



May 13-15, 2014

 http://rrt6.org/	Meeting Location: US EPA Training Center 16650 Westgrove Drive Addison, Texas	Regional Response Team (RRT) Co-Chairs Wes McQuiddy (interim), EPA Michael Sams, USCG	RRT Coordinators Steve Mason, EPA, C (214) 789-1871 mason.steve@epa.gov Todd Peterson, USCG O (504) 671-2232 Todd.M.Peterson@uscg.mil
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Tuesday, May 13, 2014		
Adobe Connect: https://epa.connectsolutions.com/region6rrt/		Conference Call: 866-299-3188 Pin: 214-665-2292#
Time	Topic	Presenter / Facilitator
1:30 – 5:00 PM	RRT 6 Executive Committee Meeting	Separate Agenda will be transmitted to Executive Committee Members
Wednesday, May 14, 2014		
Adobe Connect: https://epa.connectsolutions.com/region6rrt/		Conference Call: 866-299-3188 Pin: 214-665-2292#
Time	Topic	Presenter / Facilitator
8:30 - 9:00 AM	Introductions / Administrative Announcements / Opening Statements	Wes McQuiddy, EPA / Michael Sams, USCG
9:00 - 9:30 AM	Review of 2014 RRT Priorities / Status	Michael Sams, USCG
9:30 - 10:15 AM	State Reports (NM, TX, AR, OK & LA)	State Agencies Present
10:15 – 10:30 AM	BREAK	
10:30 – 11:30 AM	Texas City Y Spill Response; Houston-Galveston	USCG Sector Houston/Galveston
11:30 AM -- 12:30 PM	LUNCH	
12:30 – 1:30 PM	Endangered Species Act Discussion	Michael Sams, USCG
1:30 – 1:45 PM	RRT 101 and Other Website Training	Steve Mason, EPA
1:45 – 2:00 PM	Plan API JIP Subsea Dispersants Use Project Status Update	Victoria Broje, Shell
2:00 – 2:15 PM	BREAK	
2:15 – 4:00 PM	Tar Sand / Bakken Oils (properties, transport, emergency response)	DOT and others
4:00 – 5:00 PM	USCG Captain of the Port (COTP) Reports	USCG COTPs
5:00 PM	ADJOURN	

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Thursday, May 15, 2014		
Adobe Connect: https://epa.connectsolutions.com/region6rrt/		Conference Call: 866-299-3188 Pin: 214-665-2292#
Time	Topic	Presenter /Facilitator
8:30 – 9:00 AM	Status of Implementation of <u>President EO</u>	Kim Jennings, <u>OEM</u> , EPA
9:00 – 9:30 AM	Consideration of Chemical Safety Workgroup / Subcommittee	Janice Kroone, Steve Mason, EPA
9:30 – 10:00 AM	Fish and Wildlife and Sensitive Environments Plan (FWSEP) Annex Requirements	Steve Spencer, DOI
10:00 – 10:15 AM	BREAK	
10:15 – 11:15 AM	EPA OSC Reports (Explo Removal, Odessa Mercury, Waterproof LA Oil Spill)	OSCs Delgado, McAteer
11:15 AM -- 12:45 PM	LUNCH	
12:45 – 1:45 PM	Federal Agency Reports	Federal agencies present
1:45 – 2:15 PM	HWCG-FMOG Subsea Dispersant Exercise	Jim Staves, ILC
2:15 – 2:45 PM	MEXUSGULF Update	Todd Peterson, USCG
2:45 – 3:00 PM	Review of RRT 2014 Priorities / Updates	Michael Sams, USCG
3:00 – 3:15 PM	Wrap-Up / Moving Forward / Closing Remarks	Wes McQuiddy, EPA/ Michael Sams, USCG
3:15 PM	ADJOURN	

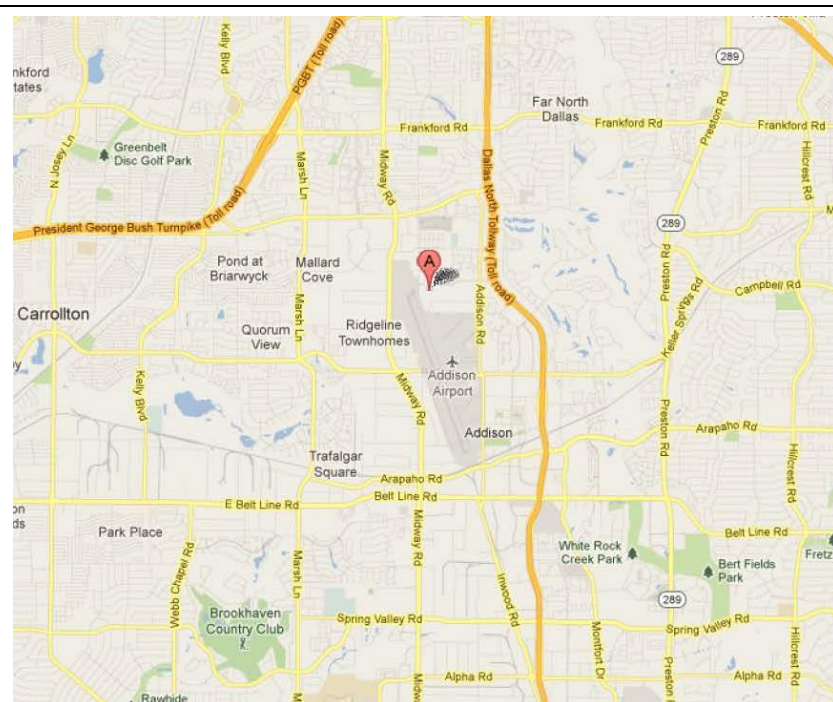
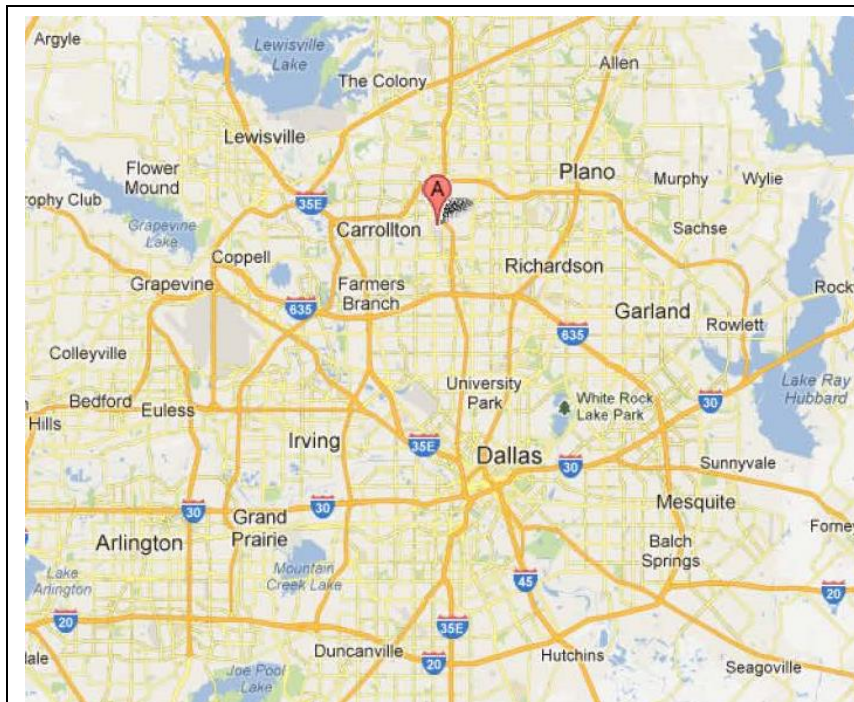
May 13-15, 2014



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US EPA Training Center
16650 Westgrove Drive
Addison, Texas

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Executive Committee

Priorities for 2014

As of 05/13/2014



In Progress or Continuing

1	Review Coastal (USCG) / Inland (USEPA) Boundaries and update as needed	Executive Committee
2	Develop Surface Washing Agent (SWA) Checklist / SOP	Alternative Technologies Workgroup
3	Revise / Expand R6 RRT AST Fact Sheet (collaborate with R4 as appropriate)	Industry Liaison Committee
4	Coordinate with Region 4 RRT to maximize consistency between dispersant pre-authorization and dispersant use plan (forms, procedures); revise as appropriate	Preparedness Committee
5	Create draft guidance for industry to facilitate RRT6 dialogue on the issue of subsurface dispersant application	Industry Liaison Committee
6	Monthly Executive Committee Teleconferences	Executive Committee
7	Conduct Incident Specific Conference Calls, including Exercises and Document Results	RRT Function
8	Develop Region 6 RRT Countermeasures for Oil Spills Playbook	Response Committee
9	Develop RRT 101 / Welcome to the RRT presentation for new RRT members (Completed)	Executive Committee
10	Develop Regional template for Waste Management Plan, including State inputs	Science & Technology Committee
11	Revise Inland Contingency Plan as part of Compendium of RRT Plans	Executive Committee
12	Create Lower Mississippi River Sub-Area Plan	Executive Committee

Texas Commission on Environmental Quality



RRT VI Summer Meeting

May 14- May 15, 2014

Addison Texas



TCEQ Mission Statement

The Texas Commission on Environmental Quality strives to protect our state's public health and natural resources consistent with sustainable economic development. Our goal is clean air, clean water and the safe management of waste.

The **TCEQ Emergency Response Team** responds to natural disasters, spills, and other environmental emergencies or situations.

TCEQ Emergency Management Support Team Deployments:

- Texas City Y Spill Matagorda ICP March 27 April 7.

TCEQ/NDOW Trainings given:

- Response Manager Tyler Region 5 Office February 10-13.
- Response Manager San Antonio Region 13 Office April 15-17.
- Response Manager Lubbock Region 2 Office April 22-24.

Scheduled Trainings:

- Response Manager and H2S training in May.
- Response Manager Houston June (TBD).
- Response Manager Course El Paso June 23-26.
- TEEX Sample Course Corpus Christi, May 28-29.

Multi-Agency Exercises/Events:

- Homeland Response Force, Camp Gruber OK, February 29- March 6.
- TCEQ Trade Fair May 6-8, 2014.
- TDEM Emergency Management Conference, San Antonio May 12-15.
- TDEM Showcase at Ellington Field June (TBD).
- TDEM Multi-Agency Communications Training June (TBD).

TCEQ State wide Investigations:

- 247 On-Site Emergency Response Investigations.
- 360 Spill Record Review/Oversight Investigations.

TCEQ Regional Offices

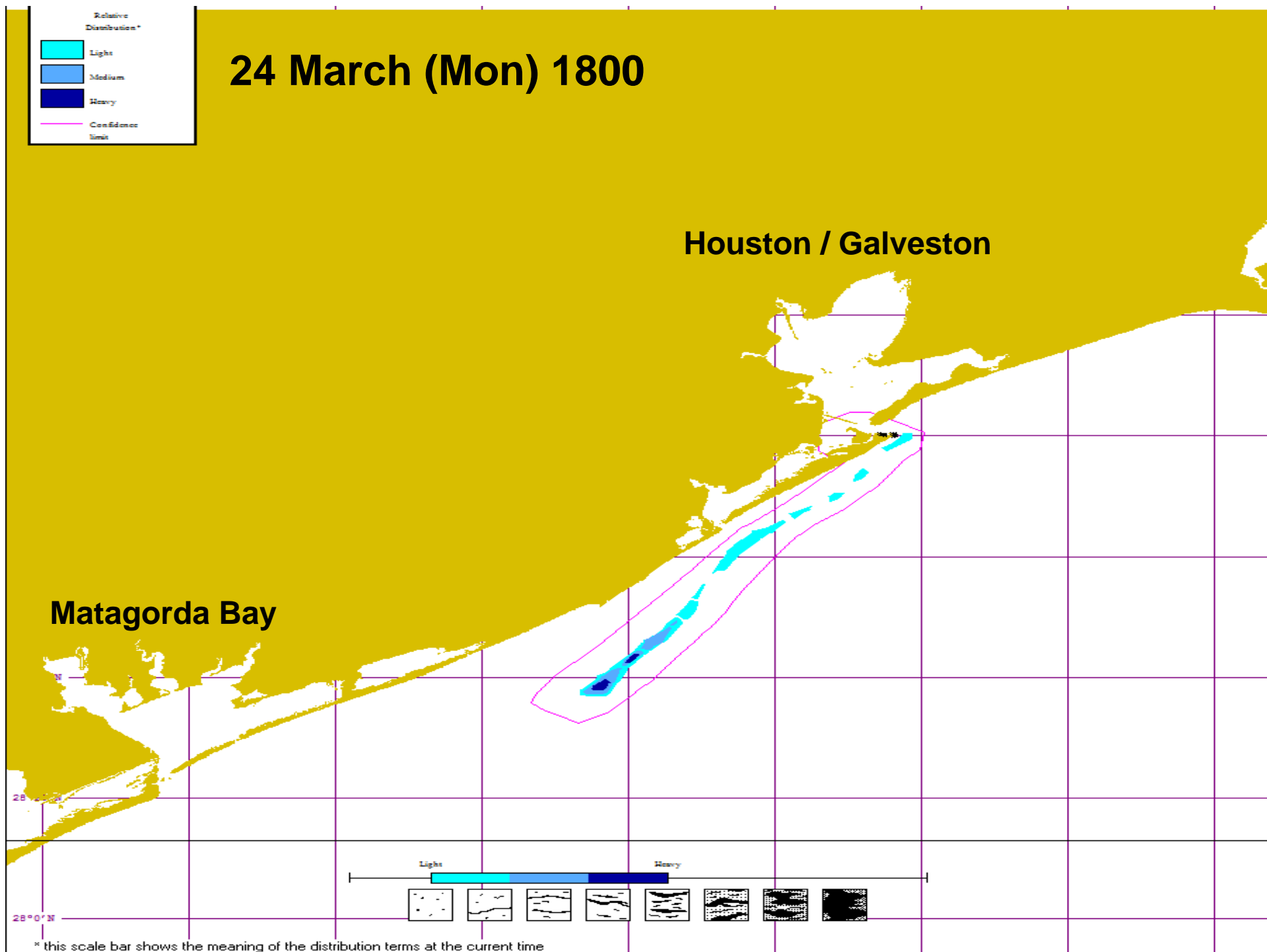


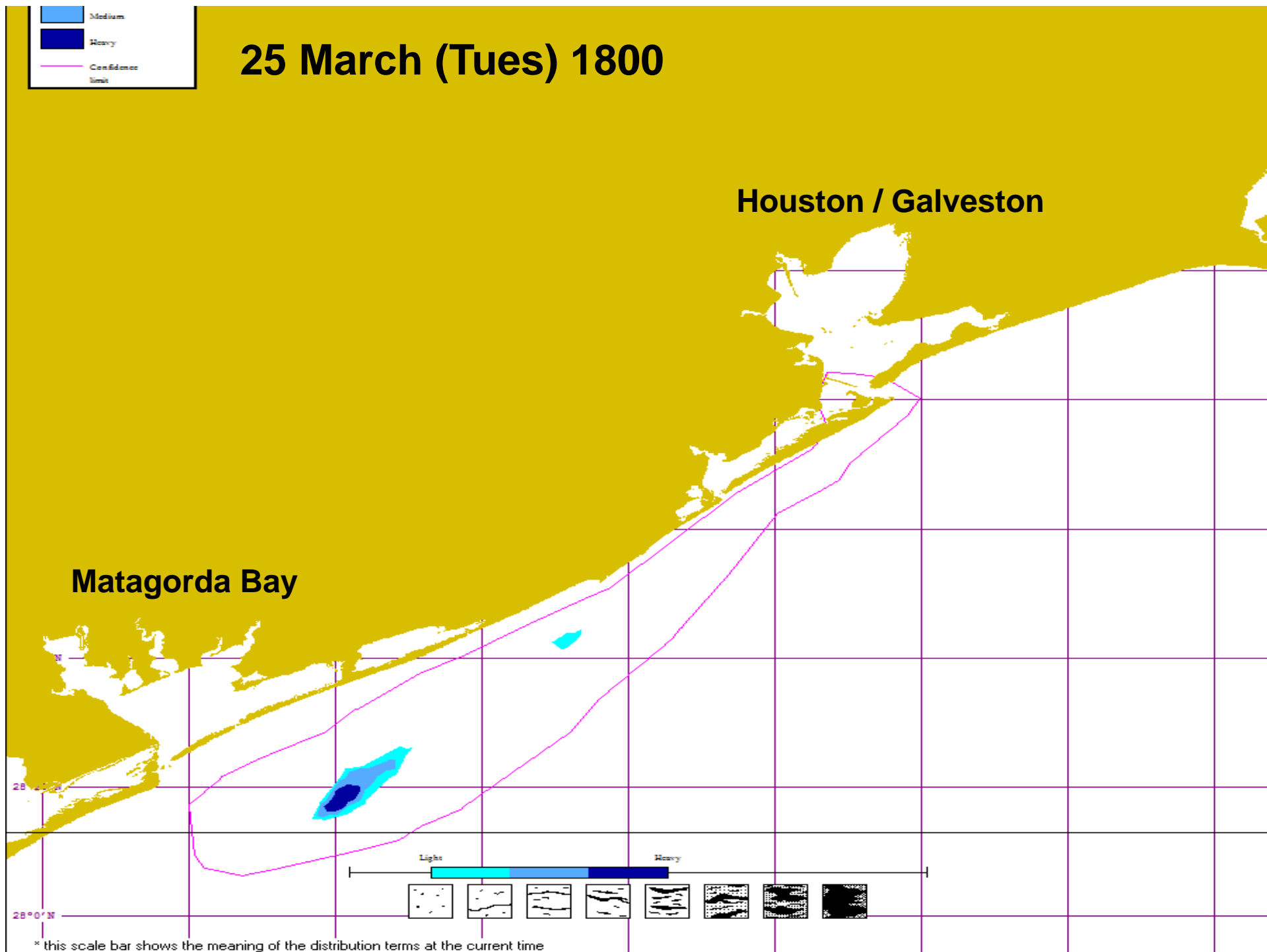
USCG Sector Corpus Christi

Save Lives

Protect U.S. Waters





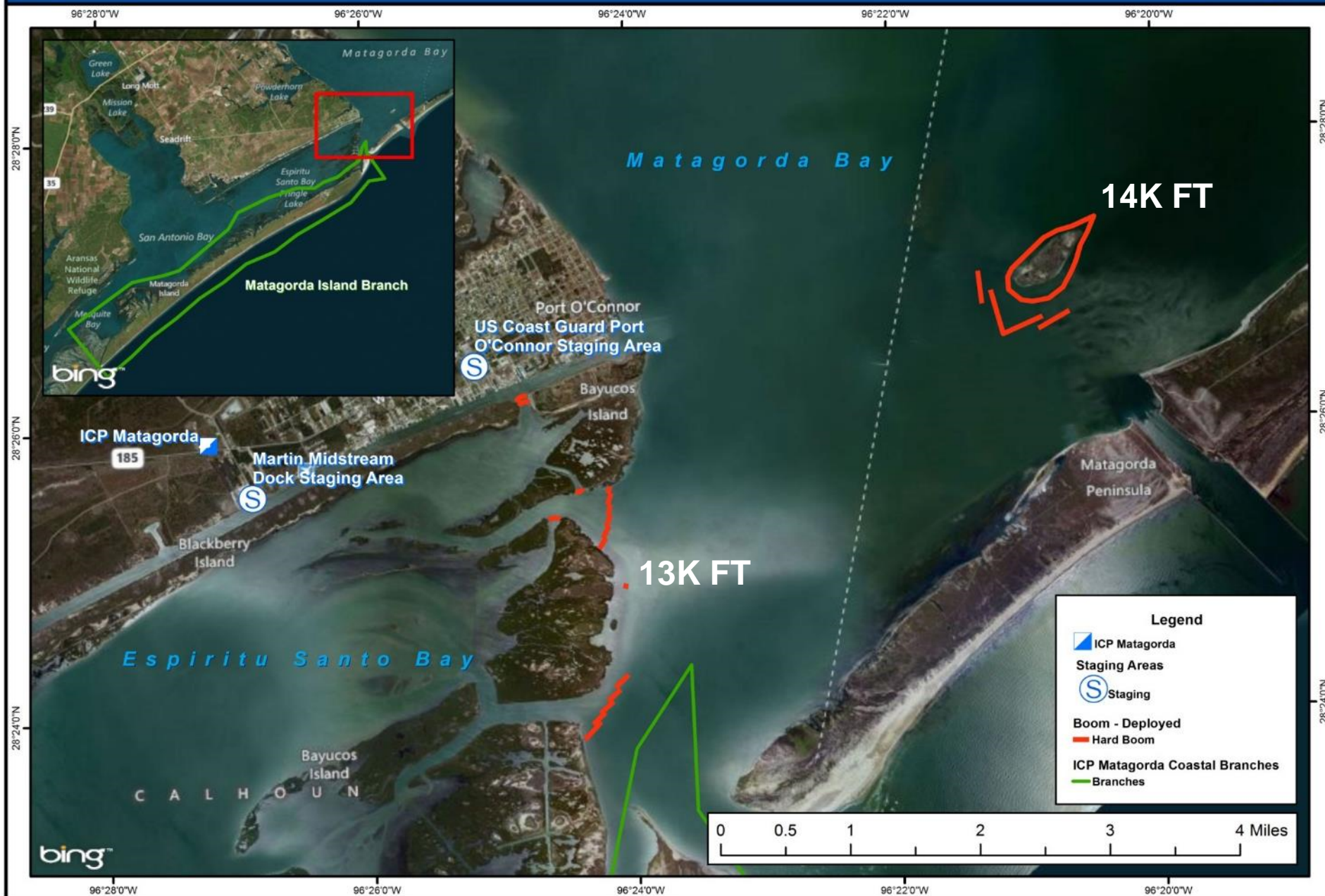




Texas City Y Spill Matagorda ICP Deployed Boom 03/29/2014 1000 HRS

The Response Group
Emergency Response • Pre-Planning & Support
281-880-5000

Scale: 1:60,000



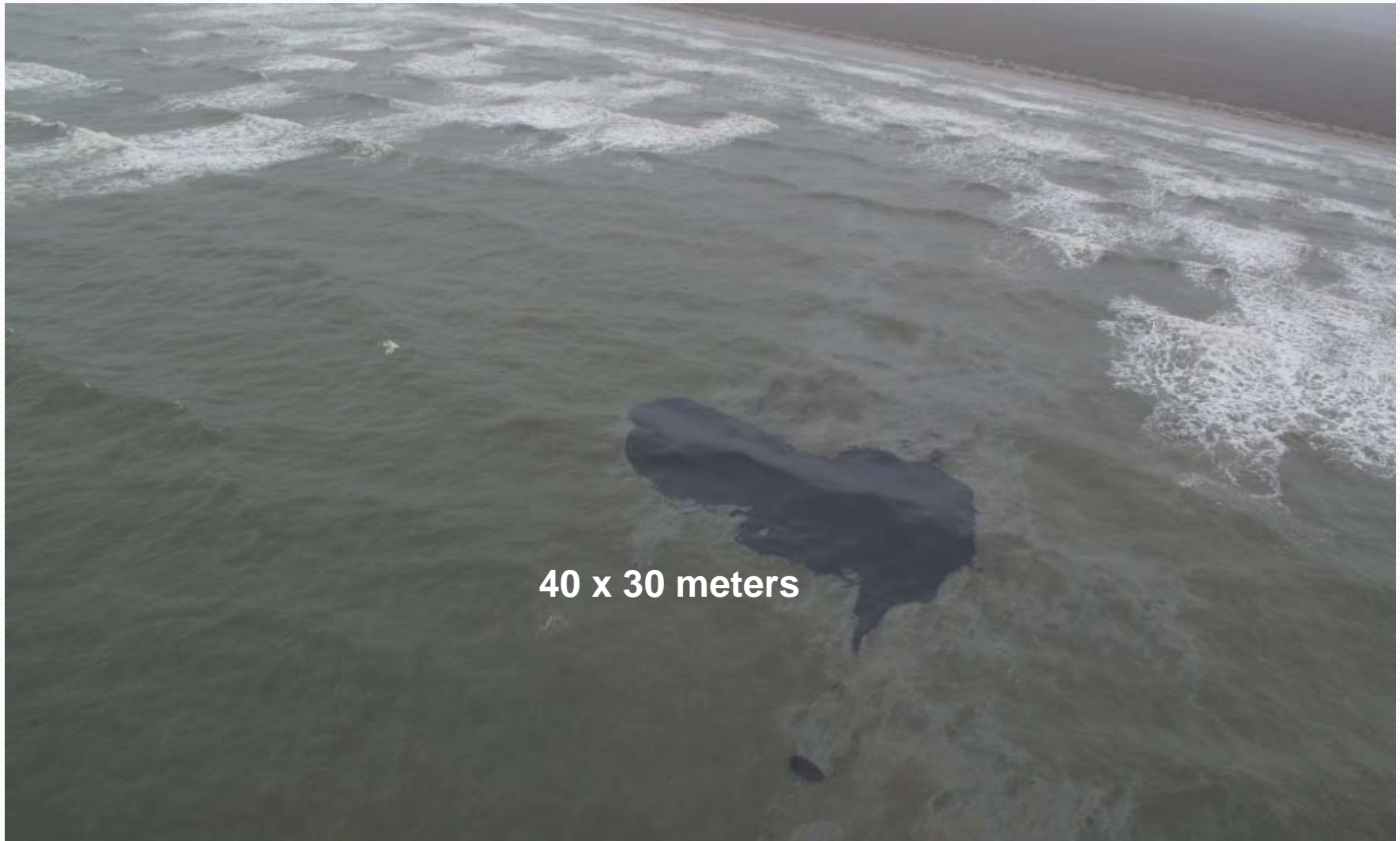
Bird Island



26 March (Wed) 1800

Bird Island

Oil Impacting S. Matagorda Island



40 x 30 meters

Thursday, 27 March

Just off Matagorda Island



**Oil on S. Matagorda Island
Shoreline**



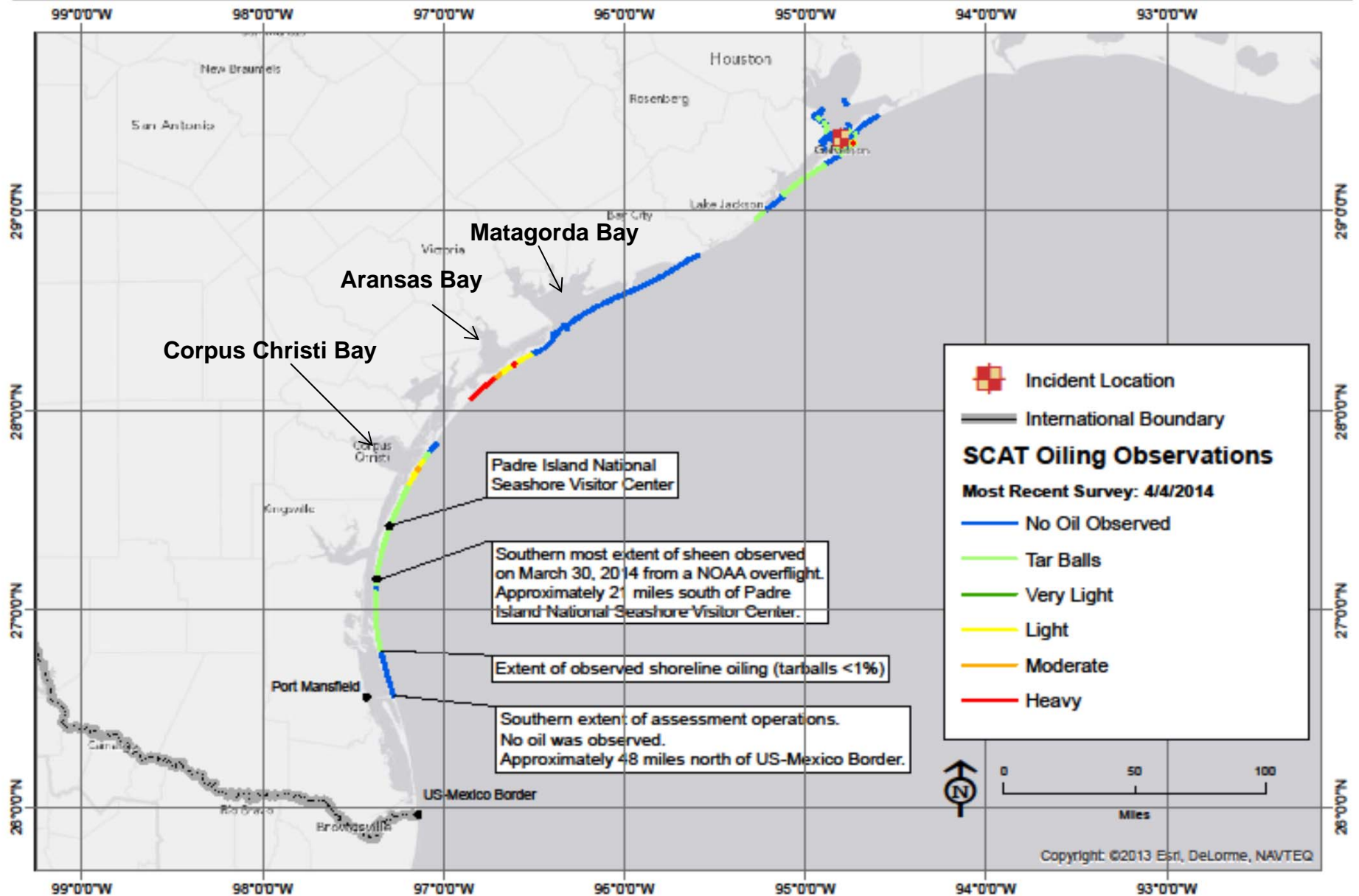
Texas City "Y" Incident, Port Bolivar, TX

Type of Map: Extent of Oiling Along TX Coast

Prepared by: NOAA

USE ONLY AS A GENERAL REFERENCE

Date/Time: 4-6-2014 / 1400 CST

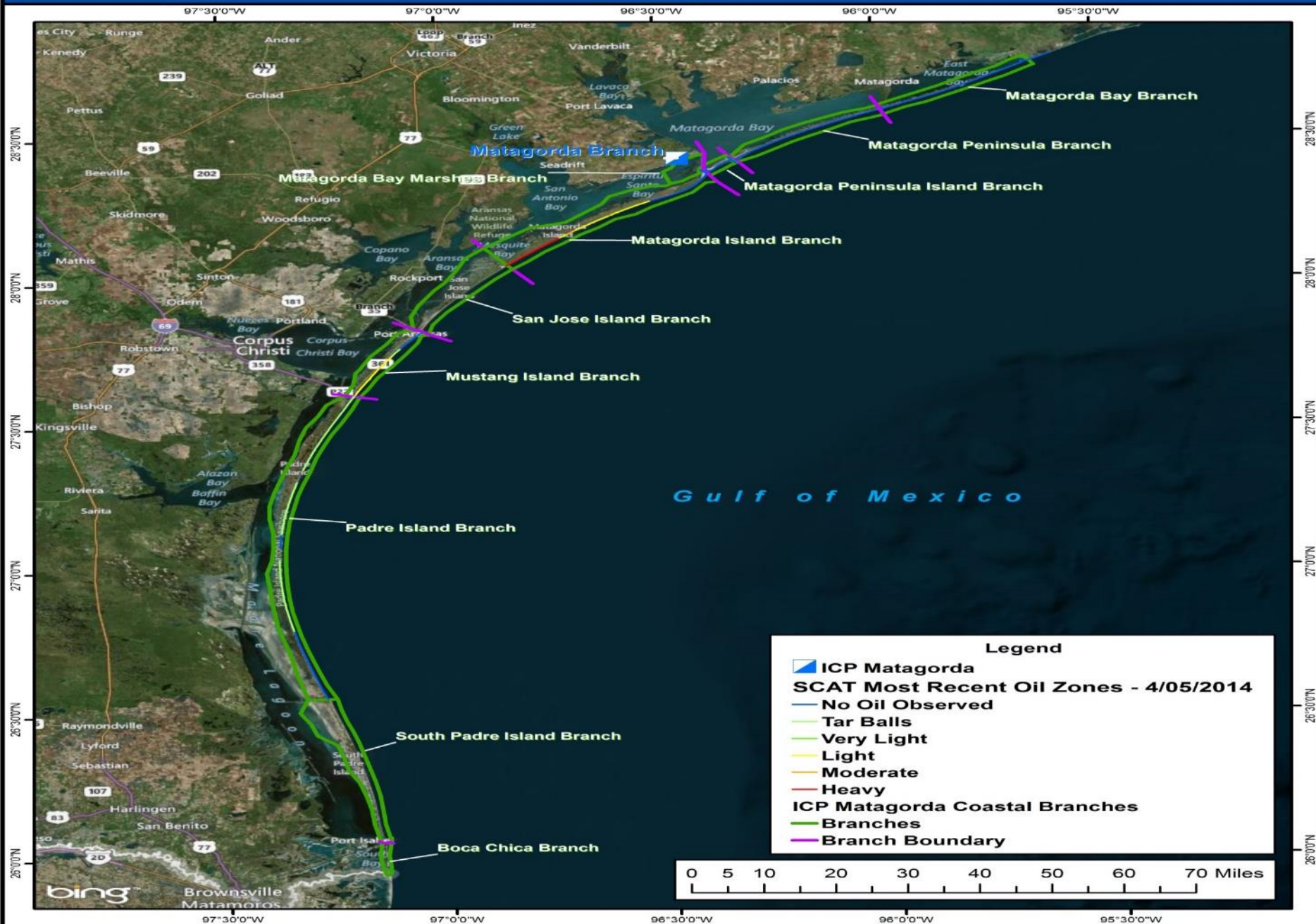




Texas City Y Spill ICP Matagorda SCAT Observed Oil Zones 04/07/2014

The Response Group
Emergency Response Pre-Planning & Support
201-880-5000

Scale: 1:1,400,000

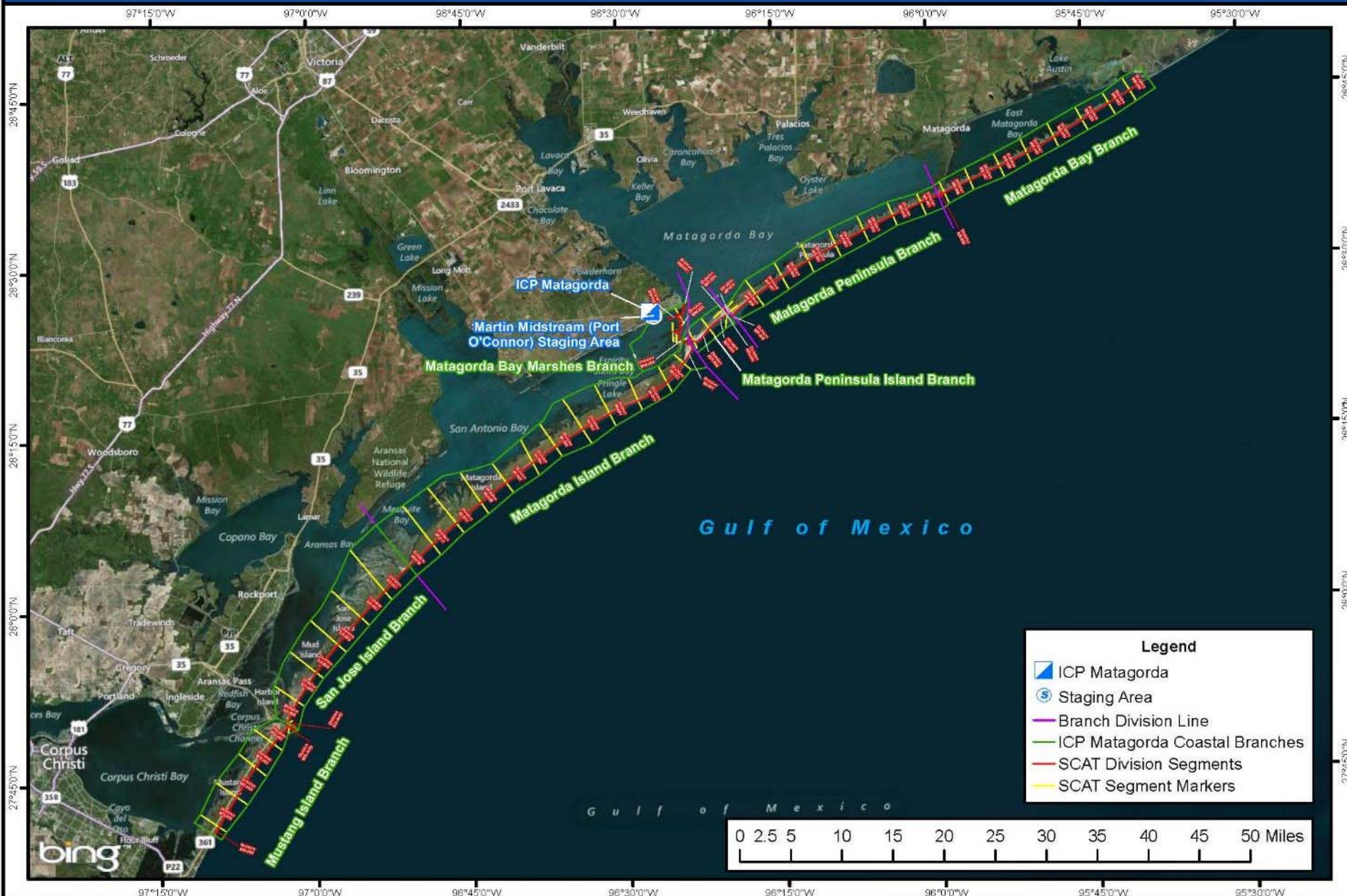




Texas City Y Spill ICP Matagorda Coastal Overview Map 03/28/2014

The Response Group
Emergency Response | Pre-Planning & Support
281-880-5000

Scale: 1:773,896





**North Padre Island (PINS)
& Mustang Island**

South Matagorda Island







**S. Matagorda Island
60 Dump Trucks**





Things That Went Well

1. IMAT & Strike Team mobilization & support
2. Branch Transition to ICP & Unified Command
3. External Communications – Webinar / JIC
4. Real World Testing of South TX ACP

Challenges

1. GRPs:
 - Need water current info (bays & inlets)
 - Booming strategies (protective / deflective)
 - Environmentally Sensitive Wildlife Refuge Beyond Belief
2. Logistics:
 - Extreme remote location – access, mobility of personnel & equipment
3. Agencies:
 - ICS qualifications (Div / Gru Supervisor; extreme coaching by CG)
 - Accountability of personnel, equipment, & costs
 - Inaccurate incident information flow
4. Heavy federal oversight of RP (extreme coaching of IMT)

