Upper Mississippi River Hazardous Spills Coordination Group

Spill Response Training and La Crosse Area Functional Exercise
October 2-4, 2014

Thursday, October 2

Spill Response Training Sessions

Stoney Creek Hotel and Conference Center
3060 South Kinney Coulee Road, Onalaska, Wisconsin 54650

Time	Topic	Presenter(s)
8:00 a.m.	**Welcome and Introductions**	***Tom Kendzierski**, WI DNR*
8:15	**Exercise and Training Orientation**	***Dave Morrison**, MPCA*
8:25	**Upper Mississippi Resource and Response Overview**	
	▪ Contingency Planning Overview	***Ann Whelan,** US EPA*
	▪ Upper Mississippi Spill Response Considerations and Planning Tools	***Dave Hokanson**, UMRBA*
	▪ La Crosse Area Overview: Natural Resources and Human Use Resources	***Jim Nissen,** USFWS and* ***Keith Butler,** La Crosse County*
9:00	**Bakken Crude Oil Background**	***April Mack,** CTEH*
10:00	*BREAK*	
10:15	**Incident Command – Key Concepts and Application to Functional Exercise**	***Dave Morrison**, MPCA* ***Steve Renninger**, US EPA*
10:45	**Response: Operations Section**	
	▪ Response considerations for newer fuel products	***Steve Faryan,** US EPA*
	▪ On-water booming and containment strategies	***Pat Flowers,** Xcel Energy*
Noon	*LUNCH*	
1:15 p.m.	**Response: Operations Section** *(continued)*	
	▪ Wildlife reconnaissance and recovery	***Jason Suckow,** USDA*
	▪ Wildlife rehabilitation	***Rhonda Murgatroyd**, WRS*
2:15	**Response: Planning Section**	
	▪ Shoreline cleanup assessment techniques (SCAT) and endpoints	***Ann Whelan,** US EPA*

(Continued)

Thursday, October 2 (Continued)

Time	Topic	Presenter(s)
2:45 p.m.	*BREAK*	
3:00	**Natural Resource Damage Assessment (NRDA)**	***Dave Warburton,*** *USFWS*
3:15	**Response: Logistics** • Communications	***Todd Nehls,*** WEM
3:35	**Hands-On Stations** • Air monitoring • Booming equipment • Collection equipment • Communications equipment • Personal protective equipment • Planning tools • Wildlife capture and hazing	***All***
4:30	**Wrap up of Training Session** **Preview and Check-In for Functional Exercise**	***Dave Morrison****, MPCA* ***All***
5:00	*ADJOURN TRAINING*	
7:00 to 8:30 p.m.	**SPECIAL EVENING SESSION: Rail Response 101**	***Ed Dankbar,*** *CP Rail* ***Derek Lampkin****, BNSF*

Friday, October 3

Functional Exercise

Stoney Creek Hotel and Conference Center
3060 South Kinney Coulee Road, Onalaska, Wisconsin 54650
and
La Crosse Municipal Boat Harbor
1609 Marco Drive, La Crosse, Wisconsin 54601

Time	Activity	Location
7:30 a.m.	**Exercise Check-in**	***Stoney Creek Hotel***
7:30 a.m.	**Field Check-in**	***La Crosse Municipal Boat Harbor***
8:30	**Exercise Introduction**	***Stoney Creek Hotel and La Crosse Municipal Boat Harbor***
8:45	**Briefing from Current IC regarding Previous Operational Period**	***Stoney Creek Hotel***
9:00	**Safety Briefing for Boat Crews**	***La Crosse Municipal Boat Harbor***
9:05	**IC/UC Update Objectives**	***Stoney Creek Hotel***
9:30	**Assignments and Launch of Boat Crews**	***La Crosse Municipal Boat Harbor***
11:00	**Boat Crews Debrief at Landing**	***La Crosse Municipal Boat Harbor***
Noon	**Lunch**	***Provided at Both Locations***
1:30	**Press Conference**	***La Crosse Municipal Boat Harbor***
3:00	**Boat Crews Off Water**	***La Crosse Municipal Boat Harbor***
3:30	**Boat Crews Return to ICP**	***Stoney Creek Hotel***
4:00	**Post-Incident Review**	***Stoney Creek Hotel***
5:00 p.m.	**Exercise Ends**	

Saturday, October 4

Field Exercise Day

La Crosse Municipal Boat Harbor
1609 Marco Drive, La Crosse, Wisconsin 54601

Time	Activity	Presenter(s)
8:00 a.m.	**Check-in, Safety Briefing, and Review of Functional Exercise Outcomes**	***Matt Stokes**, STARS*
8:30	**Response Tactics Practice and Demonstration** • Deflection boom in river • Pumps and skimmers • Boom across sensitive target • "J" booming (still water) • Containment boom around vessel • Shore deployment of boom • Specific tactics as identified in Pool 8 Geographic Response Plan/functional exercise	***Stokes**, STARS (Leader) and other group leaders*
	Demonstration of Wildlife Hazing and Recovery Techniques (ongoing)	***Jason Suckow and Paul Wolf**, USDA*
11:30	**Clean-Up, Wrap-Up**	***All***
Noon	**Adjourn**	

Participants in La Crosse Functional Exercise and Training
October 2-4, 2014
La Crosse, WI
(email addresses listed where provided)

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UPPER MISSISSIPPI RIVER SPILL RESPONSE CONSIDERATIONS AND PLANNING TOOLS

Dave Hokanson, Water Quality Program Director
Upper Mississippi River Basin Association
La Crosse Spill Response Training
October 2, 2014

OVERVIEW

- Upper Mississippi River (UMR) Response Considerations
- Need for UMR Spill Response Coordination
- Planning and Response Tools – These are Available for Use During the Exercise & During Hands-On Session Later Today

UPPER MISSISSIPPI RIVER

- Resource Setting: Scope and Scale
  - 189,000 square miles in basin
  - 1,300 miles in total length
  - 850 miles navigable, 816 interstate

UPPER MISSISSIPPI RIVER SPILL RESPONSE CONSIDERATIONS

- Complex Physical System
  - Locks and dams, main channel, side channel, backwaters
  - Flows/spill trajectories variable and hard to predict
- High Value Natural Resources
  - Seasonal concentrations of migratory waterfowl
  - Threatened and endangered species
  - Diverse habitats, National Wildlife Refuges
- Recreation
  - Including Presence of Commercial and Recreational Vessels (safety considerations, Interference with response efforts)
- Water Supply
  - Drinking Water, industrial processes, cooling

UPPER MISSISSIPPI RIVER SPILL RESPONSE CONSIDERATIONS

- Diverse Potential Pollution Sources
  - Storage Facilities
  - Pipeline
  - Rail
  - Vessels
  - Highway crossings
  - Industrial discharges

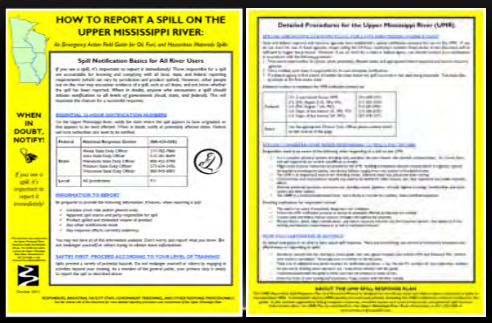
NEED FOR COOPERATION AND COORDINATION IN SPILL RESPONSE ON THE UMR

- **Multiple Jurisdictions and Agencies**
- **Potential for Downstream Impacts**
- **Public-Private Sector Coordination Important**
- **Need to Target Limited Resources (equipment, personnel, planning, etc.)**
- **Adapt to Emerging Issues and Priorities**
- **So, need:**
  - **Forums (e.g., UMR Hazardous Spills Coordination Group)**
  - **Training and Exercises (such as this week)**
  - **Planning Tools (next…)**

UMR SPILL RESPONSE PLAN AND RESOURCE MANUAL

- A contingency plan to supplement other area and agency plans (R5, R7 area) maintained by UMR Spills Group
- Addresses how state and federal agencies respond to UMR spills
- Includes resource manual appendices with reference information
- Restricted access and public distribution versions (due to contents of appendices in resource manual) – see www.umrba.org for public plan

UMR Emergency Action Field Guide



REGIONAL PLANNING & RESPONSE TOOLS

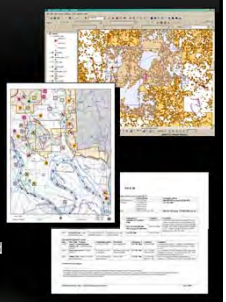
Inland Sensitivity Atlas

- US EPA product; collaboration between US EPA , Great Lakes Commission & UMRBA
- Geographic focus:
  - Six-state U.S EPA Region 5 area
  - State-wide atlases (IL, IN, MI, MN, OH,WI)
  - Sub-areas within Region 5
  - River corridors
- All states mapped, updates ongoing

REGIONAL PLANNING & RESPONSE TOOLS

Inland Sensitivity Atlas

- A set of databases and maps that display potential sources of spills and sensitive resources (cultural, economic, and natural resources)
- Data accessible to a variety of users: GIS analyst to field responder
- Maps in user-friendly "GeoPDF" format
- A tool for organizing and managing planning and response information
- Distributed on DVD by US EPA



REGIONAL PLANNING & RESPONSE TOOLS

Inland Sensitivity Atlas

- Spill Responders
  - To access a spill
  - Site-specific details
  - Provide contact information
- Response Planners
  - For writing facility plans
  - For training & exercises
  - Updating sub-area plans

REGIONAL PLANNING & RESPONSE TOOLS

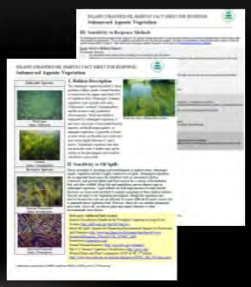
Geographic Response Planning

- Response Strategies
  - UMR Sub-areas: Minneapolis-St. Paul, Quad Cities, and St. Louis
- Geographic Response Plans
  - Initiated in response to UMR events and for protection of sensitive resources
  - Horicon Marsh; UMR Pools 7, 10 , 13 and 19
  - Include response strategies, initial incident action plan, and other resources
  - Draft Pool 8 GRP – including response strategies and Initial Incident Action Plan available for exercise

HABITAT- SPECIFIC RESPONSE FACT SHEETS

Available for habitats including:

- Deep Marsh Annual
- Deep Marsh Perennial
- Open Water
- Rooted-Floating Aquatics
- Sedge Meadow
- Shallow Marsh Annual
- Shallow Marsh Perennial
- Submersed Vegetation
- Wet Meadow



QUESTIONS?

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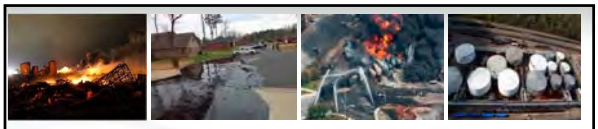


BAKKEN CRUDE OIL

- BACKGROUND

APRIL MACK

MANAGER GULF COAST OPS, MAJOR PROJECTS TEAM & MEMBER, CENTER FOR TOXICOLOGY AND ENVIRONMENTAL HEALTH, LLC

Key Points

- Background of CTEH
- Air Monitoring Strategy
- BNSF TacTox Program
- Properties of Crude Oil
  - Bakken Crude
- Crude derailment response examples

Who is CTEH?

