagery interpretation?



# Conclusions

- If you want to understand the source of a sheen, deploy an ADCP sensor
- Particle release simulation capabilities have demonstrated the ability to match field observed sheen origin, surfacing location, direction, and shape.
- Surface sheen observations can be traced to subsea release locations with accurate subsea and surface current data
- Sheens observations must be interpreted in the context of the history of local met-ocean environments
- Many of our assumptions on sheen development and interpretation need to be revisited in light of the complexities involved in their dynamics



# **MEXUSGULF**

## **Seminar 2018**

### **Overview**



**Michael Sams**  
**Eighth Coast Guard District**  
Incident Management and Preparedness Advisor  
MEXUSGULF Regional Chair

16 May 2018

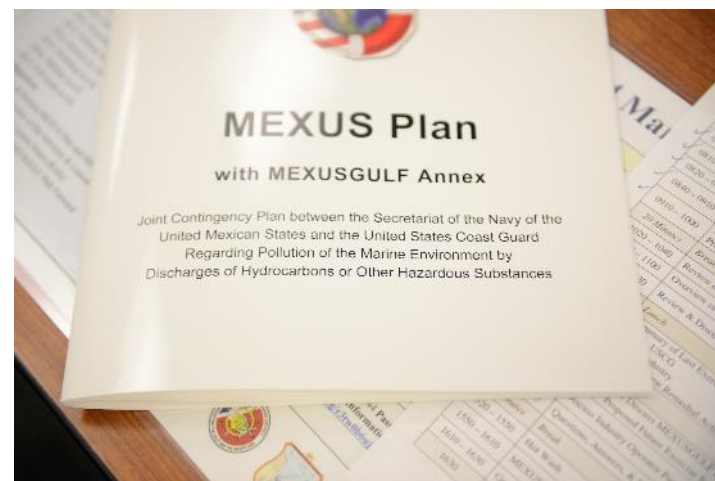




# Seminar Agenda



1. U.S. – Current & Future Updates on Exploration & Production
2. Mexico – Current & Future Updates on Exploration & Production
3. Review & Discuss MEXUS Plan
4. Overview of the Advisory & Liaison Coordinator (ALC)
5. Review & Discuss MEXUSGULF Annex
6. Summary of Last Exercise Cycle:
  - USCG
  - Industry
  - Review Remedial Action Issues (RAIs)
7. Review & Discuss MEXUSGULF Path Forward
  - Proposed Future Exercise Schedule (2019 – 2021)
8. Discuss Industry Operator Participation Options
9. Questions, Answers, & Review Action Items
10. MEXUSGULF Annex Signing & Closing Remarks





# Attendees





# Federal



- U.S. Coast Guard:
  - Headquarters (CG-MER-2)
  - Eighth District (CGD 8)
  - Seventh District (CGD 7)
  - Sector New Orleans
  - Sector Corpus Christi
  - Sector Houston/Galveston
  - Sector Mobile
  - Marine Safety Unit Houma
  - Marine Safety Unit Port Arthur
  - Exercise Support Division
  - Gulf Strike Team
  - Outer Continental Shelf (OCS) National Center of Expertise (NCOE)
  - \*National Pollution Funds Center (NPFC)
- U.S. Environmental Protection Agency, Region 6 (USEPA)
- \*U.S. Customs and Border Protection (CBP)
- National Atmospheric and Oceanographic Administration (NOAA)
- \*U.S. Department of the Interior (DOI):
  - Bureau of Safety and Environmental Enforcement (BSEE)
  - \*U.S. Fish & Wildlife Service (USFWS)

\*Remote Access



# State



- Louisiana Oil Spill Coordinator's Office (LOSCO)
- Louisiana Department of Environmental Quality (LDEQ)
- Texas General Land Office (TGLO)
- Texas Commission on Environmental Quality (TCEQ)
- \*Texas Parks and Wildlife Department (TPWD) -Corpus Christi

\*Remote Access





# Industry

- Add Energy
- Anadarko Petroleum Corporation (APC)
- BP
- Chevron
- Clean Gulf Associates, Inc. (CGA)
- CSA Ocean Sciences Inc.
- ExxonMobil
- HWCG LLC.
- Marine Spill Response Corporation (MSRC)
- Marine Well Containment Company (MWCC)
- \*National Response Corporation (NRC)
- Oil Spill Response Ltd.
- Red Willow Offshore
- ResilientRM
- Shell
- Stone Energy Corp
- The Response Group (TRG)
- Wild Well Control (WWC)



# Mexico

- Mexican Navy (SEMAR) Zone One (ZN-1)
- Agency for Safety, Energy, and Environment (ASEA)
- National Hydrocarbons Commission (CNH)
- Port Authority of Altamira

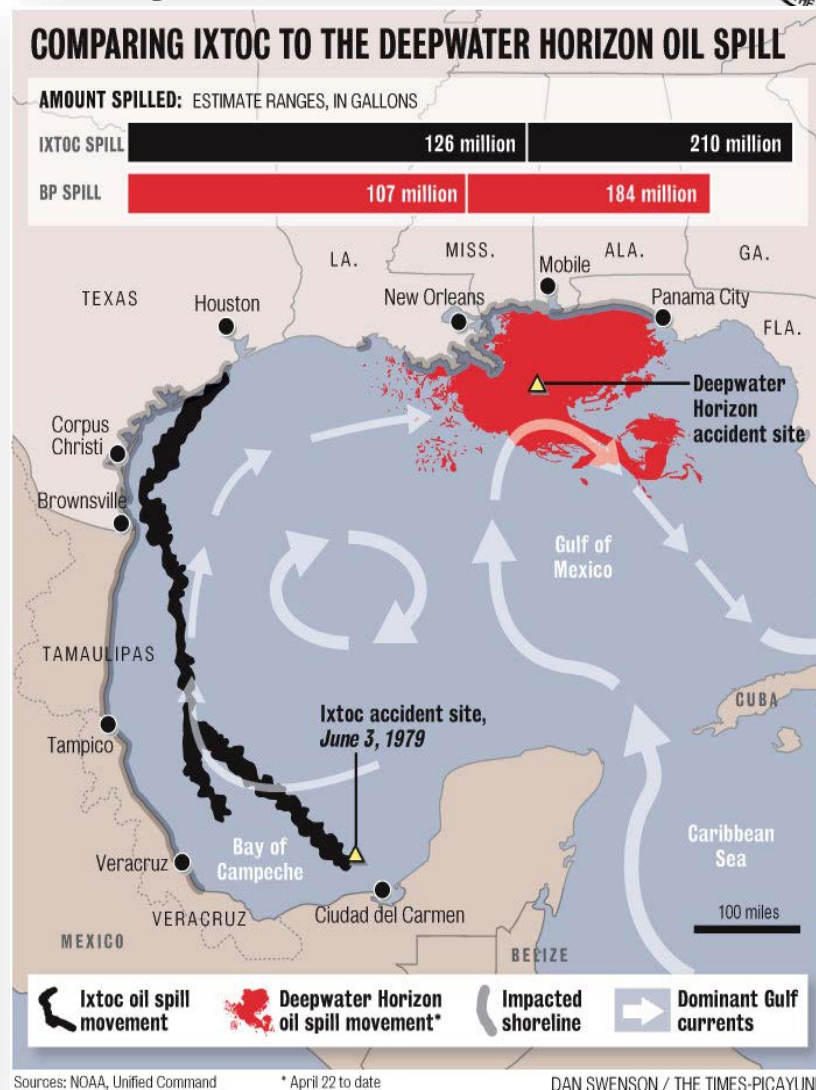
# History



**Ixtoc I**  
June 3, 1979



**Deepwater Horizon**  
April 20, 2010







# Exercises

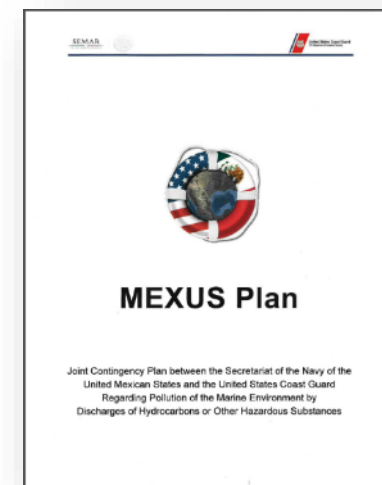


Year	Description	Location
2002	First Full-Scale Exercise	USA
2003	Signing Ceremony Gulf Annex	MX
2004	Tabletop Exercise	MX
2006	Full-Scale Exercise	MX
2007	Workshop	MX
2008	Full-Scale Exercise	USA
2010	Full-Scale Exercise	MX
2011	Knowledge Exchange & Workshop	USA
2012	Tabletop and Gulf Annex Update	USA
2014	Seminar	USA
2015	Workshop	USA
2016	Tabletop Exercise	USA
2017	Full-Scale Exercise	USA
2018	Seminar	USA



# MEXUS Plan

To promote a coordinated system for regional preparedness, planning, and response to incidents in adjacent waters by providing guidance that supplements the existing national response system of each country and facilitates joint response at the regional level.





# Coordination & Levels of Command

## National

USCG  
COMDT (CG-5RI/MER)

SEMAR  
3<sup>rd</sup> Section

JRT Chairs

## Regional

### MEXUSGULF

USCG  
District 8

SEMAR  
Zone 1

### MEXUSPAC

USCG  
District 11

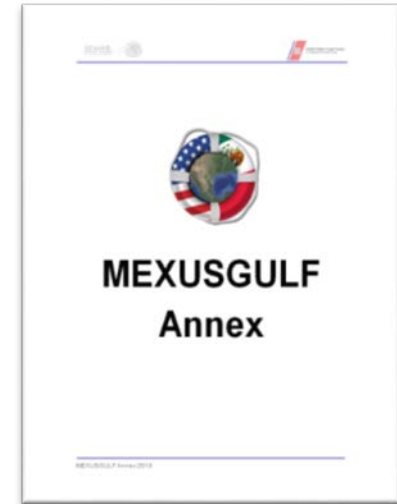
SEMAR  
Region 2

Regional Chairs



# MEXUSGULF Annex

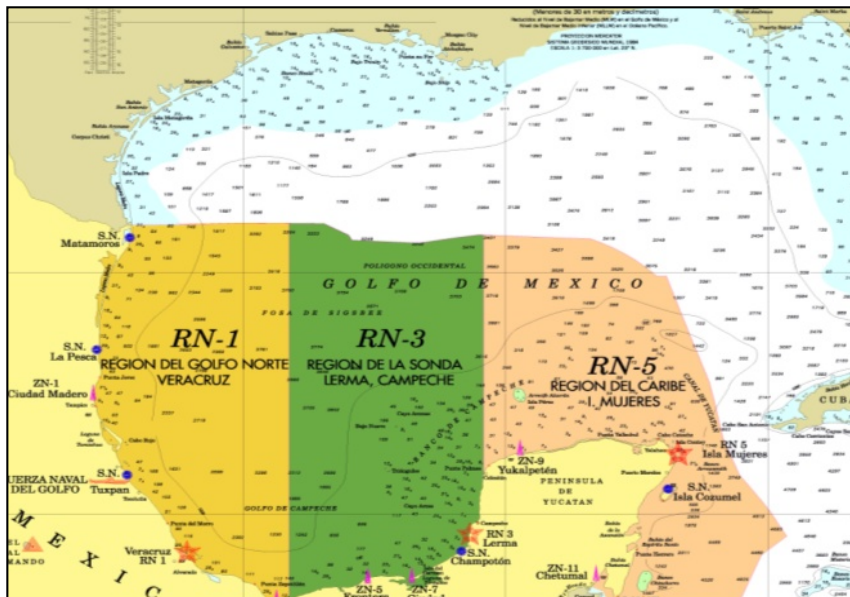
Provides guidance with respect to communication and coordination processes that should be used to facilitate effective joint response when a pollution incident occurs in, or threatens, the Gulf of Mexico maritime border region of either country.



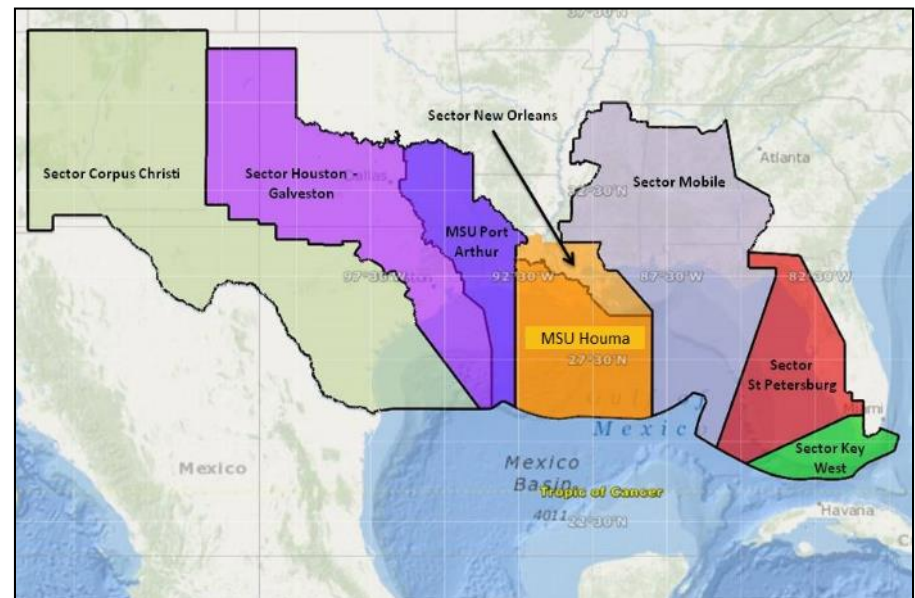


# Geographic Limits

## Mexico



## United States



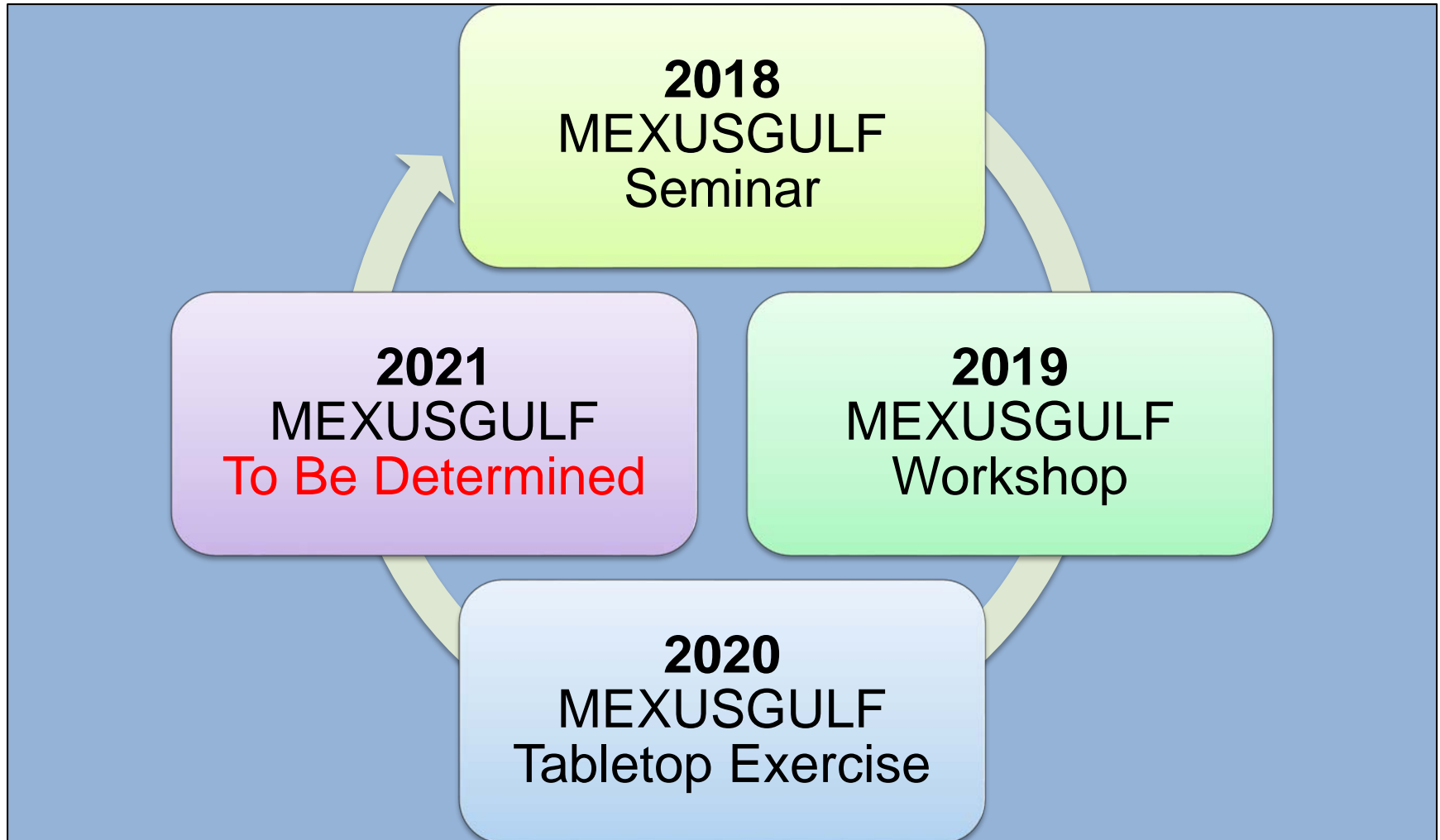


# Major Changes

- Simplified and Consistent
- U.S. Regional Chair delegated to Incident Management and Preparedness Advisor (IMPA)
- Advisory and Liaison Coordinator (ALC)
- Bilingual MEXUS Spill Notification Form



# Future Exercise Cycle







# Questions?

# U.S. crude oil, petroleum, and natural gas overview



---

*For*

*U.S. Coast Guard Regional Response Team 6*

*May 16, 2018 / Addison, TX via video conference*

*By*

*Arup Mallik, Industry Economist*

## An overview

- Prices
- Crude oil
  - Global oil market
  - U.S. market
- Petroleum products
- Natural gas
  - Liquefied natural gas

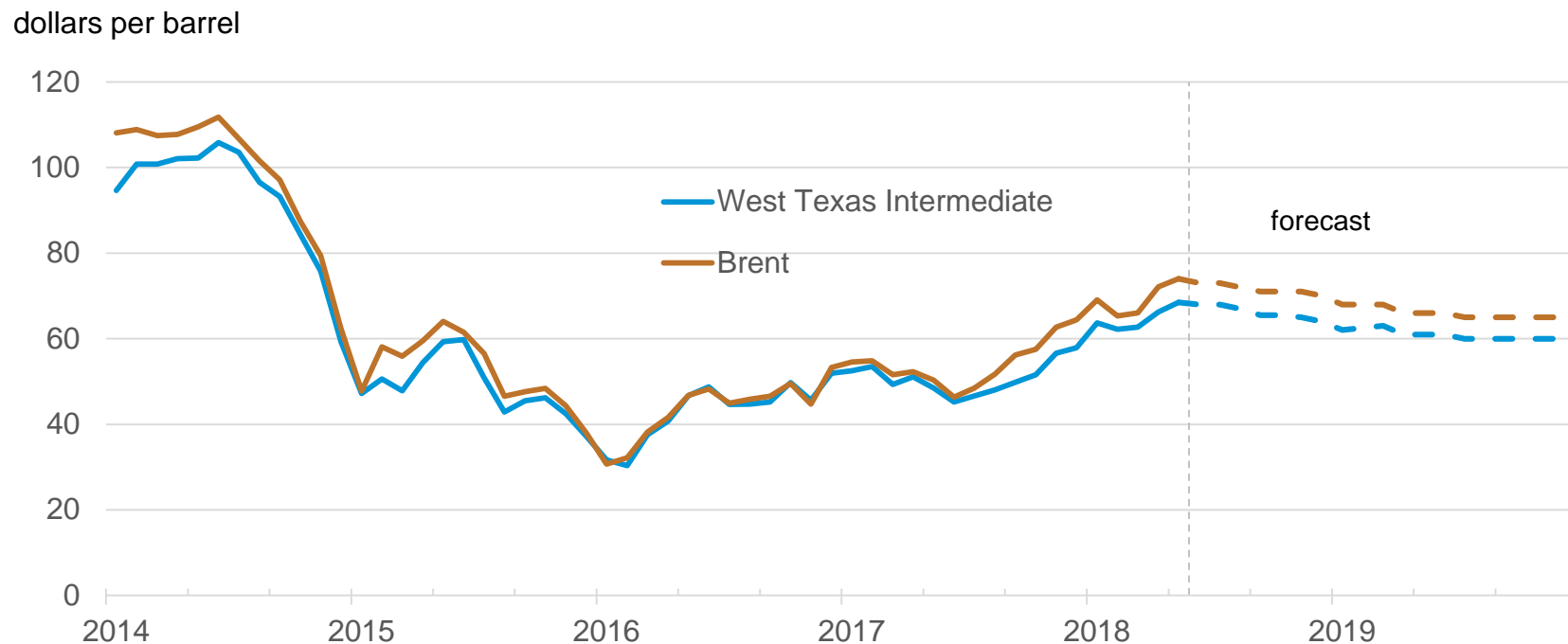
## EIA mission: independent statistics and analysis

- EIA was created by the U.S. Congress in 1977
- EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment
- EIA is the Nation's premier source of energy information and, by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. Government
- EIA does not propose or advocate any policy positions

## EIA produces data series, analyses, and energy projections

- Weekly, monthly, and annual data
  - Displays U.S. and regional production, stocks, blender inputs, imports, and exports
- Real-time analyses
  - Digests important developments in Today in Energy, This Week in Petroleum, Drilling Productivity Report, Natural Gas Weekly Update
- Short-Term Energy Outlook (STEO)
  - Forecasts U.S. supplies, demands, imports, stocks, and prices of energy with a horizon of 12 to 24 months
- Annual Energy Outlook (AEO)
  - Presents 25- to 30-year projection and analysis of U.S. energy supply, demand, and prices
- International Energy Outlook (IEO)
  - Assesses international energy production and consumption

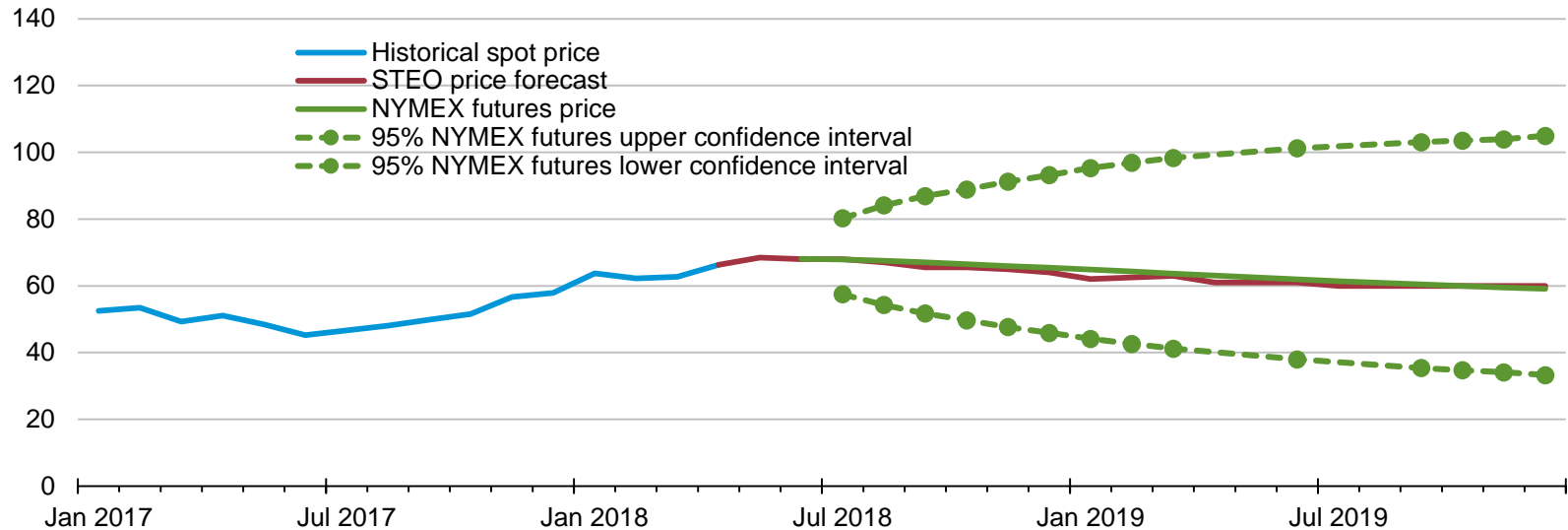
## EIA forecasts crude oil prices to \$71 per barrel in 2018



Source: EIA Short-term Energy Outlook, May 2018

# Though there are uncertainties to the forecast

West Texas Intermediate (WTI) crude oil price  
dollars per barrel



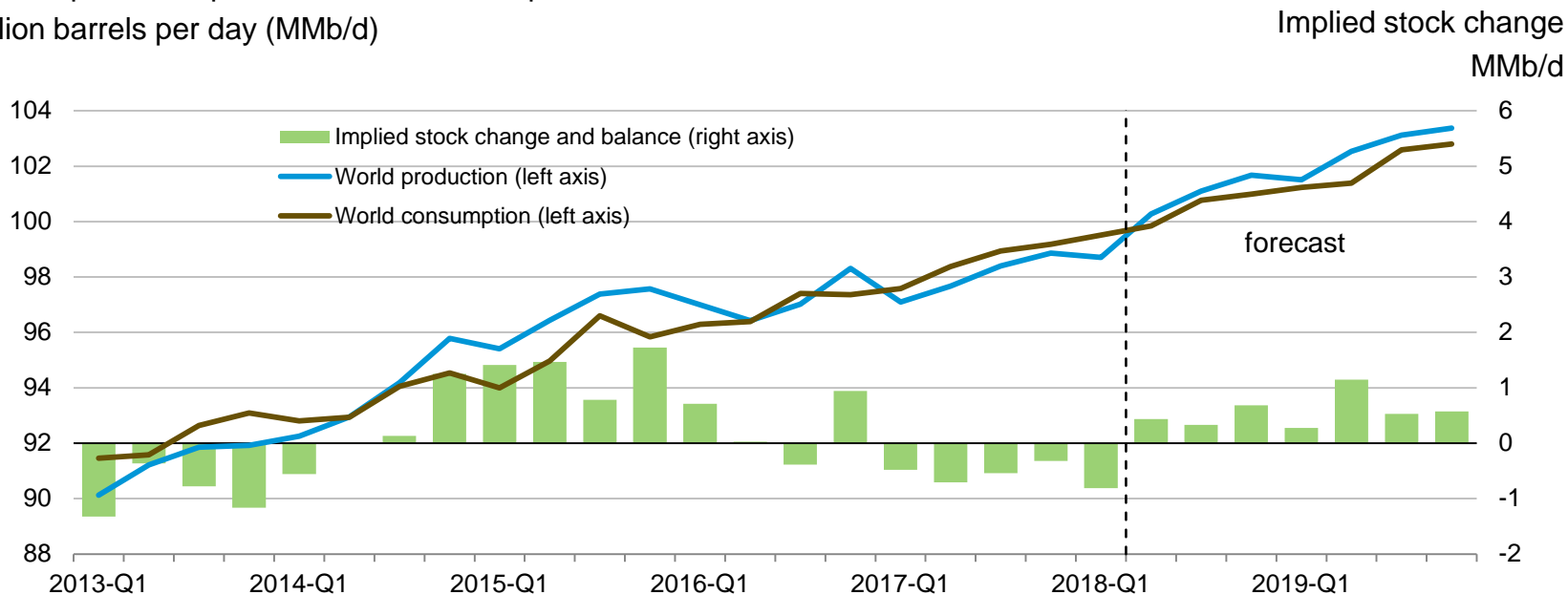
Note: Confidence interval derived from options market information for the 5 trading days ending May 3, 2018. Intervals not calculated for months with sparse trading in near-the-money options contracts.

Source: Short-Term Energy Outlook, May 2018, and CME Group



# Global inventories of crude oil are forecasted to grow into 2019

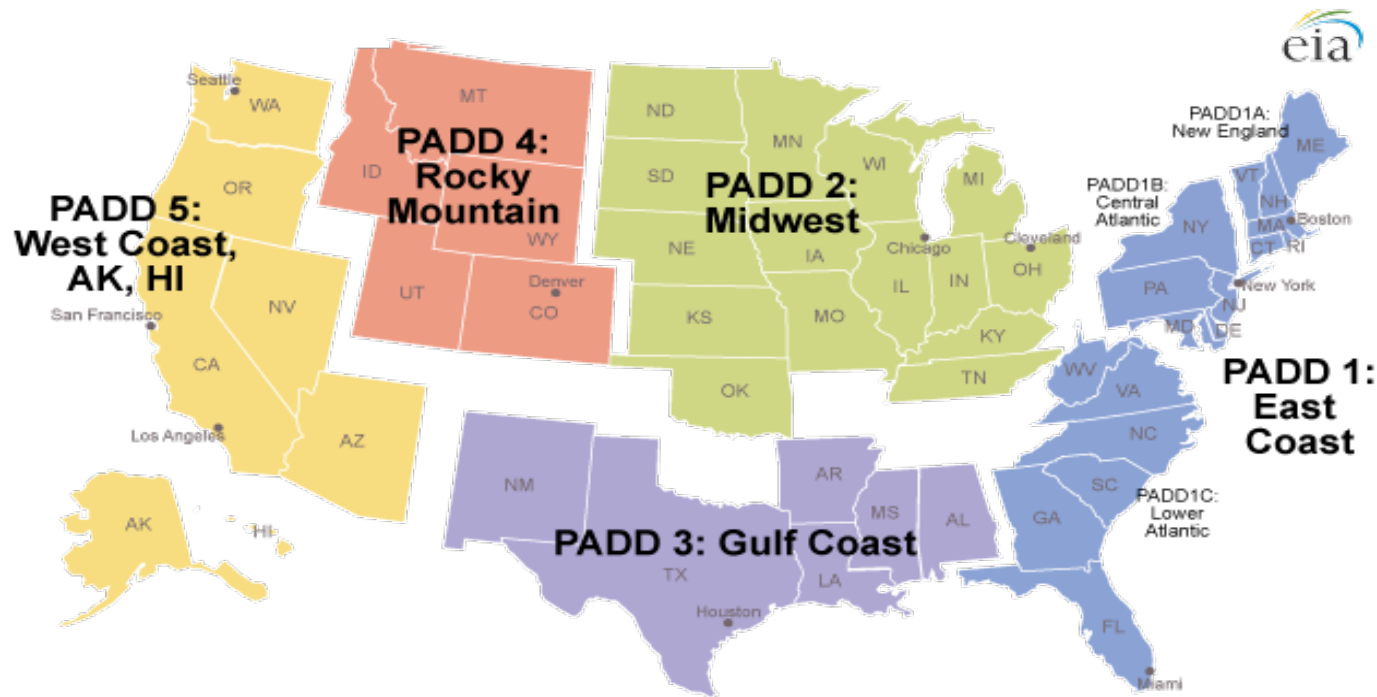
World liquid fuels\* production and consumption  
million barrels per day (MMb/d)



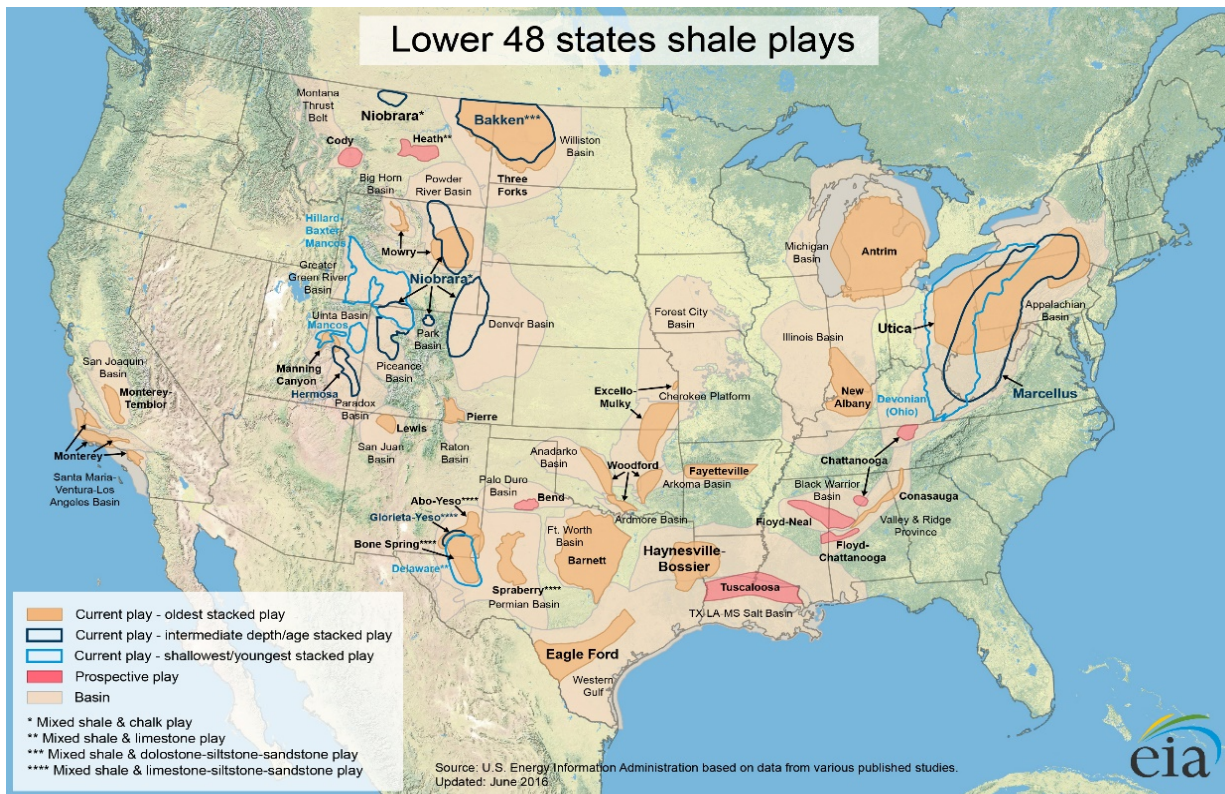
Source: EIA Short-Term Energy Outlook May 2018

Note: \*Liquids is crude oil and natural gas liquids

# EIA petroleum data are reported at the Petroleum Administration for Defense Districts (PADD) level



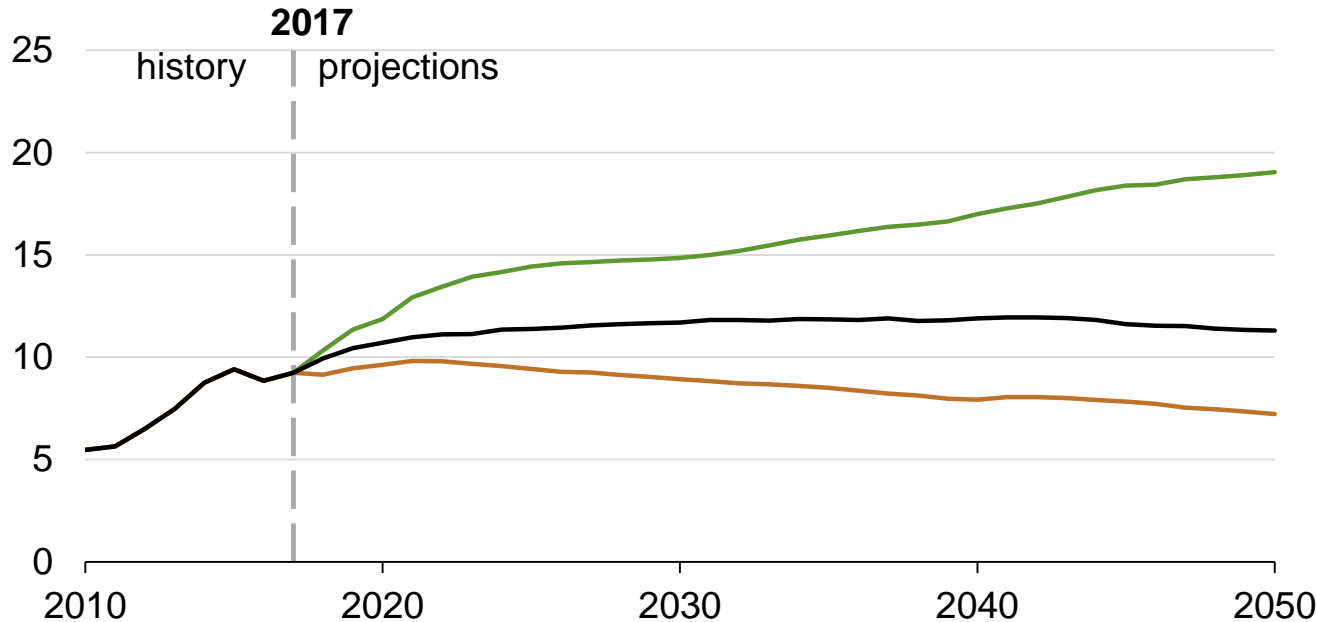
# Shale oil and tight plays



# In the Annual Energy Outlook, resource availability and technological improvements determine domestic production levels

## Crude oil production

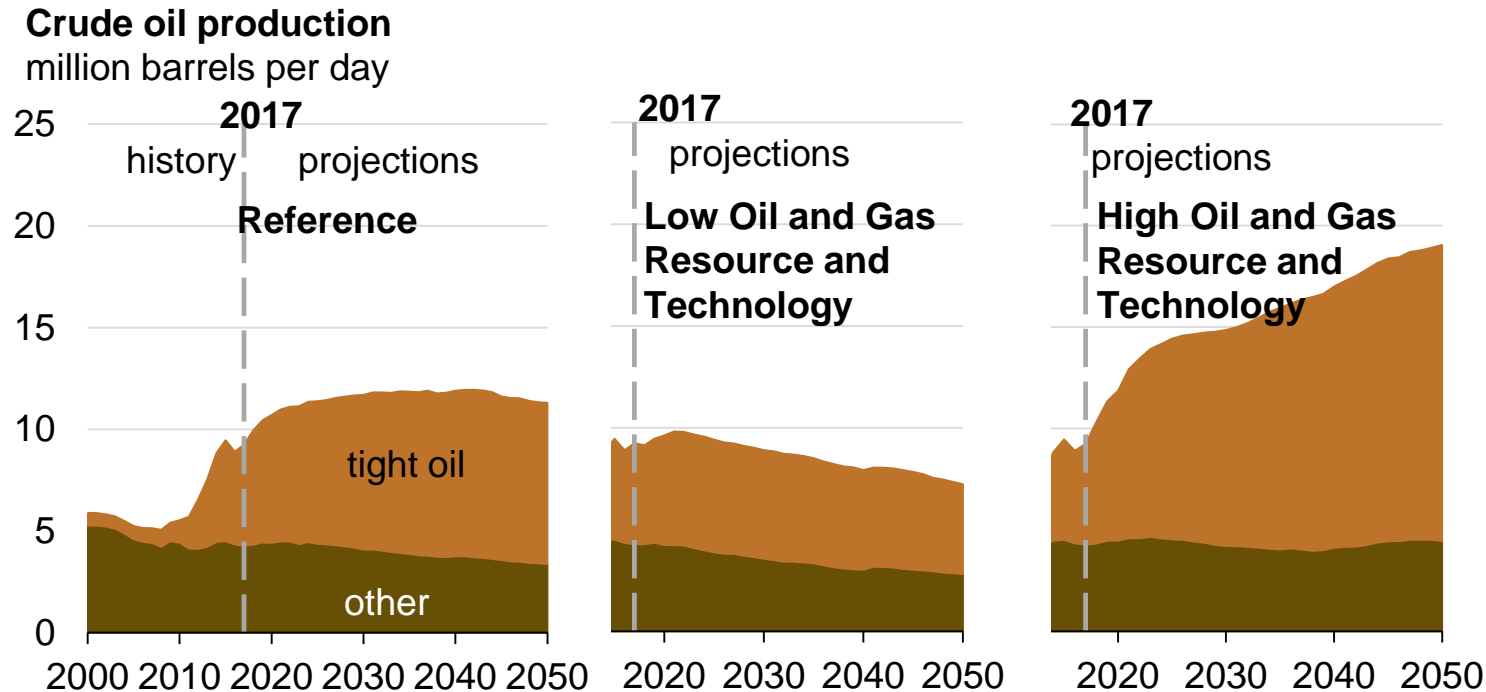
million barrels per day



High Oil and Gas  
Resource and  
Technology  
Reference  
Low Oil and Gas  
Resource and  
Technology

Source: EIA Annual Energy Outlook 2018

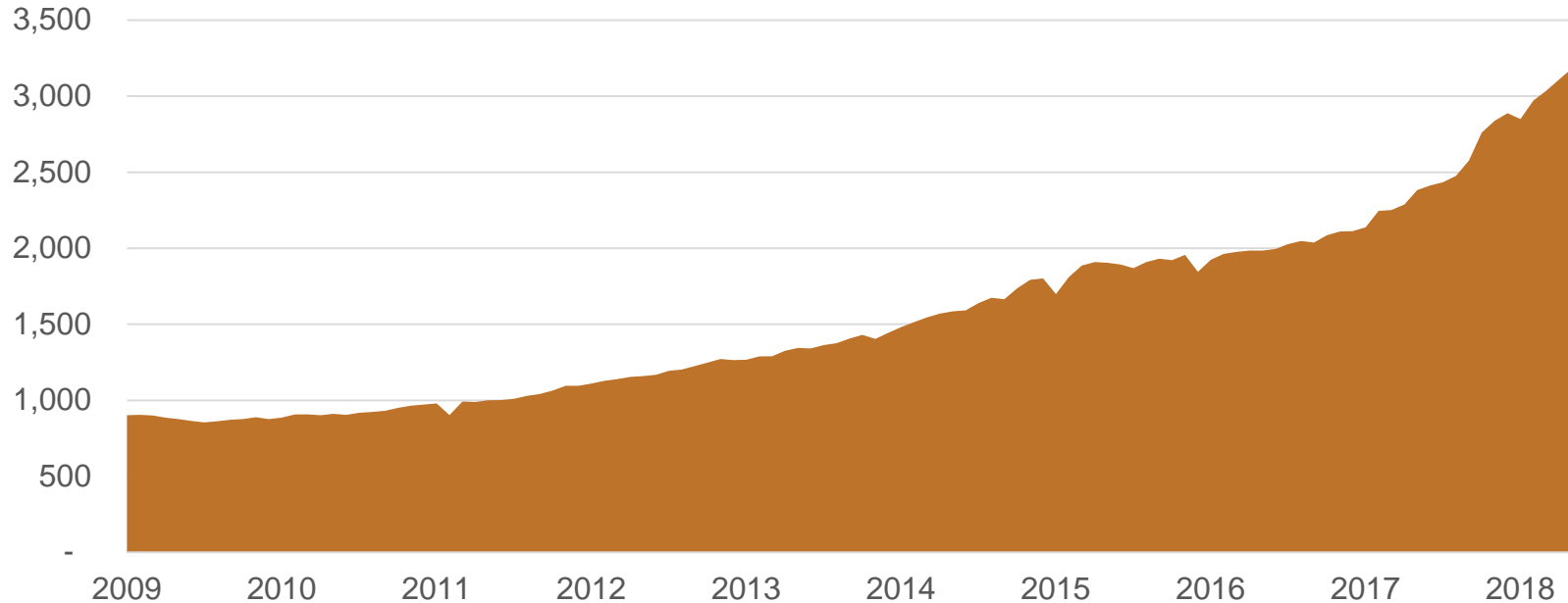
# Tight oil will be the dominant form of U.S. crude oil production



Source: EIA Annual Energy Outlook 2018

# The Permian is the fastest growing tight oil play in the United States; pipelines are reaching capacity

Permian crude oil production  
thousand barrels per day

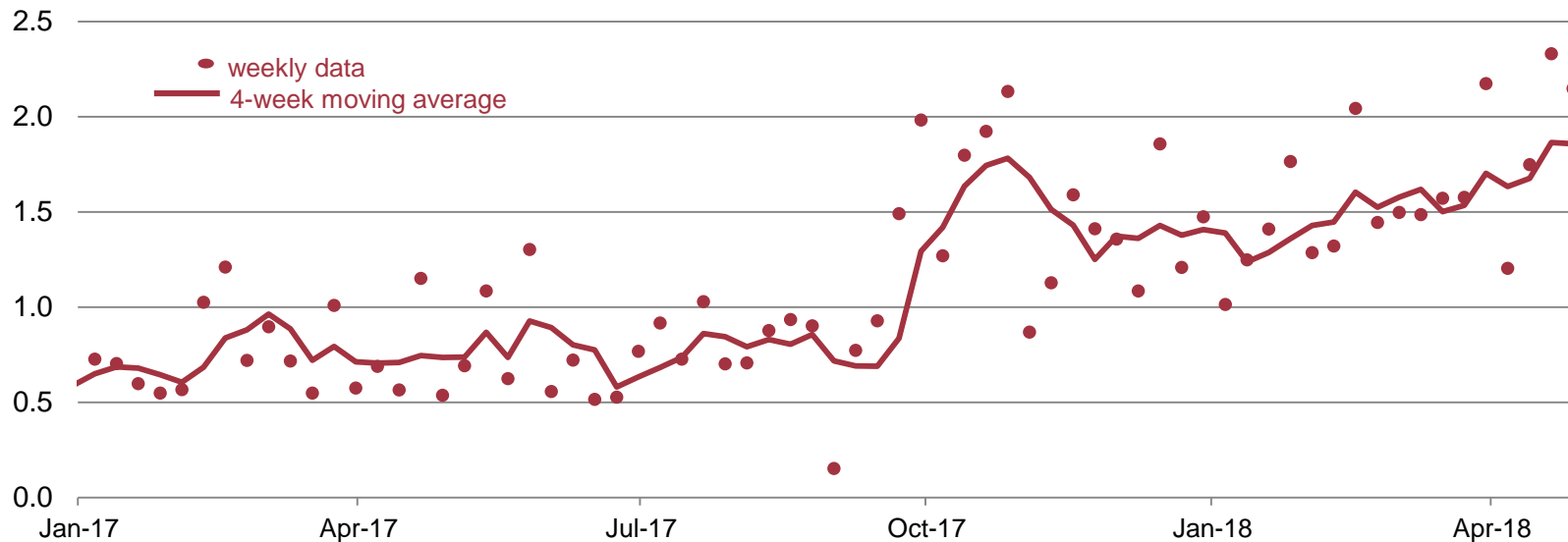


Source: EIA Drilling Productivity Report

# Growing production and the lifting of the export ban on crude oil have allowed increasing exports

## U.S. crude oil exports

million barrels per day

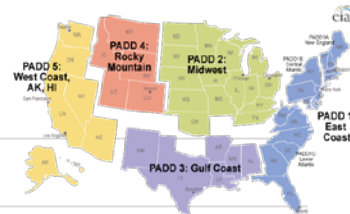
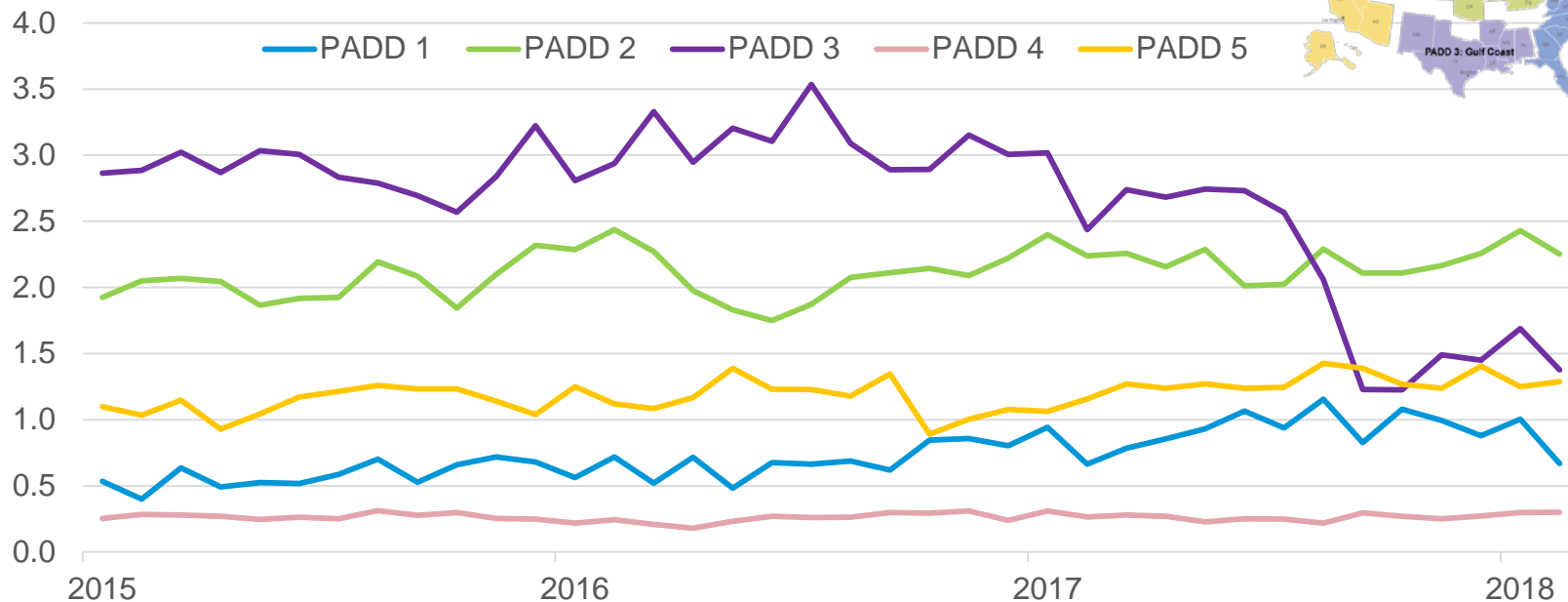