DeepWater Horizon
Barataria Bay
Grand Isle, LA

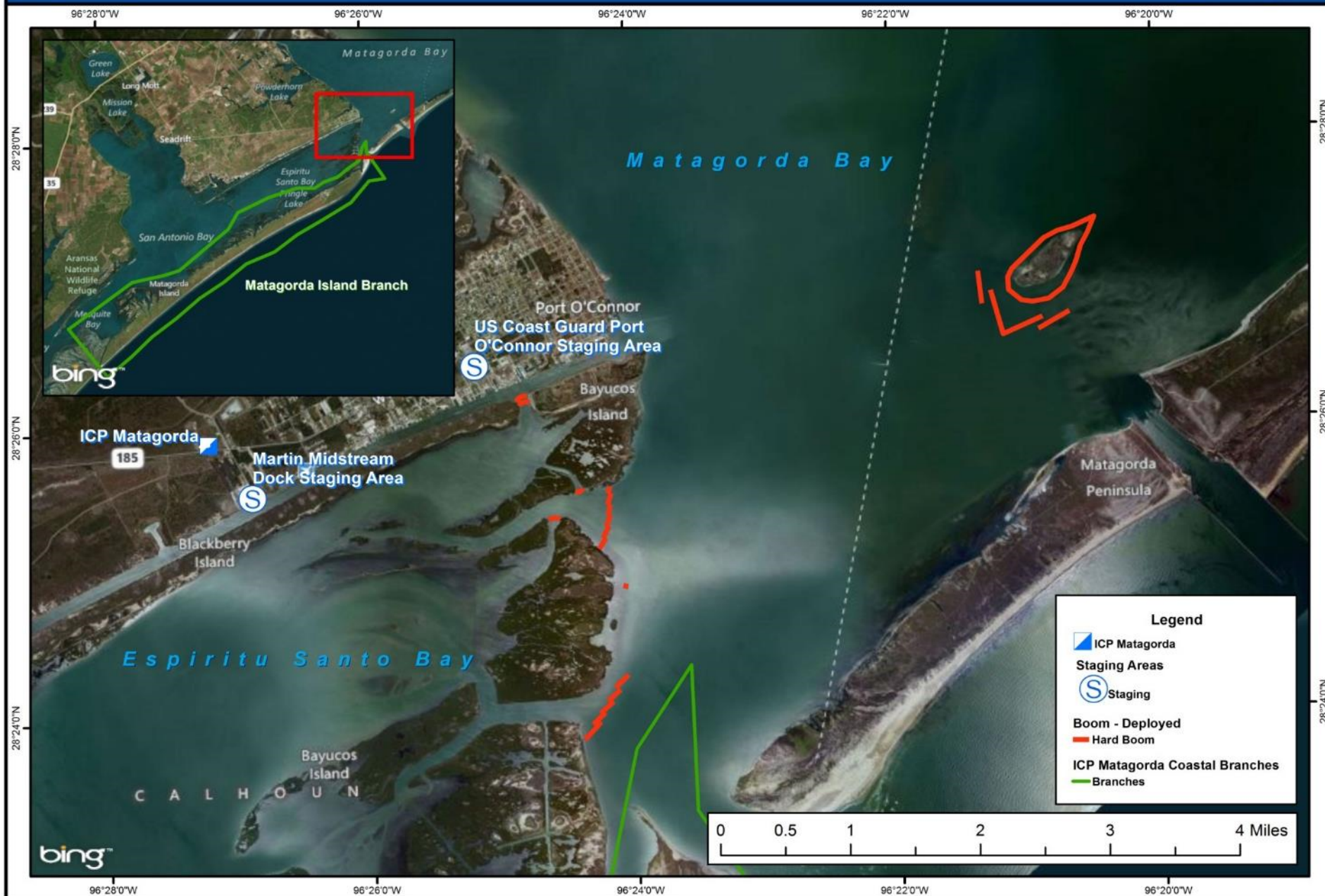
DeepWater Horizon
Barateria Bay
Grand Isle, LA



Texas City Y Spill Matagorda ICP Deployed Boom 03/29/2014 1000 HRS



Scale: 1:60,000

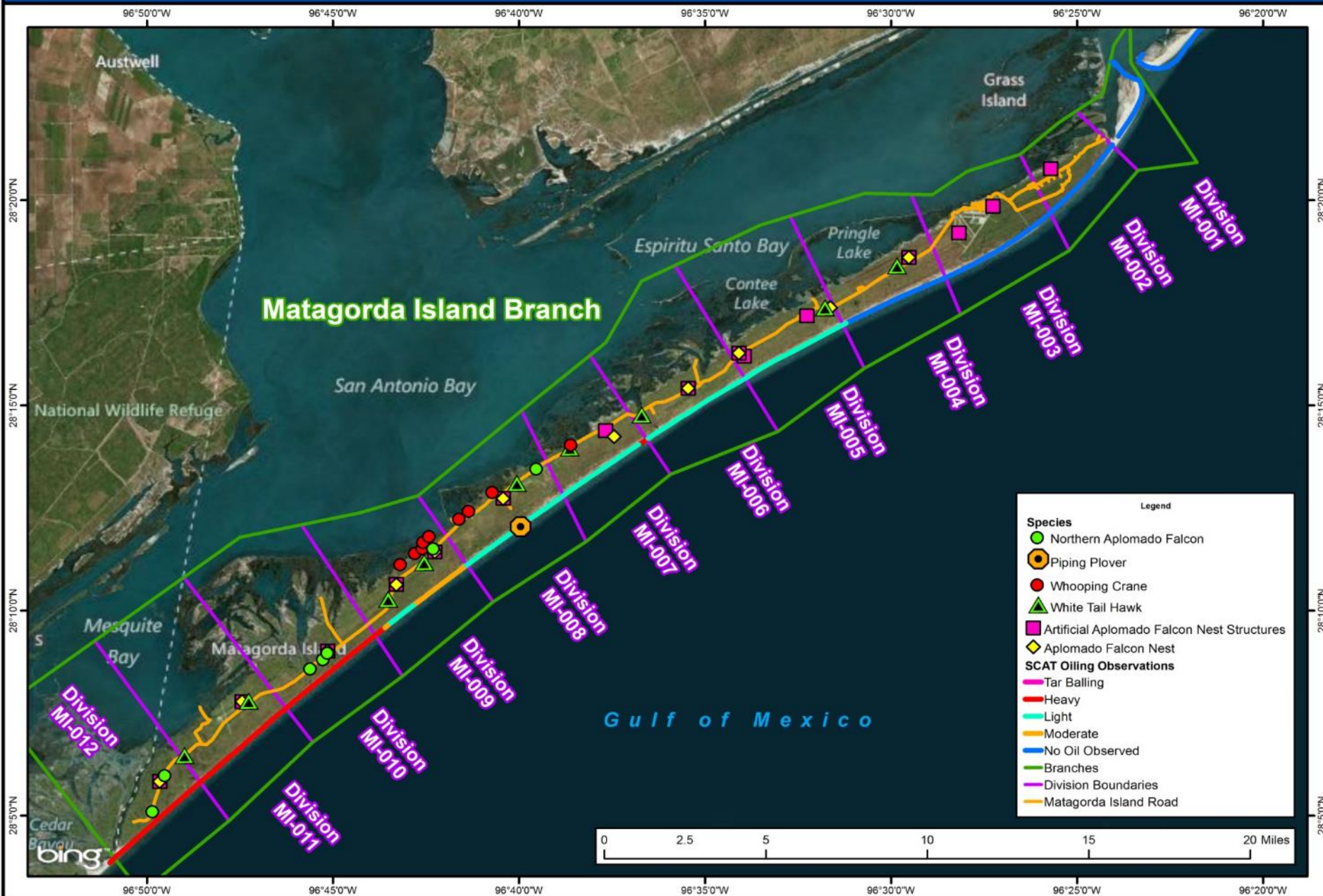




Texas City Y Spill Matagorda Island Species Sightings and SCAT Oiling Observations



Scale: 1:241,357

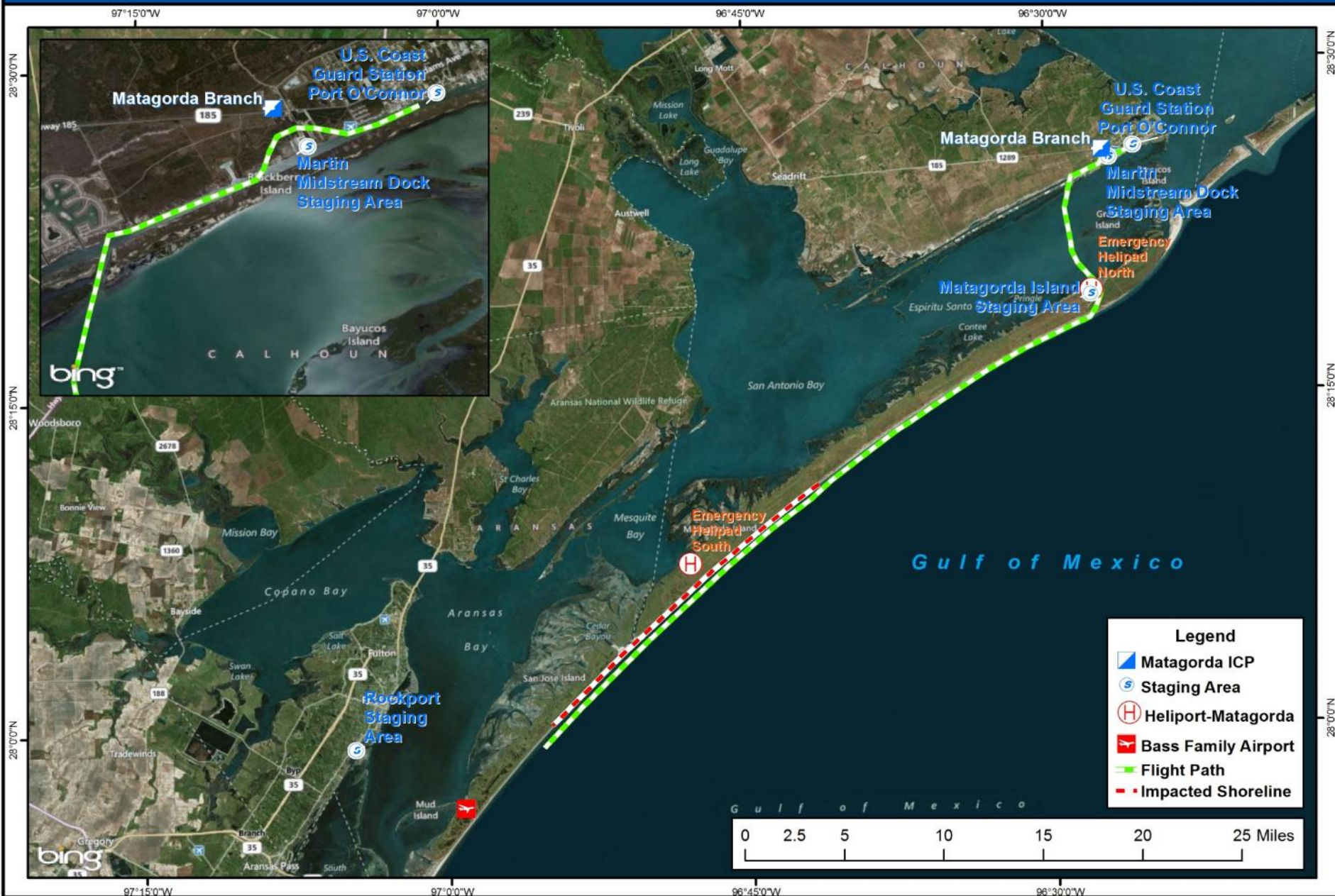




Texas City Y Spill ICP Matagorda Coastal Flight Route



Scale: 1:394,872







Things That Went Well

1. IMAT & Strike Team mobilization & support
2. Branch Transition to ICP & Unified Command
3. External Communications – Webinar / JIC
4. Real World Testing of South TX ACP

Challenges

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2 Apr 2014 (Wednesday) Padre Island National Seas

Incident Command Post Matagorda

Texas City Y Oil Spill

Impact



Saturday, 29 March
Matagorda Island



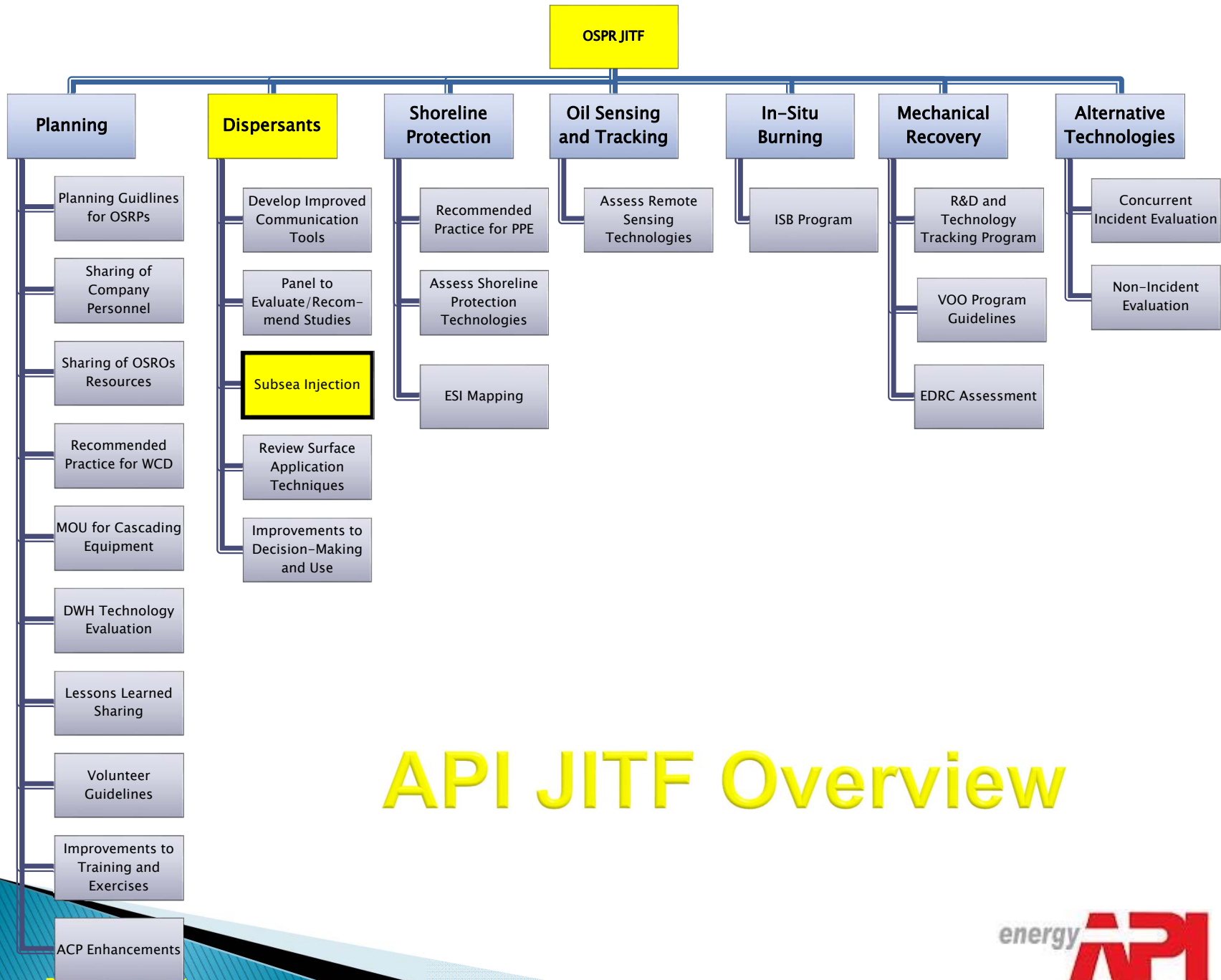
Saturday, 29 March
Matagorda Island

API Subsea Dispersants Injection Project

RRT VI Meeting
May, 2014



Subsea Dispersants



API JTF Overview

Subsea Dispersants



Team Members & Key Contributors

American Petroleum Institute
Anadarko
BP
Chevron
Cobalt
ExxonMobil*
Marine Well Containment Company
Murphy Oil
Shell
Statoil
Total

In addition to industry membership, Technical Advisory Committee members from various agencies, international organizations, and academia are providing input and input

* D3 Steering Committee lead

5 Project Teams

- Effectiveness
- Modeling
- Monitoring
- Fate and Effects
- Communications

Effectiveness Project Objectives

Focus: Develop recommended subsea dispersant injection methodology and equipment

- Literature review
- Scaled testing to evaluate injection methods and determine dispersant-to-oil ratios



SINTEF tank facility for examining subsea releases (6 m x 3 m Φ , no pressure).



SwRI Deep Ocean Simulators (left: 7.3 m x 1.3 m Φ , 13,500' pressure & right: 2.3 m x 5.8 m Φ , 9,000' pressure)

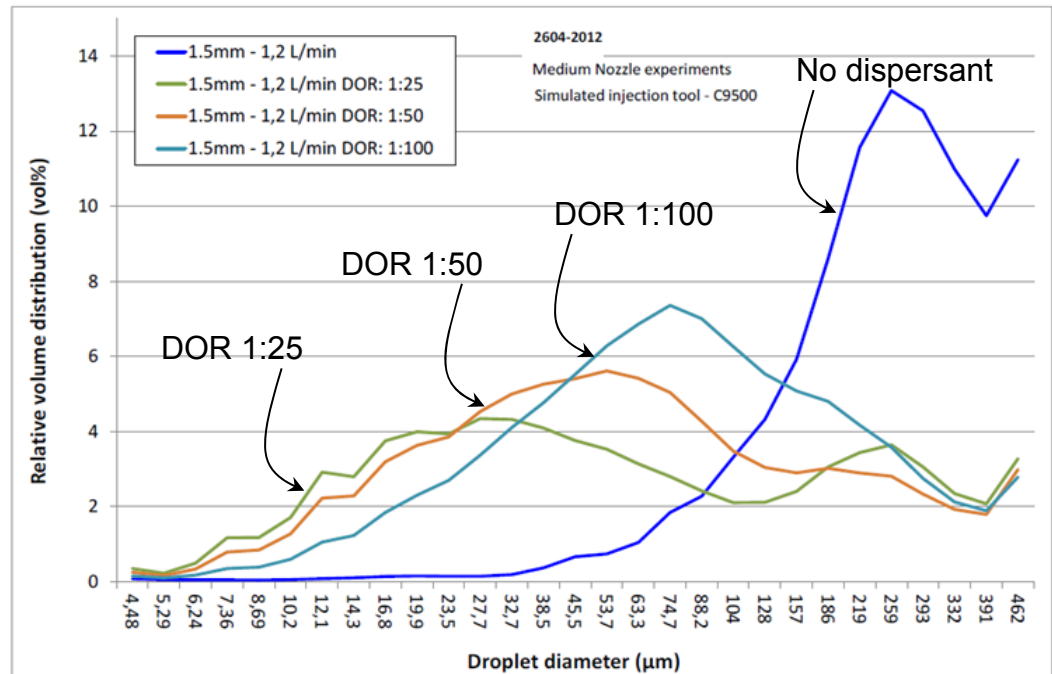
Effectiveness Project Plans and Status

Phase	Description	Research organization	Schedule				Status
			2012	2013	2014	2015	
I	DOR and geometry	SINTEF	X				Completed
II	Temperature effects, wider range of oil and dispersants	SINTEF		X			Testing completed, report drafted
III	Replicate Phase I at high pressure	SwRI/SINTEF			X		Testing completed, report being drafted
IV	Latent breakup	SINTEF/UH			X	X	Proposal accepted, in final contract negotiations
V	Live oil, methane, and hydrates	SwRI/SINTEF			X	X	
VI	High flow rate	TBD			X	X	

Flow rate, DOR, and injection method

- **Study objectives:** Determine the effects on dispersed oil droplet size of
- **Dispersant-to-oil ratio**
 - Dispersant injection method
 - Dispersant injection location
 - Low-solvent dispersants

Dispersant was effective at reducing droplet size even with low DOR's



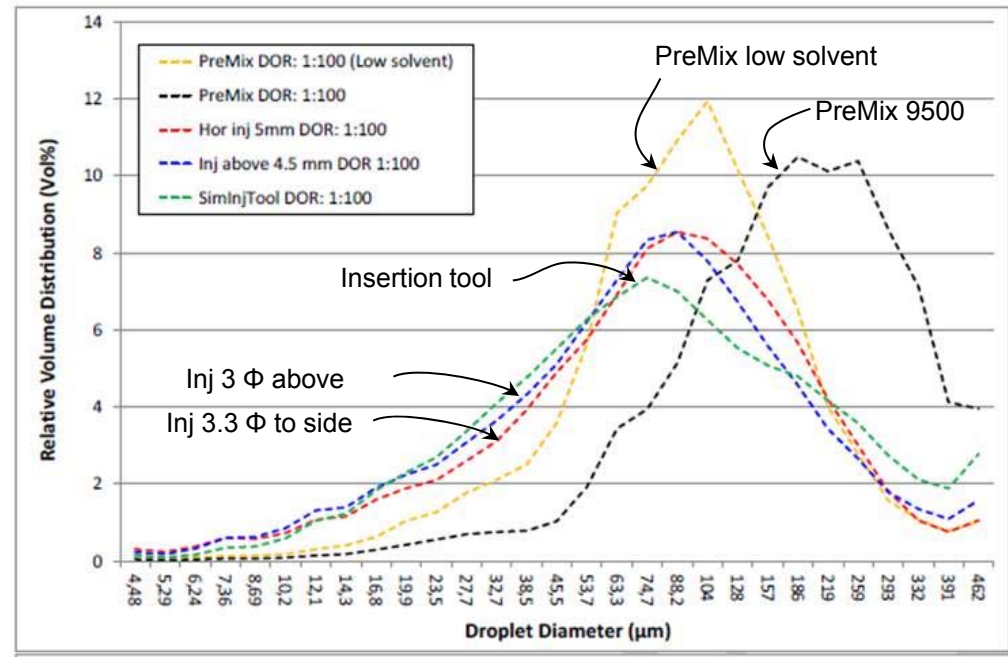
Droplet size distribution (volume %) formed for different DORs (100, 50, 25, and 0). Release conditions 1.5 mm and 1.2 L/min.

Flow rate, DOR, and injection method

➤ **Study objectives:** Determine the effects on dispersed oil droplet size of

- Dispersant-to-oil ratio
- **Dispersant injection method**
- Dispersant injection location
- **Low-solvent dispersants**

1. *Injection wands were effective*
2. *Removing solvent IMPROVES dispersant effectiveness*

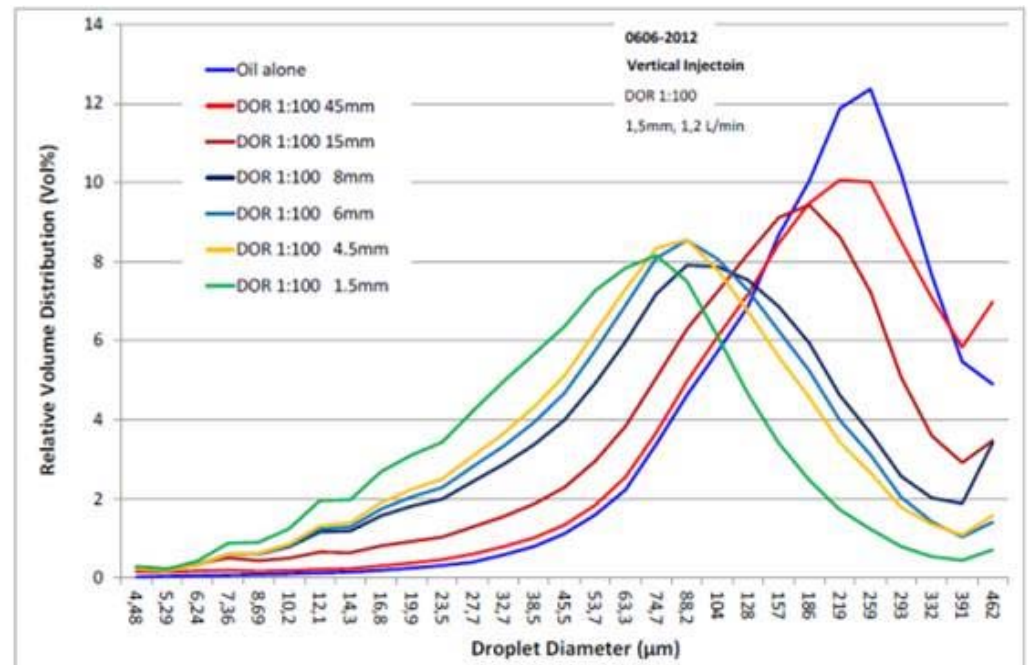


Droplet size distribution (volume %) formed for different injection methods and dispersant types.

Flow rate, DOR, and injection method

- **Study objectives:** Determine the effects on dispersed oil droplet size of
- Dispersant-to-oil ratio
 - Dispersant injection method
 - **Dispersant injection location**
 - Low-solvent dispersants

Injecting dispersant at less than 5 pipe diameters above discharge point was effective



Droplet size distribution (volume %) formed when dispersant injected above the discharge point

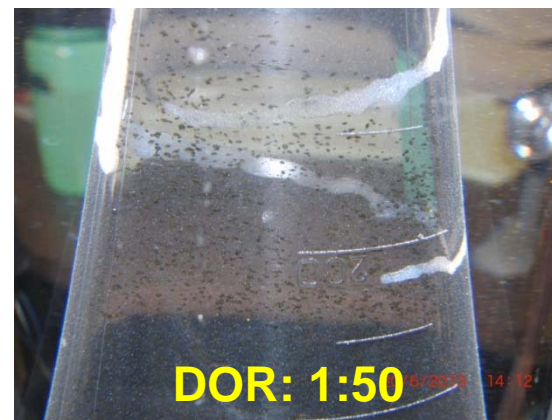
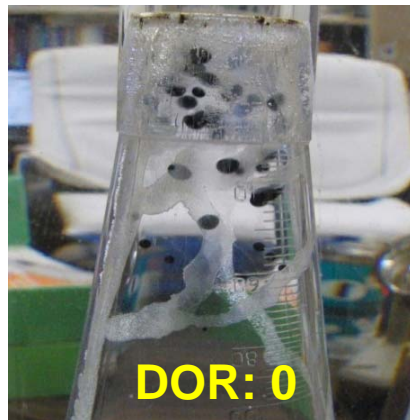
Next Phases

- **Phase II objectives:** Determine dispersant effectiveness as a function of oil temperature, oil/dispersant combination, presence of air bubbles, and evaluate droplet coalescence.
- **Phase III objectives:** Determine effect of pressure on droplet formation and dispersant effectiveness.
- **Phase IV objectives:** Study possible secondary droplets splitting (tip streaming)
- **Phase V objectives:** Investigate the effect of “live oil,” gas, and hydrates on droplet size
- **Phase VI objectives:** Test upward scaling of droplet model to more realistic field scales (TBD)

Phase IV: Latent breakup

SINTEF/Univ. of Hawaii

- **Purpose:** Study possible secondary droplets splitting (tip streaming)
- **Scope:** Mimic the rise of droplets through the water column many minutes after initial formation
 - Experiments at U. of Hawaii and Johns Hopkins indicate the droplets will slowly break-up when treated with dispersant through a process labeled 'tip-streaming'
- **Equipment:** Initial droplets to be formed as usual in SINTEF Tower basin
 - Once formed, droplets will be captured in an inverted Imhoff cone where they can be studied for hours



Source: University of Hawaii

Modeling Project Team

Focus: Enhance existing numerical tools to model dispersed oil plumes resulting from subsea injection

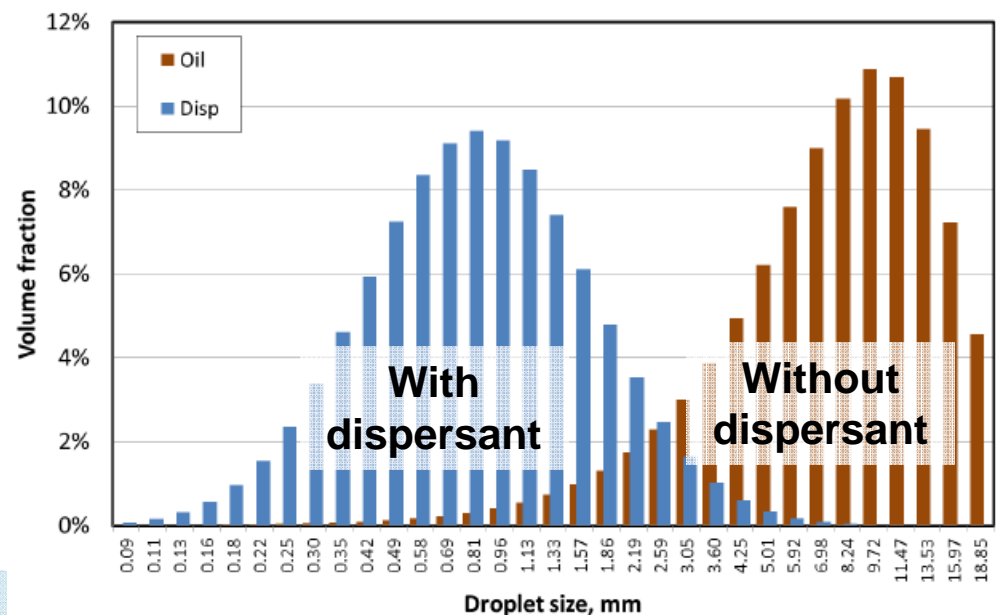
Adams et al. Evaluated droplet size models

- Key to getting accurate integrated model results
- Found Johansen et al. (2013) gives good initial size but

Compared integrated models (GNOME, etc.)

- Workshop held in January
- All major models are using Johansen et al.
- Report due in June 2014

Developing more sophisticated droplet model to include breakup as droplet rises to surface

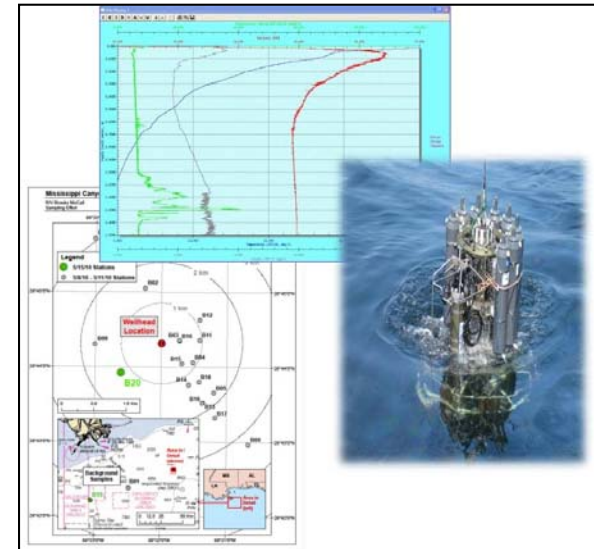
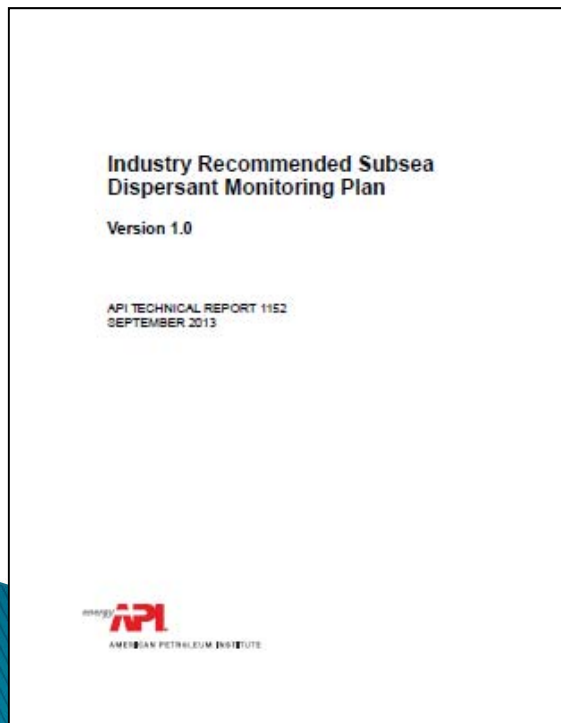


Subsea Dispersants

Monitoring Project Team

Focus: Establish field monitoring criteria and provide a recommended monitoring plan based on latest technology

- Evaluated existing and emerging monitoring technologies
 - White paper developed
 - Results presented at Clean Gulf 2012



- Developed a recommended monitoring plan
 - Available at:
<http://www.spillprevention.org/documents/API%201152-Industry-Recommended-Subsea-Dispersant-Monitoring-Plan.pdf>

Fate and Effects Team Workshop

- Houston, TX, 3-5 October 2012
 - Scientific experts, regulatory authorities and representatives from the oil and gas industry attended
 - Breakout sessions were held to:
 - Summarize best practices and existing data on toxicity and biodegradation of oil, dispersed oil, and dispersants
 - Reach consensus on test species and test protocols for research in the next three-four years



Akvaplan
niva

Battelle
The Business of Innovation
bp

CALIFORNIA DEPARTMENT OF
FISH and WILDLIFE

Cedre

Chesapeake

ENVIRONMENTAL PROTECTION AGENCY

Exponent
Engineering and Scientific Consulting

ExxonMobil

FIU

LSU

LSU

NewFields

NOAA

PAYNE

ENVIRONMENTAL

RCAC

RPI

Shell

SINTEF

SINTEF

STATOIL

TEXAS A&M
UNIVERSITY

TOTAL

U.S. Coast Guard

UT

energy

API

Subsea Dispersants

Chemistry of Oil and Gas at Depth

State of the Knowledge Summary

- Pressure affects the solubility of gas molecules and other oil compounds
- Release energy from well control events may vary considerably
 - Depends on release point, temperature, pressure, flow path, gas content, and oil properties
 - Combined with dispersants, these factors influence droplet size and gas bubble distribution
- Research should focus on:
 - Oil droplets <70 μ in diameter
 - Low viscosity (<5 centipoise at 60° F)
 - High GOR
- Wide range of analytical chemistry techniques are available to obtain whole oil, fixed gases, volatile, semi-volatile, and non-volatile compounds contained in oil
- Low-detection limit method exists for dioctyl sodium sulfosuccinate (DOSS), but not for other dispersant constituents
- Gas hydrates could affect toxicity and biodegradability
 - Complex issue which could be informed by other API-sponsored research

Chemistry of Oil and Gas at Depth

Recommendations for Future Research

- Analyze solubility and partitioning of petroleum components at depth
- Better understand dispersed oil droplet sizes for different conditions
- Conduct a single chemical component toxicity testing at the atmospheric and possibly pressurized conditions followed by multi-component tests to understand the technical aspects of exposure and response
- Results of these tests can be used to model PAH toxicity levels to determine relationships between pressure and toxicity
- Consider surrogate toxicity testing employing SPMD, SPME, and stir bars
- Concentrations of dispersed oil in water must be as representative as possible during controlled toxicity testing programs
- Natural seeps should be considered for *in situ* high pressure tests

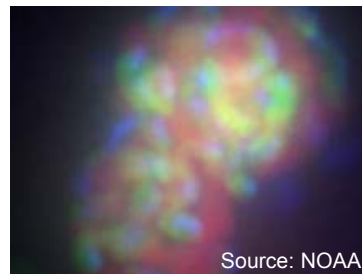


Oil, Gas, Dispersants, & Dispersed Oil Biodegradation - State of the Knowledge

- Weathering processes in deep ocean environments are different from surface environments
- Hydrocarbon degraders are ubiquitous in the open ocean
- Hydrocarbons are known to biodegrade even in dark, cold and pressurized environments
- Biological processes include transformation, incorporation into cell biomass, and mineralization
- Biomass tends to decrease with depth, but individual taxa can reproduce quickly to take advantage of an energy source
- Nutrient and oxygen availability can impact biodegradation, but is not thought to be limiting in conditions representative of likely spill conditions
- Dilute solutions of oil in small droplets biodegrade faster than oil in surface slicks or oil concentrated in sediments
- The combined metabolism of microbial consortia can utilize a wide array of petroleum hydrocarbons

Oil, Gas, Dispersants, & Dispersed Oil Biodegradation Recommendations for Future Research

- Document the current state of the knowledge on biodegradation
- Evaluate the need for additional biodegradation tests and whether modified tests at atmospheric conditions can be representative of biodegradation in deepwater environment
- If tests under pressure are required - define test objectives, test protocols, and conduct the tests
- Compare biodegradation of dispersed oil in deepwater to oil biodegradation at the surface as a part of Net Environmental Benefit Analysis
- Evaluate co-metabolism by methanotrophs



Source: NOAA

Cluster of anaerobic
methane-consuming archaea and
sulfate-reducing bacteria.

Sensitivity of Deepwater Organisms to Dispersants, Oil, and Dispersed Oil

State of the Knowledge Summary

- Valuable Ecosystem Components (VEC) are important to the deep sea food web, representative of pelagic and demersal habitats, relatively abundant, and are culturally or commercially important
- VECs suitable for toxicity studies should be:
 - Representative of deep sea habitats likely to be affected by an oil spill
 - Representative of geographic locations of interest
 - Easily collected in numbers sufficient to support toxicity studies
 - Sensitive to dispersed oil
 - Compatible with conditions typical of laboratory study



Sensitivity of Deepwater Organisms to Dispersants, Oil, and Dispersed Oil

State of the Knowledge Summary

- VEC diel vertical migrators (DVMs) (surface to 1000 m) offer advantages of:
 - Ease of collection
 - Widespread geographical distribution
 - Less sensitivity to temperature, pressure, and DO fluctuations
 - Importance as prey species
- DVM taxa include:
 - Copepods – Metridinidae, Clausocalanidae, Calanus spp.
 - Euphausiids – Euphausia spp.
 - Mysids – Gnathopausia spp.
 - Lanternfish – Myctophidae, Diaphus spp., Stenobrachius spp.
 - Bristlemouths - Gonostomatidae
- Other VECs that occur at depths of 1000 m or greater include:
 - Amphipods – Lysianassids
 - Decapods – Olophoidae, Sergestidae, Penaeids, Aristeidae
 - Fish – Sablefish (*Anaplopoma fimbria*), Rattail fish (Macrourids)
 - Deep Sea Corals – *Lophelia* spp.



LGL Ecological Research Associates, Inc.