- Established in 1997- UAMS Bioventures
- Emergency response toxicology, air monitoring, environmental sampling and health & safety services
- Complete documentation of spill impacts
- Job #1- Keep people safe
- Job #2- Help manage risk
- Rapid 24-hour, 365 day, response globally

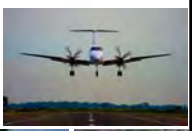
COMPANY SNAPSHOT

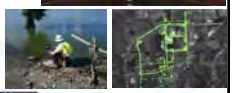
- 9 Office Locations:(Albany, NY; Asheville, NC; Denver, CO; North Little Rock, AR; Memphis, TN; Houston, TX; New Orleans, LA; Indianapolis, IN; Seattle, WA)

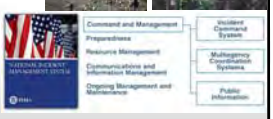
- 12 Ph.D. Toxicologists
- Medical Doctor (Occupational & Preventive)
- Registered Nurse
- 8 Certified Industrial Hygienists
- 4 Certified Safety Professionals
- 85 Industrial Hygienists/Environmental Scientists
- 15 GIS and Data Management Specialists

TOXICOLOGY EMERGENCY RESPONSE PROGRAM

- Qualitative and quantitative sampling of air, soil, and water
- Deriving safe exposure levels
- Air dispersion modeling
- Address public health concerns and regulatory issues
- Crisis communication
- Health and safety support for hazardous waste site activities
- Environmental assessment & remediation







3rd Party Air Monitoring

- Worker health and safety
  - Benzene, Hydrogen Sulfide, CO, Hexane
- Community health and safety
  - Same as worker monitoring plus fire smoke particles (PM_{10}, $PM_{2.5}$)
- 360 degree perimeter and offsite documentation
  - Document detections and non-detections
- Recommendations on PPE, evacuations, and “all clear”
- Rapid data collection and interpretation
  - Response Portal

Type of Responses

- Fixed Facility Fire and Chemical Releases
  - Refineries
  - Chemical Manufacturing Companies
  - Hazardous Waste Facilities
- Pipeline Transportation Companies
- Train Derailments
- Oil and Gas Exploration Companies
- Barge Shipping Incidents
- Forest Fires

Equipment Readiness

- *Equipment Maintained*

Air Monitoring Strategy

- Reasons for Air Monitoring
  - Safety for workers (365 degrees around incident)
  - Safety of the community near the incident (evacuations, re-occupation)
  - Assessment of potential problems (changes in site conditions)
  - PPE selection (upgrade, downgrade)
  - Identification of product (unknowns, mixtures)
  - Compliance with regulatory standards and guidelines
  - Documentation for downstream litigation

Where to Conduct Air Monitoring

- Breathing Zone
  - OSHA defines the breathing zone as…..
    - The breathing zone is within a ten inch radius of the worker's nose and mouth.
- OSHA requires that worker exposure monitoring air samples be collected in the breathing zone.
- Worker exposure monitoring must always be collected outside of any respiratory protection equipment.
- Ambient Air
  - Also use breathing zone guidance in monitoring ambient conditions

Air Monitoring - Source Material

- Source Material can be:
  - Pooled product,
  - Open containers,
  - Leaking tanks
  - Contaminated soil and/or water
  - DECON area
  - Contaminated equipment (e.g. hoses, pumps etc…)

Air Monitoring for Source Material

- Air Monitoring for Source Material must be:
  - Conducted in a safe manner (consider respiratory protection),
  - Differentiated from breathing zone air monitoring,
  - Properly documented as source material when recording data
  - Clearly communicated
    - Results should be flagged as source material

Air Monitoring Strategy

- Sample Location Selection
  - Place yourself between incident and receptors
  - Between incident and workers
  - Between area of downgraded PPE
  - At receptors
    - Schools
    - Daycares
    - Nursing homes
    - Hospitals
    - Residential areas
    - Business parks
    - Community events
    - Municipal works
    - Highways
    - Recreational areas
  - Downwind of an incident is priority
  - If product in waterway, follow the leading edge of product nearest the shoreline

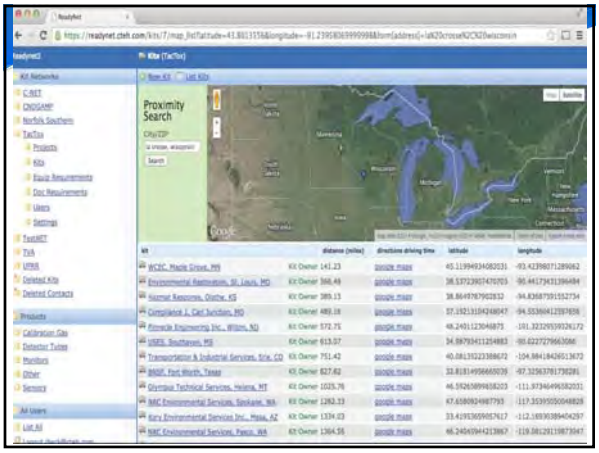
Air Monitoring Strategy

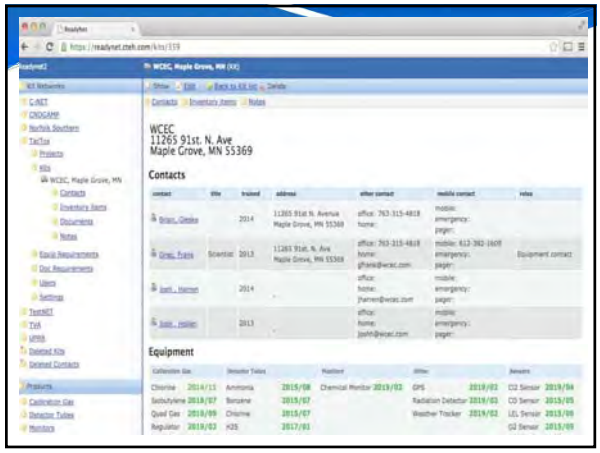
- Sample Collection Tips
  - Documentation
    - Calibration Logs
    - Photograph Logs
    - Air Monitoring Logs
  - Documentation of all Readings
    - Time, date, GPS location, work activity notes, odor description
  - Document **ABSENCE** of chemicals

DATA MANAGEMENT

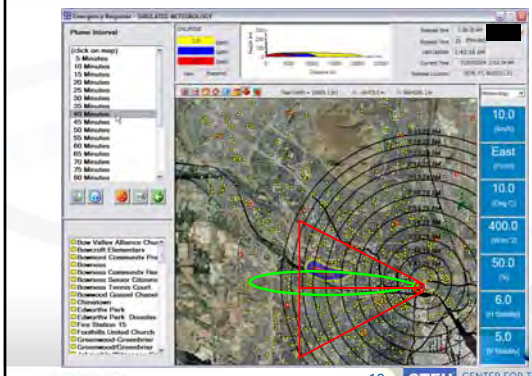
REDUCTION OF DATA GAP
BNSF TacTox Program

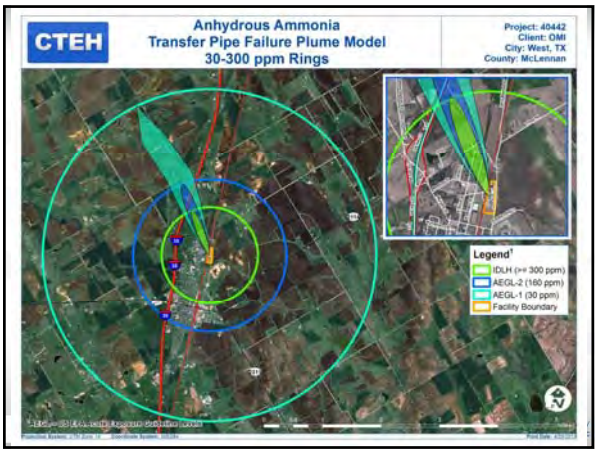
- Partnership of CTEH, BNSF, & trained responders across rail system.
- 3 TIER Response System
- All incidents involving a release or potential release of chemicals have access to Toxicologist support and direction.
- Fast response time
- Air Monitoring kits maintained by CTEH
- Data monitored and reported by CTEH



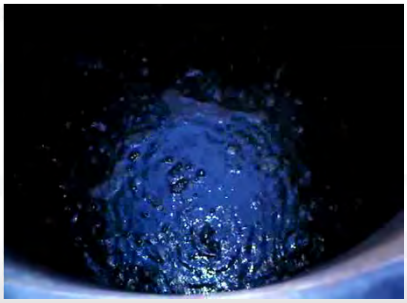


AIR DISPERSION MODELING





CRUDE OIL BAKKEN VS OTHER



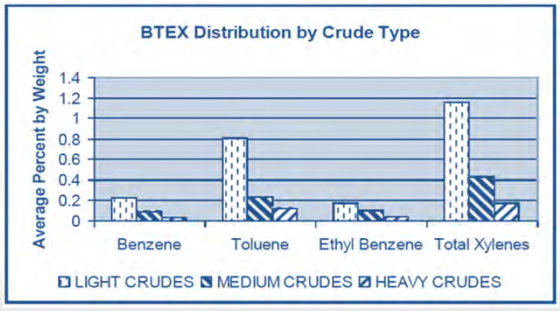
WHAT IS CRUDE OIL?

- Naturally-occurring substance resulting from the decomposition of plant material over millions of years
- Ranges in appearance from mobile, volatile, light colored liquids to dark, viscous tar-like materials with low vapor pressure.
- Carbon numbers range from C4 to C60+
- Sulfur, oxygen and nitrogen compounds, organometallic complexes (nickel and vanadium), dissolved gases, such as hydrogen sulfide.
- An "average" crude oil contains:
  - 84% carbon,
  - 14% hydrogen,
  - 1-3% sulfur, and
  - approximately 1.0% nitrogen,
  - approximately 1.0% oxygen,
  - and approximately 0.1% minerals and salts.

WAYS TO CLASSIFY CRUDE OILS

- **Sulfur content:**
  - **Sweet Crude = Sulfur content < 1%**
  - **Sour Crude = Sulfur content > 1%**
- **More sulfur = greater potential to emit H_2S**

BTEX



The American Petroleum Institute Petroleum HPV Testing Group. High Production Volume (HPV) Chemical Challenge Program. January 14, 2011

Specific Components of Crude Oils

- Aliphatics
- Aromatics
- BTEX
- Polycyclic aromatic hydrocarbons (PAHs)
- Metals

Crude Oil: Toxicity and Physical Hazards

Primary acute concerns

- Hydrogen sulfide (Headspace as well as open air)
- Flammability
- VOCs (confined space hazard)

Secondary acute and primary longer-term concerns

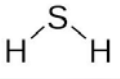
- BTEX compounds (substance specific standard)
- Hexane
- Total hydrocarbons
- Odors
- PAHs

Combustion byproducts

- Oxides of carbon, nitrogen and sulfur
- Various organics – aldehydes, aromatics
- Particulate matter/soot, PAH's

NO TWO CRUDE OILS ARE THE SAME!

Crude Oil: Acute Concerns-Hydrogen Sulfide



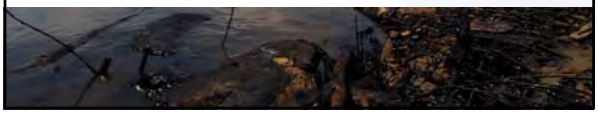
- Found (mostly) in sour crude.
- Low odor threshold, but poor warning properties (olfactory fatigue).
- Affects respiration at the cellular level.
- Exposure to high concentrations can lead to rapid incapacitation and possibly death.
- Can also be produced in storage tanks of skimmed oil.
- Can be found in Bakken crude oils.

Acute Concerns - Flammability/VOCs

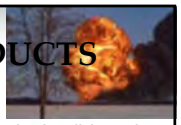
- Flammability is a major concern with unweathered crude oils.
- VOCs –
  - Eye and URT irritation
  - CNS depression in high concentrations
- Confined space/headspace hazard

Secondary Acute and Primary Longer-Term Concerns

- BTEX compounds
  - Benzene – carcinogen/OSHA standard
- Hexane – high-dose neuropathy
- Total hydrocarbons
- Odors



Combustion Byproducts



Fire Smoke is:

- complex mixture of heated air, suspended solid and liquid particles, gases, fumes, aerosols and vapors. The type of smoke produced in a fire depends on the chemical composition of the material being burned, the flame temperature, the availability of oxygen, and weather-related elements.

Fine Carbon **Particulate Matter** (PM) is

- Greatest hazard to response workers and general public
- Fine PM can be carried to much greater distances than other byproducts causing a greater potential area of exposure

Particulate Matter

- Follow the plume – this will highly depend on wind direction and terrain.
- Collect real time air monitoring readings and find 5 minute average in each location to capture variability
- Wildfire smoke particle size 0.4 - 0.7 µm in diameter
- Petroleum fire smoke particle size < 1 µm in diameter
- Safe to use published values in the document: Wildfire Smoke: A Guide for Public Officials (Lipsett, 2008) includes AQI, visibility, PM10 for 1-3 hours, 8 hours and 24 hour
- Work area set at "unhealthy" AQI value
- Community set at "unhealthy for sensitive populations"

VOC Emissions from Crude Oil

- Crude oil is a complex mixture of organic hydrocarbons.
- **V**olatile **O**rganic **C**ompounds (VOCs) can evaporate and enter the air around a crude oil spill.
- The VOCs which enter the air are also present as complex mixtures of hydrocarbons.
- While no two crude oils are the same, there is significant overlap in the identity of VOCs released into the air from spill to spill.
- CTEH® performed an analysis of air samples from past crude oil spills (Bakken and non-Bakken) to determine:
  - VOCs that would likely be present in the air around a spill and…
  - Which would be highest priority for air monitoring efforts.

VOC Emissions from Crude Oil

Analytical Approach

- Breathing zone air samples were taken in the vicinity of spilled crude oil.
  - Instantaneous sample using evacuated canisters.
  - US EPA Analytical Method TO-15 + **T**entatively **I**dentified **C**ompounds (TICs).
- Compare percentages of different types of VOCs released.
- Identify individual VOCs being released from crude oil.
- Identify health protective values for VOCs.