Source: U.S. Energy Administration, Weekly Petroleum Status Report



## But the U.S. is a net importer of crude oil

Crude oil net imports  
million barrels per day

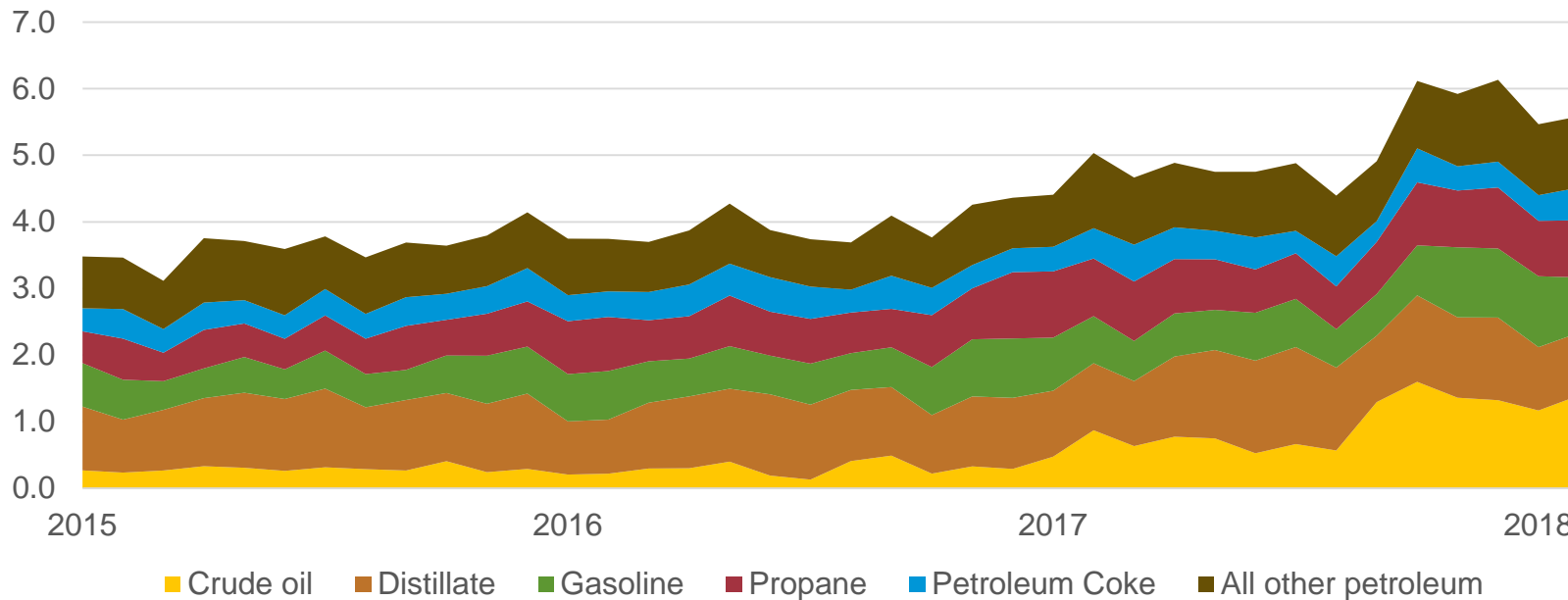


Source: EIA Petroleum Supply Monthly

## On the Gulf Coast (PADD 3) crude oil is now a top export

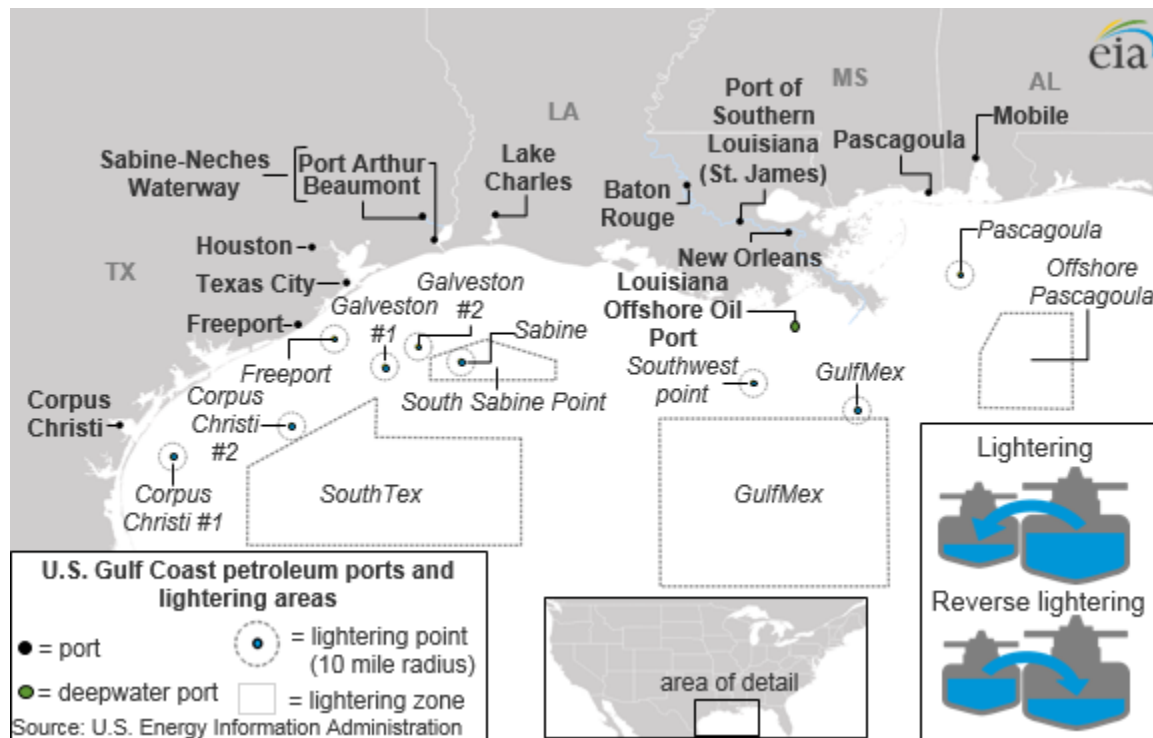
PADD 3 exports

million barrels per day



Source: EIA Petroleum Supply Monthly

# Lightering zones are required for crude oil exports

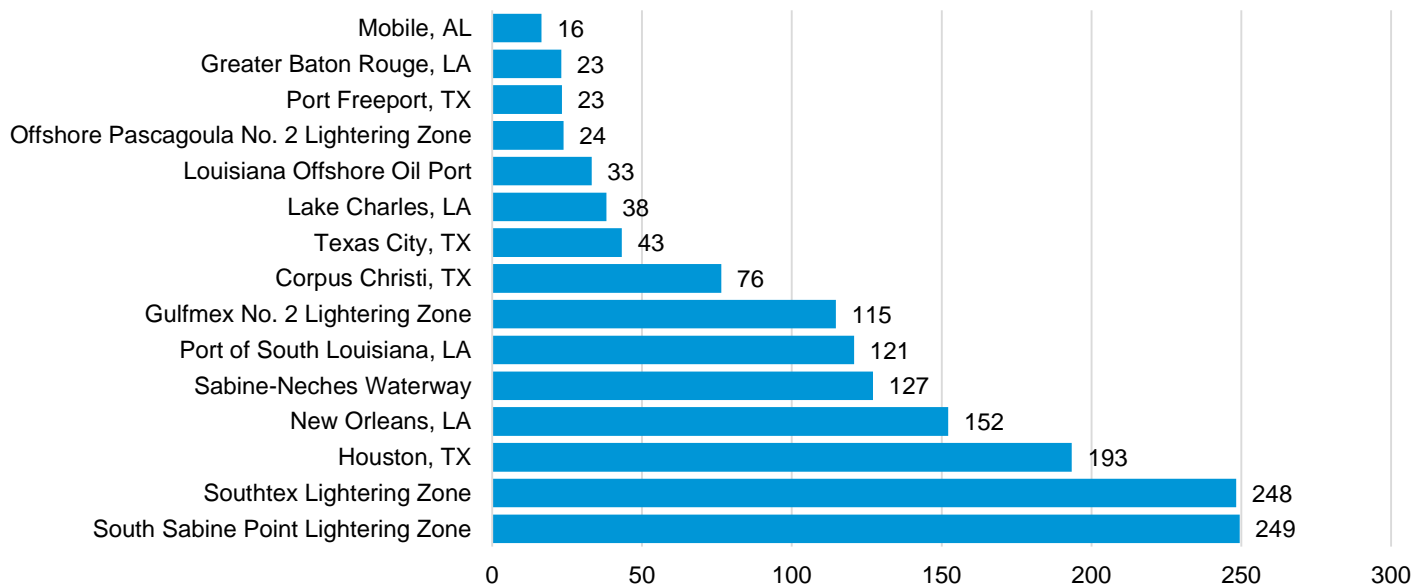


Source: This Week in Petroleum - [https://www.eia.gov/petroleum/weekly/archive/2018/180502/includes/analysis\\_print.php](https://www.eia.gov/petroleum/weekly/archive/2018/180502/includes/analysis_print.php)

## And the two busiest ports in 2015 were lightering zones

2015 U.S. Gulf Coast port tanker traffic volume

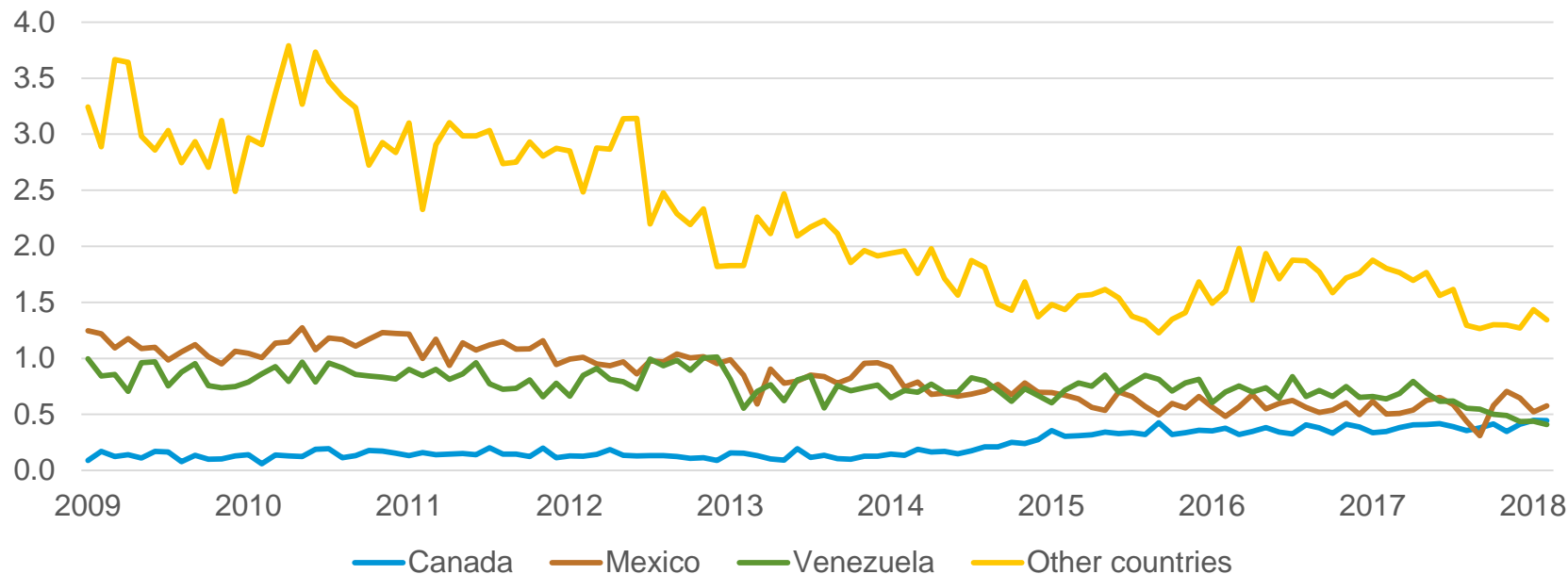
million deadweight tons



Source: U.S. Energy Information Administration, U.S. Maritime Administration

# Crude oil imports from Canada to the Gulf Coast are increasing but imports from other countries are down

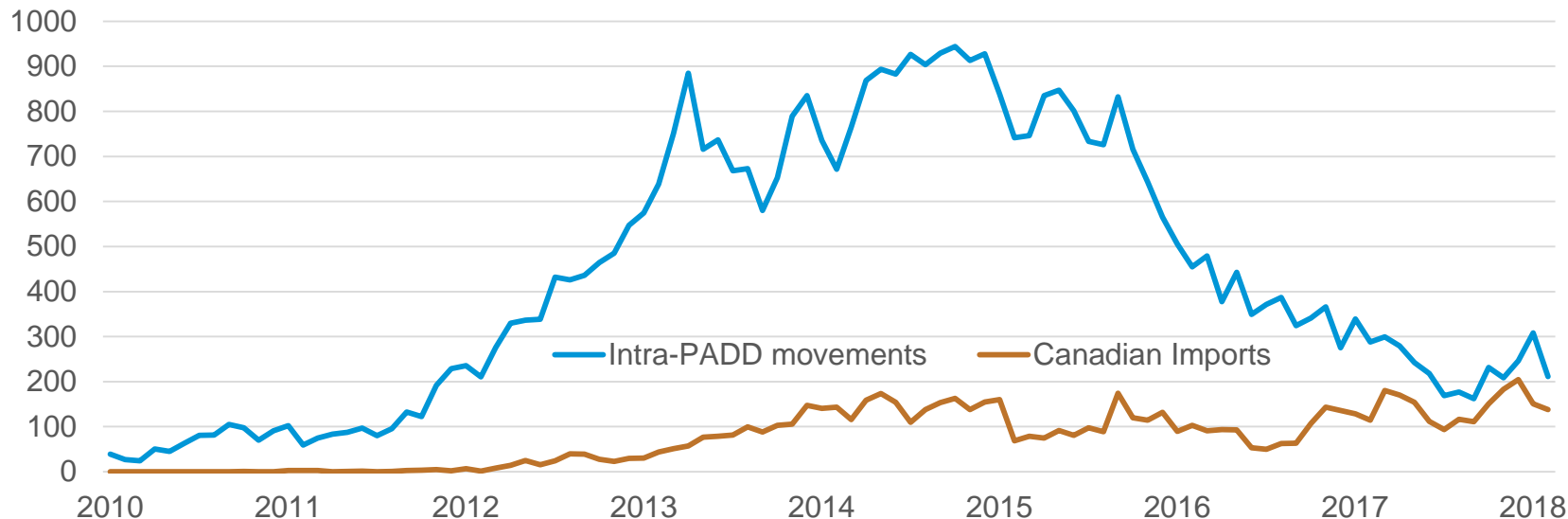
Crude oil imports processed in PADD 3  
million barrels per day



Source: EIA Petroleum Supply Monthly

# Rail is an important import mode as crude oil pipelines have become full

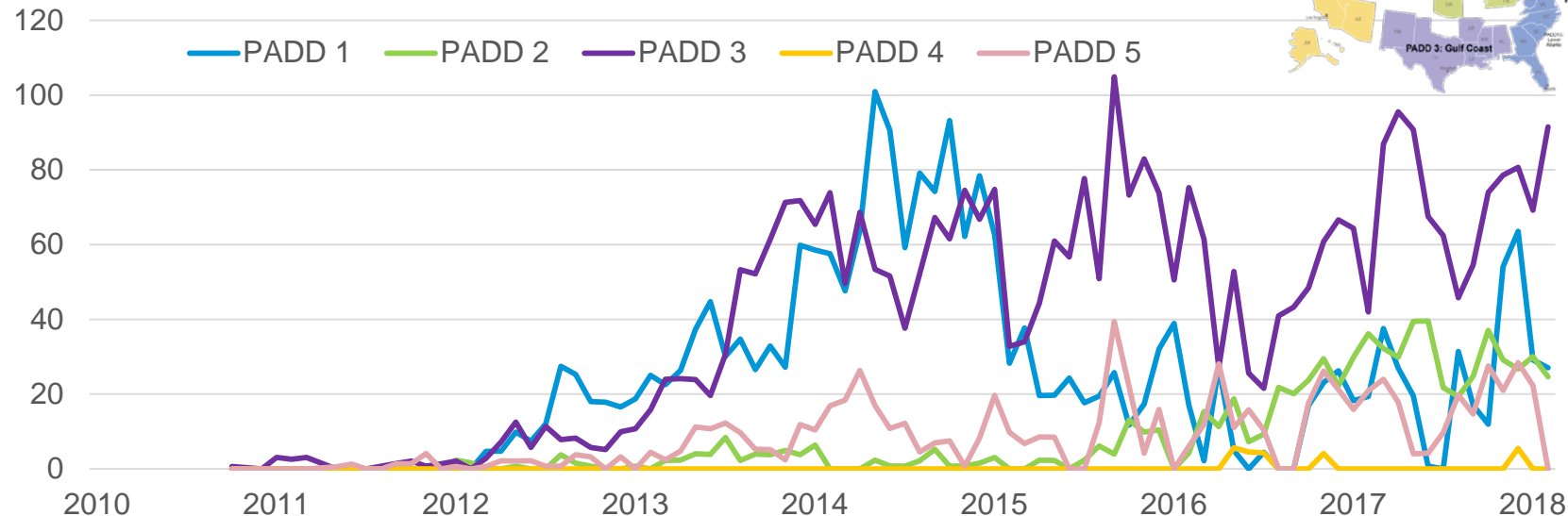
Crude oil by rail movements  
thousand barrels per day



Source: EIA Petroleum Supply Monthly

# And most crude-by-rail imports from Canada are going to the Gulf Coast

Canadian crude imports by rail  
thousand barrels per day

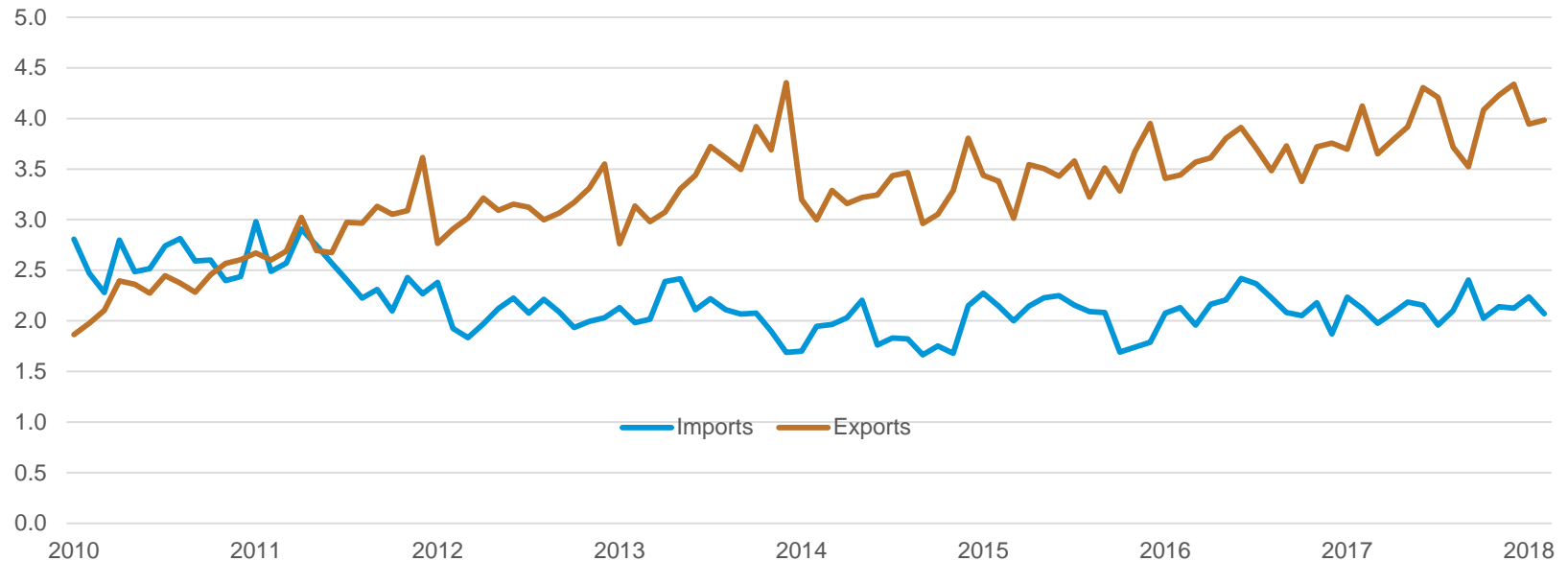


Source: EIA Petroleum Supply Monthly



# The United States became a consistent net exporter\* of petroleum products by late 2011

Petroleum product imports and exports  
million barrels per day

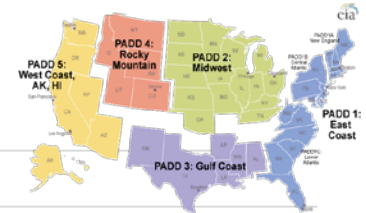
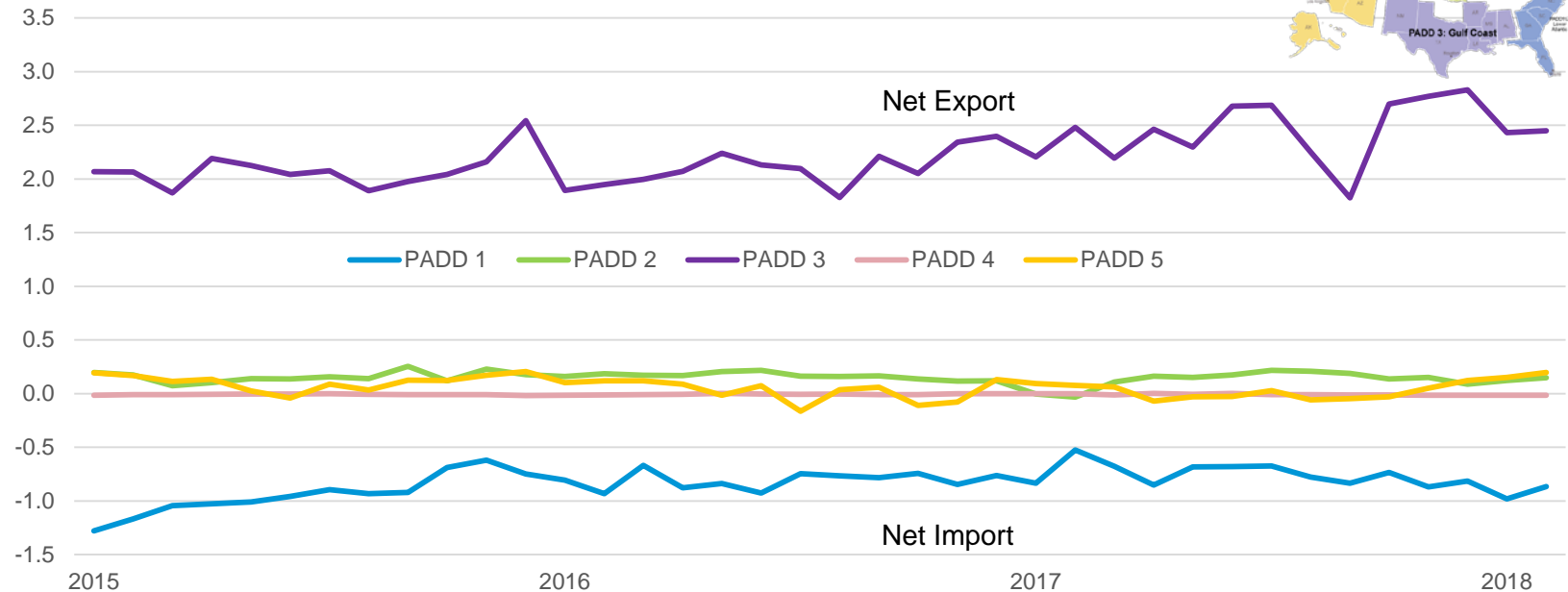


Note: \* Net export = export – import > 0

Source: EIA Petroleum Supply Monthly

# Most petroleum product exports come from the Gulf Coast (PADD 3)

Petroleum product net exports by PADD  
Million barrels per day

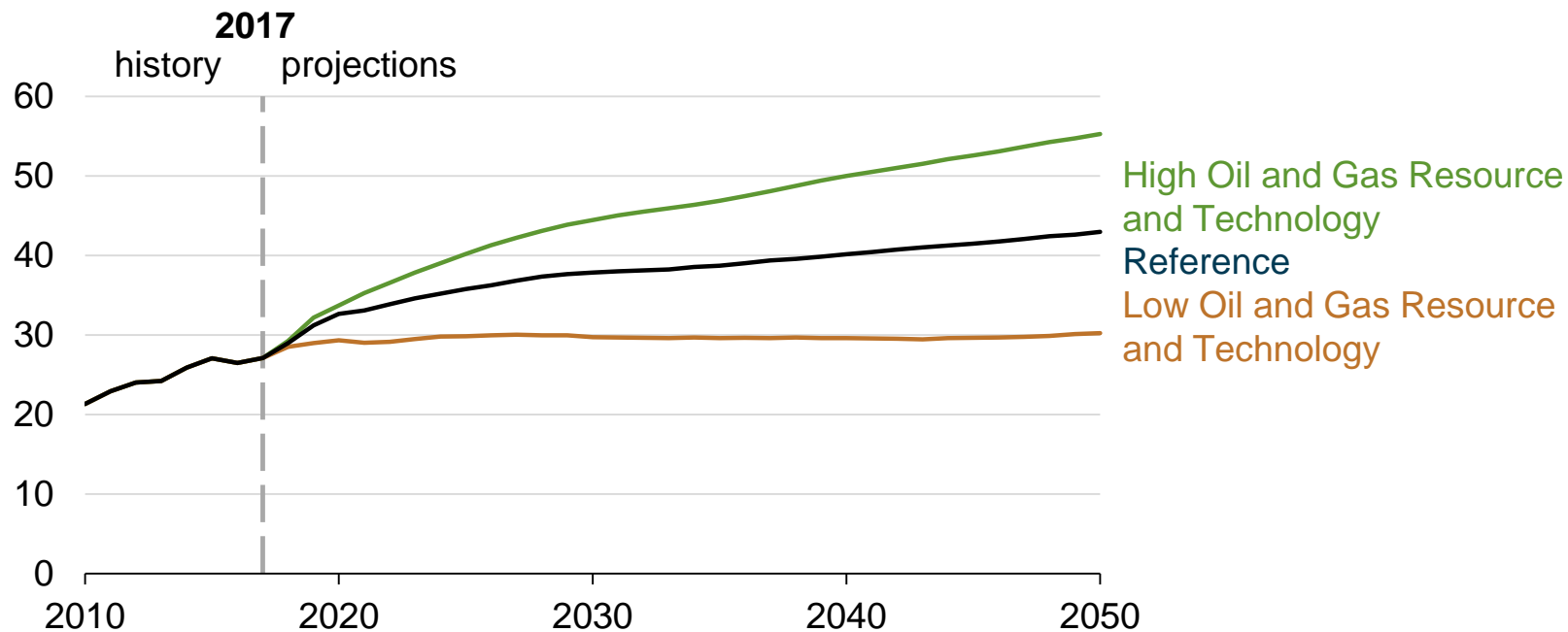


Source: EIA Petroleum Supply Monthly

# EIA projects natural gas production will grow in all cases

## Dry natural gas production

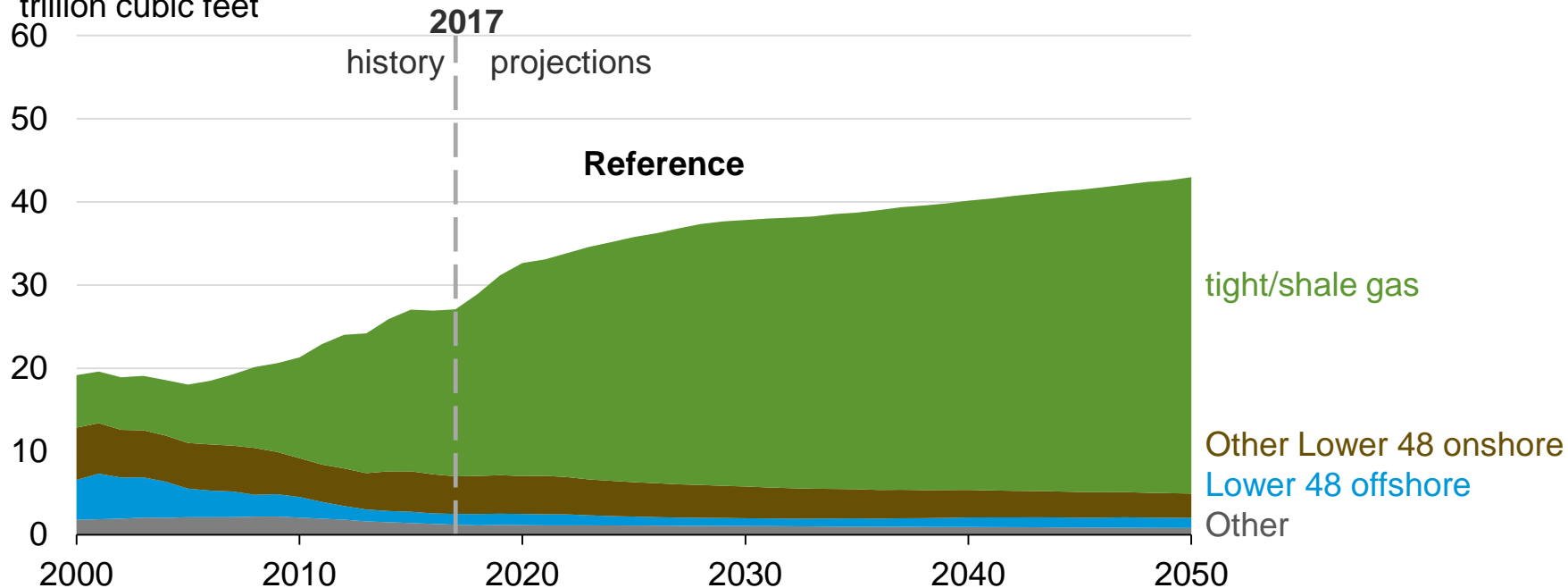
trillion cubic feet



Source: EIA Annual Energy Outlook 2018

# Natural gas from shale gas and tight oil plays will account for more than three-quarters of production by 2050

Natural gas production by type  
trillion cubic feet

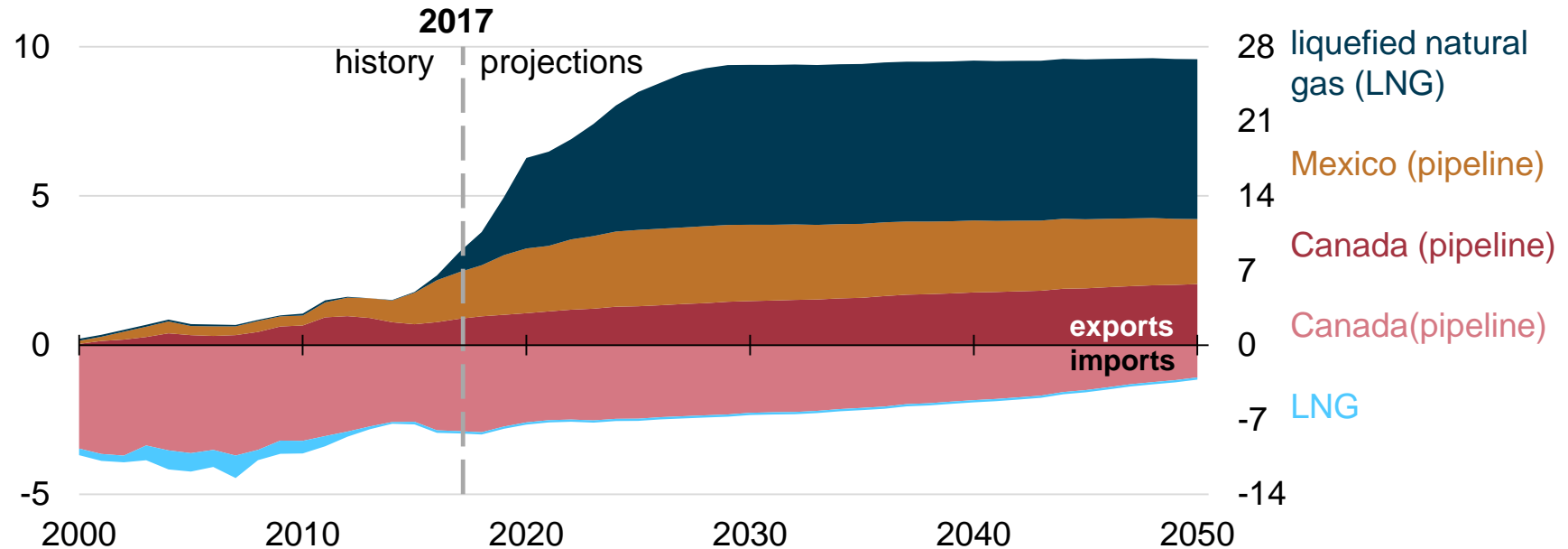


Source: EIA Annual Energy Outlook 2018

# U.S. natural gas exports grow, liquefied natural gas allows access to global markets and imports decline

Natural gas trade  
trillion cubic feet

billion cubic feet per day

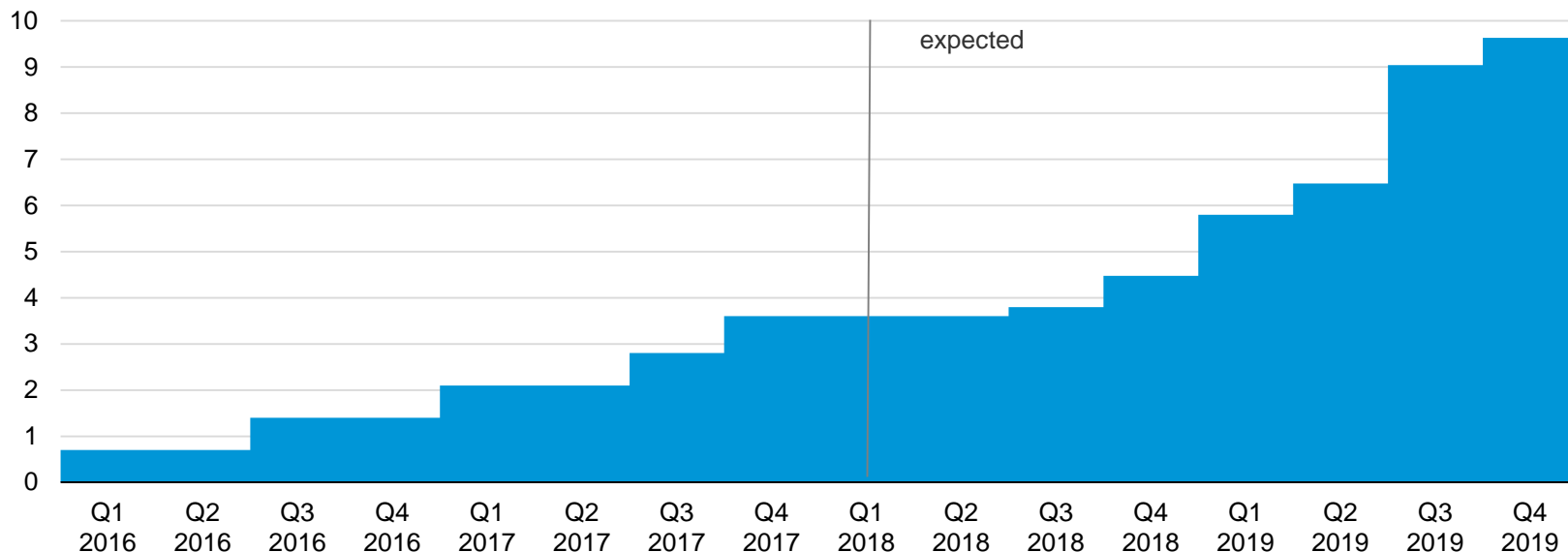


Source: EIA Annual Energy Outlook 2018

## And more LNG capacity is expected to come on-line

U.S. liquefied natural gas export capacity (2016-2019)

billion cubic feet per day



Source: EIA based on IHS and Trade Press

# And U.S. liquefied natural gas exports quadrupled in 2017

U.S. exports of liquefied natural gas  
billion cubic feet per day



Source: EIA Natural gas monthly



# For more information

U.S. Energy Information Administration home page | [www.eia.gov](http://www.eia.gov)

Annual Energy Outlook | [www.eia.gov/aeo](http://www.eia.gov/aeo)

Short-Term Energy Outlook | [www.eia.gov/steo](http://www.eia.gov/steo)

International Energy Outlook | [www.eia.gov/ieo](http://www.eia.gov/ieo)

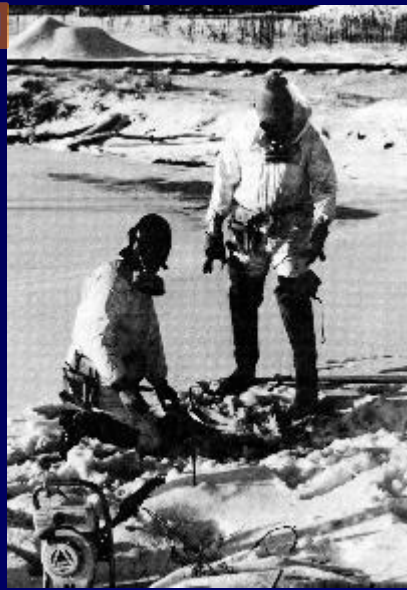
Monthly Energy Review | [www.eia.gov/mer](http://www.eia.gov/mer)

Today in Energy | [www.eia.gov/todayinenergy](http://www.eia.gov/todayinenergy)

State Energy Profiles | [www.eia.gov/state](http://www.eia.gov/state)

Drilling Productivity Report | [www.eia.gov/petroleum/drilling/](http://www.eia.gov/petroleum/drilling/)

International Energy Portal | [www.eia.gov/beta/international/?src=home-b1](http://www.eia.gov/beta/international/?src=home-b1)



# Environmental Response Team





# “Classic” Environmental Emergency



Anything



Anytime



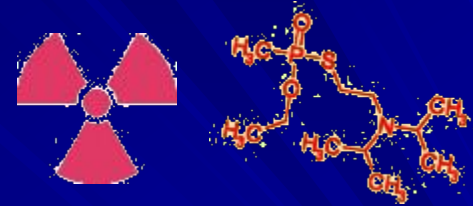
Anywhere

---

Designated as a Special Team in the Special Forces section of the National Contingency Plan

# Response Capabilities

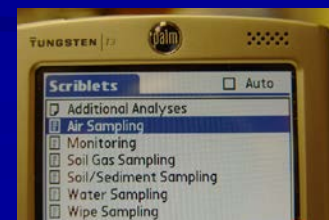
- Standard or unique multi-matrix sampling & monitoring
- Dive Unit – Experienced scientific divers
- Radiation – Detection, assessment, decontamination and disposal
- Air Dispersion Modeling – CALPUFF, HPAC & CATS, IMAAC
- Oil Spills – Standard response assistance, forensic investigation analytical techniques
- Health and Safety- technical assistance, CBRN HASP
- Information Management Technology – WebEOC, Scribe
- Cited in 2005 Coast Guard Hazardous Materials Response Special Teams Capabilities and Contact Handbook





# Resources

- Trace Atmospheric Gas Analyzers (TAGA) – real-time capabilities, developing spectra and calibration curves for CWAs
- Dive Unit – Sector and side scan sonar, Cobra-Tac Navigation and mapping
- Radiation Resources – Exploranium, Gamma Spec, Genetron, SAM 935
- CT sampling & monitoring – BTA 550, AP2C, ADP 2000, Lumex, SENSIR Travel/IR
- Oil Spills – Fluorometry
- Information Management Technology – WebEOC, Scribe, PDA Scriblets for OS Palm, Windows CE



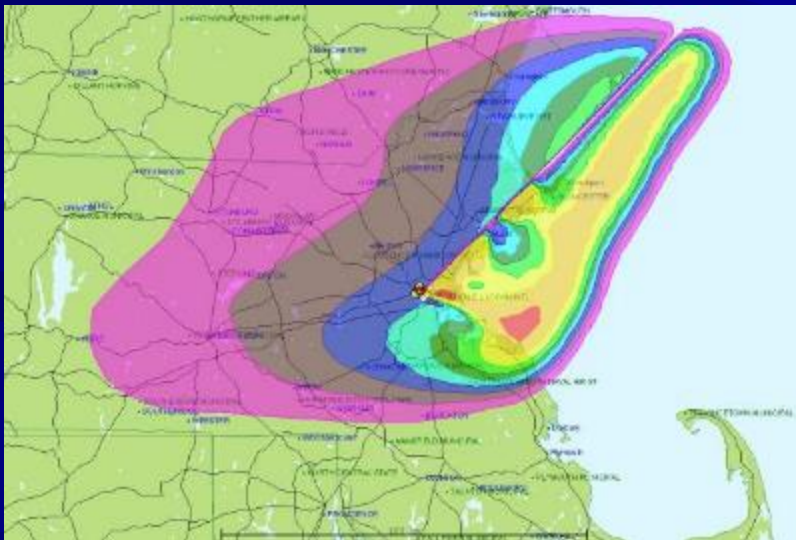
# ERT IS YOUR INLAND SSC





# Air Surveillance / Modeling

- Air investigations (fixed/mobile; indoor/ambient)
- Rapid deployment of near real-time & real-time instruments (VOCs, acid gasses, mercury, particulates, aerosols, chemical and biological agents)



- Sampling & analysis for NIOSH, EPA, OSHA, ASTM, ISO methods
- Air dispersion modeling - ALOHA to HPAC, IMAAC

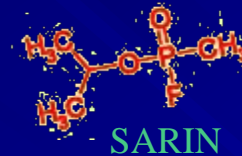


# Homeland Security

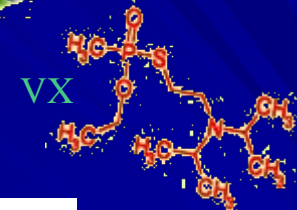
- Chemical and biological agent detection and sampling
- Decontamination strategy design, implementation and monitoring
- Fast track Technical Bulletin, Quick Guide development



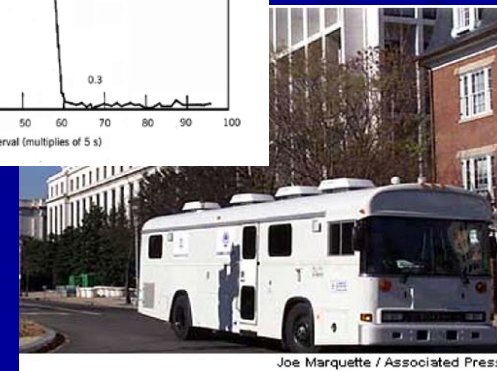
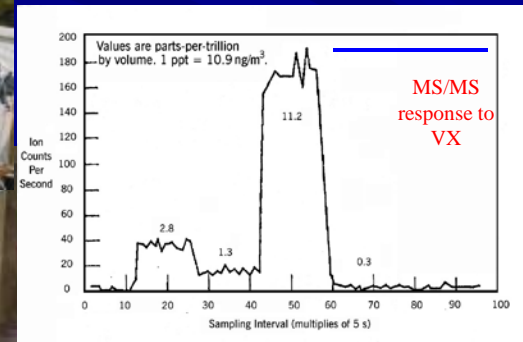
PFIB



SARIN

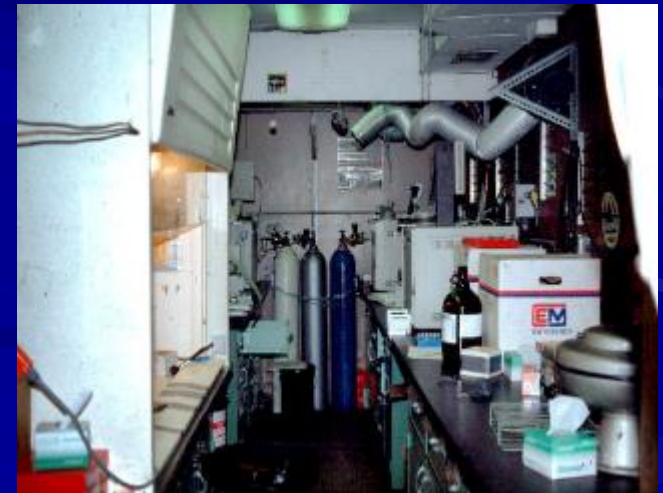


VX



# Analytical Support

- Cost effective, rapid turnaround for VOCs, metals, pesticides/PCBs, BNAs in all matrices
- Mobile/on-site analytical support
- Site specific method modification or development
- Special Projects: i.e. Tissue analysis, oil fingerprinting



# Joint Projects



- Microwave Assisted Process (MAP) extraction technique
- In-situ oil burn (NOBE)
- Health and Safety protocol adaptation
- Field Demo of Advanced CBRN Decontamination Technologies: Chemical Trial





# Information Management Tools

- Scribe - Environmental Data Management
- WebEOC Daily Operations – NRC Spill Reports
- WebEOC ICS – IAP Generation, incident communication
- Response.epa.gov – Public/Private Access Websites
- RCMS - Cost Tracking
- Train Trax –H&S training tracking
- NEMS – National Equipment Inventory



LocationID	Online Since	Last Reset	Last Update	# of Records
ERT - Cincinnati, OH	10/01/2004	2/1/2006 6:22:04 PM	2/1/2006 6:22:06 PM	336
ERT - Edison, NJ	02/17/2005	12/20/2005 5:16:10 PM	2/13/2006 5:12:18 PM	3700

<a href="#">0017703</a>	Operations Section Technical Specialist	New Orleans, LA	OPS) Debris Site Assessment Team Leader - Landfill Inspection RCRA Solid Wa... <a href="#">More</a>				2006/02/15	2006/03/07	REQUESTED
<a href="#">0016645</a>	Command Comm. Involvement Coord.	New Orleans, LA	[OPS] Community Involvement Volunteer C - Region 2 Stationed at the IMT ... <a href="#">More</a>		Region 02	Monica Vaussen	2006/03/18	2006/03/31	SUPPLIED
<a href="#">0016141</a>	Operations Section Task Force Leader	New Orleans, LA	(OPS) Plaquemines Parish Task Force Team Leader 24 (RPM/RSC) Travel dates ... <a href="#">More</a>		Region 01	Diane Switzer	2006/03/01	2006/03/21	SUPPLIED

WebEOC 6 Login:



Region 5 Grosse Ile	01/26/2005	3/11/2005 12:18:00 PM	4/18/2005 8:55:19 AM	350
Region 6	01/10/2005	8/31/2005 1:46:08 PM	2/12/2006 9:03:27 PM	584
Region 7	09/29/2004	12/22/2005 4:39:48 PM	2/13/2006 4:59:02 PM	1116
Region 8	12/28/2004	2/13/2006 7:06:07 PM	2/13/2006 7:53:39 PM	814
Region 9	03/03/2005	3/3/2005 10:57:14 AM	3/3/2005 12:20:54 PM	617

# Training / Health & Safety

- Provide training for over 30 years
- Over 20 courses: basics to technically focused
- Specialty course development
- Integral to health and safety (H&S) guidance development
- Designated Center of Excellence for H&S for Emergency Response



Center of Excellence



Health & Safety  
for Emergency Response

**Technical Bulletins**

**Recommended Occupational**

United States Environmental Protection Agency | Office of Solid Waste and Emergency Response | Publication 9205-2-101-2 EPA/546-F-03-025 May 1999

**EPA Available Health and Safety Guidance: Hazardous Waste Operations and Emergency Response**

**Pox**

United States Environmental Protection Agency | Office of Emergency and Response | Washington, DC 20460 | Publication 9205-1-03 PB92-1953414 June 1992

**EPA Standard Operating Safety Guides**

[www.ert.org](http://www.ert.org)

# Dive Unit

- Remote and underwater search & recovery
- Evidence collection for civil & criminal oil and chemical spills
- Experienced contaminated water/scientific divers
- Sediment bed mapping





# International Response



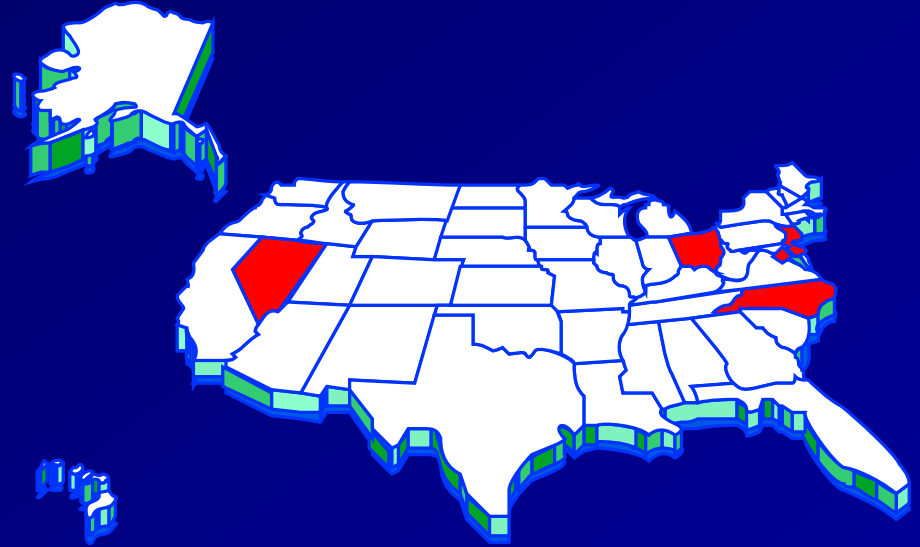
Recent responses:

- Vietnam - Region 9, extent of Agent Orange, dioxin in Da-Nang
- Australia – Thermal Unit evaluation and shakedown
- Israel – Ramat Horav Industrial Park: treatment options
- Taiwan – Benzene tanker
- China - Nitrobenzene



# Environmental Response Team

- Established in 1978
- Multidisciplinary 44 member staff
- 5 locations
- Available to respond  
24 / 7 / 365