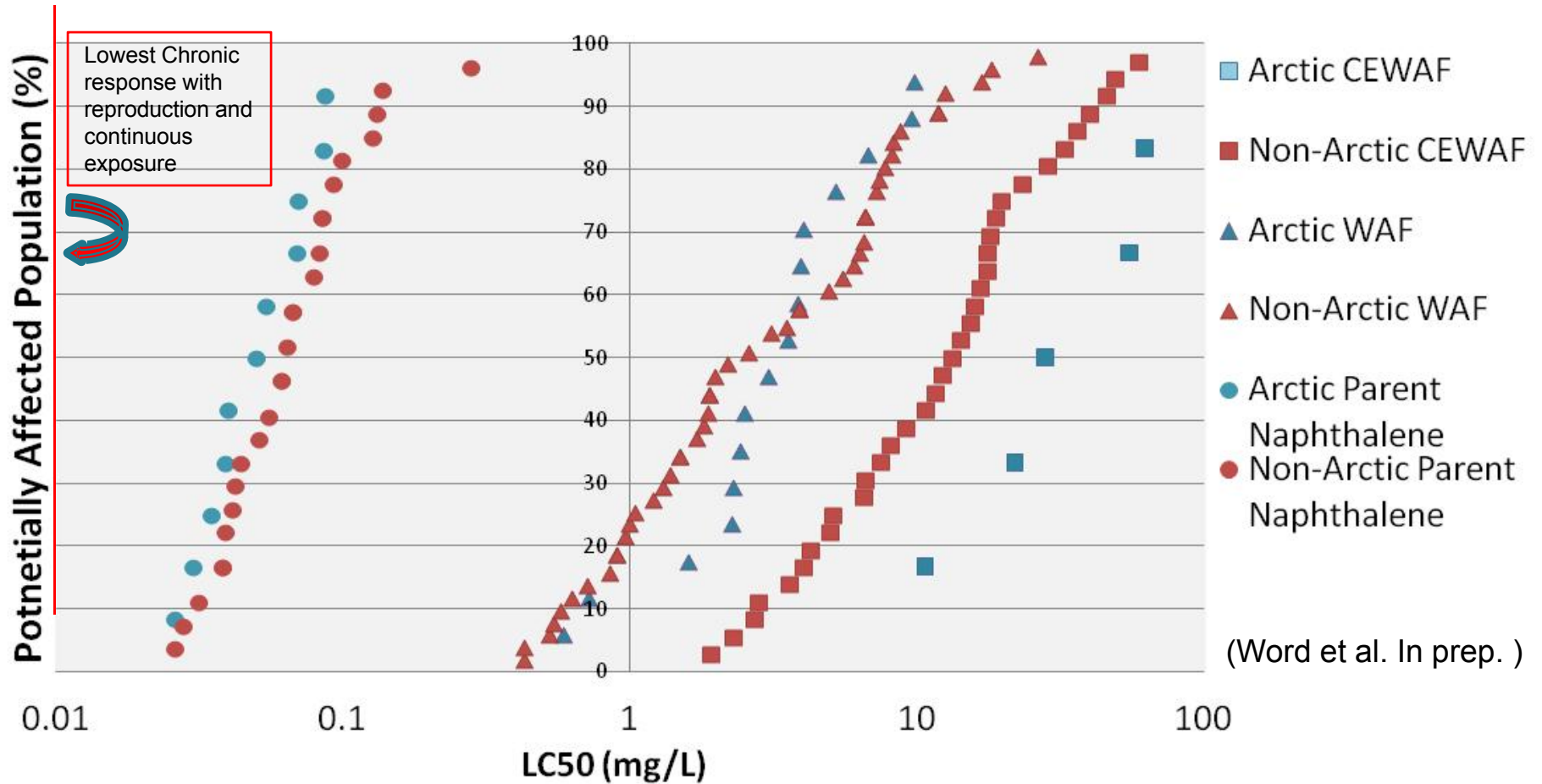
NewFields

Sensitivity of Vertically Migrating Species to Dispersants, Oil, and Dispersed Oil Tested under Surface Conditions

Species	Depth Range (m)	Tested Temp	WAF Spiked	CEWAF Spiked	Methylnaphthalene C ₁₁ H ₁₀	Napthalene C ₁₀ H ₈
<i>Boreogadus saida</i> (Fish: Arctic Cod)	900	2°C	√	√	√	√
<i>Hippoglossoides platessoides</i> (Fish: American Plaice)	3,000	NR			√	
<i>Calanus glacialis</i> ¹	1,000	2°C	√	√		
<i>Calanus finmarchicus</i> ¹	1,300	2°C	√	√		
<i>Calanus hyperboreus</i> ¹	2,400	2°C				
<i>Calanus sinicus</i> ¹	>1,000	8°C	√	√		
<i>Paracalanus aculeatus</i> ¹	4,206	8°C	√	√		
<i>Pandalus borealis</i> (Shrimp)	1,330	5°C	√	√	√	
<i>Anonyx nugax</i> (Amphipod)	1,697	4-10°C	√		√	√
<i>Strongylocentrotus droebachiensis</i> (Sea Urchin)	1,200				√	√

Note: (1) Copepod

Relative Sensitivity of Cold Water and Temperate Species to Dispersants, Oil, and Dispersed Oil



Lowest chronic reproductive response to continuous exposure 0.01 mg/L (UK guidance)

Subsea Dispersants



Sensitivity of Deepwater Organisms to Dispersants, Oil, and Dispersed Oil

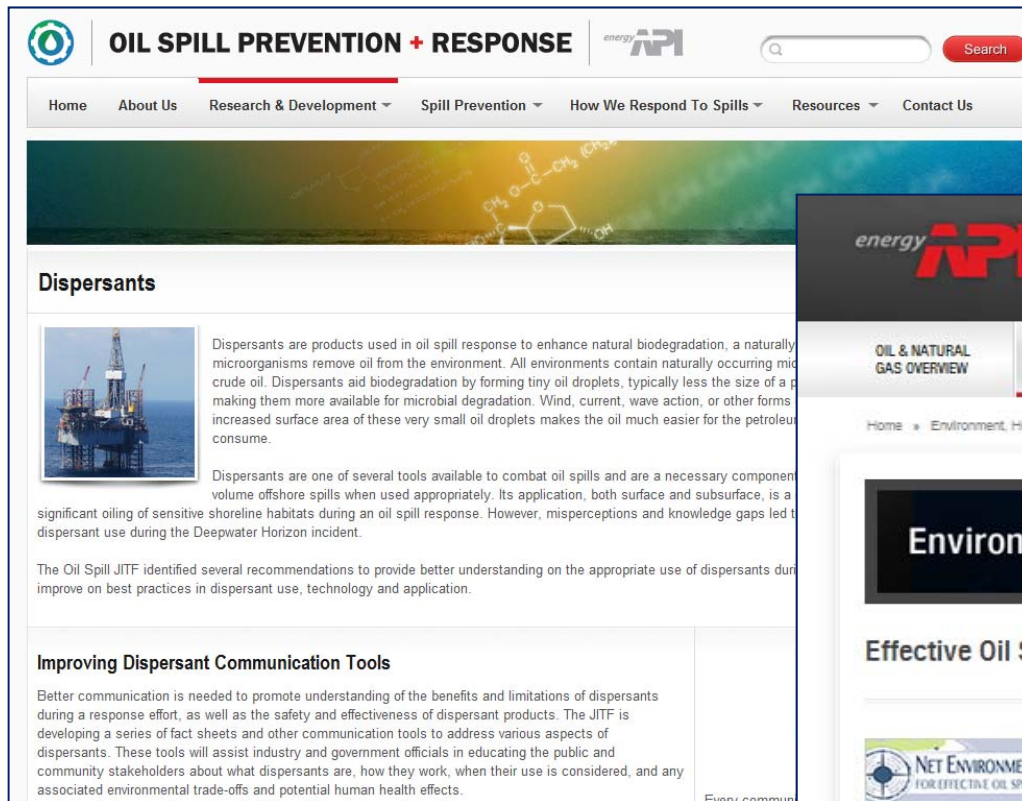
Recommendations for Future Research

- Determine the relative sensitivity of deep water VECs compared to shallow water species whose sensitivities have been well characterized
- Conduct initial phase with acute exposures to selected, single hydrocarbons to derive comparative response to known chemicals for deep water and shallow water species based on SSDs
- Support model development that links hydrocarbon structure to toxicity, advancing a framework for predicting dispersed oil toxicity
- Perform initial toxicity tests with barotolerant species; at one atm pressure; no light; with temperatures, salinities, and DO concentrations appropriate for the test species/life stage.
- Subsequent testing under pressure may be performed after the initial studies are completed and appropriate pressure dosing and exposure characterization methods have been developed.

Fate and Effects Projects Status

- **Biodegradation** - *Funded - University of Tennessee (Dr. Terry Hazen)*
 - State of the Knowledge Summary
 - Evaluating the Need for High Pressure Laboratory Biodegradation Research
 - Defining Laboratory Protocols for High Pressure Biodegradation Testing
- **Toxicity**
 - Phase I – *Funded*
HDR, Inc., and University of Delaware
 - Literature and Model Review on Aquatic Toxicity of Gas Molecules
 - Literature and Model Review on Role of Pressure on Hydrocarbon Aquatic Toxicity
 - DHI Group*
 - Understanding Exposure to Oil Components at Depth – Part 1
 - Phase II – RFP is in preparation
 - Species Sensitivity Distribution (SSD) Check for Deep Sea Species
 - Toxicity of Continuous and Spiked Exposures to Crude Oil at 1 atm for Deep Sea Species – Part 1

Communications Team – API Website



OIL SPILL PREVENTION + RESPONSE | energy API

Home | About Us | Research & Development | Spill Prevention | How We Respond To Spills | Resources | Contact Us

Dispersants

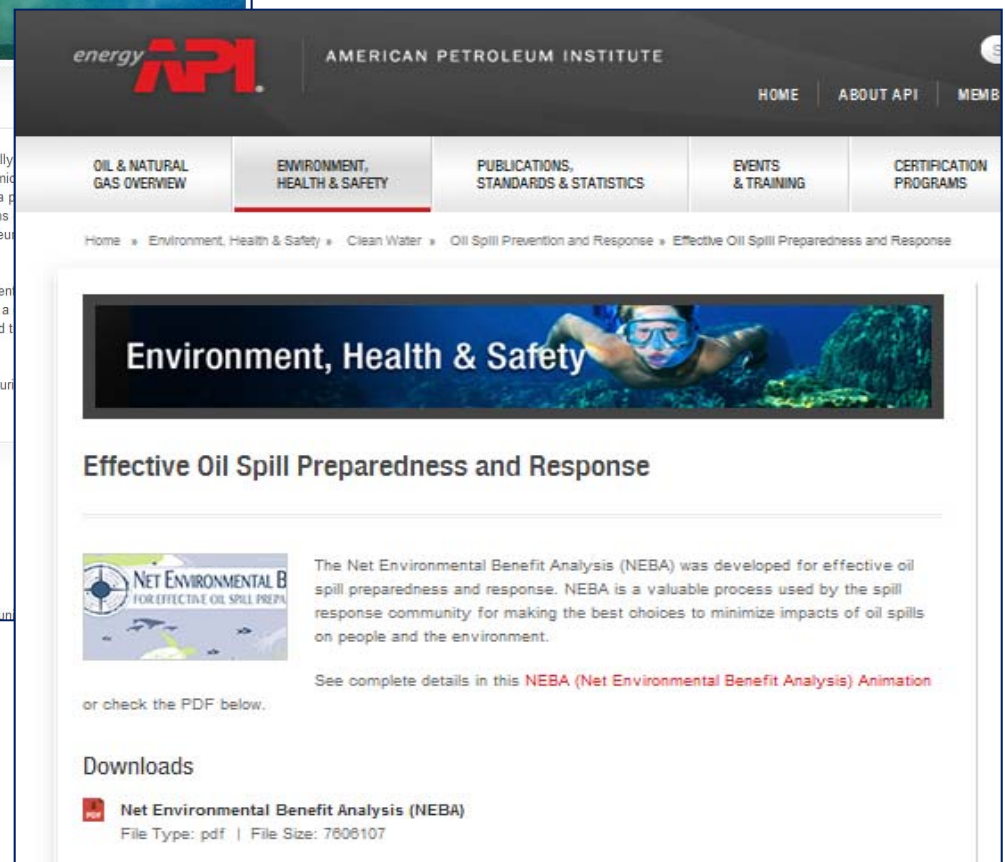
Dispersants are products used in oil spill response to enhance natural biodegradation, a naturally occurring process where microorganisms remove oil from the environment. All environments contain naturally occurring microorganisms that break down oil. Dispersants aid biodegradation by forming tiny oil droplets, typically less than 1 micrometer in size, making them more available for microbial degradation. Wind, current, wave action, or other forces that increase the surface area of these very small oil droplets makes the oil much easier for the petroleum microorganisms to consume.

Dispersants are one of several tools available to combat oil spills and are a necessary component of an oil spill response. Dispersants are used in both surface and subsurface oil spills, including significant oiling of sensitive shoreline habitats during an oil spill response. However, misperceptions and knowledge gaps led to increased dispersant use during the Deepwater Horizon incident.

The Oil Spill JITF identified several recommendations to provide better understanding on the appropriate use of dispersants during an oil spill response and to improve on best practices in dispersant use, technology and application.

Improving Dispersant Communication Tools

Better communication is needed to promote understanding of the benefits and limitations of dispersants during a response effort, as well as the safety and effectiveness of dispersant products. The JTF is developing a series of fact sheets and other communication tools to address various aspects of dispersants. These tools will assist industry and government officials in educating the public and community stakeholders about what dispersants are, how they work, when their use is considered, and any associated environmental trade-offs and potential human health effects.



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OIL & NATURAL GAS OVERVIEW | **ENVIRONMENT, HEALTH & SAFETY** | PUBLICATIONS, STANDARDS & STATISTICS | EVENTS & TRAINING | CERTIFICATION PROGRAMS

Home » Environment, Health & Safety » Clean Water » Oil Spill Prevention and Response » Effective Oil Spill Preparedness and Response

Environment, Health & Safety


Effective Oil Spill Preparedness and Response

The Net Environmental Benefit Analysis (NEBA) was developed for effective oil spill preparedness and response. NEBA is a valuable process used by the spill response community for making the best choices to minimize impacts of oil spills on people and the environment.

See complete details in this [NEBA \(Net Environmental Benefit Analysis\) Animation](#)

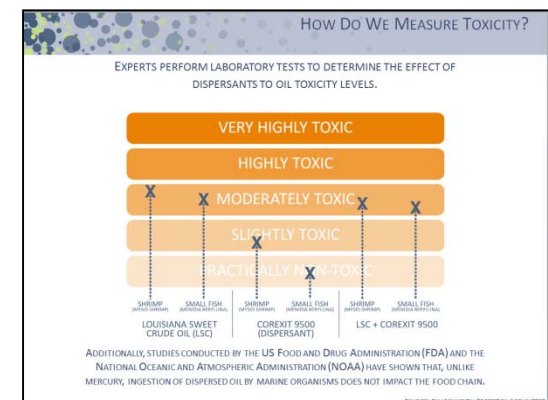
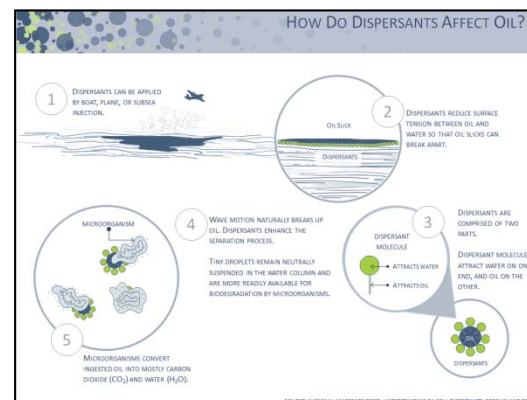
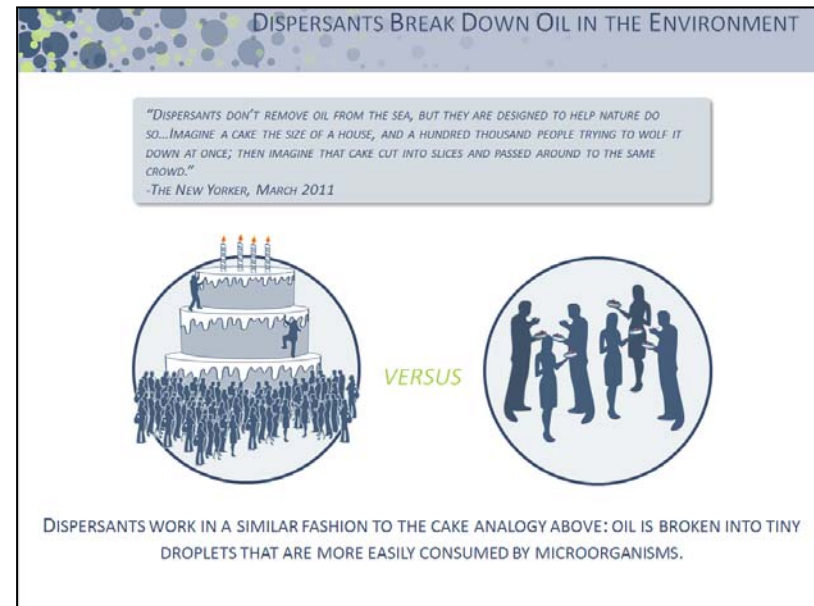
or check the PDF below.

Downloads

 **Net Environmental Benefit Analysis (NEBA)**
File Type: pdf | File Size: 7608107

Outreach Materials: Scan and Glance

- Develop communications materials explaining dispersant use. Convert complex topics to relatively simple information
- Tools designed to educate the public, media, and government
- Collaborate with OGP/IPIECA
- Topics include: Dispersants, NEBA, Tiered response.
- Formats: PowerPoints, booklets, fact sheets



Published Materials: Fact Sheets

Introduction to Dispersants

Dispersants — Human Health and Safety

Fate of Oil and Weathering

Toxicity and Dispersants

Dispersant Use Approvals in the United States

Assessing Dispersant Use Trade-offs

Aerial and Vessel Dispersant Operations

Subsea and Point Source Dispersant Operations

Dispersants Use and Regulation Timeline

Dispersant Use in the Arctic Environment

Things You Should Know

SUBSEA AND POINT SOURCE DISPERSANT OPERATIONS

SpillPrevention.org



Dispersants may only be applied with the appropriate government approvals.

Subsea injection reduces the amount of oil coming to the surface and the potential for exposure by personnel to the volatile organic components of the oil.

Subsea injection may require significantly less dispersant compared to dispersing at the surface. In a subsea release or a puncture of a pipeline or tanker that cannot be rapidly controlled, decision-makers should consider the application of dispersants as close to the leak source as possible.

An efficient subsea dispersant delivery system could potentially treat the vast majority of oil escaping from a single release point before it reaches the surface and forms a widely spread slick.

Subsea injection may proceed day and night and is generally not limited by weather. Other response options are usually limited to daylight hours and could have significant weather limitations.

Dispersants remove oil from the water surface thereby protecting birds, mammals and sensitive shorelines.

Oil discharged in deep waters will be removed from the environment by petroleum degrading bacteria found throughout the water column world-wide. The addition of dispersant will enhance the rate of biodegradation due to the increased surface area accessible to bacteria.

Treated oil is rapidly diluted to the point that biodegradation occurs at low concentrations without depleting oxygen or nutrients.

Overview

Dispersants are products used in oil spill response to enhance natural microbial degradation, a naturally occurring process where microorganisms remove oil from the environment. All environments contain naturally occurring microbes that feed on and break down crude oil. Dispersants aid the microbial degradation by forming tiny oil droplets, typically less than the size of a period on this page (<100 microns), making them more available for microbial degradation. Wind, current, wave action, or other forms of turbulence help both this process and the rapid dilution of the dispersed oil. The increased surface area of these very small oil droplets in relation to their volume makes the oil much easier for the petroleum-degrading microorganisms to consume.

Dispersants can be used under a wide variety of conditions since they are generally not subject to the same operational and sea state limitations as the other two main response tools - mechanical recovery and burning in place (also known as in-situ burning). While mechanical recovery may be the best option for small, near-shore spills, which are by far the majority, it has only recovered a small fraction of large offshore spills in the past and requires calm sea state conditions that are not needed for dispersant application. When used appropriately, dispersants have low environmental and human health risk and contain ingredients that are used safely in a variety of consumer products, such as skin creams, cosmetics, and mouthwash (Fingas, et al., 2001; 2006).

This fact sheet summarizes the benefits and limitations of dispersants use for subsea and point source injection.

Fact Sheet Series

Introduction to Dispersants
Dispersants — Human Health and Safety
Fate of Oil and Weathering
Toxicity and Dispersants
Dispersant Use Approvals in the United States
Assessing Dispersant Use Trade-offs
Aerial and Vessel Dispersant Operations
Subsea and Point Source Dispersant Operations
Dispersants Use and Regulation Timeline
Dispersant Use in the Arctic Environment

Research Review Panel

- A group of experts that will be reviewing and evaluating dispersant-related research publications.
- The API Joint Industry Task Force and the International Association of Oil and Gas Producers (OGP) Oil Spill Response (OSR) Joint Industry Project co-sponsors
- Work began in October 2013

Name	Affiliation
Victoria Broje	Shell Exploration and Production Company Co.
Per Johan Brandvik	SINTEF Marine Env. Technology
Robyn Conmy	United States Environmental Protection Agency
Tom Coolbaugh	ExxonMobil Research & Engineering
Cortis Cooper	Chevron Energy Technology Corp.
Will Gala	Chevron Energy Technology Corp.
Ken Lee	CSIRO
Alun Lewis	Oil Spill Consulting
Don Mackay	Trent University
Francois Merlin	CEDRE
Tim Nedwed	ExxonMobil Upstream Research Company
Nicolas Passade-Boupat	Total Exploration and Production
Debbie Payton	NOAA, OR&R Emerg. Resp.
Ken Trudel (Coordinator)	S.L. Ross Environmental Research Ltd.

Q&A



Oil – Trends and Risk





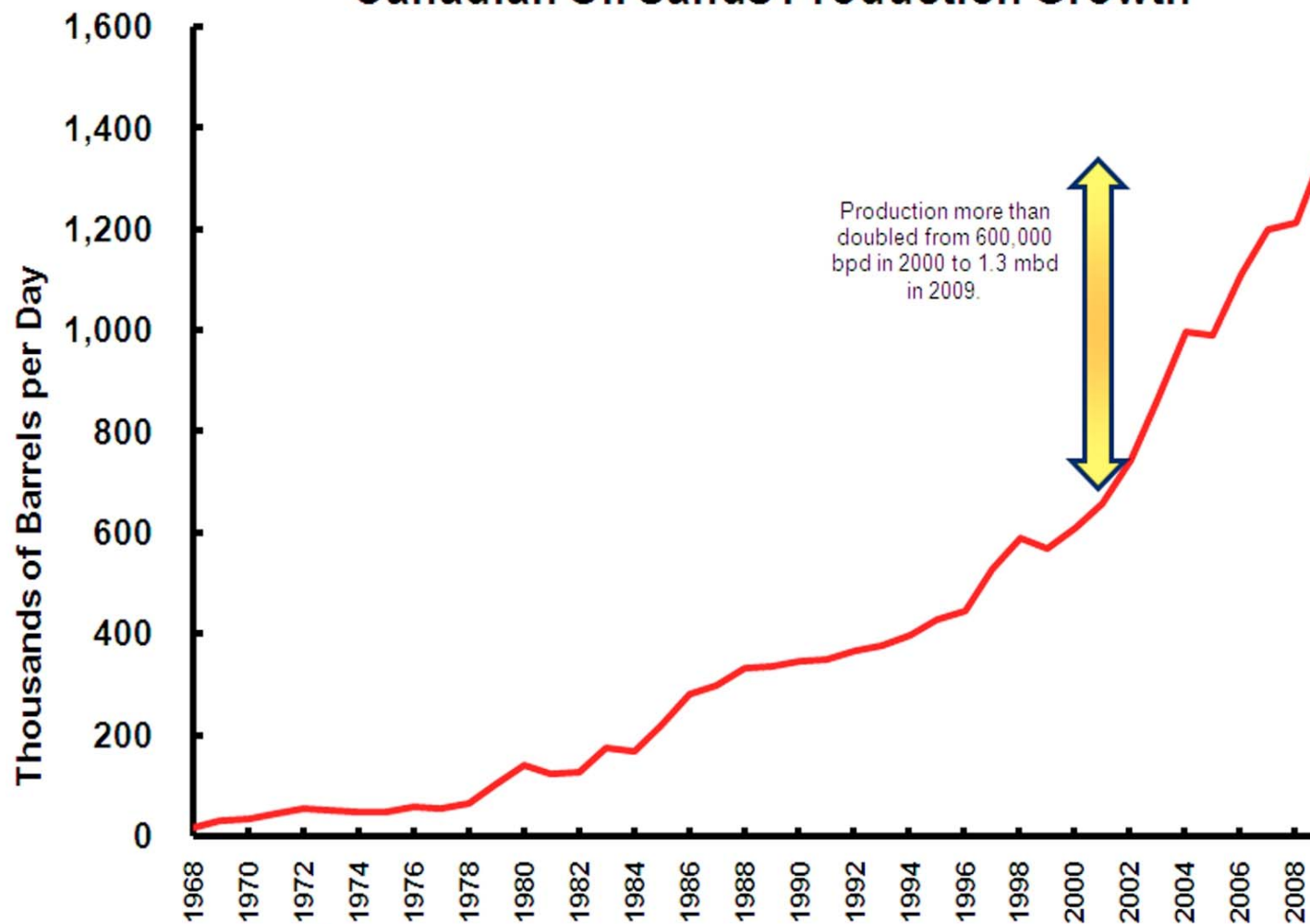
Acknowledgement



- Majority of info is from presentations given at March 2014 NRT meeting
 - Slides 3-10
 - Taken from 18 March 2014 NRT Oil Sands Products 101, presentation given by **Gary Shigenaka**, NOAA/Office of Response & Restoration/Emergency Response Division
 - Slides 11 – 15 and photos in Slide 1
 - Taken from 18 March 2014 NRT Transporting Risk: The Domestic Oil & Gas Boom authored by **David Behler**, **Kat Pfleeger**, and **Brian Milchak**, Department of the Interior, Office of Environmental Policy and Compliance (DOI/OEPC)
 - Slides 16-18
 - Taken from 18 March 2014 NRT Transporting Risk: Bakken Crude presented by **Gina Cristiano**, R8 EPA OSC, Emergency Response & Planning Coordinator

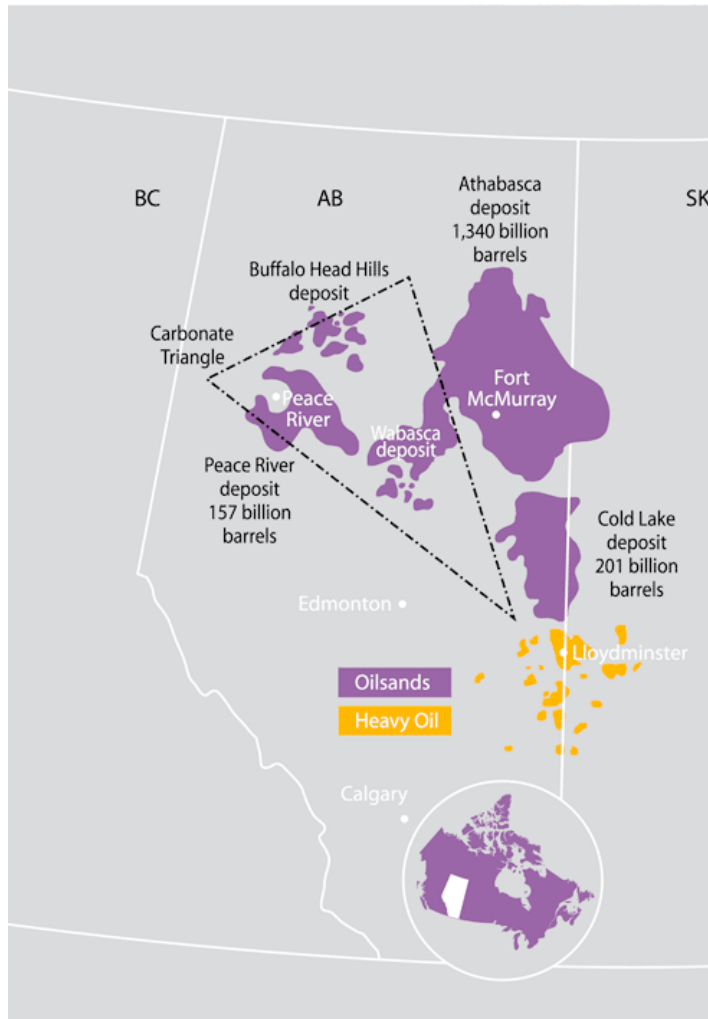


Canadian Oil Sands Production Growth

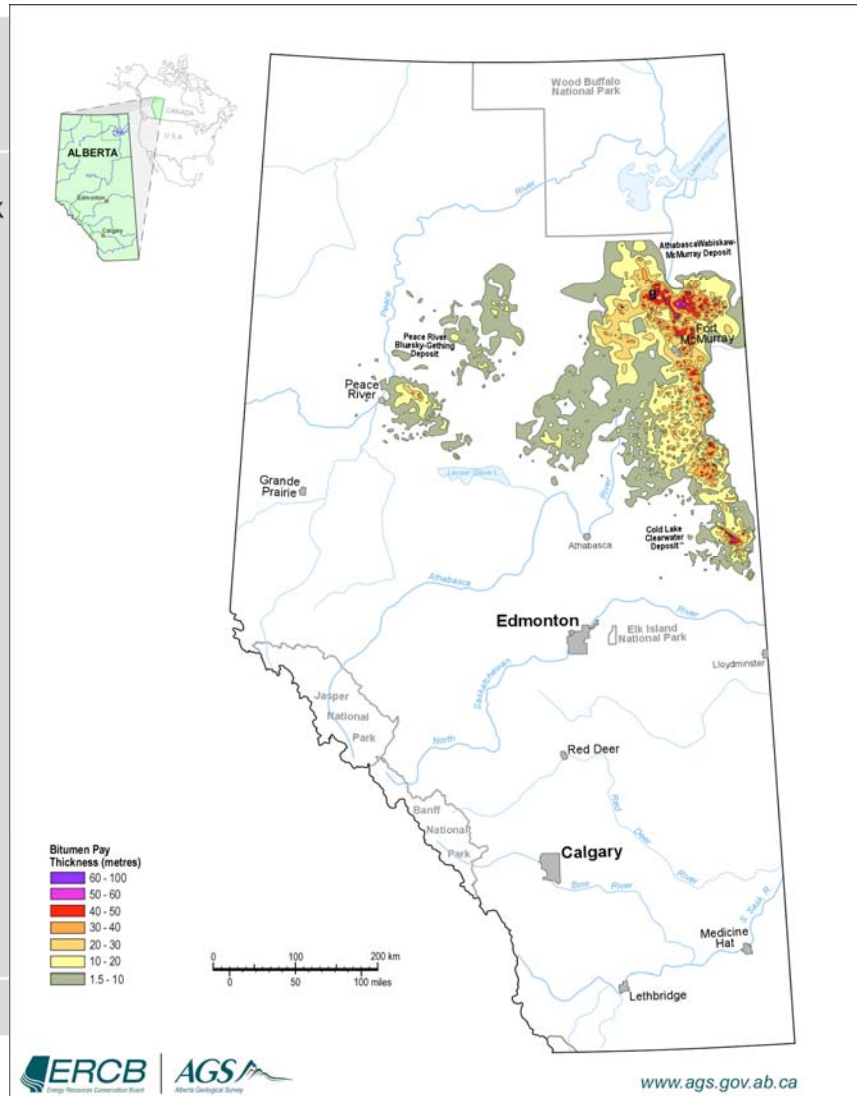


Source: IHS CERA, CAPP.

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Source: Canadian Centre for Energy Information







Oil Sands Products:



Definitions

- **Oil sands/(tar sands):** Naturally-occurring combination of bitumen, clay, sand, and water
- **Bitumen:** Semi-solid raw petroleum product resulting from in-situ partial biodegradation of crude oil reserve
- **Diluent:** Any lighter viscosity petroleum product used to dilute bitumen for transportation
- **Dilbit:** Diluted bitumen, bitumen mixed with any diluent for transport
- **Synbit:** Bitumen combined with synthetic crude oil
- **Dilsynbit:** Synbit combined with a diluent





Oil Sands Products Spill



Incidents

- Burrard Inlet pipeline rupture, Burnaby BC
 - July 25, 2007
 - 58,000 gal. dilsynbit, 25,000 gal. into water
- Enbridge/Kalamazoo River spill, Marshall MI
 - July 26, 2010
 - 843,000+ gal.
- Enbridge/Lakehead System, Romeoville IL
 - September 9, 2010
 - 250,000 gal. "oil sands"
- CNRL Cold Lake, Alta production sites
 - May 2013 - ongoing?
 - 370,000 gal. "bitumen emulsion"
- Exxon/Mobil Pegasus oil spill, Mayflower AR
 - March 29, 2013
 - 210,000 gal. Wabasca Heavy crude



Initial Response Hazards Summary



Hazard	Dilbit	Bakken Crude	ANS Crude
Fire/Explosion	Yes - due to diluent	Yes	Yes - low
Benzene	Yes - depending on diluent	Yes - concentration up to 3%	Yes - low
Hydrogen Sulfide	Possibly - will need monitoring	No	Yes



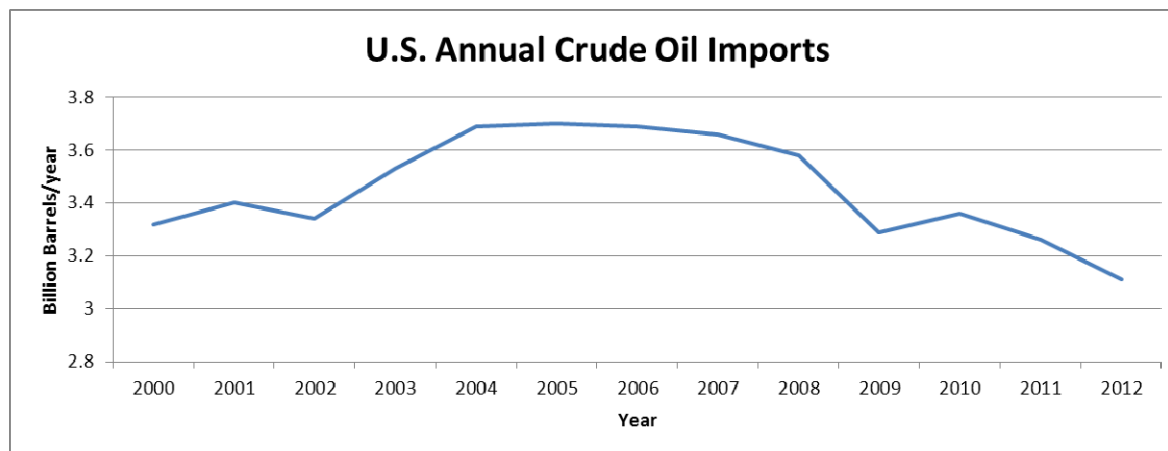
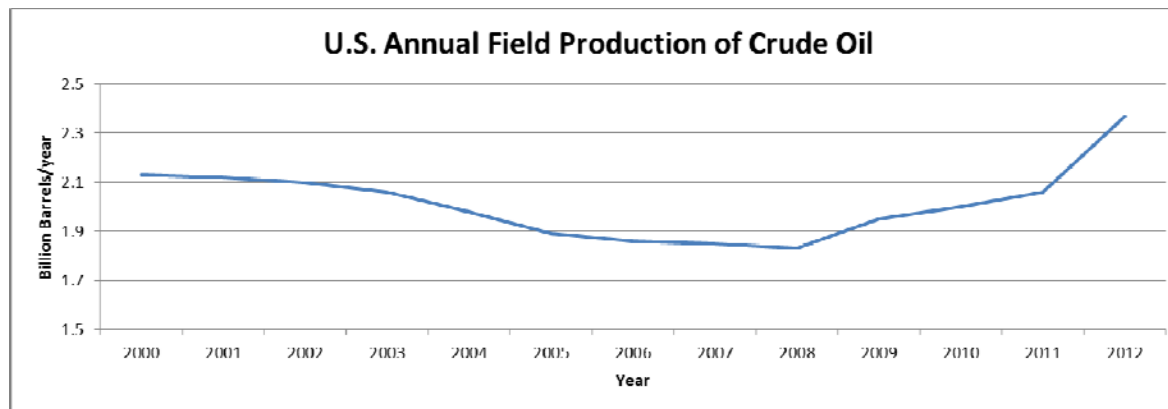
Oil Sands Products:

A few bottom lines

- Float or sink?
 - Floats when fresh as well as weathered...but approaches or exceeds neutral density. In the Kalamazoo Rivers spill, some oil bound with sediments and is an issue 4 years later.
- Inhalation hazard?
 - Environment Canada measured very rapid evaporation for dilbits (12-16% in 6 hrs).
 - Kalamazoo River: benzene exceedances measured by EPA.
- Corrosivity?
 - Oil sands products do not appear to be more corrosive than other crude oils transported by pipeline.
- Toxicity?
 - We have not encountered anything unusual about dilbit toxicity, although Gainford study measured very rapid and high concentrations of BTEX in water.
- Policy?
 - Tax issues: oil sands products are not “oil”; and state tax exempt for “right of innocent passage.”



Since 2000: A dramatic increase in US domestic oil production and simultaneous decrease in foreign oil imports.

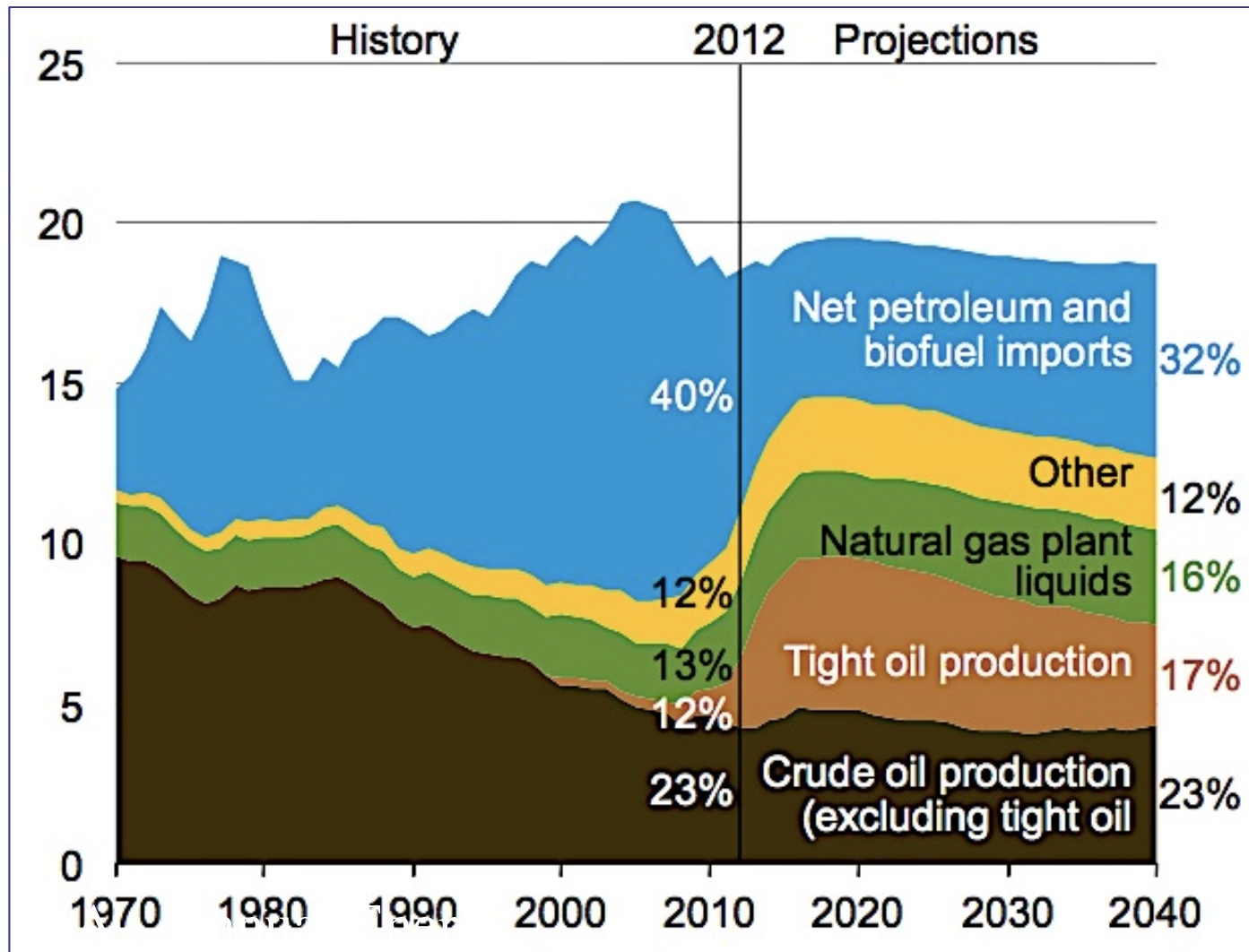




U.S. Petroleum and Other Liquid Fuels Supply by Source,



1970-2040 (million barrels per day)



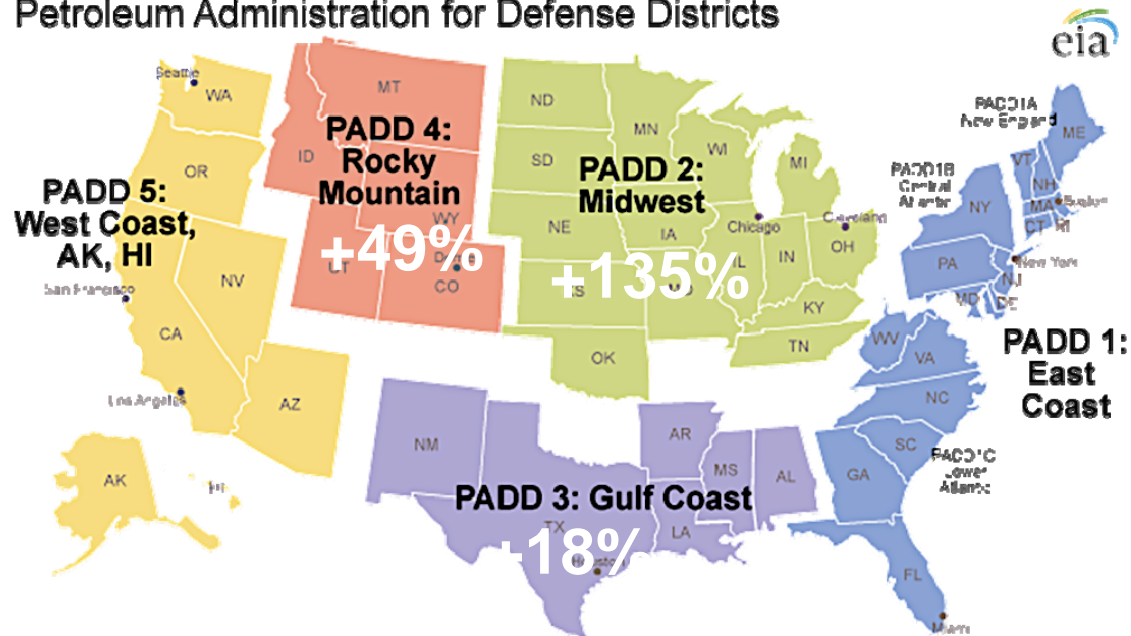


2012 Crude Oil Production by Region



Percent Change Since 2000

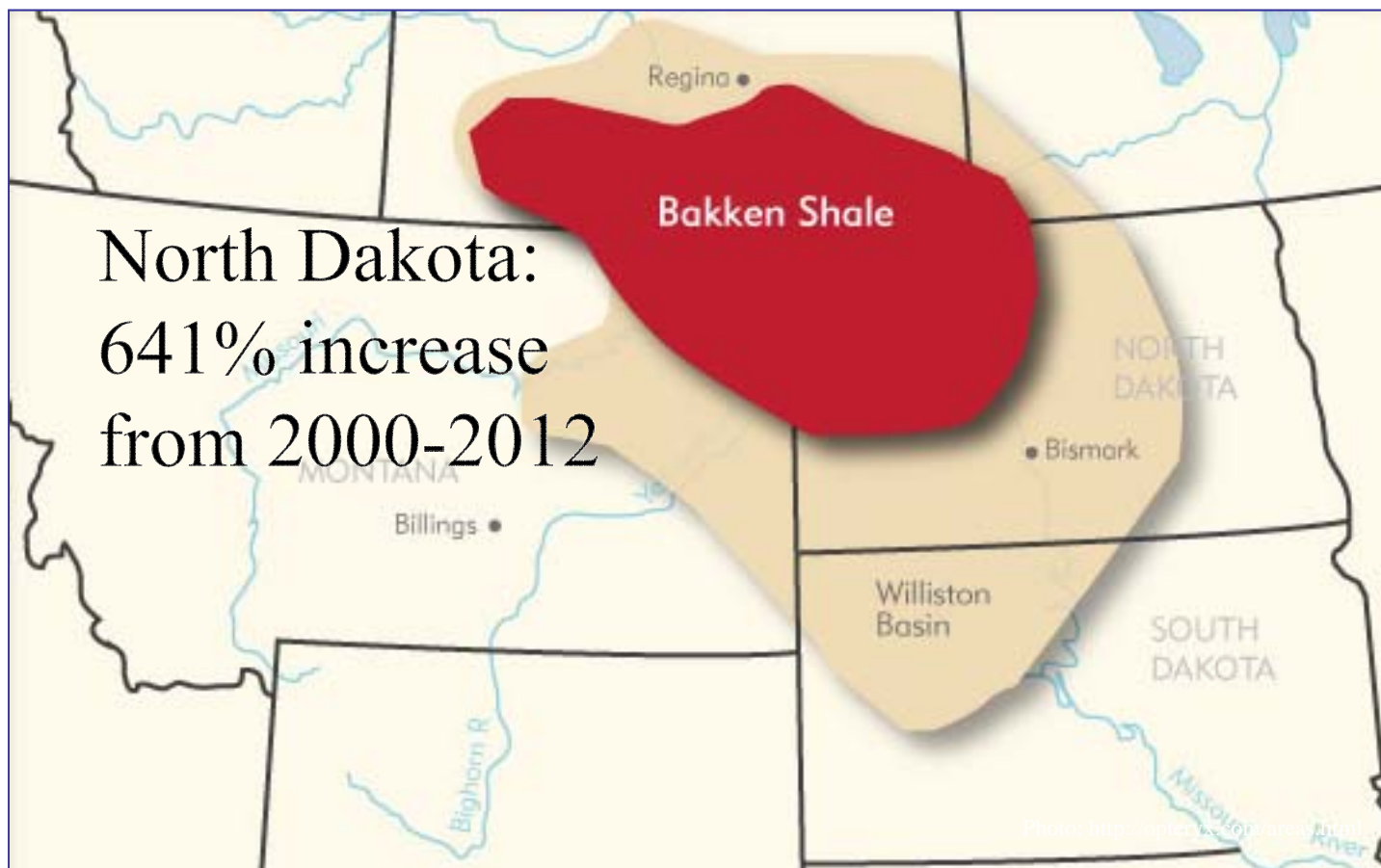
Petroleum Administration for Defense Districts