Scenario	Health Protective Value Source	Exposure Duration
Worker	NIOSH, OSHA, ACGIH	8 or 10 hour TWA
Community	EMI SIG Protective Action Criteria (PAC)	1 hour (short term, acute)

VOC Emissions from Crude Oil

Analytical Approach

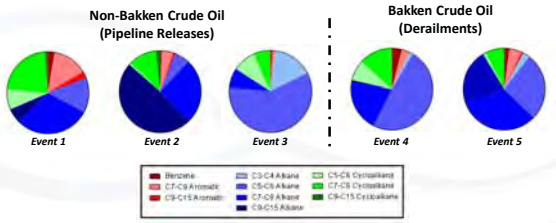
- Calculate ratio of mean VOC concentration across incidents and health protective value (HPV).
  - **Worker:** Minimum of NIOSH, OSHA, ACGIH TWA values
  - **Community:** PAC-1 and PAC-2 values

HPV Ratio = VOC conc ÷ HPV

- VOCs with HPV Ratios between 0.01 and >1 have highest priority for monitoring.
- Rank chemicals based on health protective value (HPV) ratio for worker and community settings.

VOC Emissions from Crude Oil

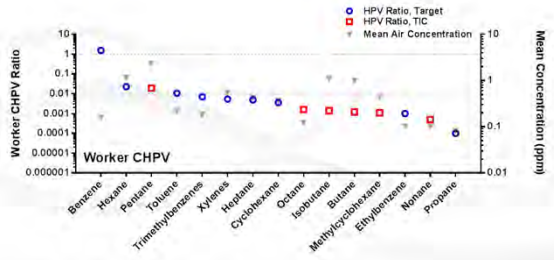
Hydrocarbon Fractions



- Similar types of VOCs are released from crude oil during a spill.
- The relative percentage of the emitted VOCs can vary.
- Typical order of abundance: Alkanes > Cycloalkanes > Aromatics

VOC Emissions from Crude Oil

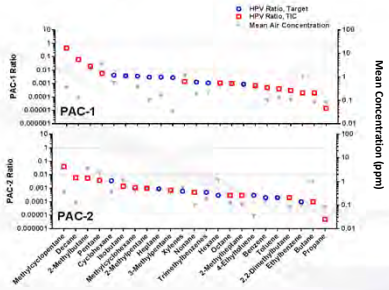
Worker Health Protective Value Ratios



- For workers, benzene was the only VOC detected above a health protective value.
- Hexane, pentane and toluene were detected above a safety factor ratio threshold of 0.01.

VOC Emissions from Crude Oil

Community Health Protective Value Ratios



- For community, no VOCs were detected above a health protective value.
- Several VOCs were detected above a safety factor ratio threshold of 0.01.

VOC Emissions from Crude Oil

Proposed Analyte List for Crude Oil Air Monitoring

Analyte	PAC-1[a] or CHPV[b] Ratio
Benzene	1.5500 [b]
Hexane	0.0230 [b]
Pentane	0.0192 [b]
Toluene	0.0107 [b]

- Proposed analyte list based on results of **Worker** CHPV Ratio analysis.
- Analytes can be monitored with both analytical and real-time methods.
- Analyte list may be subject to change at specific incidents based on data collected during the response.
- H2S and combustion byproducts (if a fire was involved) would also be priority analytes for air monitoring.

CLEANUP - THE ISSUES

- Not all crude oils are created equally.
- Environmental conditions alter worker hazards during cleanups.
- H&S professionals need to recognize changing conditions to keep cleanup workers safe.

CRUDE OIL BEHAVIOR IN THE ENVIRONMENT

Major factors:

- Meteorological conditions
  - Affects viscosity of the oil
  - Affects weathering of the oil
- Weathering of crude oil
  - Volatile fraction gone within 48 hrs under warmer conditions – responsible for most of the toxicity
  - Afterward, primary hazard is repeated dermal contact

DIFFERENT SPILL CONDITIONS = DIFFERENT WORKER HAZARDS

Spills in Water:

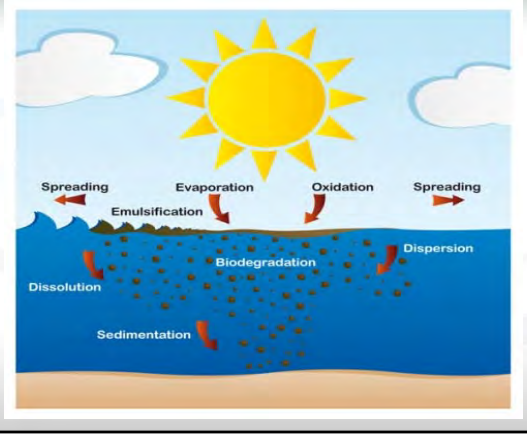
- Depth affects volatile fraction
- Composition affects volatile fraction
- Time/extent of weathering determines airborne hazards
- Heavier oils WILL SINK

Spills on Land:

- Time/extent of weathering determines airborne hazards
- Impacted soil may entrain volatiles

Stored oil:

- Decomposition creates sulfur and other issues
- Headspace hazards



Weathering Effects on Worker Exposure Potential

- Absence of volatiles reduces/eliminates inhalation exposure potential
- Skin exposure hazards become the primary risk driver
- PPE decisions must be based on sound data and continued evaluation of hazards

Ensuring Worker Safety

- Initial characterization:
  - Grab sampling air
  - SDS reliability?
- Continued characterization:
  - Monitoring air in real time
  - Evaluation of storage headspace
- Feedback: Continually evaluate the data to update PPE requirements

Aliceville, Alabama – Crude Oil

Aliceville, Alabama – Crude Oil Derailment

The Work Area was *Dynamic*

- Fire Fighting
- Train Wrecking
- Environmental Excavation
- Bridge/Track Engineering
- Road Construction
- Oil Spill

Each operation occurred simultaneously and all within the derailment area

Aliceville, Alabama – Crude Oil Derailment

Challenges of a *Dynamic* Work Site:

- Variety of worker groups each with unique exposure potential
  - Can everyone be protected equally?
  - Are all work groups ready for respiratory protection if needed?
  - High worker densities and nearby fire hazards

Each working group must be involved in the hazard analysis and risk assessment for the combined effort per operational period.

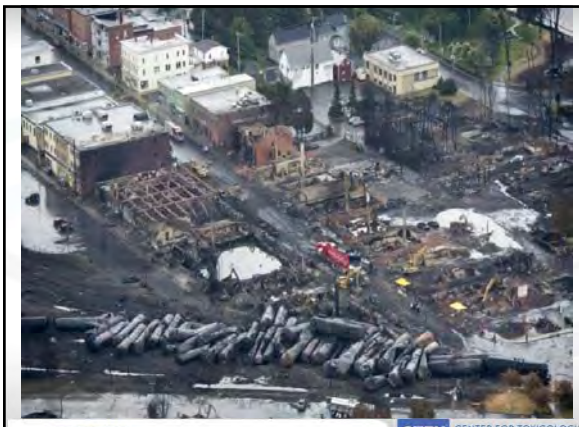
Aliceville, Alabama – Crude Oil Derailment

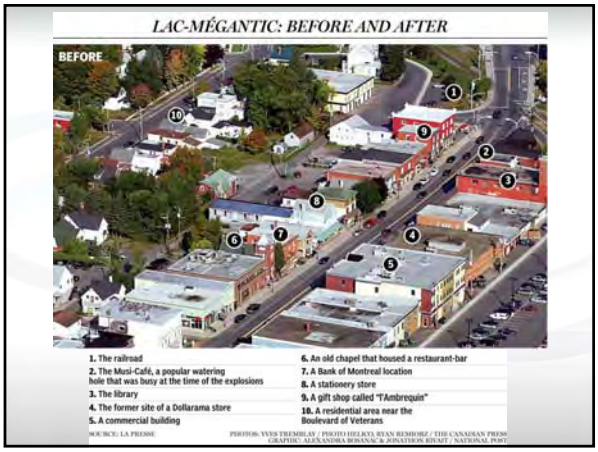
Fire Hazard Analysis

- Train wrecking operations alongside oil spill cleanup
  - Workers waist-deep in oil were very close to train wrecking operations
  - Chemical suits worn over FRC

During operations with elevated fire risk, nearby oil spill operations should be re-evaluated

LAC MEGANTIC, QUEBEC





LAC MEGANTIC

The first two weeks…

- Lac Megantic was in shock
  - Emotionally charged areas surrounding site
  - Difficult to get the right resources in place to start recovery
- Many response resources were idle for several days

INCIDENT CHALLENGES

- 63 railcars involved
- No additional release or spill of crude oil or firefighting water/foam allowed
- Foam application before moving each car
- No torches
- High benzene concentrations when digging or dragging
- Limited confined space entry capabilities for tank car decontamination

LAC MEGANTIC

Responder Safety: Elevated Benzene

- 1.5 ppm in breathing zone *sustained*
  - Measured 20 feet from pooled oil
- Efforts were made to vacuum standing product before wrecking to reduce need for respiratory protection.

LAC MEGANTIC WRECKING OPS

More Issues…

- Interactions with regulatory agencies regarding wrecking operations
- Action limit for ½ face APR = 0.5ppm benzene and 25 ppm VOC. Full face required over 5 ppm benzene.
- Respirator supply and fit testing for wreckers
- Where to put 63 scrap tankcars?

LESSONS LEARNED

- Prior relationships are crucial.
- Tact is essential in emotionally charged situations.
- Benzene cannot be ignored.
- To let it burn or not to let it burn? That is the question.

BAKKEN CRUDE OIL

- General characterization of the oil can help guide hazard assessment, but cannot replace actual analysis of the material.
- Understanding the "weathering" process can aid in the selection of proper PPE for oil spill workers.

TAKE HOME LESSONS

- Not all oil spills are the same: know what the differences might be
- As oil weathers, worker hazards change: keep up with changing conditions and update H&S approach accordingly
- Avoid complacency: it's not just another oil spill.

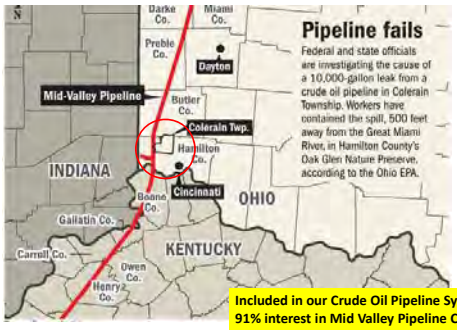
QUESTIONS ?

Mid-Valley Pipeline Crude Oil Release

Colerain Township, Ohio
March 2014

IC & PSC since 2004
PSC @ Hurricane Katrina, Deepwater Horizon, Enbridge Response
Response = Multiple days/Multiple Agencies/>Medium Spill = ICS
ICS brings together local/state/federal/RP resources & coordination
Plans are worthless…..Planning is everything……it's the Process (P)
Mid-Valley Response = Best use of ICS to date in an ER in Ohio
2010 vs 2014 = Agencies & RPs have experienced IMTs (Sunoco IMT from Philly on Day 2)
PSC goal is to navigate the IMT thru the Planning P (Educate/ICS Etiquette/Aggressive Sched)

Background



Included in our Crude Oil Pipeline System is a 91% interest in Mid Valley Pipeline Company, a crude oil pipeline, that we operate, running from Longview, Texas to Samaria, Michigan

Background

March 18, 2014, 0102 hours, Sunoco Pipeline LP notified NRC that an unknown volume of crude oil was released from a pipeline running through the Oak Glen Nature Preserve in Colerain Township, Hamilton County, Ohio.

20 inch pipeline to refineries in Lima/Toledo/Detroit

Crude oil released into 1-mile stretch of a creek that discharged into a pond

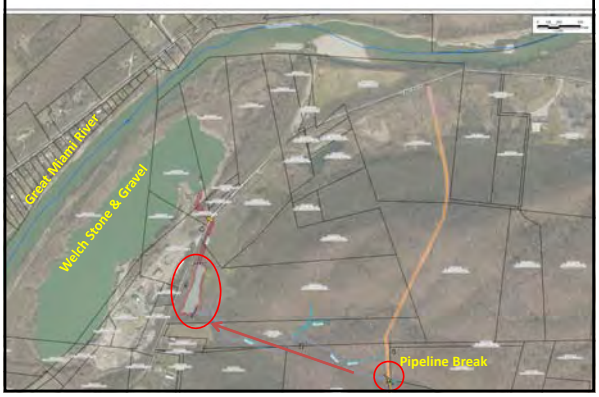
Great Miami River 1,500 feet west of pond

Initial estimate – 240 barrels (10,000 gallons)

Revised estimate – 500+ barrels (21,000 gallons)

EPA issued Notice of Federal Interest on March 18

Site Map



Initial Reconnaissance

Initial Reconnaissance

Crude oil flowing into pond

Initial Reconnaissance

Pockets of crude oil in creek

Sensitive Species in Creek & Pond Area

Cave Salamander

Great Parks of Hamilton County

OHIO DIVISION OF WILDLIFE

TRI-STATE BIRD RESCUE & RESEARCH, INC.
(302) 737-9543

EPA SCAT Team – Initial Reconnaissance

Creek area remote/Sensitive species/Park

Shoreline Cleanup Assessment Techniques (SCAT)

Operation Zones

Zones 1 & 3 were initial priorities

Zone 1 – Discharge area, pipeline repair

Zone 2 – 1 mile stream section to underflow dam

Zone 3 – The pond and the stream section from the pond to the effluent of the underflow dam