Edison, New Jersey

Washington, DC

Cincinnati, OH / Erlanger, KY

Research Triangle Park, NC

Las Vegas, Nevada

# Accessing ERT

■ 24/7 Access  
732-321-6660





# SEERELY ROAD REACTIVE METAL DRUMS

2016 INDIANAPOLIS, INDIANA

# INITIAL FIRE SMOKE PLUME





# Potassium Metal

NaK Alloy Liquid at room temperature

61% Potassium

31 % Sodium

Forms superoxides when exposed to air

Forms caustic precipitate



# Drum ID KEY

Seerley Road Fire  
Drum ID Key



# NaK Alloy Drum







# Thermal Imaging

Drum two thirds full



## Exothermic Reaction

Molten Material flowing from breach in drum. Precipitated over with time

# Metal Salts Formation



# Containment Shelter Damage Due To Corrosive Vapors





# Treatment Tent 100% Nitrogen Atmosphere





# Proximity Suites Inner Layer





# Video Monitoring of Operations





# Residual NaK Reaction

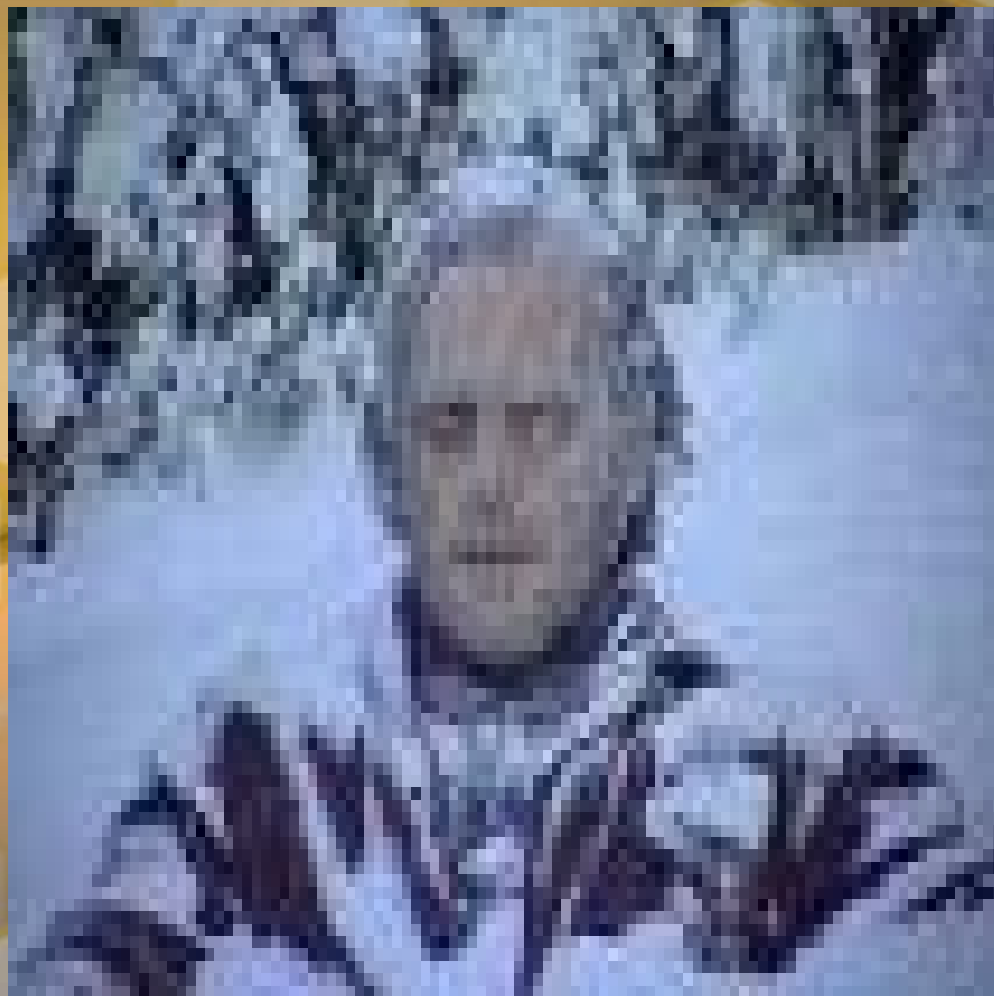




# 99% Hg/ 1% Li Reaction Vessel



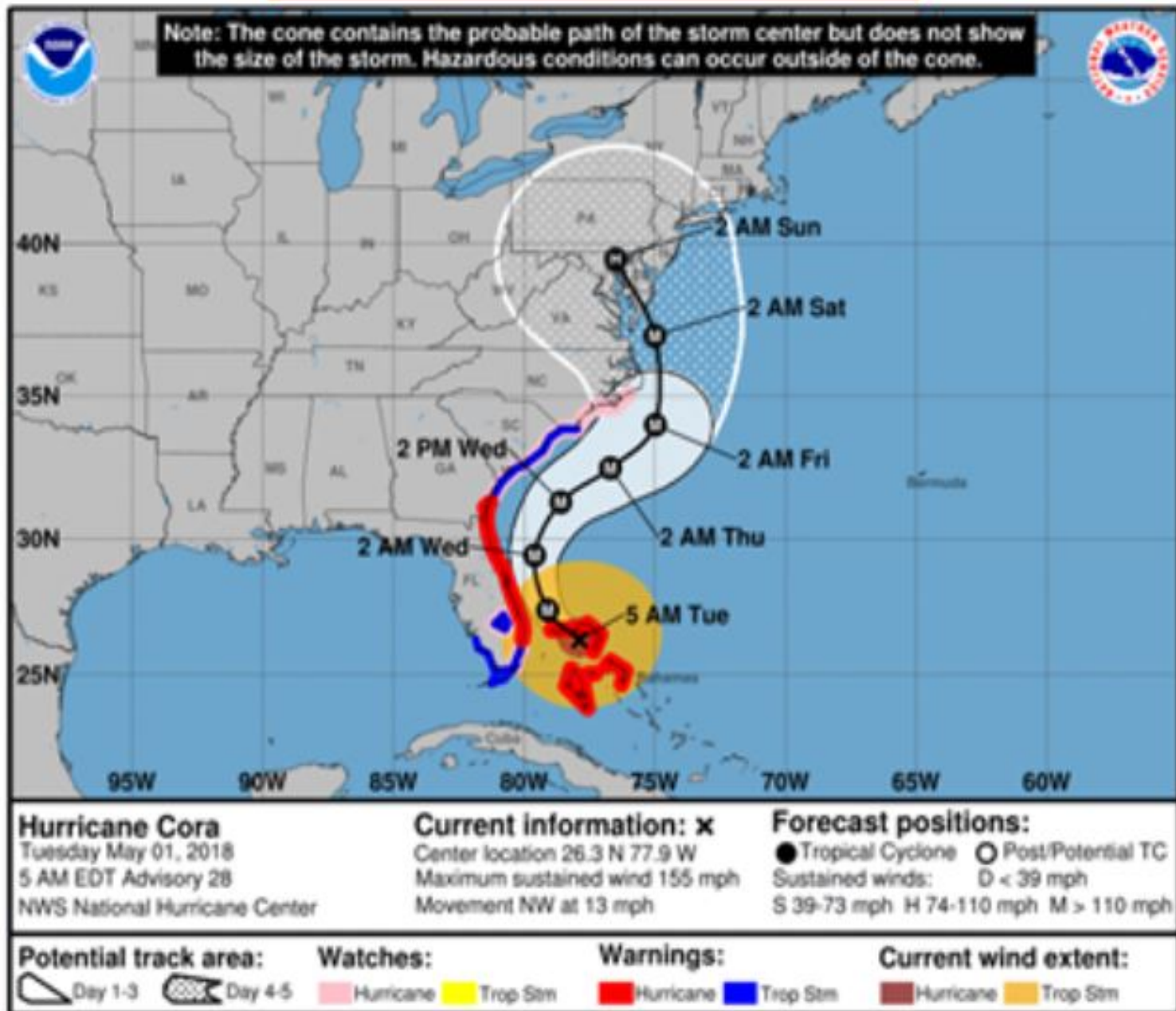
THE END







# EXERCISE EXERCISE EXERCISE



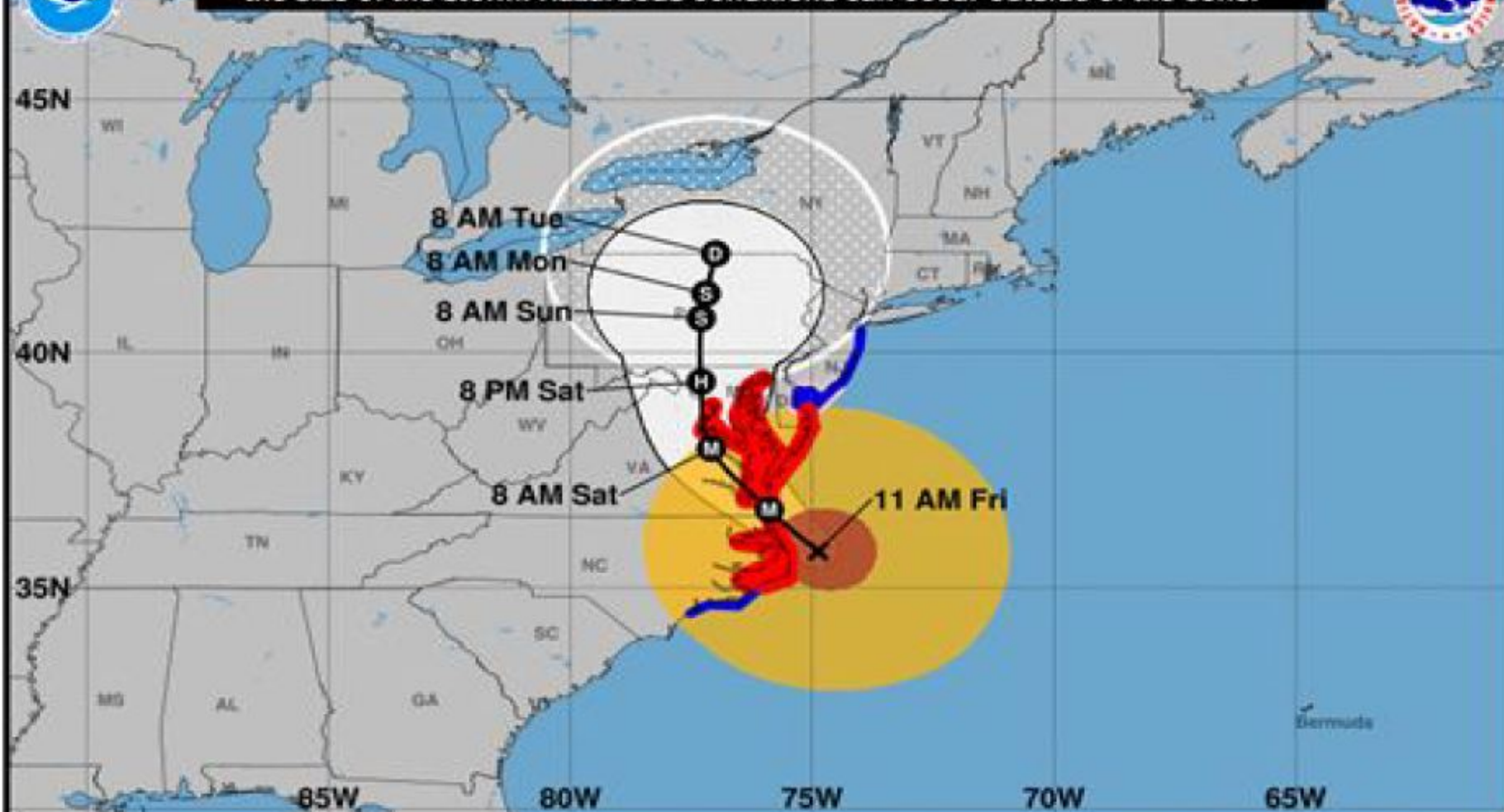
EXERCISE EXERCISE EXERCISE  
NATIONAL LEVEL EXERCISE  
(NOAA Eagle Horizon 2018)

HURRICANE CORA





Note: The cone contains the probable path of the storm center but does not show the size of the storm. Hazardous conditions can occur outside of the cone.



### Hurricane Cora

Friday May 04, 2018

11 AM EDT Advisory 41

NWS National Hurricane Center

### Current information: x

Center location 35.8 N 74.9 W

Maximum sustained wind 140 mph

Movement NW at 9 mph

### Forecast positions:

● Tropical Cyclone ○ Post/Potential TC

Sustained winds: D < 39 mph

S 39-73 mph H 74-110 mph M > 110 mph

### Potential track area:

Day 1-3 Day 4-5

### Watches:

Hurricane Trop Stm

### Warnings:

Hurricane Trop Stm

### Current wind extent:

Hurricane Trop Stm

# **SITUATION MONDAY 7 MAY 2018 – THIS IS A DRILL**

- Loss of Life
- Injuries/deaths reported by flooding, falling trees, etc.
- Local Resources are overwhelmed
- Emergency/Disaster Declarations NC, VA, MD, DE, NJ, D.C. - “Worse disaster to ever hit the National Capital Region.”
- Damage to bridges and roads, debris on roads – no gasoline
- 7.5 M customers without power – (no traffic lights working)

(did anyone notice?)

- 2018 Hurricane Season starts 1 June 2018
- The cone of uncertainty will be even smaller.
- Forecast advisories enhanced.



Kenneth Graham selected as director of NOAA's National Hurricane Center. (NOAA)

- *Ken Graham - New NOAA NHC Director, MIC*
- *How active a 2018 Atlantic Hurricane Season?*
- *(prediction means little)*
- *Remember – A.B.C.*

### 2018 Hurricane Names

ALBERTO	HELENE	OSCAR
BERYL	ISAAC	PATTY
CHRIS	JOYCE	RAFAEL
DEBBY	KIRK	SARA
ERNESTO	LESLIE	TONY
FLORENCE	MICHAEL	VALERIE



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# **Flower Garden Banks National Marine Sanctuary (FGBNMS)**

## **RRT-6 Guidance for Oil Spill Response**

Paige Doelling, PhD  
NOAA Scientific Support Coordinator

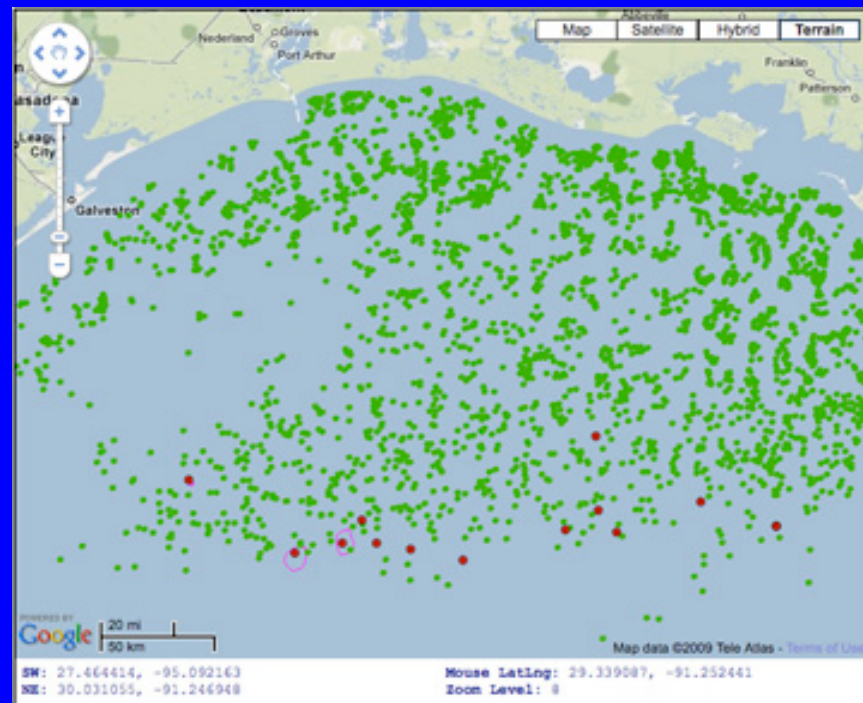


# Why Create Guidance at the RRT Level?

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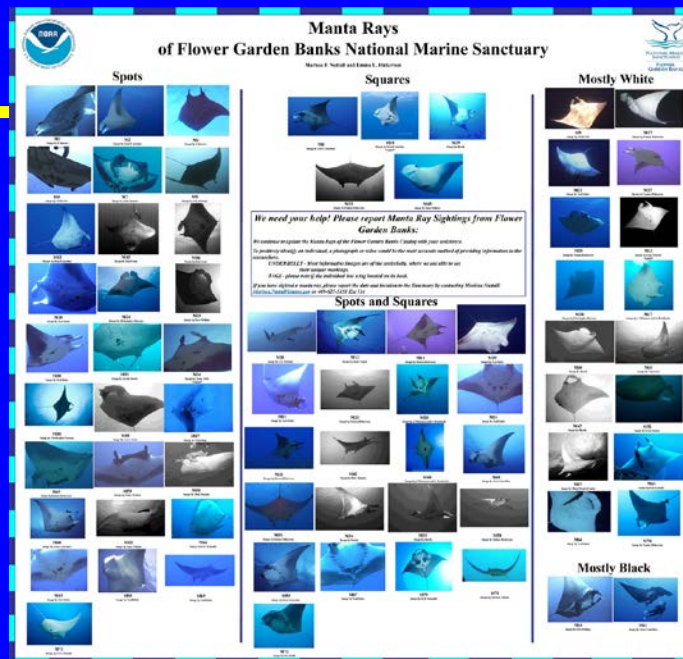
- Risk and Consequences
  - Located in active oil and gas production region
  - High value biologically
- Jurisdiction
  - Currently within Sector Houston-Galveston
  - Surface transport may move oil discharged from another location
  - Sanctuary expansion is in the planning process







# Natural Resources





# History of the Guidance

---

- How to respond to large offshore discharges a common question in many drills
- Concern about Sanctuary resources during Green Canyon 248 response (May 2016), and DWH (2010)
- Response Options Workshop held in May 2016, full report generated (~40 pages +240 page appendix)
- Guidance summarizes key points from workshop (4 pages)



# Key Points

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- Consensus: avoid response activities which introduce more oil components into the water column in the immediate vicinity of FGBNMS whenever possible
- Briefly discusses possible response methodologies and environmental tradeoffs
- Provides contact information for key NOAA personnel



# Concerns

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- Risk to surface dwelling organisms, and shorelines versus water column organisms and the coral species comprising the banks
- Hinges on questions regarding toxicity of naturally dispersed oil, chemically dispersed oil and the dispersants themselves

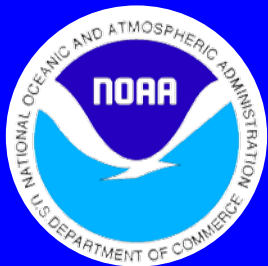




# Ecological Structure

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# Food Web Effects and Trophic Cascades

## Coral Reef Food Web

### Producers

- 1. plankton

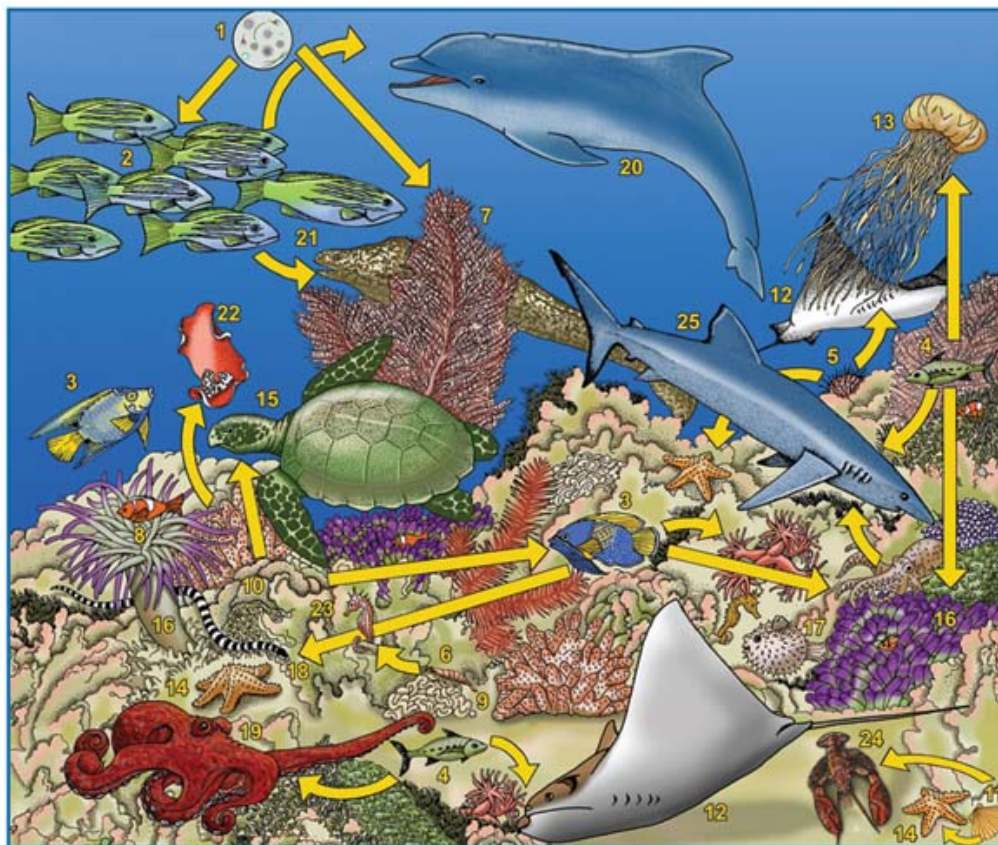
### Primary Consumers

- 2. blue striped snappers
- 3. angelfish
- 4. jackfish
- 5. sea urchin
- 6. shrimp
- 7. sea fan
- 8. clown fish
- 9. coral
- 10. sea sponge
- 11. clams

### Secondary Consumers

- 12. stingrays
- 13. jellyfish
- 14. starfish
- 15. sea turtle
- 16. sea anemone
- 17. pufferfish
- 18. sea snake
- 19. octopus
- 20. bottlenose dolphin
- 21. moray eel
- 22. sea slug
- 23. seahorse
- 24. lobster
- 25. blue shark

©Sheri Amsel  
[www.exploringnature.org](http://www.exploringnature.org)





# Composition and Toxicity of Crude Oil

---

- Crude oil is generally classified as moderately toxic to fish on an acute basis
- An EPA test showed Louisiana crude oil to have an LC50 of 2.9 ppm for fish (inland silversides) and ~2.8 ppm for shrimp (mysid)
- The toxicity of the mixture is a combination of the toxicity of each of the components (saturates, aromatics, polars, and asphaltenes)





# Does Chemically Dispersing Change Toxicity?

---

- Tests indicate toxicity of chemically dispersed oil is not different than naturally dispersed oil
- What has changed is the concentration of oil in the water column



Credit:  
Wikipedia



# Are Dispersants Toxic?

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- Like oil, dispersants are a mixture. They typically contain surfactant, solvent, and sometimes other ingredients.
- Specific surfactants in dispersants vary, but the ones we most commonly use contain dioctyl sodium sulfosuccinate (DOSS)
- Most dispersants are generally in the moderately to practically non-toxic range for fish and invertebrates (10 -1,000 ppm range), thus less toxic than oil to which they are applied





# Some literature reports

---

- “This study provides new information on octocoral sensitivity to toxins, and indicates that combinations of oil and dispersants are more toxic to octocorals than exposure to oil alone.” (Fromerta et al 2017)
- Issues:
  - Exposure versus concentration
  - Measurement of oil components in water accommodated fraction (WAF)
  - Environmentally relevant concentrations of dispersant



# Status of Guidance

---

- In final draft, anticipate it will be complete prior to next RRT-6 meeting
- Working to resolve concerns and wording regarding dispersant related issues.



# **Role of the Department of Health and Human Services (HHS) Regional Health Administrator and Role of HHS in ESF #8 Activations**

**Mehran S. Massoudi, PhD, MPH**  
**CAPT, US Public Health Service**  
**Regional Health Administrator, Region VI**  
**Department of Health and Human Services**

**RRT-6 General Session**

**May 17, 2018**

**Dallas, TX**



## Disclaimer

- **The findings and conclusions in this presentation are those of the author and do not necessarily represent the official position of the Department of Health and Human Services.**



# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators



Texas



Oklahoma



Louisiana



Arkansas



New Mexico







# Outline

- ❑ **Overview of the HHS Office of the Regional Health Administrator (ORHA)**
  
- ❑ **HHS representatives from the Office of the Secretary**
  - **HHS/OASH Regional Health Administrator**
  - **HHS/ASPR Regional Administrator**
  - **HHS/IEA Regional Director**
  
- ❑ **Role of HHS in ESF #8**
  
- ❑ **Role of HHS in ESF #10 – CAPT Patrick Young**

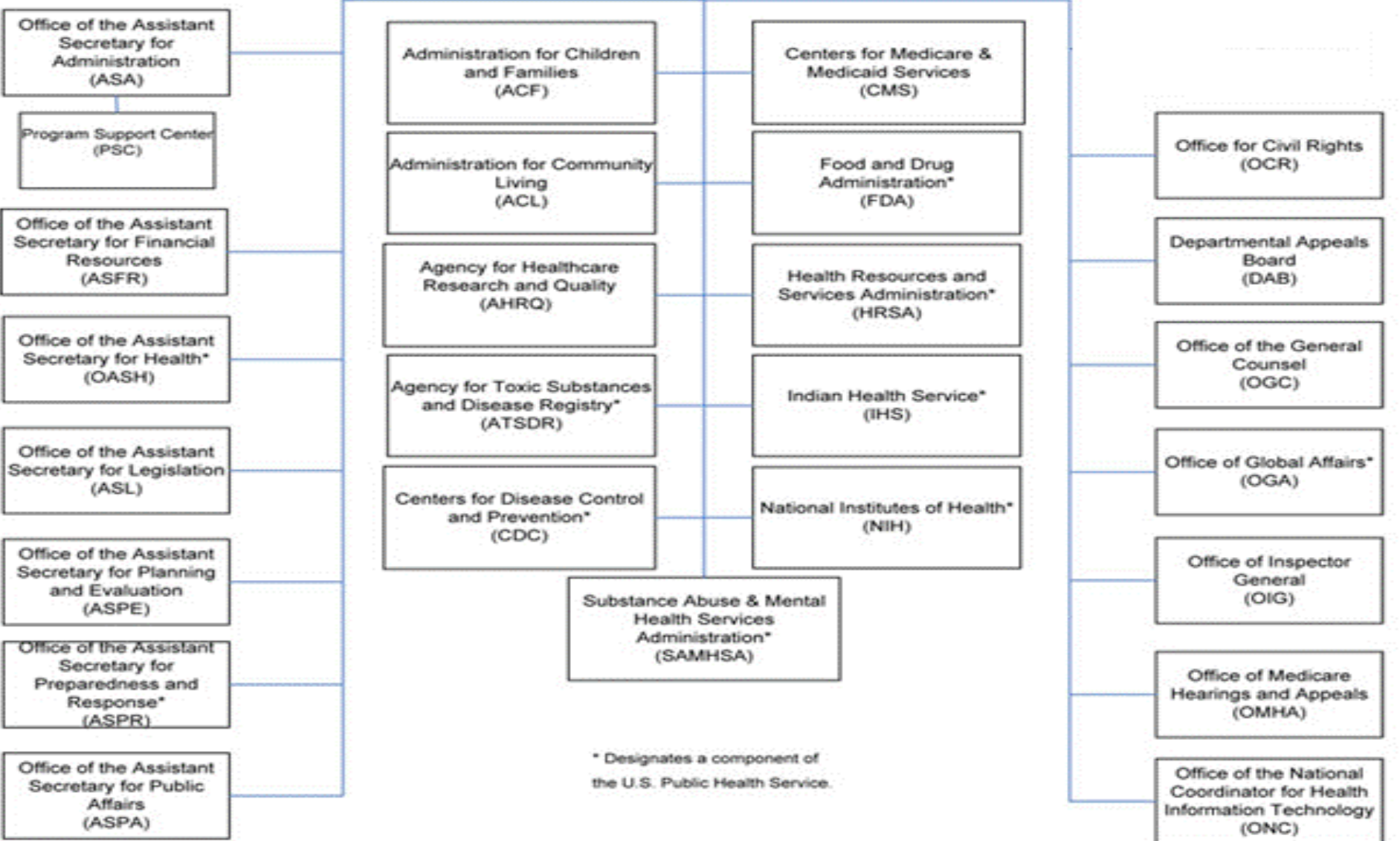
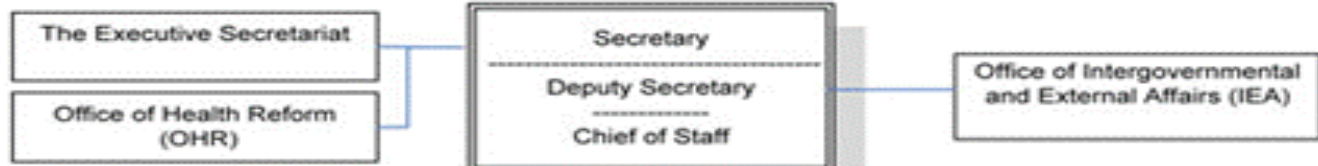


# **U.S. Department of Health and Human Services (HHS)**

**HHS is the United States Government's principal agency to enhance the health and well-being of Americans**

## **HHS MISSION**

- **To protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves**





# Mission and Functions

**Regional Health Administrators are the Senior Federal Public Health Official in their regions. In this role, they:**

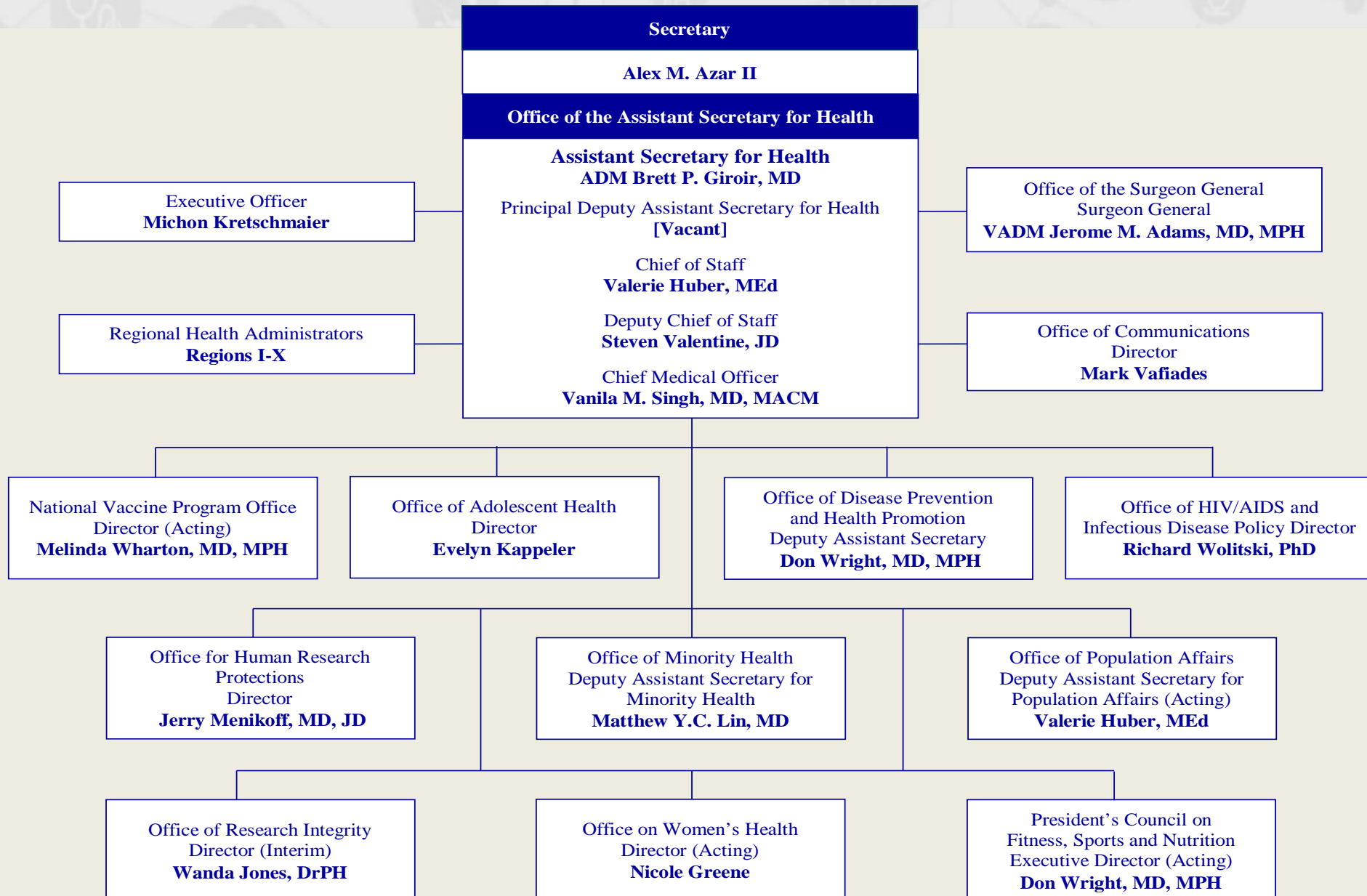
- **Foster coordination and collaboration around HHS priorities across federal departments**
- **Serve as spokespersons and extensions of OASH**
- **Ensure that HHS/OASH priorities are better incorporated at the local, state, and national levels**

RHAs and their teams use their regional expertise and networks to catalyze public health action and impact leading health indicators across the Nation



# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators

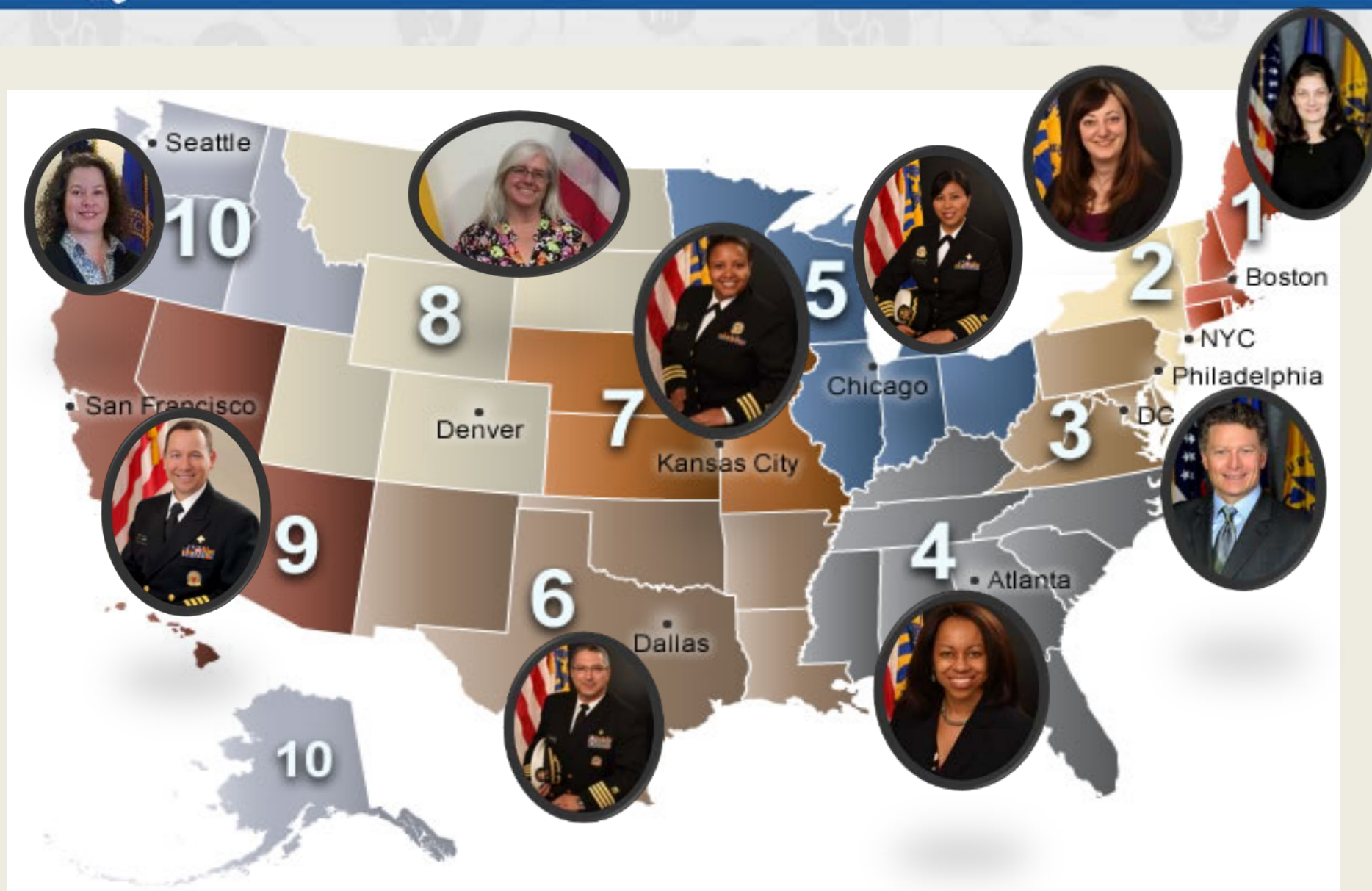






# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators





## Meet our Team



CAPT James Dickens DNP, RN, FNP-BC, FAANP  
Office of Minority Health



CAPT Mehran Massoudi, PhD, MPH  
Regional Health Administrator



CAPT Alisha Acker, RN, BSN, PHN, MPH  
Office of Family Planning and  
Acting Deputy Regional Health Administrator



CDR Angela Girgenti, RDH, MPH, CPH  
Office on Women's Health



Deputy Regional Health Administrator  
**VACANT**



Dr. Liese Sherwood-Fabre, PhD  
Office of Family Planning



CDR Stacy Harper, RDH, MPH  
Public Health Advisor



Shandrea Jeffery  
Senior Staff Assistant



Staff Assistant  
**VACANT**



ORISE Fellow and Student Interns  
**VACANT**



Regina Waits, B.S.  
Regional Resource Network



**RESPOND** - Develop and implement targeted strategic action plans that address public health challenges and promote and sustain healthy communities.

- **Preparedness/Response:**  
*Hurricane responses; Tabletop exercises with Federal/State/Local leaders*
- **Infectious Disease Outbreaks:**  
*Ebola; Zika; Influenza; Hepatitis C*
- **Children's Health:** *Asthma; Lead; Tobacco; Anti-trafficking*







**PROMOTE** - Share policies, programs, promising practices, and research that maximize the Nation's investment in health and science, positively impact leading health indicators, and are based on the best evidence.

- **Lead regional implementation of branded national campaigns:** *National Adult Immunization Plan – NVPO; Think, Act, Grow® - OAH*
- **Initiate regional or state work that promotes HHS/OASH priorities:** *National Partnership for Action – OMH*
- **Catalyze OASH and HHS campaigns at the local level:** *I Can Do It, You Can Do It! (ICDI) Program; Million Hearts®*





# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators

**PARTNER** - Connect people, convene partners, and establish networks with public and private stakeholders to leverage assets and advance public health.

- **OASH, HHS and the federal family:** *Childhood lead poisoning*
- **States, localities and communities:** *Regional Prevention Collaboratives, Telehealth, Two-generation employment initiative*
- **Faith-based, academia, business and philanthropy:**  
*HIV, Hepatitis C, Substance Use Disorders*







# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators

**Inform** - Leverage our understanding of the regional landscape, the unique public health challenges of our region, and our knowledge of HHS programs to inform public health decision-making at federal, state, and local levels.

- **Leadership Meetings:** *with regional HHS Executive Leadership teams, SHOs and others to exchange updates*
- **Presentations:** *share high priority topics and activities of HHS, OASH, and OSG at regional conferences and meetings*
- **Newsletters & Listservs:** *reach 15,000 partners across the country through name recognition. Includes Twitter accounts and blogs*
- **Connect:** *apprise HQ of happenings, perspectives, and needs of local partners*





# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators

**MANAGE** - Provide administrative management to protect and amplify OASH's regional programs, human capital, technology, and facilities.

- **Regional Programs:** *quality improvement; manage OPA and OWH grants; support OMH Regional Health Equity Councils*
- **Human Capital:** *team-based model, organizational development, training, succession planning*
- **Facilities:** *lease consolidation and renewal, office relocations*
- **Logistics Contract:** *20 regional and 2 HQ meetings, 20 webinars; evaluate best practices for convening stakeholders to impact public health*





### Responding to the Opioid Epidemic

Regional offices are partnering with their networks to identify critical pathways to address the opioid crisis. Region-specific projects have informed national planning with regional, state and local stakeholders in areas such as:

- ✓ the unique prevention, treatment, recovery and research issues for women and the child welfare system,
- ✓ cultural competence for systems of care, and
- ✓ strategies for buprenorphine prescribers and naloxone administration.





## Region VI

### Mission Statement

The Office of the Regional Health Administrator (ORHA), Region VI, is committed to creating the conditions in which all people and communities can be healthy.



# Region VI Demographics

**Racially and ethnically diverse populations - Hispanic/Latinos, Black/African Americans, and American Indian/Alaska Natives, populations, to include 68 Federally Recognized Tribes located in four of the five states**





# Public Health Challenges

**High rates of cardiovascular disease, diabetes, obesity, HIV/AIDS, teen pregnancy, STDs, suicide, substance use disorders and overdose deaths**



# Public Health Challenges

**Region VI experiences high numbers of public health emergencies, natural disasters and man-made disasters**





# Public Health Challenges

- **Geographically diverse - two-thirds of the US-Mexican border, second most populous State (TX), and large areas of rural populations**
- **High Health Professional Shortage Areas (HPSA) scores and Medically Underserved Areas (MUAs)**
  - **Large rural areas with unmet healthcare needs:**
    - 62% of primary care needs met
    - 61% of dental care needs are met
    - **ONLY 36% of mental health needs are met**



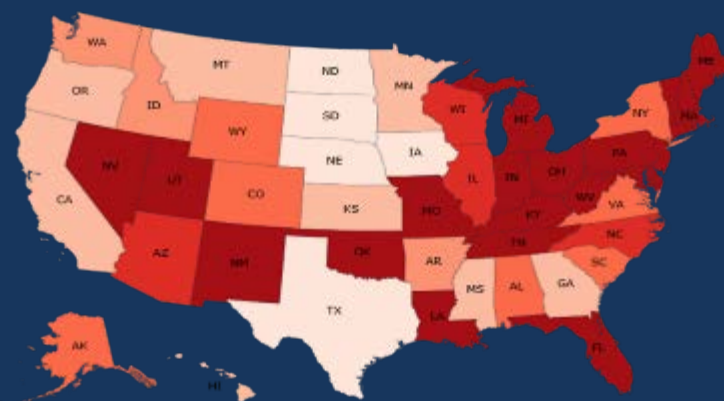
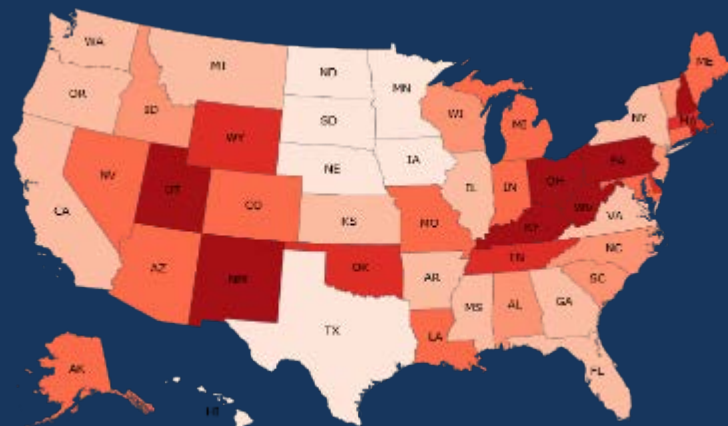
# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators

### Number and age-adjusted rates of drug overdose deaths by state

**2014**

**2016**



**2014**

Arkansas- 12.6 rate (356)

Louisiana- 16.9 rate (777)

New Mexico- 27.3 rate (547)

Oklahoma- 20.3 rate (777)

Texas- 9.6 rate (2,601)

\*per 100,000; (number of deaths)

**2016**

Arkansas - 14.0 rate (401)

Louisiana – 21.8 rate (996)

New Mexico – 25.2 rate (500)

Oklahoma – 21.5 rate (813)

Texas – 10.1 rate (2,831)

\*per 100,000; (number of deaths)



## **\*Emerging Issue**

### **Opioids and Substance Misuse**

**Region VI experiences high rates of deaths related to substance abuse, including opioid misuse and the number of overdose deaths are increasing**

## **Opportunity/Response**

**February 2018, Region VI Opioid Summit was held in partnership with UT Southwestern Medical Center to address the Opioid Epidemic**

**RHA is working to obtain OASH funding to increase provider training and education related to Maternal Health, Substance Misuse/Abuse and Neonatal Abstinence Syndrome (NAS)**





## **\*Emerging Issue**

# **Opioids and Substance Misuse**

**Region VI monitors two Office on Women's Health Prevention Awards – Prevention of Opioid Misuse in Women**

## **Opportunity/Response**

- ❖ **Cardea Services, Austin, TX**

**Purpose: To create a community of practice for prevention of opioid misuse in adolescent girls in Central Texas. Health care providers and school nurses will receive education and training on opioid misuse and abuse, as well as screening tools, motivational interviewing and trauma informed care.**

- ❖ **Capital Area Human Services Region, Baton Rouge, LA**

**Purpose: To create a community media campaign related to opioid misuse/abuse prevention and implement an educational strategy to include; school based curriculum, community based curriculum, and health care provider education in Ascension Parish, LA**



## **\*Emerging Issue**

### **Tribal Populations**

### ***Mental Health, Obesity and Chronic Disease Management***

**68 Federally Recognized Tribes with need for continuous engagement with Tribal Leaders, as well as need for chronic disease management and behavioral/mental health care services**

## **Opportunity/Response**

**RHA participates in the Region VI, Tribal Consultation to increase communication and identify gaps in services**

**Region VI partnered with the National Council on Behavioral Health to create a culturally-relevant, Native American Mental Health First Aid Course**

**Fall of 2018, curriculum will be complete and made available to tribes nationwide**



## **\*Emerging Issue**

### **Immunizations**

***Region VI has lower rates of immunization coverage as compared to other regions***

## **Opportunity/Response**

January 2018, convened an Adult Immunization Stakeholder Meeting bringing together Region VI State Immunization Directors, Immunization Coordinators and key community partners.

RHA is proposing a project to improve adult immunization rates in the Rio Grande River Valley in southwest Texas, specifically Hidalgo (McAllen), Cameron (Brownsville), and Starr (Rio Grande City), counties and the federally recognized Kickapoo Nation tribe of Texas (Eagle Pass).



## **\*Emerging Issue**

### **Public Health Emergencies**

**Region VI has high occurrences of tornadoes, floods, fires, ice storms, hurricanes and man made disasters**

**The costliest natural disasters in the Nation occurred in Region VI - Hurricane Harvey (\$190 BILLION) and Hurricane Katrina (\$125 BILLION)**

## **Opportunity/Response**

**RHA serves on the Regional Advisory Committee (RAC) with the RD and is engaged with ASPR, State, Tribal and local public health officials during emergency response**



# Office of the Assistant Secretary for Health, **HHS**

## Regional Health Administrators

### \*Emerging Issue

### Human Trafficking

#### HUMAN TRAFFICKING IMPACT IN TEXAS



When using this data please use the following citation: Busch-Armendariz, N.B., Nale, N.L., Kammer-Kerwick, M., Kellison, B., Torres, M.I.M., Cook-Heffron, L., Nehme, J. (2016). Human Trafficking by the Numbers: Initial Benchmarks of Prevalence & Economic Impact in Texas. Austin, TX: Institute on Domestic Violence & Sexual Assault, The University of Texas at Austin.





## **Other Projects**

**Military Service Members and Families**

**Homelessness and Veterans**

## **Opportunity/Response**

**RHA is working with the Department of Defense's Building Healthy Military Communities (BHMC) pilot to better understand challenges faced by Service members and their families**

**RHA is working closely with federal partners in the Federal Interagency Workgroup on Homelessness and the VA to address chronic homelessness**

# ASPR and OASH Sit Under the Office of the Secretary within HHS



11 OPERATING DIVISIONS

Examples



OFFICE OF THE SECRETARY

Examples

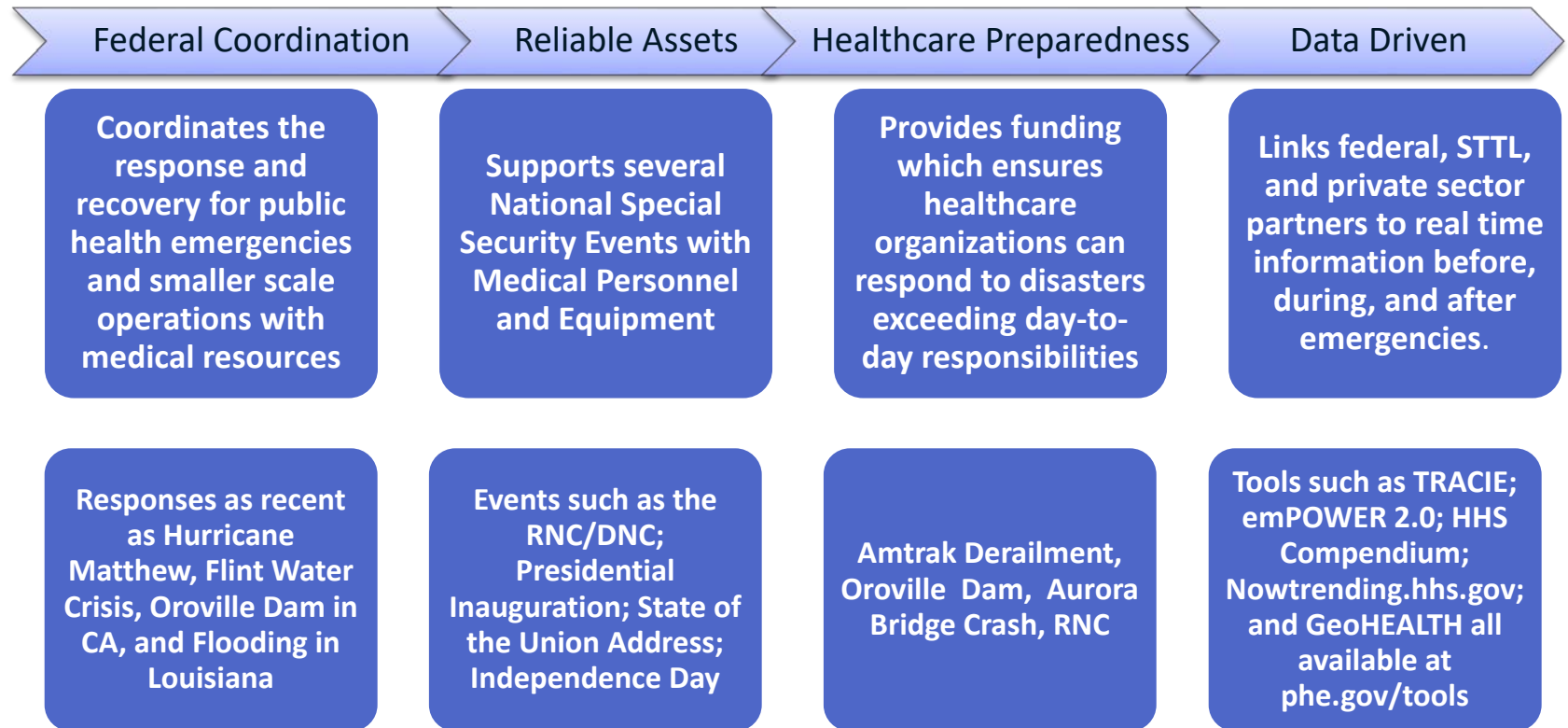


Office of the Assistant Secretary for Health, **HHS**  
Regional Health Administrators



*Resilient People. Healthy Communities. A Nation Prepared.*

# ASPR Coordinates Comprehensive Public Health and Medical Emergency Response/Recovery Functions



# ASPR's Response Resources are Unique

## THOUSANDS OF MEDICAL PROFESSIONALS



**NDMS Teams provide medical, veterinary, and mass fatality support to communities when affected by a disaster.**

## EXTENSIVE RESOURCES AND LOGISTICS



**Logistics facilities are able to manage and coordinate medical equipment, caches, and other assets to provide resources at a moment's notice.**

## 24/7/365 Secretary's Operations Center (SOC)



**HHS is the primary federal agency for public health and medical incidents under Emergency Support Function #8.**

*Resilient People. Healthy Communities. A Nation Prepared.*

# ASPR Prepares HHS and Interagency Partners for Public Health and Medical Emergencies



## Developing HHS Plans for All Hazards

- OEM develops interagency plans with federal partners to ensure the effective transition to a national and federally coordinated response during public health and medical emergencies



## Training Medical Personnel

- OEM develops and provides capabilities based training for NDMS and PHS responder teams and ASPR staff. OEM has partnered with the DHS Center for Domestic Preparedness to conduct training.