1. **East Coast**: 9.42 million
2. **Midwest**: 408 million
3. **Gulf Coast**: 1.39 billion
4. **Rocky Mountain**: 164 million
5. **West Coast, AK, HI**: 407 million

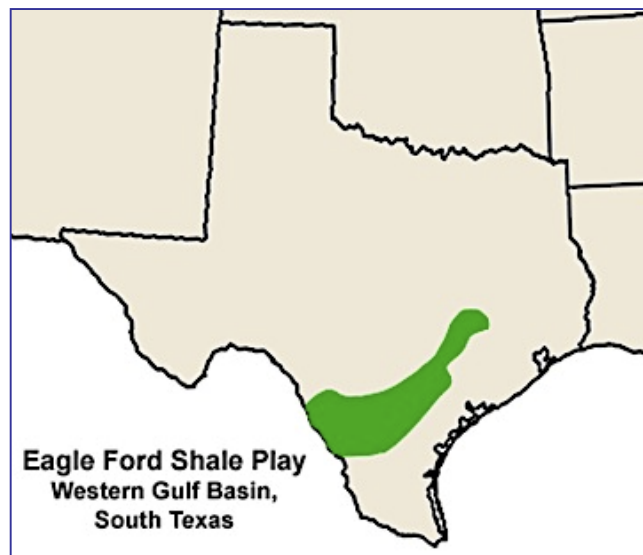
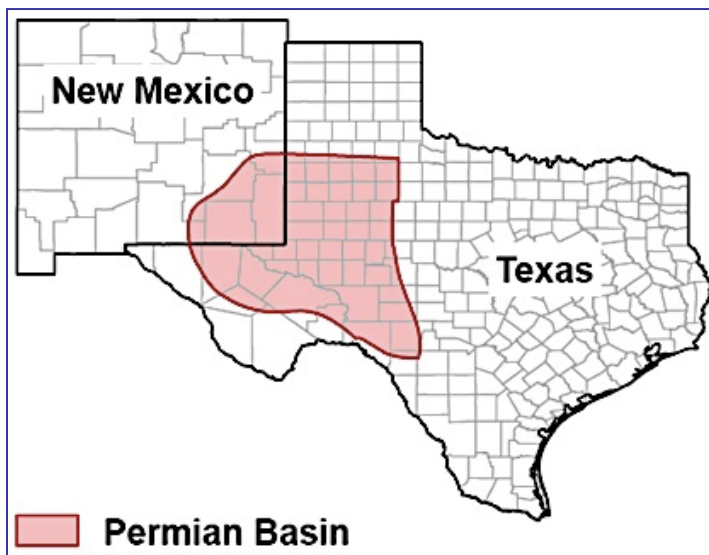


Areas of Greatest Production Growth: Bakken Shale (Williston Basin)



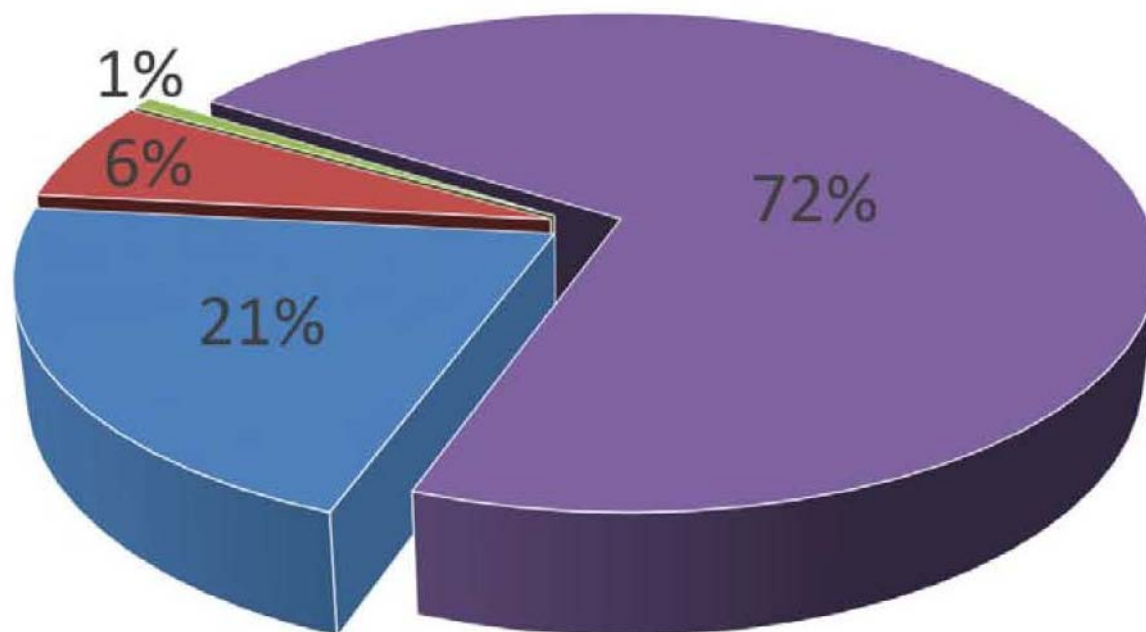


Areas of Greatest Production Growth: Permian Basin and the Eagle Ford Shale Play





Bakken Oil Transportation



■ Estimated Pipeline Export ■ Tesoro Refinery
■ Truck to Canadian Pipelines ■ Estimated Rail

Monthly Production (bbls)	Pipeline Export (bbls/month)	Rail Export (bbls/month)	Rail Export (cars/month)
28.9M	6M	~21M	~30,000



Bakken Crude - Characteristics



Property	Units	Oil Types						
		Gasoline	Diesel	Light Crude	Bakken Crude	Heavy Crude	Intermediate Fuel Oil	Bunker C
Density	Kg/M ³ @ 15°C	720	840	780 to 880	816 to 822	880 to 1000	940 to 990	960 to 1040
API Gravity		65	35	30 to 50	40.5 to 43.1	10 to 30	10 to 20	5 to 15
Viscosity	mPas @ 15°C	0.5	2	5 to 50		50 to 50,000	1,000 to 15,000	10,000 to 50,000
Flash Point	15°C	-35	45	-30 to 30	<-30 to <-35	-30 to 60	80 to 100	>100
Solubility in Water	ppm	200	40	10 to 50		5 to 30	10 to 30	1 to 5
Pour Point	°C	NR	-35 to -1	-40 to 30	<-65	-40 to 30	-10 to 10	5 to 20
Interfacial Tension	mN/m @ 15°C	27	27	10 to 30		15 to 30		25 to 35



Response/Safety Considerations



- Light crude/High API is amenable to typical response tactics and natural attenuation if spilled
- Increased production + increased rail = increased potential for accidents
- Potential NRT areas of focus
 - First responders – flammability, improper placards
 - Reiterate, update typical rail concerns (fire, BLEVE)
 - NRT agency partnership with DOT, RRTs and DOT
 - Transloading



My observations

- Not all oil spills are the same....
 - Some oil can pose an immediate public health threat
 - May impact the type and timing of response assets
- Emergency responders need to know all hazards associated with spill when responding
- Air monitoring/sampling program may need to be implemented early to ensure that cleanup personnel and public is safe
- Need to identify oil characteristics to ensure that oil spill recover techniques are correctly applied



Operation Safe Delivery

*Enhancing the Safe Transport of Crude Oil and Other
Flammable Liquids*

**RRT 6 Co-Chairs Meeting
March 19, 2014**

Tay Rucker

**Pipeline and Hazardous Materials Safety Administration
Office of Hazardous Materials Safety**



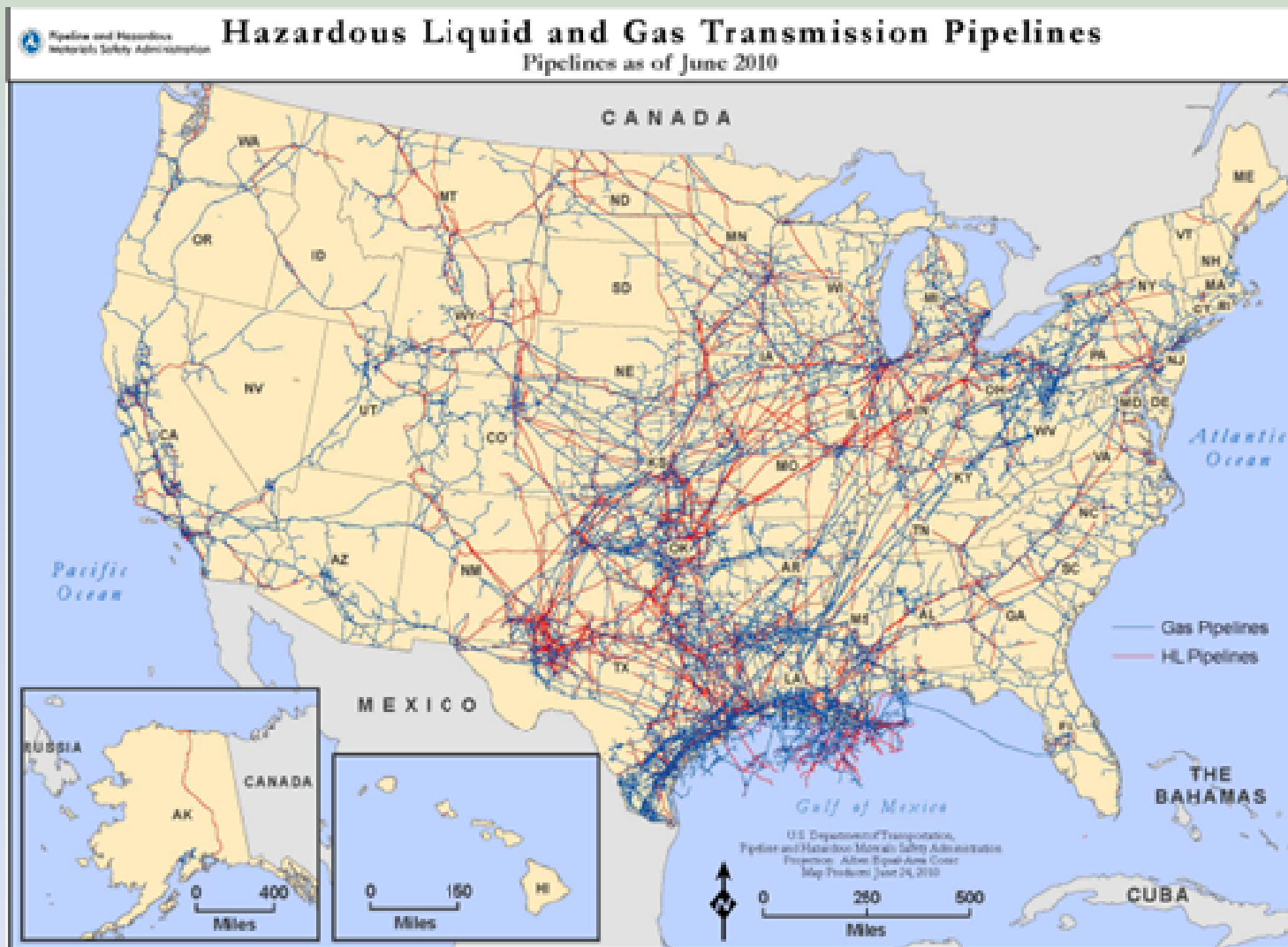
Pipeline and Hazardous Materials Safety Administration

Protect people and the environment from the risks of hazardous materials transportation by all modes.

- Safe transportation of more than 1 million shipments of hazmat moved by air, rail, highway, and water each day.
- Safety of over 2.6 million miles of natural gas and hazardous liquid pipelines.



Pipelines in the United States

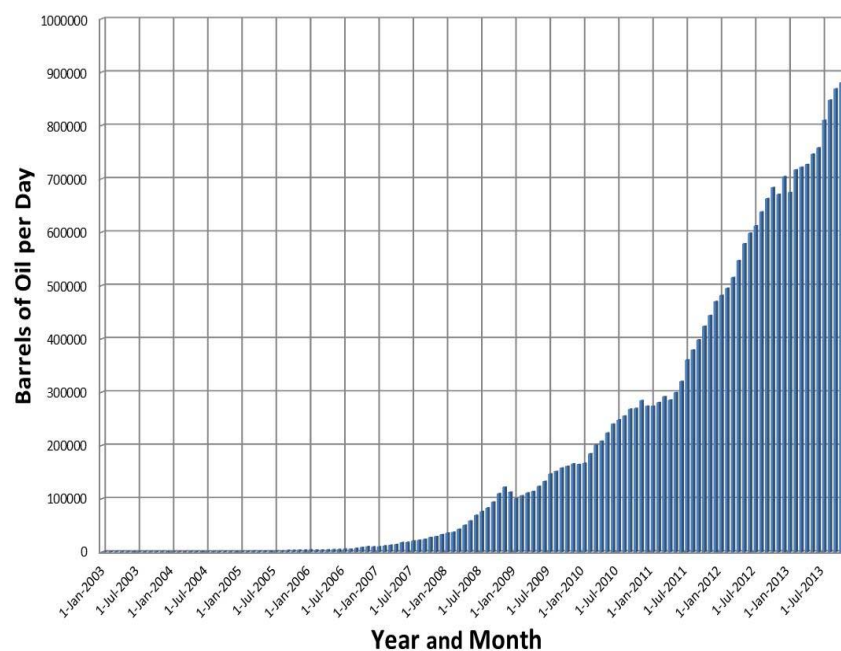




US Energy Production

- Growth of domestic natural gas and crude oil production is revolutionizing the US energy economy.
- During December 2013, over 11 million barrels daily were produced.
- In 2013 the Bakken play (Region) produced over 10% of all US oil.
- In November 2013, over 10,022 Bakken wells produced 29 million barrels of oil, over 900,000 barrels of oil daily.

Table 1: Bakken Oil Production in North Dakota 2003-2013



US Energy Production

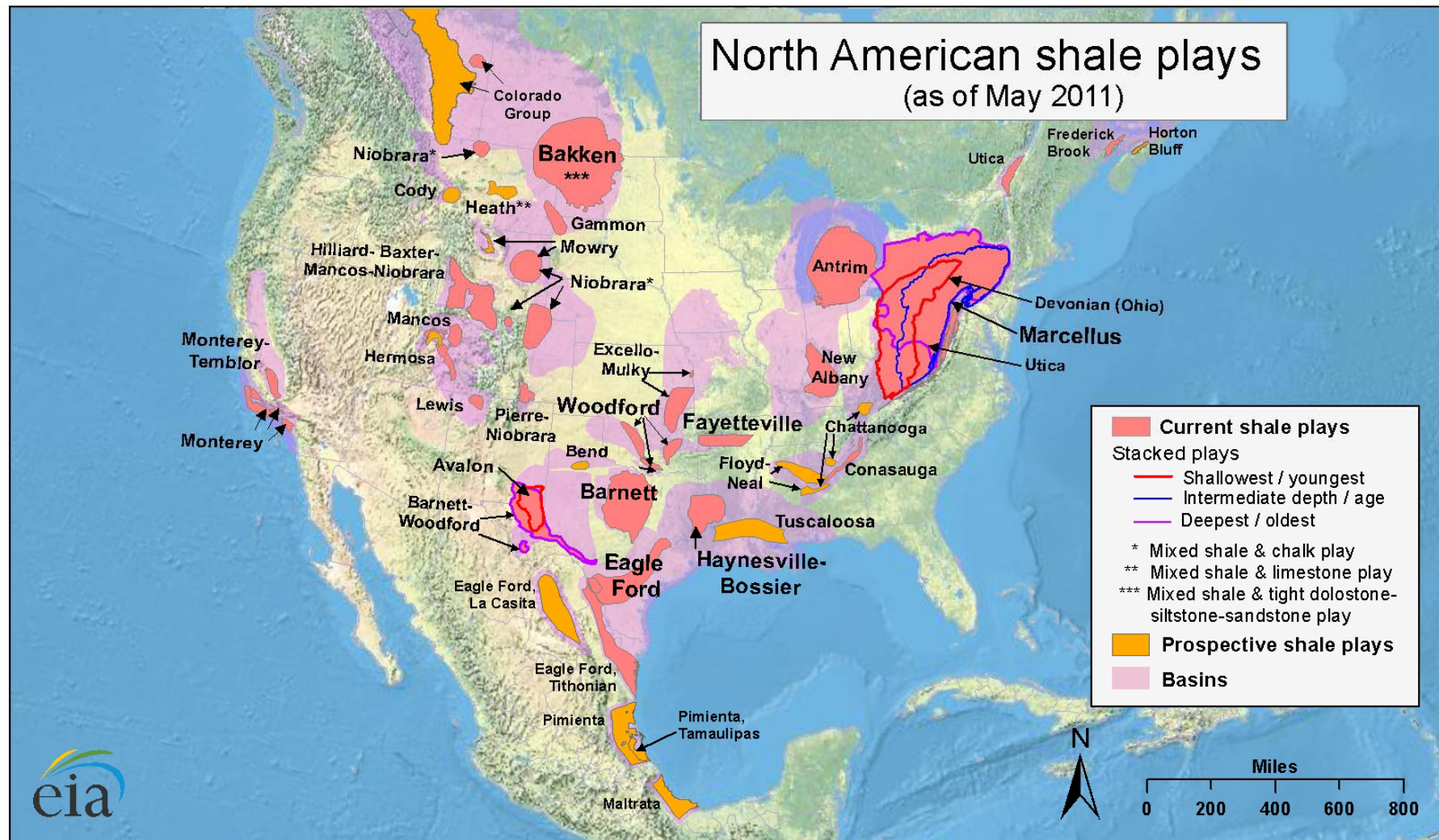
- 52% of domestic oils comes from 20 counties
- Eagle Ford Shale
- Bakken
- Alaska
- Gulf of Mexico

US Energy Production

- Six shale regions account for 95 percent of the oil production growth in the United States: the Eagle Ford in South Texas, the Permian in West Texas and New Mexico, the Bakken in North Dakota and Montana, the Haynesville in Louisiana and East Texas, the Marcellus in the Northeast, and the Niobrara largely in Colorado.

Unconventional Oil and Gas

A Game Changer

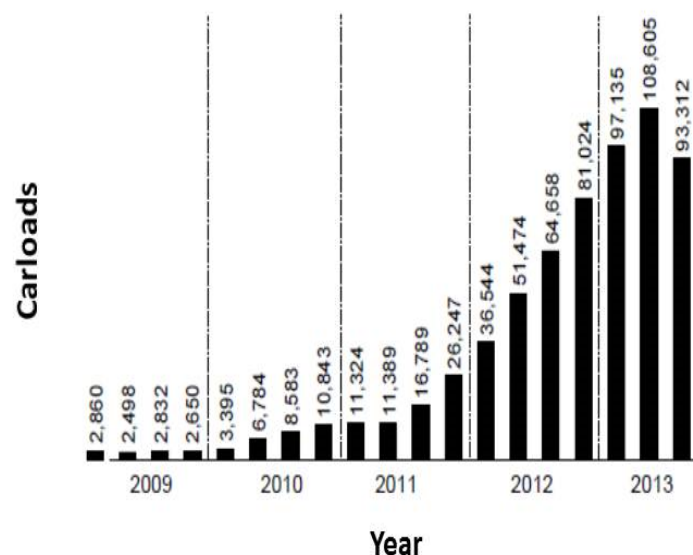




Crude Oil Transport

- Increased energy production results in increased transport by all modes.
- The volume of crude oil moving by rail has quadrupled in less than a decade – 725K bbl daily.
- Rail volume has increased, but accidents have declined by 43 %.
- Accidents involving Hazmats are down 16 %.
- Increased use of unit trains of 100+ cars of a single commodity.

Table 2: Originated Carloads of Crude Oil on Class 1 Railroads



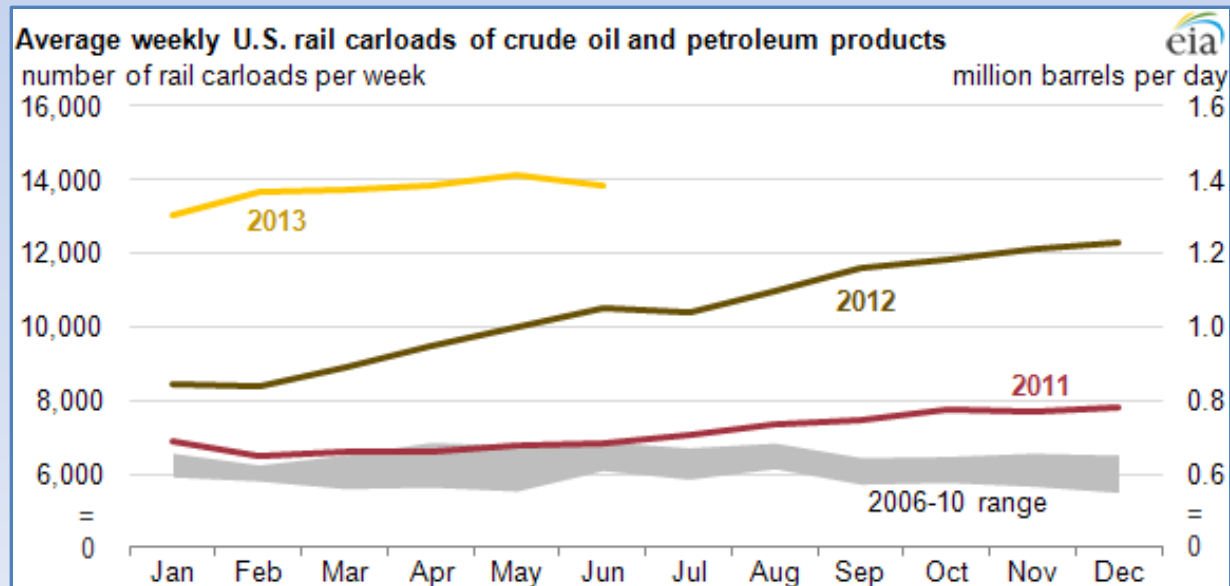
Waybill Sampling* of Crude Oil By Rail



* Represents only a “sampling” of waybills – not necessarily an accurate view of where crude actually travels by rail

Significant Rise in Crude Oil Shipments by Rail

- Limited pipeline capacity and geography of refineries favoring light crude has increased use of rail.
- The increase in rail shipments is projected to continue.





Recent Bakken Crude Oil Derailments

- Plaster Rock, NB

January 7, 2014, 16 cars derailed, 8 hazmat)

- Casselton, ND

December 20, 2013, 20 of 106 tankers derailed

- Aliceville, AL

November 8, 2013, 25 of 90 cars derailed

- Lac-Megantic, PQ

July 6, 2013, 74 cars derailed, 47 fatalities





Recent Bakken Crude Oil Derailments

- Lynchburg, VA

April 30, 2014, 15 TC derailed, 3 TC leak & burn)

- LaSalle, CO

May 9, 2014, 6 TC derailed, 1 leaker





Operation Safe Delivery

Comprehensive approach to address risks, prevent derailments and reduce consequences of flammable liquids by rail.

- Product testing and analysis
- Inspections and enforcement
- Rulemaking
- Partnerships
- Public Outreach
- Aggressive Actions



Emphasis on prevention and mitigation.



Rulemaking

- **September 6, 2013: Advanced Notice of Proposed Rulemaking (ANPRM)** to improve the crashworthiness of DOT 111 tank cars.
- **December 5, 2013:** Comment closing date – over **150,000** comments were received.
- **March 2014: NPRM** being finalized to include enhancements to rail operational procedures.



Non-Regulatory Actions

- **August 2013:** The FRA issued **emergency order** for railroads to properly secure rolling equipment.
- **August 2013:** PHMSA and FRA issued **safety advisory** recommending railroads take additional action to eliminate risk.
- **November 2013:** PHMSA and FRA issued a **safety advisory** reinforcing the importance of proper characterization, classification, and selection of a packing group for Class 3 materials.
- **January 2014:** PHMSA issued a **safety alert** advising Bakken crude may be more flammable than traditional heavy crude oil.
- **February 2014:** Secretary of Transportation issued an **Emergency Order** requiring shippers of petroleum crude oil to ensure crude oil is properly analyzed and classified prior to transportation



Non-Regulatory Actions

- **May 2014:** PHMSA and FRA issued **safety advisory** recommending offerors & carriers of Bakken crude oil to avoid the use of older, legacy DOT 111 & CTC 111 tank cars.
- **May 2014:** Secretary of Transportation issued an **Emergency Order** requiring single trains of Bakken crude oil to notify SERCs for each state when transporting 1 million gallons of crude of its route.



Enhanced Enforcement

- **Operation Classification:** Unannounced inspections and testing of crude oil samples to verify classification.
 - **August 2013:** Launch of “Operation Classification.”
 - PHMSA tested for vapor pressure, boiling point and other physical characteristics on 14 samples.
 - Coordinating efforts with Transport Canada and North Dakota.
 - **February 2014:** PHMSA has initiated a notice of proposed violations (NOPV) against 3 shippers with additional actions pending.



The Secretary's Call to Action

- In January, 2014, Secretary Foxx issued a **Call to Action** to rail company CEOs and energy association leadership.
- January 16, 2014, Secretary Foxx met with petroleum and railroads industry to discuss crude oil safety.
- 30-day proposed changes focused on:
 - Proper classification and characterization
 - Operational controls to lessen the likelihood of accidents
 - Tank car and rail track integrity
- Voluntary improvements were identified (February 2014).
- PHMSA and FRA are continuously engaged with stakeholders to ensure progress and effectiveness of safety improvements.



Industry Actions

- Association of American Railroads Letter of Agreement To DOT includes
 - Routing Considerations
 - Speed Restrictions, distributed power and operational controls
 - Rail inspection and maintenance
 - Emergency Response assessment and training
- API/Bakken Crude Oil Producers –
 - Development of testing and analysis best practice methodology
 - Sharing of crude oil testing/analysis data and methodology



PHMSA's Next Steps

- Consider other regulatory actions and will explore all regulatory avenues.
- Continue to work with shippers and carriers to address safety gaps and issues
- Continue Operation Classification and enhance outreach efforts to better educate the regulated industry, emergency responders and the public about crude oil and rail safety.



Operation Safe Delivery Website – www.phmsa.dot.gov

PHMSA - Hazmat Safety Community - Operation Safe Delivery: Enhancing the Safe Transport of Flamm - Windows Internet Explorer

<http://phmsa.dot.gov/portal/site/PHMSA/menuitem.6f23687c7b0b0f22e4c6962d9c87897/vgnnextoid=c5f6d96d8283410VgnVCM100000d2c97898F>

operation safe delivery

Convert Select

Favorites ADP Resource CCMS v5 Google Tim's Gov't CC Business Cards Correspondence UPS Castle Timecards GovTrip Access to UniSpec email PROCAS Time & Expense

Emergency Responder Eng... PHMSA - Hazmat Safet...

About PHMSA Pipeline Safety Hazardous Materials Safety


Advanced Search

Home > Hazmat Safety Community

Operation Safe Delivery: Enhancing the Safe Transport of Flammable Liquids

In this article: Call to Action

Show Related Links



Call to Action

In response to recent accidents involving crude oil shipments by rail in the U.S. and Canada, U.S. Transportation Secretary Anthony Foxx has issued a "Call to Action," calling on rail company executives, associations, shippers, and others to discuss how stakeholders can prevent or mitigate the consequences of rail accidents that involve flammable liquids. [See recent Call to Action letter from Secretary Foxx.](#)

Nearly a million shipments of hazardous materials move throughout the U.S. each day. While most of these shipments reach their final destinations without incident, accidents can and do occur. DOT remains committed to the safe transport of flammable liquids by all modes of transportation, including the nation's 140,000 mile freight railroad network.

Action Plan

Done, but with errors on page. Trusted sites | Protected Mode: Off 100%



Contacts

Office of Pipeline Safety:

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Office of Hazmat Safety

Hazardous Materials Safety Team (HMSAT)

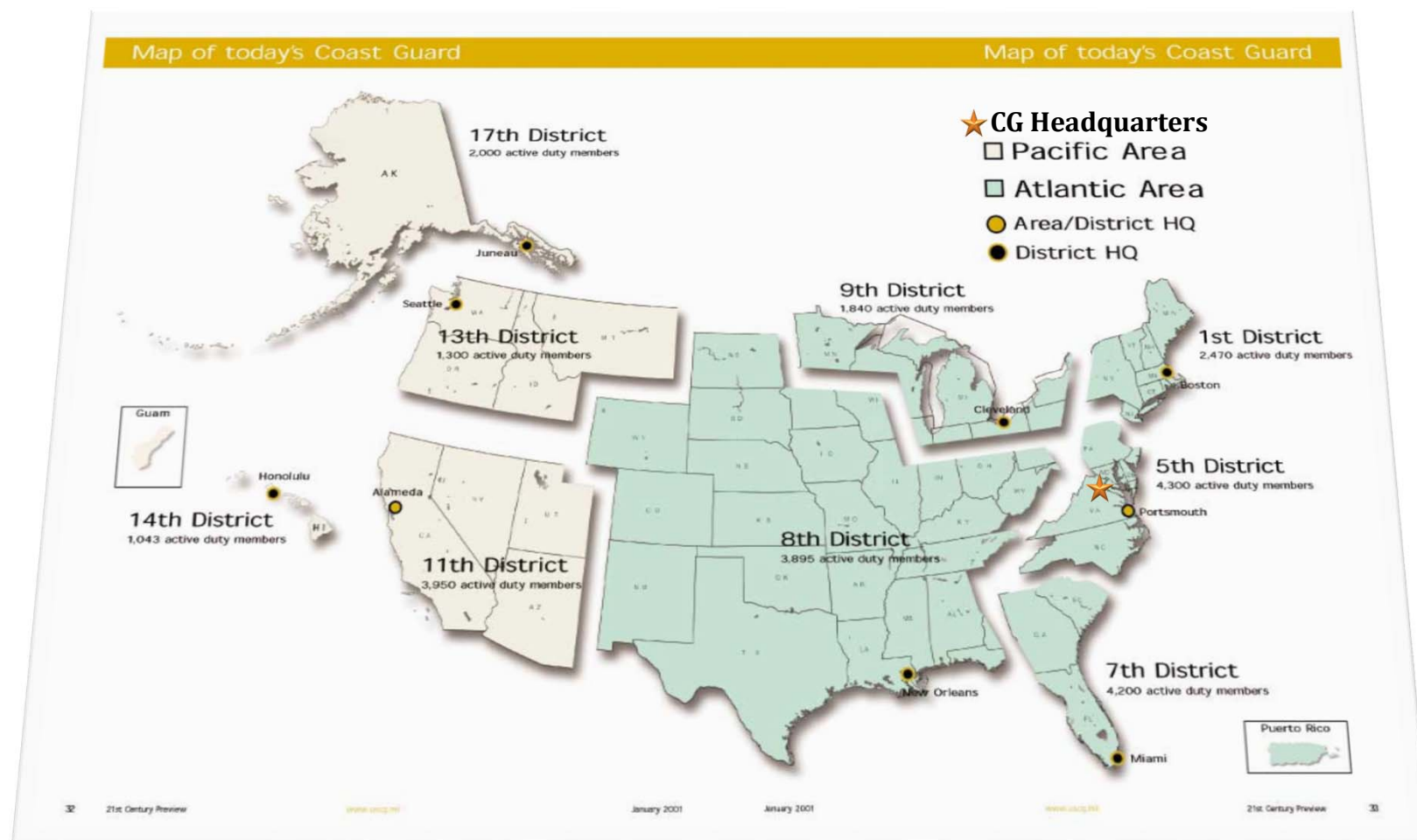
Mike Roberts

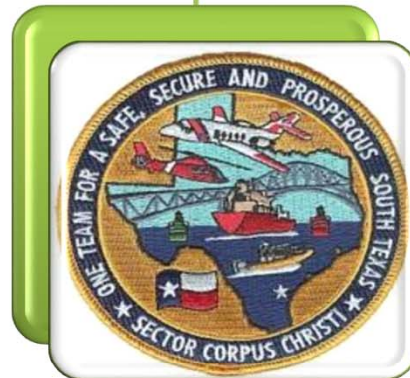
(832)370-9812

michael.l.roberts@dot.gov



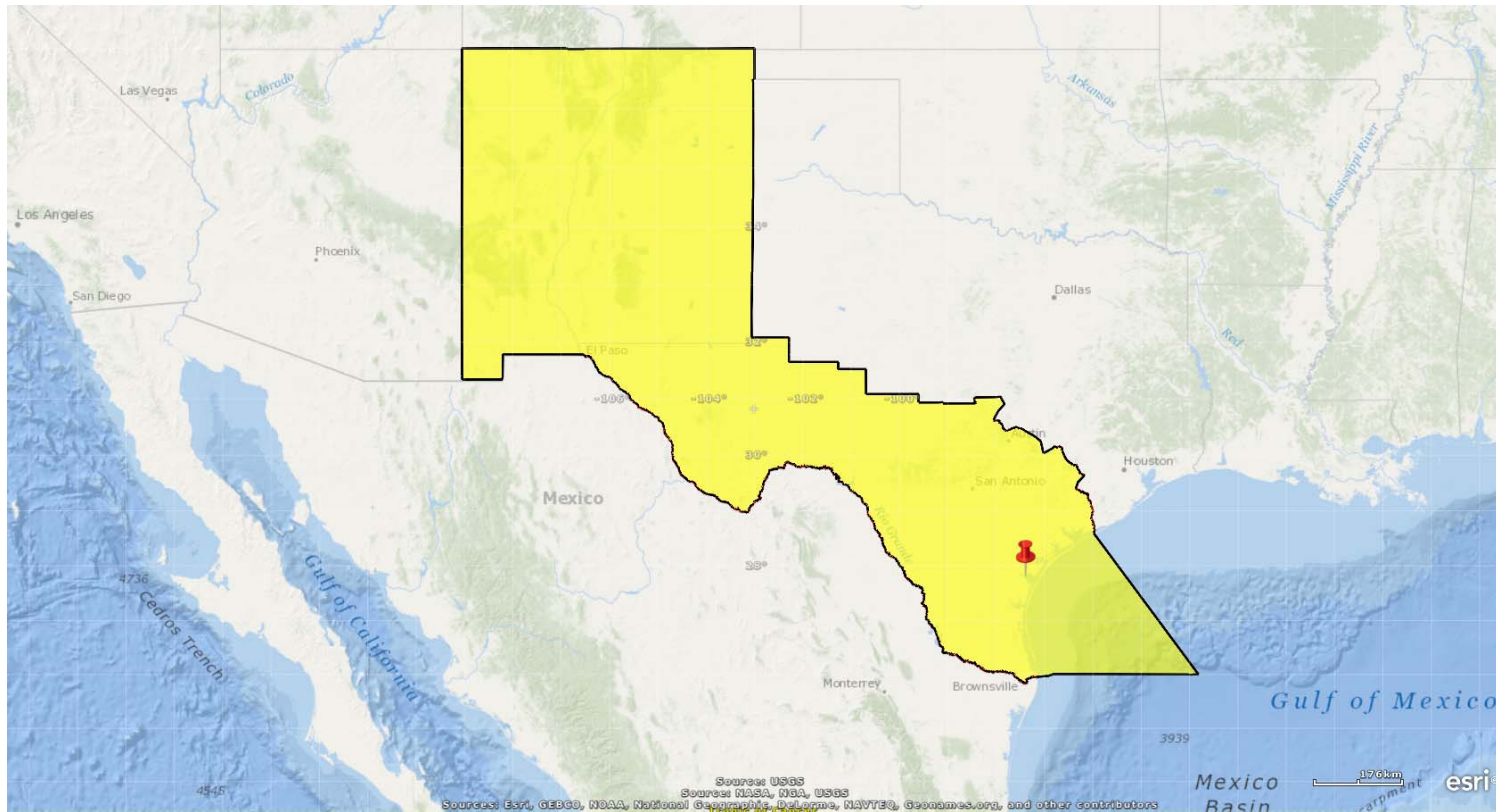
U.S. Coast Guard District 8 Captain of the Port (COTP) Reports







Sector Corpus Christi



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
178	0 Surface Washing Agents 0 In-situ Burns 0 Dispersants	1	2



Operation Safe Oyster





Sector Corpus Christi

Meetings

Description	Dates
Area Committee	Date TBD June

Training

Description	Dates
Pollution Incident Response College	14-18 Apr 2014
Oiled Wildlife Course TAMUCC	February 2014

Drills/Exercises

Description	Dates
Hurricane Exercise Conference Nueces County	7-8 May 2014
BP Spill Exercise/ ICS -320	9-11 June 2014