Zone 4 – North and west of the pond

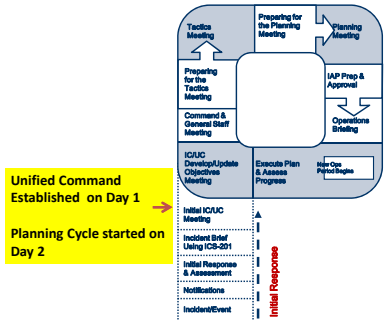
Command Post

Command Post established at a local park. 500 yards from spill area. Hamilton County tents utilized. ERT MCP

Unified Command

Sunoco Logistics mobilized an IMT to manage response

Planning Cycle initiated on Day 2



Unified Command Established on Day 1

Planning Cycle started on Day 2

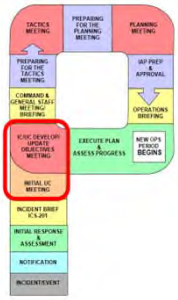
UC Initial Meeting/Objectives Meeting

Purpose: UC develops Objectives

Attends: UC, PSC, SITL

Action Tracker

Key Decisions



Daily Planning Cycle

ICS 230 - Daily Meeting Schedule

Incident: Oak Glen Release | Prepared By: Wolfe,Andrew | at 3/24/2014 09:33

Period: Period 7 (3/25/2014 07:00 - 3/26/2014 07:00) | Version Name: Period 7 DAILY MEETING SCHEDULE

Meeting Name & Date/Time	Purpose	Attendees	Location
Ops Briefing 3/25/2014 07:00	Update incoming shift on current events.	Incident Commander, Planning Section Chief, Operations Section Chief, Logistics Section Chief, Finance Section Chief	Command Post
IC/UC Objectives Meeting 3/25/2014 09:00	Review/identify and prioritize objectives for the next operational period.	Unified Command and ICS Advisor	EPA Trailer
Command & General Staff Meeting 3/25/2014 10:00	Coordinate Command Staff functions, responsibilities and objectives.	Federal OSC, State OSC, State OSC, Local OSC, Local OSC, Local OSC, Incident Commander, Situation Unit Leader, Documentation Unit Leader, Information Officer, Information Officer, Safety Officer, Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance Section Chief, Environmental Unit Leader	Command Post
Media Brief 3/25/2014 11:00	Update media on current situation		Parking Lot
Tactics Meeting 3/25/2014 13:30	Develop primary and alternate strategies to meet incident objectives for the next operational period.	Operations Section Chief, Logistics Section Chief, Resource Unit Leader, Situation Unit Leader, Environmental Unit Leader, Shoreline Cleanup Assessment Specialist, Safety Officer, Communications Unit Leader, EPA START	Command Post
Planning Meeting 3/25/2014 16:00	Define/Review incident objectives, strategies, and tactics and identifies resource needs for the next operational period.	Federal OSC, State OSC, State OSC, Local OSC, Local OSC, Local OSC, Incident Commander, Planning Section Chief, Operations Section Chief, Documentation Unit Leader, Situation Unit Leader, Resource Unit Leader, Information Officer, Information Officer, Logistics Section Chief, ICS Advisor, Finance Section Chief, Environmental Unit Leader, Communications Unit Leader	Command Post
IAP Prep, and Approval 3/25/2014 18:00	Immediately following the Planning Meeting, the attendees prepare their assignments for the IAP	Planning Section Chief, Safety Officer, Operations Section Chief, Logistics Section	Command Post

Unified Command Objectives Meeting

0900 hours

Objectives/Command Emphasis/Action Tracker items identified by UC

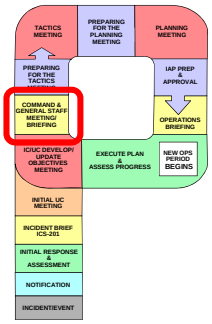
Command & General Staff Meeting

Purpose: Initial IMT meeting. Team huddle.

Attends: C&G Staff

Review Key Decisions by UC

Review Action Item List



ICS 230 - Daily Meeting Schedule

Incident: Oak Glen Release | Prepared By: Woltje,Andrew | at 3/24/2014 09:33

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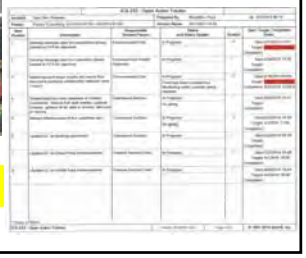
OhioEPA · Great Parks of Hamilton County · EPA Emergency Response · Colerain · Sunoco Logistics

Command and General Staff Meeting

1000 hours



Situation Briefing
Reviewing Action Tracker in C&G Staff Mtg

OhioEPA · Great Parks of Hamilton County · EPA Emergency Response · Colerain · Sunoco Logistics

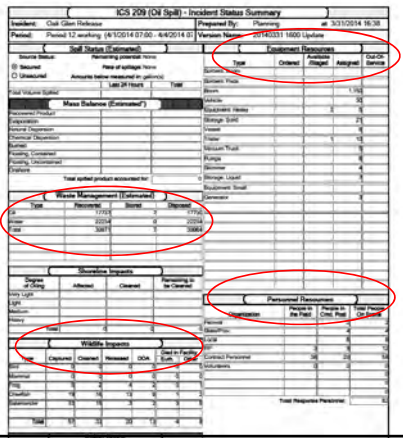
ICS 233 - Open Action Tracker

Incident: Oak Glen Release | Prepared By: Bestolfon, Paul | at 3/31/2014 08:10

Period: Period 12 working (4/1/2014 07:00 - 4/4/2014 07:00) | Version Name: 3/21/2014 14:54

Item Number	Description	Responsible Section/Person	Status and Status Update	Briefed	Start, Target, Completed Dates
1	Develop strategic plan for remediation phase. Submit to FPA for approval.	Environmental Unit	In Progress		Start:3/21/2014 14:53 Target: [redacted] Completed:
2	Develop strategic plan for restoration phase. Submit to EPA for approval.	Environmental Health Agencies	In Progress		Start:3/28/2014 10:26 Target: Completed:
3	Submit ground water results and report that discusses hydraulic relationship between zone 3 and 4	Environmental Unit	In Progress Pond and Quarry connected. Monitoring wells currently being installed.		Start:3/18/2014 00:00 Target: [redacted] Completed: 3/26/2014 12:00:0
4	Submit daily frac tank database to Unified Command. Include frac tank number, gallons of water, gallons of oil, date in service, date out of service	Operations Section	In Progress On going		Start:3/22/2014 19:07 Target: Completed:
5	Monitor effectiveness of the underflow dam	Operations Section	In Progress On going		Start:3/23/2014 14:33 Target: 5/1/2014 17:00 Completed:
6	Update UC on flushing operations.	Operations Section	In Progress		Start:3/23/2014 09:16 Target: Completed:
7	Update UC on Great Parks reimbursement	Finance Section Chief	In Progress		Start:3/27/2014 16:29 Target: 4/1/2014 18:00 Completed:
8	Update UC on Health Dept reimbursement	Finance Section Chief	In Progress		Start:3/26/2014 10:44 Target: 4/2/2014 18:00 Completed:

ICS 209



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Media Briefing

1100 hours

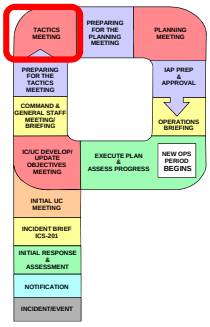
Initial PIO was EPA Ginny Narsete. By Day 3, transitioned to Colerain Township Public Information Officer

Tactics Meeting

Purpose: Operations develops primary and alternative strategies to accomplish Incident Objectives for next Operational period

Attends: Ops/PSC/SO/RESL/SITL/ LSC

Develop 215



ICS 230 - Daily Meeting Schedule

Incident: Oak Glen Release | Prepared By: Wolfe,Andrew | at 3/24/2014 09:33

Period: Period 7 (3/25/2014 07:00 - 3/26/2014 07:00) | Version Name: Period 7 DAILY MEETING SCHEDULE

Meeting Name & Date/Time	Purpose	Attendees	Location
Ops Briefing 3/25/2014 07:00	Update incomming shift on current events.	Incident Commander, Planning Section Chief, Operations Section Chief, Logistics Section Chief, Finance Section Chief	Command Post
IC/UC Objectives Meeting 3/25/2014 09:00	Review/Identify and prioritize objectives for the next operational period.	Unified Command and ICS Advisor	EPA Trailer
Command & Genereral Staff Meeting 3/25/2014 10:00	Coordinate Command Staff functions, responsibilities and objectives.	Federal OSC, State OSC, State OSC, Local OSC, Local OSC, Local OSC, Incident Commander, Situation Unit Leader, Documentation Unit Leader, Information Officer, Information Officer, Safety Officer, Operations Section Chief, Planning Section Chief, Logistics Section Chief, Finance Section Chief, Environmental Unit Leader	Command Post
Media Brief 3/25/2014 11:00	Update media on current situation		Parking Lot
Tactics Meeting 3/25/2014 13:30	Develop primary and alternate strategies to meet incident objectives for the next operational period.	Operations Section Chief, Logistics Section Chief, Resource Unit Leader, Situation Unit Leader, Environmental Unit Leader, Shoreline Cleanup Assessment Specialist, Safety Officer, Communications Unit Leader, EPA START	Command Post
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Ops Briefing 3/25/2014 19:00	Update incomming shift on current events.	Incident Commander, Planning Section Chief, Operations Section Chief, Logistics Section Chief, Finance Section Chief	Command Post

SCAT Team – Daily Meetings

1200 hours

Discussing SCAT recommendations (Pre-Tactics)
SCAT team = Park, OEPA, EPA, Sunoco consultants

Tactics Meeting

1330 hours

SCAT recommendations discussed in Tactics Meetings with OPs

Sunoco Logistics Oak Glen Release
SCAT Treatment Recommendations – Zone 2 (Stream) — **For March 29, 2014**

SCAT Leaders: SCAT Coordinator: Chris Pfeifer/Candice ENTRIX (302-598-1989); SCAT Ops Rep: Russell Howerton/SXL (409-659-8430); FOSC Rep: Pat Hansbrough/USEPA (917-749-3786); SOSC Rep: Bill Lahrson/OEPA (937-723-6952)

Segment	Recent Observations (3/28/14)	Treatment Recommendations
2A-01	• No significant oily debris. • Significant oil on underside of rocks. • Black oil released from discrete sediment accumulations.	• Flip rocks to expose oil on undersides. • Continue flushing. • Continue removal and bagging of oily debris.
2A-02	• More submerged flow in this reach. • Rocks more embedded in stream bed/bank. • Less oil under rocks than upstream segment. • Minimal oily debris.	• Flip rocks to expose oil on undersides focus mainly on surface (top) layer of loose rocks. • Continue flushing. • Continue removal and bagging of oily debris.
2B-01 (Upper Island)	Left Descending Branch: • Oiling similar to 2A-01. • Moderate oil under rocks. • Moderate-heavy oily debris. Right Descending Branch: • Less oil under rocks. • Limited oily debris. • Limited riparian oiling.	Left Descending Branch: • Flip rocks to expose oil on undersides. • Continue flushing. • Erect rock deflector to divert flow to left side channel. Right Descending Branch: • Additional oily debris removal as needed.
2B-02	• Moderate/heavy oiling. • Subterranean outflow with oil discharge on left descending bank near footbridge. • Lower gradient/wider channel.	• Flip rocks as available to expose oil on undersides (low tide). • Sorbent recovery and/or flushing at subterranean oil discharge. • Continue removal and bagging of oily debris.
2C-01 (Left Side Around Lower Island)	• Lower gradient/wider channel. • Less rock, more sediment. • Less oil under rock than other upstream reaches. • More oily debris.	• Prioritize oily debris removal over rock flipping. • Flip rocks as encountered. • Continue flushing.
2C-02 (Right Side Around Lower Island)	• Greater surface oiling of rock (highest observed in all segments.) • Heavy oily debris. • More rocky and narrower than 2C-01.	• Prioritize oiled debris removal. • Stand spill to potential boat traversal treatment and/or directed rock washing.
2C-03 (Just upstream of Dam)	• Less rocky, more poor riparian habitat. • Significant black oil released upon sediment agitation. • Right descending bank: subterranean oil seeps discharging near fence removal site.	• Sorbent collection and/or directed flushing of oil seep discharge. • Prioritize oily debris removal. • Flip accessible rocks.