## Leading Exercises with Federal Partners to Test Capacity

- OEM brings interagency partners together to test planning assumptions and capacities. OEM conducts root cause analysis to identify improvements and corrective actions.



## Managing HHS Continuity Planning

- OEM leads HHS' Continuity of Operations and Government planning efforts. OEM manages the HHS COOP site for the Emergency Relocation Group (ERG).





# Regional Emergency Coordinators (RECs)



## ASPR's Regional Representatives for:

- Preparedness
  - Lead for both HHS and ESF8 disaster preparedness planning
  - Coordinate implementation of ASPR programs with regional stakeholders
- Response
  - Lead for HHS and ESF8 field operations
  - Liaison with senior officials (State, Tribal, Local, Federal)
  - Manage HHS field assets
- Recovery
  - Support recovery operations



# Preparedness Activities



- Operational Planning
- Hospital Preparedness Grant support
- Facilitate/Participate in Exercises
- Develop and Maintain Stakeholder Relationships



# HHS Response Activation



**HHS is the lead coordinating agency for federal public health and medical response when:**

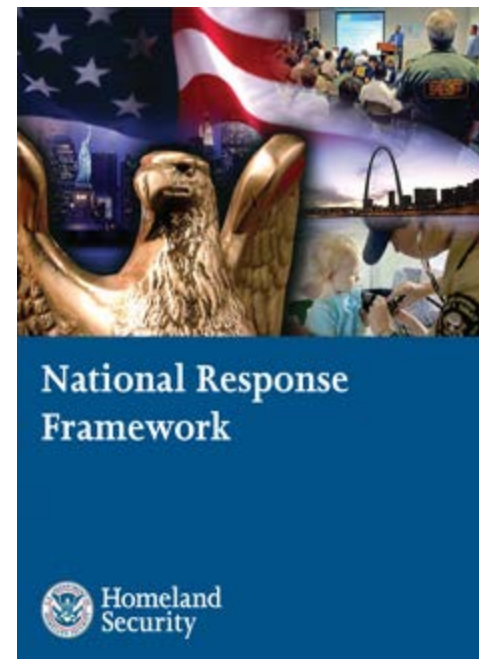
- The HHS Secretary, using **his authorities**, declares a Public Health Emergency (PHE)
- Federal assistance is requested by **State, Tribal, Territorial or local authorities** (Stafford Act)
- A **Federal department or agency**, acting under its own authority, requests HHS assistance (Stafford Act)



# National Response Framework (NRF)



- ESF1 - Transportation
- ESF2 - Communications
- ESF3 - Public Works and Engineering
- ESF4 - Firefighting
- ESF5 - Emergency Management
- ESF6 - Mass Care, Emergency Assistance, Housing and Human Services
- ESF7 - Logistics Management and Resource Support
- ESF8 - Public Health and Medical Services**
- ESF9 - Search and Rescue
- ESF10 - Oil and Hazardous Materials Response
- ESF11 - Agriculture and Natural Resources
- ESF12 - Energy
- ESF13 - Public Safety and Security
- ESF14 - Long-Term Community Recovery
- ESF15 - External Affairs





# ESF8 Partners



## Lead Federal Coordinating Agency: HHS

### Supporting Departments and Agencies:

- **Department of Homeland Security**
- **Department of Veterans Affairs**
- **Department of Defense**
- Department of Transportation
- Department of Agriculture
- Department of Energy
- Department of Justice
- Environmental Protection Agency
- General Services Administration
- American Red Cross
- National Communications System
- Office of U.S. Foreign Disaster Assistance
- U.S. Postal Service





# HHS / ESF8 Core Functional Areas



- Assessment of public health/medical needs
- Public health surveillance
- Medical care personnel
- Medical equipment and supplies
- Patient movement
- Hospital care
- Outpatient services
- Victim decontamination
- Safety and security of human drugs, biologics, medical devices, veterinary drugs, etc.
- Blood products and services
- Food safety and security
- Agriculture feed safety and security
- Worker health and safety
- All hazard consultation and technical assistance and support
- Mental health and substance abuse care
- Public health and medical information
- Vector control
- Potable water/wastewater and solid waste disposal, and other environmental health issues
- Victim identification/mortuary services
- Veterinary services
- Medical materiel, personnel, and technical assistance



# Requesting Assistance / Support



**Requests for HHS/ESF8 assistance are coordinated through the FHO-RECs**

## HHS Assistance

(PHE or other)

- Local → **State (Health Dept. / EMA / Governor)** → HHS/ASPR
- ASPR Request Form or formal letter
- Cost share TBD

## HHS/ESF8 Assistance

(Stafford Act/Presidential Declaration)

- Local → **State EMA (SCO)** → FEMA (FCO) → ESF-8/HHS
- Resource Request Form (RRF) ... *old Action Request Form (ARF)*
- Cost share (75% Federal / 25% State)



# The 2017 Hurricane Season



4,836

Deployed over 4800 NDMS, PHS, VA, and ASPR staff to support Hurricanes Harvey, Irma and Maria.



133

Days of Emergency Management Group activation for all three incidents (Level 1, 2 or 3).



36,370

Total number of patient's cared for ("Patient Encounters") over all three incidents (includes 782 patients evacuated)



975

Tons of materiel and resources deployed valued at over \$67M

# ESF-8 Supported Missions

- Evacuated patients using Fed-contracted assets
- Provided acute care support in a variety of environments
- Established and staffed field hospitals and medical shelters
- Executed Emergency Prescription Assistance Program (EPAP)
- Provided vaccines (flu, Hep, Tetanus, etc)
- Met health care facility equipment shortfalls
- Provided mortuary services support in PR
- Air and ground ambulance support
- Vector Control



# Breakdown of HHS Support by Storm

## Logistics:

- Harvey – 306 caches worth \$16.5M and 418 short tons
- Irma – 142 caches worth \$4M and 97.1 short tons
- Maria – 348 caches worth \$45M and 439 short tons
  - (NOTE: for USVI only – \$1.3M and 21.5 short tons)

## HHS Personnel Deployed:

- Harvey – 1,637 personnel (328 PHS)
- Irma/Maria – 3,037 personnel (821 PHS)
  - (NOTE: for USVI only – 162 personnel (118 PHS))

## Patient Encounters:

- Harvey – 5,359 patient encounters
- Irma/Maria – 31,011 patient encounters
  - (NOTE: for USVI only – 2,750 patients encounters)

**Patients Evacuated** by federal patient movement: 782 patients (for all three storms)





**Thank you for your time!**

# Induced Polarization Associates LLC

## Marine Induced Polarization

### An Electrical In-Water Hydrocarbon Detection Technology

Presentation:  
May 17, 2018



Kari Walker | Kevin Hand  
Induced Polarization Associates



## March 29, 2017 – “If you can’t see spilled oil, how do you find it and clean it up?”



Search

# Office of Response and Restoration

[Home](#) [Oil and Chemical Spills](#) [Multimedia](#) [Environmental Restoration](#) [Marine Debris](#) [Training and Education](#) [About](#)

### High Water and Sunken Oil on the Great Mississippi

March 29, 2017 - If you can't see spilled oil, how do you find it and clean it up?

That's the situation emergency responders faced in two oil spills on the Mississippi River that challenged their understanding of how to approach evaluating oil spill conditions.

The first incident was Sept. 3, 2015 when two [tow barges collided on the Lower Mississippi River](#) near Columbus, Kentucky. The second was Jan. 21, 2016 when a barge towed by the [UTV Amy Frances struck the Natchez Bridge](#) on the Lower Mississippi River. The Lower Mississippi is the most traveled and commercially important portion of the river's system.



USCG conducting initial damage survey of barge from the UTV Amy Frances. Credit: U.S. Coast Guard

### On Our Radar

#### Response Tools for Spills



#### Meet the New CAMEO Chemicals Mobile App



#### Preparing for Hurricane Season





# Marine Induced Polarization

## An Introduction:

- 2016: *Induced Polarization Associates LLC* was formed to explore the *commercial* applications of Marine Induced Polarization
- Proven technology relating to hydrocarbon detection
- Investigating the practicality of applications which benefit the oil spill community



Excerpt: Ocean Science

PEER-REVIEWED SCIENCE

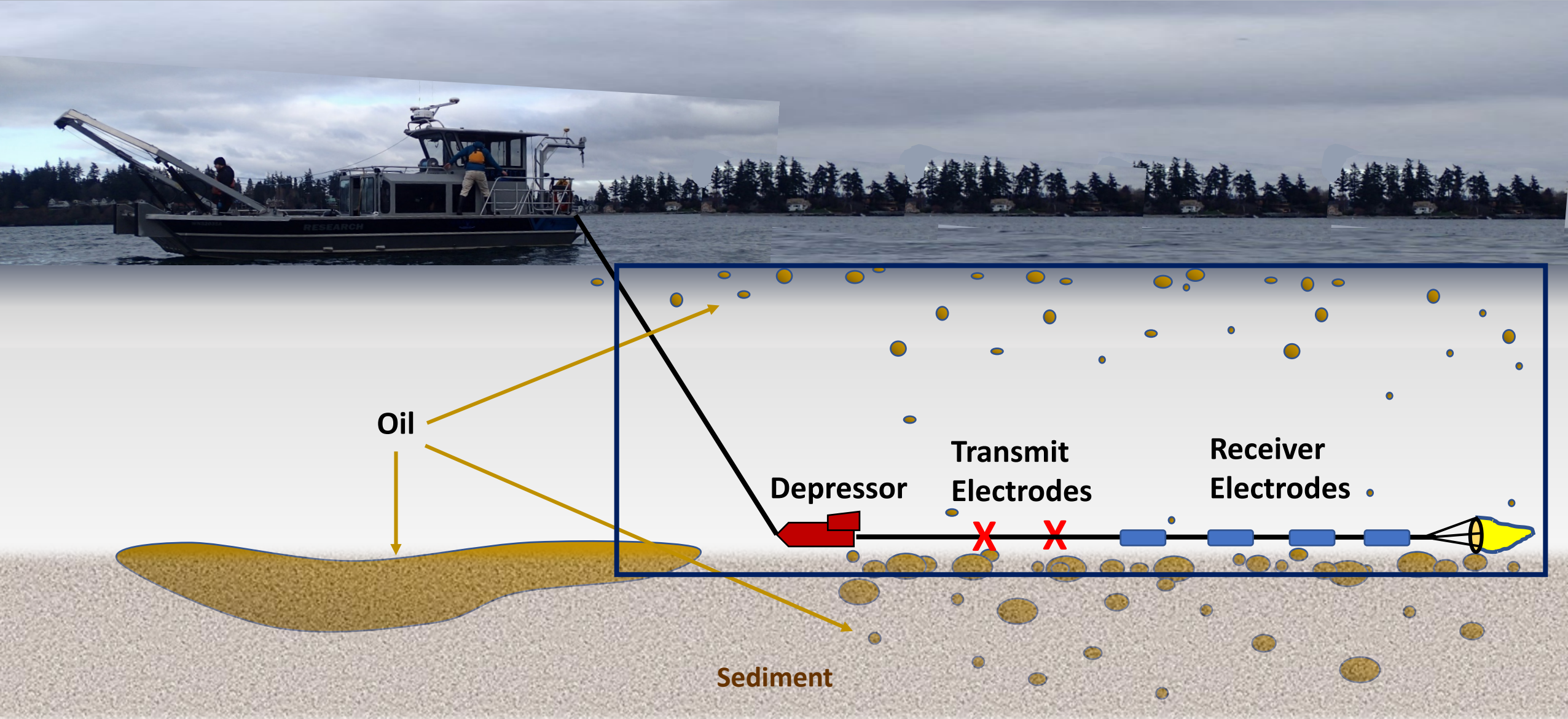


# A Brief History...

- Induced Polarization (IP) has been used on land for more than a half-century, its initial application aimed at mining for precious metals.
- Recently the focus has been on detection of hydrocarbons and associated derivatives in the water column, on sea and river beds, or sequestered in bottom sediments.
- Measurement of non-floating oil substances, both from industrial sources and collected weather-altered field samples, have been tested with similar positive results

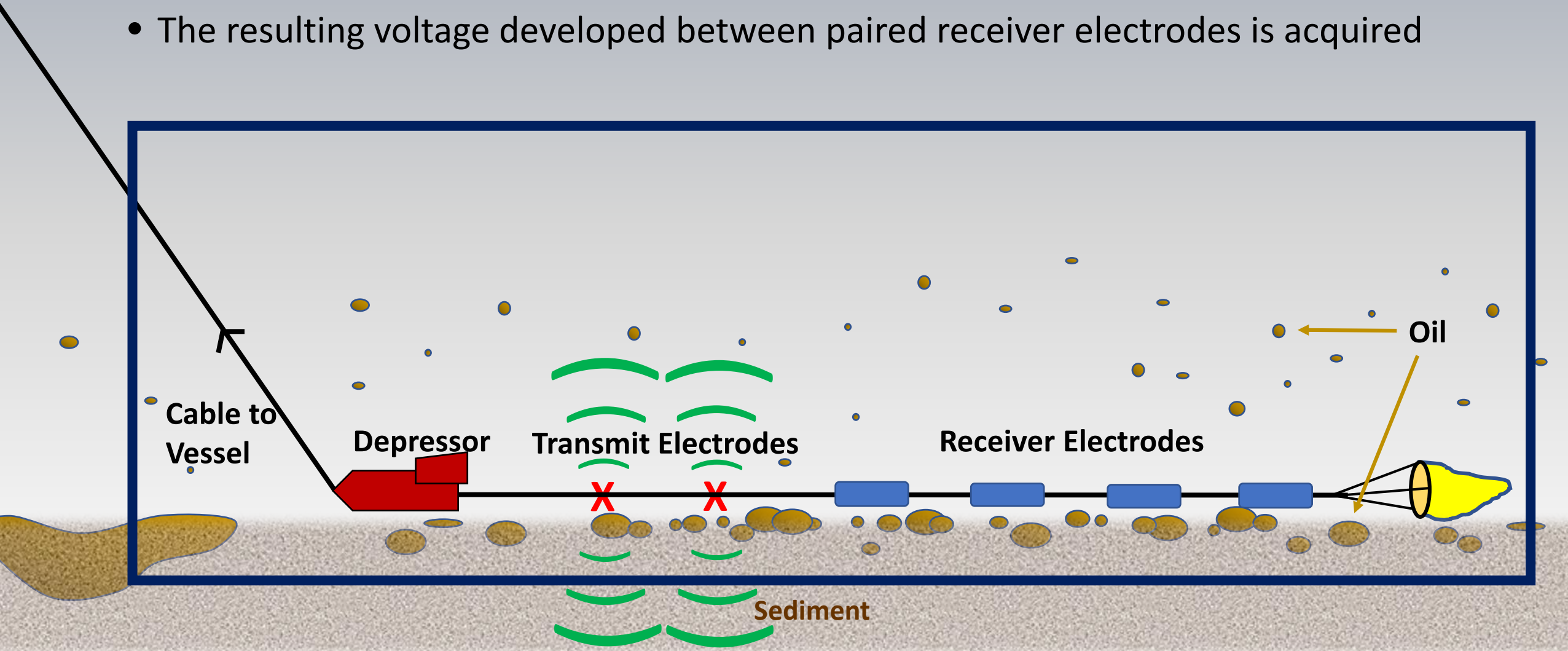


# How it works



# How it works

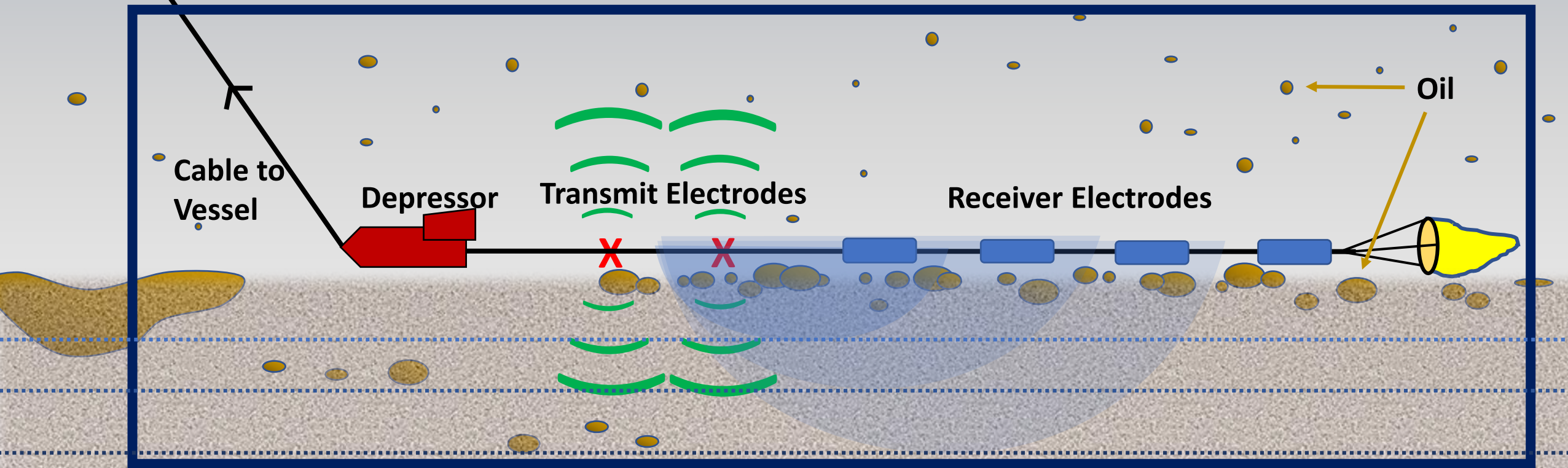
- A controlled electrical current is introduced into sea/river water
- The resulting voltage developed between paired receiver electrodes is acquired





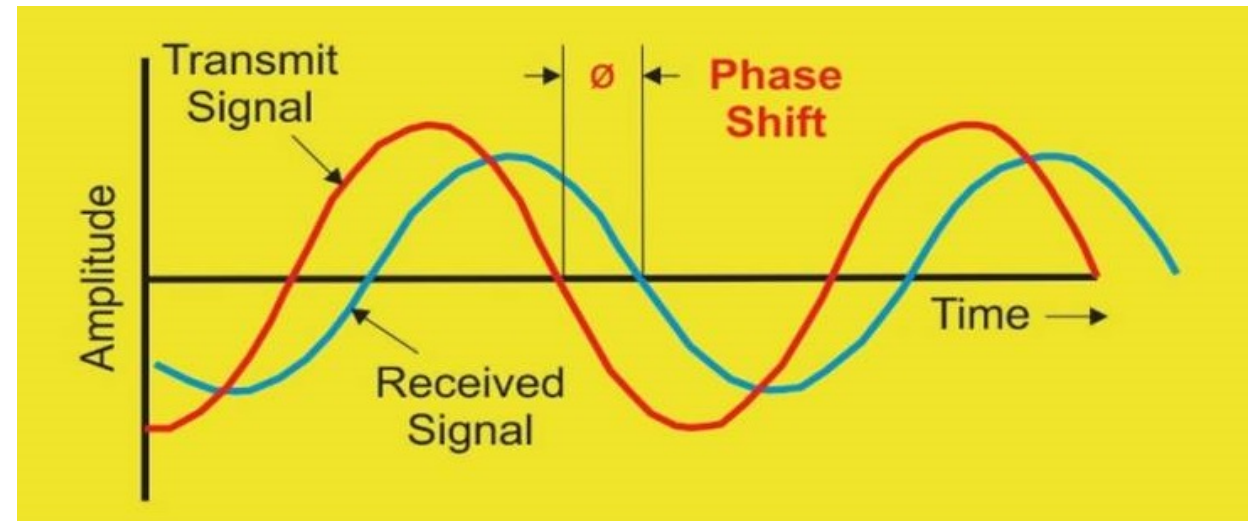
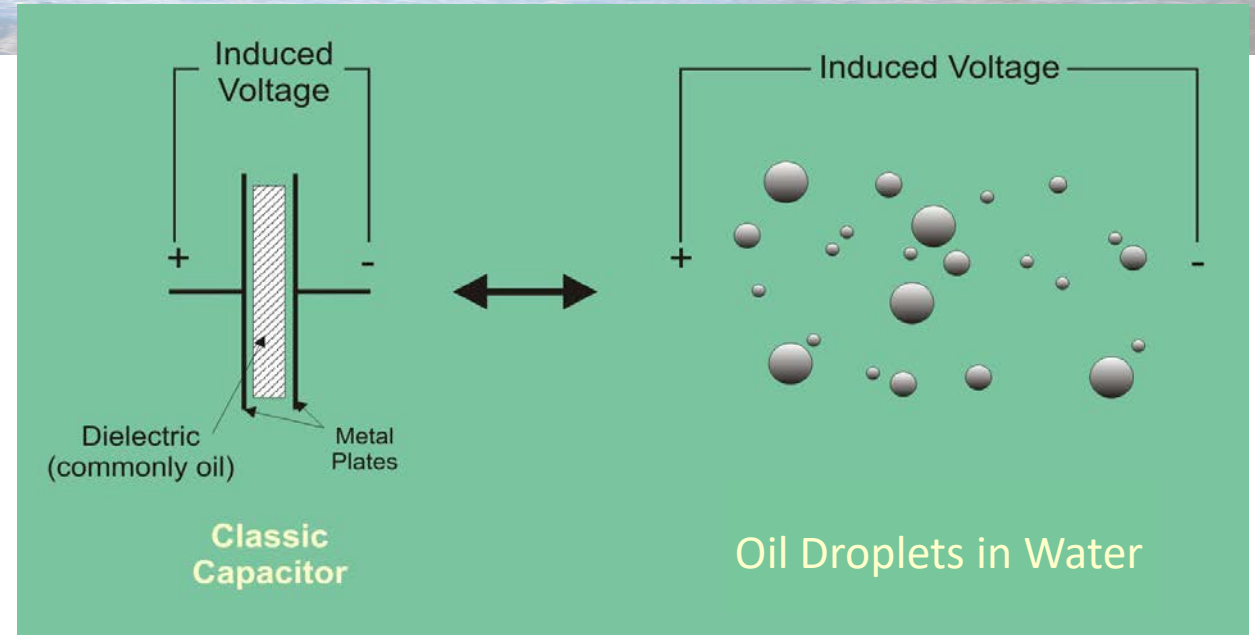
# How it works

- Multiple receiver dipoles distinguish responses by depth



# How it works

- Acts as a capacitor
- The phase shifts between the current and the voltage are used to identify anomalies, such as hydrocarbons.





# How it works

## Specifications

- Salinity: Sea Water, Rivers, Lakes
- Minimum Temperature (°C): -2
- In laboratory, detection of oil down to 2 ppm
- Current cable configuration:
  - Total length: 160m
  - Weight: ~150 lbs.
- Cable's breaking strength: 6500 lbs.
- Water depth: 1m to Full Ocean Depth
- Penetration in sediment: Down to 20m
  - Transmitter/receiver geometries are adjustable
  - The distance between receiver electrode pairs determines depth of penetration.

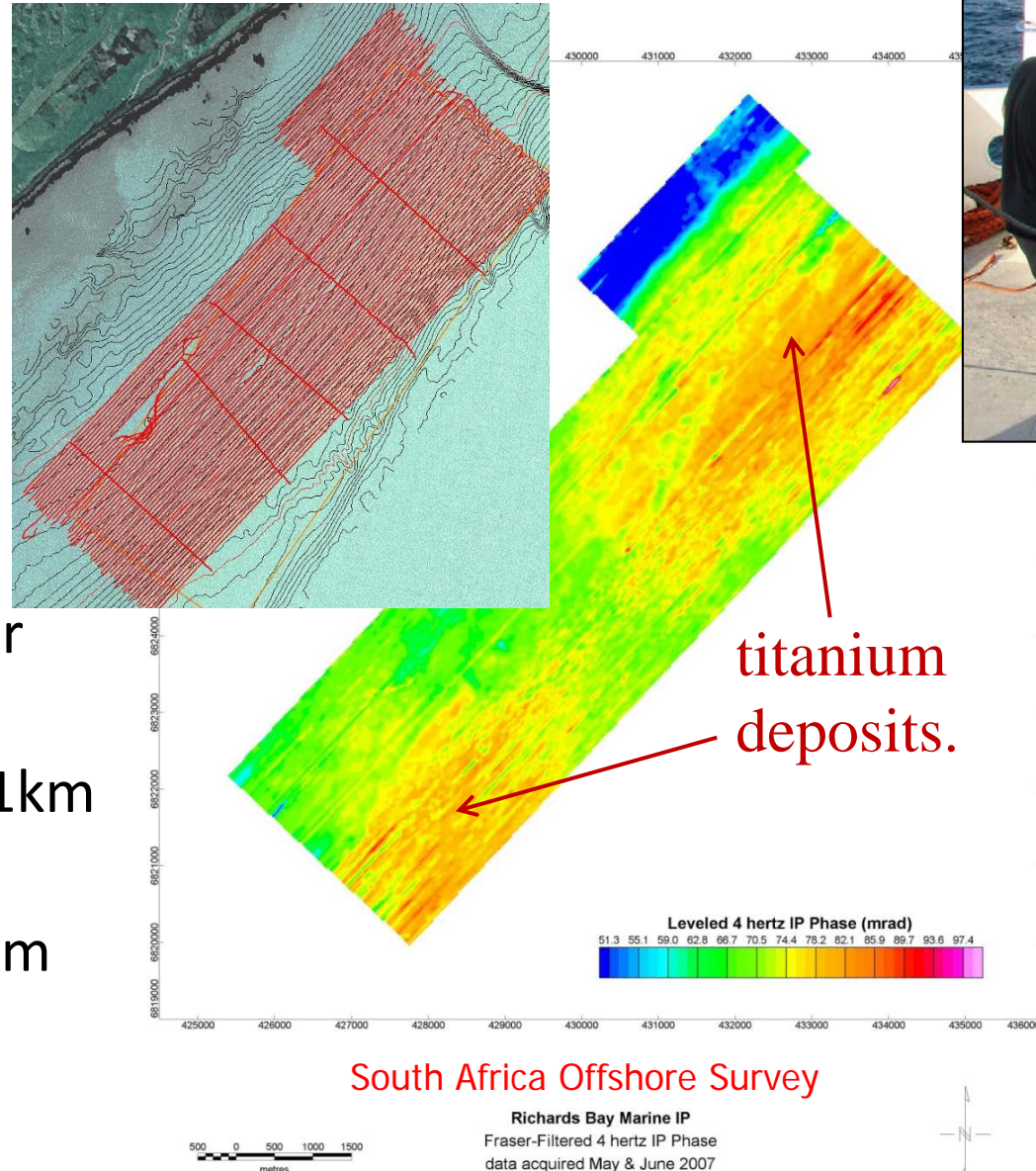




# Seawater Field Measurements:

## South Africa

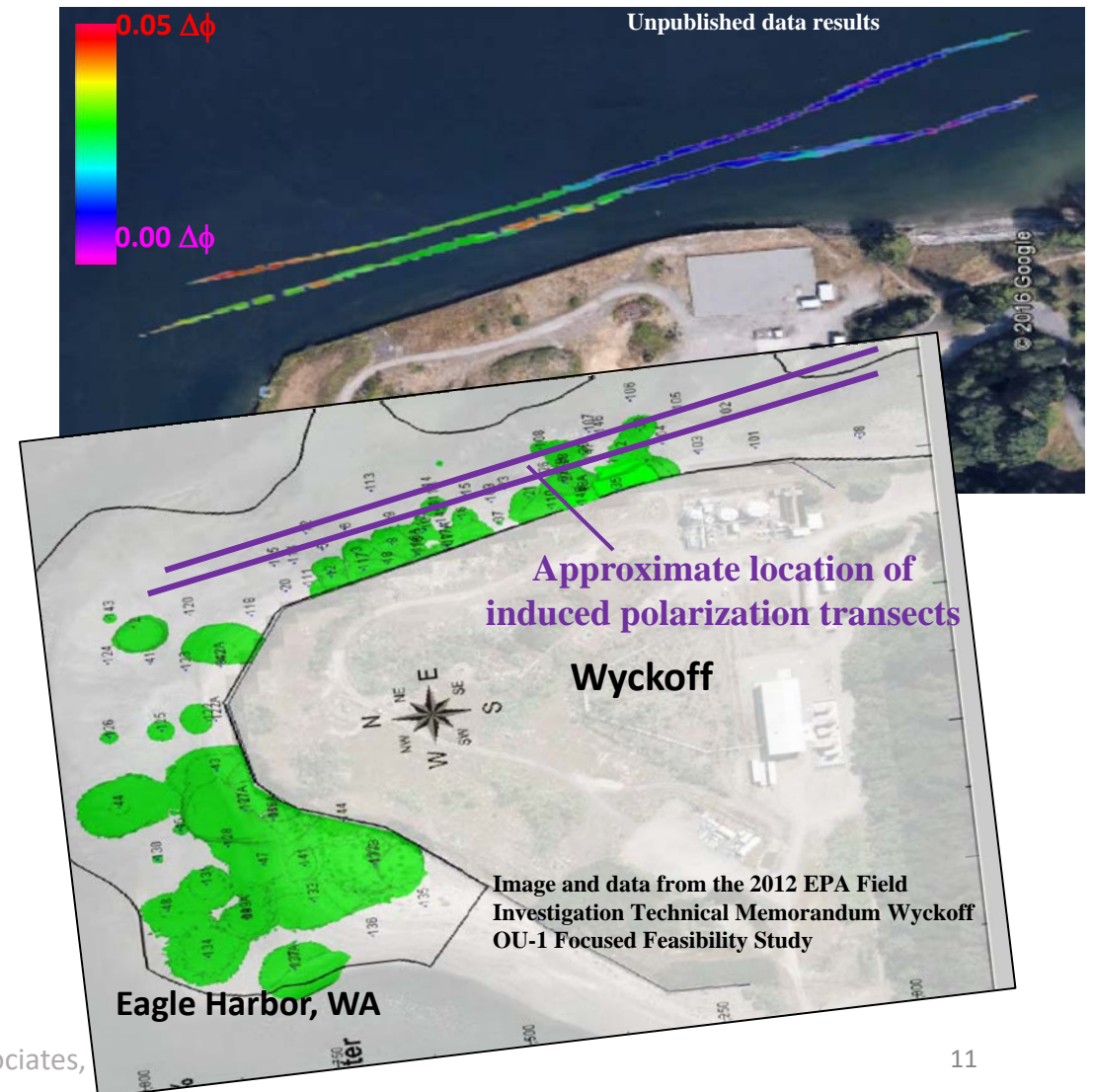
- Commercial marine IP survey in South Africa
- Discovered 2 large & hidden placer titanium deposits
- Invisible to ROV or diver
- Survey area: 3.5km x 11km
- 25-day survey with 100m line spacing





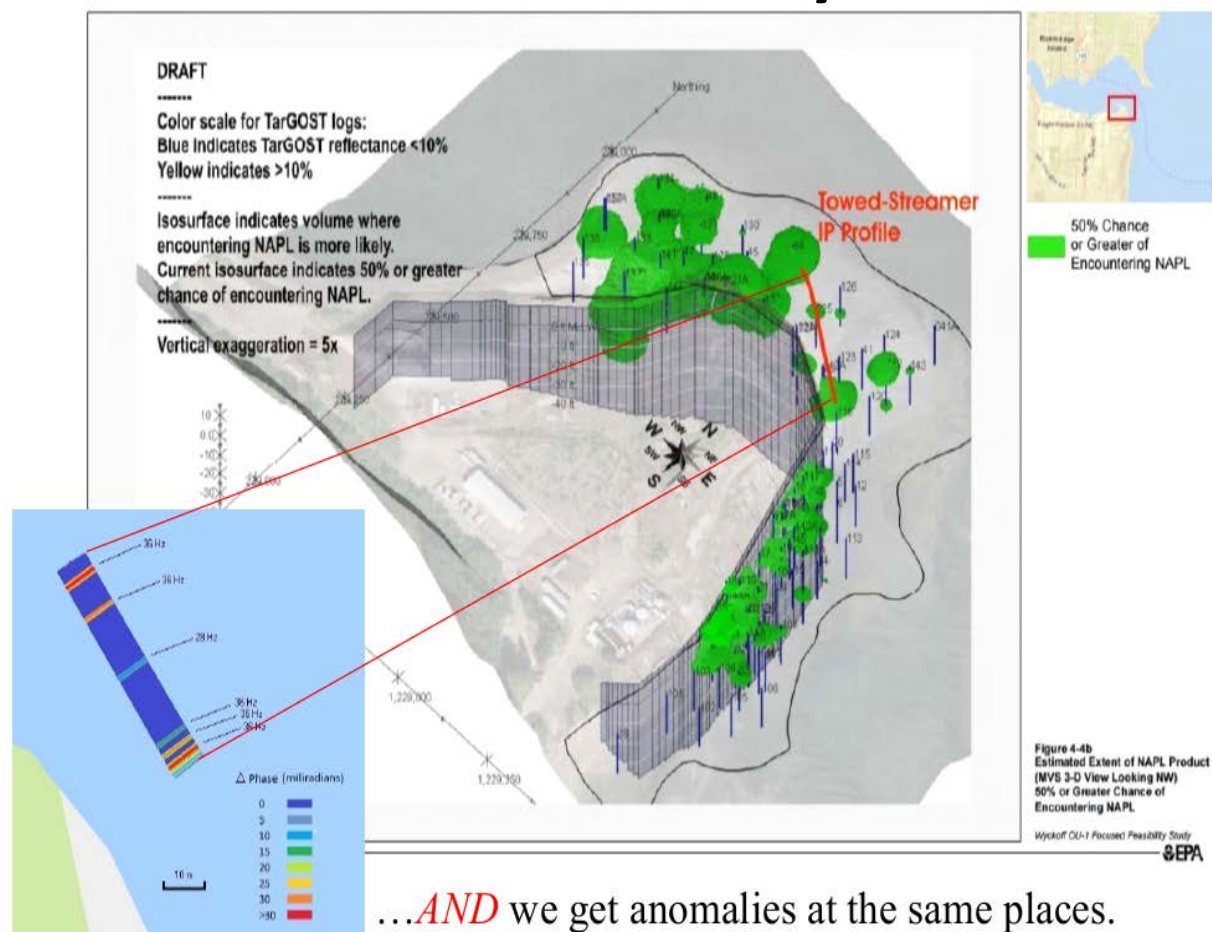
# Seawater Field Measurements: Wyckoff

- Field trials were conducted at the Wyckoff superfund site in Puget Sound, WA (2016)
- Former creosote manufacturing facility
- Pockets of creosote/tar, NAPL and PAH have either been capped and are randomly extruded to the seabed and/or transported to the intertidal zones

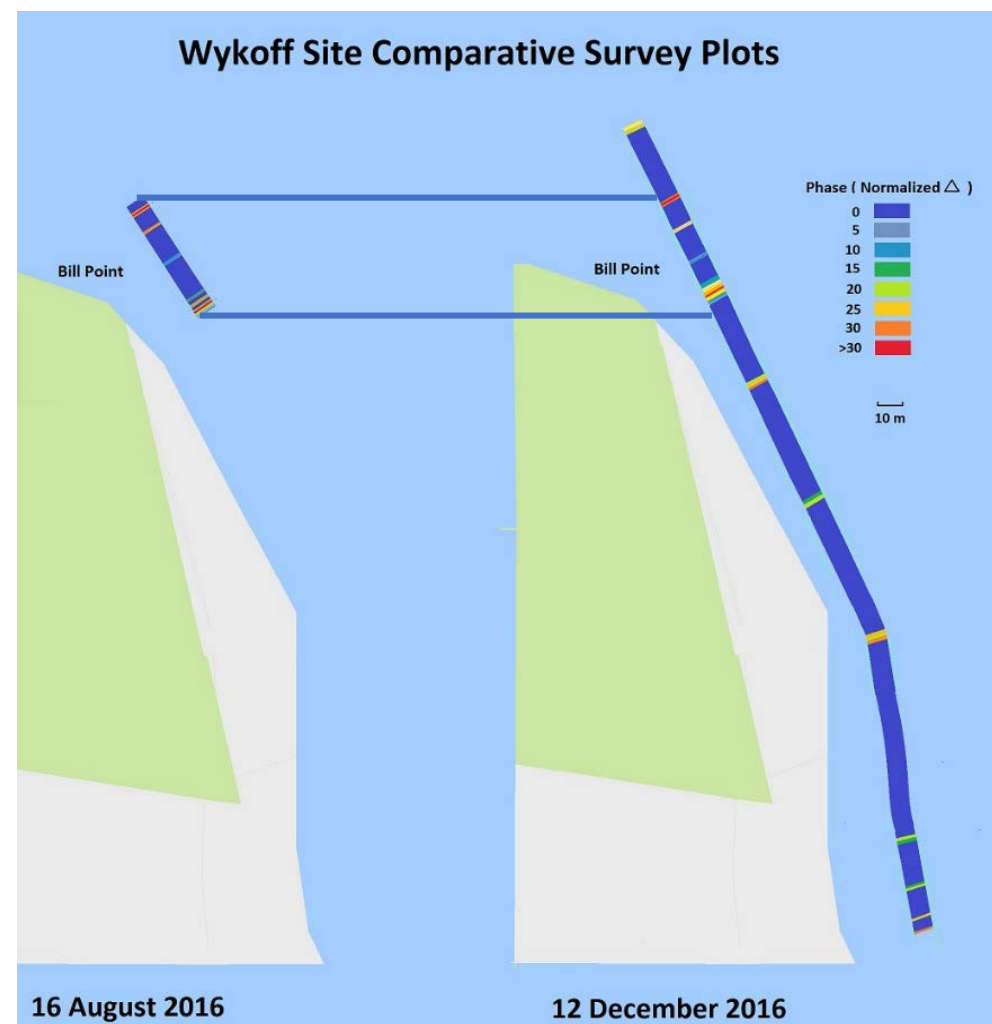


# Seawater Field Measurements: Wycoff

## Comparison Check: EPA TarGOST Survey Results



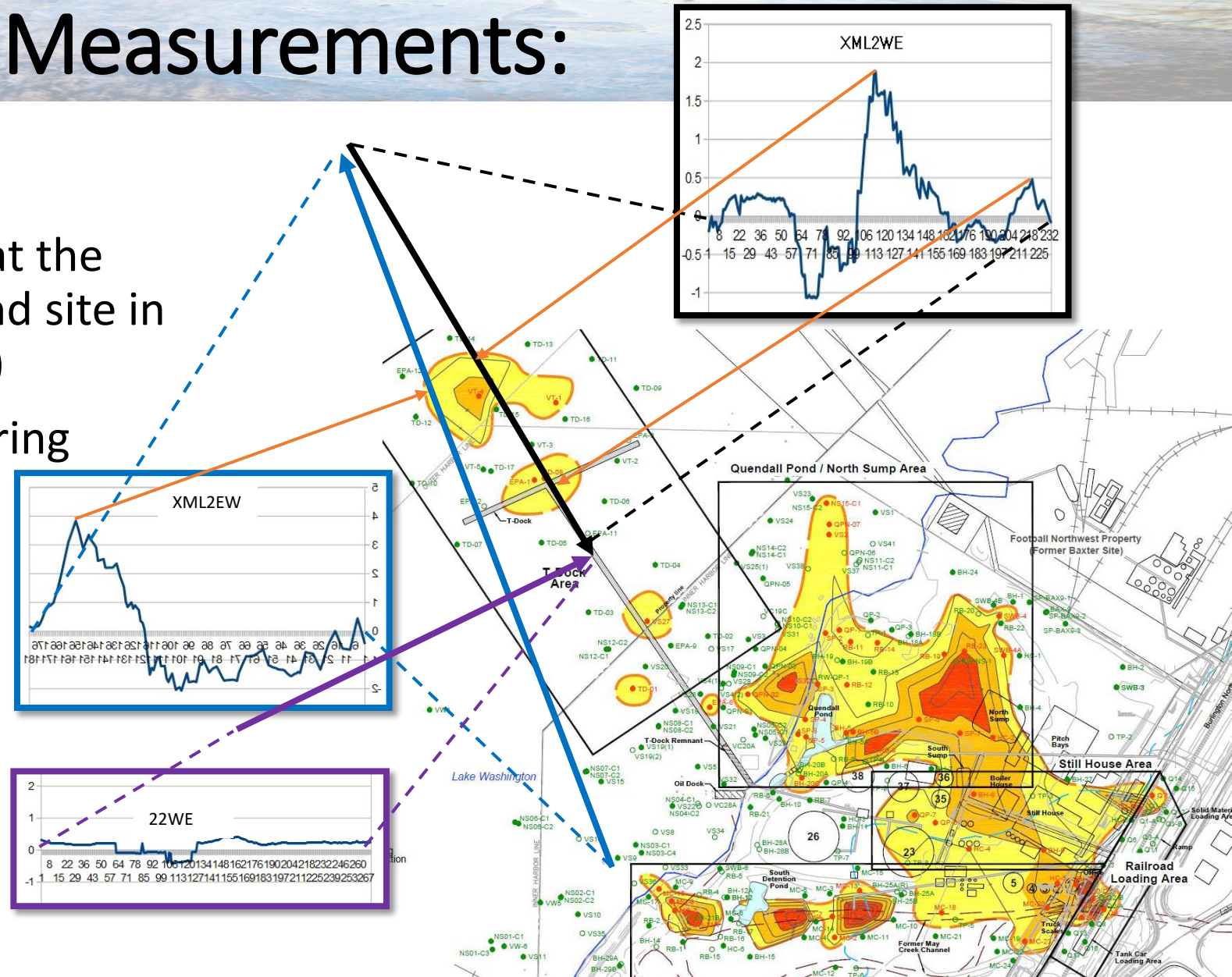
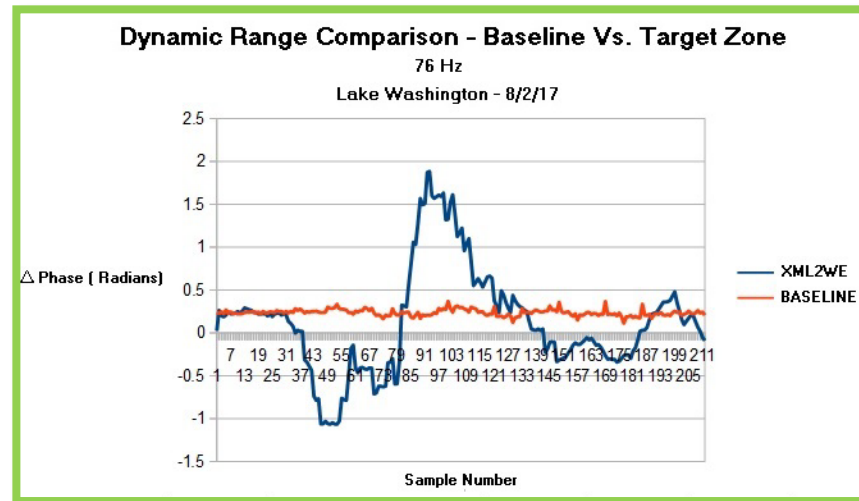
## Replication Check:





# Freshwater Field Measurements: Lake Washington

- Field trials were conducted at the Quendall Terminals superfund site in Lake Washington, WA (2017)
- Former creosote manufacturing facility





# Field Operations

## Deployment & Recovery

### Vessel requirements

- Minimum 25 ft.
- Protected area for electronics
- 4 x 8 ft. deck space
- Ability to travel  $\leq 3$  kts



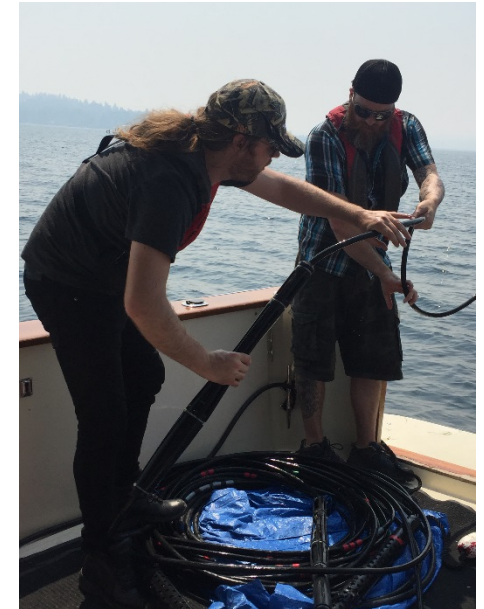
Hand Deployment

Proprietary Information – Company Confidential



Cable being towed

Induced Polarization Associates, LLC

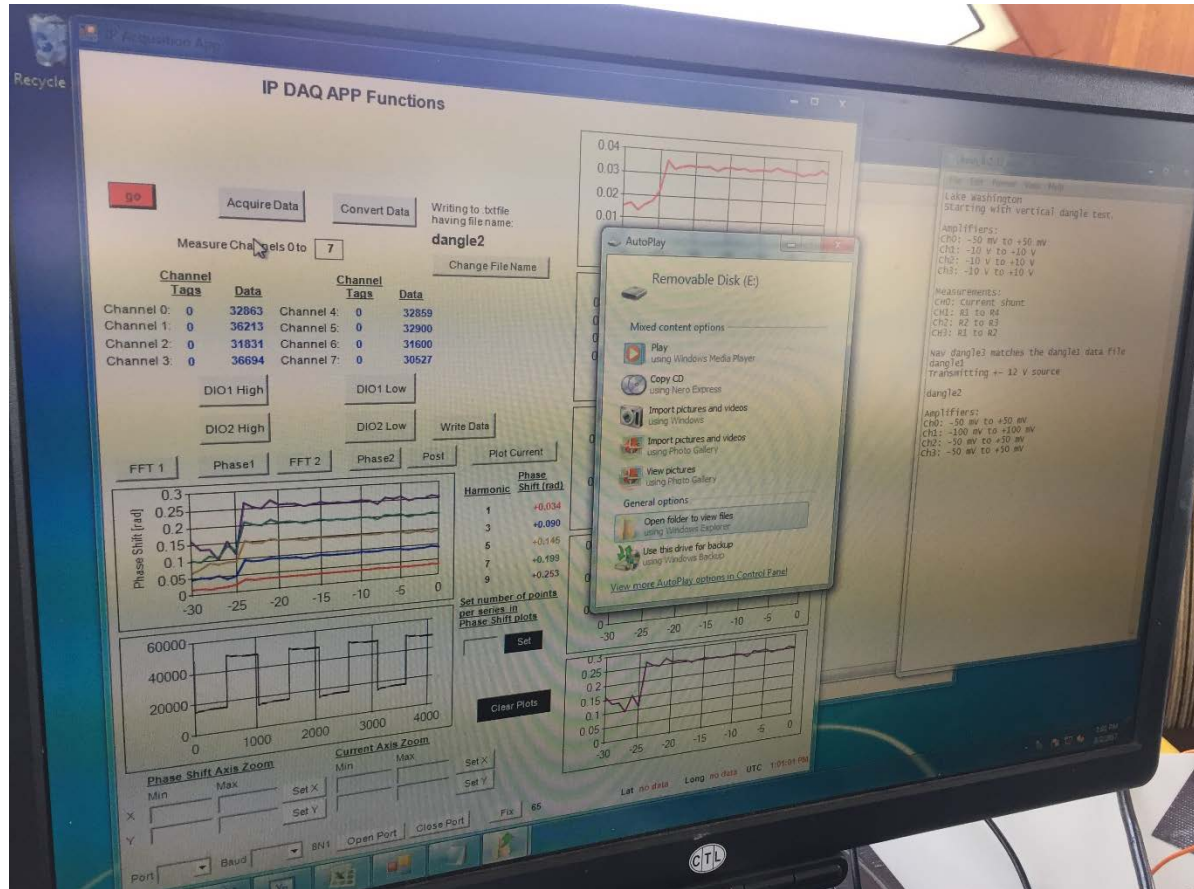


Hand Recovery



# Field Operations

## Data acquisition

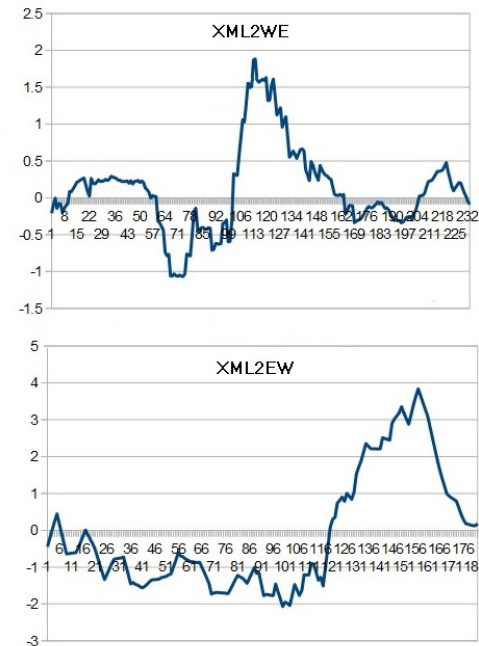


# Field Operations

## Data products

- Data files
  - \*.txt
  - \*.csv
  - \*.xls
  - 3D Voxels
  - & Others
- Graphics files
  - Georeferenced maps
  - \*.KMZ
  - Shapefiles
  - & Others

Example 10-min Product



Example for Reporting





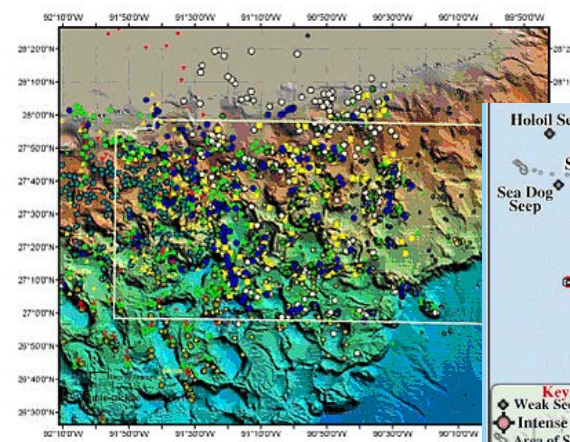
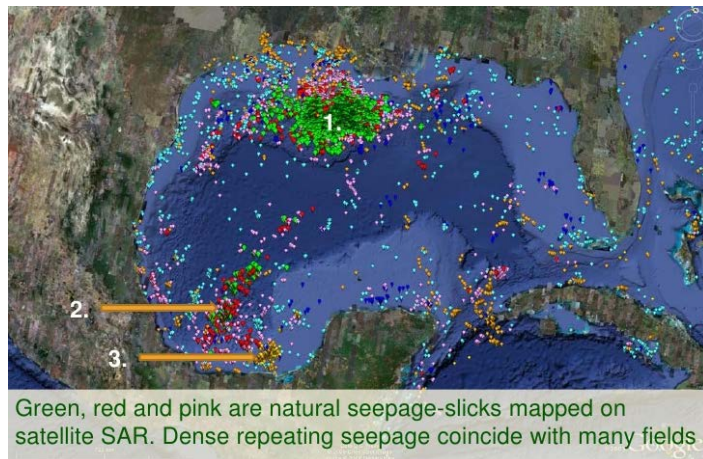
# How can Marine IP be useful for OSROs?