Scheduled Training

Description	Dates
Facilities College (Reserve FAC/IMD)	Date TBD July 2014



Sector Corpus Christi

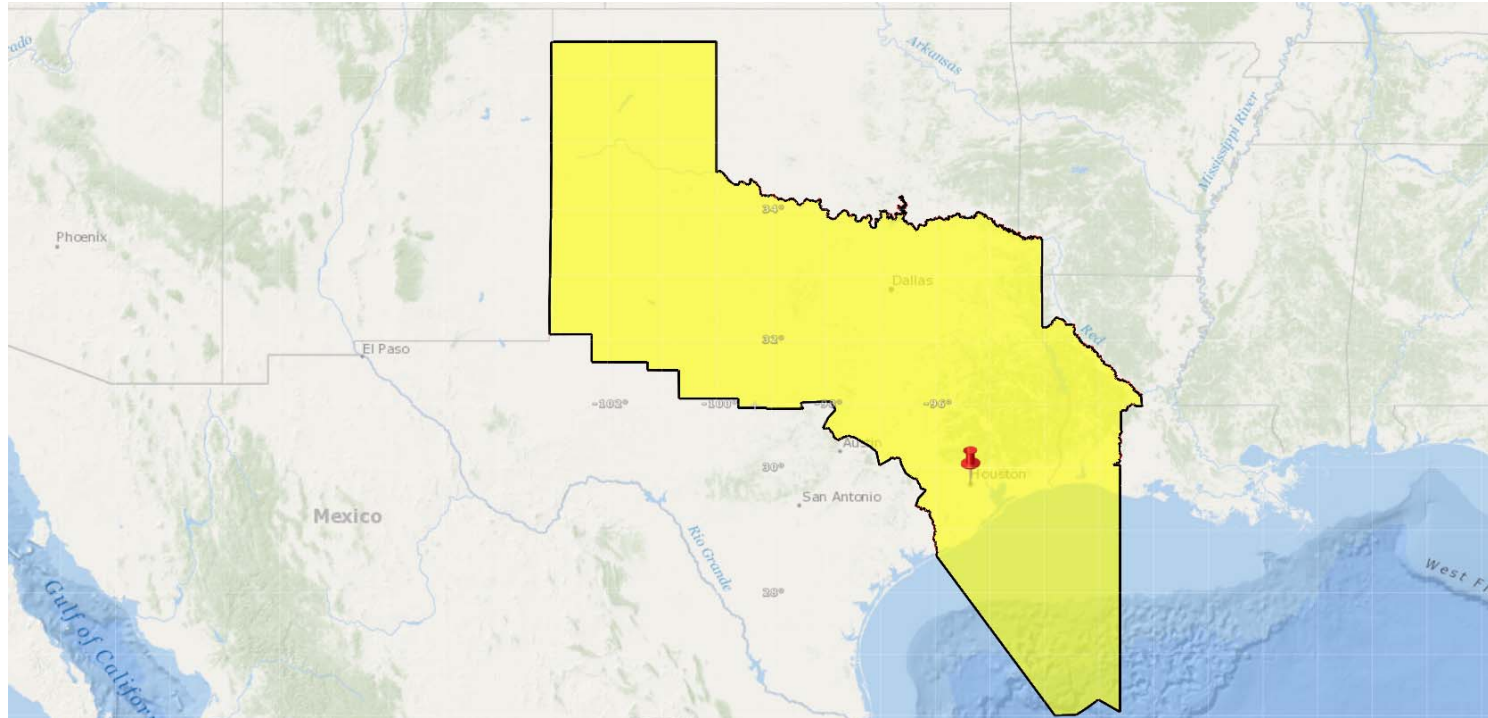
Industry Growth & Port Risk

- Numerous Channel improvement projects approved by Congress
- 52' depth & 530' widening project permitted - **Bigger Ships**
- Because of Eagle Ford Shale the Port of Corpus Christi is now exporting more Crude than importing – A 60% increase over 2012
- With the Panama Canal expansion, export of petroleum to Asia could increase significantly - **More Ships**
- 6 LNG Facilities are in permitting process – **More Facilities**
- 21 Dock improvements projects underway in Port of Corpus Christi for increase in exports – **Increased Capacity**

Sector Houston-Galveston

Captain Brian Penoyer

Sector Commander



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
95	01 Surface Washing Agents 00 In-situ Burns 00 Dispersants	02	01(EPA lead)

Shell Pipeline

Sector Houston-Galveston



RRT Activation:	No
Type and amount of product spilled:	Estimated 84 gal.
Cause of spill:	Ruptured Pipeline
Time /date of spill:	0800 04 APR 14
Responsible Party:	Shell
Key operational activities:	USCG provided initial response with TGLO and TCEQ. Continued to monitor cleanup activities.
Major lessons learned:	Aging infrastructure in the Sector Houston Galveston AOR is becoming more of a key factor in recent spills.
Lead Coordinator Contact Information:	Sector H-G lead Investigator MST1 Joel Blanchard



Trinity Bay Platform

Sector Houston-Galveston



RRT Activation:	No
Type and amount of product spilled:	Estimated 420-500 gal.
Cause of spill:	Tank overflow due to High Level Alarm failures.
Time /date of spill:	0800 30 Mar 14
Responsible Party:	Galveston Bay Energy
Key operational activities:	USCG, TGLO, and TPNW provided initial response despite being involved with the Texas City "Y" . TGLO and USCG monitored cleanup activities.
Major lessons learned:	Resources were all deployed to the Texas City and unavailable for this incident. Several OSROs were contacted with negative availability. As a result the cleanup efforts took much longer than normal and environmentally sensitive areas were impacted.
Lead Coordinator Contact Information:	Sector H-G lead Investigator MST1 Joel Blanchard COTP Reports



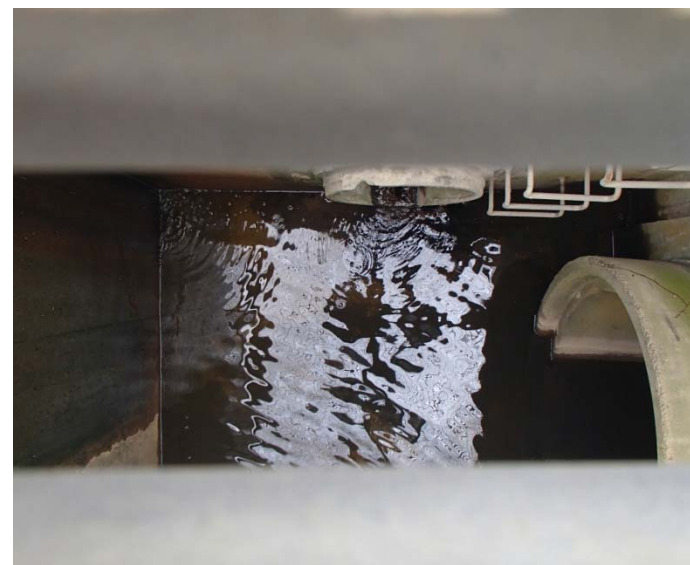
Exxon-Mobile Outfall

Sector Houston-Galveston



RRT Activation:	No
Type and amount of product spilled:	Estimated 126 gal; Hydrocarbons
Cause of spill:	Inadequate Sump system overflowing during significant rain events
Time /date of spill:	Date of Spill UNK; Reported 03 NOV 14 @ 0800
Responsible Party:	Exxon
Key operational activities:	USCG in partnership with TGLO, TCEQ, and the EPA supervised on water and shore-side clean up. Conducted lengthy investigation to determine the source. Continue to monitor remediation of the site.
Major lessons learned:	Inadequate storm water containment plans. Quicker activation of the response plan would have prevented significant shoreline impact.
Lead Coordinator Contact Information:	Sector H-G lead Investigator MST1 Joel Blanchard

COTP Reports

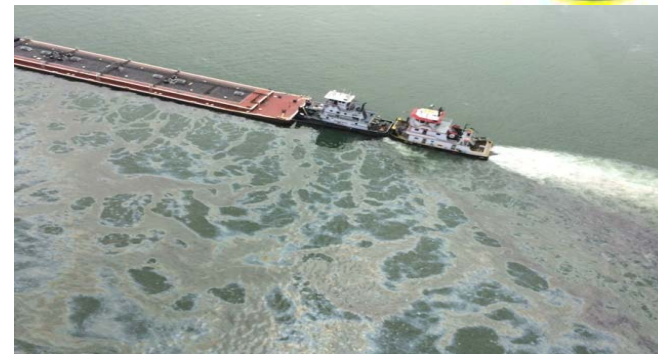


Texas City “Y” Spill

Sector Houston-Galveston



RRT Activation:	Yes-alternative technology discussions
Type and amount of product spilled:	168,000 gal. of marine fuel oil (RMG 380)
Cause of spill:	Collision involving MV Summer Wind and Kirby barge 27706
Time /date of spill:	1230(lcl)/Saturday, 22 March 2014
Responsible Party:	Kirby Maritime
Key operational activities:	USCG stood up initial ICP, supervised on water and shore-side clean up, vessel and infrastructure decon, lightering and salvage of barge, inspection of repairs, enforcement of safety zone, recovery of Maritime Transportation System, multi-million federal project.
Major lessons learned:	Management of media was key to public perception of spill. Robust ACP critical to success of event.
Lead Coordinator Contact Information:	Sector H-G/MSU Texas City; Capt. Penoyer/CDR Alonso, MSTC Naker (long-term FOSCR) COTP Reports



Dow Chemical Phenol Release

Sector Houston-Galveston



RRT Activation:	Yes, consultation for Bio-remediation
Type and amount of product spilled:	60,000 lb of Phenol
Cause of spill:	Break in pipeline; release entered process discharge canal and contaminated 20 million gals of water
Time/date of spill:	0200(lcl)/Friday, 28 February 2014
Responsible Party:	Dow Chemical Freeport TX
Key operational activities:	USCG filled critical roles in ICP and coordinated with fed/st/lcl agencies to prevent impact to Coastal Zone; transferred contaminated water to 44 million gal retention pond and on-site holding tanks.
Major lessons learned:	Delayed notification process. Lack of ICS experience from a major maritime transportation related facility.
Lead Coordinator Contact Information:	MSU Texas City; MST2 James Eland, MST2 Lucas Martin COTP Reports



Crystal Beach Mystery Pipe

Sector Houston-Galveston



RRT Activation:	None
Type and amount of product spilled:	Sheen continuously observed at low tide
Cause of spill :	Eroded pipeline
Time/date of spill:	0800(1cl)/Thursday, 20 February 2014
Responsible Party:	Unknown(last know RP now bankrupt)
Key operational activities:	USCG responded to scene to determine magnitude of discharge. Contracted T&T Marine Salvage to install patch. Patch installed, USCG conducts periodic check of pipe.
Major lessons learned:	Pipeline records for lines that date several decades back are not accurate and require extensive research to determine ownership.
Lead Coordinator Contact Information:	MSU Texas City; MST2 Lucas Martin

COTP Reports

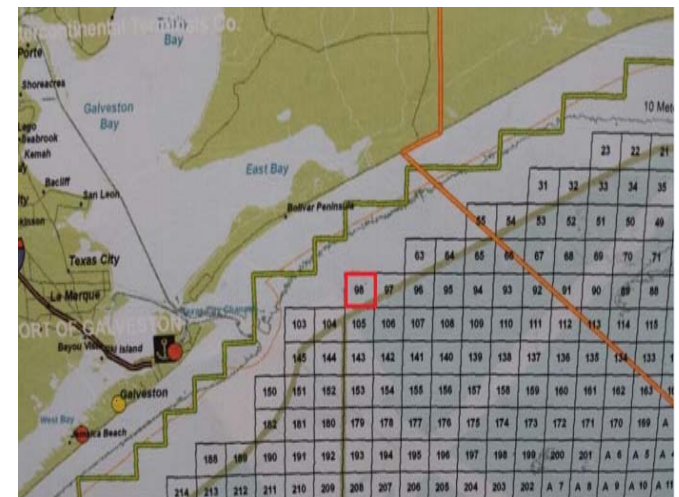


High Island 98 Platform Spill

Sector Houston-Galveston



RRT Activation:	None
Type and amount of product spilled:	Sheen approximately 3 miles x 50ft
Cause of spill :	Eroded 1" pipeline (continuous discharge)
Time/date of spill:	1000(lcl)/Friday, 21 February 2014
Responsible Party:	Seiran E&P, abandoned platform claimed bankruptcy
Key operational activities:	BSEE responded to scene to determine magnitude of leak. USCG worked with pipeline owner "Impact Marine" shut in their pipeline and replaced eroded valve (pipeline still connected to platform).
Major lessons learned:	Coordination between BSEE/USCG and outreach conducted with surrounding platforms/pipeline owner prevented costly federal project.
Lead Coordinator Contact Information:	MSU Texas City; MST2 Ronald Sampert



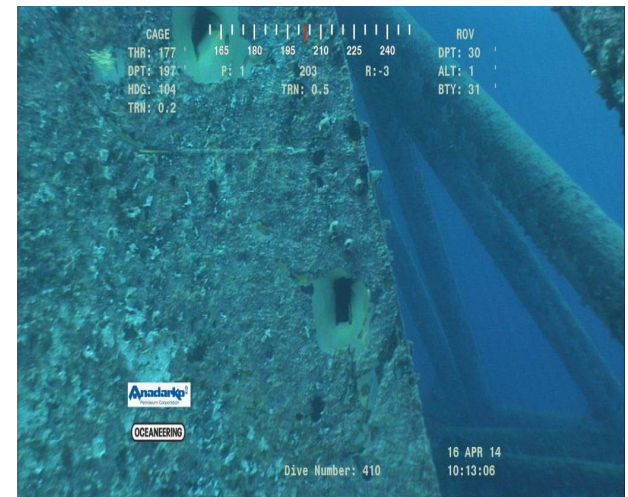
COTP Reports

ENSCO 8506

Sector Houston-Galveston

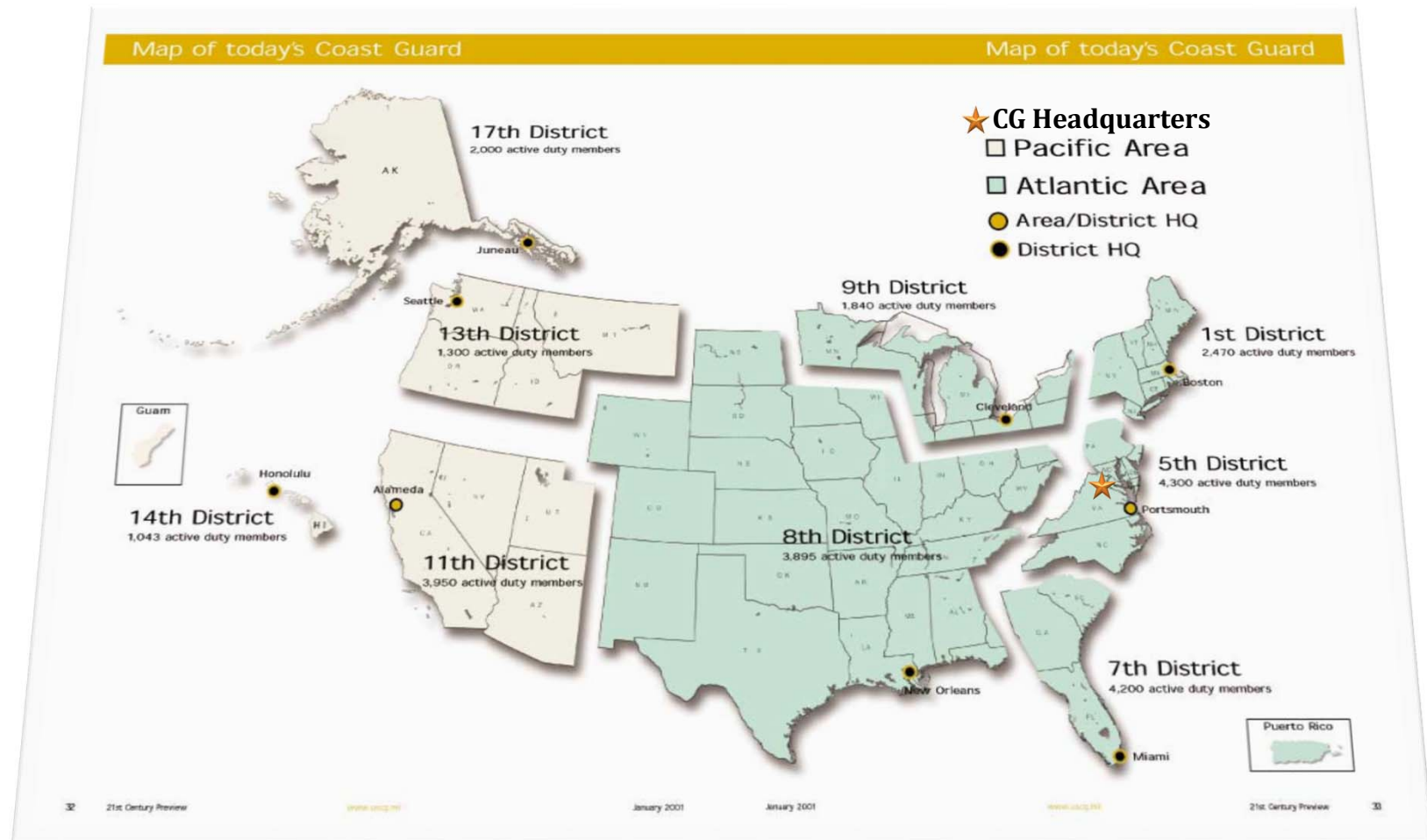


RRT Activation:	None
Type and amount of product spilled:	None (initially event had potential for offshore well blowout)
Cause of potential spill:	In rough seas, vessel anchor dislodged, creating four gashes in 1 of 4 caisson legs and causing vessel to take on water
Time/date of spill:	1100(lcl)/Tuesday, 15 April 2014
Responsible Party:	Anadarko (well owner)
Key operational activities:	Prepared for possible well blowout and monitored situation (potential worst case discharge incident). Sent MSU Texas City OCS expert to rig, monitored temporary repairs, issued press release.
Major lessons learned:	Immediately preparing for worst case discharge due to media interest is best practice. Get USCG inspector on scene as soon as possible for on-site validation.
Lead Coordinator Contact Information:	MSU Texas City; MSSE4 Tony Pesek, MST2 Ronald Sampert COTP Reports





U.S. Coast Guard District 8 Captain of the Port (COTP) Reports





5/19/2014

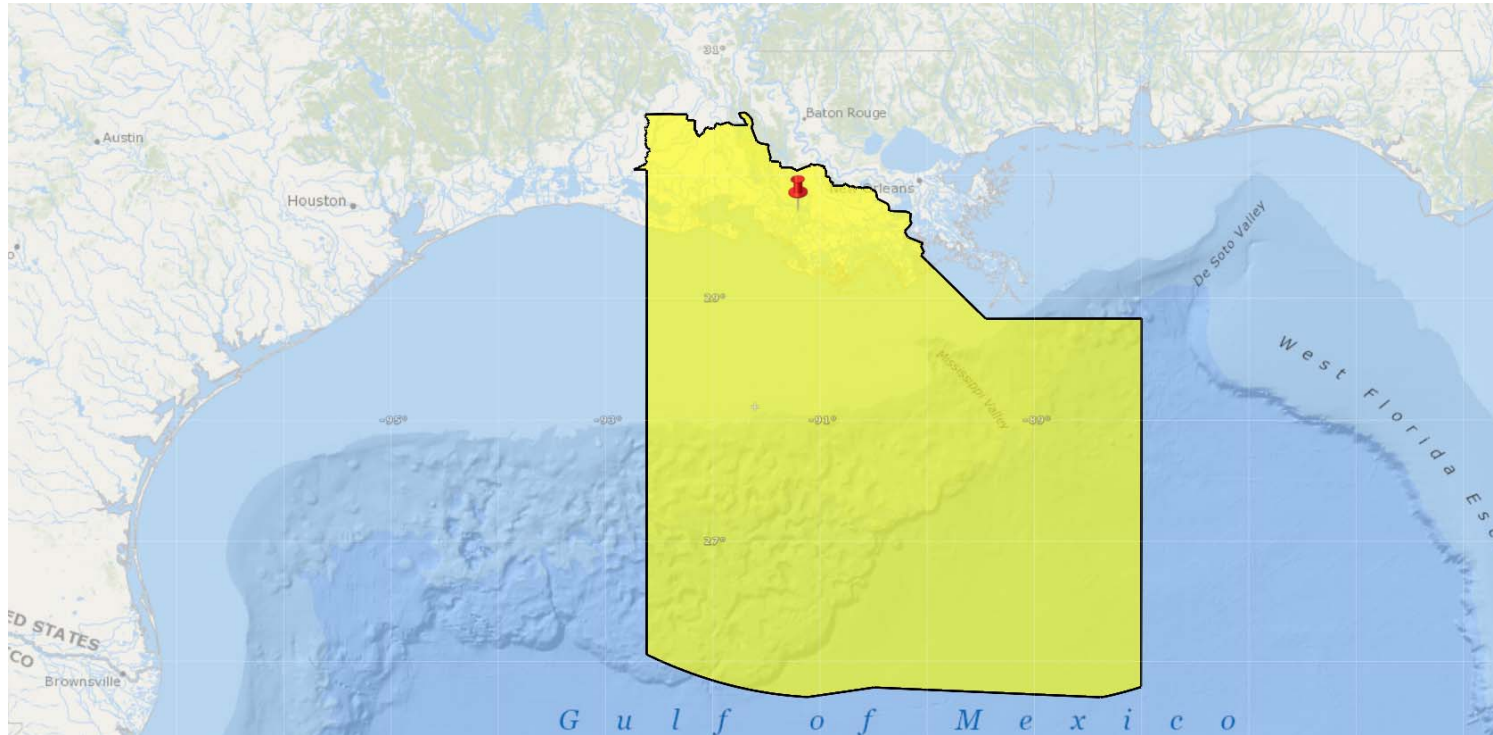
USCG COTP Reports



MSU Morgan City

Captain McClellan

MSU Commanding Officer



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
665 (since Dec RRT mtg)	00 Surface Washing Agents 00 In-situ Burns 00 Dispersants	00	00



Crude Oil Discharge

White Oak – Murphy Lake



RRT Activation:	No
Type and amount of product spilled:	Crude Oil – 210 gal.
Cause of spill:	A broken valve on a flow line created a high-pressure fine spray, covering the facility and surrounding marsh land.
Time & date of spill:	01Apr14
Responsible Party:	White Oak Energy Operating LLC
Key operational activities:	Field personnel shut in the facility to secure the source of the release. Personnel from ES&H Consulting Services, Inc. and a Spill Management Team member from ES&H/Forefront EM were dispatched to the incident. Over 3 operational periods wash pumps were used to migrate free-liquids to collection points and absorbent rolls and pads were used to recover the product.
Major lessons learned:	
Lead Coordinator	LCDR Keith Smith
Contact Information:	

5/19/2014

COTP Reports





MSU Morgan City

Meetings

Description	Dates
GRP approval (w/ state & parishes)	Approved. Posted on Homeport

Training

Description	Dates
NOAA Aerial Observation	25Feb
Castex facility trng	25May

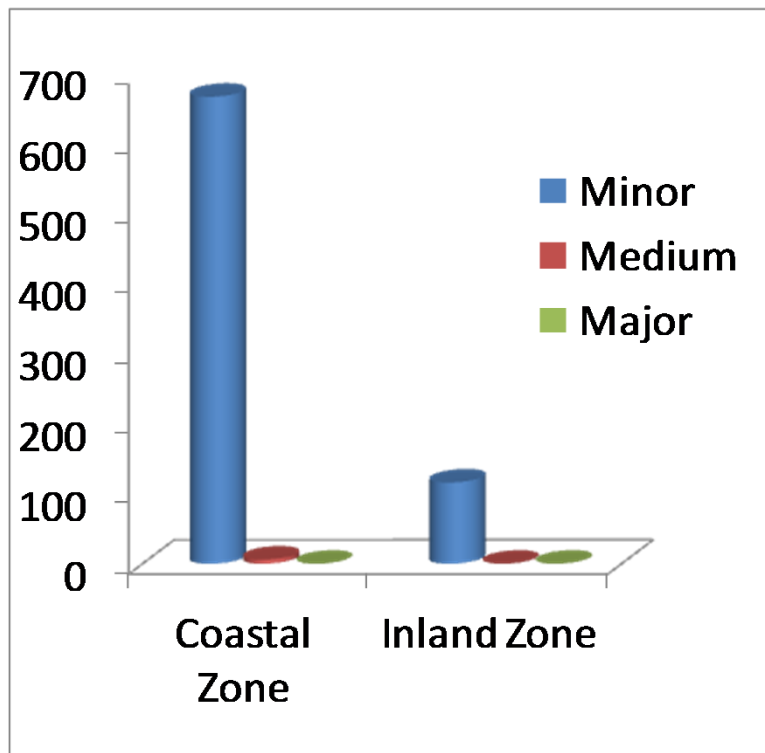
Drills/Exercises

Company (exercise lead)	Date
BSEE GIUE (FMOG)	19Feb
HUREX (MSU Morgan City)	07May
Castex (TTX)	21May
LOOP (TTX)	29May

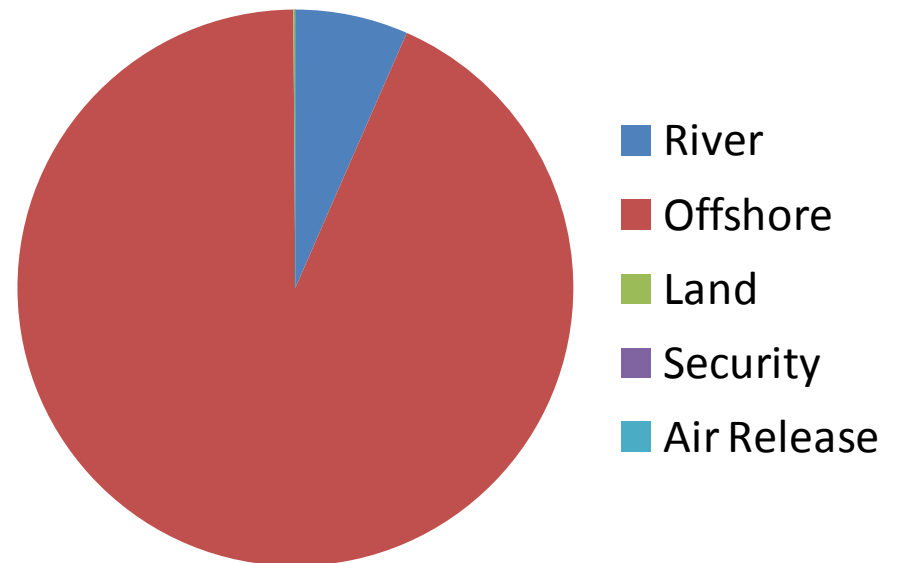


NRC Notifications

Oil Discharges



Breakdown of Reports







MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



NRC Notifications	RRT Activations	Federal Projects	CERCLA Projects
82 MSU Port Arthur 48 Lake Charles <u>130 Total</u>	00 Surface Washing Agents 00 In-situ Burns 00 Dispersants	06	00

05/14/2014

COTP Reports

1

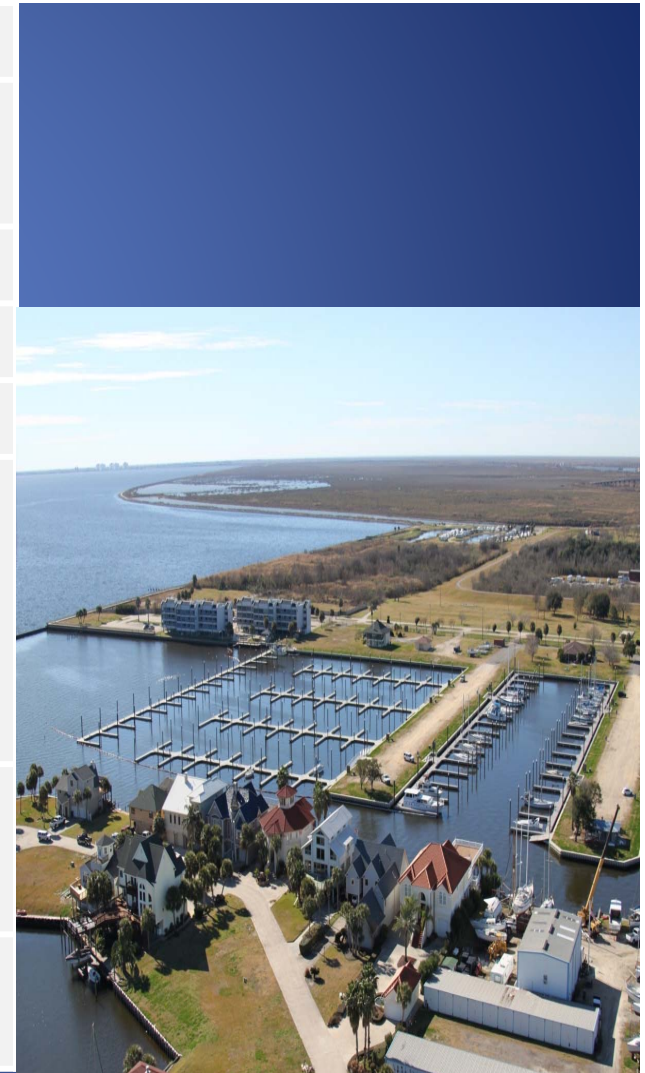


MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Parties Involved:	USCG, TGLO, NOAA SSC
Type and amount of product salvaged:	Crude Oil Approximately 1 Barrel
Cause of spill:	Unknown
Time/date of discovery:	0700/ January 8, 2014
Responsible Party:	Unknown
Key operational activities:	Federalized Case to quickly deploy containment/ deflection boom to protect marina. Utilized NOAA SSC for product trajectories for effective booming strategies.
Major lessons learned:	Aggressive booming strategy helped to protect vessels inside marina.
Lead Coordinator Contact Information:	MSU Port Arthur/MST3 Conger



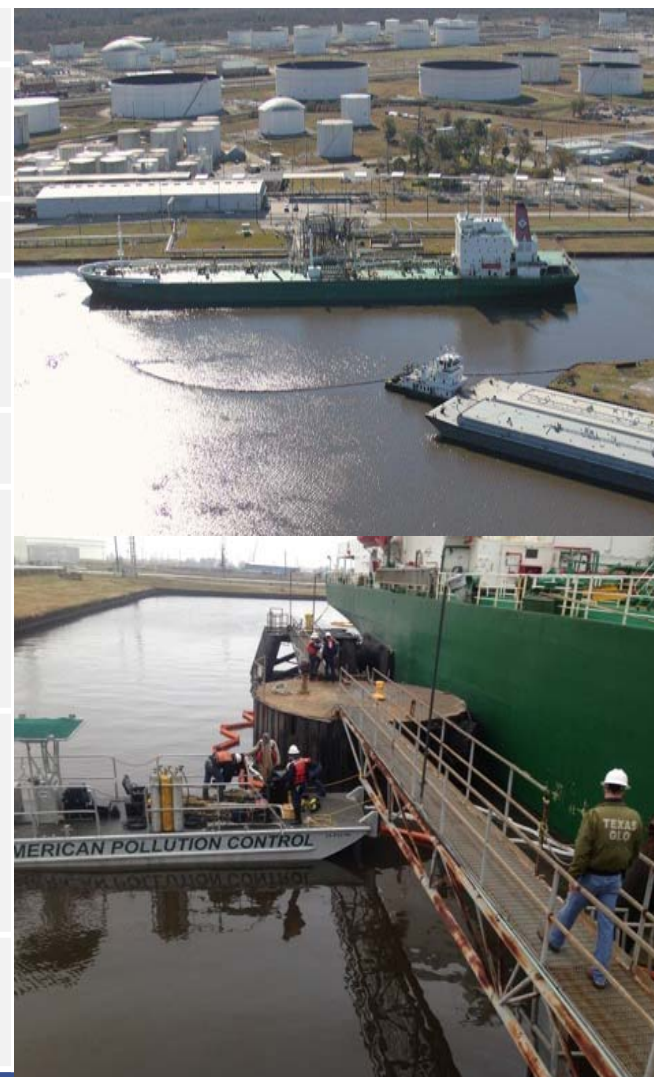


MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Parties Involved:	USCG, TGLO, NOAA SSC
Type and amount of product salvaged:	Crude Oil Approximately 1 Barrel
Cause of spill:	Contaminated ballast tank
Time/date of discovery:	1300/ Jan 7, 2014
Responsible Party:	M/V HOUSTON
Key operational activities:	COTP order issued for vessel. Tank sampling , and dive operations conducted to identify location of leak on vessel.
Major lessons learned:	Initial sampling produced negative results. More invasive ballast tank sampling was required in order to locate source.
Lead Coordinator Contact Information:	MSU Port Arthur/MST2 Ryan



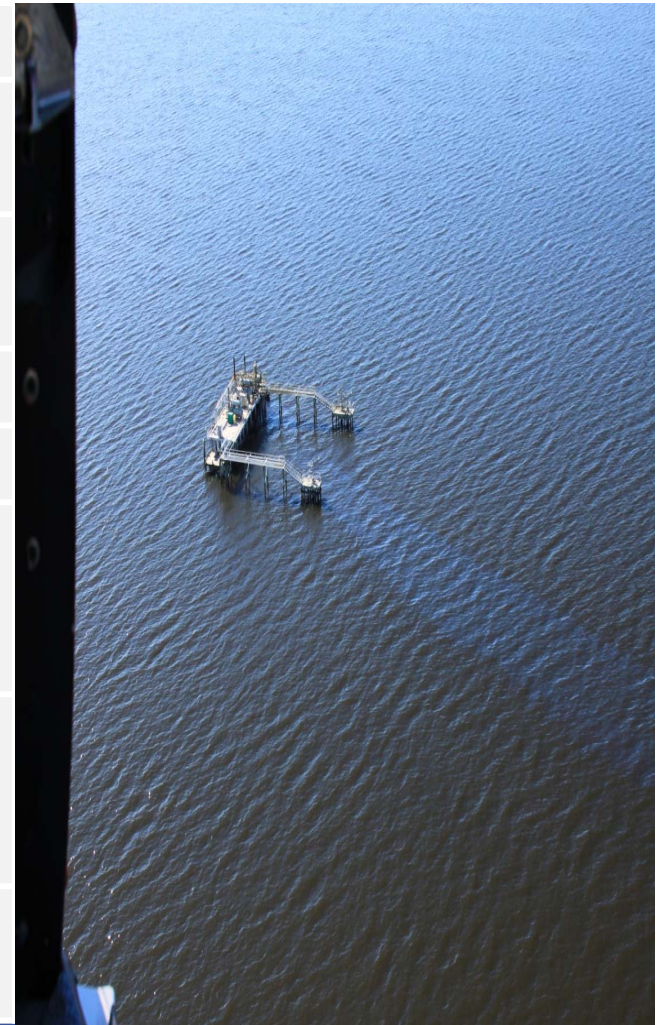


MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Parties Involved:	USCG, TGLO
Type and amount of product salvaged:	Condensate Approximately 20 Gallons
Cause of spill:	Product discharged from a relief valve.
Time/date of discovery:	0700/ Jan 8, 2014
Responsible Party:	Ballard, Inc.
Key operational activities:	Heavy product residue required RP to wash platform and capture product through containment boom.
Major lessons learned:	Multiple incidents from same RP have heightened the need to conduct harbor patrols.
Lead Coordinator Contact Information:	MSU Port Arthur/MST2 Grulkey



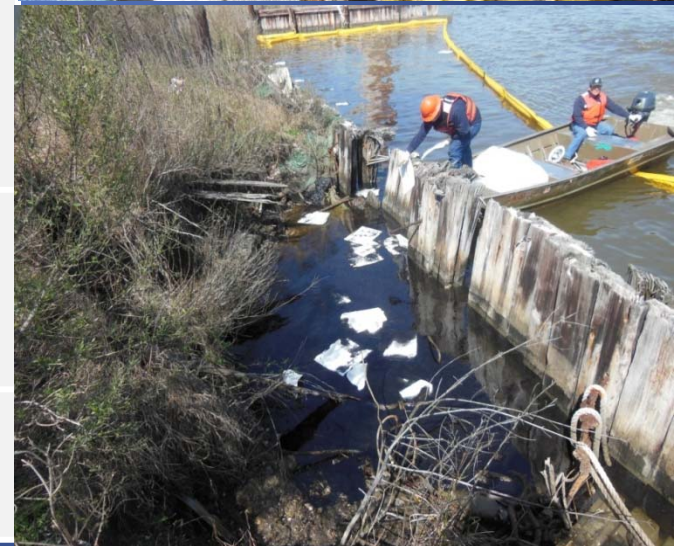


MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Parties Involved:	USCG, TGLO, NOAA SSC
Type and amount of product salvaged:	Waste Oil Approximately 147 Gallons
Cause of spill:	Bilge Pumped overboard
Time/date of discovery:	0800/ Feb 21, 2014
Responsible Party:	F/V MISS DIANE I
Key operational activities:	Federalized cleanup for quick capture & removal of product; utilized NOAA SSC for product trajectories
Major lessons learned:	Oil sampling and oil sample analysis of nearby vessel fleet matched RP to spill.
Lead Coordinator Contact Information:	MSU Port Arthur/MST2 Dodson



05/14/2014

COTP Reports

5



MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Parties Involved:	USCG, USFWS, LADEQ
Type and amount of product salvaged:	Natural Gas Condensate Estimated between 840-1050 gallons
Cause of spill:	Pipeline failure
Time/date of discovery:	0900/March 27, 2014
Responsible Party:	Hillcorp
Key operational activities:	USCG supervised RP's response efforts
Major lessons learned:	Proximity to sensitive area/NWR necessitated consideration for wildlife impact. State broached issue of burning marsh to mitigate
Lead Coordinator Contact Information:	MSU Lake Charles/MST3 Nathon Mills



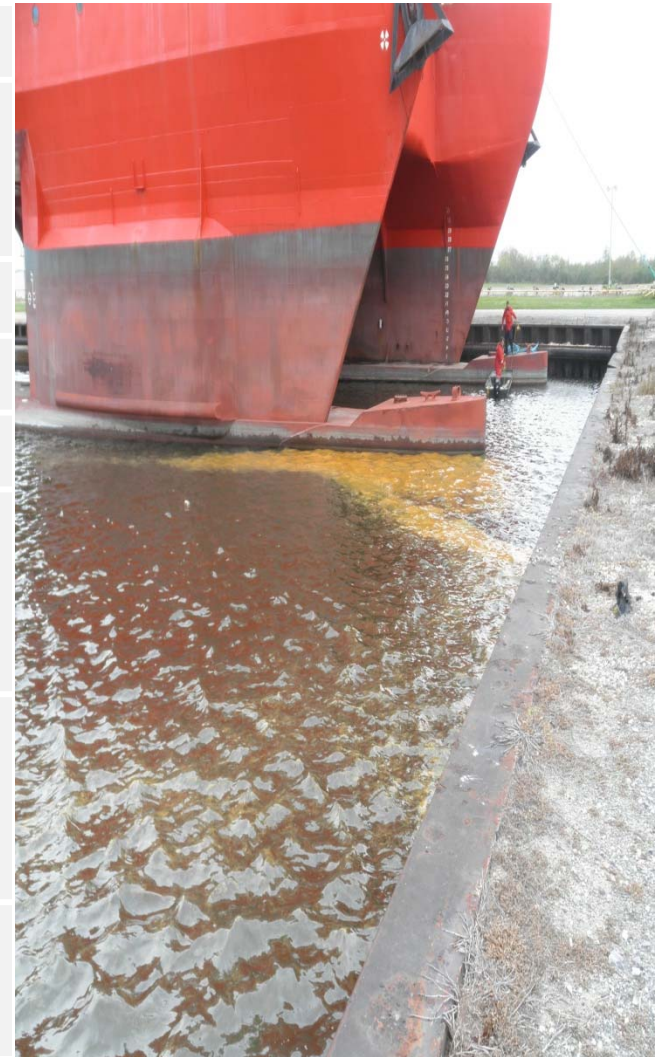


MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Parties Involved:	USCG, CG Legal, US Customs
Type and amount of product salvaged:	Bio-diesel Approximately 320 Gallons
Cause of spill:	Overfill of barge during transfer
Time/date of discovery:	0700/ April 3, 2014
Responsible Party:	OPI/Offshore Contractors, Inc.
Key operational activities:	COTP order issued for vessel deficiencies; LOU and Customs 'hold' later required for penalty amount.
Major lessons learned:	Difficulty identifying an RP when a vessel is in the process of being sold.
Lead Coordinator Contact Information:	MSU Lake Charles/MST2 Christopher Wallin





MSU Port Arthur

CDR Jackie Twomey
MSU Executive Officer



Meetings

Description	Dates
SWLA LEPC Meeting	3 rd Tues every mo.
LC Industry Day	June 6, 2014
ESC for AC Meeting	June, 2014
AC Meeting	July, 2014

Training

Description	Dates

Drills/Exercises

Description	Dates
Hurricane Evacuation Exercise	April 14, 2014
Oil/ICS Tabletop Drill	April 30, 2014
Sector Hurricane Checklist Drill	May 5, 2014
Industry Led Prep Exercise	June 11/12, 2014



Sector Lower Mississippi River

USCG COTP Report

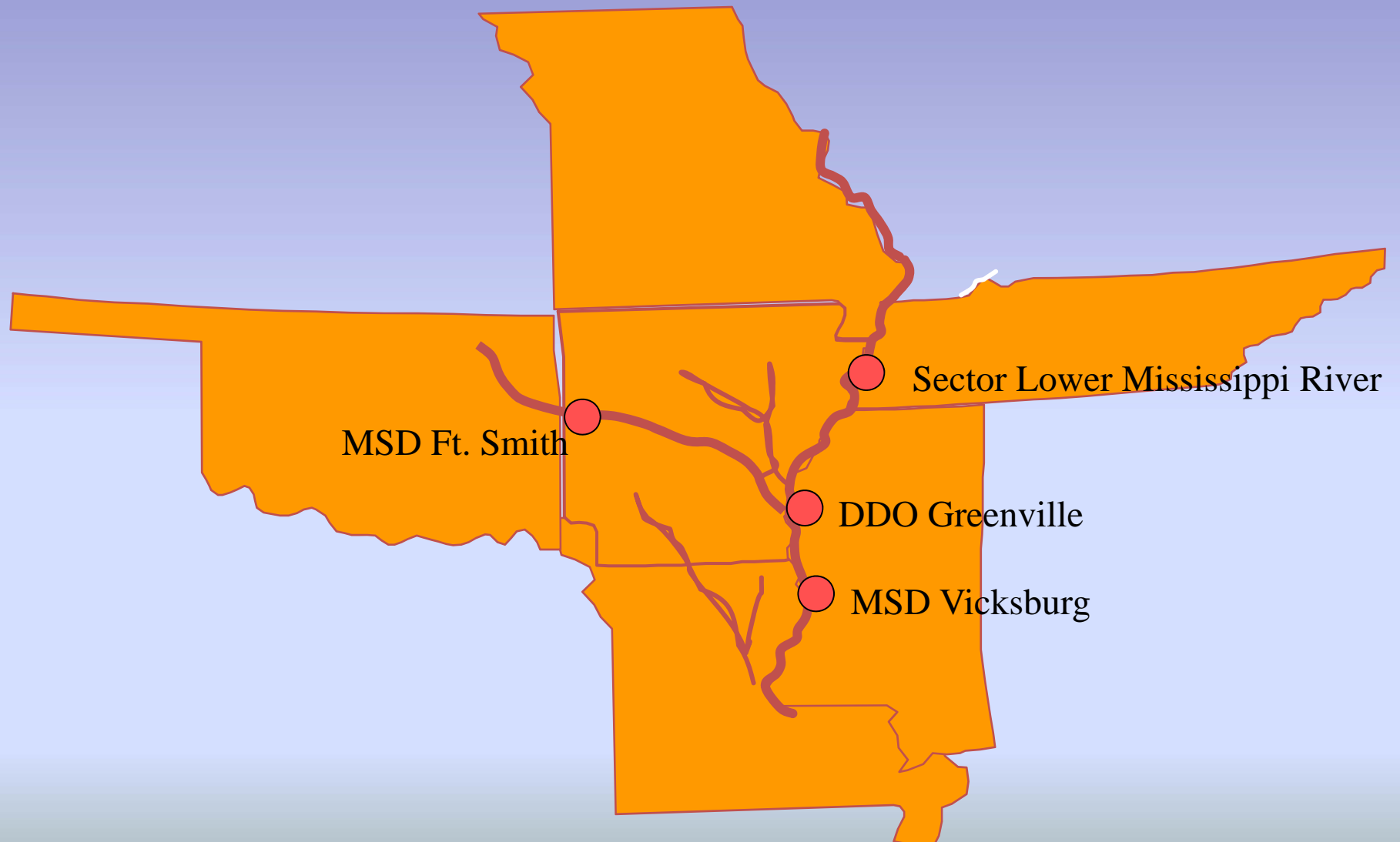
LTJG Thomas Mason

Sector Lower Mississippi River AOR



<u>Area of Responsibility</u>	<u>River miles</u>
Lower Mississippi River	303 – 869
Ouachita/Black River	0.0 – 340
Arkansas River	0.0 – 444.8
Red River	0.0 – 236
Yazoo River	0.0 – 188
White River	57.0 – 256
Wolf River Chute	0.0 – 3.0

SLMR Units



Pollution Response Activities 2014

- NRC Reports:
 - 27 NRC reports for pollution
 - Responded to 20

Exercises

- Valero refinery spill (October, annually)
 - Fill ICS Positions, offer response plan guidance
- Marathon Pipeline spill & Barge alission (17-19SEP14)
 - Fill ICS positions, guide plan creation and scenario
- Quarterly in house pollution response drill

Major Cases

- M/V Blue Knight
 - 500 gallon asphalt discharge, potential of over 5,000 gallons

Executive Order: Improving Chemical Facility Safety & Security



1

Status of EPA Activities under EO 13650

AS OF MAY 15, 2014

Executive Order on Chemical Facility Safety & Security



2

- Key sections of the Executive Order:
 - Improving Operational Coordination with State, Local, and Tribal partners
 - Enhancing Federal Coordination
 - Enhancing Information Collection and Sharing
 - Modernizing Regulations, Guidance, Policy, and Standards
 - Identifying Best Practices

Improving Operational Coordination with State, Local, and Tribal partners



3

- The Working Group, lead by EPA, developed an ‘Operational Coordination Plan’
 - Purpose: Support and further enable efforts by State regulators, State, local, and tribal emergency responders, chemical facility owners and operators, and local and tribal communities to work together to improve chemical facility safety and security
- Identify limitations and needs at the local level to improve chemical safety and security using input from:
 - Listening sessions
 - Meeting with stakeholders
 - Webinars
 - Information submitted to Federal Agencies

Improving Operational Coordination with State, Local, and Tribal partners (cont'd)



4

- Key needs include:
 - Expanded engagement of the regulated community in the local emergency planning process;
 - Improve training for first responders, including a comprehensive implementation/compliance strategy of the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations;
 - Provide further technical assistance to SERCs/TERCs and LEPCs/TECPs on prevention and preparedness, including increasing LEPCs capacity to analyze information submitted by facilities (EPCRA Tier II);
 - Identify and coordinate funding sources for LEPCs to sustain planning activities;
 - Increase use of electronic reporting and data management; and
 - Improve public disclosure/access to information about chemical facility risks while protecting security/sensitive information.