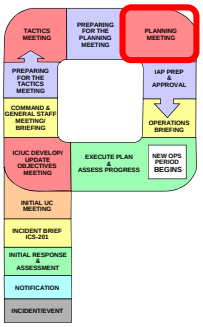
Planning Meeting

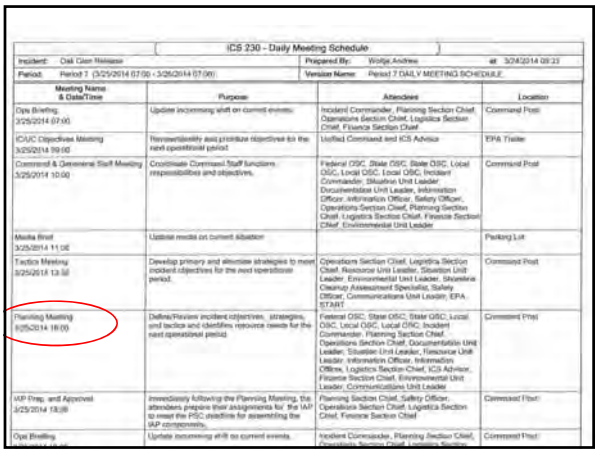
Purpose: Present plan for UC approval

Attends: C&G Staff

30 min meeting with review Of Ops 215

KLPs indicate support of plan





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Planning Meeting

1600 hours

Daily plan (IAP) presented to Unified Command for approval

SCAT Team

Recommendations discussed @ Planning Mtg

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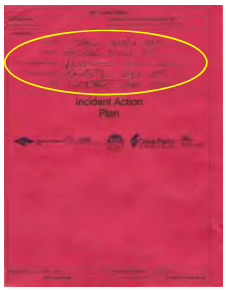
IAP Approval Meeting

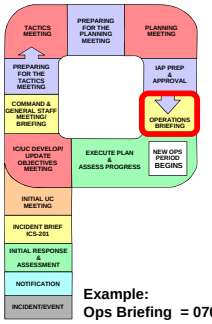
1800 hours



Operations Briefing

The operations briefing:

- Is conducted at the beginning of each operational period
- Presents the IAP to supervisors of tactical resources
- Should be concise



Example:
Ops Briefing = 0700

Operations Briefing

0700 hours

Operations – Zone 1

Zone 1 – Discharge area, pipeline repair

Zone 2 – 1 mile stream section to underflow dam

Zone 3 – The pond and the stream section from the pond to the effluent of the underflow dam

Zone 4 – North and west of the pond

Operations -Zone 1

Inspecting the pipeline for damage (DOT lead)

Operations - Zone 1

Temporary Pipeline Repair
Pipeline restarted on March 23 per DOT approval

Operations – Zone 2

Zone 1 – Discharge area, pipeline repair

Zone 2 – 1 mile stream section to underflow dam

Zone 3 – The pond and the stream section from the pond to the effluent of the underflow dam

Zone 4 – North and west of the pond

Operations - Zone 2

Underflow dam constructed in creek – Day 4

Operations - Zone 2

Skimming operation at underflow dam – Day 5

Operations - Zone 2

Per SCAT recommendations, high flow flushing operations initiated in Zone 1 – Day 6
8" water line pumped water 1 mile uphill (Zone 3 to Zone 1)

Operations - Zone 2

Operations removing oil-contaminated leaves and debris to increase flow through stream

Operations - Zone 2

Skimming operation at underflow dam – Day 8

Operations – Zone 3

Zone 1 – Discharge area, pipeline repair

Zone 2 – 1 mile stream section to underflow dam

Zone 3 – The pond and the stream section from the pond to the effluent of the underflow dam

Zone 4 – North and west of the pond

Operations - Zone 3

Pond on Day 1 – farthest oil migration point

Operations - Zone 3

Operations collecting oil-contaminated debris and skimming oil from surface of pond

Operations - Zone 3

Vacuum Trucks at the pond

Sensitive Species in Zones 2-3

Cave Salamander

TRI-STATE BIRD RESCUE & RESEARCH, INC. (302) 737-9543

Operations - Zone 3

Pond on Day 4

Operations - Zone 3

Pond on Day 5

SCAT Team – Zone 2 & 3

Operations - Zone 3

Oil residue ring around pond shoreline

Operations - Zone 3

OEPA & SCAT recommendation: Thermal treatment on oil residue ring around pond shoreline. Colrerain Twp FD oversees Ops

Operations - Zone 3

Air sparging the pond, using 3 aerators (lowers Benzene levels in water)

Operations - Zone 3

Operations – Zone 4

Zone 1 – Discharge area, pipeline repair

Zone 2 – 1 mile stream section to underflow dam

Zone 3 – The pond and the stream section from the pond to the effluent of the underflow dam

Zone 4 – North and west of the pond

Operations - Zone 4

Operations – Zone 4 Summary

Step 1 – Place boom on overflow pathway and Welch Sand & Gravel quarry

Step 2 – Daily inspections

NOTE: No oil was ever observed in the quarry or on the Great Miami River

Security Badging and IAP Development

Personnel scanned entering work zones and ICP

Waste Disposal

27 Red Boxes = Contaminated Boom
17 Blue Boxes = Contaminated Soil

Frac Tanks
19,000 gal of Oil
22,000 gal of Oil/Water

OhioEPA Sunoco Logistics

Groundwater Investigation

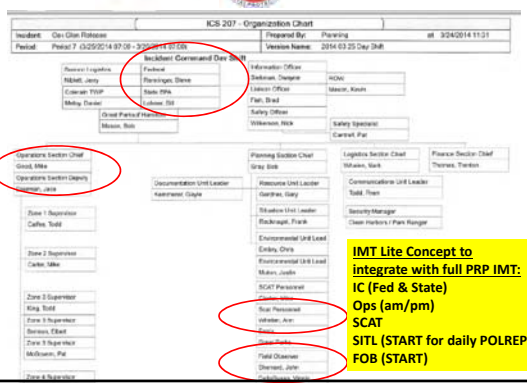
9 Monitoring Wells installed around Zone 3 pond

OhioEPA Sunoco Logistics

Remediation Phase – April 2014

Zone 2 flushing/direct washing

OhioEPA Great Parks of Hamilton County EPA Emergency Response Colerain Sunoco Logistics



IMT Lite Concept to integrate with full PRP IMT:
IC (Fed & State)
Ops (am/pm)
SCAT
SITL (START for daily POLREPs)
FOB (START)

Mid-Valley Pipeline Crude Oil Release

Colerain Township, Ohio
March 2014

OhioEPA Great Parks of Hamilton County EPA Emergency Response Colerain Sunoco Logistics

Summary

1. Unified Command established on Day 1
2. Sunoco mobilized IMT to manage response on Day 2 (EPA/OEPA= IMT Lite)
3. 200 response personnel, multiple OSROs mobilized
4. SCAT mobilized early due to Zone 2-3 sensitive species, remote areas
5. SCAT recommendations introduced in Tactics meetings with OPs
6. Spill amount revised from 10,000 gal to 30,000 gal +
7. EPA Emergency Response phase completed by March 31 (Day 13)

Mid-Valley Pipeline Crude Oil Release

Colerain Township, Ohio
March 2014

Response Considerations for Ethanol, BioDiesel and Dilbit

Steve Faryan USEPA On-Scene Coordinator

Ethanol Response Considerations

- **Proper Air Monitoring Equipment**
  - Combustible Gas Indicator (CGI) and Flame Ionizing Detector (FID) or MultiRAE Plus Five-Gas Air Monitoring Instrument; Photo Ionizing Detector (PID). Must review response factors prior to using PID.
- **Proper Spill Containment**
  - Ventilate area and eliminate ignition sources. Fire-fighting measures must use **ALCOHOL-RESISTANT FOAMS**. Containment/response should follow typical containment procedures. Example: use non-combustible oil-dry, absorbent socks, booms, etc that are **ALCOHOL-RESISTANT**. Avoid entry into sewers and waterways due to flammability hazards, potential aquatic toxicity, and potential microbial upsets at wastewater treatment plants. Waste generated from the clean-up may exhibit the flammability characteristic for hazardous waste.

Note: The Response Overview includes measures for the other major chemicals involved in the manufacturing process.

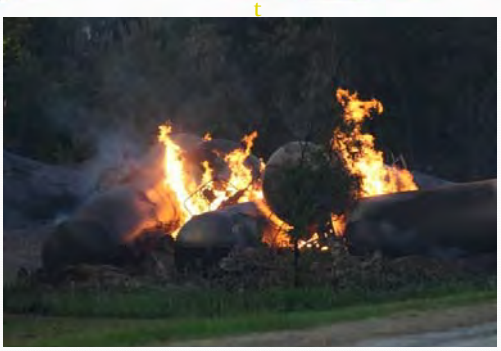
EXPECTED FATE

- **Release in Soil**
  -Rapidly biodegraded in soil
- **Release in Water**
  -Mixes with water
  - At high concentrations of water, ethanol separates from gasoline
  - Rapidly biodegraded in groundwater and surface water
  - Studies focusing on possibility of ethanol inducing transport of other chemicals such as benzene
  - YSI meter is ideal instrument as it gives Dissolved Oxygen, Conductivity, Temperature and pH in a single throw in a couple of minutes
- **Release in Air from spill/fire**
  -Ethanol vapor, like gasoline vapor, is denser than air and tends to settle in low areas
  - Vapor disperses rapidly
- **Release to storm/sanitary sewers**
  -Ethanol released to water will volatilize and rapidly biodegrade
  - Potential decrease in DO as a result of ethanol degradation can upset microbial functions at WWTPs
  - Potential flammability hazard must be addressed when ethanol is released to a sanitary or storm system

TISKILWA ILLINOIS DERAILMENT




http://www.epaosc.org/rockfordcptrainderailment



June 2009

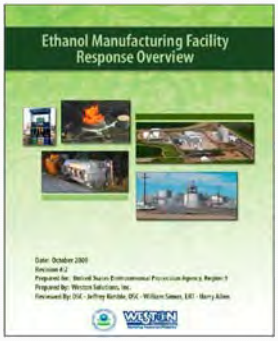
Overall Health Risks of Ethanol

- Human Health Effects
  - Exposure to fuel ethanol can occur by breathing its vapors (inhalation), getting it on the skin or in the eyes (skin absorption), or accidentally swallowing it (ingestion).
  - The following symptoms of exposure to fuel ethanol may appear immediately: Dullness of memory and concentration; impaired motor coordination; and drowsiness, stupor, and finally coma. May cause skin irritation as a result of defatting.
  - Carcinogenic compounds are not present in pure ethanol; however, because gasoline is used in the blend, E85 is considered to be potentially carcinogenic.
- **Ecological Effects**
  - Pure ethanol has demonstrated lethal concentrations for fish (rainbow trout) at 11,200 to 15,300 milligrams per liter (mg/L).
  - Pure ethanol is expected to biodegrade rapidly and bioaccumulation or concentration in the food chain is not expected. However, the biodegradation may decrease the dissolved oxygen in surface water resulting in fish kills.

Current Ethanol Plants

http://www.card.iastate.edu/research/bio/tools/ethanol.aspx as of 01/16/2008

http://www.epaosc.org/ResponseOverviews



Overall Health Risks of a Biodiesel Release

- **Human Health Effects**
  - Inhalation effects are negligible unless heated to produce vapors.
  - If biodiesel fuel were to be ingested, enzymes in the body called esterases would break the biodiesel fuel molecules into the component fatty acids and alcohol molecules. The alcohol is usually methanol and methanol is toxic. Thus, methanol toxicity could be a concern for ingestion of biodiesel fuel.
  - Neat biodiesel fuel is approximately 11 percent methanol by weight, so ingestion of 100 grams of biodiesel would release 11 grams, or 14 milliliters (mL) of methanol. For a 70 kilogram (kg) adult, the fatal dose of methanol ranges from 60 to 160 mL.
- **Ecological Effects**
  - Biodiesel biodegrades much more rapidly than conventional diesel.
  - When biodiesel is present in bulk in the environment, it can coat animals that come in contact with it and may reduce the ability of oxygen to reach aquatic systems. In this respect, its action is similar to petroleum diesel fuel.
  - Biodiesel does not have the toxicity and the solvent action that diesel fuel has, so its effects on animals are expected to be less severe.
  - The treatment of oiled birds and animals would be similar to the treatment provided when an oil spill occurs.
  - However, in water it has a high oxygen demand which can lead to massive fish kills

EXPECTED FATE OF BIODIESEL

- **Release in Soil**
  -Biodegradation occurs rapidly, with faster rates under aerobic conditions than anaerobic conditions.
- **Release in Water**
  -Insoluble in water. Degrades rapidly and fairly extensively in aquatic environments. Estimated to degrade at a rate approximately four times faster than petroleum diesel – 85% of pure biodiesel expected to degrade within 28 days.
- **Release in Air as result of spill/fire**
  -Combustion produces carbon monoxide, carbon dioxide along with thick smoke.
- **Release to storm/sanitary sewers**
  -May be high in free fatty acids and glycerol, and can have a high biochemical oxygen demand (BOD). These can disrupt wastewater treatment plant operations.

Appropriate Mitigation Measures for Release of Biodiesel Fuel

- **Proper Air Monitoring Equipment**
  - Biodiesel fuel has a very low volatility at normal ambient temperatures and vapors are not typically an issue. However, vapors/mists may be generated when heated above ~266 degrees Fahrenheit (°F).
- **Proper Spill Containment**
  - Containment/response should follow typical oil containment procedures. Example: use oil-dry, petroleum-compatible absorbent socks, booms, etc; the absorbent material used should be resistant to alcohol in the event methanol has further commingled with the biodiesel release. Disposal of biodiesel-contaminated soil or products can be considered non-hazardous provided methanol and/or hexane have not commingled with the release to meet the flammability characteristic for hazardous waste.