- **Baseline Characterization**
- **Offshore Spill Response**
- **Nearshore, River, Fresh Water Incidents**
- **Legacy Spills**

# How can Marine IP be useful for OSROs?

## Baseline Assessments – Categorizing Environmental Liability

- Mapping of existing oil seeps
  - Extent & Location of existing source releases
- Pre-existing contaminations
  - Prior E&P activity
  - Adjacent operators: source contamination potential

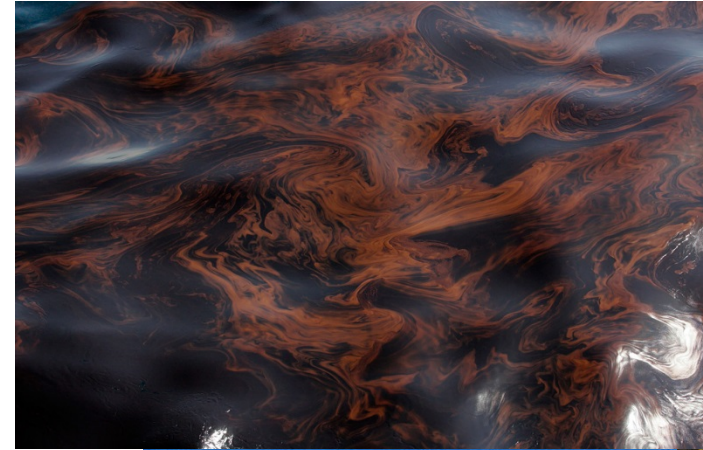




# How can Marine IP be useful for OSROs?

## Spill Response

- Mapping of Oil in/on Sediment
- Potential: 3D Mapping of water column
  - Real-time data returns of extent
- Potential: Monitoring the movement of spill
  - Confirm validity of Trajectory Modeling
- Potential: Shoreline Incursion “ALARM”
  - Near-shore / Sensitive Area Warning System

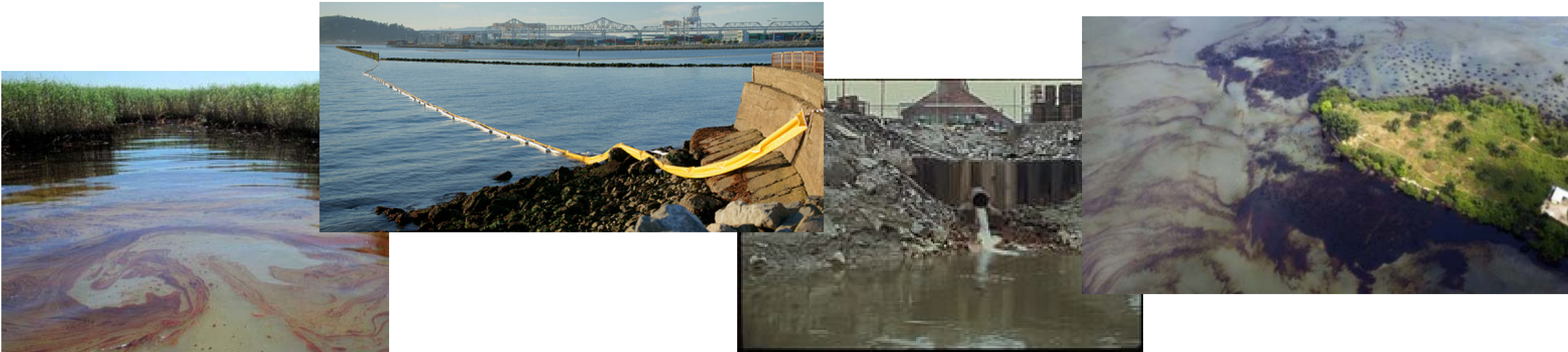




# How can Marine IP be useful for OSROs?

## Nearshore, River, Freshwater Incident Response

- IP is capable of strong signal returns in fresh & brackish water environments
  - Pipeline river crossings – leak detection
  - Static monitoring at inflows / outflows
  - Spill response/monitoring in shallow river deltas




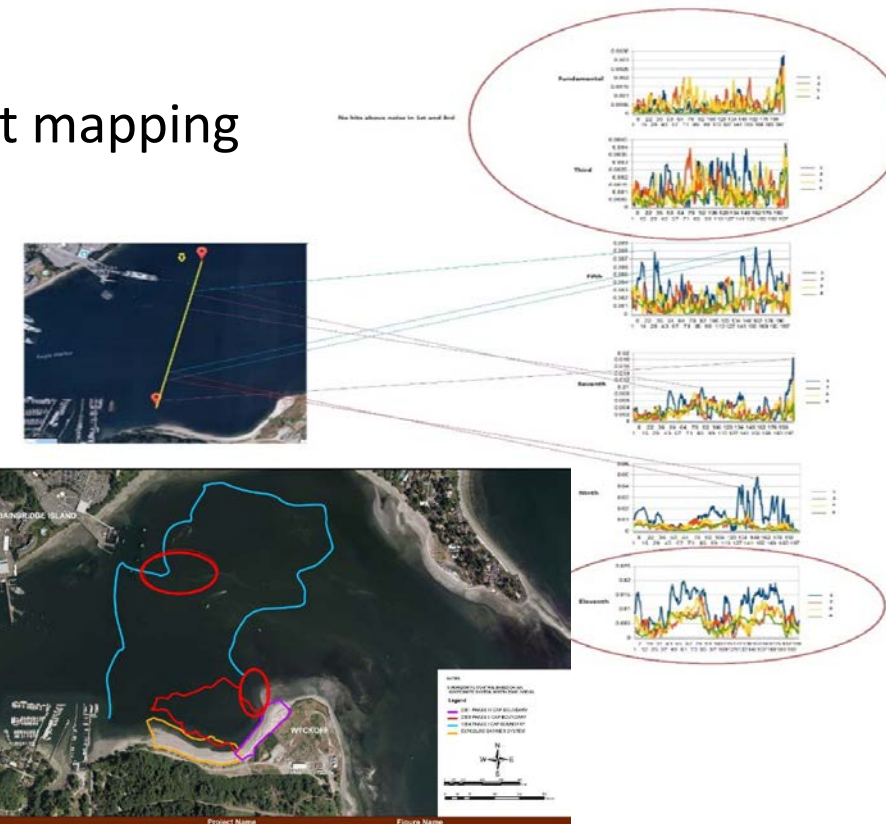
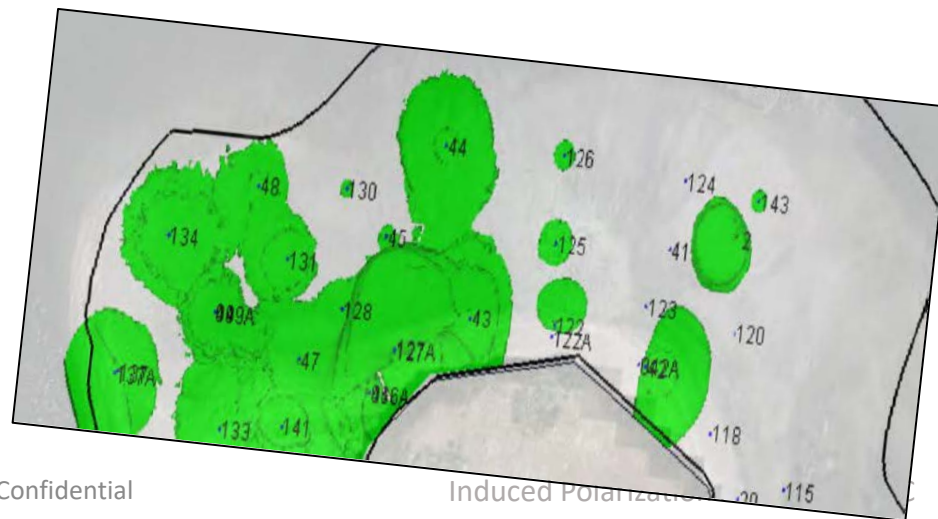


# Marine IP Applications

## Impact Assessments and Legacy Spills

➤ Identification of Location & Extent of Contaminated and Uncontaminated Areas

- Single towed cable + detection into sediment = efficient mapping
  - Fills in otherwise interpolated areas between cores
  - Enables targeted & reduced sediment sampling
- 





# Comparative Analysis – Level of Effort

Example: Marine IP v. Coring – Contaminant Delineation of Quendall Terminals Superfund Site

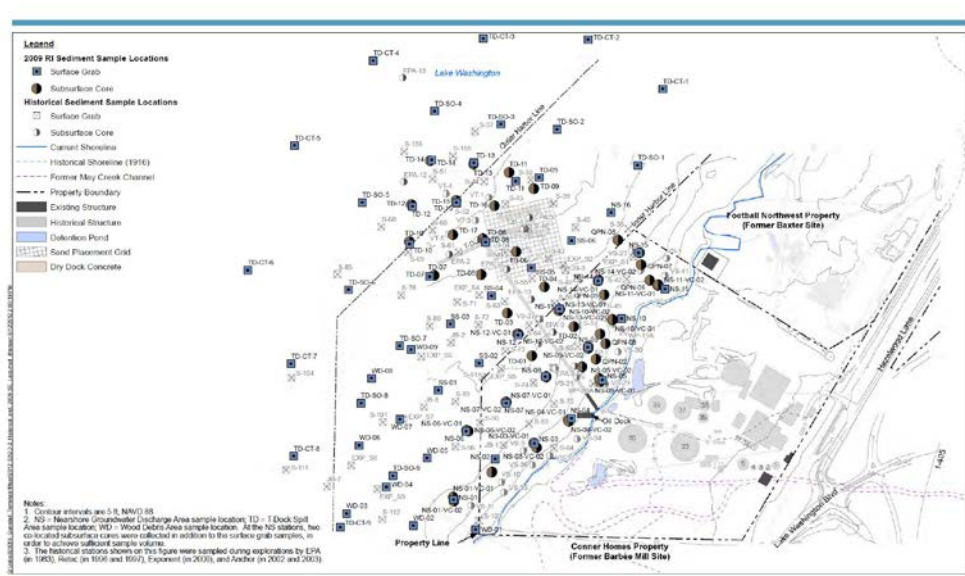
## Survey Efficiency:

- Able to identify extent of contaminated AND non-contaminated areas
- Fast area coverage, data collection, and results
- Reduces reliance on interpolation

Survey Methodology:	Marine IP	Coring
<b>Survey Days:</b>		
Marine IP Survey	2	0
Sediment Sampling Days	4	18 (estimated for 12 coring, 6 grabs)
Total Vessel Survey Days	6	18
<b>Data Collection:</b>		
# of Samples	50 (estimated: 8 cores, 15 VanVeen Grabs)	350 (actual: 67 Cores, 109 VanVeen Grabs)

Note: **ESTIMATES** only for exhibiting efficiencies of Marine IP system  
Survey Area: .1km<sup>2</sup> (.3km x .4km)  
Assumptions: Cores/day = 6; Grabs/day = 20; Samples/Core = 4; Lab Chemistry: \$240/sample  
Proprietary Information – Company Confidential

Induced Polarization Associates, LLC



# Potential Future Developments

## Fueling & Port Monitoring

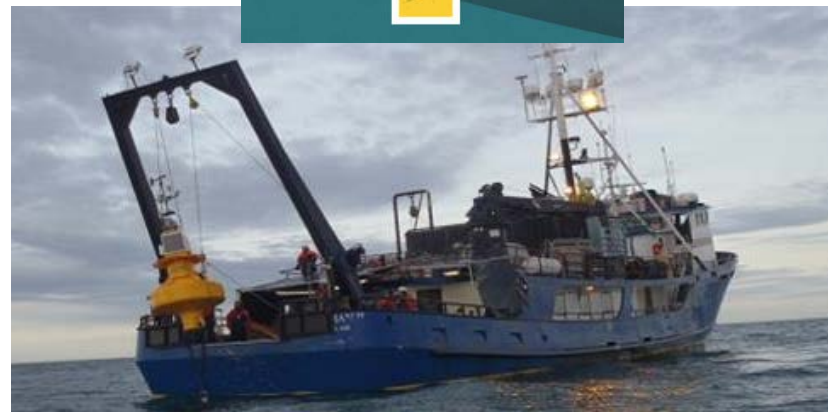
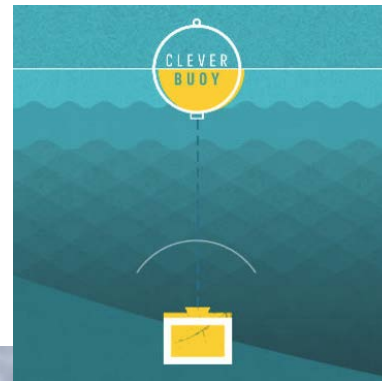
- Shipping fueling ops
- 'Smart Boom': instant alert to leaks
- Improper ballast discharges



Proprietary Information – Company Confidential

## Static Mounts (e.g.: Buoys)

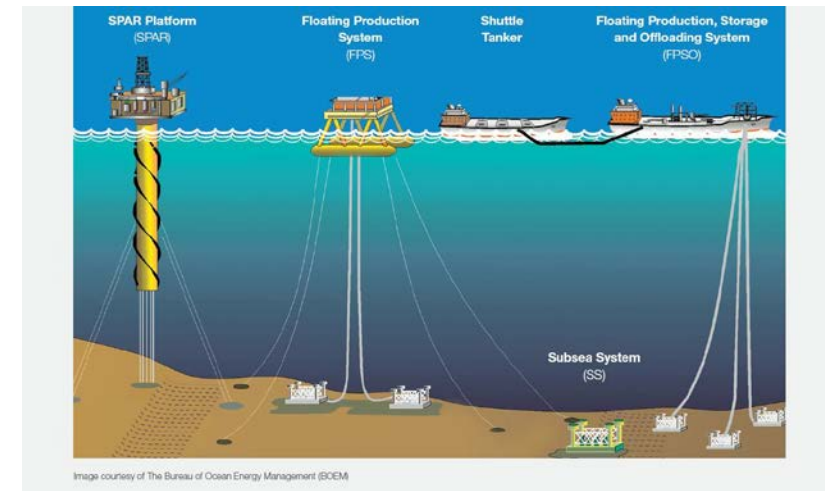
- Detection In specific targeted areas
- High-fidelity modeling when used in unison



Induced Polarization Associates, LLC

## Rig Mounts

- Immediate Leak Detection
- Potential for other identifications:  
(e.g.: For regulatory compliance)
  - ❑ Sewer/effluent discharge
  - ❑ Operating fluids
  - ❑ Other contaminants (polarizable)







# Advantages

- Compliant with USCG/OSRO guideline with respect to non-floating oil
- Unique in its ability to detect hydrocarbons in the water column, river/seabed and embedded in sediments
- Highly robust and ruggedized
- Easily transportable: small instrument foot print can be mobilized on a vessel of opportunity as small as 25-ft
- Small environmental footprint: In bottom reference mode bottom disturbance no greater than medium sized flat fish.
- On-the-fly interpretable real time displays
  - Fast output a layered geo-plot for onsite
  - Potentially detect and locate leaky outfalls and pipelines





# Limitations

- Not optimal for sea surface detections
- Current signature library is still limited, though expanding
- Effect of biofouling on static arrays unknown (primarily a receiver dipole design issue)

# Conclusions

- Marine IP is an efficient tool for detection & mapping of non-floating hydrocarbons
- Field-verified technology
- During an incident or for legacy spills, marine IP:
  - provides a more complete georeferenced data set
  - enables more targeted sediment sampling, reducing costs
- Potential to detect & map oil in water column during incidents
- Potential for oil spill monitoring and early-warning alerts:
  - Ports and Docks
  - Pipeline leaks
  - Intakes, sensitive areas



# Thank you!

*For more information:*  
**Induced Polarization Associates, LLC**  
**[www.marine-ip.com](http://www.marine-ip.com)**

**Kari Walker**  
206.550.6728

**[Kari.Walker@intellisensemarine.com](mailto:Kari.Walker@intellisensemarine.com)**

**Kevin Hand**  
907.529.6672

**[Kevin.Hand@intellisensemarine.com](mailto:Kevin.Hand@intellisensemarine.com)**

# Backup

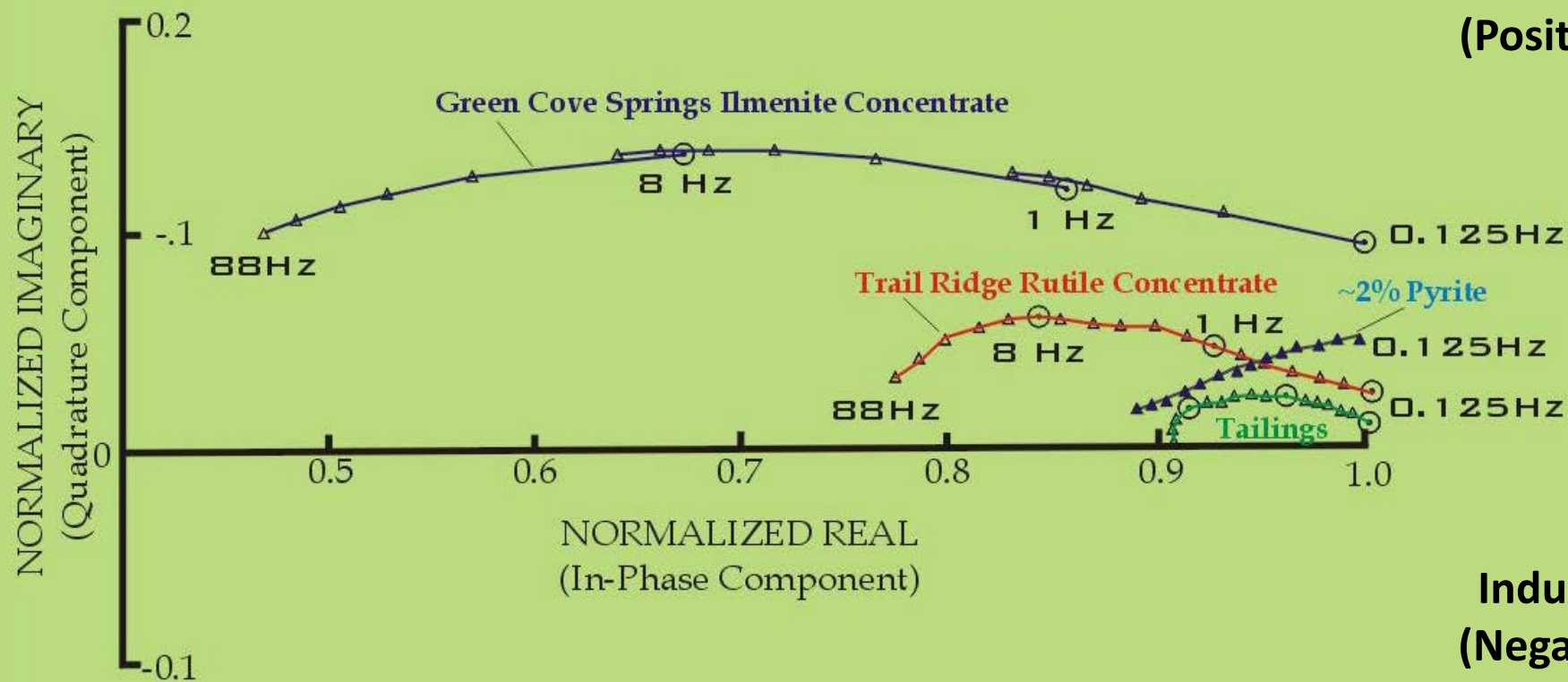
**Backup Slides Follow**



# How it works

## Differentiating polarizable materials

### Typical Placer-Mineral I.P. Spectra



**Capacitive Response  
(Positive, eg. Hydrocarbons)**



**Inductive Response  
(Negative, eg. Metals)**



May 17, 2018

# The Office of Infrastructure Protection

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National Protection and Programs  
Directorate Department of  
Homeland Security

Regional Response Team

Location: Addison, TX



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# Hometown Security



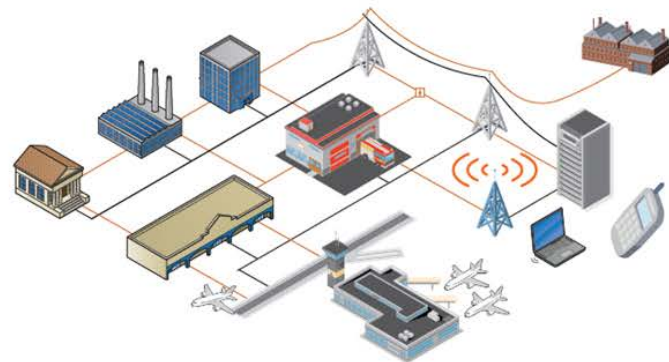
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# Infrastructure Protection

## Diverse Stakeholders



## Complex Interdependencies



## Evolving Threats



## National Policies



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# Whole of Community Approach

- Partnerships at all levels and shared responsibility of infrastructure security - with the types of initiatives IP has taken in an effort to enhance infrastructure security and resilience.
  - Protective Security Advisor program
  - Regional Resilience Assessment Program
  - Hometown Security
  - Active Threat Awareness - Bombing Prevention/Active Shooter
  - Chemical Security
  - Cyber Security



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# Resilient and Secure Infrastructure

- Linked to our Nation's security and prosperity.
- CI disruption impact to national economies
- How infrastructure will be used in the coming 100 years, and how it will interact with the Internet?
- What are the threats on the horizon?



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# Protecting Critical Infrastructure – A Shared Responsibility

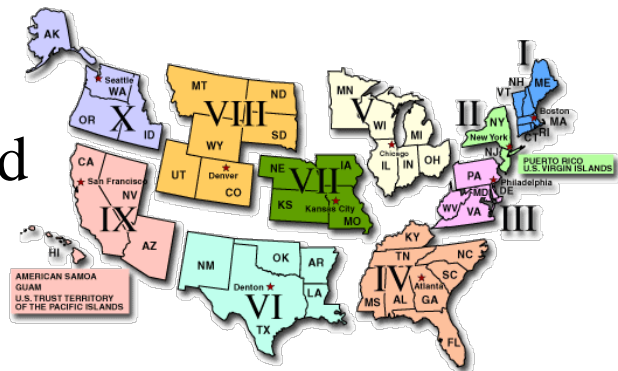
- *Challenge* continues to be copycats, lack of indicators
- *Need* balance security with open access business model
- Whole of community effort
- Partnership with owners & operators
- Recognize unique nature of operating environments
- Share information & best practices
  - SHIFT – leaning forward in how we share information
    - E.g., Paris, Brussels



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# Regionalization Efforts

- Strengthen coordinated delivery of IP capabilities and support to existing 300 field personnel
  - Reduce layers between mission execution and NPPD and IP leadership
  - Devolve outreach, exercises, analysis and training services, currently performed at headquarters to the regions
  - Enhance coordination regionally in steady state, special events and incident response – improving situational awareness for NPPD
- Led by a Regional Director - responsible for execution of the overall IP mission
- Assess operational needs of stakeholders and drive requirements for national IP programs and capabilities



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# Protective Security Advisors (PSAs)

- PSAs are field-deployed personnel who serve as critical infrastructure security specialists
  - Chief of Protective Security (CPS) oversee and manage the PSA program in their respective region
- State, local, tribal, and territorial (SLTT) and private sector link to DHS infrastructure protection resources
  - Coordinate vulnerability assessments, training, and other DHS products and services
  - Provide a vital link for information sharing in steady state and incident response
  - Assist facility owners and operators with obtaining security clearances
- During contingency events, PSAs support the response, recovery, and reconstitution efforts of the States by serving as pre-designated Infrastructure Liaisons (IL) and Deputy ILs at the Joint Field Offices



# Hometown Security Initiative

- Connect
- Plan
- Train
- Report

Website <https://www.dhs.gov/hometown-security>

- Active Shooter Preparedness
- Bomb Threat Training
- COOP Suite



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# Active Shooter Preparedness

- Plans (Active Shooter How to Respond)
- Cards, Posters, Factsheets
- Training Videos
- Online Training (Active Shooter: What you can do)
- One Hour Training given by the PSA (Not Tactical)
- Active Shooter Workshops



<https://www.dhs.gov/active-shooter-preparedness>

<https://www.govevents.com>



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# Stop The Bleed Campaign

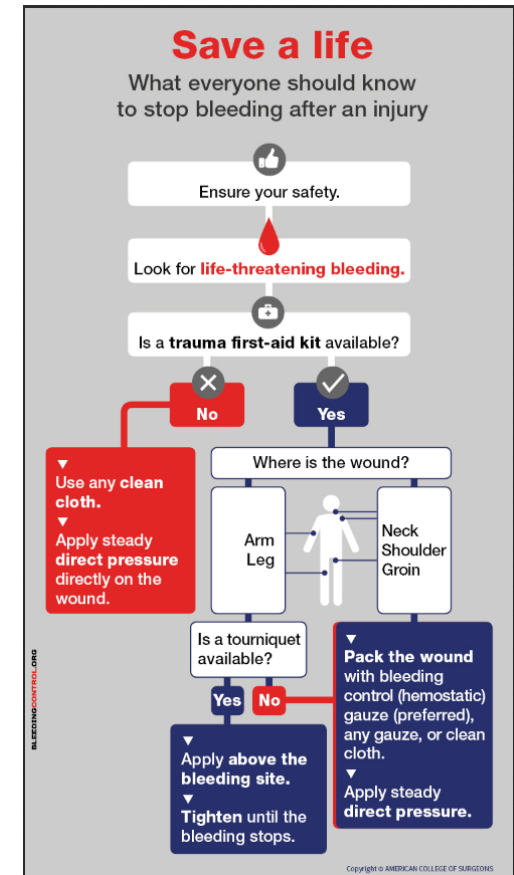
*"Stop the Bleed" is a nationwide campaign to empower individuals to act quickly and save lives.*



Website:

- ✓ Free Training
- ✓ Resources
- ✓ Partners
- ✓ Public Service Announcements

<https://www.bleedingcontrol.org/>



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# National SAR Initiative

- Joint effort between DHS, FBI, State, Local, Tribal, and Territorial law enforcement partners
- Online Training with certificate
  - What is Suspicious Activity, Items, how to report, etc.
- Resources



<https://nsi.ncirc.gov/>



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# DHS See Something, Say Something



<https://www.dhs.gov/see-something-say-something>



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"If You See Something, Say Something™" is a national anti-terrorism campaign that raises public awareness of the indicators of terrorism and terrorism-related crime, as well as the importance of reporting suspicious activity to state and local law enforcement.



Inform and educate  
communities on  
suspicious activity

What it is, how to recognize  
it, and how to report it.



Provide guidance

How to report suspicious activity  
to state and local law enforcement  
so that calls about suspicious  
activity can be reported in  
compliance with NSI.



Raise awareness

What are the indicators of  
terrorism and the importance of  
reporting suspicious activity  
through nationwide outreach  
efforts and partnerships.

## Together, We Can Keep Our Communities Safe

The U.S. Department of Homeland Security (DHS) is committed to strengthening hometown security by creating partnerships with state, local, tribal, and territorial governments; the private sector; and the communities they serve. Campaign partners play an integral role in keeping our communities safe.

To learn more about **becoming a campaign partner**, email [seesay@hq.dhs.gov](mailto:seesay@hq.dhs.gov) with your:

- Name and contact information.
  - The entity you represent.
  - The city and state in which your entity is located.
- Increasing the campaign's reach and maintaining the campaign's visibility by disseminating outreach materials.
  - Educating and informing your community at local events, through your website and social media, or through training opportunities.

**Make a difference. Join the campaign.**

For more information about the campaign, visit  
**[dhs.gov/See-Something-Say-Something](https://www.dhs.gov/See-Something-Say-Something)**

If You See Something, Say Something™ used with permission of the NY Metropolitan Transportation Authority.

# Homeland Security Information Network (HSIN)

- <https://hsin.dhs.gov/>
- HSIN is DHS's primary technology tool for trusted information sharing
- HSIN – Critical Infrastructure (HSIN-CI) enables direct communication between:
  - DHS
  - Federal, State, and local governments
  - Critical infrastructure owners and operators



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# Cybersecurity Advisory Program

## Mission:

To provide direct coordination, outreach, and regional support in order to protect cyber components essential to the sustainability, preparedness, and protection of the Nation's Critical Infrastructure and Key Resources (CIKR) and State, Local, Tribal, and Territorial (SLTT) governments.

## Priorities:

- Protection & Sustainment of Critical Infrastructure
- Information Sharing
- Incident Response Support



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# DHS Cyber Security Tools / Resources

## **Cyber Security Assessments:**

- Cyber Resilience Review (CRR)
- External Dependencies Management (EDM)
- Cyber Infrastructure Survey (CIS)
- Phishing Campaign Assessment (PCA)
- Risk & Vulnerability Assessment (RVA) | Pen Test
- Cyber Hygiene (CH) | Vulnerability Scanning
- Industrial Control Systems (ICS) Survey

## **Information Sharing and Threat Analysis:**

- Automated Indicator Sharing | Threat Feed
- Cyber Information Sharing & Collaboration Program (CISCP) | Trusted Circle
- Enhanced Cybersecurity Service (ECS) | Intrusion Prevention

## **Incident Reporting/Response:**

- Proactive Hunt & Incident Response Team



# Cyber Security Evaluation Tool

- Self Assessment
- Select Standards
- Determine Assurance Level
- Create Diagram
- Answer the Questions
- Review Analysis and Reports
- Get started by downloading CSET at <https://ics-cert.us-cert.gov/Downloading-and-Installing-CSET>



# Incident Reporting/Malware Analysis

24x7 contact number: 1-888-282-0870

## When to Report:

If there is a suspected or confirmed cyber attack or incident that:

- Affects core government or critical infrastructure functions;
- Results in the loss of data, system availability; or control of systems;
- Indicates malicious software is present on critical systems

## Advanced Malware Analysis Center:

- Provides 24x7 dynamic analyses of malicious code. Stakeholders submit samples via an online website and receive a technical document outlining the results of the analysis. Experts will detail recommendations for malware removal and recovery activities.
- Must be provided in password-protected zip files using password “infected”
- Email Submission: [submit@malware.us-cert.gov](mailto:submit@malware.us-cert.gov)
- Web Submission: <https://malware.us-cert.gov>



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A screenshot of the US-CERT AMAC Malware Analysis Submissions form. The form has a blue header with the US-CERT logo and the text "US-CERT UNITED STATES COMPUTER EMERGENCY READINESS TEAM". Below the header, the title "US-CERT AMAC Malware Analysis Submissions" is displayed. A red box highlights the "Web Disclaimer" section, which contains several paragraphs of text regarding the submission of malware artifacts, the use of the data, and the disclaimer of liability. At the bottom of the form, there is a checkbox labeled "Submitter agrees to the terms above" and a note "(All fields are optional)". Below this, there are four input fields: "First Name", "Last Name", "Organization", and "Open Incident ID".



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## DHS Contact Information

**George W. Reeves**

Cyber Security Advisor

Office of Cybersecurity &  
Communications

U.S. Department of Homeland Security  
Greater Houston, Austin & San Antonio  
Regions

**Email:** [george.reeves@hq.dhs.gov](mailto:george.reeves@hq.dhs.gov)

**Mobile:** (281) 714-1259

# Stop. Think. Connect.

- Join The Campaign
- Campaign Blog
- Promotional Materials
- Toolkit
- Videos



<https://www.dhs.gov/stopthinkconnect>



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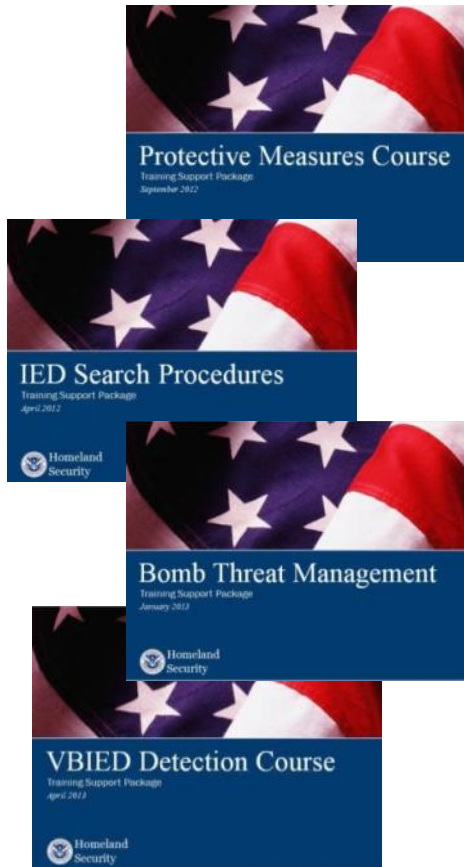


# Bombing Prevention

- The Office for Bombing Prevention (OBP) mission is to protect life and critical infrastructure by building capabilities within the general public and across the private and public sectors to prevent, protect against, respond to, and mitigate bombing incidents
- OBP accomplishes this mission through a portfolio of complementary programs:
  - Coordination of National and Intergovernmental Bombing Prevention Efforts
  - Information Sharing and Decision Support
  - Counter-IED Training and Awareness
  - Capability Analysis and Planning Support



# Counter-IED Training & Awareness



- Diverse curriculum of training designed to build counter-IED core capabilities, such as:
  - IED Counterterrorism Detection
  - Surveillance Detection
  - Bomb Threat Management
  - Vehicle-Borne IED (VBIED) Detection
  - Protective Measures
  - IED Search Procedures
- Increases knowledge and ability to detect, prevent, protect against, and respond to bombing threats

Courtesy of DHS OBP



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Security

# OBP VILT

- Live Instructor
- FEMA SID
- Registration
- HSIN Connect
- Free of charge
- Anyone can take these classes

Website:

<https://cdp.dhs.gov/obp>



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Office for Bombing Prevention  
Virtual Instructor-Led Training (VILT)

## DESCRIPTION

Virtual Instructor-Led Training (VILT) courses provide general awareness level counter-improvised explosive device (C-IED) information to a broad audience through an on-line virtual training experience with a live instructor. Perfect for participants with time availability constraints, they can be taken as stand-alone courses or serve as prerequisites for many of the instructor-led courses provided by the Office for Bombing Prevention (OBP).

## REGISTRATION INFORMATION

Register on the OBP/CDP Schedule & Registration Page at  
<https://cdp.dhs.gov/obp>

*NOTE: FEMA SID number and password are required to apply.*

To obtain a FEMA SID go to:  
<https://cdp.dhs.gov/femasid/register>

## ON-LINE VIRTUAL CLASSROOM

Approximately 2 business days prior to the course start date, you will receive login instructions.

## EQUIPMENT REQUIREMENTS

Laptop/desktop/mobile device with internet connection capable of running

## April 2018 Course Schedule

(All times are Eastern Standard Time)

**AWR-333 - Improvised Explosive Device Construction and Classification (IED-CC):** Provides foundational knowledge on the construction and classification of IEDs. [75 Min]

Date	Times	Date	Times
4/03/2018	11:00 AM - 12:15 PM	4/17/2018	9:00 AM - 10:15 AM
4/05/2018	11:00 AM - 12:15 PM	4/19/2018	9:00 AM - 10:15 AM
4/10/2018	11:00 AM - 12:15 PM	4/24/2018	4:00 PM - 5:15 PM
4/11/2018	9:00 AM - 10:15 AM	4/25/2018	4:00 PM - 5:15 PM
4/12/2018	12:00 PM - 1:15 PM	4/26/2018	4:00 PM - 5:15 PM

**AWR-334 - Introduction to the Terrorist Attack Cycle (ITAC):** Introduces a model of the terrorist attack cycle that describes the nature of terrorist surveillance, target selection, planning, and other activities that occur before and immediately after an attack. [105 Min]

Date	Times	Date	Times
4/03/2018	2:00 PM - 3:45 PM	4/17/2018	2:00 PM - 3:45 PM
4/05/2018	2:00 PM - 3:45 PM	4/19/2018	2:00 PM - 3:45 PM
4/10/2018	3:00 PM - 4:45 PM	4/24/2018	6:00 PM - 7:45 PM
4/11/2018	3:00 PM - 4:45 PM	4/25/2018	6:00 PM - 7:45 PM
4/12/2018	3:00 PM - 4:45 PM	4/26/2018	6:00 PM - 7:45 PM

**AWR-335 - Response to Suspicious Behaviors and Items (RSBI):** Provides participants with an awareness of the indicators of suspicious behavior and the basic responses to suspicious behaviors and/or items. [75 Min]

Date	Times	Date	Times
4/03/2018	9:00 AM - 10:15 AM	4/18/2018	11:00 AM - 12:15 PM
4/10/2018	9:00 AM - 10:15 AM	4/24/2018	9:00 AM - 10:15 AM
4/11/2018	2:00 PM - 3:15 PM	4/25/2018	9:00 AM - 10:15 AM
4/12/2018	9:00 AM - 10:15 AM	4/26/2018	1:00 PM - 2:15 PM

**AWR-337 - Improvised Explosive Device Explosive Effects Mitigation (IED-EEM):** Provides an introduction to the fundamentals of explosives effects. Details the difference between blast, thermal/incendiary, and fragmentation effects. [75 Min]

Date	Times	Date	Times
4/4/2018	2:00 PM - 3:15 PM	4/17/2018	11:00 AM - 12:15 PM
4/10/2018	12:00 PM - 1:15 PM	4/24/2018	2:00 PM - 3:15 PM
4/11/2018	11:00 AM - 12:15 PM	4/25/2018	11:00 AM - 12:15 PM
4/12/2018	10:00 AM - 11:15 AM	4/26/2018	2:00 PM - 3:15 PM

**AWR-338 - Homemade Explosives and Precursor Awareness (HME-P):** Provides foundational knowledge on HMEs and common precursor materials that are used to manufacture HME. [75 Min]

Date	Times	Date	Times
4/04/2018	11:00 AM - 12:15 PM	4/18/2018	2:00 PM - 3:15 PM
4/10/2018	10:00 AM - 11:15 AM	4/24/2018	1:00 PM - 2:15 PM
4/11/2018	10:00 AM - 11:15 AM	4/25/2018	1:00 PM - 2:15 PM
4/12/2018	11:00 AM - 12:15 PM	4/26/2018	9:00 AM - 10:15 AM

**AWR-340 - Protective Measures Awareness (PMA):** Provides an overview of the risk management process, surveillance detection, and the development of appropriate protective measures based on facility characteristics. [75 Min]

Date	Times	Date	Times
4/4/2018	9:00 AM - 10:15 AM	4/18/2018	9:00 AM - 10:15 AM
4/5/2018	9:00 AM - 10:15 AM	4/19/2018	11:00 AM - 12:15 PM
4/10/2018	2:00 PM - 3:15 PM	4/24/2018	11:00 AM - 12:15 PM
4/11/2018	12:00 PM - 1:15 PM	4/25/2018	2:00 PM - 3:15 PM
4/12/2018	2:00 PM - 3:15 PM	4/26/2018	11:00 AM - 12:15 PM

Courses are provided by DHS with no charge to attend

# TRIPwire

**TRIPwire**  
Technical Resource for Incident Prevention

**User Login**

Username:   
Password:   
  
[Register Now](#)  
[Forgot Password?](#)

**HSIN Partner Login**

Login with a Homeland Security Information Network account: [more info](#)

**TRIPwire Video**

[View Larger](#)  
[Download Video](#)

**About the Office for Bombing Prevention**

**About TRIPwire**

**What's on TRIPwire**

**TRIPwire Partners**

**TRIPwire**  
tripwire.dhs.gov

**PREVENT, PROTECT, RESPOND, MITIGATE**

**WARNING:** You are about to access a Department of Homeland Security computer system. This computer system and data therein are property of the U.S. Government and provided for official U.S. Government information and use. Accordingly, there can be no expectation of privacy in the course of your use of this computer system. The use of a password or any other security measure does not establish an expectation of privacy. There is no expectation of privacy in any media, peripheral or other devices placed in or connected to this computer system. By using this system, you consent to the terms set forth in this notice. You may not process classified national security information on this computer system. Access to this system is restricted to authorized users only. Unauthorized access, use, or modification of this system or of data contained herein, or in transit to/from this system, may constitute a violation of section 1030 of title 18 of the U.S. Code and other criminal laws. Anyone who accesses a Federal computer system without authorization or exceeds access authority, or obtains, alters, damages, destroys, or discloses information, or prevents authorized use of information on the computer system, may be subject to penalties, fines or imprisonment. This computer system and any related equipment is subject to monitoring for administrative oversight, law enforcement, criminal investigative purposes, inquiries into alleged wrongdoing or misuse, and to ensure proper performance of applicable security features and procedures. DHS may conduct monitoring activities without further notice.

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- Secure information sharing platform for IED incident information, evolving IED tactics, lessons learned, and counter-IED preparedness information
- Builds knowledge and preparedness capabilities, filling vital gaps in information sharing

Courtesy of TRIPwire



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Security



## How to React Quickly and Safely to Suspicious Packages and Bomb Threats

Bomb threats are a rare but serious event. How quickly and safely you react can save lives, including your own:

- **DO** report suspicious activity, unattended packages, or a potential bomb threat to authorities immediately, follow instructions, and evacuate the area
- **DO** provide as much detail as possible to authorities
- **DO** seek distance and cover – they are the best means to reduce the risk of injury
- **DO NOT** approach or inspect suspicious items or unattended packages
- **DO NOT** congregate near the incident scene – it may impede first responders and there could be a risk of secondary attacks

## Be Prepared for IEDs and Play a Role in Prevention

Below are counter-IED resources appropriate for individuals, families, travelers, educational and religious institutions, and businesses, as well as law enforcement, emergency services, or security professionals, which provide insight to help increase preparedness and reduce risks associated with potential bombings.

### Bomb Threat Guidance:

- [Bomb-Making Materials Awareness Program \(BMAP\) Video](#)
- [Bomb Threat Checklist](#)
- [Bomb Threat Stand-Off Card](#)
- [Bomb Threat Management Guidance Quad-Fold](#)
- [Bomb Threat Management Video](#)
- [Bombing Prevention Lanyard Cards \(Lined Version\)](#)
- [Bombing Prevention Lanyard Cards \(Unlined Version\)](#)
- **(NEW)** [Sports and Entertainment Venues Bombing Prevention Solutions Portfolio](#)

### Awareness Materials:

- [FBI-DHS Private Sector Advisory - Ammonium Nitrate- & Urea-Based Fertilizers Poster](#)
- [FBI-DHS Private Sector Advisory - Hazardous Chemicals Poster](#)
- [FBI-DHS Private Sector Advisory - Hazardous Chemicals Card](#)
- [FBI-DHS Private Sector Advisory - Peroxide Products Poster](#)
- [FBI-DHS Private Sector Advisory - Peroxide Products Card](#)
- [FBI-DHS Private Sector Advisory - Suspicious Purchasing Behavior Awareness Poster](#)
- [FBI-DHS Private Sector Advisory - Suspicious Purchasing Behavior Awareness Card](#)
- [FBI-DHS Private Sector Advisory - Retail and Shopping Center Advisory](#)
- [Mail and Suspicious Package Guidance Poster](#)

If you are a law enforcement, emergency services, or security professional, much more information is available through [free registration](#) to the full TRIPwire website. Inside you will find valuable resources and much more detail on IED threats and counter-IED activities.

■ For additional information on how to identify suspicious activity, safely and effectively react to bomb threats, or get additional counter-IED awareness, or planning resources, contact the Office for Bombing Prevention at [OBP@dhs.gov](mailto:OBP@dhs.gov).



Bomb Threat Management Video



Bomb-Making Materials Awareness Program (BMAP) Video



National Counter-IED Capabilities Analysis Database (NCCAD) Video

- Bomb threat guidance materials available for download
- Awareness materials





# Counter-IED Training & Awareness



Courtesy of DHS/FBI

- Bomb-Making Materials Awareness Program (BMAP)
- Joint DHS-FBI program that promotes private sector point-of-sale awareness and suspicious activity reporting to prevent misuse of dual-use explosive precursor chemicals and components commonly used in IEDs
- Increases prevention opportunities by building a network of aware and vigilant private sector partners



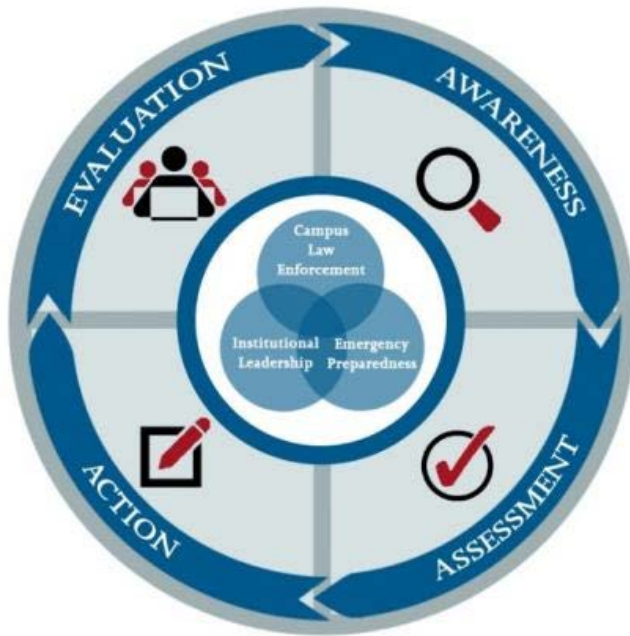
Homeland  
Security

# Other Products and Services



- Bombing Prevention Solutions Portfolio
- One-stop shop for countering the threat of explosives
- Toolkit divided into five sections
  - VILT
  - Self-Paced, Computer-Based
  - In-Person Training
  - Job Aids
  - Training and Awareness Videos

# Other Products and Services



- Campus Resilience Program Resource Library
- Online repository of resources to empower campus leaders to enhance security and resilience
- Resources organized according to specific threat/hazard
- Further categorized according to its relevant Mission Area
- <https://www.dhs.gov/campus-resilience-program-resource-library>



# InfraGard

- <https://www.infragard.org>
- InfraGard is an information-sharing and analysis effort serving the interests of and combining the knowledge base of a wide range of members
- At its most basic level, InfraGard is a partnership between the Federal Bureau of Investigation (FBI) and the private sector
- InfraGard is an association of businesses, academic institutions, State and local law enforcement agencies, and other participants dedicated to sharing information and intelligence to prevent hostile acts against the United States



# The Chemical Facility Anti-Terrorism Standards

- DHS regulates security at high-risk chemical facilities through the CFATS program
- CFATS follows a risk-based approach, allowing DHS to focus on high-risk chemical facilities
- To determine if a facility is subject to CFATS, DHS looks at the unique circumstances faced by the facility
  - If the facility is in possession of threshold quantities of Appendix A Chemicals of Interest (COI), the facility must provide information to the Department to support risk assessment
  - This applies even if the facility does not consider itself a “chemical facility”—CFATS applies to hospitals, mines, universities, etc.



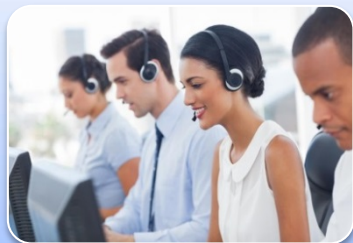


# Available Resources



**Outreach:** DHS outreach for CFATS is a continuous effort to educate stakeholders on the program.

- To request a CFATS presentation or a CAV, individuals may submit a request through the program Web site, located at [www.dhs.gov/chemicalsecurity](http://www.dhs.gov/chemicalsecurity), or by e-mailing DHS at [CFATS@dhs.gov](mailto:CFATS@dhs.gov).



**CFATS Help Desk:** DHS has developed a CFATS Help Desk that individuals can call or email with questions on the CFATS program.