Enhanced Federal Coordination



5

- The Working Group, lead by EPA Region 2 via the Regional Response Team, established a pilot program to:
 - Validate best practices and to test innovative methods for Federal interagency collaboration:
 - ✦ Innovative and effective methods of collecting, storing, and using facility information
 - ✦ Stakeholder outreach
 - ✦ Inspection planning.
 - ✦ Evaluate and disseminate best practices.
 - Develop comprehensive and integrated standard operating procedures for identifying and responding to risk in chemical facilities, incident reporting and response procedures, enforcement, and collection, storage, and use of facility information.

Draft list of Region 2 SOPs



6

- Region 2 Regional Response Team (RRT) – Change in Participation
- Incident Commander and Hazardous Material Supervisor Training for Senior Fire Department Personnel
- Approach for Specific HAZWOPER Training Standard for Hazmat Responders
- Sustainability
- Cross-Cutting Issues between Sub-groups
- Evaluation of Work Products
- Improving Coordination with Federal and State Agencies on Programs, Roles, and Contacts – Getting to Know You
- Inter-Agency Inspection Information, Data Requests, and Database Access
- Outreach to Regulated Industry Concerning the “Emergency Contact” Listed on the Annual Tier II Form and Prompt Reporting of New Chemicals
- Enforcement Initiative to Identify EPCRA 311, 312 Violations and Ensure Continued Compliance with the Regulation
- Revised Inspection Protocol – EPCRA 311, 312 Inspections and Development of Ways to Make EPCRA 302 Information More Available to First Responders and Fire Fighters
- Coordinated Inspections
- Inspection Referrals
- Simple Guide to provide First Responders with Access to “Subject Matter Experts” – Single Point of Contact for Facility Chemical Information
- Joint Drills and Exercises
- LEPC Best Practice Implementation and Support

Enhanced Information Collection and Sharing



7

- The Working Group is exploring ways to:
 - Institutionalize improved sharing of information among Federal Agencies to identify facilities that are not meeting good standard practices or are out of compliance with important safety and security requirements
 - Create a central data input mechanism for facilities increase Federal efficiency and decrease burden on information submitters
 - Ensure States and locals have access to information to ensure information is available to those who need it without compromising facility security
 - Ensure facilities are aware of their regulatory obligations

Policy, Regulation and Standards Modernization



8

- Options to improve risk management via:
 - Agency programs, private sector initiatives, government guidance, outreach, consensus standards, voluntary programs, and regulations.
 - The list of options were published on January 2, 2014 and comments were requested by March 31, 2014.
 - Input will be used to develop a plan for implementing practical and effective improvements to chemical risk management by the end of May 2014 as part of the Report to the President.



EPA's Request for Information (RFI)

9

- EPA is drafting an Request for Information (RFI) similar to OSHA's RFI to:
 - Collect background information to inform Agency actions
 - Evaluate any potential action in parallel to OSHA's actions on their Process Safety Management Standard
- RFI categories include:
 - RMP chemicals list
 - Strengthening or clarifying existing requirements
 - New prevention and emergency response program elements
 - Other technical changes and/or corrections
- Publish in Federal Register – June 2014

Working with Stakeholders to Identify Best Practices



10

- The Working Group has gathered via listening sessions successes and best practices to reduce safety and security risks, including use of safer alternatives, adoption of best practices, and potential public-private partnerships
- Check out the EO website for more information:
http://www.epa.gov/emergencies/eo_improving_chem_fac.htm#eopu

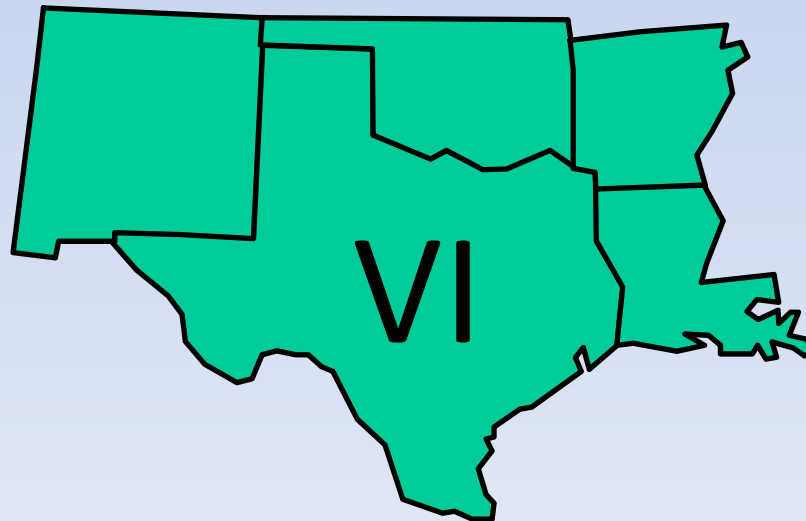


Questions?

National Contingency Plan Requirements for Area Contingency Plans

Fish and Wildlife and Sensitive Environments Plan Annexes

May 2014



Important: The National Contingency Plan (40 CFR Parts 9 and 300) is a regulation, not guidance.

§300.210 Three levels of contingency plans

- **National (NCP)**
- **Regional (RCP) – Includes information on useful facilities and resources in the region from government, commercial, academic and other sources, and information on the demarcation between inland and coastal zones**
- **Area (ACP) – developed by the Area Committee for its designated area and contain provisions to adequately remove a worst case discharge and mitigate or prevent a substantial threat of such a discharge from a vessel, offshore or onshore facility operating in or near the area**

Region 6 has:

- **Regional Contingency Plan (RCP)**
- **Inland Area Contingency Plan (ACP) with the RRT functioning as the Area Committee**
- **5 Coastal ACPs each with an Area Committee**
- **MEXUS Plans (Gulf of Mexico and Inland Border Region)**

§ 300.210(4)(i) In order to provide for coordinated, immediate and effective protection, rescue and rehabilitation of, and minimization of risk of injury to, fish and wildlife resources and habitat, Area Committees shall incorporate into each ACP a detailed annex containing a Fish and Wildlife and Sensitive Environments Plan that is consistent with the NCP and RCP.

- The annex shall be prepared in consultation with the USFWS and NOAA and other interested natural resource management agencies and parties. (States/Tribes??)
- It shall address fish and wildlife resources and their habitat, and *shall include other areas considered sensitive environments* in a separate section of the *annex, based upon Area Committee recommendations*.
- The annex will provide the necessary information and procedures to immediately and effectively respond to discharges that may adversely affect fish and wildlife and their habitat and sensitive environments, including provisions for a response to a worst case discharge.

Such information shall include the identification of appropriate agencies and their responsibilities, procedures to notify these agencies following a discharge or threat of a discharge, protocols for obtaining required fish and wildlife permits and other necessary permits, and provisions to ensure compatibility of annex-related activities with removal operations.

(ii) The annex shall:

(A) Identify and establish priorities for fish and wildlife resources and their habitats and other important sensitive areas requiring protection from any direct or indirect effects from discharges that may occur. These effects include, but are not limited to, any seasonal or historical use, as well as all critical, special, significant, or otherwise designated protected areas.

(B) Provide a mechanism to be used during a spill response for timely identification of protection priorities of those fish and wildlife resources and habitats and sensitive environmental areas that may be threatened or injured by a discharge. These include as appropriate, not only marine and freshwater species, habitats, and their food sources, but also terrestrial wildlife and their habitats that may be affected directly by onshore oil or indirectly by oil-related factors, such as loss or contamination of forage. The mechanism shall also provide for expeditious evaluation and appropriate consultations on the effects to fish and wildlife, their habitat, and other sensitive environments from the application of chemical countermeasures or other countermeasures not addressed under paragraph (e)(4)(iii).

(C) Identify potential environmental effects on fish and wildlife, their habitat, and other sensitive environments resulting from removal actions or countermeasures, including the option of no removal. Based on this evaluation of potential environmental effects, the annex should establish priorities for application of countermeasure and removal actions to habitats *within the geographic region of the ACP*. The annex should establish methods to minimize the identified effects on fish and wildlife because of response activities, including, but not limited to: Disturbance of sensitive areas and habitats; illegal or inadvertent taking or disturbance of fish and wildlife or specimens by response personnel; and fish and wildlife, their habitat, and environmentally sensitive areas coming in contact with various cleaning or bioremediation agents. Furthermore, the annex should identify the areas where the movement of oiled debris may pose a risk to resident, transient, or migratory fish and wildlife, and other sensitive environments and should discuss measures to be considered for removing such oiled debris in a timely fashion to reduce such risk.

(D) Provide for pre-approval of application of specific countermeasures or removal actions that, if expeditiously applied, will minimize adverse spill-induced impacts to fish and wildlife resources, their habitat, and other sensitive environments. Such pre-approval plans must be consistent with paragraphs (c)(4)(ii)(B) and (C) of this section and subpart J requirements, and must have the concurrence of the natural resource trustees.

(E) Provide monitoring plan(s) to evaluate the effectiveness of different countermeasures or removal actions in protecting the environment. Monitoring should include “set-aside” or “control” areas, where no mitigative actions are taken.

(F) Identify and plan for the acquisition and utilization of necessary response capabilities for protection, rescue, and rehabilitation of fish and wildlife resources and habitat. This may include appropriately permitted private organizations and individuals with appropriate expertise and experience. The suitable organizations should be identified in cooperation with natural resource law enforcement agencies. Such capabilities shall include, but not be limited to, identification of facilities and equipment necessary for deterring sensitive fish and wildlife from entering oiled areas, and for capturing, holding, cleaning, and releasing injured wildlife. Plans for the provision of such capabilities shall ensure that there is no interference with other OSC removal operations.

(G) Identify appropriate federal and state agency contacts and alternates responsible for coordination of fish and wildlife rescue and rehabilitation and protection of sensitive environments; identify and provide for required fish and wildlife handling and rehabilitation permits necessary under federal and state laws; and provide guidance on the implementation of law enforcement requirements included under current federal and state laws and corresponding regulations. Requirements include, but are not limited to procedures regarding the capture, transport, rehabilitation, and release of wildlife exposed to or threatened by oil, and disposal of contaminated carcasses of wildlife.

(H) Identify and secure the means for providing, if needed, the minimum required OSHA and EPA training for volunteers, including those who assist with injured wildlife.

(I) Define the requirements for evaluating the compatibility between this annex and non-federal response plans (including those of vessels, facilities, and pipelines) on issues affecting fish and wildlife, their habitat, and sensitive environments.

Identifying Federally-Listed Species and Critical Habitats Information, Planning, and Conservation System (IPaC)

<http://ecos.fws.gov/ipac>

Data Layers

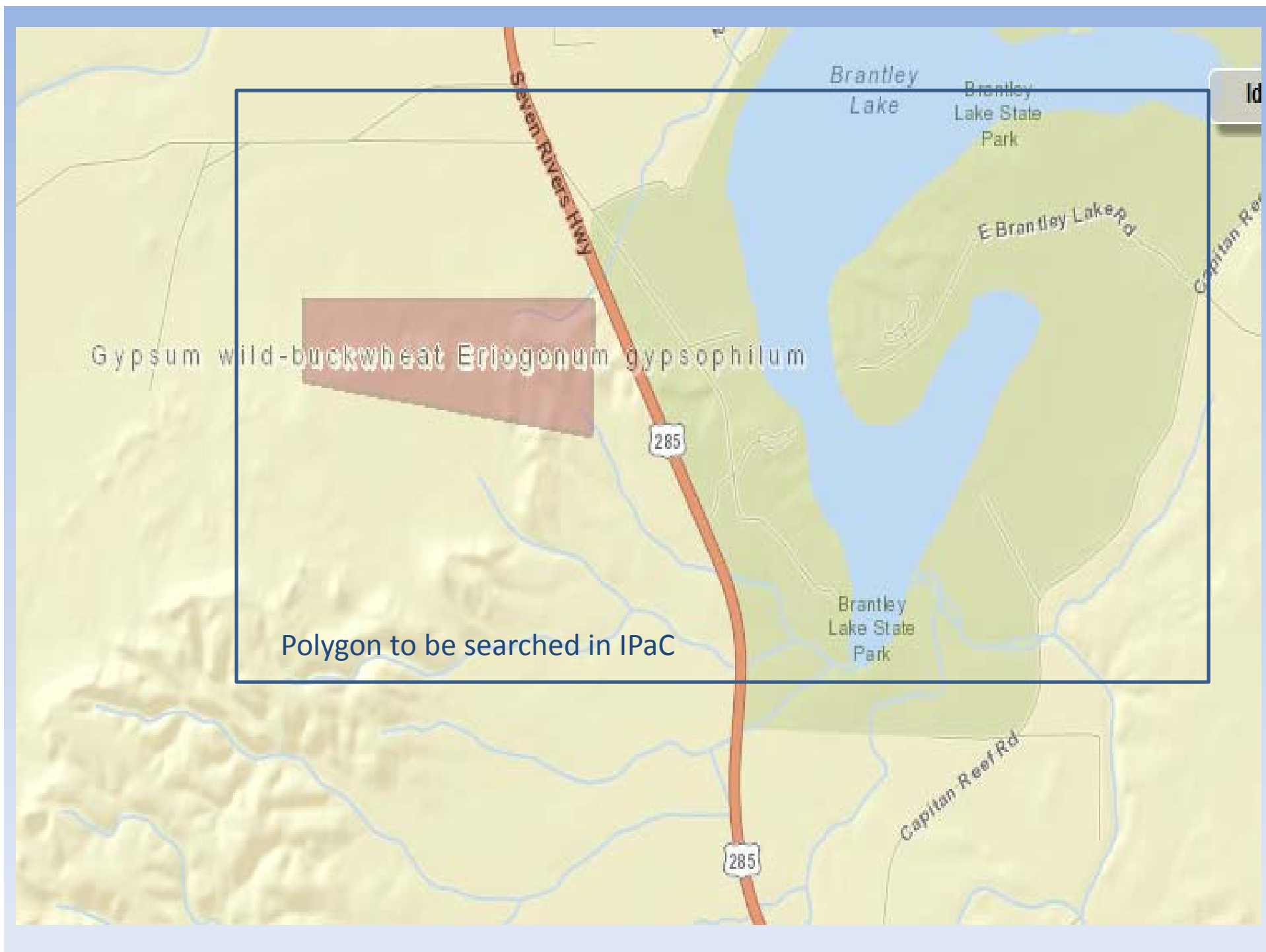
Endangered and Threatened Species and Critical Habitat

National Wildlife Refuges

Non-Game Birds of Conservation Concern

National Wetlands Inventory Wetlands

Land Ownership





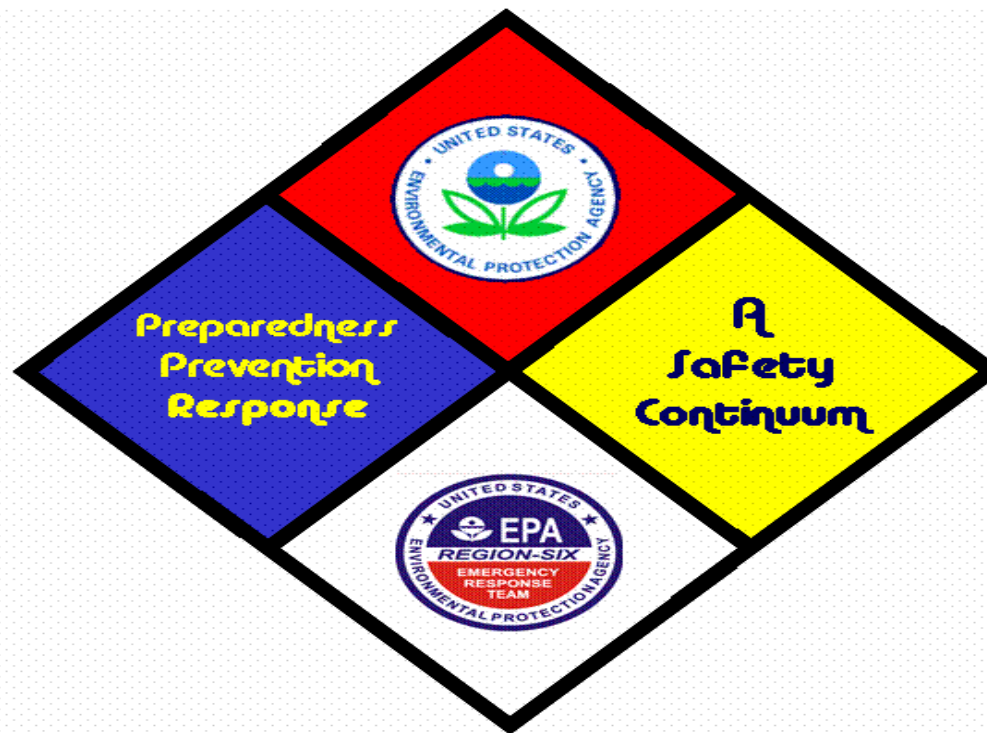
Gypsum wild buckwheat (*Eriogonum gypsophilum*)
Only known from Eddy County, New Mexico

- Current FWSEP dates back to about 2004
- **Not currently any species-, habitat-, or location-specific information in the Regional Inland Contingency Plan FWSEP.**

How do we include other than Federal lands and Federally-listed species and critical habitats (e.g., park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks, national monuments) in the FWSEP? Examples: State parks, State wildlife management areas, State-listed species, tribal interests of the 66 Federally-recognized Tribes in Region 6, sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); and other ecologically significant or critical areas.

- Suggest using IPaC as a first screening tool for Federal resources and include instructions in the Regional Inland Contingency Plan FWSEP for using the tool

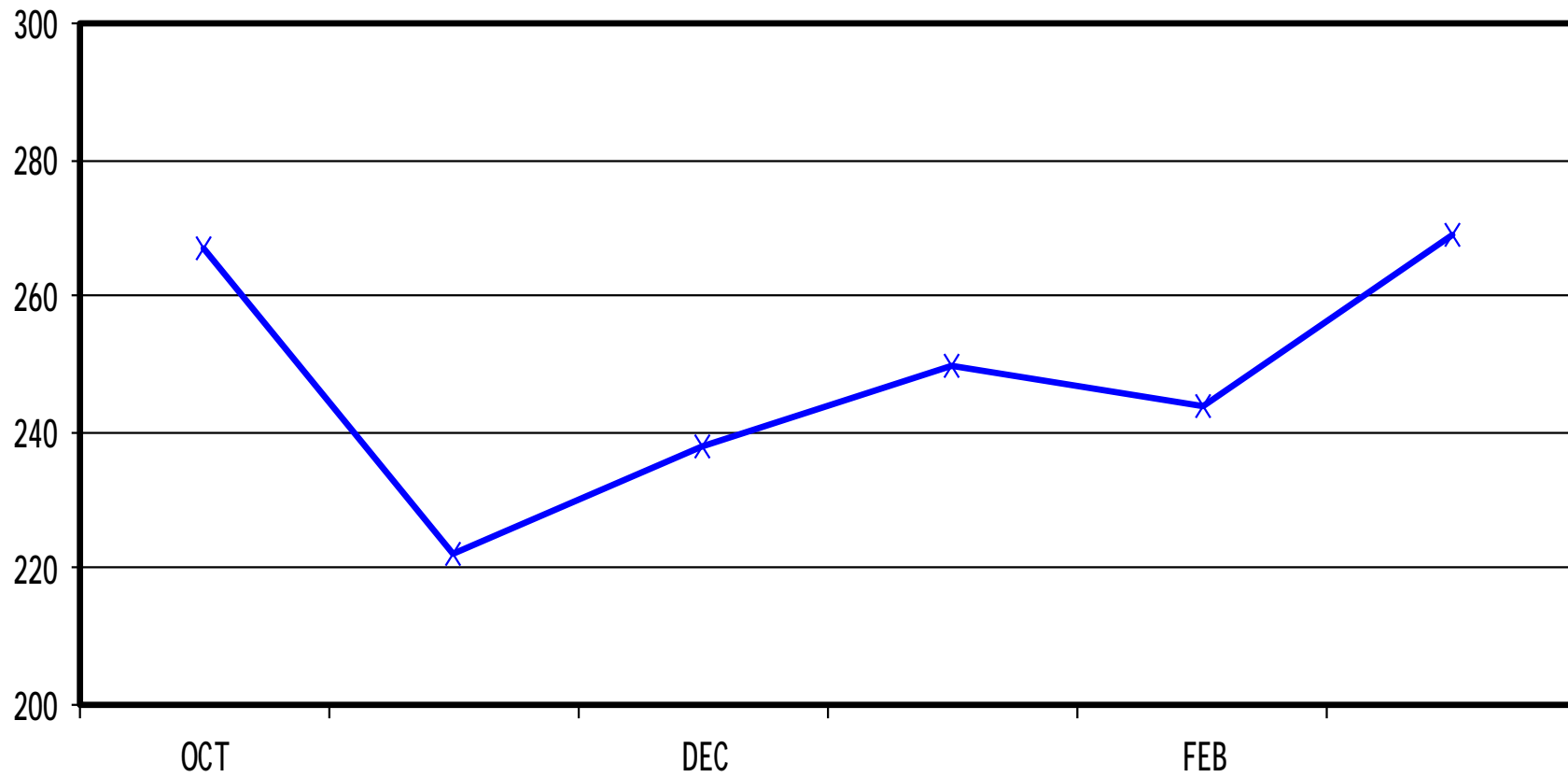
How do we organize to efficiently proceed to the next step, inclusion of State and Tribal sensitive resources and protection strategies? Points of contact, level of detail? Ideas?? Need a leader.



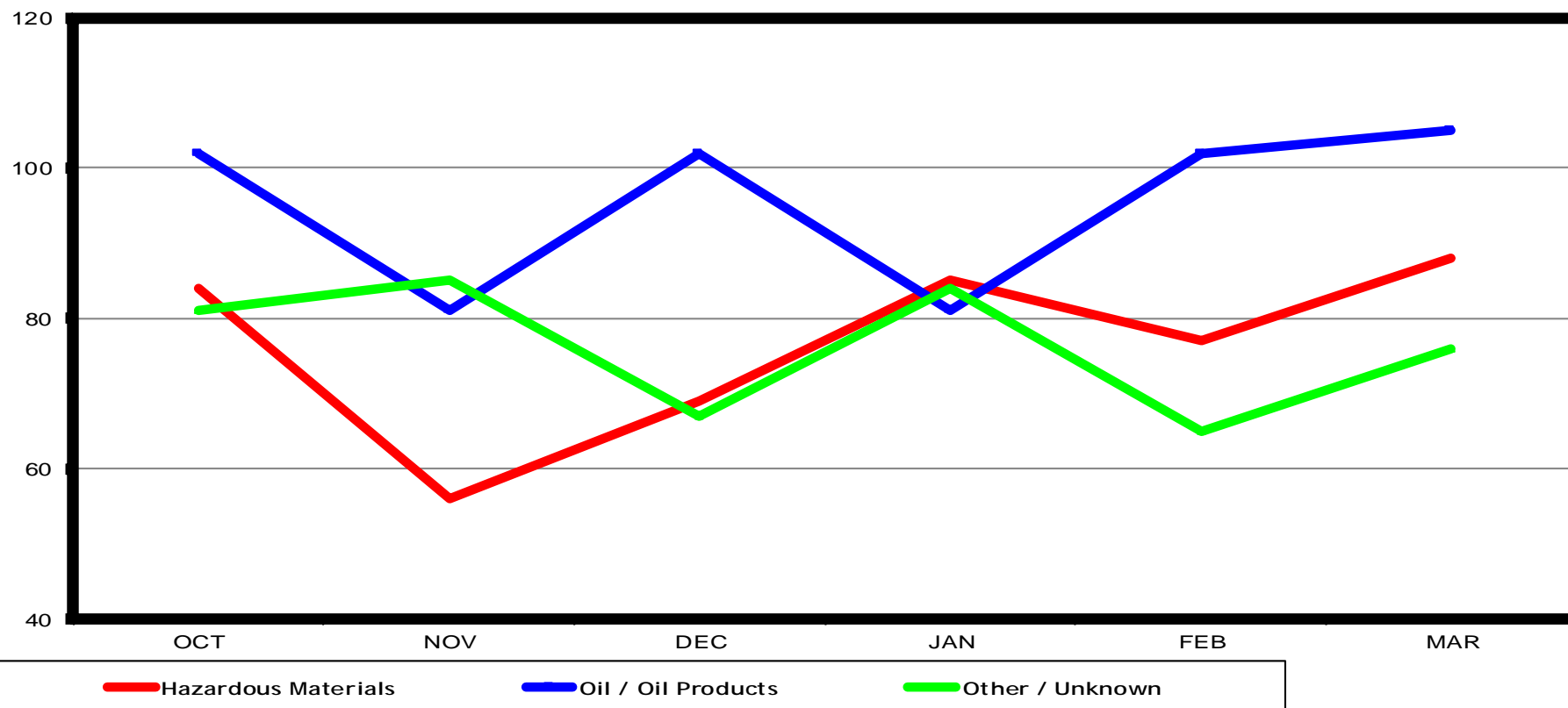
EPA Region 6 Accidental Release Information :

October, 2013 – March, 2014

Over Thirty Years of Collecting Release / Spill Information

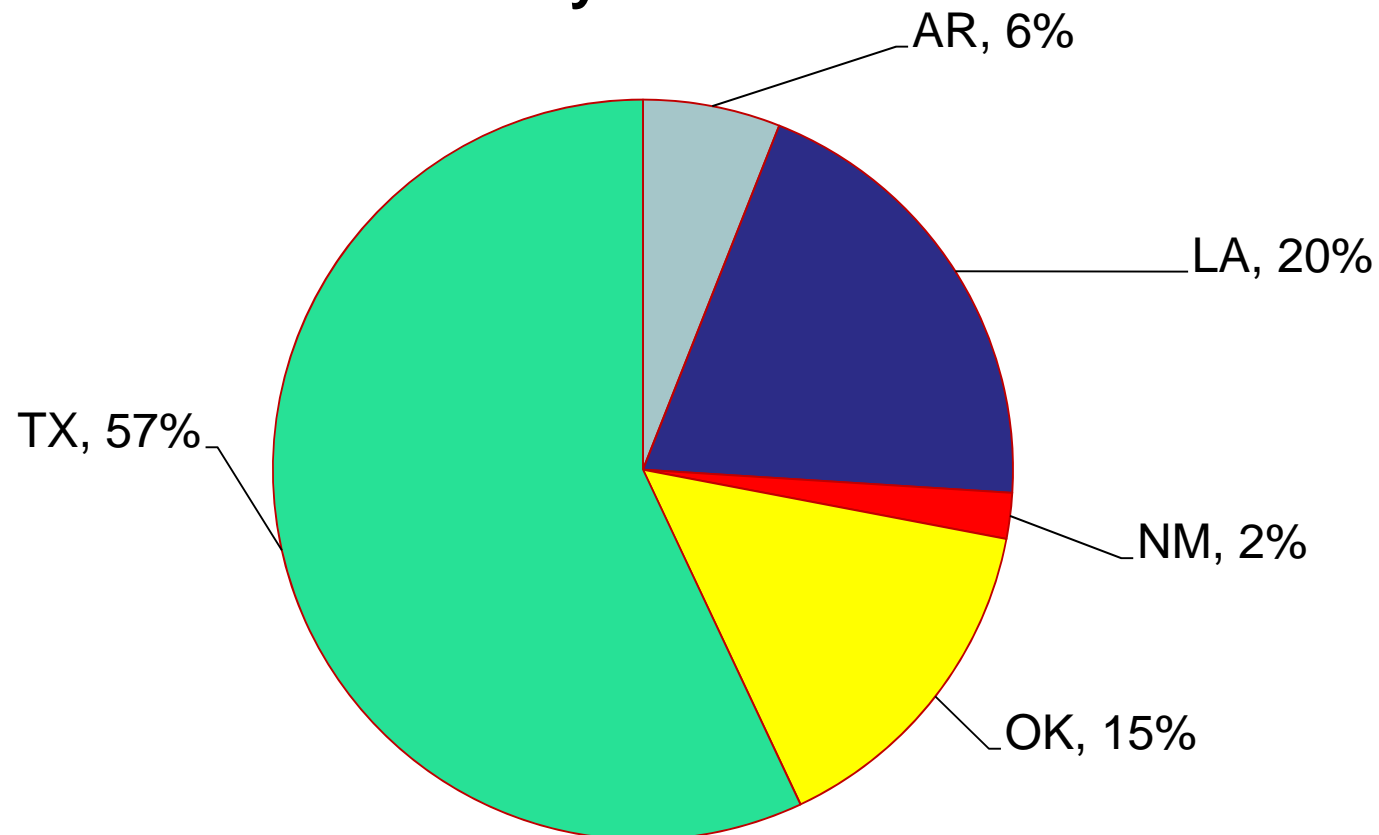


2013-2014	OCT	NOV	DEC	JAN	FEB	MAR
EPA Notifications	267	222	238	250	244	269



	OCT	NOV	DEC	JAN	FEB	MAR
Hazardous Materials	84	56	69	85	77	88
Oil / Oil Products	102	81	102	81	102	105
Other / Unknown	81	85	67	84	65	76

By State



	OCT	NOV	DEC	JAN	FEB	MAR
Arkansas	11	8	12	10	17	24
Louisiana	47	53	49	52	45	57
New Mexico	5	5	9	4	9	3
Oklahoma	36	35	37	37	34	45
Texas	166	121	130	146	137	137

Region 6 – Spill Reports – (Oct 2013 – Mar 2014)

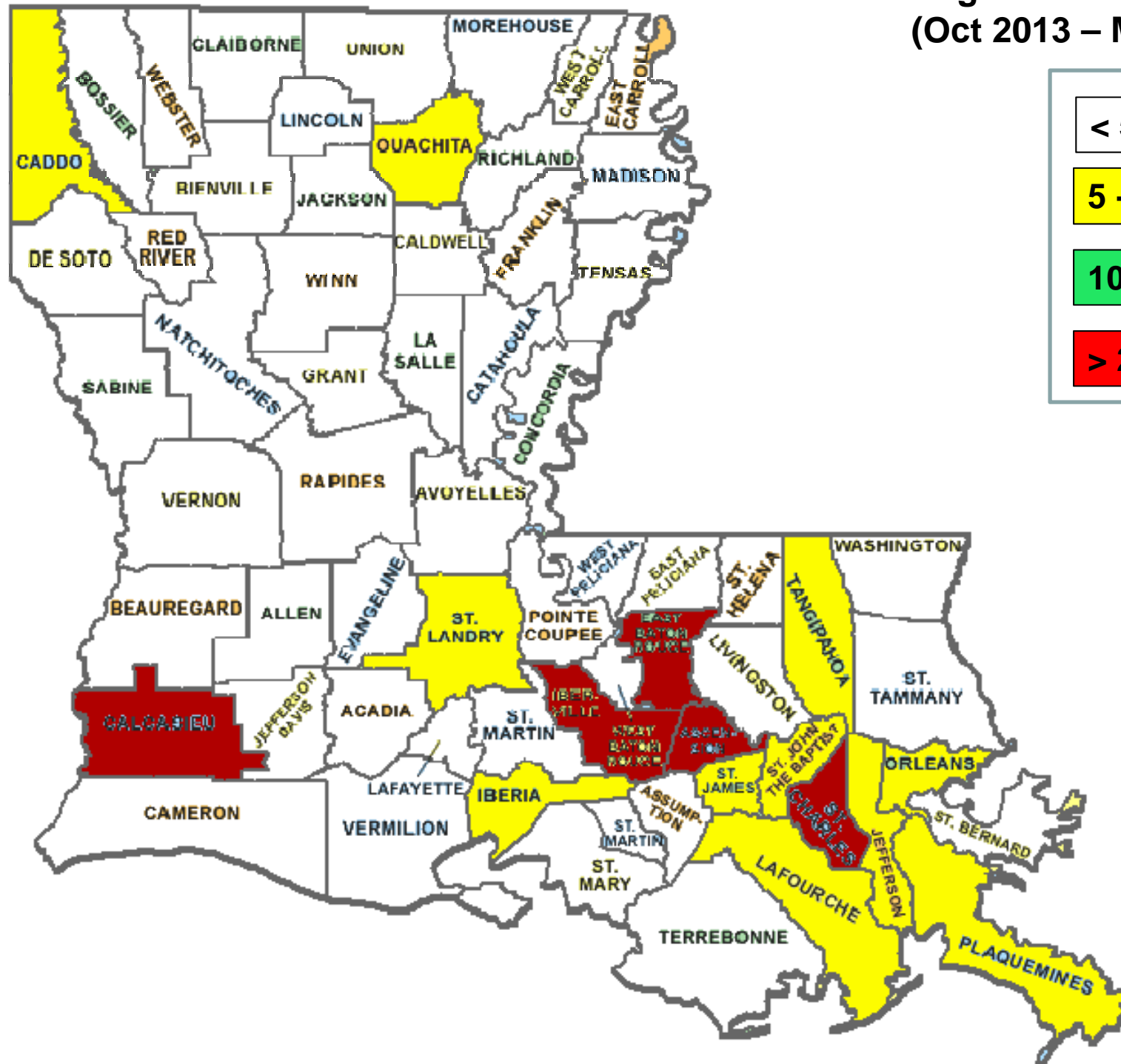


< 5 releases

5 - 10 releases

> 10 releases

Region 6 – Spill Reports – (Oct 2013 – Mar 2014)