Note: The Response Overview includes measures for the other major chemicals involved in the manufacturing process.

Response to Diluted Bitumen (Dilbit, Tar Sands)

- Most Dilbit is transported via pipeline
- More Rail Tank Car transport and Barge transport is being reported
- Health and Safety, Response Considerations, Fate and Transport in the Environment

There are other oil sands products you need to be aware of transported by rail and pipeline:

- 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

Response considerations for a release of Dilbit

- High benzene levels in diluent may necessitate evacuation of the public in the immediate area
- Air monitoring necessary for public and workers (Benzene will drive the risk levels)
- Dilbit is transported warm 180 degrees, volatiles will evaporate quickly
- Once the volatiles have evaporated, Dilbit is suspended in the water column and will sink

Fate and Transport of Dilbit

- Initially specific gravity is less than 1 and product floats
- As the diluent evaporates product becomes suspended in water column and will sink
- Consider response tactics to stop flow of release (dams, bladder bags, diversion to tanks or a pond)
- When the product becomes suspended or sinks typical oil response equipment is ineffective

Spill Response Considerations

Safety

- Air monitoring - Fire
  - O_2
  - CO
  - Explosive Levels - LEL/UEL
  - H_2S
  - Benzene
  - Organic vapors (VOCs)
  - Sulfur and Nitrogen Oxides
  - Particulates - smoke

Spill Response Considerations

Monitoring Equipment

- For Spill:
  - 4 or 5 gas monitors for O_2, LEL, H_2S
  - PID/FID for VOCs (FIDs may be more sensitive)
  - Chemical-specific monitors for benzene
    - Colorimetric tubes
    - PID with benzene tube
- Additionally, for fire:
  - Particulate monitors for Polynuclear Aromatic Hydrocarbons (PAHs) sampling
  - Monitors or sampling equipment for particulates (smoke)

Exposure Guidelines

Component	ACGIH	NIOSH	OSHA
Petroleum (8002-05-9)	Not established	CEIL: 1800 mg/m3 TWA: 350 mg/m3	Not established
Hydrogen sulfide (7783-06-4) [Oregon <1]	TWA: 1 ppm STEL: 5 ppm	CEIL: 10 ppm	CEIL: 20 ppm
Benzene (71-43-2) [Oregon 0.25 ppm]	TWA: 0.5 ppm STEL: 2.5 ppm	TWA: 0.1 ppm STEL: 1 ppm	TWA: 1 ppm STEL: 5 ppm
Ethylbenzene (100-41-4)	TWA: 20 ppm	TWA: 100 ppm STEL: 125 ppm	TWA: 100 ppm
Toluene (108-88-3)	TWA: 20 ppm	TWA: 100 ppm STEL: 150 ppm	TWA: 200 ppm CEIL: 500 ppm

Upper Mississippi River Basin Association

Containing On-Water Spills

Patrick Flowers, CSP, CHMM
Xcel Energy, Inc.

Lesson Objectives

- **Identify appropriate deployment methods for calm water**
- **Identify appropriate deployment method(s) for moving water**

Containment Boom

- **Originally developed for open water**
  - Harbor boom was brought inland to use in rivers and lakes
- **Several designs**
  - Rigid
  - Flexible
  - Inflatable
- **Inland experimentation with:**
  - Windows
  - Steering systems

Types of Containment Boom

- **Rigid Boom**
  - Fence Boom
- **Flexible Boom**
  - Inflatable
  - Fixed Flotation

Containment Boom Design

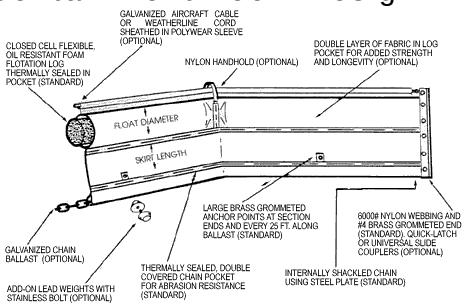


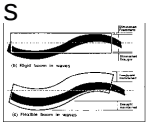
Image courtesy of ACME, Inc.

Deploying Boom

- **Environmental Issues**
  - Wind & Waves
  - Current
  - Debris
  - Water Depth
  - Shoreline

Environmental Influences

- **Wind**
  - Creates wave chop
  - Moves oil contamination
  - More influence along river course
  - Splashover



Environmental Influences

- **Current**
  - Oil movement
  - Limits equipment effectiveness
  - Entrainment
  - Modified deployment methods
  - Erosion at shore

Environmental Influences

- **Debris**
  - Increases boom stresses
  - Fouls recovery equipment
  - Mechanical failure

Environmental Influences

- **Water Depth**
  - Different equipment needs
  - Simplify/Complicate deployment

Environmental Influences

- **Shoreline**
  - Anchoring location
  - Recovery site
  - Access

River Dynamics

- **Current varies across width**
- **High current speed over deeper water**
- **Confluences**

River Dynamics

- **Bends and current flow**
- **Other issues**
  - Wing dams
  - Dredged channels
  - Dams

Lake Effects

- **Wind**
- **Waves/Swells**

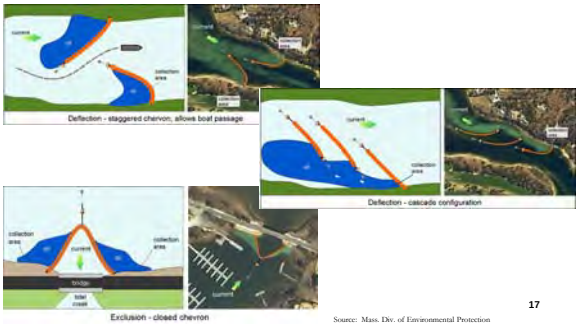
Deploying Boom

- **Basic Rules**
  - Never go straight across river
  - As current increases, angle increases
  - Work in pieces
  - The river always wins
  - Get help!
  - Expect it to take more time than you want

Boom Deployment Strategies

- **Exclusion booming**
- **Deflection booming**
- **Containment booming**
- **Cascade booms**
- **Backup boom**

Booming Strategies (River)



Source: Mass. Div. of Environmental Protection

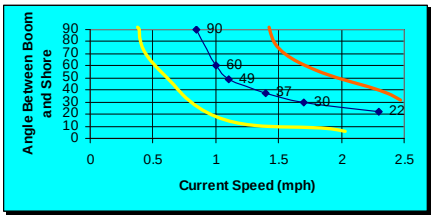
Deploying Boom (River)

- **Determining boom angle**

This graph is for 12" (6"x6") boom.

Larger boom moves curve to left.

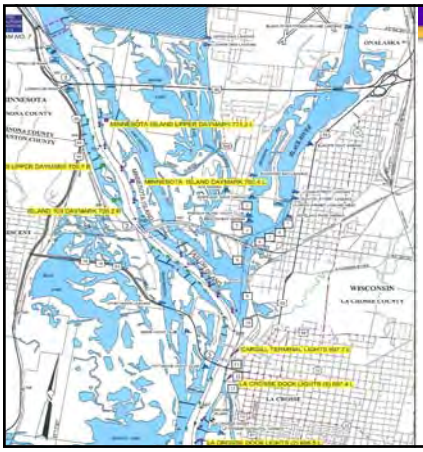
Smaller boom moves curve to right.



Lake Type Environment

Mixed Lake/River Type Environment

19



What do you do?

20

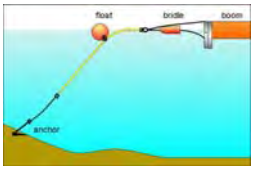
Xcel Energy

Short Answer: Get Creative!

Xcel Energy

Deploying Boom (River)

- **Anchoring**
  - Water
  - Shore

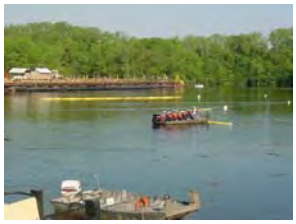


22

Xcel Energy

Deploying Boom (River)

- **Deployment Methods**
  - Boom to Shore
  - Boom to River
  - "S" maneuver



23

Xcel Energy

Boom to Shore

- **Use Conditions**
  - Low current flow
  - Multiple shore anchor locations
- **Safety Issues**
  - Max. strain on boat
  - Max. tension on lines
- **Procedure**

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Boom to River

- **Use Conditions**
  - Low current flow, or
  - Well practiced location(s)
- **Safety Issues**
  - Max. strain on boat
  - Max. tension on lines
- **Procedure**

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"S" Maneuver

- **Use Conditions**
  - Moderate to high current flow
  - Unfamiliar locations
- **Safety Issues**
  - Boat & lines
  - Shore hazards
- **Procedure**

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27

Trouble Spots

- **Belly in the boom**
- **Improper angle**
- **Shore/water interface**

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Wrap Up

- Question?
- You will have a chance to use this information on Saturday.

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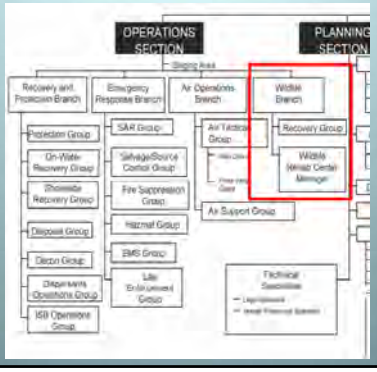
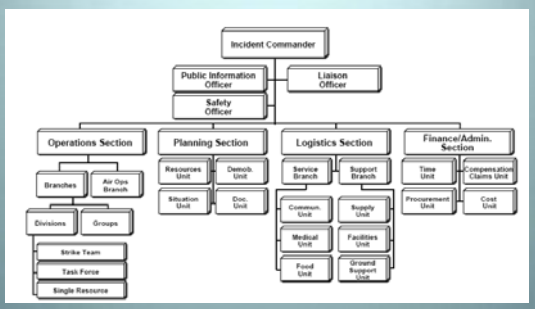
MODULE 2

Wildlife Response

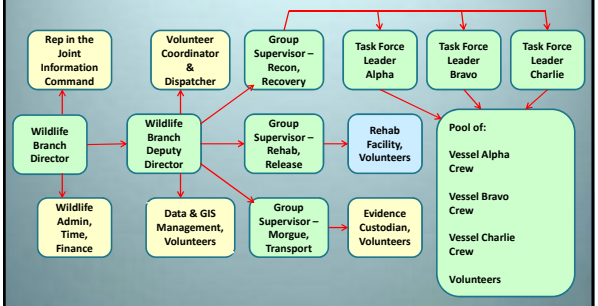
2a: Wildlife Branch in ICS



Incident Command Structure (ICS)



Wildlife Branch Organization Scheme



When a Wildlife Branch is Needed

- Wildlife are impacted or have potential to be impacted
- Setting up the Wildlife Branch - Where is the response center to be located? What kind of office resources are needed, such as phone and internet capability?
- Mobile Command Post – EPA, local or state governments can usually provide. Make sure Wildlife Branch has a spot reserved in the Command Post!
- Identify dedicated resources – Liaison with primary response unit.
- What is the Wildlife Branch Scope of Work?

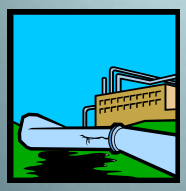
Wildlife – Who is in Charge?

- **Wildlife Branch Director**
  - Facilitates wildlife response coordination between ICS branches
  - Communicates needs of the Wildlife Branch to IC/UC
  - Communicates with RP to establish rehab center
- **Wildlife Branch Deputy Supervisor**
  - Coordinates reconnaissance, recovery, hazing, salvage
  - Communicates with Branch Director
  - Handles logistics associated with wildlife response

Potentially Responsible Party

Considerations:

- Is the RP able to hire an appropriate rehabber?
- It may be necessary to help them do it (help identify resources, assist with procedures)



- Many won't know what to do or have the capability
- Make a checklist of issues to discuss with the RP
- IC should make sure the right people are engaged
- Does the RP have appropriate licenses?

2b. Wildlife Reconnaissance

Wildlife Reconnaissance Considerations

- What are the best reconnaissance methods?
- What species are known to be present in the affected area?
- What approaches are recommended to avoid nesting impacts, prevent escape or chasing into the oil?
- What capture techniques should be used?
- How will the Wildlife Branch share collected data?

Wildlife Reconnaissance Observations

- Are concentrations of birds or other wildlife in the affected area or attracted to the affected area?
- How many of what species?
- What percentages of the colonies or flocks are oiled?
- What is the degree of oiled plumage?
- Are birds seen preening excessively, panting, feeding, caring for young? Not all birds need to be immediately rescued even if oiled.
- Are dead animals observed?