- Hours of Operation are 8:30 AM – 5:00 PM (ET), Monday through Friday
- The CFATS Help Desk toll-free number is 1-866-323-2957
- The CFATS Help Desk email address is [csat@dhs.gov](mailto:csat@dhs.gov)



**CFATS Web Site:** For CFATS Frequently Asked Questions (FAQs), CVI training, and other useful CFATS-related information, please go to [www.dhs.gov/chemicalsecurity](http://www.dhs.gov/chemicalsecurity).



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# Questions



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For more information, visit:  
[www.dhs.gov/critical-  
infrastructure](http://www.dhs.gov/critical-infrastructure)



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Security

Harvey "PT" Perriott

Chief, Protective Security RVI

[Harvey.Perriott@hq.dhs.gov](mailto:Harvey.Perriott@hq.dhs.gov)



# **RRT-6 In-Situ Burn Policy Update**

Mr. Adam Tyndale  
RRT-6 Response Committee Chair

desk: (504) 671-2063  
email: [adam.j.tyndale@uscg.mil](mailto:adam.j.tyndale@uscg.mil)



# Background

- Significant shift in approach to Inshore/Nearshore policy development since last RRT-6 meeting.
- Three consecutive ISB operations Nov-Dec 2017 brought to light inconsistencies/shortfalls of current ACP's ISB content.
- Convened work group Jan 2018 to determine way forward; District 8 to edit/update existing ACP ISB appendices.
- Delivered to Sector New Orleans, MSU Houma & MSU Port Arthur on 01 May.
- Currently using newly developed appendices as template for regional policy document.





# What changed?

- Improved readability and document flow
- Removed redundancies
- Aligned language with NCP
- Outlined expectations for OSCs (reporting requirements, briefing requirements, notifications, operational plans, etc.)
- Updated checklists; burning agent examples
- Clarified Consultation/Concurrence Process

## Regional Response Team (RRT) 6 Inshore/Nearshore In-Situ Burn Policy

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# Way forward

- Currently 75%(ish) complete on RRT-6 ISB Policy effort
- Soliciting feedback from development team, incorporating comments
- Upon approval (prior to end of CY2018), will replace current guidelines (Inshore/Nearshore)
- Immediately begin work on RRT-6 In-Situ Burn Plan (Preauthorization)
- Long term goal: all Region ACPs to incorporate new policy by reference





Any questions?

desk: (504) 671-2063

email: [adam.j.tyndale@uscg.mil](mailto:adam.j.tyndale@uscg.mil)



# **TRI-CHEM INDUSTRIES**

**2600 North Cresson Highway**

**Cresson, TX 76035**

**March 15, 2018**

**EPA OSC ADAM ADAMS**

**Incident: Explosion and fire at a chemical facility / 1 unaccounted for and injuries**



- ▶ **Incident: Explosion and fire at a chemical facility resulting in one fatality (unaccounted for) and multiple injuries.**
- ▶ **TX Highway 171 closed.**
- ▶ **EPA Response Duty Officer (OSC) activated.**
- ▶ **EPA START contractors activated.**
- ▶ **EPA ASPECT activated.**

## **INITIAL EPA RESPONSE**



- ▶ **Upon arrival, EPA entered Unified Command with OSHA, TCEQ, the Fire Marshal's office, and local Fire Department.**
- ▶ **Additional responding agencies: Cresson FD, Tolar Volunteer FD, Spring Creek FD, North Hood County Volunteer FD, Pecan Plantation FD, Ft. Worth FD, De Cordova FD, Granbury FD, Baker Dover FD, Parker County FD, Texas EMS, Texas DPS, ATF, and TX DOT.**
- ▶ **PRP representative was on-site responding on behalf of the PRP. This was a PRP response with oversight by Unified Command.**



# UNIFIED COMMAND





AERIAL MAP



- ▶ **Potential chemical releases – impacted containers, risk of off-gassing, reactivity between stored chemicals, or reactivity with precipitation.**
  - ▶ **Some chemicals on-site prior to or during the incident:**
    - ▶ **phosphoric acid, citric acid, silicone antifoam and emulsions, copper sulfate,**
    - ▶ **phosphates (sodium tripoly phosphate, sodium hexametaphosphate, tetrasodium pyrophosphate, tetrapotassium pyrophosphate), asphalt additives,**
    - ▶ **glycol ether DPM, sodium hydroxide, sodium hydrosulfide, and others.**
- ▶ **Ongoing fire – smoldering continued approximately 2 weeks after the incident.**
- ▶ **Liquids/firefighting water runoff – pH 2 measured at liquids off-site near railroad tracks in drainage path.**
- ▶ **Building debris – Impacted building presented structural hazards on the pad.**

# HAZARDS





- ▶ **Plume:** (during incident / during smoldering); threat to public and responders.
- ▶ **Drainage:** Chemicals / fire water runoff /precipitation flowed ~1/4 mile south off-site.

## THREATS

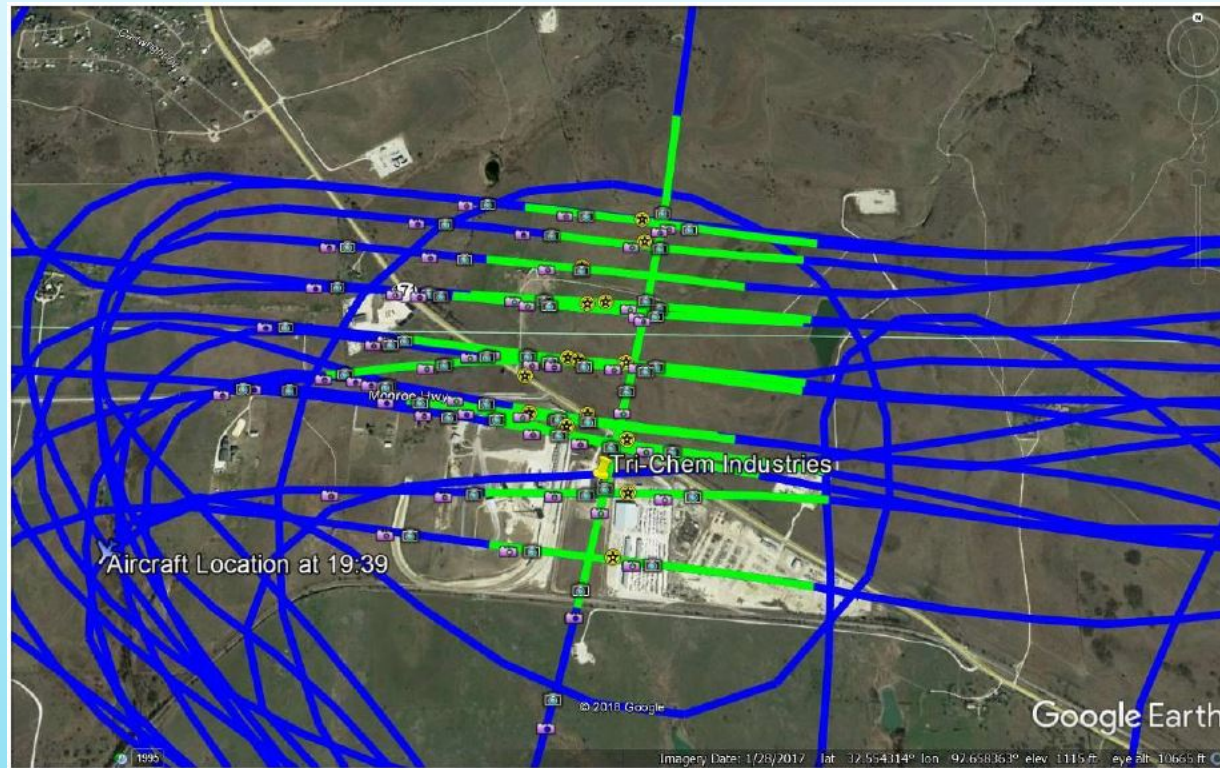




- **...Inclement weather increased risk of hazardous materials' off-site migration, and affected Site conditions on multiple occasions during EPA's response.**

## THREATS





- ▶ **ASPECT deployed on 15 March.**
- ▶ **Detected 1-butene on-site, and 1-butene, 2-butene, alcohol, acetone, and isobutylene 50 meters off-site (downwind) – all below 3.0 ppm.**

## EPA RESPONSE

- ▶ **Air monitoring – conducted off-site, downwind during initial response; at site perimeter; pad perimeter.**
  - ▶ **Maximum detections during the response:**
    - ▶ **Cl<sub>2</sub> 10.8 ppm (PEL C 1 ppm, IDLH 10 ppm);**
    - ▶ **HCN 17 ppm (PEL TWA 10 ppm);**
    - ▶ **H<sub>2</sub>S 12.3 ppm (PEL C 20 ppm);**
    - ▶ **CO 8 ppm (PEL TWA 50 ppm);**
    - ▶ **NH<sub>3</sub> 3 ppm (PEL TWA 50 ppm);**
    - ▶ **VOCs 1.3 ppm (START Action Level 150 ppm for unknown VOC).**
- ▶ **Periodic pH monitoring conducted at the runoff liquids locations.**

## EPA RESPONSE







- ▶ **Air monitoring for public health conducted at Site;**
- ▶ **Recovery of caustics - source of H<sub>2</sub>S off-gassing;**
- ▶ **Investigators searching for remains in debris.**

## RESPONSE



- ▶ **PRP (via contractors):**
- ▶ **Excavated drainage path impacted soils;**
- ▶ **Recovered runoff liquids;**
- ▶ **Trenched around the pad;**
- ▶ **Removed impacted chemical residues, containers of chemicals not impacted, debris;**
- ▶ **Conducted off-site confirmation sampling; and**
- ▶ **Working on disposal options.**



# PRP RESPONSE





- ▶ **View of Tri-Chem Industries from the entrance fence line, facing south at the impacted facility.**
- ▶ **The warehouse building was demolished and hazardous materials were removed from pad, pending disposal.**
- ▶ **PRP contractor continued remediation under TCEQ oversight. EPA transitioned off Site and has continued communications with TCEQ and PRP.**

**BEFORE/AFTER, SITE ENTRANCE**





**BEFORE/AFTER, FACILITY REAR**





**BEFORE/AFTER, NORTH OF RAILROAD**





**BEFORE/AFTER, SOUTH OF RAILROAD**





IMPACTS PHOTOS





IMPACTS PHOTOS



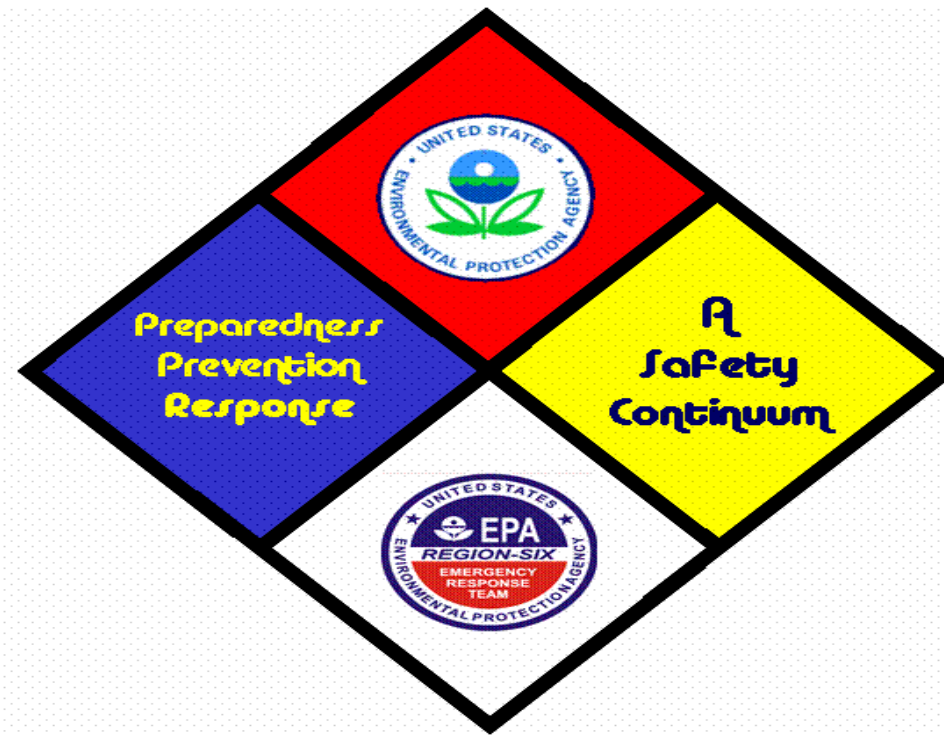
- ▶ **Incident occurred (15 March).**
- ▶ **Initial chlorine gas detection (17 March).**
- ▶ **Initial trenches installed, east ditch excavated (17 March).**
- ▶ **Search for remains concluded, remains identified (21 March).**
- ▶ **Smoldering / Fire out (28 March).**
- ▶ **PRP Contractor response approach and subcontractor transition (02 April).**
- ▶ **Hood County Fire Marshal southern section of pad partial release, but investigation is ongoing (06 April).**
- ▶ **Completed excavations off-site (19 April).**
- ▶ **Completed off-site work, EPA transitions site to TCEQ (confirmation samples collected / no further action for off-site storm water) (20 April).**
- ▶ **OSHA / Fire Marshals investigations are ongoing (16 May).**

## **TIMELINE**

- ▶ **Summary / Take aways:**
- ▶ **Great teamwork between EPA, OSHA, TCEQ, and local responders (Fire Marshals and Fire Dept).**
- ▶ **Response was conducted during on-going investigations (OSHA and Fire Marshal's Office).**
- ▶ **Primary hazards observed during the response:**
  - ▶ **Chlorine gas, HCN, H<sub>2</sub>S, and low pH run-off liquids**

**TRI-CHEM INDUSTRIES INCIDENT - MARCH 15, 2018**

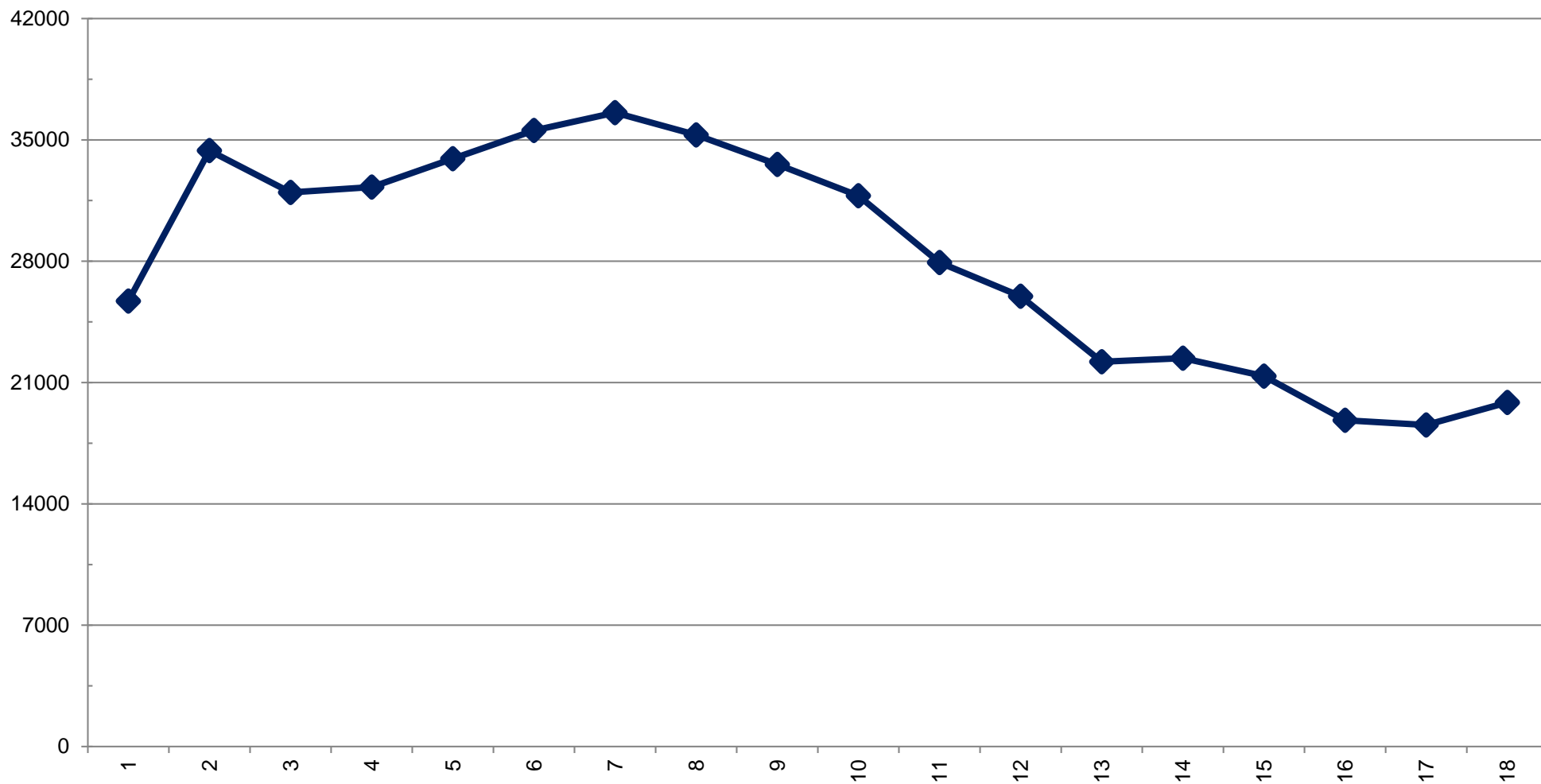
**OSC ADAM ADAMS / PRESENTED MAY 17, 2018**



# EPA Region 6 Accidental Release Notification Information:

## FY 2013 – 2018

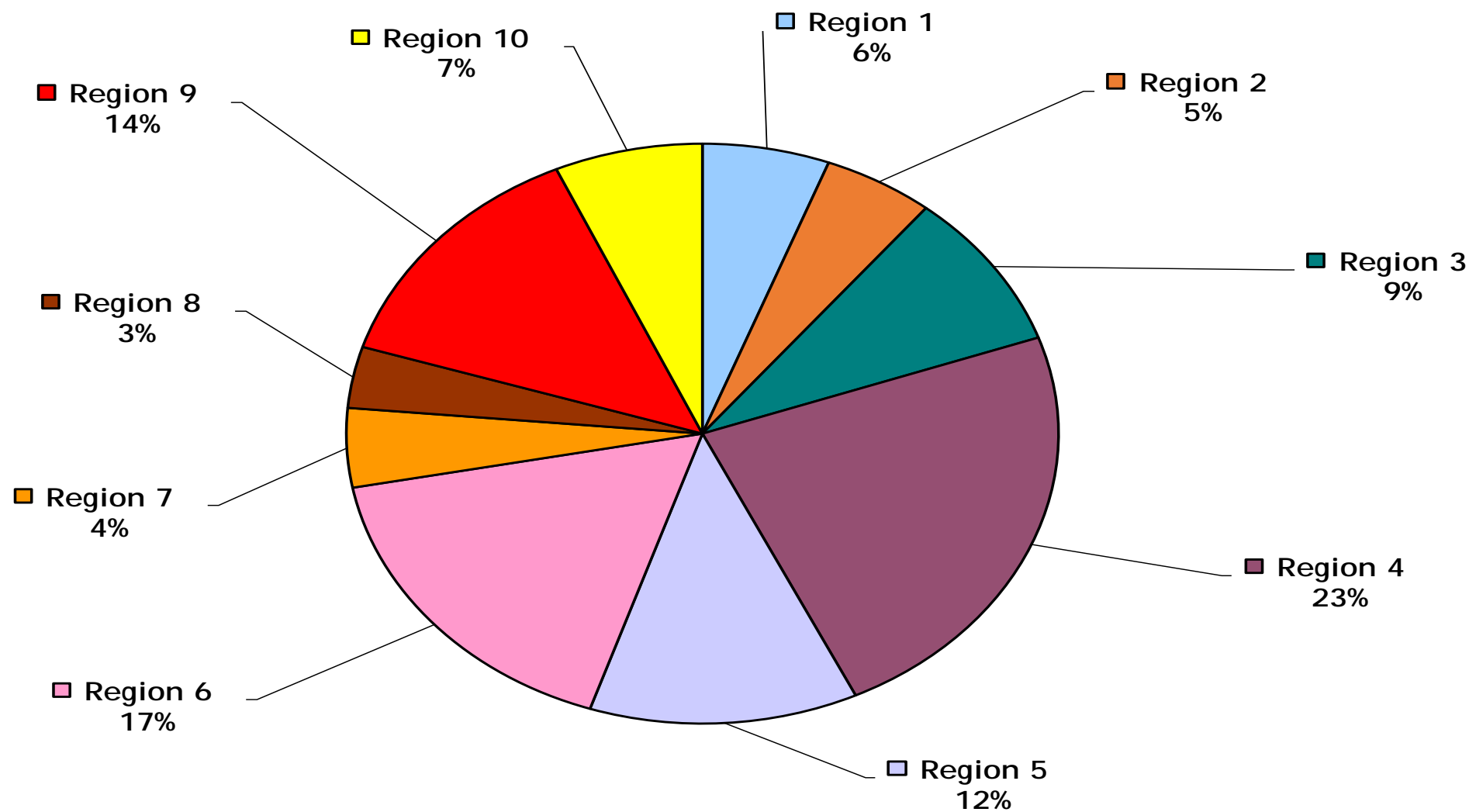
*Over Thirty Years of Collecting Release / Spill Information*

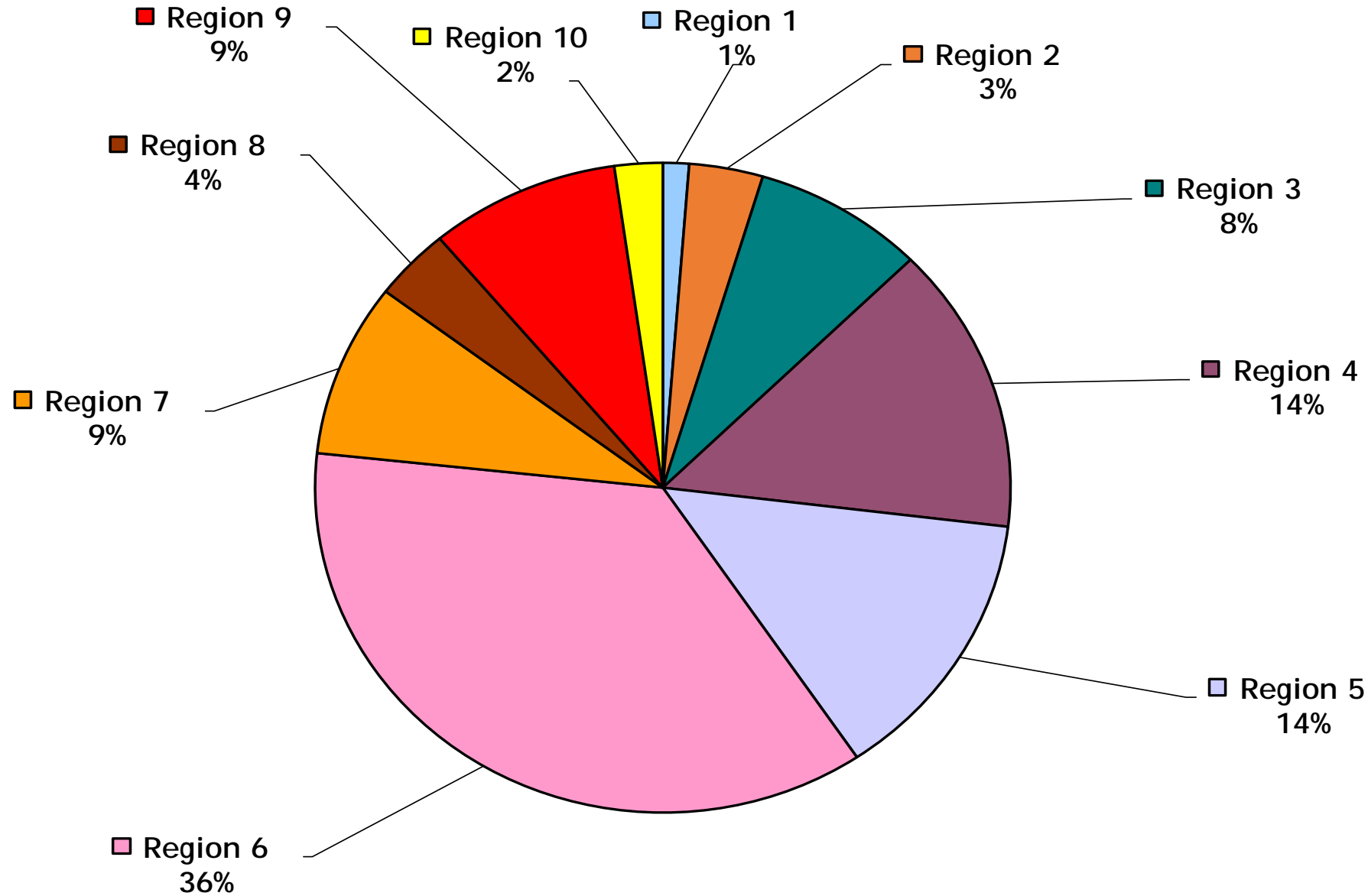
**\*\* INCLUDES REPORTS FOR INLAND (EPA) \*\***

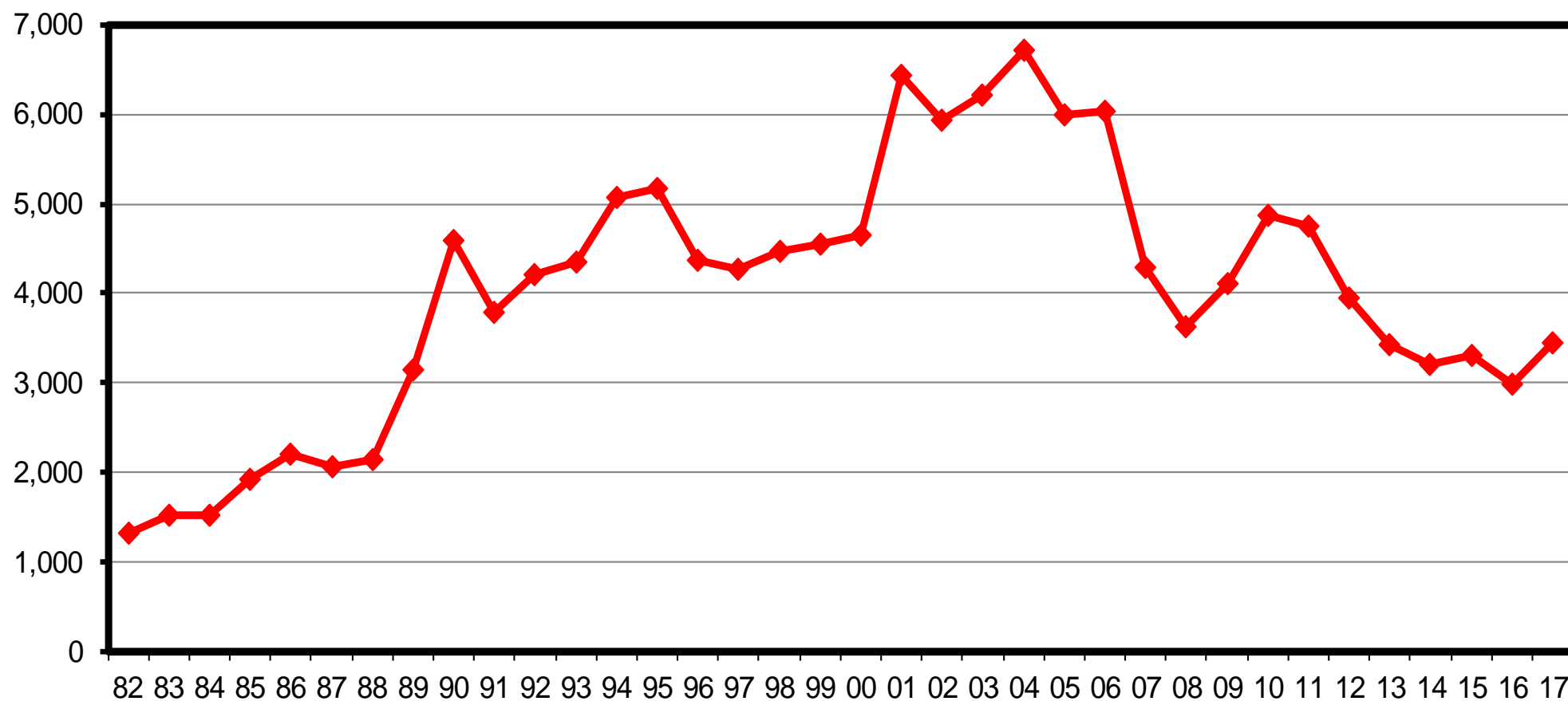
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
25,704	34,387	31,967	32,279	33,911	35,540	36,574	35,284	33,587	31,777	27,922

2011	2012	2013	2014	2015	2016	2017
25,978	22,202	22,404	21,374	18,827	18,550	19,849

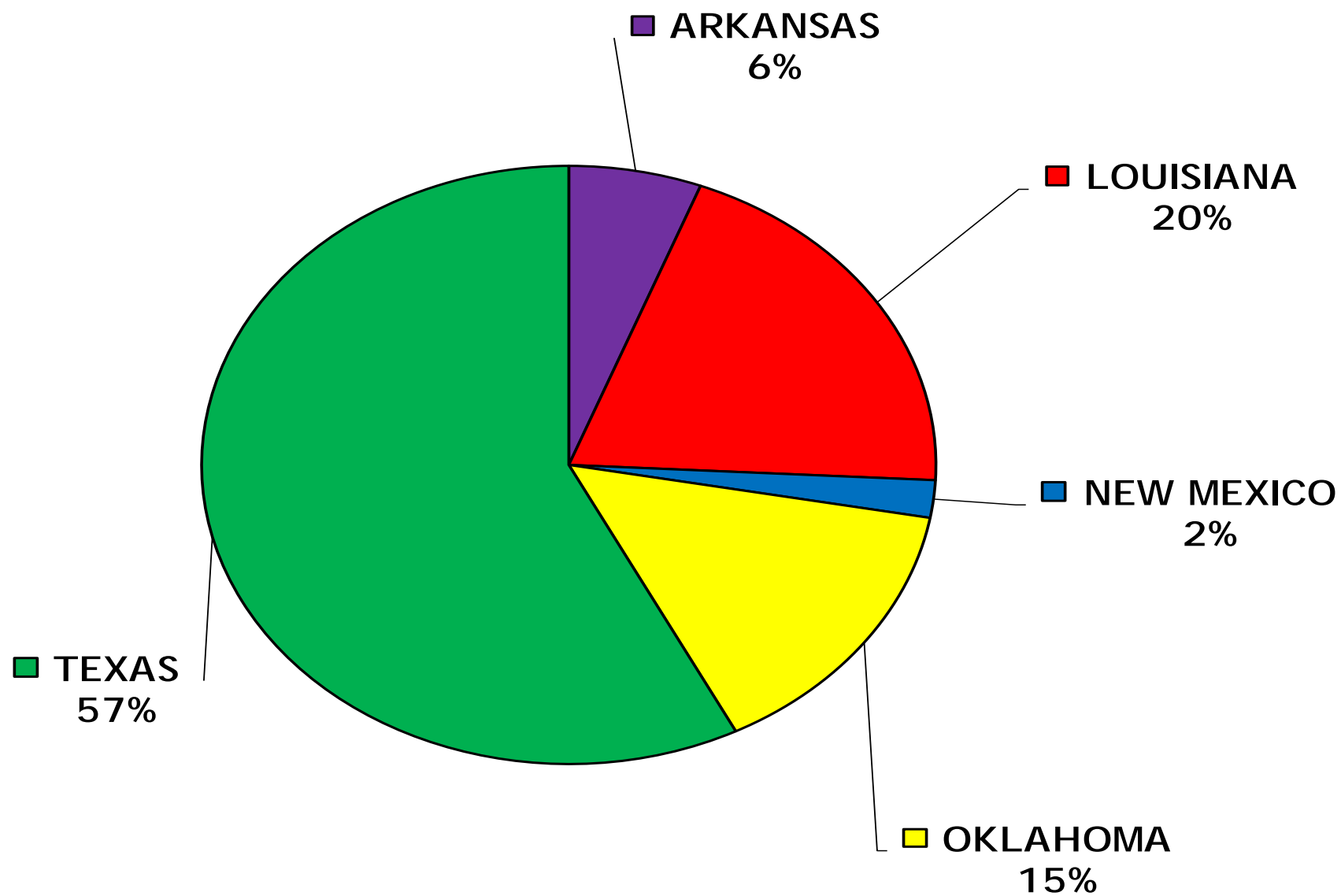








		82	83	84	85	86	87	88	89	90	91	92	93	94	95	
EPA Notifications		1,315	1,520	1,521	1,920	2,196	2,057	2,142	3,152	4,591	3,784	4,208	4,340	5,063	5,180	
96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12
4,376	4,277	4,472	4,559	4,641	6,431	5,928	6,206	6,718	5,997	6,024	4,290	3,619	4,107	4,870	4,751	3,942
13	14	15	16	17	18											
3,428	3,212	3,299	2,988	3,448	2100											

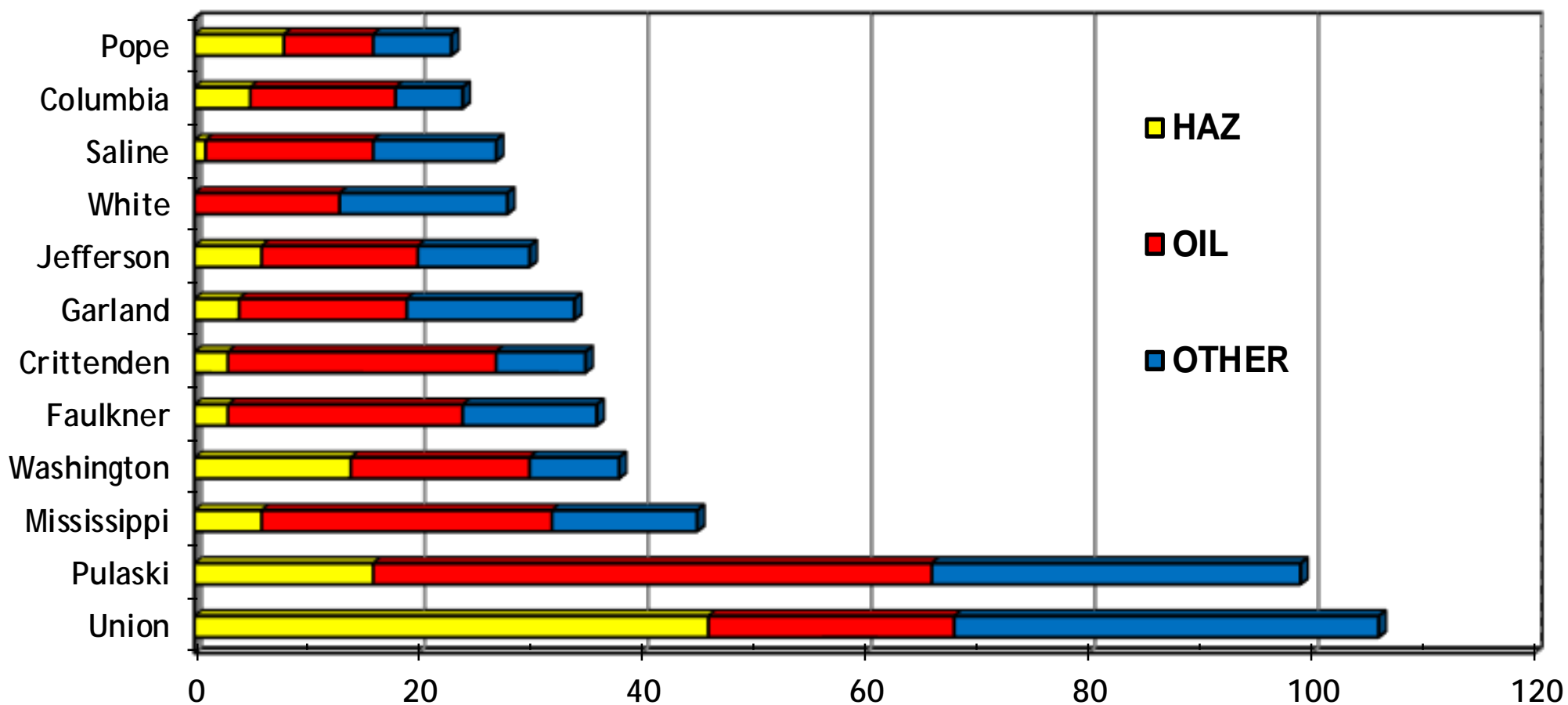


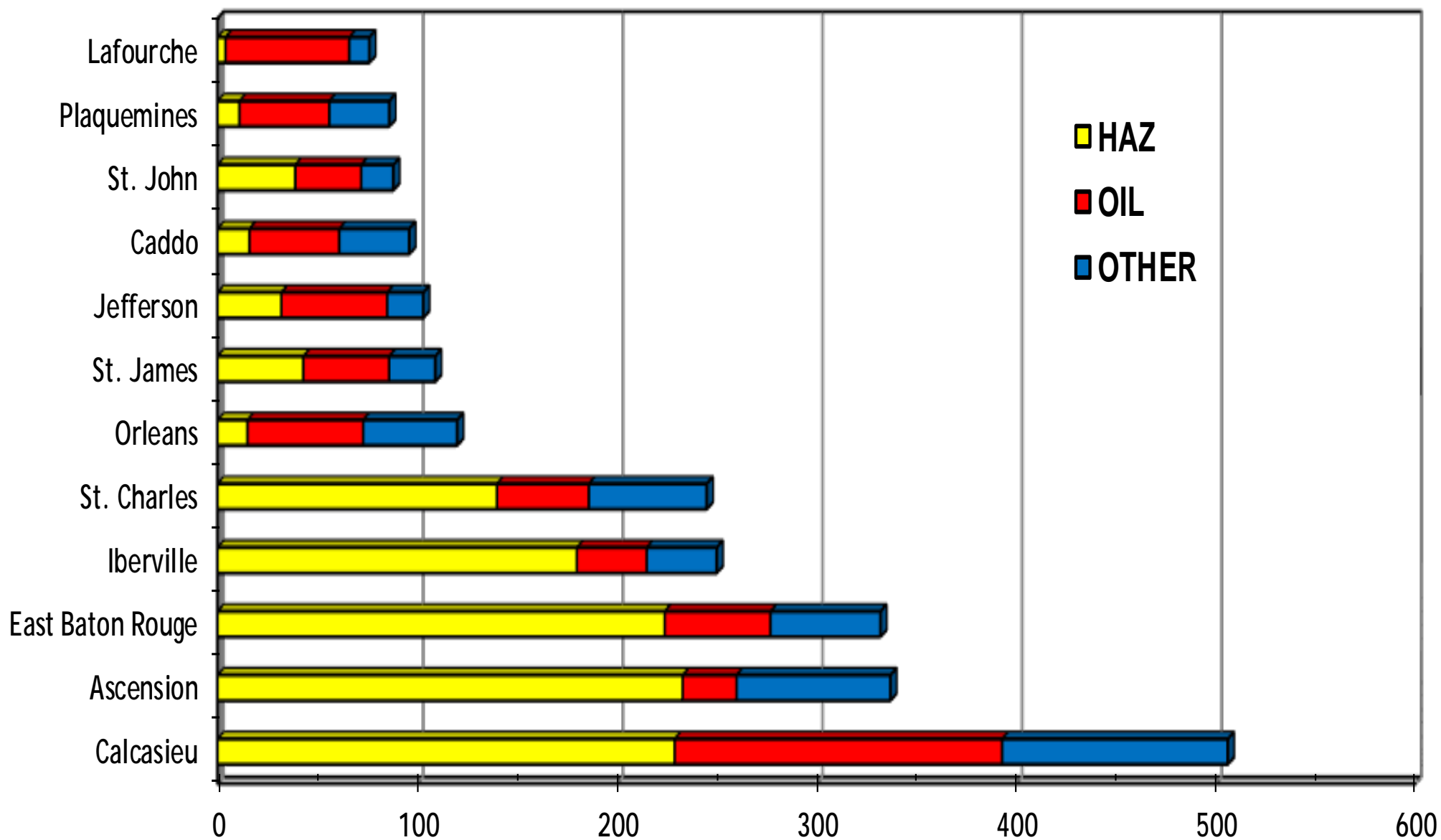


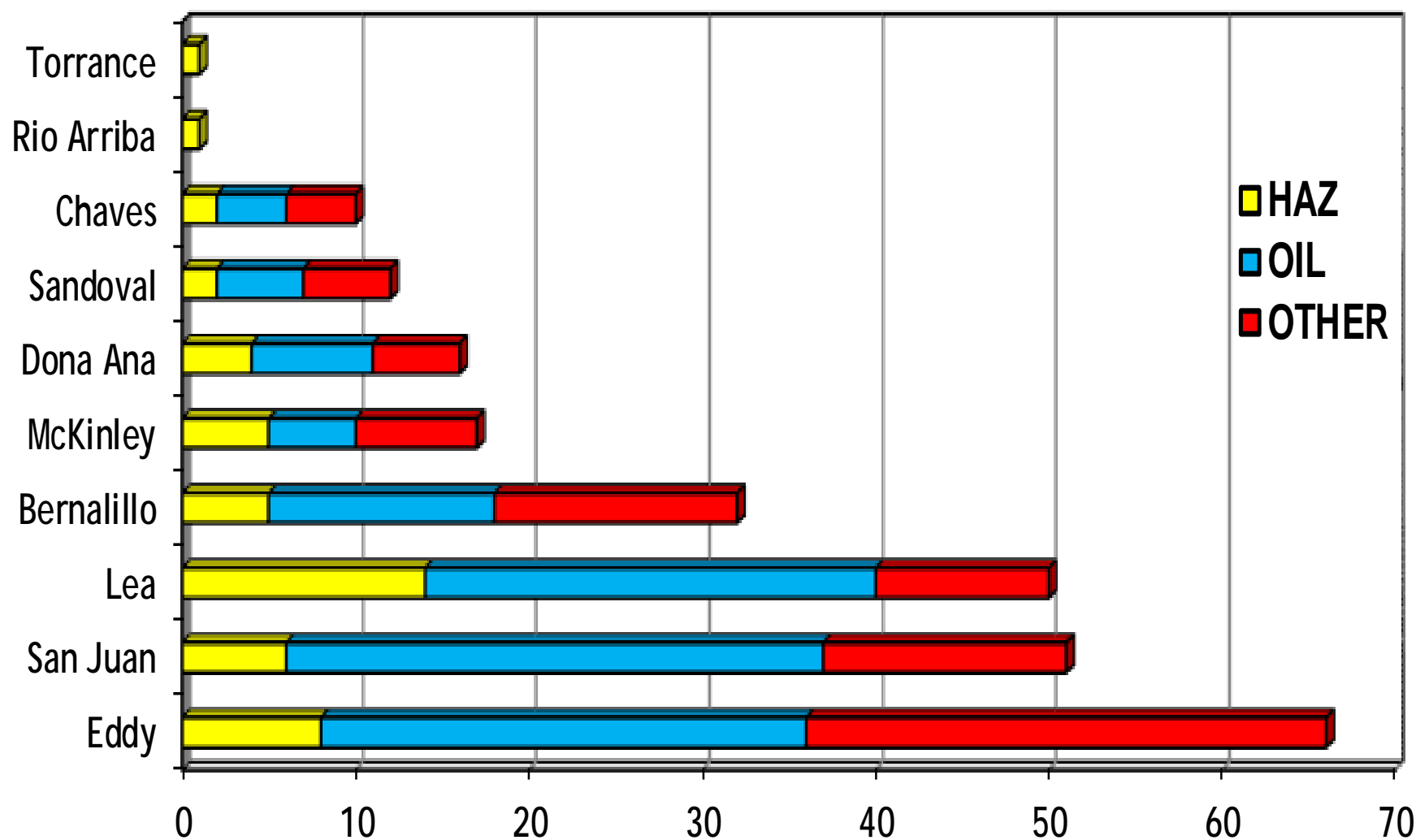
**Since 2013, approximately 5.2% of all release reports have led to a significant event (death, injury, community evacuation, evacuation of a facility, shelter-in-place)**

**Deaths, injuries, and evacuations may not be directly due to exposure, but as a consequence of the accident resulting in the release**

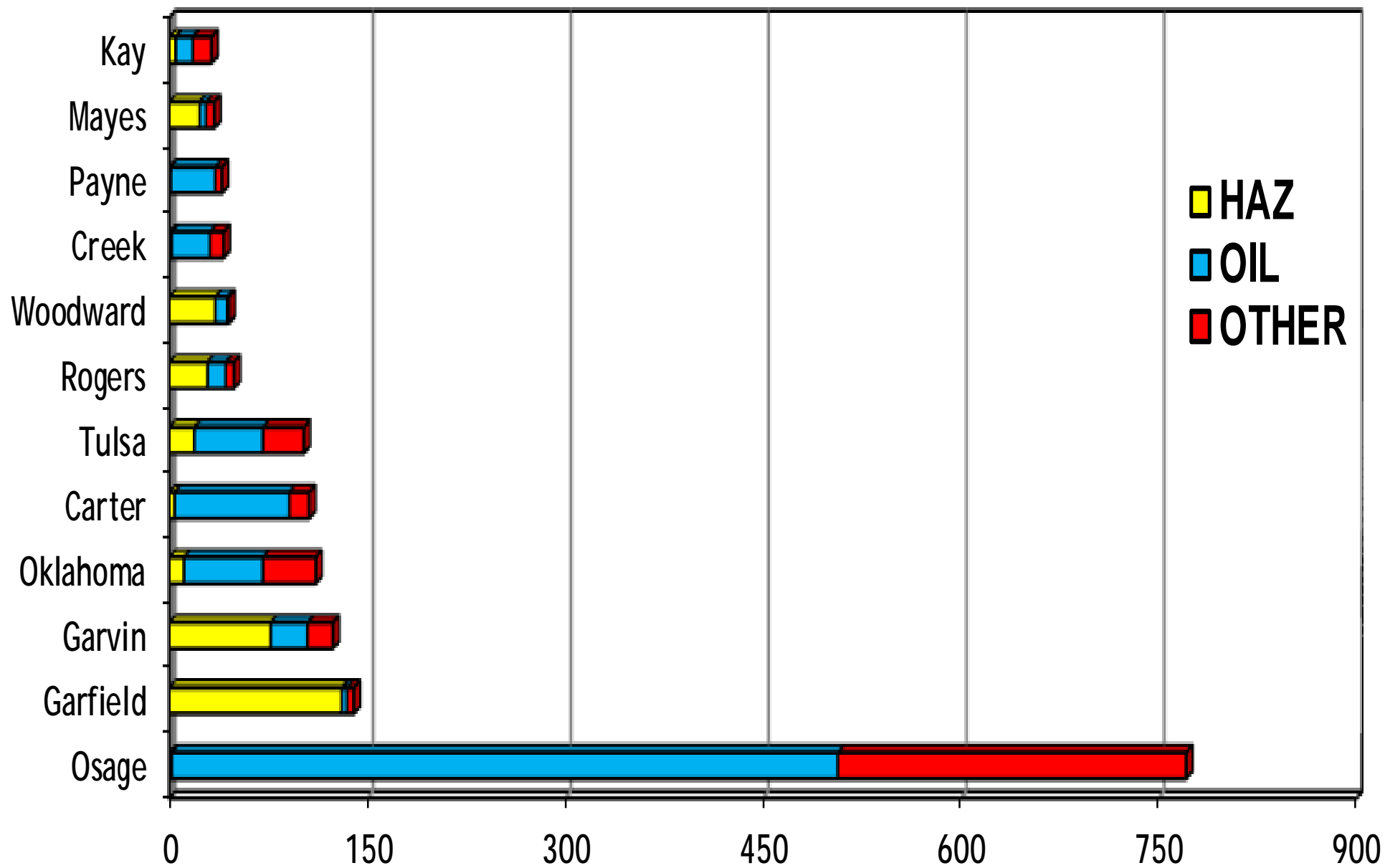
**Since 2013, statistically there is more than one shelter-in-place or evacuation of a community (whole or part) or of a facility due to a hazardous substance, oil, or other material incident somewhere in Region 6, on a weekly basis**