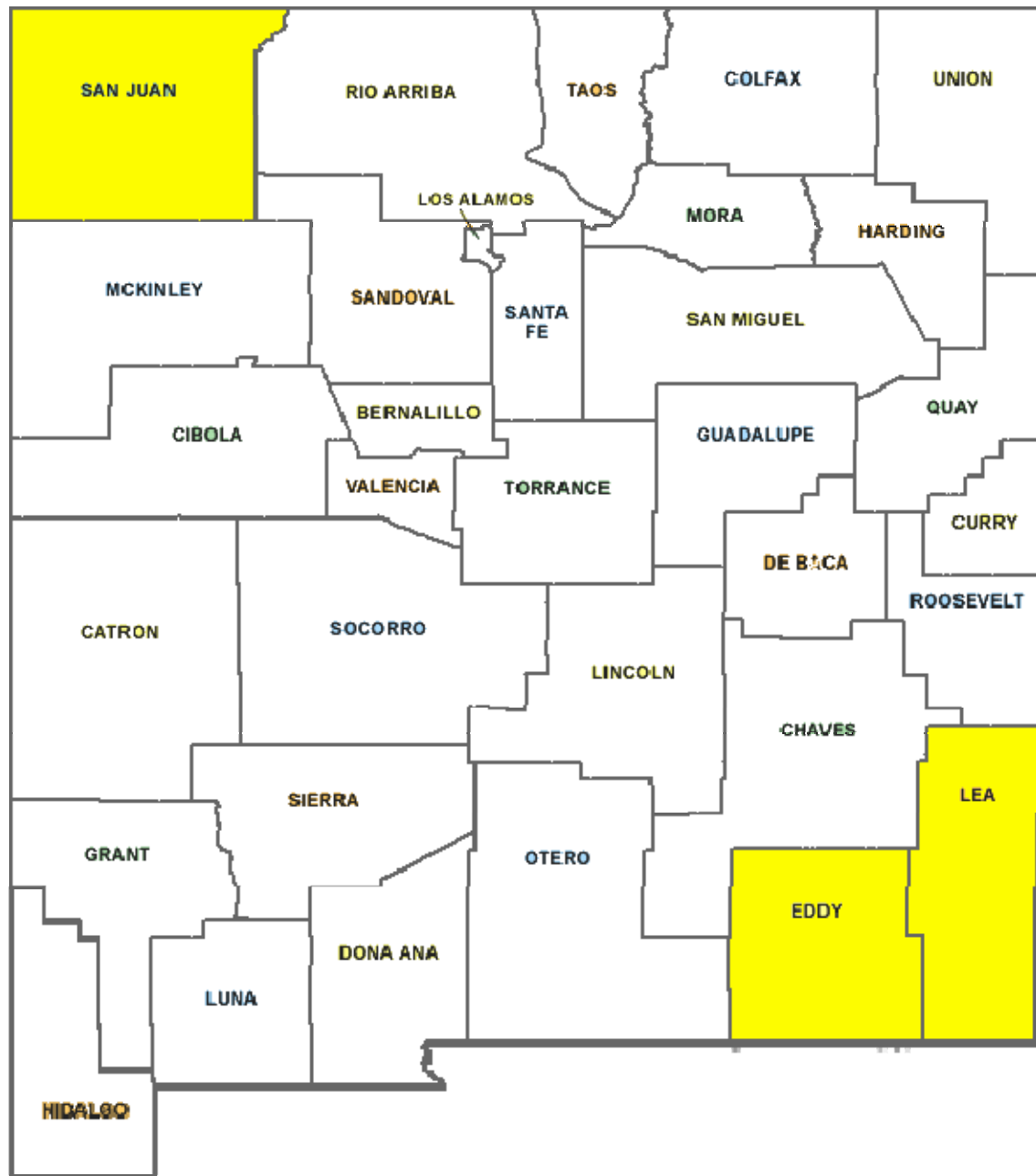
< 5 releases

5 - 10 releases

10 – 25 releases

> 25 releases

Region 6 – Spill Reports – (Oct 2013 – Mar 2014)

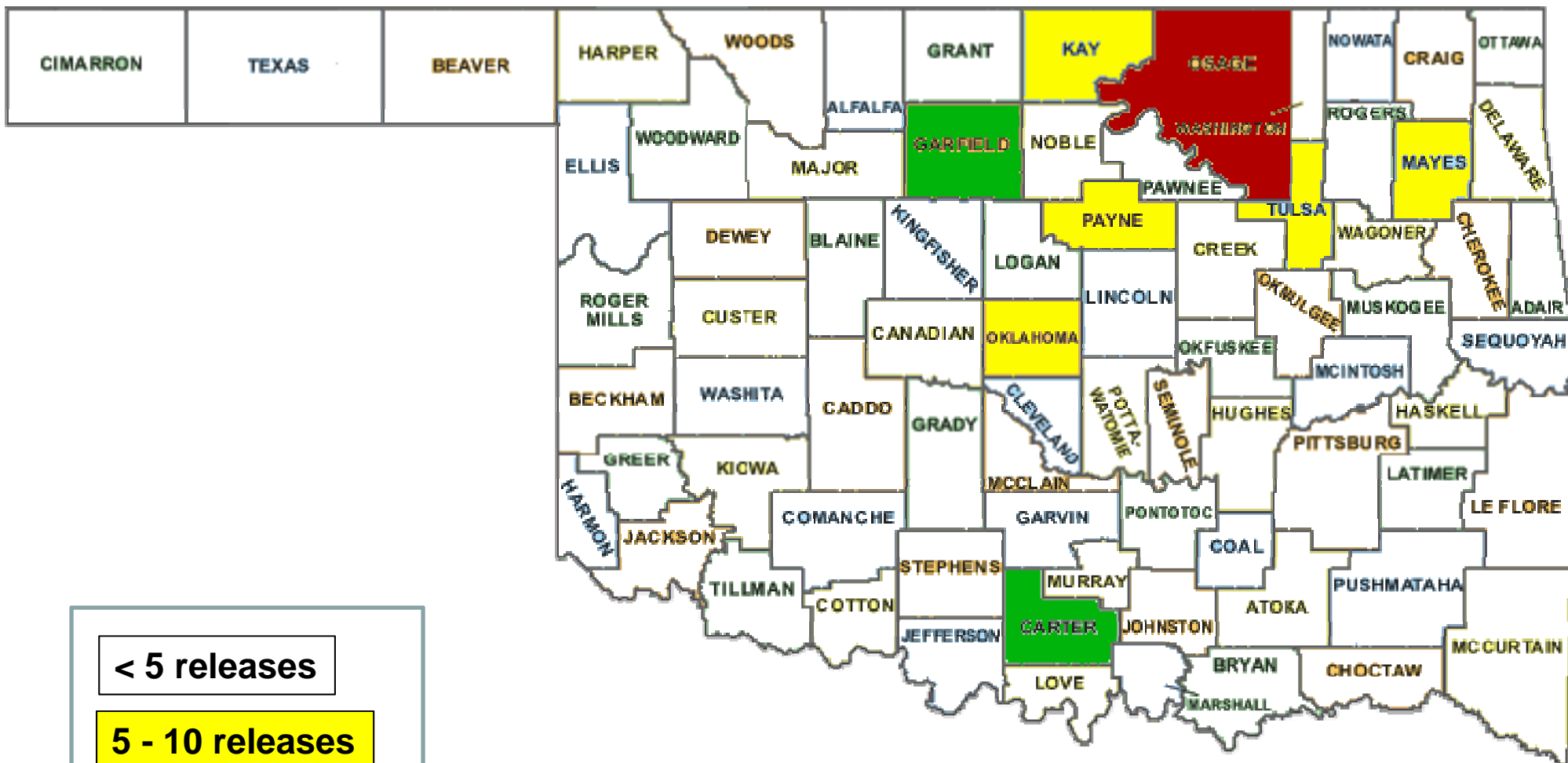


< 5 releases

5 - 10 releases

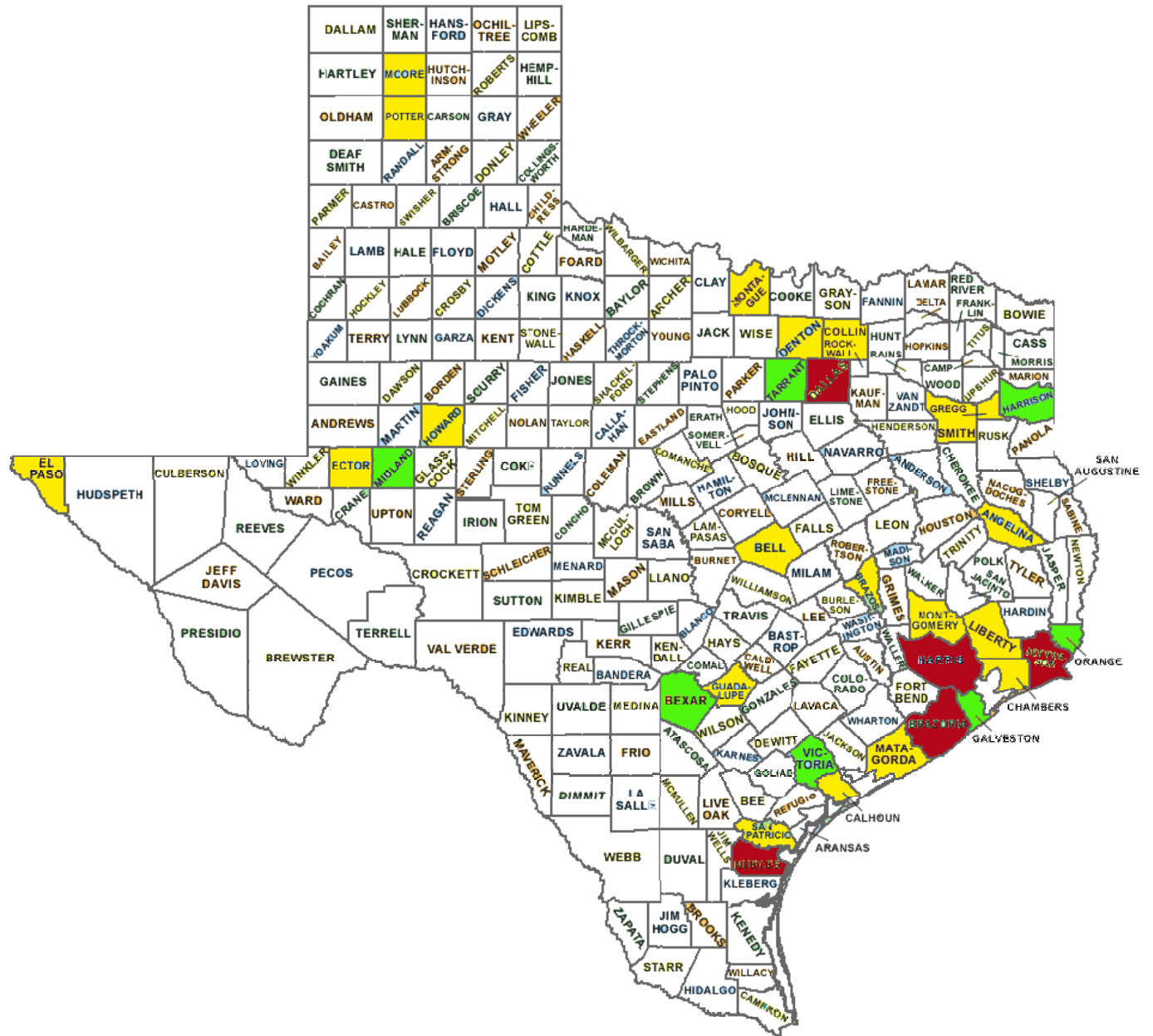
10 – 25 releases

> 25 releases



Region 6 – Spill Reports – (Oct 2013 – Mar 2014)

Region 6 – Spill Reports – (Oct 2013 – Mar 2014)



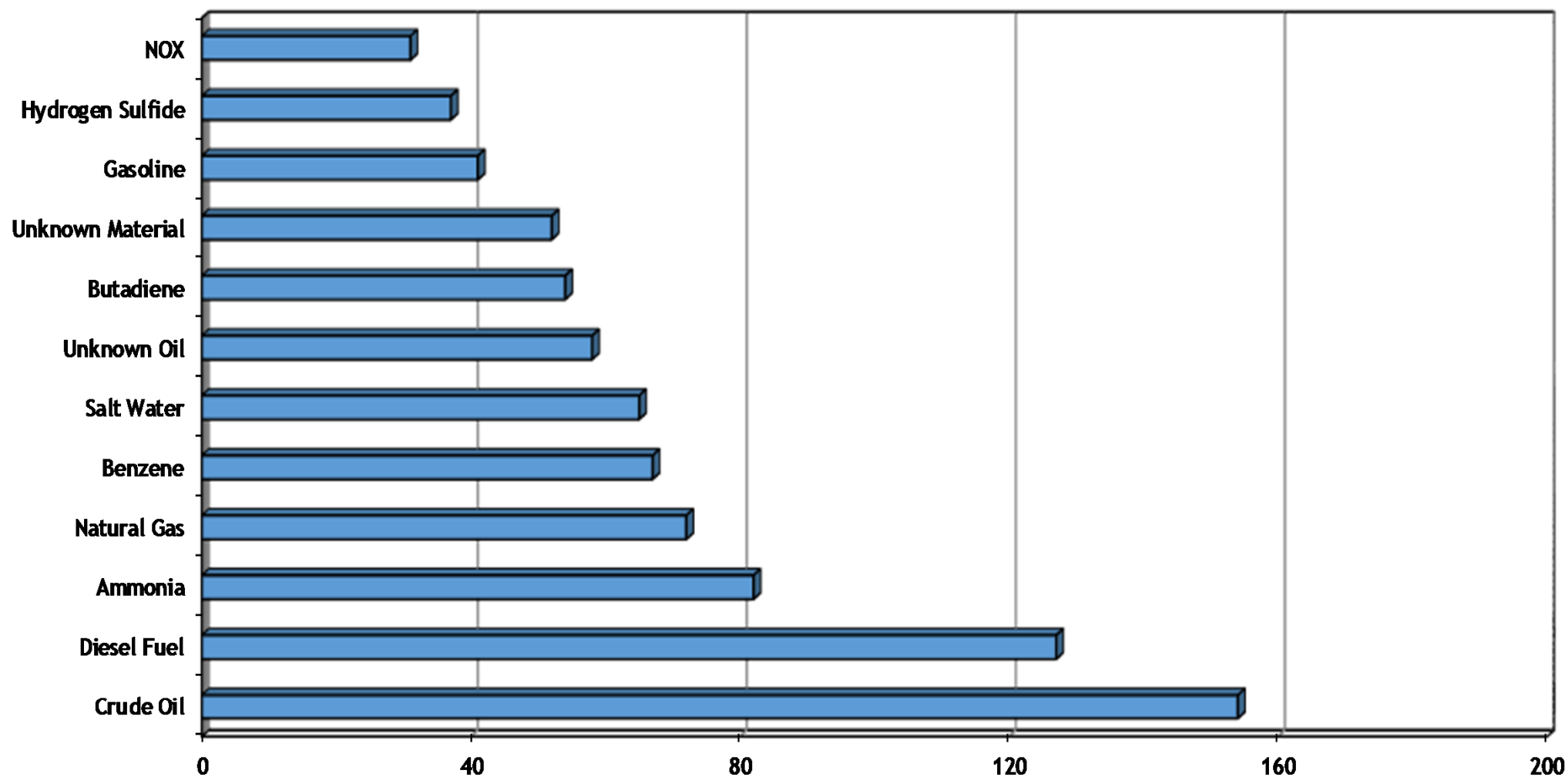
< 5 releases

5 - 10 releases

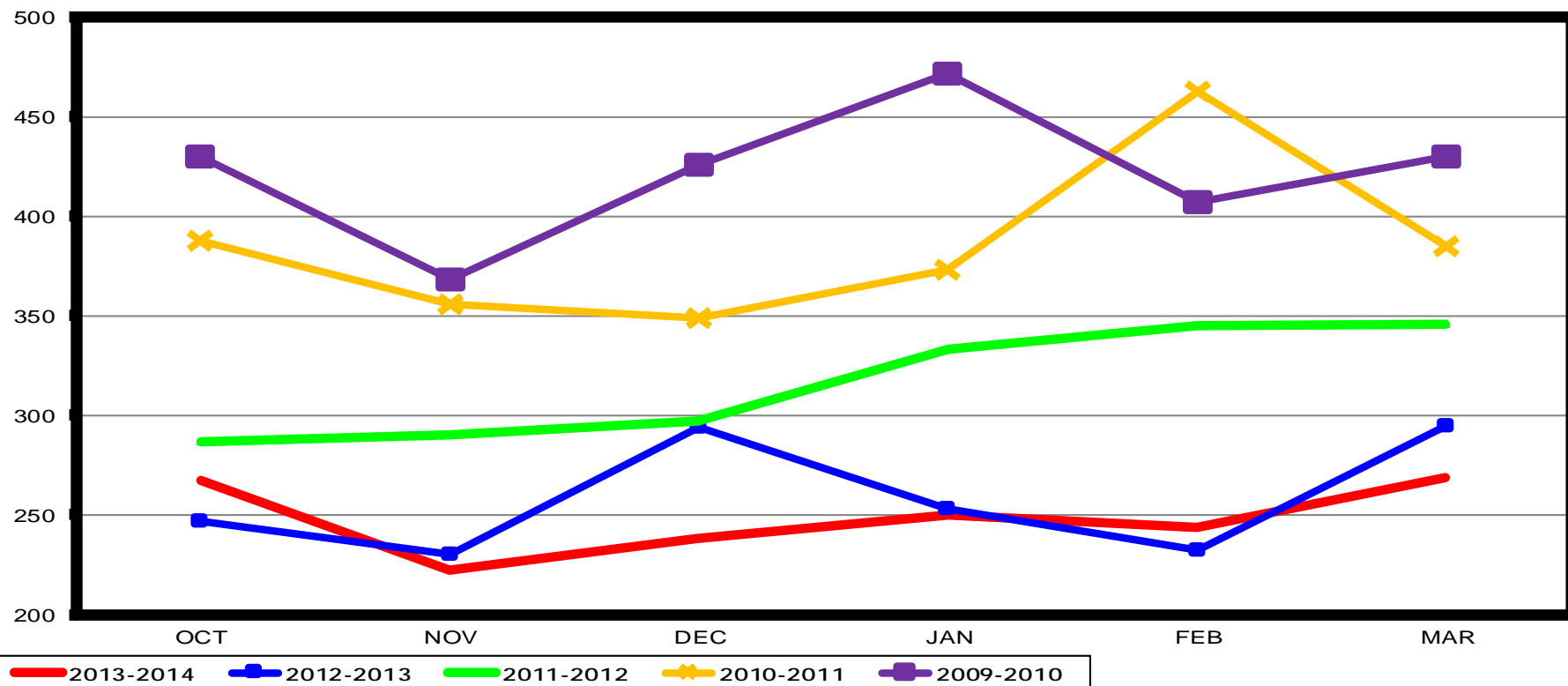
10 – 25 releases

> 25 releases

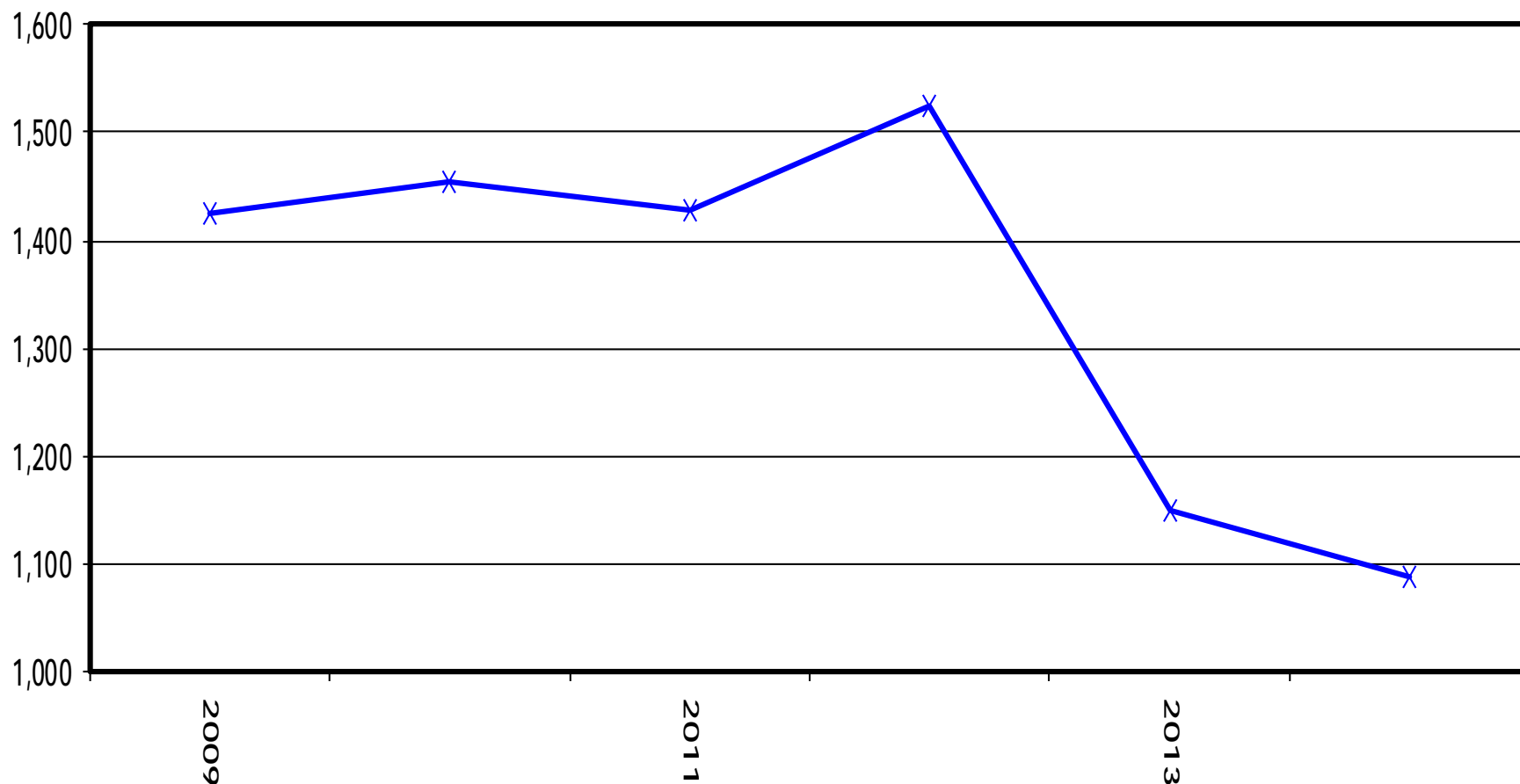
The 12 materials listed below account for almost 60 % of all material releases within Region 6 in last 6 months



NRC Notifications to EPA Region 6 -- 5 year comparison (OCT - MAR)



	OCT	NOV	DEC	JAN	FEB	MAR
2013-2014	267	222	238	250	244	269
2012-2013	247	230	294	253	232	295
2011-2012	287	290	297	333	345	346
2010-2011	388	356	349	373	463	385
2009-2010	430	368	426	472	407	430



2013-2014	2009	2010	2011	2012	2013	2014 Projected
EPA Notifications	1,426	1,454	1,429	1,524	1,148	1,086

Explo Systems, Inc. Camp Minden, Webster Parish, LA



Magazine Explosion –
Oct. 2012

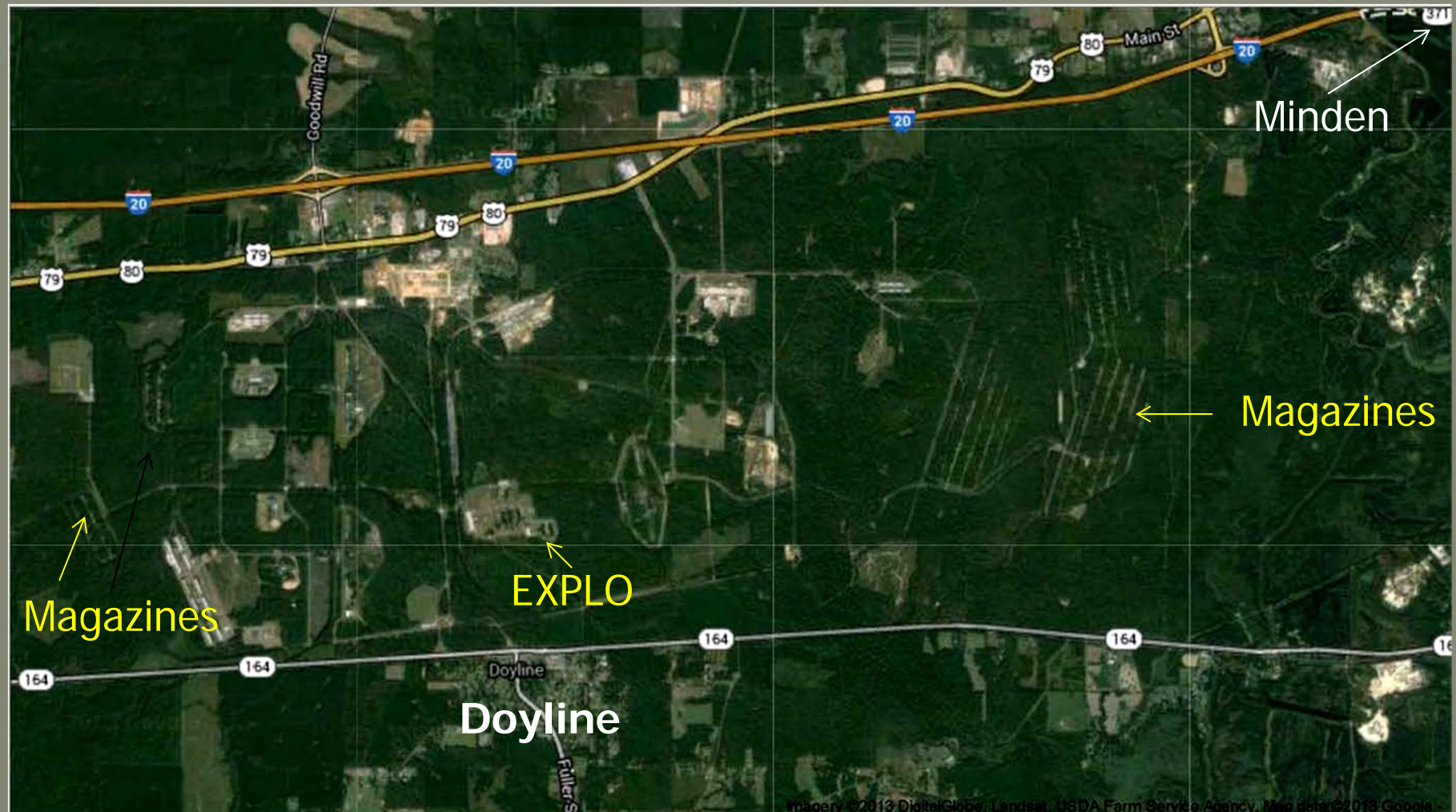


Improper storage of M6 Propellant –
Nov. 2012

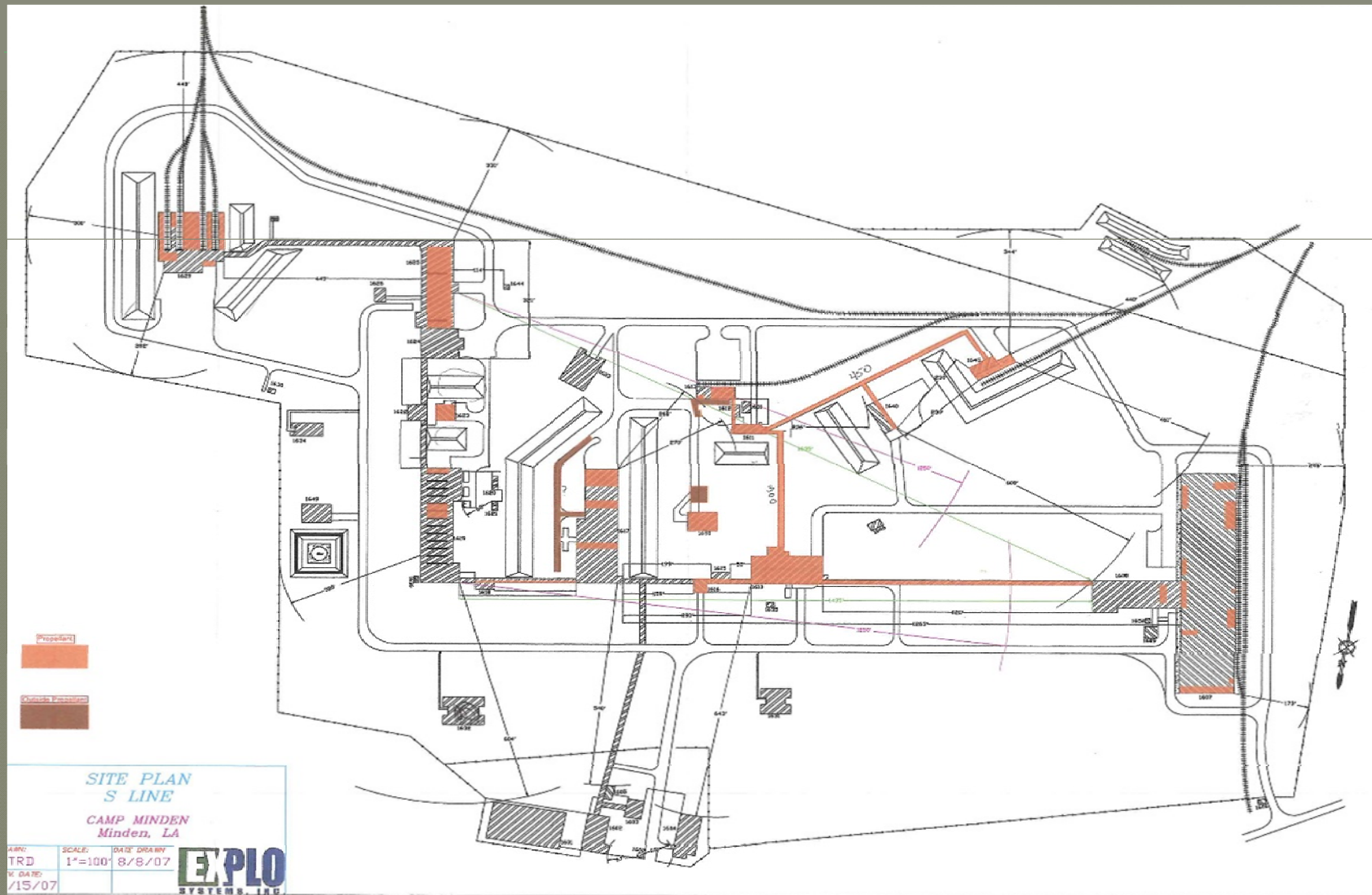
Paige Delgado, On-Scene Coordinator
EPA Region 6 Superfund Division

May 16, 2014

Evacuation of Doyline and Camp Minden – M6 Propellant Explosive Risk



Explo S-Line M6 Propellant Storage



DRAFT

Accumulation of Hazardous/ Explosive Materials

M6 PROPELLANT

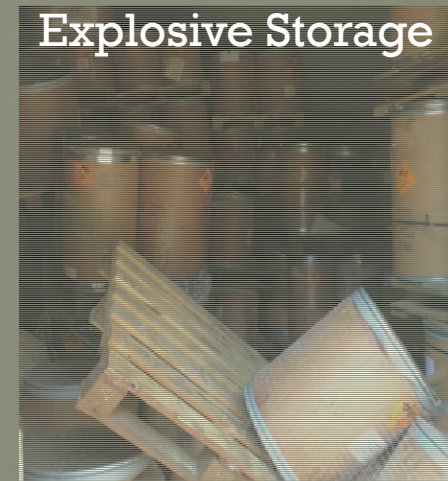


NITROCELLULOSE/
TRITONAL/M6/M30/PTP



18 M lbs of Explosives in 97 magazines

- 15 M lbs. - M6 Propellant
- ~2 M lbs. - Tritonal (aluminum/TNT) mixture
- ~661,000 lbs. - Nitrocellulose
- **Additional Explosive Materials:**
 - 128 lbs. - black powder
 - 200 lbs. - Composition H6
 - Four 50-gallon drums of ammonium perchlorate
 - Two 50-gallon drums and 3-50 lb. boxes of Explosive D (ammonium picrate)
 - 109,000 lbs. - M30 propellant
 - 320,000 lbs. - Clean Burning Incendiary (CBI)
 - Unknown volume of Red Water (water contaminated with TNT)
 - Effluent associated with the Super Critical Water Oxidation Unit (SCWO)



Mixed Explosives within Storage Magazines – Explosive Risk?

EXPLOSIVE STORAGE
MAGAZINE



EXPLOSIVE STORAGE
MAGAZINE AFTER
EXPLOSION – OCT. 2012



DRAFT

Understanding the Risk

EXPLOSIVE

- An **explosive**, is a reactive substance that contains a great amount of potential energy that can produce an **explosion** if released suddenly, usually accompanied by the production of light, heat, sound, and pressure.

EXPLOSION

- A rapid increase in volume and release of energy in an extreme manner, usually with the generation of high temperatures and the release of gases.
- **Causes: Impact/Shock/Compression, Friction, and Heat**

What's the Explosive Risk?

ALUMINUM/TNT AND M6
PROPELLANT – STACKED,
DAMAGED/COMPRESSED



ALUMINUM/TNT AND M6
PROPELLANT – STACKED
AND FALLING OVER



DRAFT

Imminent Explosive Risk

- 15 M lbs. of M6 Propellant with Rapidly Deteriorating Stability
 - As Propellant ages, stabilizer degrades resulting in auto-ignition and explosion
- DoD Explosives Safety Board Concerns:
 - Risk - Similar to Magazine Explosion in Oct. 2012
 - Complete destruction of magazine and damaged 11 railcars
 - 7,000 –foot mushroom cloud
 - Shattered windows in Minden, LA – 4 miles away
 - Insufficient stabilizer to prevent auto-ignition
 - Imminent risk of explosion greatly increases by August 2015



Magazine Explosion – Oct. 2012

Current Actions

- GD/ATK Removal and disposal of ~ 2.5M lbs. of explosives:
 - ~2 million lbs. of tritonal mixed with tar/aluminum and TNT
 - ~70,000 lbs of Nitrocellulose
 - 109,000 lbs of M30 propellant
 - 200 lbs Composition H6
 - St. Mark's Powder – Pit Powder (PTP)
- Signed AOC with Hercules –
 - Removal and disposal of ~661,000 lbs. Nitrocellulose
 - Begin ~June 2014
- GNL, CERCLA AOC, and RCRA 7003 UAO to DoD/US Army
- CERCLA AOC/Draft UAO - LMD



Nitrocellulose
Removal



Nitrocellulose Drums

Lessons Learned:

- Caller ID – Screen LSP Phone Calls
- Relationships, Relationships, Relationships – LSP, LMD, LDEQ, ATF, DOT, DoD/Army USATCES, EPA FFO/FFEO
- Identification of Appropriate Personnel – DoD/Army and ATF

RRT Coordination:

- Notification vs. Activation
- Supporting Agencies
- Knowledge Exchange



Improperly stored M6 Propellant



Aluminum/TNT and
M6 in Magazine



M6 Propellant on the
Ground

Questions/Comments?



DRAFT

Questions/Comments?



DRAFT

MCGOWAN WORKING PARTNERS (FPN E14609)

Oil type: **Crude Oil – medium (API 28)**

Spill Volume: **389 Barrels (initial report 20 Bbls)**

Date & time of Spill: **3/15/14 @10:39 AM**

Last observed at 4:00 PM on 3/14/14

NRC Notified: **3/20/14 @ 12:55**

Cause of Spill: **Failure of the Oil Dump valve on the separator**

Impact: **0.6 miles of Big Choctaw Bayou**

Responsible Party: **McGowan Working Partners, Inc.**

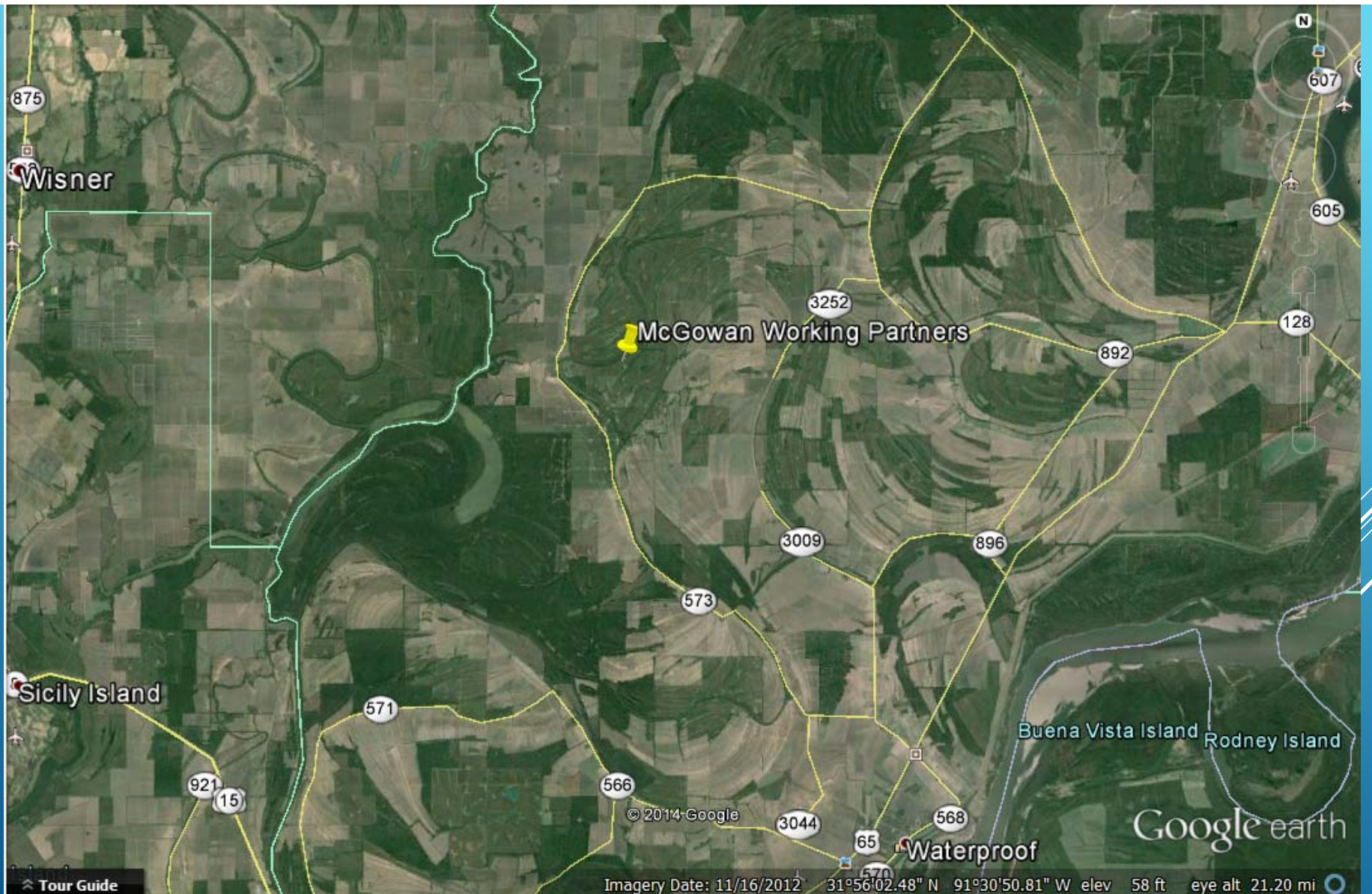
Key Operational Activities: **Coordination with USFWS - The area surrounding the spill scene is designated habitat for the threatened Louisiana Black Bear. In addition the nearby area is a conservation easement of the USDA Natural Resources Conservation Service Wetlands Reserve Program.**

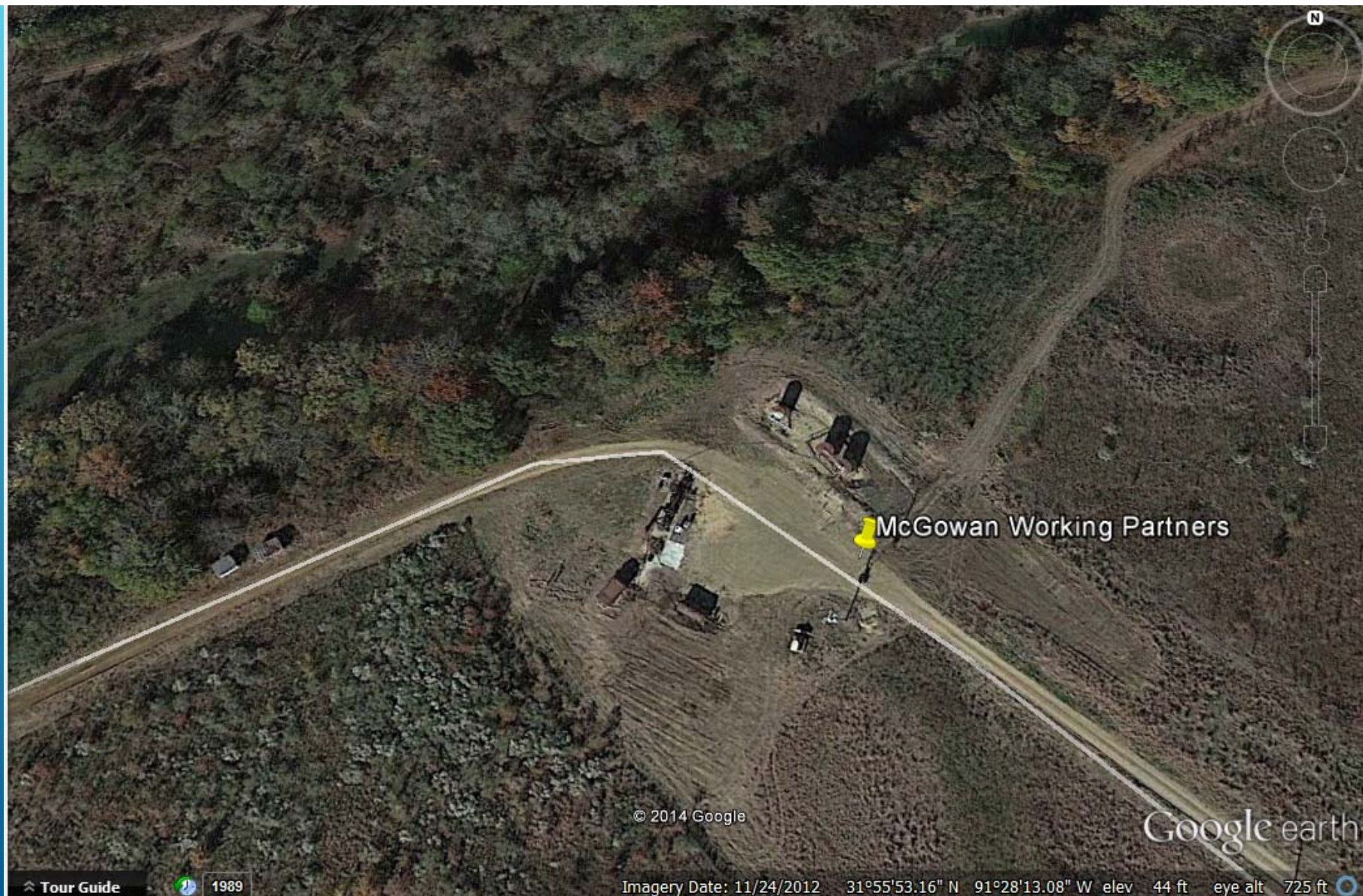
April 29, 2014 –Removal determined complete by FOSC

BA: **"not likely to adversely affect"** the Louisiana Black Bear

RRT Activation: **No**







McGowan Working Partners

© 2014 Google

Google earth

Tour Guide

1989

Imagery Date: 11/24/2012 31°55'53.16" N 91°28'13.08" W elev 44 ft eye alt 725 ft

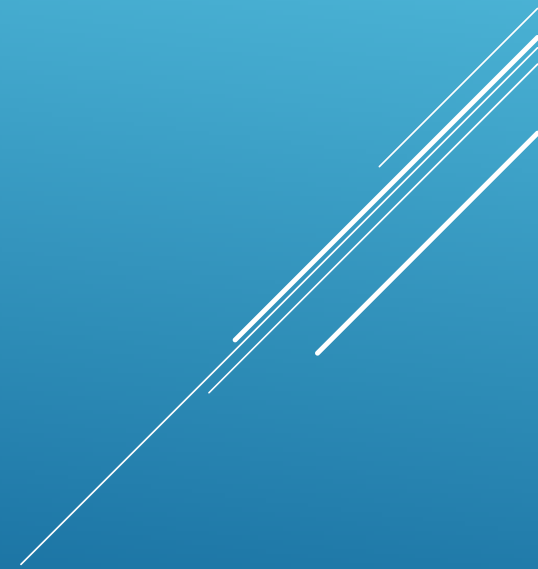












McGOWAN WORKING PARTNERS (FPN E14609)

- March 16, 2014, the RP (McGowan Working Partners, Inc.) mobilized WT Drilling Service of Natchez, Mississippi to conduct initial oil spill containment and cleanup operations.
- March 17, 2014, the RP activated their Oil Spill Response Organization Oil Mop, Inc (OMI) to coordinate and lead the oil spill containment and recovery operations, approximately 20 OMI personnel .
- After review of site conditions, and at the request of LOSCO, additional personnel and resources were mobilized to the spill scene on March 20th to assist with spill response activities. Approximately 56 personnel were on scene, between OMI and McGowan.