Wildlife Reconnaissance - Methods

- ✓ **Environmental sensitivity index maps**
- ✓ **Local knowledge**
- ✓ **Hotline reports**
- ✓ **Ground surveys**
- ✓ **Car, boat, and aircraft surveys**
- ✓ **Data collection and organization**

Wildlife Reconnaissance - Methods

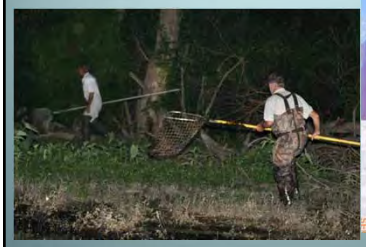
- ✓ **Environmental sensitivity index maps**

Wildlife Reconnaissance - Methods

- ✓ Local knowledge
- ✓ Hotline reports

Wildlife Reconnaissance - Methods

- ✓ Shoreline or beach walks (Ground surveys)



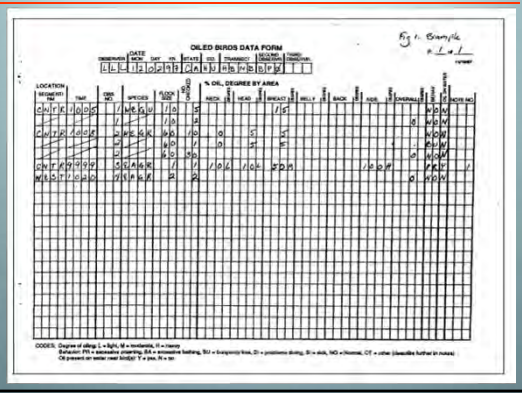
Wildlife Reconnaissance - Methods

- ✓ Car, boat, and aircraft surveys

Example - Boat Survey - Methodology

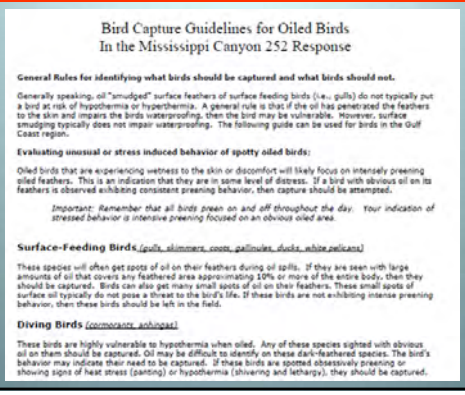
- ❑ Distance Sampling Techniques
- ❑ Regulated speed in smaller boats with unobstructed views of water
- ❑ Survey adapted to shoreline configuration
- ❑ Assess representative areas efficiently and effectively
- ❑ GPS during data collection – locate sick and dead birds
- ❑ Record:
  - Species
  - Number of individuals
  - Distance from transect
  - Behavior

Example – Oiled Birds Data Form



OILED BIRDS DATA FORM

Example – Incident-Specific Guidelines



Bird Capture Guidelines for Oiled Birds
In the Mississippi Canyon 252 Response

General Rules for identifying what birds should be captured and what birds should not.

Generally speaking, oil "smudged" surface feathers of surface feeding birds (i.e., gulls) do not typically put a bird at risk of hypothermia or hyperthermia. A general rule is that if the oil has penetrated the feathers to the skin and impairs the birds waterproofing, then the bird may be vulnerable. However, surface smudging typically does not impair waterproofing. The following guide can be used for birds in the Gulf Coast region.

Evaluating unusual or stress induced behavior of spotty oiled birds:

Oiled birds that are experiencing wetness to the skin or discomfort will likely focus on intensely preening oiled feathers. This is an indication that they are in some level of distress. If a bird with obvious oil on its feathers is observed exhibiting consistent preening behavior, then capture should be attempted.

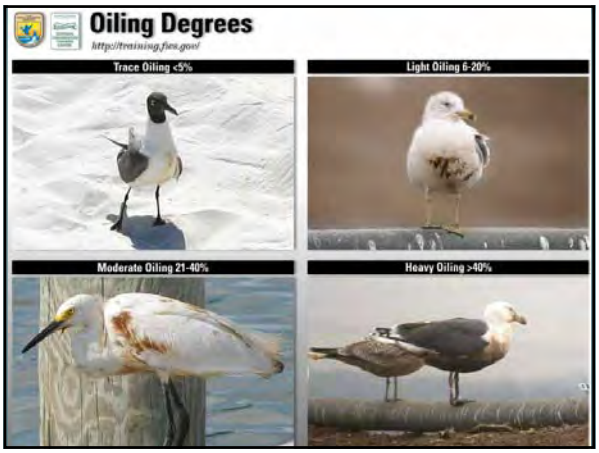
Important: Remember that all birds preen on and off throughout the day. Your indication of stressed behavior is intensive preening focused on an obvious oiled area.

Surface-Feeding Birds (gulls, skimmers, coots, gallinules, ducks, white pelicans)

These species will often get spots of oil on their feathers during oil spills. If they are seen with large amounts of oil that covers any feathered area approximating 10% or more of the entire body, then they should be captured. Birds can also get many small spots of oil on their feathers. These small spots of surface oil typically do not pose a threat to the bird's life. If these birds are not exhibiting intense preening behavior, then these birds should be left in the field.

Diving Birds (cormorant, anhingas)

These birds are highly vulnerable to hypothermia when oiled. Any of these species sighted with obvious oil on them should be captured. Oil may be difficult to identify on these dark-feathered species. The bird's behavior may indicate their need to be captured. If these birds are spotted obsessively preening or showing signs of heat stress (panting) or hypothermia (shivering and lethargy), they should be captured.



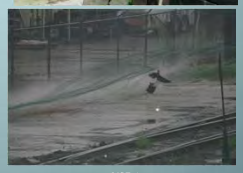
Data Collection

1. What species?
2. How many?
3. Any oiled?

4. **Decision** - keep distance and set up a cannon net,
-OR-
risk chasing them with hand nets and potentially lose them or break up the flock?

Methods of Capture



USDA
United States Department of Agriculture
Animal and Plant Health Inspection Service

Considerations – Recovery – Methods of Capture

USDA
United States Department of Agriculture
Animal and Plant Health Inspection Service

2c. Hazing / Deterrent

Hazing or Deterrent – Techniques

- Visual

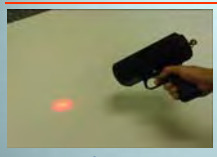
- Acoustic

- Alternative

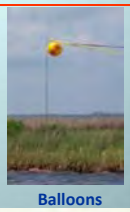
Hazing or Deterrent – Visual Techniques

- Reflective material
- Lights/lasers
- Kites/balloons
- Scarecrows/effigies

Hazing or Deterrent - Visual Techniques

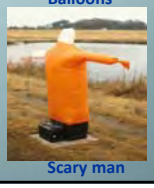


Lasers



Balloons

Effigies



Scary man

Visual Technique– Reflective Materials

Visual Technique – Kites and Balloons

Visual Technique – Lasers

Considerations: How to choose a deterrent?

- **Specific area to protect.**
  - Is it logistically feasible?
  - How much reflective tape, number of balloons, etc., would it take to be successful?
- **Maintenance plan in place.**
  - "Scary man" and balloons / kites need to be checked and moved around to be effective.
- **Right tool / Right time.**
  - Lasers work best in low light to almost no light conditions.
  - Effigies can be effective for deterring wildlife but they can also be considered offensive to the public.

Hazing or Deterrent – Acoustic Techniques

Non-Natural vs. Natural

Propane cannons

Pyrotechnics

Repulsion

Distress calls

Hazing or Deterrent – Acoustic Techniques

REPULSION

Acoustic Techniques - Considerations

Safe use of pyrotechnics:

- **Must** be trained to use pyrotechnics.
- Do **NOT** use when there is a risk of fire.
- **Must** use proper personal protective equipment. (hearing and eye protection)
- **Must** follow legal storage, transportation and purchase requirements of Class C explosive materials.
- Notification of public and response workers in the immediate area.

....More Considerations

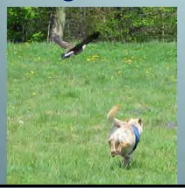
Safe use of pyrotechnics:

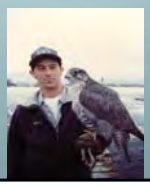
- **Specific area to protect -**
  - Is it logistically feasible?
  - How many propane cannons would it take to be successful?
- **Maintenance plan in place -**
  - Propane cannons and distress calls need to be checked and moved around to be effective.
- **Right tool / right time -**
  - Will there be a significant noise disturbance for the "locals"?
  - Time of year is a big factor. Nesting birds are hard to harass and may want to use other options for T/E species.

Alternative Techniques

- Radio-controlled (rc) equipment and "manned" boats/ aircraft

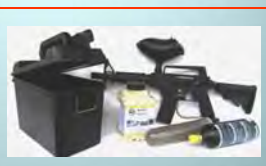
- Biological Hazing (dogs, falconry)



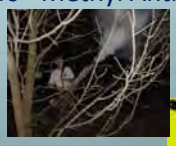


Alternative Techniques

- Paintball guns



- Repellants (odors - Methyl Anthranilate fogger)



Alternative Techniques - Considerations

Generally used for special or unique situations:

- **Use of RC equipment around spill area.**
- **Risks associated with using boats and aircraft.**
- **Dogs / falcons for the purpose of hazing wildlife must be under control at all times.**
- **Methyl anthranilate fog can not be used over fish bearing water bodies.**

Hazing and Deterrent

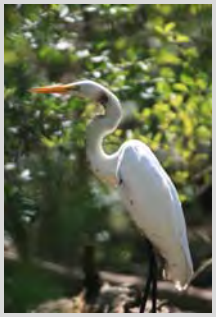
Remember to ALWAYS use adaptive management!

Keep in mind:

- Safety
- Laws & Policies
- National Environmental Policy Act (NEPA)
- Endangered Species considerations
- The Well Being of the Animals
- Public Perception

2d: Wildlife Rehabilitation and Release

Rehab and Release – Prepare a Release Plan



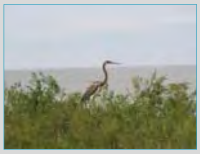
"Plan the work and work the plan"

Migratory Birds

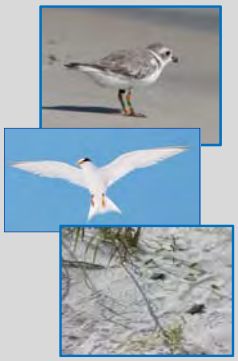
USFWS describes the regulatory definition of a migratory as:

A bird of a species that belongs to a family or group of species present in the United States as well as Canada, Japan, Mexico, or Russia. Most native bird species (birds naturally occurring in the United States) belong to a protected family and are therefore protected by the Migratory Bird Treaty Act.

A general rule of thumb: **If it is native bird, it is protected.**



Rehab and Release - Permit Language



In any given incident/ response involving the capture, rehabilitation, release, and general handling of wildlife, there are various permits that may be required.

WHAT YOU NEED TO KNOW:

- Requirements are State-specific
- Contractors will need to have the appropriate permits in order to perform these activities
- FWS and State Departments of Natural Resources should be consulted for applicability of appropriate permits

Rehab and Release – Mobile Rehabilitation

Rehab and Release – Decontamination

Rehab and Release - Considerations

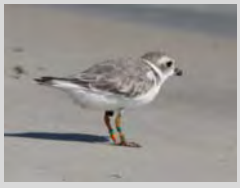
- Habitat needs of the species – vary seasonally
- Coordination with others – rehabilitation group, local officials, landowners
- Media (public information)
- Number of individuals
- Age of animal and individual health status
- Compatibility with other species
- Site conditions – weather, predators
- Time of day
- Acclimate animals – air temperature, warm water

Rehab and Release - Considerations

- Transportation
- Containers – appropriate size, type, number
- Special handling instructions
- Pre-release exam by a wildlife veterinarian
- Recontamination risk
- Alternative long-term care

Rehab and Release - References

- ***Oiled Bird Rehabilitation Training Manual***, Copyright 2005, Tri-State Bird Rescue & Research, Inc., Chapter 7 – Husbandry and Release
- ***Best Practices for Migratory Bird Care During Oil Spill Response***, November 2003, USFWS, Edited by Catherine Berg



Why is salvage and Chain of Custody Important?

U.S. Fish & Wildlife Service

Migratory Bird Permits

Authorized Activities Involving Migratory Birds

What is the Migratory Bird Treaty Act?
The Migratory Bird Treaty Act (MBTA) is the primary legislation in the U.S. established to conserve migratory birds. Under the MBTA, no one may take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. The MBTA covers migratory bird species protected under four international treaties

Waterfowl Sale and Disposal. Although a permit is not required to possess properly marked captive-bred waterfowl or their eggs, a permit is necessary to engage in the sale or transfer of such birds. Properly marked captive-bred mallard ducks are an exception, requiring no permit to sell, buy or keep.

Falconry. Permits are issued to individuals engaging in falconry, which is the art of training raptors for pursuit of game and the sport of hunting with raptors.