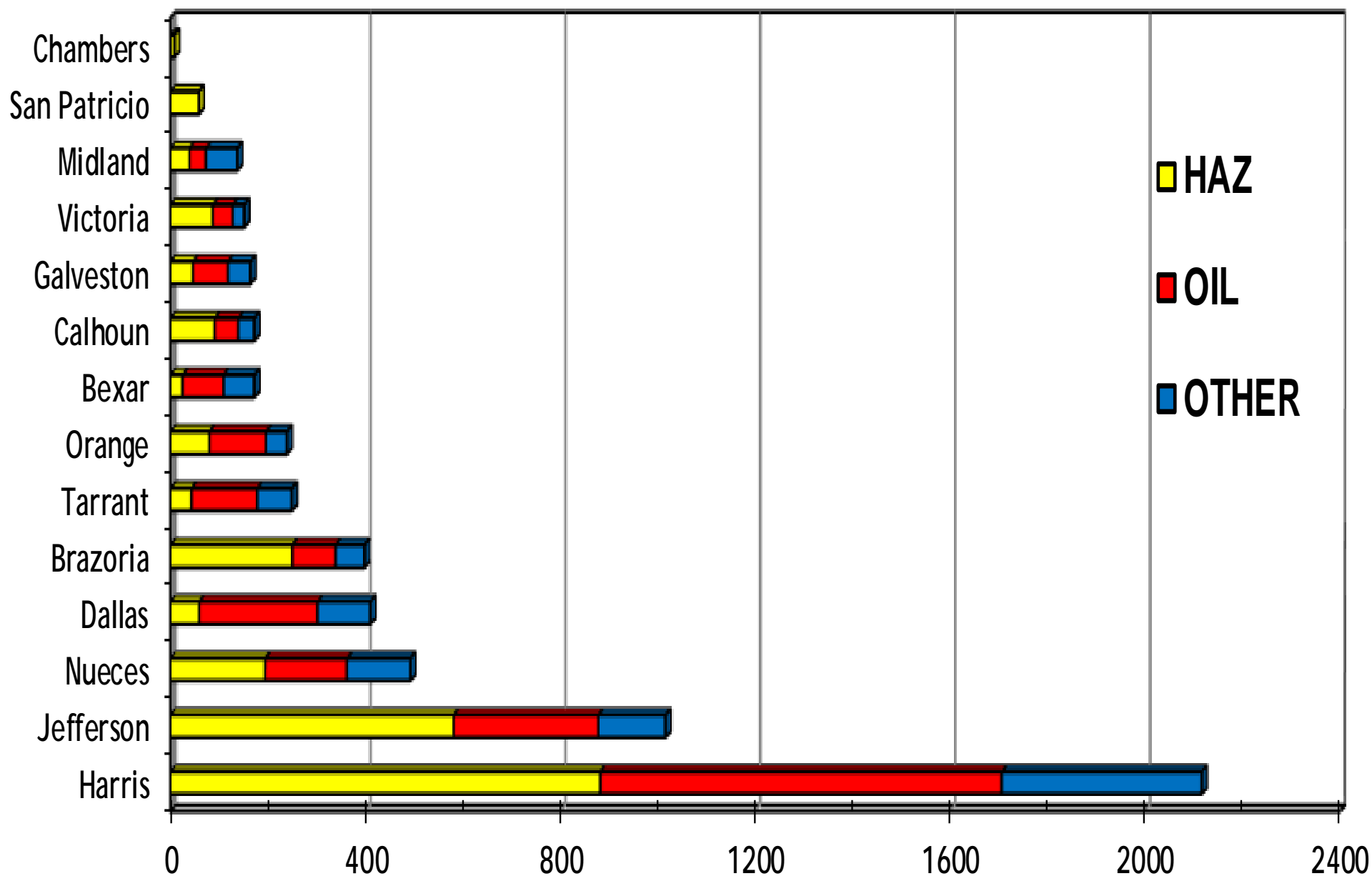








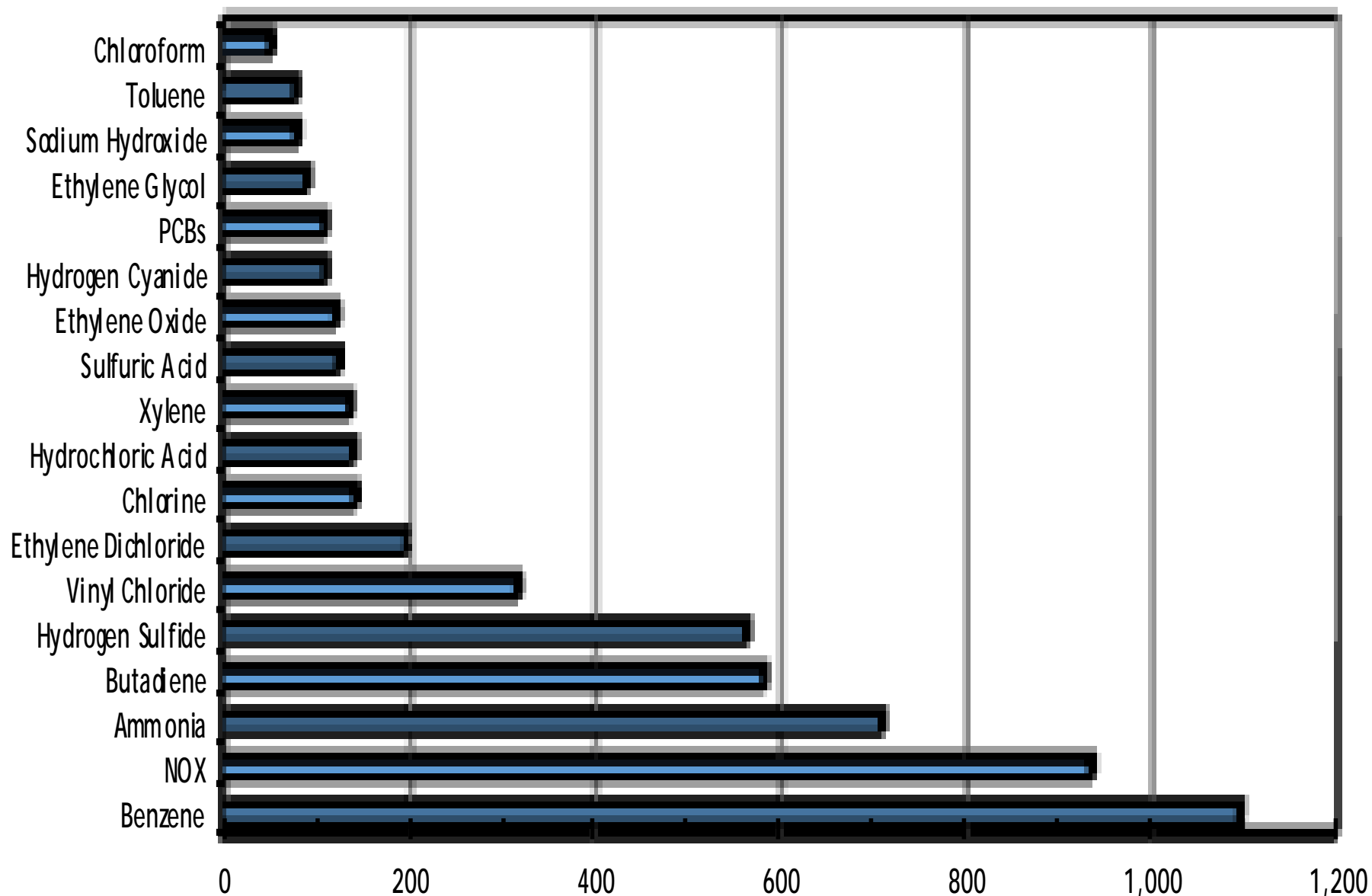




**Since 2013, more air release reports to EPA through the National Response Center have originated from Harris County (Greater Houston), Texas, than 47 States**

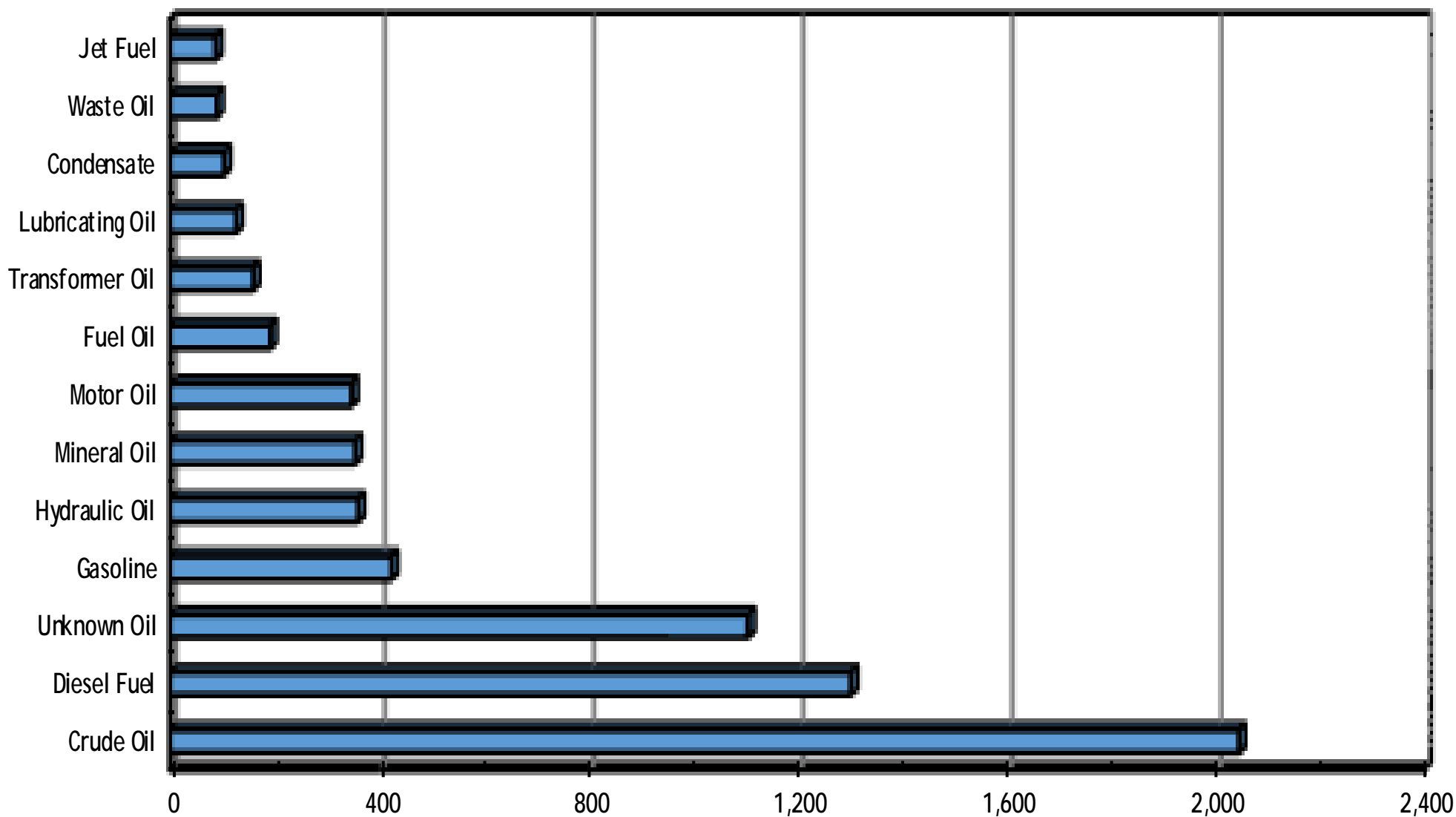


The substances listed below account for 83 % of all hazardous material releases within Region 6 since 2013

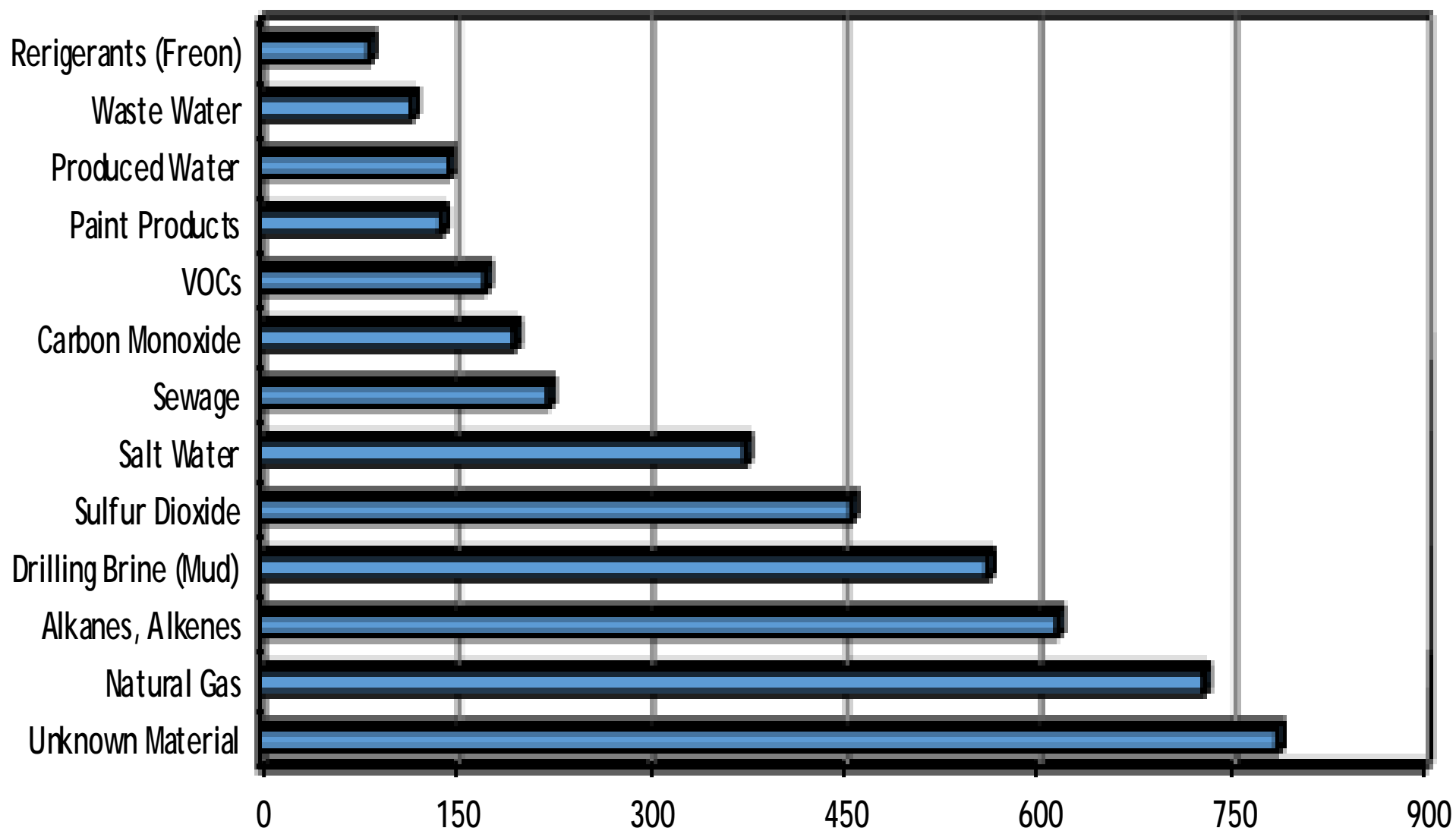




The oil / oil products listed below account for 88 % of all oil / oil product releases within Region 6 since 2013



The materials listed below account for 73 % of all other material releases within Region 6 since 2013



# Dewey Public Schools Response

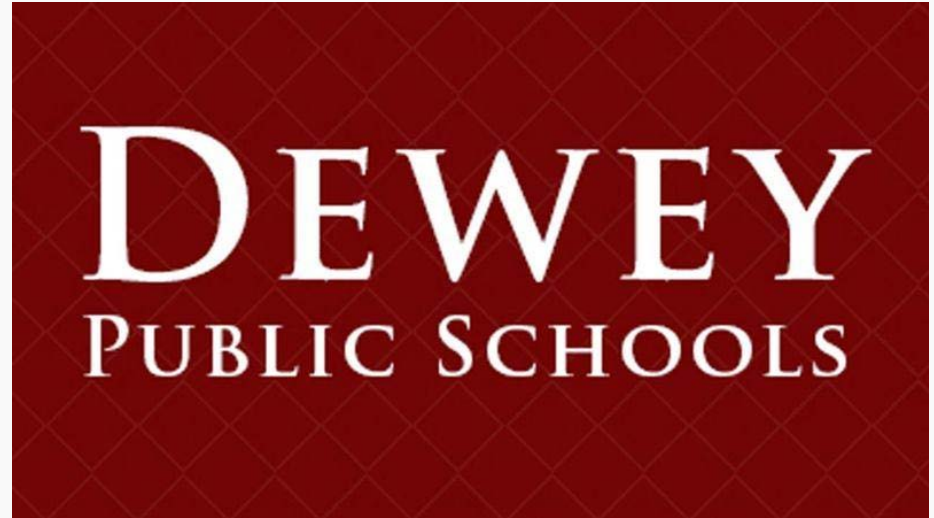
Dewey, OK  
OSC Baxter





# Dewey Public Schools

- Anonymous call to NRC on November 3, 2017
- Unknown chemical that is causing medical issues/seizures in female students
- Former smelter area that had been remediated
- ODH tested for black mold and bacteria in water supply - **found none**









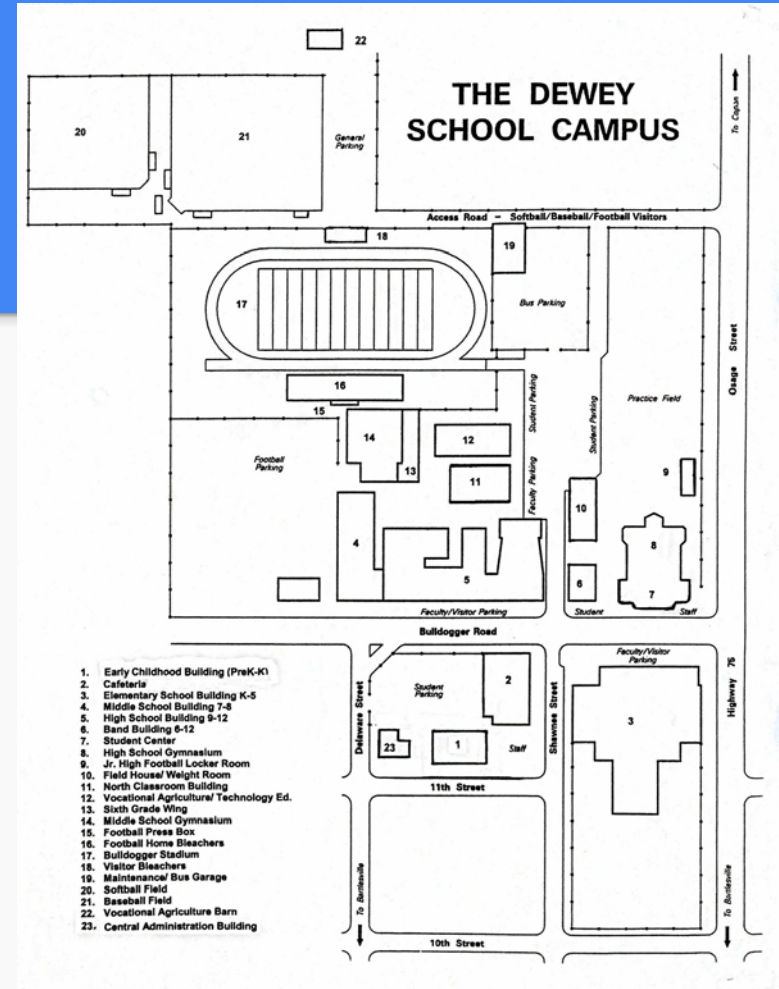
# Initial Actions & Issues

- Washington County Health Dept
- Oklahoma Dept of Health
- Agency for Toxic Substances and Disease Registry
- Pediatric Environmental Health Specialty Unit
- Oklahoma Poison Control Center
- CDC
- Requested school nurse assistance
- Inconsistent information from the symptomatic students
- 1 student diagnosed with epilepsy
- Few students diagnosed with **Conversion Disorder**
- Unable to gain access to health records or the location history of the students

# Initial Assessment

- MultiRAE
- AP2C
- Ludlum
- Lumex

Based on initial screening, we found no elevated levels of hazardous materials.



# Air & Wipe Sampling Events

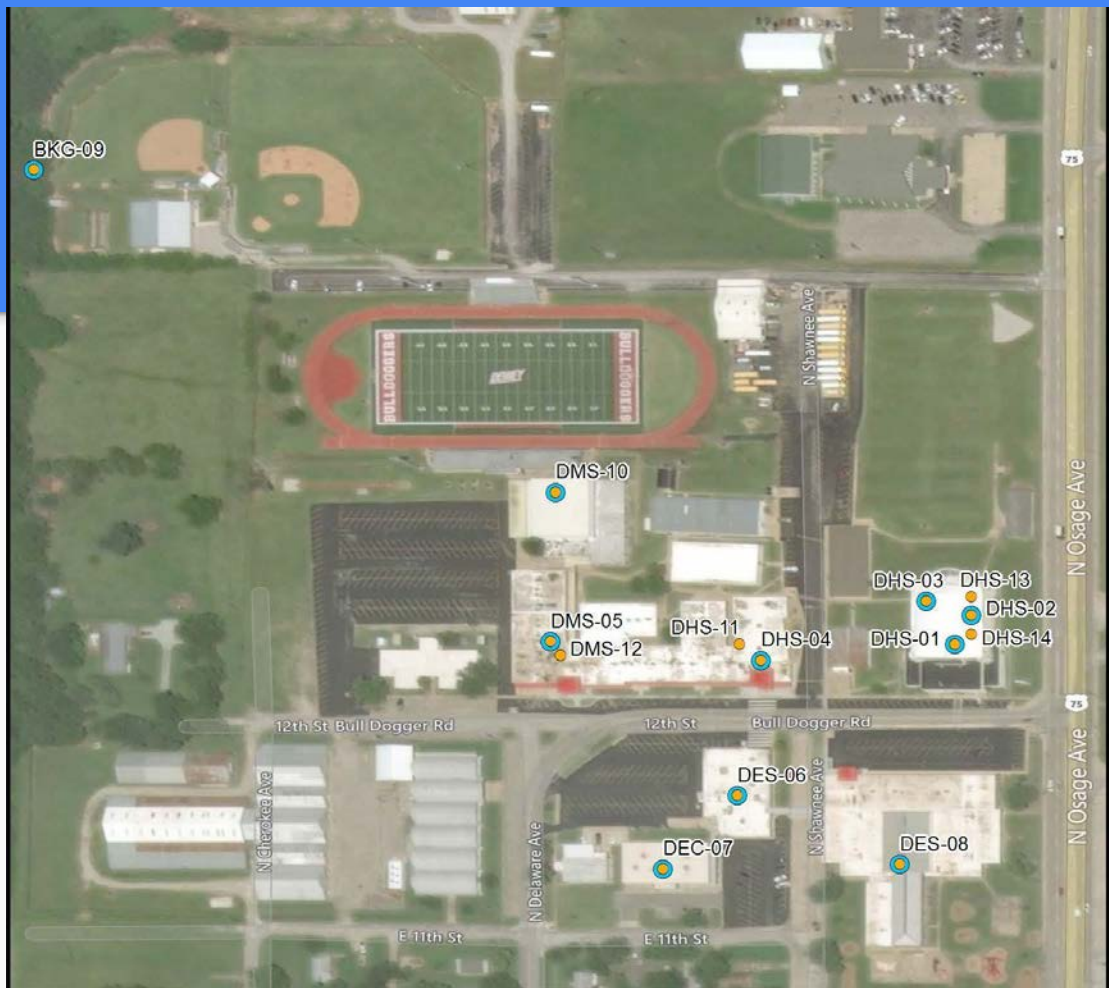


Because all of the symptomatic students were athletes, the sampling was originally focused in the gym and locker room area, but was expanded to the entire campus.

Tested for:

- SVOCs
- VOCs
- Pesticides

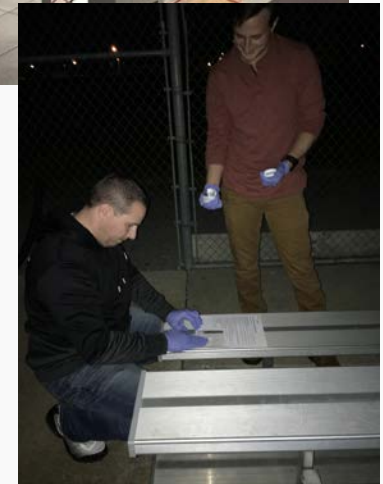




# Findings

EPA and ODEQ found no levels of chemicals most likely to cause a neurological response such as those affecting the girls at the school

Phthalates were detected in 6 out of 15 wipe samples, exceeded their cancer and non-cancer screening levels



# Similar Situations

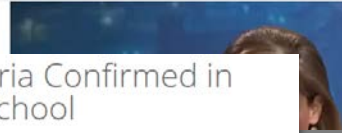
Since November 2017, I have been notified of 2 separate schools with female students exhibiting similar symptoms

- Elkhart, Kansas
- Carlisle, Texas

## Carlisle ISD concerned after some students start having seizures on campus

By: Valerie Tysanner

Updated: Dec 07, 2017 12:28 PM CST



## Mass Hysteria Confirmed in New York School

By Benjamin Radford, Live Science Contributor | June 19, 2012 06:05pm ET



MORE



Credit: Classroom photo via Shutterstock

A bizarre illness affecting nearly 20 students at a Western New York Junior-Senior High school now has an official diagnosis: mass hysteria.

Magazine

## What Happened to the Girls in Le Roy

By Susan Ormiston | March 1, 2012



## MASS HYSTERIA STRIKES 600 GIRLS AT MEXICAN BOARDING SCHOOL



For months, doctors have studied a mysterious disease that has afflicted 600 girls at a Mexican boarding school, leaving victims nauseated, feverish and sometimes unable to walk.

Their conclusion: the girls are suffering from a mass psychogenic disorder, known more prosaically as [mass hysteria](#).

# Pawhuska High School ER

## August 14, 2017 - EPA Activation


621 East 15<sup>th</sup> Street, Pawhuska, OK 74056

### VAPOR SEEP / SCHOOL IMPACT ER ASSESSMENT

OSC Adam Adams

**EPA Objectives:** EPA responded at the request of Oklahoma to assess indoor and outdoor air quality relative to unknown vapor seeps at the north and south entrances/exits. EPA was requested to assess soil at the softball field





# Pawhuska High School ER Responding Agencies / Technical Workgroup / Unified Command

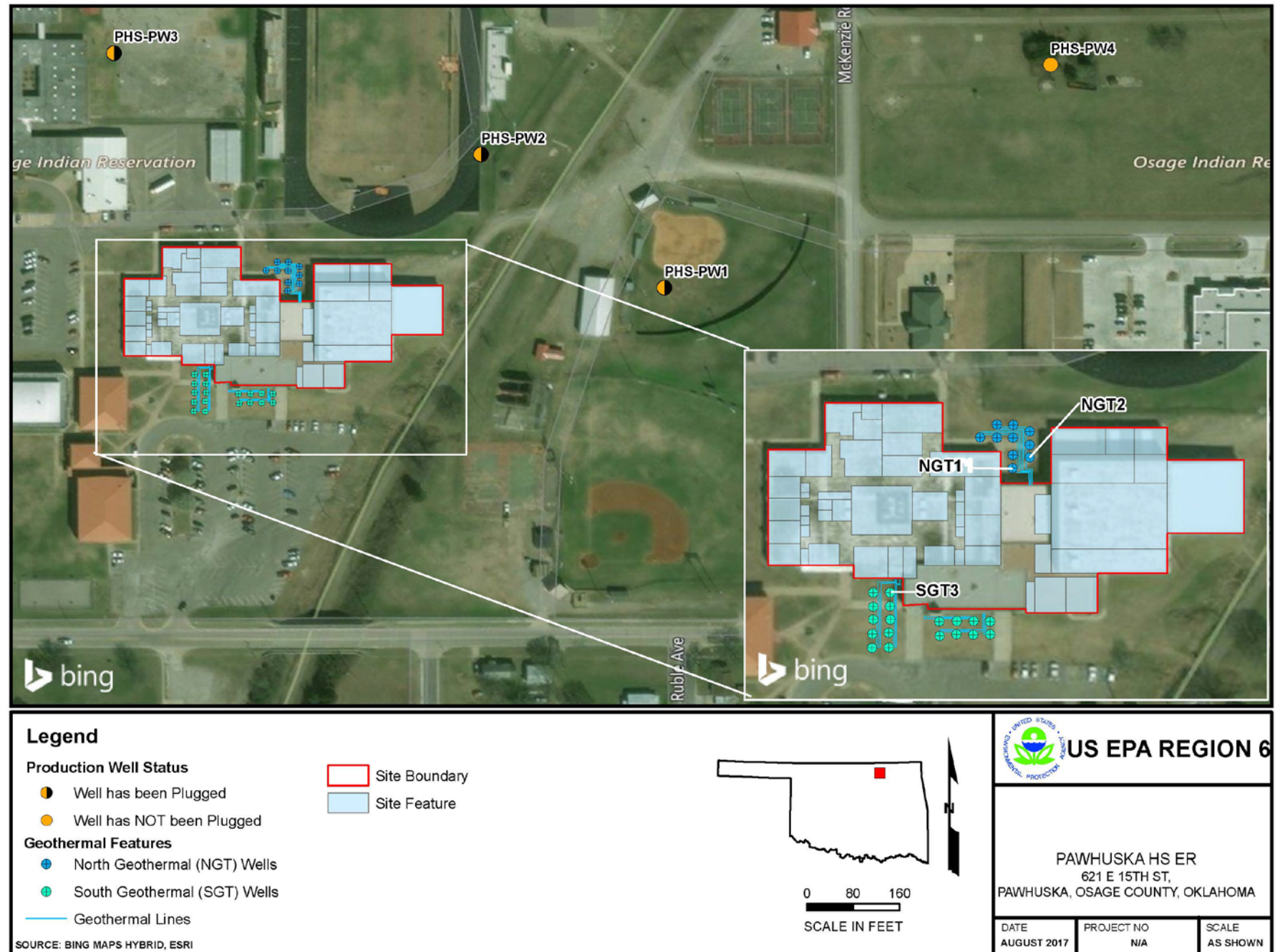
- Oklahoma
  - OEE, OCC, Office of Emergency Management, OWRB, Oklahoma Fire Marshall, ODH, OU Health Science Center
- Osage Nation
  - Osage Chief, Osage Congress, Osage Mineral Council
- Pawhuska School Board
  - Superintendent, Principals, Vice Principals, etc
- BIA, BLM
- CDC, ATSDR
- EPA



# Pawhuska High School ER Toxicity Summary

- All air sampling results were BELOW screening levels used by the U.S. Environmental Protection Agency for chemicals of concern.
- The air sampling results were compared to the EPA Regional Screening Levels for residential air.
- Screening levels are used when a situation is initially investigated to determine if potentially harmful levels of chemicals are present that warrant further investigation.
- The screening levels are developed using default exposure factors and toxicity factors associated with the chemicals of potential concern.
- Exposure factors are things such as how much air a person breaths in a day.
- Toxicity factors describe the harm a certain amount of a chemical could potentially cause.

# Pawhuska High School ER Site Map





# Pawhuska High School ER

## ■ EPA Task 1:

### ■ Air monitoring (daily)

- Indoors (high school)
- Outside
  - North Geothermal well area (NGT)
  - South Geothermal well area (SGT)
  - Softball field, right field

## ■ Air Monitoring

- TVA-1000 PID/FID
- 4 Gas MultiRae Plus (Oxygen, Volatile Organic Compounds (VOC's), Hydrogen Sulfide, Lower Explosive Limit (LEL))

### ■ Indoors – Breathing zone 3 to 5 feet above ground

### ■ Outside – Breathing zone 3 to 5 feet above ground

- NGT – Breathing zone and 2 feet above upper extent of NGT1 and NGT2 in excavations and 0 to 3 inches above ground surface at all other NGT locations.
- SGT – Ground level to 3 inches above ground (no pits)
- Softball Field – Ground level to 3 inches above ground (no pit)



# Pawhuska High School ER Air Monitoring Locations

# Pawhuska High School ER – Air Monitoring

- EPA Daily Air Monitoring (08/15 – 21/17) for Volatile Organic Compounds (VOC's):
- **High School Indoors** (maximum VOC measurement during this period): 1.77 ppm
- **High School Outside** (maximum measurements during this period):
  - North Geothermal well (NGT) area (0 to 3 inches, not including NGT 1 and 2) – 3.83 ppm
  - NGT 1 and NGT 2 excavated pits (2 feet above seep) – 9,600 ppm
  - NGT 1 and NGT 2 excavated pits (breathing zone) – 78 ppm
  - South Geothermal well (SGT) area (0 to 3 inches, not including SGT 3) – 79 ppm
  - SGT 3 (0 to 3 inches) – 4,800 ppm
  - High School Perimeter (0 to 3 inches) – 2.08 ppm
  - Softball field, right field, previously plugged well – 9,400 ppm
  - Just north of practice field, not a plugged well (0 to 3 inches) – 60,000 ppm
- **Note:** LEL for methane is 50,000 ppm / TLV for methane is 1,000 ppm



# Pawhuska High School ER Air Monitoring Guidance for Methane

- **National Institute of Occupational Safety and Health (NIOSH).** The Threshold Limit Value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) is the level to which a worker can be exposed day after day for a working lifetime without adverse effects. The NIOSH TLV for methane is 1,000 ppm.

## Methane – Characteristics and Hazards

- **Methane gas.**
  - Colorless, odorless gas that is lighter than air, and flammable.
  - The explosive limits of methane gas are 5 to 15 %volume, which would be 50,000 to 150,000 ppm.

# Pawhuska High School ER

## ➤ EPA Task 2:

### ➤ Air Sampling (8/17/17)

- Indoors (high school)

- Outside

- NGT, SGT, and Background

## ➤ Air Sampling – Summa Canisters

- 8 Hour samples collected at 3 to 4 feet above ground

- 6 Samples inside the high school

- 3 Samples and 1 duplicate (co-located) sample outside

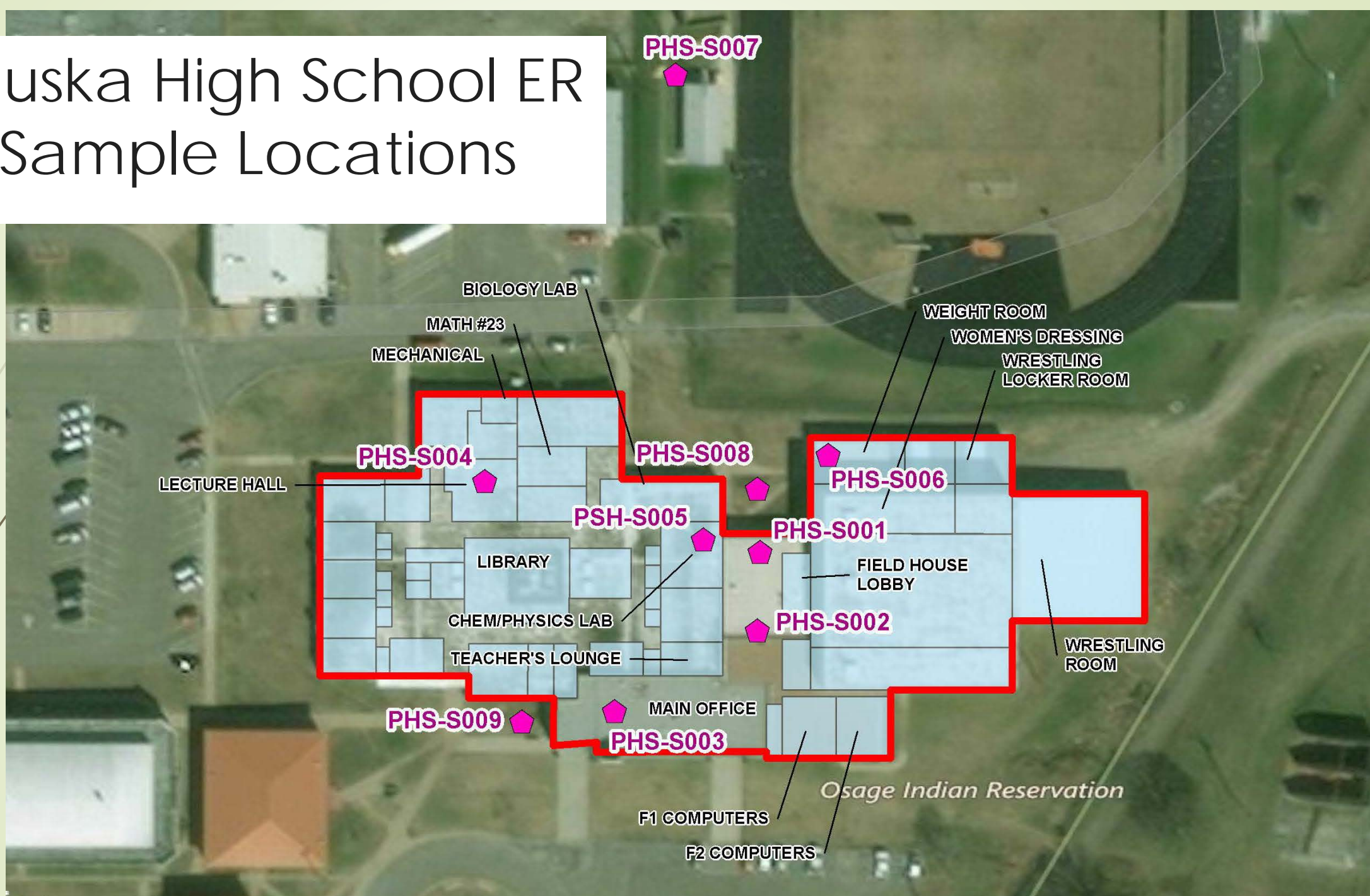
### ➤ Methods of Sample Analysis

- TO 18m – Methane, Ethane, Propane, Butane, and Pentane

- TO 15 – 62 Volatile Organic Compounds (VOC's)



# Pawhuska High School ER Air Sample Locations





# Pawhuska High School ER Air Sampling Methods and Results

- EPA Air Sampling (08/17/17) for gases (EPA Method 18 Mod/EPA EPA 25 Mod) and Volatile Organic Compounds (VOC's), (Method TO-15 VOA EXT. List):
- **EPA Method 18 Mod/EPA EPA 25 Mod includes methane, ethane, propane, butane, and pentane:** All results were non-detect except for methane in the sample and co-located duplicate sample between NGT1 and NGT2. Results were 12.31 ppm and 10.1 ppm respectively. Out of 5 volatile organic compounds analyzed, only methane was detected.
- **Method TO-15 (for 62 volatile organic compounds (VOC's)):**
  - Out of the 62 volatile organic compounds analyzed, 48 compounds were not detected during analysis. Fourteen compounds were above the Method Detection Limits (MDLs) for the analysis and below EPA Regional Screening Levels (RSL's).
  - EPA Regional Screening Levels (RSL's) are risk-based concentrations derived from standardized equations combining exposure information assumptions with the latest EPA toxicity data. RSLs are considered by the Agency to be protective for humans (including sensitive groups) over a lifetime.

# Pawhuska High School ER Air Sampling Results

**Air Sampling Results Summary**

Analyte	Number of Detections	Maximum Detection	RSL	TLV	PEL	Units
Methane	2	12.31	---	1000	---	ppm
Dichlorodifluoromethane	10	0.000610	0.00238	---	---	ppm
Trichlorofluoromethane	10	0.002980	---	1000	---	ppm
Pentane	10	0.021640	0.03389	---	---	ppm
Acetone	10	0.011300	1.34711	---	---	ppm
Methylene Chloride	1	0.000660	0.01813	---	---	ppm
Trans-1,2-Dichloroethene	6	0.000650	---	---	200	ppm
Hexane	10	0.004530	0.02071	---	---	ppm
2-Butanone	10	0.002500	0.17634	---	---	ppm
Benzene	2	0.000270	0.00097	---	---	ppm
Heptane	10	0.001040	0.01025	---	---	ppm
Toluene	10	0.000650	0.13800	---	---	ppm
Octane	3	0.000360	---	---	300	ppm
m/p-Xylene	2	0.000230	0.00230	---	---	ppm
1,2,4-Trimethylbenzene	2	0.000210	0.00128	---	---	ppm

The additional 52 analytes were not detected at the reporting limit.

RSL = Regional Screening Level

TLV = Threshold Limit Value

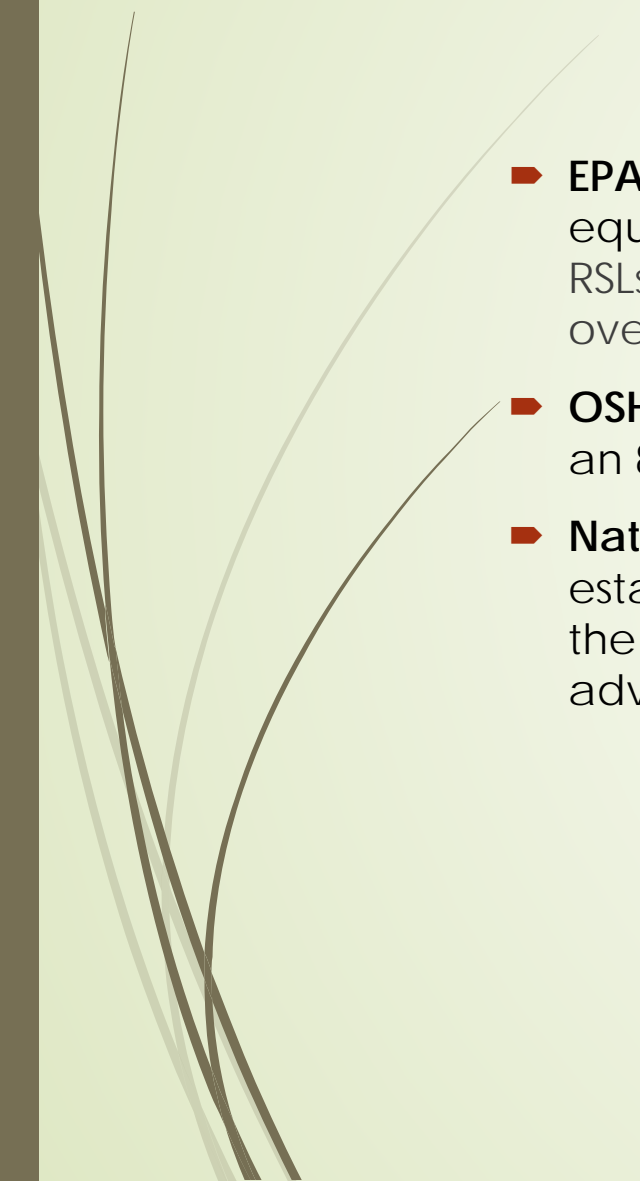
PEL = Permissible Exposure Limit

ppm = Parts Per Million





# Pawhuska High School ER Exposure Guidance Levels

- ▶ **EPA Regional Screening Levels (RSL's):** Risk-based concentrations derived from standardized equations combining exposure information assumptions with the latest EPA toxicity data. RSLs are considered by the Agency to be protective for humans (including sensitive groups) over a lifetime.
  - ▶ **OSHA Permissible Exposure Limit (PEL):** Maximum allowable amount in a workroom during an 8-hour work day in a 40-hour work week.
  - ▶ **National Institute of Occupational Safety and Health (NIOSH):** The Threshold Limit Value (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) is the level to which a worker can be exposed day after day for a working lifetime without adverse effects.
- 



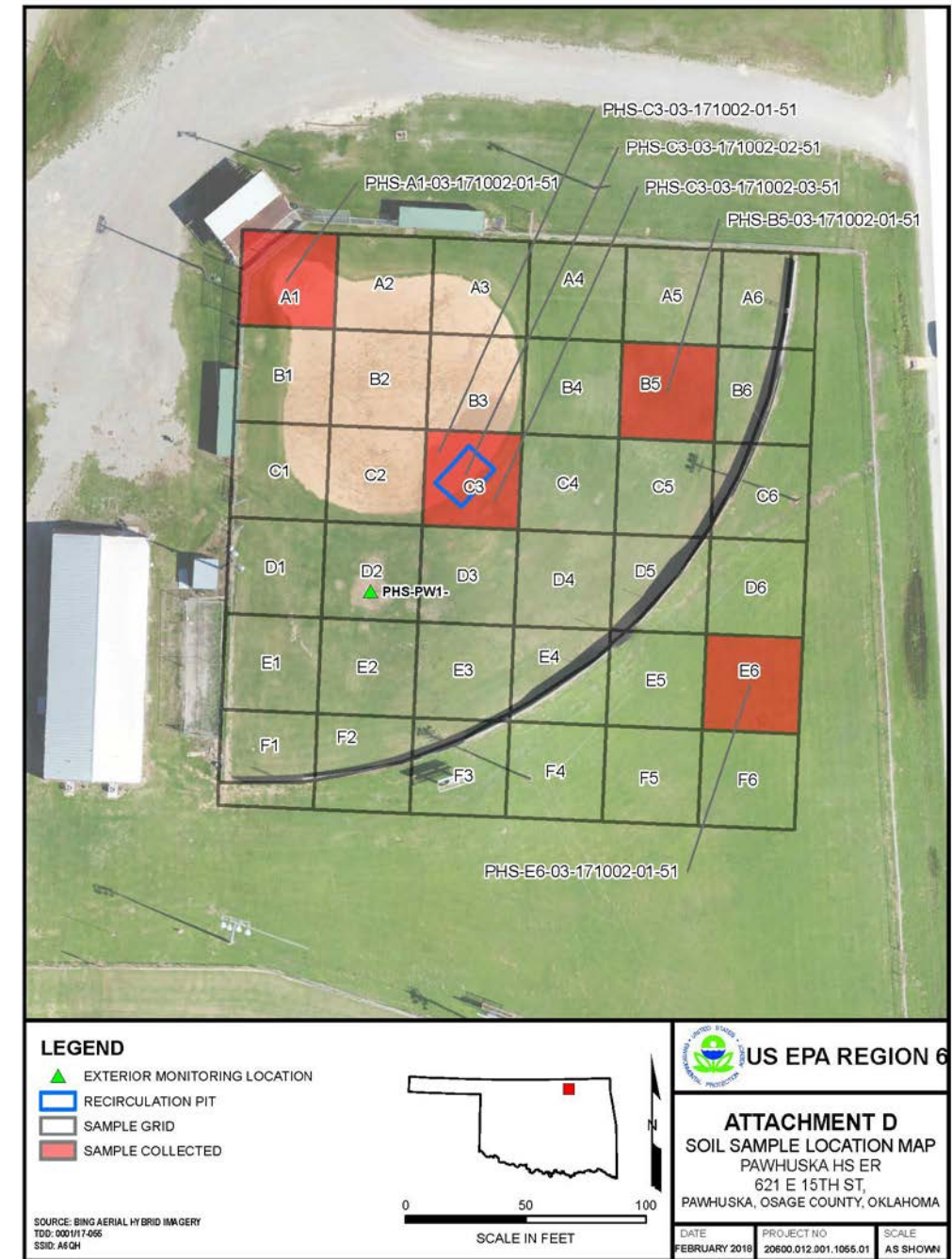
# Pawhuska High School ER

In addition to EPA air monitoring and air sampling, additional operations included:

- **August 22, 2017, EPA Air monitoring:** EPA conducted air monitoring at adjacent school facilities (Jr High and Elementary School) and nearby Indian Camp School. All air measurements were below 6 ppm with the only exception being measurements of 40 ppm near the newly installed gas stove in the kitchen of the elementary school (the school would address this separate from this response).
- **August 28, 2017, Ventilation System:** Oklahoma completed installation of ventilations systems for the two geothermal well areas, following an intergovernmental agreement between the Osage Nation and State of Oklahoma.
- **September 13, 2017, Plug of Softball field well completed:** Osage Mineral Council completed plugging of the well in the softball field.
- **September 22, 2017, Softball field Soil:** The technical workgroup requested EPA conduct soil samples of the softball field soil due to concerns following the well plugging effort and due to air pockets bubbling up in the flow-back pit.
- **October 2, 2017, EPA Soil Sampling:** EPA collected soils samples, and found the only results above the EPA RSL were for Arsenic. Oklahoma soil data reported in the Oklahoma State University Division of Agricultural Sciences and Natural Resources Oklahoma Cooperative Extension Service publication "Background Metal Concentrations in Oklahoma Soils" (2014), shows naturally occurring elevated levels of arsenic in Osage County and throughout Oklahoma, consistent with the EPA soil sample arsenic results.

# Pawhuska High School ER

- EPA Task 3:
- Soil Sampling (10/02/17)
  - Softball field
  - 40'x40' grids; 0' to 3' deep
  - 7 composite samples (5 grabs each)
    - 3 samples plus duplicate from flow-back pit
    - 3 background samples
      - Home plate
      - Left Field
      - Southeast of Center field Fenceline
  - Analyzed for
    - Total Metals (6010B/6020A)
    - Mercury (7471B)
    - VOC's (8260B)
    - SVOC's (8270C & D)
    - TPH (TX1005)



# Pawhuska High School ER

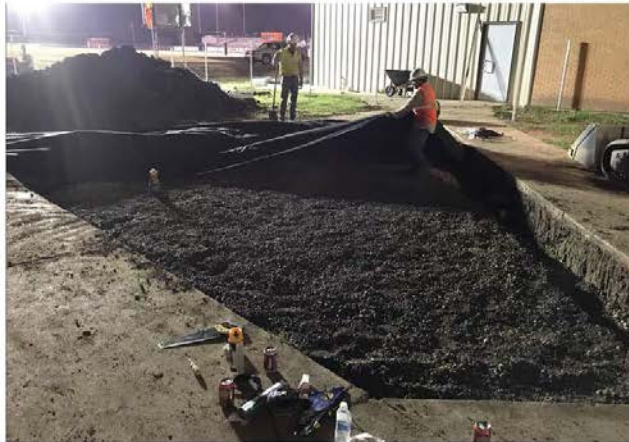
- **October 2, 2017, EPA Soil Sampling:** EPA collected soils samples, and found the only results above the EPA RSL were for Arsenic. Oklahoma soil data reported in the Oklahoma State University Division of Agricultural Sciences and Natural Resources Oklahoma Cooperative Extension Service publication "Background Metal Concentrations in Oklahoma Soils" (2014), shows naturally occurring elevated levels of arsenic in Osage County and throughout Oklahoma, consistent with the EPA soil sample arsenic results
- Arsenic **detections** were 1.9 mg/kg to 10 mg/kg.
- Oklahoma arsenic **background** concentrations range 0.75 mg/kg to 33.6 mg/kg with a median of 3.96 mg/kg.
- **Toxicology.** The soil sampling arsenic concentrations were within the target lifetime excess cancer risk range (0.68 mg/kg to 68 mg/kg) and are below the noncancer level (35 mg/kg). Therefore, the soils at the Pawhuska High School softball field are unlikely to pose a health risk.



# Pawhuska High School ER

## Geothermal well Ventilation System.

TSC ENVIRONMENTAL  
PO Box 1629  
Enid, OK 73702



OCC Gas Seep Project Pawhuska Public Schools  
August 18-29, 2017



7

TSC ENVIRONMENTAL  
PO Box 1629  
Enid, OK 73702



OCC Gas Seep Pawhuska Public Schools  
August 18-29, 2017



8



# Pawhuska High School ER

- **Softball field Air Monitoring:** Air monitoring daily (by School board with support from OCC). After months of air monitoring results and an abundance of caution, the technical workgroup proposed an area ventilation system in the softball field.
- **Softball field Ventilation System:** Oklahoma has been working with the state agencies and Osage Nation to determine the best mechanism to fund and complete installation of this system.
- **EPA continues to be available to the State of Oklahoma to provide assistance and technical support for this response.**

# Pawhuska High School ER

- **Summary of Emergency Response.**
- **Indoor air:** EPA found no hazardous air quality conditions in the school in August of 2017 from air monitoring and sampling conducted.
- **Outdoor air:** EPA found hazardous conditions (FID VOC's up to 60,000 ppm; PID VOC's <2 ppm) at ground level at well (PW4) located on the north side of the practice football field. This well was completed by the operator after this response.
- **Softball field soil:** EPA found no chemicals above EPA RSL's or state background concentrations.
- **School Geothermal Well ventilations;** Oklahoma installed.
- **School Softball field well:** Plugged by Osage Mineral Council.
- **School Softball field air monitoring:** Conducted by the School with support by OCC.
- **School Softball field ventilation:** TBD; In the works.
- Any questions?