US Fish and Wildlife Service (USFWS) Emergency Consultation

In accordance with Section 7 (50 CFR 402.05) of the Endangered Species Act (ESA), as amended (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), to minimize the potential impacts to the Louisiana black bear and its critical habitat USFWS recommended that the U.S. Environmental Protection Agency (EPA) assure the following conservation recommendations were followed:

1. Ensure that all employees, contractors, and monitors, notify the Louisiana Department of Wildlife and Fisheries (LDWF) immediately concerning all black bear issues.
2. All involved employees and contractors associated with this response action should be provided with the attached Black Bear Reporting Form and the above contact information for reporting bear observations.
3. Ensure that all potential bear attractants (i.e., food wastes) generated during response operations are strictly controlled to preclude the potential habituation of bears to human-associated food sources (e.g., use of "bear-proof" waste disposal containers).
4. No one associated with response activities should approach, or make physical contact, with any bear.
5. When/where possible, avoid impacts to trees that are 36 inches or more in diameter at breast height, regardless of species.
6. Impacts to vegetated habitat should be avoided or minimized by reducing the footprint of the proposed action and any associated work areas (e.g., equipment staging and transport, etc.) to the maximum extent feasible.

US FISH AND WILDLIFE SERVICE (USFWS) EMERGENCY CONSULTATION – cont.

7. Survey, for the presence of denning Louisiana black bears, all dense herbaceous, scrub shrub, and forested areas that may be impacted by response activities. If a bear den site is identified:
 - a. take all reasonable and practicable measures to avoid impacting the den site and its vicinity
 - b. record global positioning system (GPS) coordinates for the site
 - c. notify the Service's Louisiana Ecological Services Office as soon as possible.

That notification should include GPS coordinates and a brief description of the den type (i.e., slash pile ground den, etc.). Visual confirmation of denning bears is not necessary to identify a den site; fresh bear sign (e.g, scat or tracks) in the vicinity of a suitable den site (e.g., a large hollow tree, a slash pile, a briar thicket, etc.) or cub sounds heard from a suspected den site shall be sufficient to classify the location as a bear den.





MCGOWAN WORKING PARTNERS (FPN E14609)

Oil type: **Crude Oil – medium (API 28)**

Spill Volume: **389 Barrels (initial report 20 Bbls)**

Date & time of Spill: **3/15/14 @10:39 AM**

Last observed at 4:00 PM on 3/14/14

NRC Notified: **3/20/14 @ 12:55**

Cause of Spill: **Failure of the Oil Dump valve on the separator**

Impact: **0.6 miles of Big Choctaw Bayou**

Responsible Party: **McGowan Working Partners, Inc.**

Key Operational Activities: **Coordination with USFWS - The area surrounding the spill scene is designated habitat for the threatened Louisiana Black Bear. In addition the nearby area is a conservation easement of the USDA Natural Resources Conservation Service Wetlands Reserve Program.**

April 29, 2014 –Removal determined complete by FOSC

BA: **"not likely to adversely affect"** the Louisiana Black Bear

RRT Activation: **No**



WATERPROOF OIL SPILL



**McGowan Working Partners
(FPN E14609)**

On March 15, 2014, the Louisiana State Police (LSP) was notified of an oil spill from a crude oil storage tank and secondary containment area associated with the McGowan Working Partners well located near Waterproof, Tensas Parish, Louisiana (Incident No. 14-01174). The spill scene is located within the Holly Ridge Oil Field, approximately 7.7 miles northwest of the intersection of Louisiana Highway (LA Hwy) 568 and LA Hwy 573. The spill was the result of a faulty valve on an oil/water separation vessel. The valve regulated flow from the production well (Penrod Jurden T No. 003) to the oil production tank storage area.

McGOWAN WORKING PARTNERS (FPN E14609)

- The initial spill estimate as reported to LSP was approximately 20 barrels (bbl).
- The National Response Center was notified of the spill on March 19, 2014 (NRC No. 1077218). The spill estimate to the NRC was revised to 300 bbl.
- The area surrounding the spill scene is designated habitat for the threatened Louisiana Black Bear. In addition the nearby area is a conservation easement of the USDA Natural Resources Conservation Service Wetlands Reserve Program.

HWCG – FMOG Subsea Dispersant Application

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Region 6 Regional Response Team



HDR



ILC Guidance for Industry on requesting RRT Concurrence on Subsea Dispersant Use

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- RRT Preauthorization Plans do not cover subsea dispersant use
- Incident specific approval is required, per Subpart J of the NCP (40 CFR 300.910)
- Information needs differ from those required for surface use requests



Goal: Prepare for initial RRT Call

- RRT 6 Industry Liaison Committee (ILC) collaborated with API D3 Monitoring Team to define requirements
- Drafted standardized authorization request process and recommended information requirements
 - Signature Page
 - Incident data sheets
 - Practical, adaptable subsea injection operations plan and monitoring plan

Current Information Sources

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- RRT6 preapprovals and guidance
- EPA DWH Directives
- NRT Guidance on Environmental Monitoring of Atypical Dispersant Operations
- API Industry Recommended Subsea Dispersant Monitoring Plan
- Feedback from Industry led exercises

“A Collaborative Effort to Define the Application, Approval, and Monitoring Process for Subsea Dispersant Use”

- Industry-recommended subsea dispersant monitoring plan
- Requesting authorization for subsea dispersant use
- Subsea Dispersant monitoring kit and capability
- Basic subsea dispersant operations equipment and methods

HWCG / FMOG Drill - 2014

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- ILC guidance used to identify RRT Information needs
- ILC recommended information was supplemented with content from the IAP
- Information provided to RRT6 1 week in advance
- Two RRT conference calls were held
- Based on RRT feedback, a qualitative NEBA was included in request package
- RRT concurrence was obtained during second call

Status

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- Draft ILC guidance provided to RRT6 in April, 2014
- Content expanded to include use of qualitative NEBA based on HWCg / FMOG drill
- Webinar to be held to address comments received and determine future directions
- Coordinate with RRT 4 and 6 to seek alignment with evolving dispersant use plan(s)

HWCG - FMOG Annual Training/Drill - 2014

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HWCG Members

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- Bennu Oil & Gas LLC
- Cobalt International Energy, LP
- Deep Gulf Energy, LP; Deep Gulf Energy II LLC
- ENI U.S. Operating Company
- ERT GOM Inc./Talós Energy
- EnVen Energy Ventures LLC
- Freeport McMoRan Oil & Gas
- LLOG Exploration Company, LLC
- Marathon Oil Company
- Marubeni Oil & Gas (USA), Inc.
- Murphy Exploration & Production Company - USA
- Noble Energy, Inc.
- Repsol E&P USA Inc.
- Stone Energy
- Walter Oil & Gas Corporation
- W&T Offshore

HWCG Milestones - Technical – Capacities

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■ Water Depth	10,000 ft	WD
■ Pressure Ratings (2 capping stacks)	10,000 & 15,000 PSI	
■ Flow back	130,000 BFPD / 180 MMCFD	
■ Well Containment Plan (RCD)	2011-2014	
■ Members	16	
■ HWCG “Model”	Lease or Rent	
■ Mutual Aid Agreements	Rigs, Equip, Contractors, Members	
■ Approvals through BSEE	WCP; TLP/SPAR; Flow & capture; RCD	

HESG – Helix Energy Solutions Group



HESG provides
the Q4000,
HP1, 10K
capping stack,
IRS, hoses,
floats, burner,
HPHT Transfer
hose, HFRS.



© 2014 HWCG LLC

Trendsetter Engineering

© 2014 HWCG LLC



Leader in Contemporary
Subsea Solutions

Trendsetter Engineering supports HWCG with the dual ram 15,000 psi capping stack.

Maintenance

Storage

Testing



PetroSkills Conference Center

© 2014 HWCG LLC

PetroSkills provides
15,000 sq. ft. of dedicated
space to HWCG. 48 hours
notice to obtain space and
displays.



Rentsys Recovery System

© 2014 HWCg LLC

Rentsys provides 21 computers, HP printers, 16 – 42” LED flat screens, Poster printer, plotter, phone system with 21 phones, conference phones.



AET – American Eagle Tanker

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Supply tanker 750,000 bbl
tanker – 14 days

Shuttle tanker – 235,000
bbl in 14 days



HWCG – Freeport McMoRan Oil & Gas

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- Design Team development started in October 2013
- HWCG, FMOG, various HWCG members, Govt-USCG, BSEE, various vendors.
- Utilized PetroSkills as Source Control Command Center.
- COP – Common Operating Picture

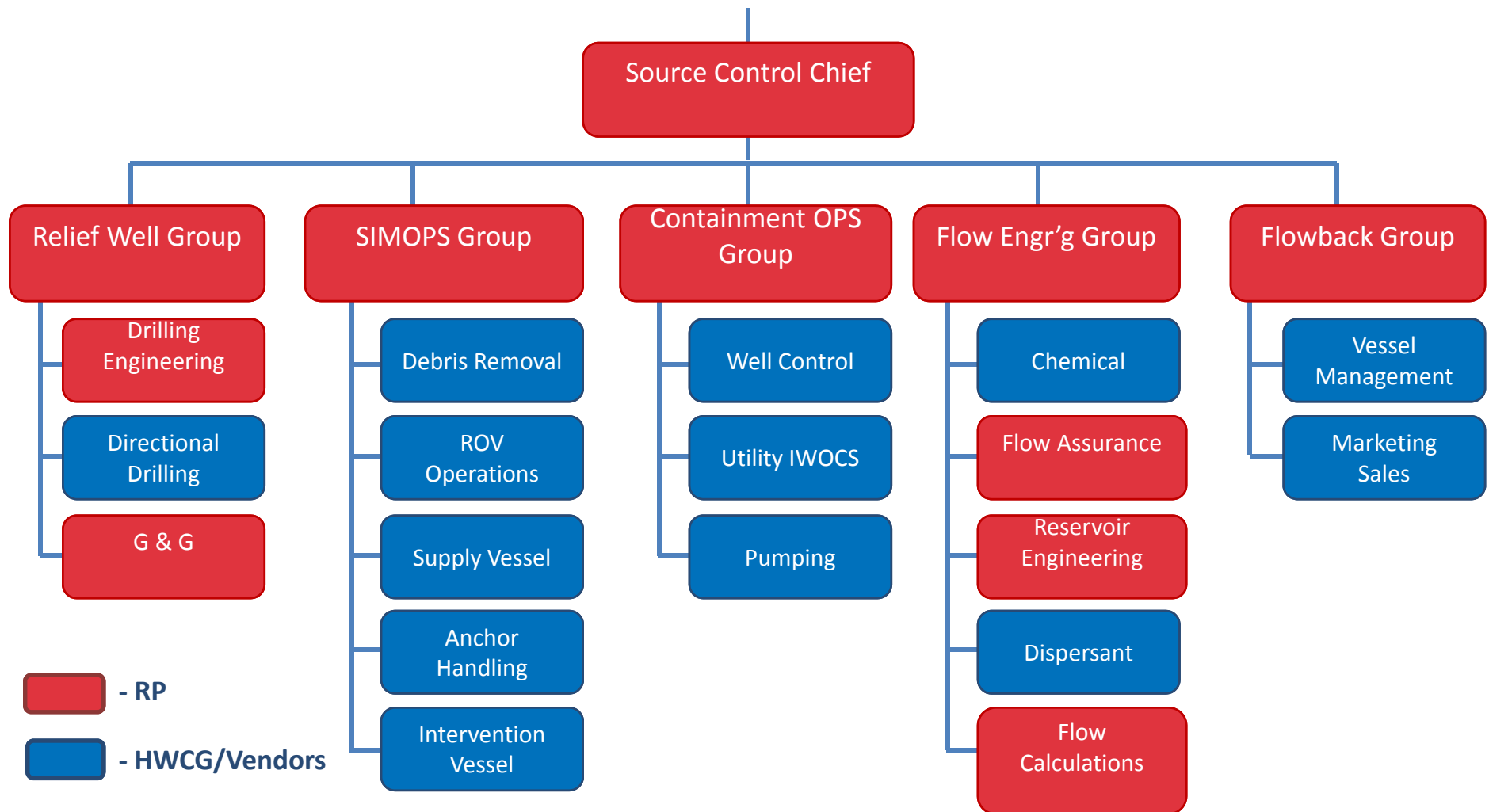
Agenda

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- FMOG – BSEE Unannounced Drill – Feb 19th
- April 30th - Day 1 – morning training – HWCG roles and responsibilities training - 224
- Afternoon – start exercise – Role out scenario from FMOG unannounced drill with IAP for day 2 work schedule.
- May 1 – Day 2 – push out to day 5 in process, all equipment on location. - 210

HWCG - FMOG - Source Control Organization

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Layout of SC Command Center

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DEEP WATER SOURCE CONTROL TEAM EXERCISE

April 29th through May 1st, 2014

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- At 0600 on April 29th, 2014 the Deepwater Drilling Rig in GC 493 experienced a fire in the engine room and suffered a complete loss of power to the vessel. The drill ship drifted off site and initiated the Emergency Disconnect Sequence.
- An ROV inspection was carried out by a vessel Timbalier Island on location: Debris Removal
- The LMRP successfully disconnected.
- There is (6 5/8) drill pipe protruding above the BOP stack
- A large plume can be seen escaping around and through the drill pipe.
- A review of the drilling report submitted prior to the incident indicates that the rig was drilling 12-1/4" hole at a depth of 23,957'.
- Both control pods failed and the autoshear did not engage the casing or blind shears and the well is flowing.
- At 1645 yesterday (29 April 2014), the Deepwater Drilling Rig had regained full power. The rig is approximately 2.5 miles north of the original location awaiting USCG and BSEE inspections..

Subsea Dispersant Application Process

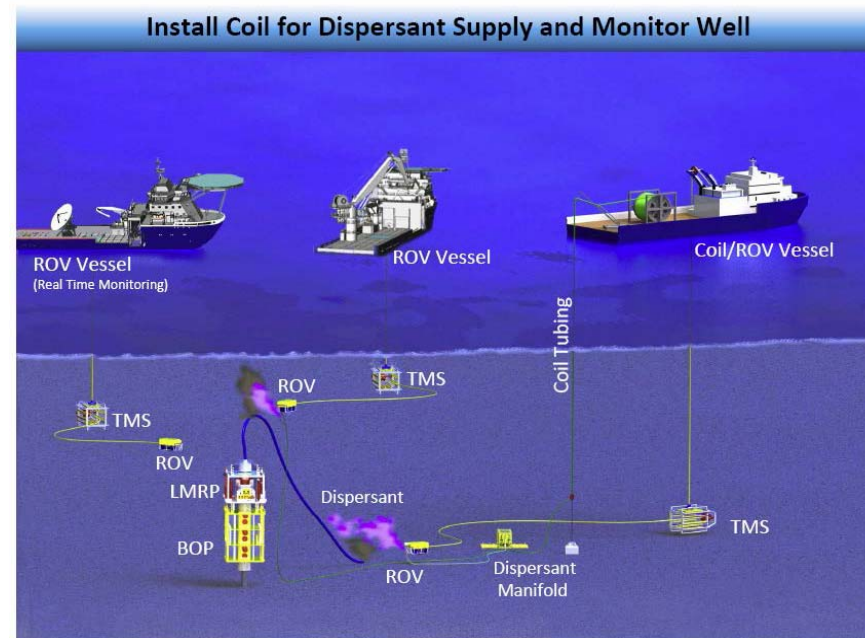
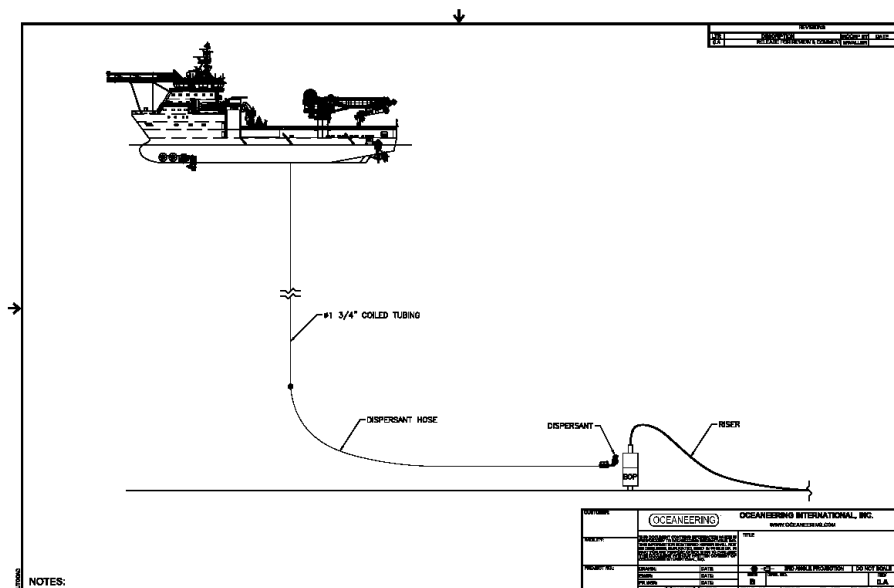
© 2014 HWCGLLC

- RRT 6 requested Subsea dispersant plan 1 week prior to exercise for review.
- Work with USCG District 8 – Michael Sams to setup phone call(s) and distribute materials.
 - Incident data sheet
 - High level subsea dispersant operational plan
 - Subsea dispersant injection monitoring plan
- API - Industry Recommended Subsea Dispersant Monitoring Plan - API TECHNICAL REPORT 1152
- RRT VI Subsea Dispersant Use Authorization Process:

List of documents in package.

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- Attachment 1 - Subsea Dispersant Injection Approval Request
- Initial Incident Report
- Proposed Subsea Dispersant Operations Plan
 - MSV Normand Flower - dispersant delivery platform - coil tubing, tanks for dispersant, pumps, etc
 - Install coil tubing for dispersant supply and monitor well - cartoon
 - Diagram of boat dispersant delivery platform schematic
 - Picture of coil tubing going thru moon pool on vessel injecting dispersants
- 2 - vessels - John P Lab and Red lab for shuttling of dispersants to dispersant delivery platform
- Diagrams of several different types of wands for utilization of injection of dispersants into plume
- Oceaneering - Dispersant Equipment Load out list to be deployed on MSV Normand Flower
- Subsea Dispersant Monitoring Plan for Green Canyon 393 exercise - equipment list to follow
- IAP - Incident Action Plan for Day 1 - compiled from previous BSEE Unannounced drill
- Plume Modeling snap-shots - 48 hours and 24 hours - reflects direction of plume



RRT 6 – Call # 1 – April 30th

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- It was discussed that not enough support documentation (description/reasoning) was given for subsea dispersant use other than safety of workers, knock down VOC/LEL's and cut down on surface expression.
- It was suggested that a document on NEBA (*net environmental benefit analysis*) should be utilized as support document.

Day 2 – Call – May 1

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- NEBA document was developed overnight and supplied to RRT 6 members on May 1 for review before scheduled 1000 phone call.
- Day 2 phone call occurred and supporting documentation was discussed and approval was given.
 - In future applications, NEBA will be incorporated into documents to support subsea dispersant application.

HWCG

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MEXUSGULF Update

Todd Peterson
Eighth Coast Guard District





Agenda

- History of Cooperation
- Evolution of the MEXUSGULF Annex
- US-Mexico Interactions & Cooperation
- Common Lessons Learned
- US-Mexico Transboundary Hydrocarbon Agreement
- Proposed Future Interactions & Exercises
- MEXUSGULF Annex Way Forward



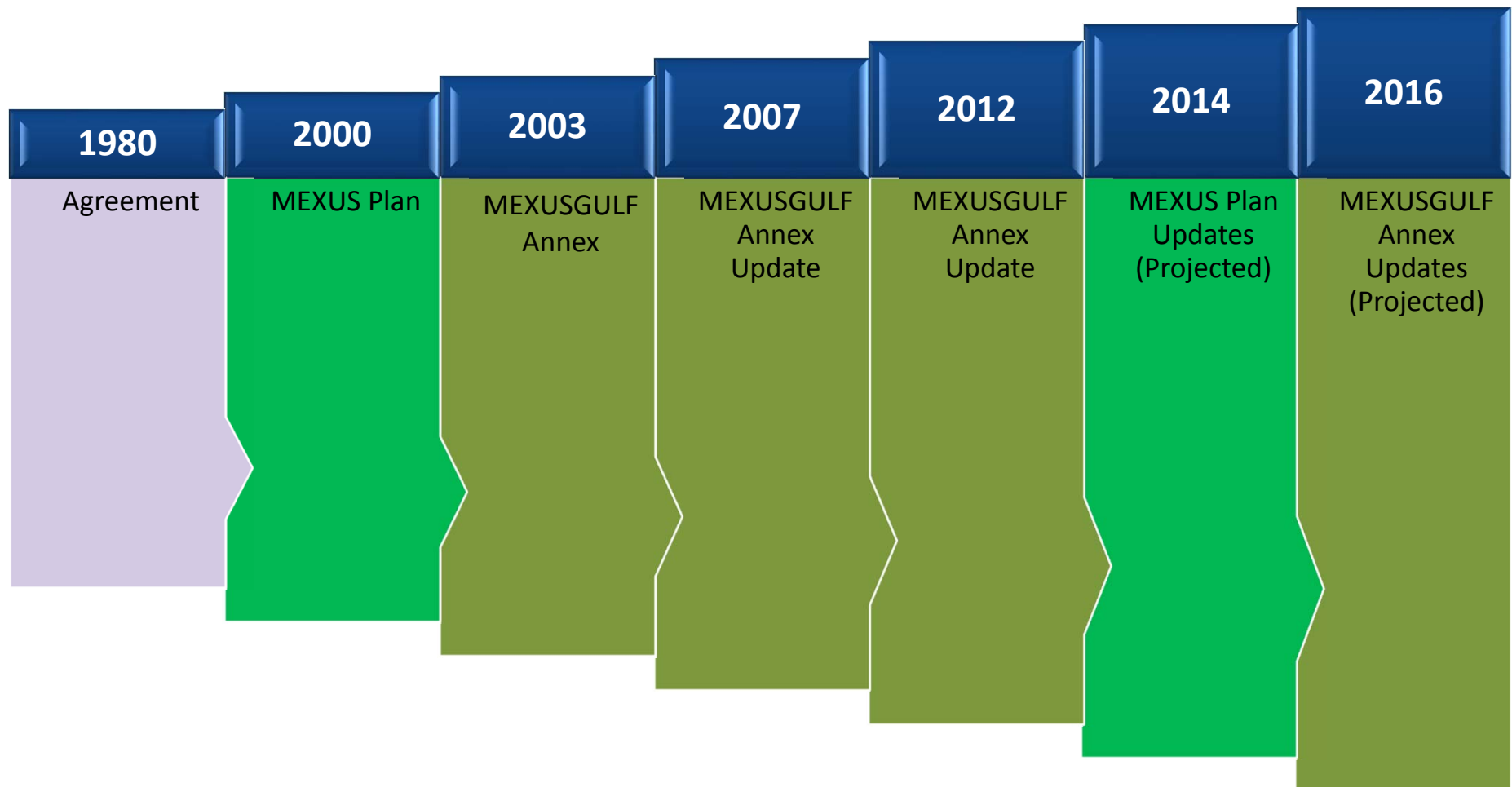
History of Cooperation



- **June 24, 1980:** U.S. and Mexico entered into an Agreement of Cooperation regarding pollution of the marine environment by discharges of hydrocarbons and other hazardous substances.
- **March 30, 1981:** Agreement entered into force.



Evolution of MEXUS & MEXUSGULF Annex





US-Mexico Interactions & Cooperation



Year	Description	Location
2002	Full-Scale	USA
2003	MEXUSGULF Annex-Signing Ceremony	MX
2004	Tabletop	MX
2006	Full-Scale	MX
2007	Workshop & MEXUSGULF Annex-Signing Ceremony	MX
2008	Full-Scale	USA
2010	Full-Scale	MX
2011	Knowledge exchange & Workshop leading up to Annex update	USA
2012	Tabletop & MEXUSGULF Annex-Signing Ceremony	USA
2014	Seminar	USA



Common Lessons Learned

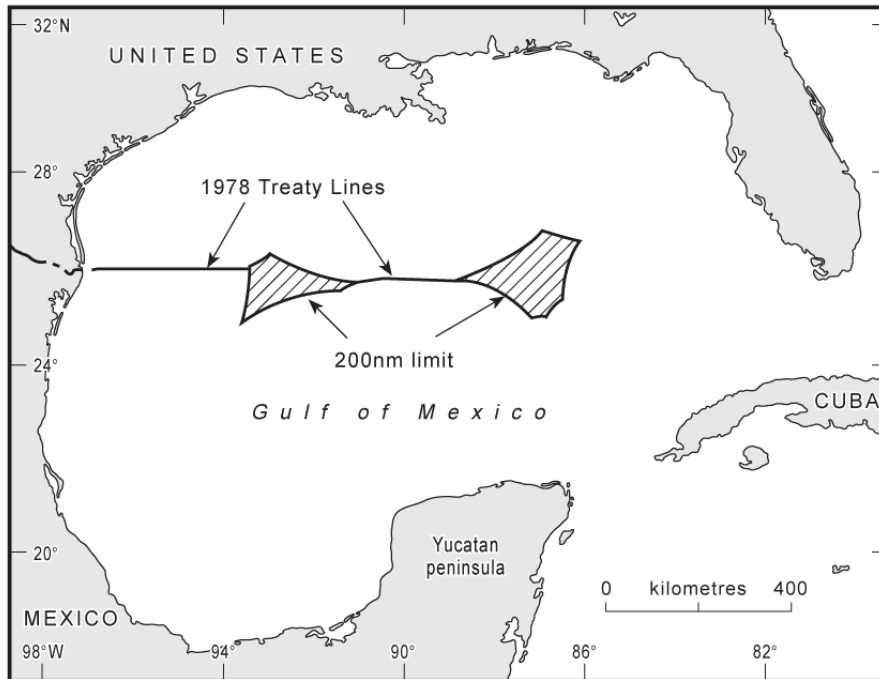


- Communications
- Transboundary Crossing
- Wildlife Rehab
- Notification
- Joint Information Center
- Incident Command System
- Volunteer Coordination
- Training
- Translation





US-Mexico Transboundary Hydrocarbon Agreement



Agreement Timeline:

- Signed by the U.S. Secretary of State and the Mexican Minister of Foreign Affairs on February 20, 2012.
- Mexican Senate approved the Agreement in April 2012.
- U.S. President signed the Budget Act on December 26, 2013 which provided approval of the Agreement.
- Agreement will be put into force 60-days after diplomatic notes are exchanged.



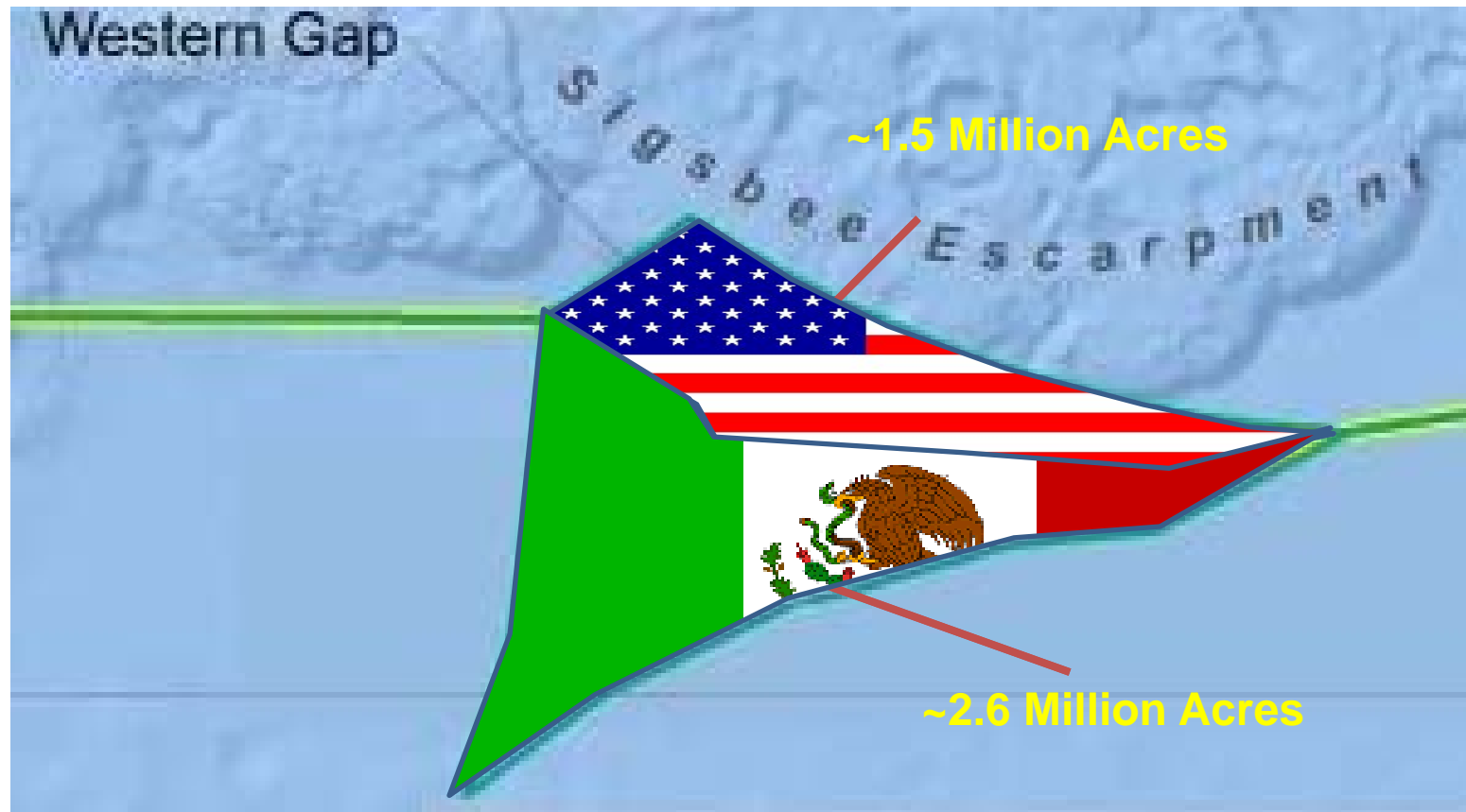
Elements of the TB Agreement



- Cooperative process that promotes joint utilization of Transboundary reservoirs.
- Sets clear guidelines for Transboundary developments.
- Establishes incentives for oil and gas companies.
- The legal certainty will enable U.S. companies to explore new business opportunities and carry out collaborative projects with Mexico.
- Joint inspection teams to ensure compliance with applicable laws and regulations.



TB Agreement Area of Discussion



Upon entry into force, the Western Gap moratorium on activity will be terminated (currently in effect through July 27, 2014)



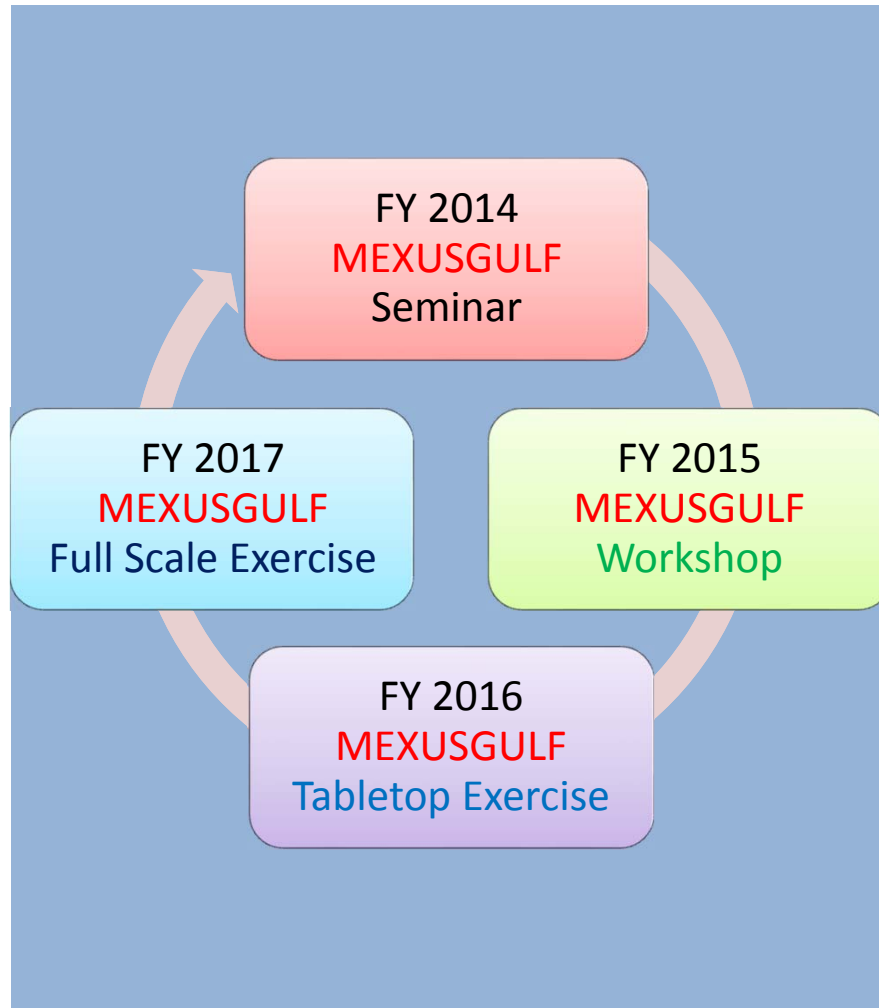
Transboundary Agreement Practical Considerations



- Prevention of economic waste
 - Prevent wasteful investment on both sides
 - Excessive wells and unnecessary facilities
- Efficient development; maximize production
 - Eliminate competitive drilling/production
 - Conserve resources
- Improve environmental situation
 - Fewer wells and facilities
 - Increase likelihood of containment capacity
 - Facilitate cooperation between national regulators
- Ensure equitable distribution, yet protect sovereign resources



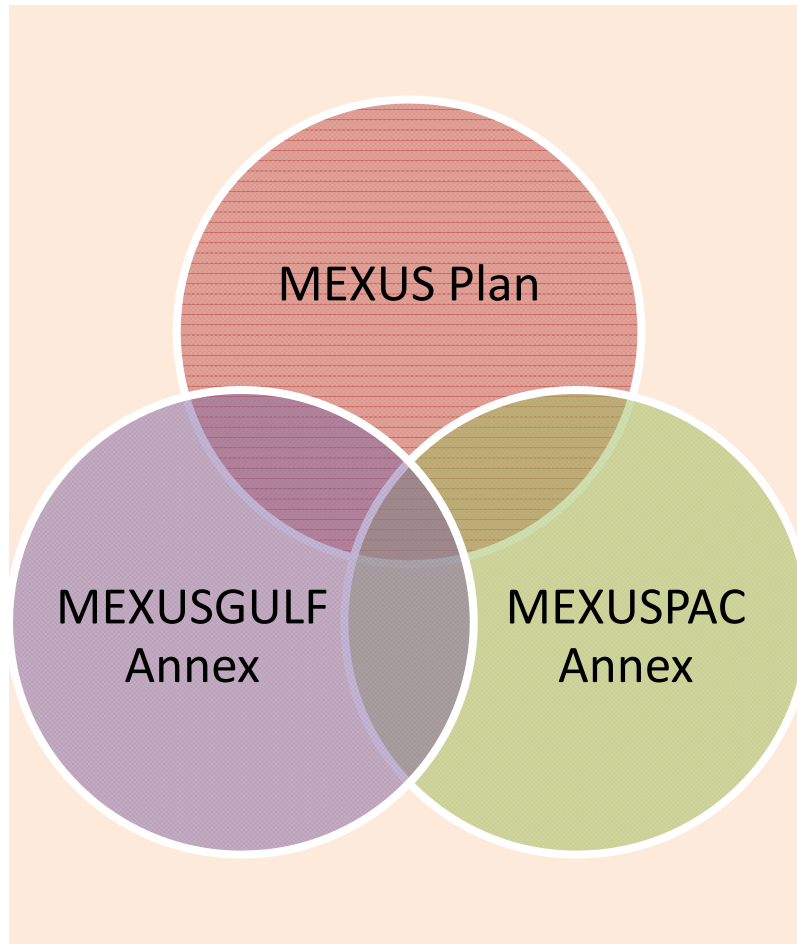
Proposed Future Interactions & Exercises



1. Data Sharing:
 - a. Dedicate personnel to determine a simple, effective, and timely methodology for MEXUS events.
2. Work with appropriate enforcement services to coordinate personnel and equipment transfers during a MEXUS event.
3. Future exercise schedule:



MEXUSGULF Annex Way Forward



Objectives for Annex Update

(Following MEXUS Plan Approval):

Standardization

- MEXUSGULF
- MEXUSPAC

- Remove country specific info
- Streamline contact info
- Update bilingual notification form



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