OSC Adam Adams / Presented May 17, 2018



# U.S. Coast Guard District 8



## Federal On-Scene Coordinator (FOSC) Reports









# Sector Corpus Christi

Captain Edward Gaynor

Sector Commander



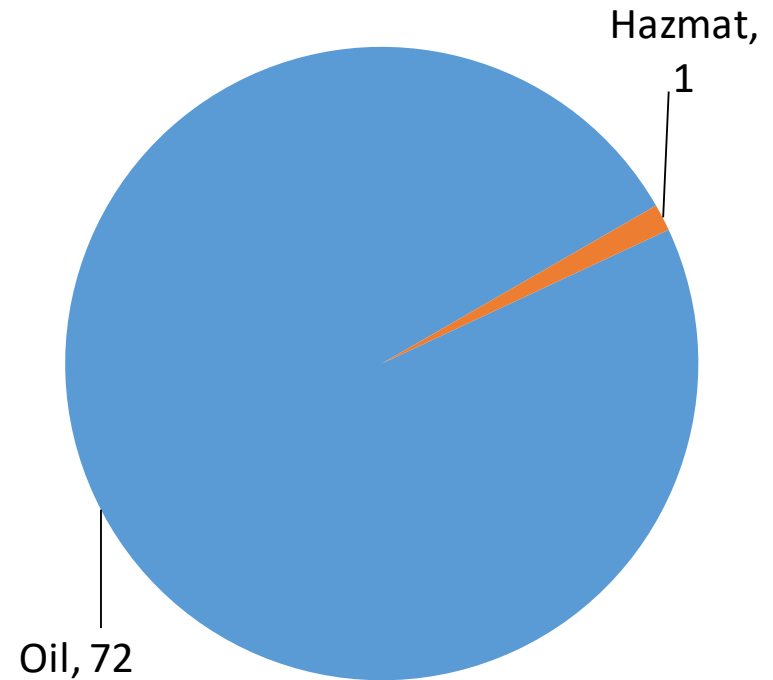
NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
73	0 Surface Washing Agents 0 In-situ Burns 0 Dispersants	3	0



# NRC Notifications

- **Oil discharge:** reports up 67% since last RRT meeting (43)
- **Hazmat release:** reports down 83% since last RRT meeting (6)

Breakdown of Reports

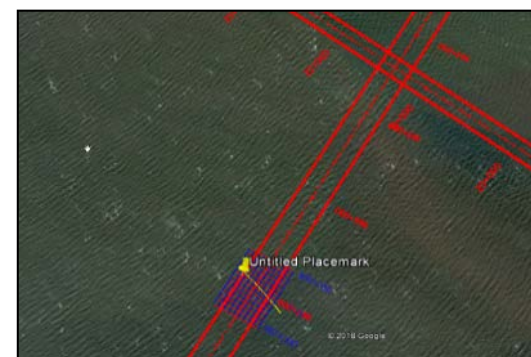




# Dredge/Pipeline Incident



<b>Date:</b>	17APR2018
<b>Type and amount of product spilled:</b>	Potential Natural Gas Condensate: 13,200 barrels Potential Diesel: 19,000 gallons
<b>Cause of spill:</b>	Dredge JONATHAN KING BOYD struck a natural gas pipeline while attempting to spud down the barge.
<b>Key operational activities:</b>	11 crewmembers were safely removed from dredge. ICP established. RP responded and contracted w/ local fire dept, salvors, & OSRO. Pipeline repairs pending.
<b>Agencies Involved:</b>	Multi-agency response including responders from TGLO, USCG, & TXRRC.
<b>Major lessons learned:</b>	Lack of offshore fire fighting assets continues to be a major concern for responders in the Corpus Christi area.





# Consultations

Start	Stop	With	Phase- Planning (P) Response (R)	For	Species (Common Name)	Listing Status	Cost
10/27/2017	04/05/2018	DOI/ USFWS & DOC/NMFS & SHPO	R	Barge B No 255 Fire	Multiple	ESA/EFH	\$2,638
GRAND TOTAL							\$2,638

[REIMBURSABLE STANDARD RATES](#)





# Accomplishments



## Training

Description	Dates
Oiled Wildlife Rehabilitation	09 FEB 2018
Marine Well Containment	15 FEB 2018
Union Pacific Railcar Emergency Response	22 FEB 2018
Oil and Gas Geo Database	27 FEB 2018

## Exercises/Workshops

Description	Dates
MEXUSGULF Seminar	14 MAR 2018
GIUE	27 MAR 2018
PREP Notification Drill	05 JAN & 06 APR 2018
Hurricane Seminar	02 MAY 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-6 Meeting	08-09 NOV 2017
TX Statewide AC Meeting	15 NOV 2017
Clean Gulf Conference	05-07 DEC 2017
STCZAC Meeting Corpus	23 JAN 2018
LEPC Meeting	22 FEB & 02 MAY 2018
STCZAC Meeting Port Lavaca	24 APR 2018



# Outlook



## Training

Description	Dates
PR college	25-29 JUN 2018
NDOW training	26 JUN 2018
ICS-300	15-18 MAY 2018

## Exercises/Workshops

Description	Dates
PREP Notification Drills	JUL & OCT 2018
Q3 GIUE	JUN 2018

## Federal, state, and local planning and coordination efforts

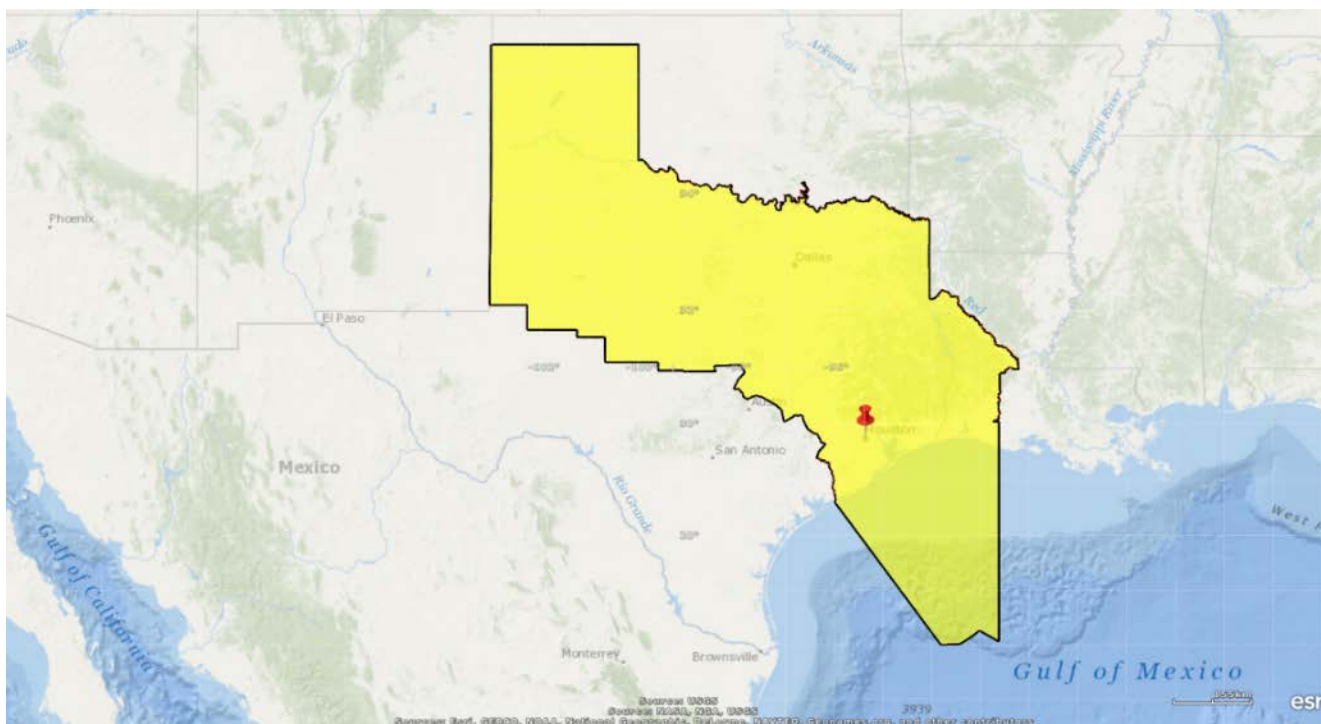
Description	Dates
NDOW Quarterly Meeting	27-28 JUN 2018
LEPC	03 JUL & 04 SEP 2018
STCZAC Meeting Corpus	24 JUL 2018
STCZAC Meeting Brownsville	23 OCT 2018
RRT-6 Meeting	08-09 NOV 2018



# Sector Houston-Galveston



**Captain Kevin Oditt**  
**Sector Commander**



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
155	00 Surface Washing Agents 00 In-situ Burns 00 Dispersants	3	4



# Executive Summary

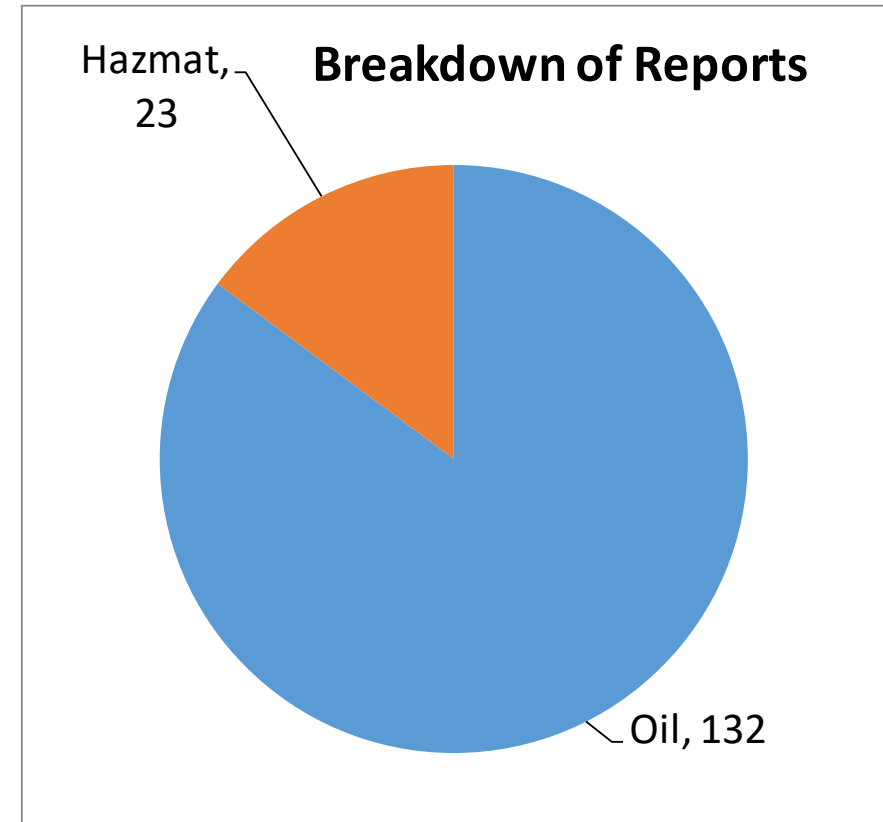
<b>Challenges-</b>	FOSC Response Posture for Air Releases in the Coastal Zone
<b>Lessons Learned-</b>	<p>1) EPA will typically serve as lead FOSC.</p> <p>2) CG may assume lead FOSC if:</p> <ul style="list-style-type: none"><li>- The CG has regulatory authority under CERCLA/CWA; OR</li><li>- There is a direct maritime nexus and/or COTP/OCMI authorities apply; OR</li><li>- There is a substantial/imminent threat to the public health/welfare, where timely on scene presence is critical and assistance is requested by EPA.</li></ul>
<b>Best Practices-</b>	If not the lead FOSC, CG should investigate and monitor the incident, coordinate notifications and response efforts, and exercise other authorities as applicable.





# NRC Notifications

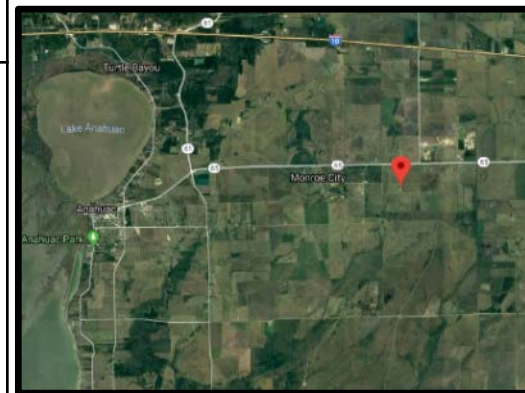
- **Oil discharge:** Reports remain the same since last RRT meeting (133)
- **Hazmat release:** Reports down 67% since last RRT meeting (70)





# RRT Activation / Notification

<b>Date:</b>	04 FEB 2018	<b>Activation</b>		<b>Notification</b>	
<b>Incident Name:</b>	Anahuac Response				
<b>Issue / Concern:</b>	An underground oil line ruptured, filling a ditch leading to Double Bayou tributary with crude oil. The RP implemented minimal response actions and made decisions without consulting USCG or State representatives (i.e. decanting water into Double Bayou without proper approval, building ineffective dams that failed to stop the continual discharge into Double Bayou, and allowing sheening to continue along the Bayou for several days).				
<b>Agencies Involved:</b>	Texas Railroad Commission, USCG, & EPA				
<b>Decisions Made:</b>	<p>EPA collaborated with USCG and USCG filled lead FOSC role. An Admin Order was issued to the RP directing the following:</p> <ol style="list-style-type: none"><li>1) Place physical barriers in the ditch to prevent further discharge into Double Bayou</li><li>2) Maintain physical barriers, boom, &amp; dams in good condition for the remainder of cleanup</li><li>3) Submit a plan to address cleanup of heavily contaminated soil</li><li>4) Remove/clean all oiled debris located in Double Bayou.</li></ol> <p>Cleanups were completed seven days after the initial discharge.</p>				



*Incident Location*



*Photo*



# Consultations

Start	Stop	With	Phase- Planning (P) Response (R)	For	Species (Common Name)	Listing Status	Cost
	Nothing to Report						
GRAND TOTAL							

[REIMBURSABLE STANDARD RATES](#)



# Accomplishments



## Training

Description	Dates
NOAA Science of Oil Spills	26-30 MAR 2018
NOAA Shoreline Cleanup Assessment Technique	24-26 APR 2018

## Exercises/Workshops

Description	Dates
MEXUSGULF Seminar	14 MAR 2018
NDOW Hurricane Exercise	11-13 APR 2018
BSEE Tabletop GIUE	08 MAY 2018
USCG GIUEs	24 APR, 01 & 10 MAY 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-6 Meeting	08-09 NOV 2017
Statewide Area Committee Mtg	15 NOV 2017
Clean Gulf Conference	04-08 DEC 2017
CTCAC Meeting	05 DEC 2017 01 MAR 2018
Incident Commander Meeting (Marathon, Texas City Quarterly Meeting)	05 APR 2018





# Outlook



## Training

Description	Dates
FOSC Representative School	07-18 MAY 2018
Pollution Responder School	18-29 JUN, 18-29 AUG 2018

## Exercises/Workshops

Description	Dates
USCG GIUE	MAY, JUN 2018
BP Exercise	31 OCT – 01 NOV 2018
Marathon Exercise	06-08 NOV 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
CTCAC Meeting	JUN, SEP 2018
RRT-6 Meeting	08-09 NOV 2018



# MSU Port Arthur



**Captain Jacqueline Twomey**  
**MSU Commanding Officer**



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
148	0 - Surface Washing Agents 0 - In-situ Burns 0 - Dispersants	7	3



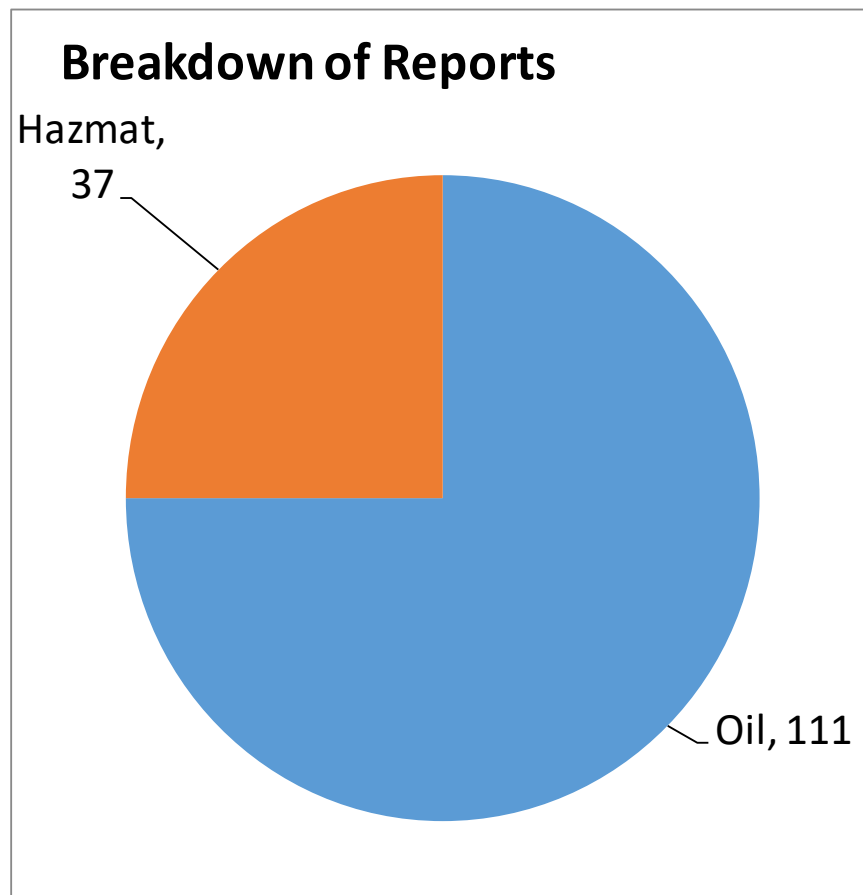
# Executive Summary

<b>Challenges-</b>	Old CG & TCEQ (TNRCC) MOA
<b>Lessons Learned-</b>	NSTR
<b>Best Practices-</b>	NSTR



# NRC Notifications

- **Oil discharge:** reports down 34% since last RRT meeting **(169)**
- **Hazmat release:** reports down 54% since last RRT meeting **(37)**







# Drums and Drugs



<b>Date:</b>	April 3-5, 2018
<b>Type and amount of product spilled:</b>	Two containers, potential release (four kgs of cocaine & seven lbs of marijuana)
<b>Cause of spill:</b>	Containers washed up on beach, posing substantial threat to public and environment
<b>Key operational activities:</b>	Separate, but coordinated ops. Level B PPE for unknown hazard and field hazard classification for general profile of substance in containers
<b>Agencies Involved:</b>	USCG (IMD & LE), USFWS, TPWD, TCEQ, & Jefferson County Sheriff
<b>Major lessons learned:</b>	Wash ups of drugs historically peak during the spring. An increase in reports of drum wash ups may be a good indicator of an increased probability of drug wash ups. Treat drug wash ups as you would a hazardous material incident. Drugs are frequently mixed with fentanyl, lethal doses of which can be easily absorbed through the skin



*Incident Location*



*Photo*



# Consultations

Start	Stop	With	Phase- Planning (P) Response (R)	For	Species (Common Name)	Listing Status	Cost
	Nothing to Report						
GRAND TOTAL							

[REIMBURSABLE STANDARD RATES](#)



# Accomplishments



## Training

Description	Dates
Keystone Pipeline Overview	09 MAR 2018
Science of Oil Spills	27-29 MAR 2018
Oiled Marine Mammals Seminar	29 MAR 2018
SCAT Course	24-26 APR 2018

## Exercises/Workshops

Description	Dates
GIUE PA	26 JAN 2018
GIUE LKC	05 MAR 2018
MEXUSGULF Seminar	14 MAR 2018
NDOW Hurricane FSE	11-12 APR 2018
GIUE LKC	17 APR 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-6 Meeting	08-09 NOV 2017
TX Statewide AC Meeting	15 NOV 2017
Clean Gulf Conference	04-08 DEC 2017
NDOW Harvey Hotwash	16-17 JAN 2018
USCG-TCEQ MOA Update Meeting	19 APR 2018
LA Statewide AC Meeting	02 MAY 2018



# Outlook



## Training

Description	Dates
NDOW/Spill Course	25-29 JUN 2018
NDOW Refresher	18 JUL 2018

## Exercises/Workshops

Description	Dates
GIUE PA	TBA
Dispersant Seminar	OCT 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
NDOW Quarterly Meeting	13-14 JUN 2018
AC Meeting	30 AUG 2018
RRT-6 Meeting	08-09 NOV 2018



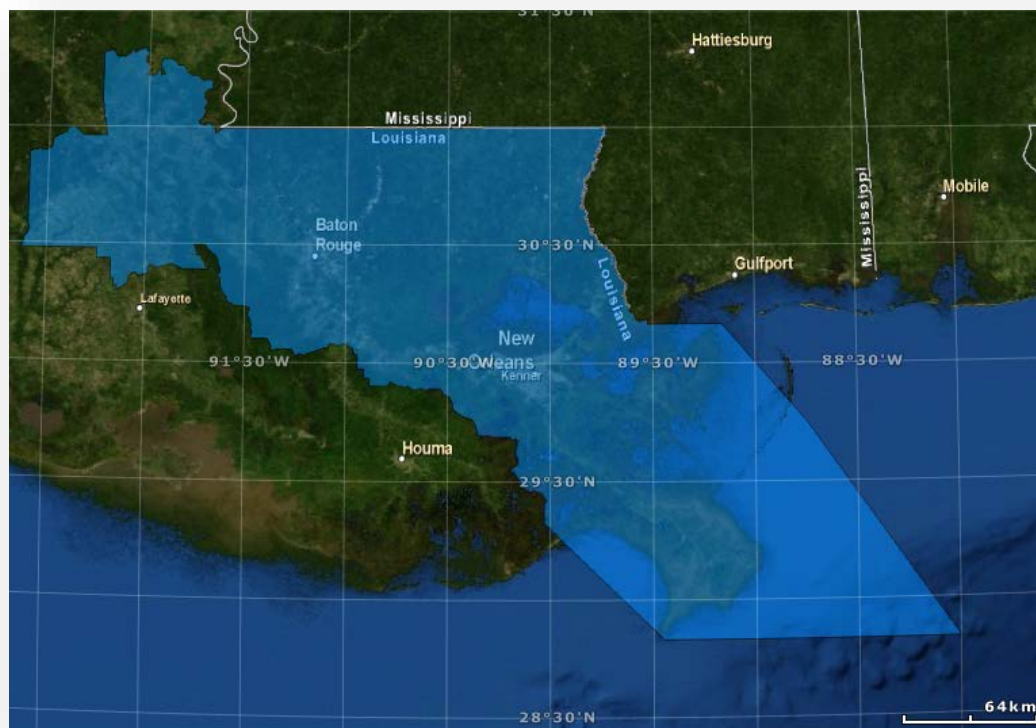


# Sector New Orleans



Captain Wayne Arguin

Sector Commander



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
285	01 Surface Washing Agents 01 In-situ Burns 00 Dispersants	05	01



# Executive Summary

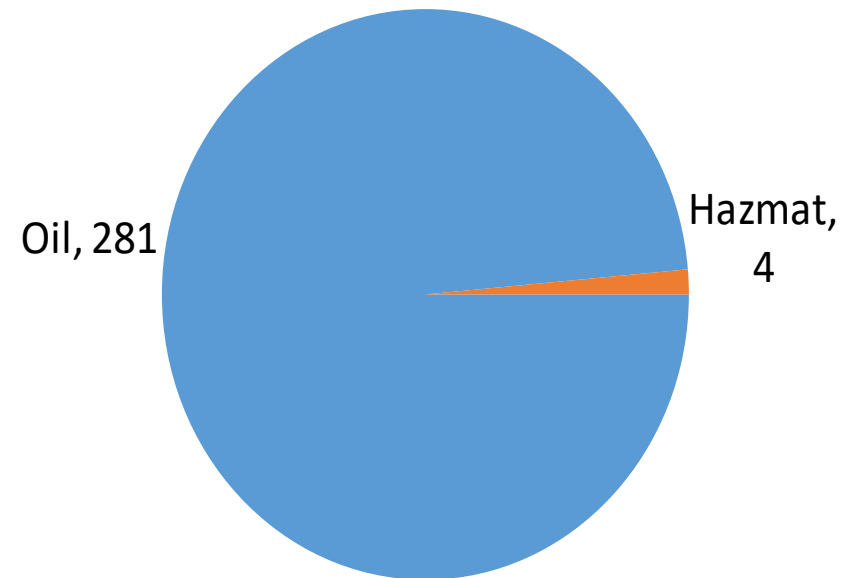
<b>Challenges-</b>	Running two significant cases simultaneously, on top of other events at Sector, causing a drain on resources
<b>Lessons Learned-</b>	<p>Need to upgrade technology to facilitate transition to ICP</p> <p>Need to incorporate more ICS processes into daily OPS</p>
<b>Best Practices-</b>	Early outreach to key stakeholders imperative



# NRC Notifications

- **Oil discharge:** reports down 19% since last RRT meeting (346)
- **Hazmat release:** reports down 66% since last RRT meeting (12)

**Breakdown of Reports**





# RRT Activation / Notification



<b>Date:</b>	22 Nov 17	<b>Activation</b>	X	<b>Notification</b>	
<b>Incident Name:</b>	XTO Energy In-Situ Burn				
<b>Issue / Concern:</b>	12 BBLs of crude oil discharged into marshland from leak in a transfer line				
<b>Agencies Involved:</b>	USCG, NOAA, LOSCO, LADEQ, & LADWF				
<b>Decisions Made:</b>	<p>Due to thick pockets of crude and density of vegetation, RP requested to conduct in-situ burn of product to protect sensitive plants from trampling during response</p> <p>-Area is under a monitoring protocol</p>				



*Incident Location*



*Photo*





# Lobo Tank Battery 12, UPDATE



<b>Date:</b>	Update 16 Apr 2018
<b>Type and amount of product spilled:</b>	<ul style="list-style-type: none"><li>- Waste Crude (Potential unk)</li><li>- No discharge occurred</li></ul>
<b>Cause of spill:</b>	During Hurricane CINDY in 2017, 'Pit Barge' sump for filled w rainfall causing 30bbl crude discharge. Operator was still using the pit barge in Mar 2018.
<b>Key operational activities:</b>	Issued Admin Order directing owner to remove barge from service and clean all oily products, which was recently completed
<b>Agencies Involved:</b>	USCG, LOSCO, LADEQ, & EPA
<b>Major lessons learned:</b>	Coordination with state partners and facility owner resulted in the removal of significant threat to the environment





# RRT Activation / Notification



<b>Date:</b>	26 Apr 18	<b>Activation</b>	X	<b>Notification</b>	
<b>Incident Name:</b>	M/V IVER EXPORTER				
<b>Issue / Concern:</b>	Requested concurrence for use of surface washing agents to conduct vessel Decontamination operations				
<b>Agencies Involved:</b>	USCG, NOAA, LOSCO, LADEQ, & LADWF				
<b>Decisions Made:</b>	<p>RRT concurred w/ use of surface washing agents for Decontamination operations.</p> <p>UC had as contingency response option. Did not employ surface washing agents.</p>				





# Consultations

Start	Stop	With	Phase- Planning (P) Response (R)	For	Species (Common Name)	Listing Status	Cost
11/30/2017	12/4/2018	DOI/ USFWS & DOC/NMFS & SHPO	R	XTO POINT NORTHE ISB	BALD EAGLE	ESA	\$516
3/26/2018	3/28/2018	DOI/ USFWS & DOC/NMFS & SHPO	R	KIRBY BIODIESEL SPILL	WEST INDIAN MANATEE PALLID STURGEON	ESA	\$188
04/13/2018	05/08/2018	DOI/ USFWS & DOC/NMFS & SHPO	R	PAC ANTARES spill	WEST INDIAN MANATEE PALLID STURGEON	ESA	\$376
4/23/2108	4/25/2018	DOI/ USFWS & DOC/NMFS & SHPO	R	IVER EXPORTER	WEST INDIAN MANATEE PALLID STURGEON	ESA	\$226
<b>GRAND TOTAL</b>							<b>\$1306</b>

[REIMBURSABLE STANDARD RATES](#)



# Accomplishments



## Training

Description	Dates
Sea Grant Offshore Spill Response	09 JAN 2018
Salvage and Marine FF Training/Exercise	08 MAR 2018

## Exercises/Workshops

Description	Dates
NDRP Workshop	12 MAR 2018
MEXUSGULF Seminar	14 MAR 2018
Exxon Pipeline WCD Ex	22 MAR 2018
GIUE	31 JAN 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-6 MEETING	08-09 NOV 2017
Clean Gulf Conference	04-08 DEC 2017
Area Committee Meeting	24 JAN 2018
Clean Waterways Conference	04-05 APR 2018
State-Wide Area Cmte Mtg	02 MAY 2018
LEPC Mtgs – Plaquemines, St. Bernard, St. Tammany, St. Charles, Jefferson	Monthly





# Outlook



## Training

Description	Dates
Clean Gulf Associates	24 JUL 2018

## Exercises/Workshops

Description	Dates
Chevron Full-Scale	15-18 May 2018
NDRP Full-Scale	Pends
St. Charles Parish Hurricane Summit	31 May 2018
Pipeline Emergency Responder Initiative	06 JUN 2018
GIUE	TBD

## Federal, state, and local planning and coordination efforts

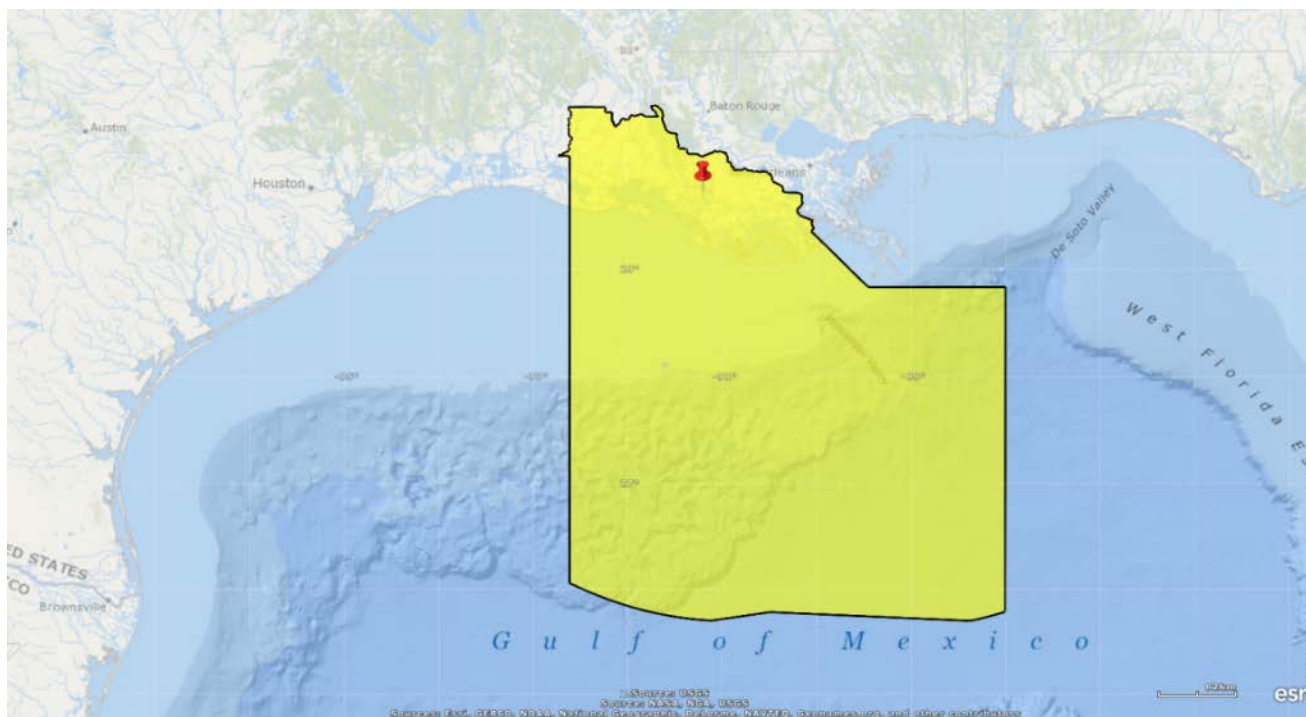
Description	Dates
GRS Meeting	16 Mar 2018
St. Tammany Parish LEPC	31 MAY 2018
St. John the Baptist Parish LEPC	05 JUN 2018
St. Charles Parish LEPC	10 JUL 2018
Area Committee Meeting	Tentatively - 11 JUL 2018
RRT-6 Meeting	08-09 NOV 2018



# MSU Houma

Captain Blake Welborn

MSU Commanding Officer



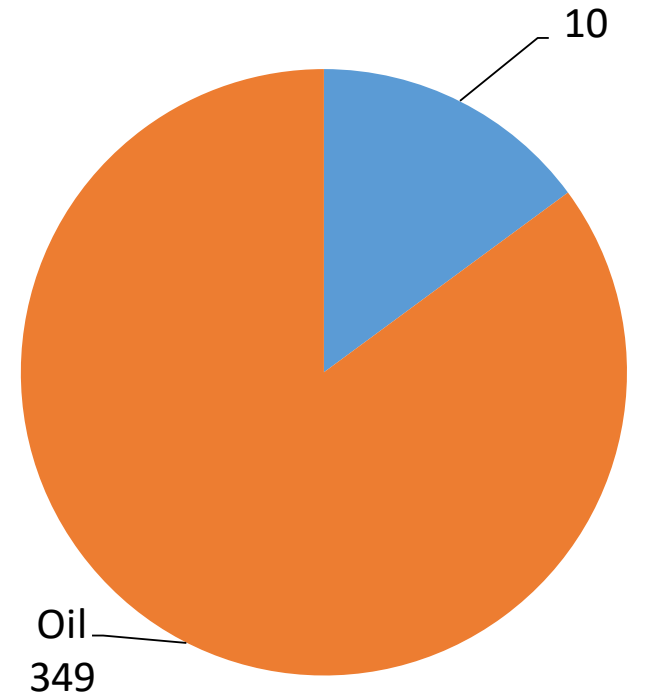
NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
359	00 Surface Washing Agents 02 In-situ Burns 00 Dispersants	03	00



# NRC Notifications

- **Oil discharge:** reports down 41% since last RRT meeting (592)
- **Hazmat release:** Reports remain about the same since last meeting (12)

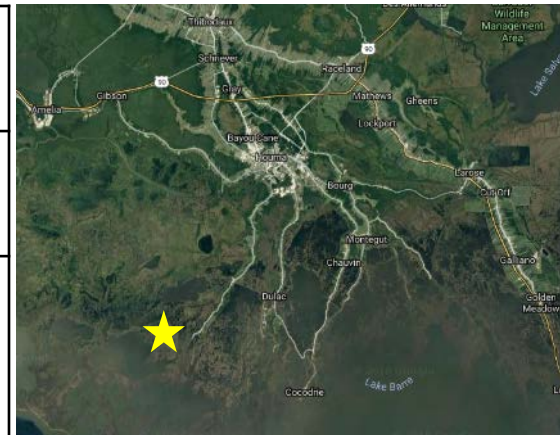
**Breakdown of Reports**





# RRT Activation / Notification

<b>Date:</b>	11/07/2017	<b>Activation</b>	X	<b>Notification</b>	
<b>Incident Name:</b>	TPIC Lake Pagie In-situ Burn Minor Oil Spill - Coastal Zone				
<b>Issue / Concern:</b>	TPIC Lake Pagie Hill discharged 10 BBLS of natural gas condensate from a flowline into a floating marsh mat and dense vegetation on Jug Lake. In-situ burn was successfully conducted.				
<b>Agencies Involved:</b>	USCG, EPA, DOI, DOC/NOAA, State of Louisiana (LOSCO, LADWF, LADEQ, LA DNR)				
<b>Decisions Made:</b>	MSU Houma sought RRT-6 consultation and approval to use in-situ burning techniques as they were best suited for recovery and remediation while minimizing impact to the environment.				



*Incident Location*



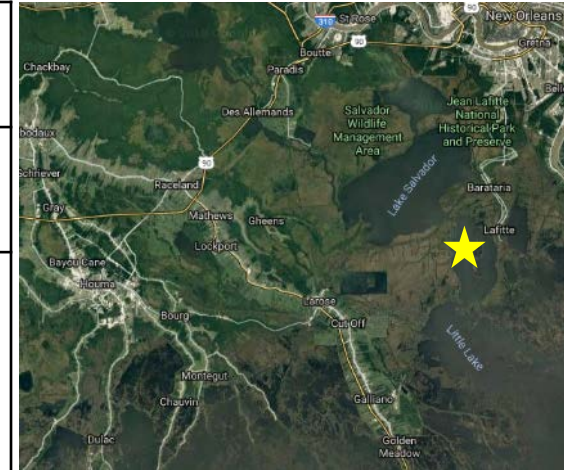
*Photo*





# RRT Activation / Notification

<b>Date:</b>	12/05/2017	<b>Activation</b>	X	<b>Notification</b>	
<b>Incident Name:</b>	TPIC Delta Farms In-situ Burn Minor Oil Spill -Coastal Zone				
<b>Issue / Concern:</b>	TPIC Delta Farms discharged 50 BBLS of crude oil from a flowline into a floating marsh on Bayou Perot. Crude oil became trapped between the marsh and water column, hindering traditional response actions. In-situ burn was successfully conducted.				
<b>Agencies Involved:</b>	USCG, EPA, DOI, DOC/NOAA, State of Louisiana (LOSCO, LADWF, LADEQ, LADNR)				
<b>Decisions Made:</b>	MSU Houma sought RRT-6 consultation and approval to use in-situ burning techniques as they were best suited for recovery and remediation while minimizing impact to the environment.				



*Incident Location*



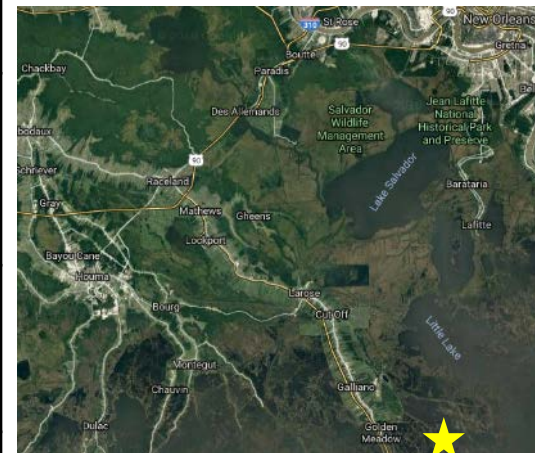
*Photo*



# Incident Name



<b>Date:</b>	04/03/2018
<b>Type and amount of product spilled:</b>	106 BBLS Crude Oil (4,452 GALS)
<b>Cause of spill:</b>	Corrosion through bottom of storage tank caused contents to discharge directly into the water
<b>Key operational activities:</b>	Skimming Marsh flushing Minor vegetation cutting
<b>Agencies Involved:</b>	USCG, EPA, DOI, DOC/NOAA, State of Louisiana (LOSCO, LADWF, LADEQ, LADNR)
<b>Major lessons learned:</b>	Authorities and jurisdiction Between CG and EPA with storage tanks located above navigable waterways



*Incident Location*



*Photo*



# Consultations

Start	Stop	With	Phase- <i>Planning (P)</i> <i>Response (R)</i>	For	Species <i>(Common Name)</i>	Listing Status	Cost
11/07/2017	11/07/2017	DOI/ USFWS/ DOC	R	In-situ Burn	Bald Eagles	ESA	\$510
12/07/2017	12/07/2017	DOI/ USFWS/ DOC	R	In-Situ Burn	Bald Eagles	ESA	\$510
GRAND TOTAL							\$1020

[REIMBURSABLE STANDARD RATES](#)



# Accomplishments



## Training

Description	Dates
Spill Response Course	28 NOV – 01 DEC 2017
ROV/Rig Training	20 MAR 2018

## Exercises/Workshops

Description	Dates
Chevron Spill Response Exercise	28-30 NOV 2017
MEXUSGULF Seminar	14 MAR 2018
Natural Disaster/COOP Workshop	27-29 MAR 2018
GIUE - TPIC	20 FEB 18
GIUE – ENERGY 21	18 APR 18

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-6 Meeting	08-09 NOV 2017
Clean Gulf Conference	04-08 DEC 2017
GRS Meeting	16 MAR 2018
GOHSEP Region 3 Hurricane Planning Meeting	25 APR 2018



# Outlook



## Training

Description	Dates
ICS-300	19-22 JUN 2018

## Exercises/Workshops

Description	Dates
Chevron Spill Response exercise	15 MAY 2018
LOOP emergency response Exercise	14 JUNE 2018
GIUE	TBD

## Federal, state, and local planning and coordination efforts

Description	Dates
GICA Hurricane Planning Meeting	15 MAY 2018
RRT-6 Meeting	08-09 NOV 2018
Area Committee Meeting	12 JUN 2018



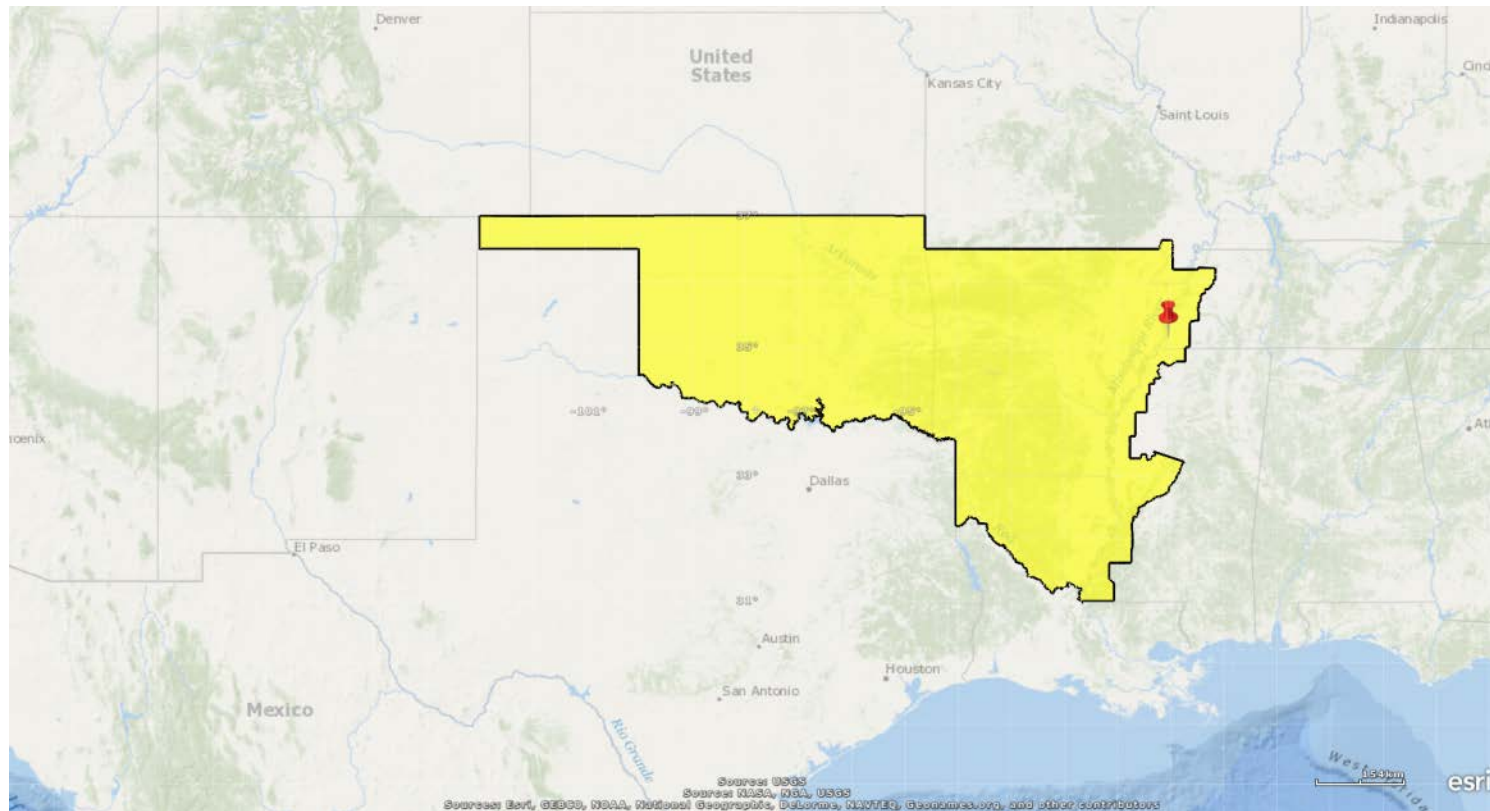


# Sector Lower Mississippi River



Captain Roxanne Tamez

Sector Commander



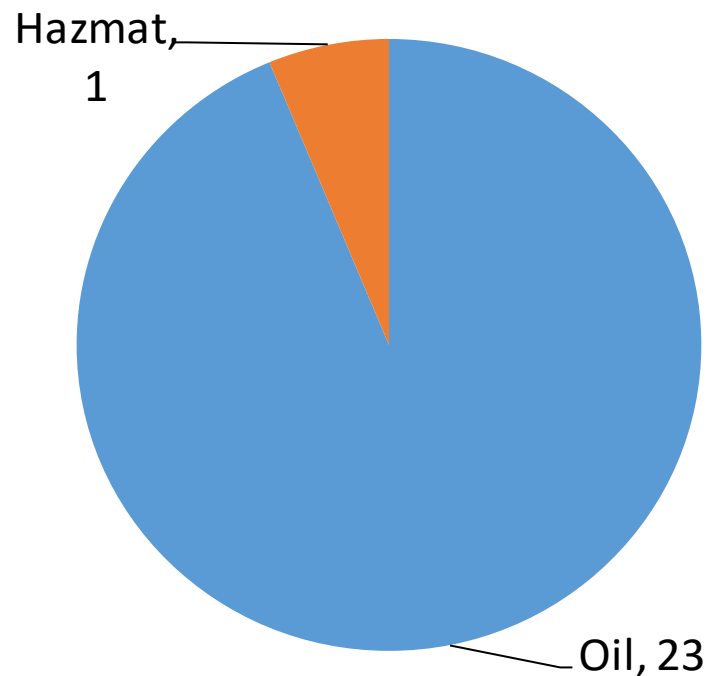
NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
24	00 Surface Washing Agents 00 In-situ Burns 00 Dispersants	00	00



# NRC Notifications

- **Oil discharge:** reports up 53% since last RRT meeting (15)
- **Hazmat release:** reports same since last RRT meeting (1)

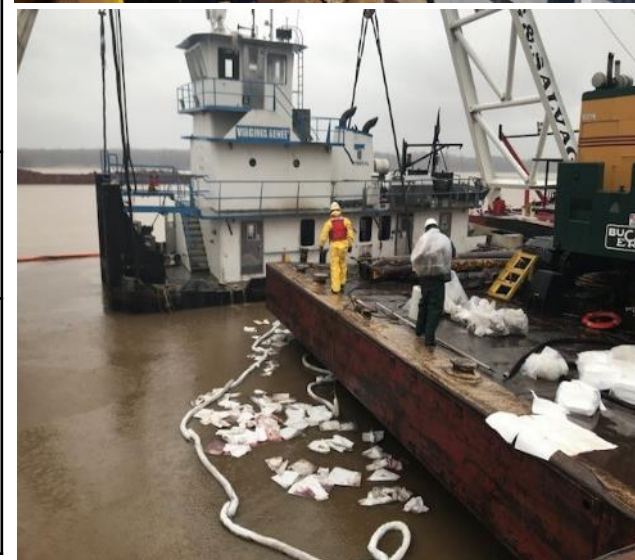
## Breakdown of Reports





# UTV VIRGINIA RENEE

<b>Date:</b>	24JAN2018
<b>Incident Name:</b>	M/V VIRGINIA RENEE
<b>Location:</b>	MM 832 LMR
<b>Type and amount of product spilled:</b>	Approx. 3,900 gallons of Red Dye Diesel
<b>Issue / Concern:</b>	Complete loss of vessel and contents
<b>Agencies Involved:</b>	USCG
<b>Decisions Made:</b>	Sector LMR discussed mitigating factors and proposed a Class 1 Civil Penalty





# Consultations

Start	Stop	With	Phase- Planning (P) Response (R)	For	Species (Common Name)	Listing Status	Cost
	Nothing to Report						
GRAND TOTAL							

[REIMBURSABLE STANDARD RATES](#)



# Accomplishments



## Training

Description	Dates
ICS 430	13-17 NOV 2017
RAD I/II Training	13 DEC 2017
ICS-345	30 APR – 04 MAY 2018
Oil Spill Recovery School	07-11 MAY 2018

## Exercises/Workshops

Description	Dates
GIUE/SLMR	07 DEC 2017
Isotope Crossroads IPM	13 FEB 2018
SOHV Response Workshop	27-28 FEB 2018
GIUE/SLMR	28 MAR 2018
GIUE/FT Smith	24 APR 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-6 Meeting	08-09 NOV 2017
Clean Gulf Conference	04-08 DEC 2017
LEPC Meetings	Monthly
RRT-4 Meeting	19-22 MAR 2018
RRT-7 Meeting	28-29 MAR 2018
Clean Waterways Conference	04-05 APR 2018





# Outlook



## Training

Description	Dates
ICS-300	14-18 MAY 2018

## Exercises/Workshops

Description	Dates
GIUE/Vicksburg	TBD
GIUE/SLMR	TBD
Isotope Crossroads	18 JUL 2018

## Federal, state, and local planning and coordination efforts

Description	Dates
RRT-7 Meeting	12-13 SEP 2018
RRT-6 Meeting	08-09 AUG 2018
RRT-4 Meeting	TBD SEP 2018
LEPC Meetings	Monthly