Migratory Bird Management

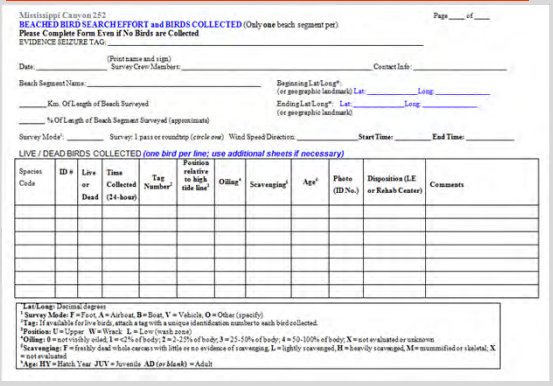
Mission

Wildlife Salvage

- Documentation
- Collection and Tagging
- Chain of Custody
- Preservation and Processing of Evidence
- Morgue

Wildlife Salvage - Documentation

Wildlife Salvage - Documentation



Mississippi Canyon 252 Page ___ of ___

BEACHED BIRD SEARCHEFFORT and BIRDS COLLECTED (Only one beach segment per)
Please Complete Form Even if No Birds are Collected
EVIDENCE SEIZURE TAG: _____

Date: _____ (Print name and sign) Survey Crew Members: _____ Contact Info: _____

Beach Segment Name: _____ Beginning Lat Long*: (or geographic landmark) Lat: _____ Long: _____

_____ Km. Of Length of Beach Surveyed Ending Lat Long*: Lat: _____ Long: _____ (or geographic landmark)

_____ % Of Length of Beach Segment Surveyed (approximate)

Survey Mode[1]: _____ Survey: 1 pass or roundtrip (*circle one*) Wind Speed Direction: _____ Start Time: _____ End Time: _____

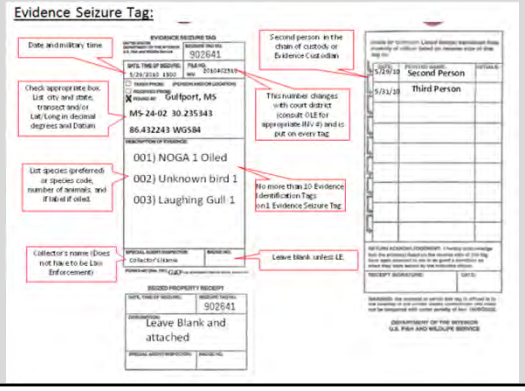
LIVE / DEAD BIRDS COLLECTED *(one bird per line; use additional sheets if necessary)*

Species Code	ID #	Live or Dead	Time Collected (24-hour)	Tag Number[2]	Position relative to high tide line[3]	Oiling[4]	Scavenging[5]	Age[6]	Photo (ID No.)	Disposition (LE or Rehab Center)	Comments

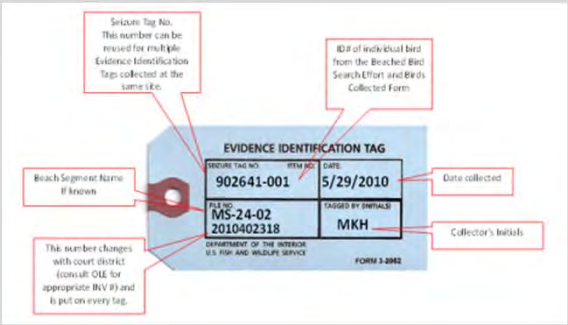
*Lat/Long: Decimal degrees
[1] Survey Mode: F = Foot, A = Airboat, B = Boat, V = Vehicle, O = Other (specify)
[2] Tag: If available for live birds, attach a tag with a unique identification number to each bird collected.
[3] Position: U = Upper W = Wrack L = Low (wash zone)
[4] Oiling: 0 = not visibly oiled, 1 = <2% of body; 2 = 2-25% of body; 3 = 25-50% of body; 4 = 50-100% of body; X = not evaluated or unknown
[5] Scavenging: F = freshly dead whole carcass with little or no evidence of scavenging, L = lightly scavenged, H = heavily scavenged, M = mummified or skeletal, X = not evaluated
[6] Age: HY = Hatch Year JUV = Juvenile AD (or blank) = Adult

Wildlife Salvage – Collection and Tagging

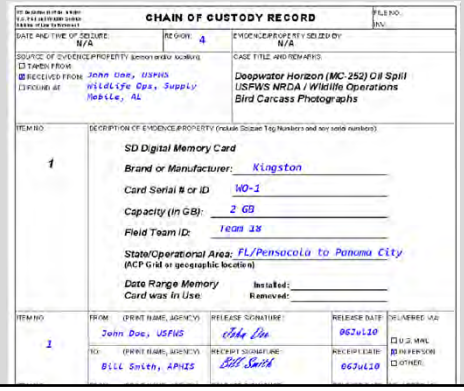
Wildlife Salvage – Collection and Tagging



Wildlife Salvage – Collection and Tagging



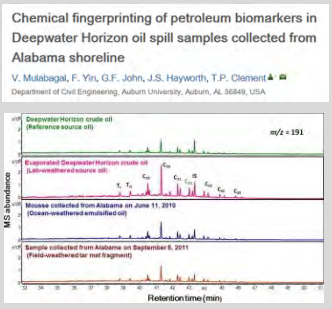
Wildlife Salvage – Chain of Custody

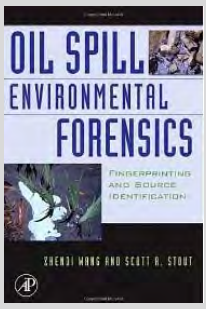


Wildlife Response - Morgue

Wildlife Salvage – Preservation & Processing of Evidence

Wildlife Salvage – Preservation & Processing of Evidence





WOW!
A lot of stuff!!

So….. How do remember it all?

Planning

USDA
United States Department of Agriculture
Animal and Plant Health Inspection Service

Training – Lafayette, LA

PRACTICE / TRAINING / EXERCISE

Upper Mississippi River Spill

Response & Wildlife Response Training, Montrose, Iowa Sept 2012

THE DAILY ADVERTISER

Agents train for oil spills

MODULE 2 QUESTIONS

A SNAPSHOT OF WILDLIFE REHABILITATION

Spill Response Training
&
La Crosse Area Functional Exercise
2 October 2014
Presented by: Rhonda Murgatroyd
Wildlife Response Services, LLC

Initial Wildlife Response Priorities --Notifications--

- Federal Agency – U.S. Fish & Wildlife Service (USFWS) – Notify Wisconsin Ecological Field Services Office at: Wisconsin Field Office; 2661 Scott Tower Drive; Green Bay, WI 54229-9565; Phone: 920-866-1717; Fax: 920-866-1710; TTY: 1-800-877-8339 (Federal Relay); e-mail: GreenBay@fws.gov. Notify Minneapolis Ecological Field Services Office at: Twin Cities Field Office; 4101 American Boulevard East; Bloomington, MN 55425; Phone: 612-725-3548; Fax: 612-725-3609; TTY: 1-800-877-8339 (Federal Relay); e-mail: TwinCities@fws.gov. **USFWS Primary Refuge Contact: Jim Nissen, Refuge Manager – La Crosse District; 608-779-2385; James_Nissen@fws.gov.** All are located in USFWS Region 3 – Great Lakes, Big Rivers Region. **Regional Headquarters Office – Minneapolis, Minnesota (Minnesota, Wisconsin, Iowa, Missouri, Illinois, Indiana, Michigan, Ohio):** 612-713-5350
- State Agencies – Wisconsin Department of Natural Resources; WI DNR West Central Spills Coordinator (Tom Kendzierski) at 715-839-1604; Minnesota Department of Natural Resources; Duty Officer at 651-649-5451.

Wildlife Branch Director Responsibilities

- Identify sensitive areas / locate animals at risk / recommend response priorities (ICS form 232). Include in IAP.
- Determine need for wildlife contractor.
- Determine who is authorized to recover live & deceased animals.
- Notifies USFWS Migratory Bird Regional Permit Office.

Who Captures & Cares for Wildlife?

- Only trained personnel from the U.S. Fish and Wildlife Service, Wisconsin Dept of Natural Resources, Minnesota Dept of Natural Resources, US Dept of Agriculture, Animal & Plant Health Inspection Service (USDA APHIS Wildlife Service), or wildlife responders permitted by these agencies, are allowed to capture and rehabilitate oiled wildlife.
- WRS wildlife response teams must possess state (issued under emergency declaration at the direction of state wildlife trustees, if not already permitted in impacted state) and federal (Federal Regulation 50 CFR 21.31) permits for rehabilitation of oiled wildlife. WRS personnel maintain state permits in Texas, Louisiana and Arkansas, as well as a USFWS federal permit for migratory birds.

Education Considerations

- Wildlife Rehabilitation Training
- OSHA HAZWOPER Certification
- ICS Training
  - Levels 100, 200, 300, 400, 700, 800
- Animals in Disasters (Module A & B)- FEMA Class
- Livestock in Disasters – FEMA Class
- Developing & Managing Volunteers – FEMA Class
- CPR & First Aid Training Certification
- Boater Safety Certificate
- Substantial Time Commitment – Daily Wildlife Rehab

Be Prepared For Anything

It Could Be One

Or It Could Be Many

Wildlife Response "Back In The Day"

- Mobilize Where – I Need A Place to Set Up Wildlife Center
  - Are Response Trailers On The Way?
- Which Responders Are Mobilizing (Even this has changed with more response activity away from coast).
- Who Am I Working For (RP)
- What Is The Trajectory? This Will Give Me A Good Idea of Wildlife Concentrations and the ability to plan a better response.

Wildlife Response "Back In The Day" cont.

- Have Oiled Animals Already been sited?
- Are Wildlife Trustees Already Engaged? Contacts?
- Resources Available (Wildlife Supplies and Rehabilitation Location, Boats, Vans, Lodging)
- WRS Documentation, Surveys, Capture, Rehabilitation, Carcass Collection, Hazing, Relocation and Pre-Emptive Capture

Wildlife Response "The Here And Now"

- All WRS Documentation Merging With . . . .
- Wildlife Trustee Specific Forms [e.g., Evidence Storage Log, Oiled Bird Intake Form, Wildlife Branch Daily Asset Report, Live Oiled Animal Data Log, Wildlife Branch Daily Report Form (to populate 209), Carcass Collection Documents, Field Survey Log (photos, GPS coordinates and tracks)].
- Wildlife Rehabilitation Personnel Are Writing More Plans (field mobilization, communications, hazing, hacking, release, severe weather, trapping, relocation), the list goes on – we don't just "do it" any longer.

Wildlife Response "The Here And Now" cont.

- Photo Documentation Becoming More Labor Intensive (being looked at closer).
- All Data To Be Entered Into Excel Spreadsheets For Future Use.
- Wildlife Responders Becoming More Engaged In Overall Incident.
- **This Is A Positive Move For Both Trustees And RP's; Just More Labor Intensive For Us, Requiring Additional Personnel**.

Wildlife Capture

Busy Wildlife Center

Spacious Wildlife Facility

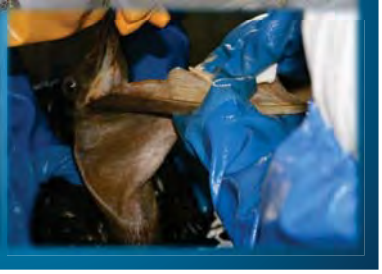
Rehabilitation Center




Portable Rehabilitation Center

Bath Time



Husbandry/Medical Care


Outside Flight Pen


Best Practices For Migratory Bird Care During Oil Spill Response

- The "Best Practices" document is the result of a three day workshop held in February 2001.
- Establishes national standardized protocols for dealing with both unoiled and oiled birds during a spill incident.
- 46 page document can be found at http://www.fws.gov/contaminants/otherdocuments/best_practices.pdf
- **It is a guide** – If followed, an oiled wildlife response will achieve the best possible outcome.

The Ultimate Goal – Healthy Release

Wild Again

Questions?

Wildlife Response Services, LLC
RESPONSE | TRAINING | CONSULTING

RHONDA MURGATROYD
Managing Director

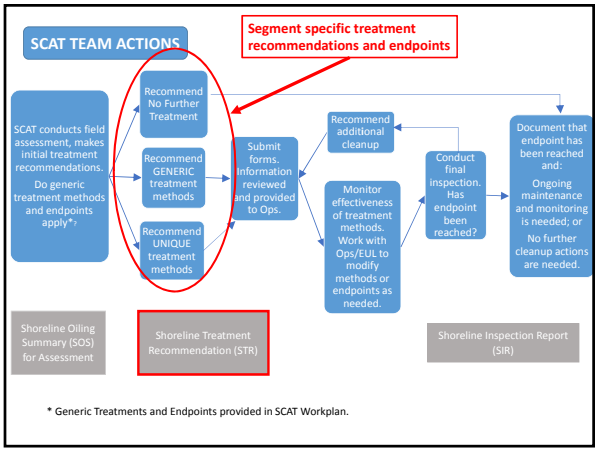
P.O. Box 842
Seabrook, Texas 77586
713.705.5897
rhonda@wildliferesponse.net
www.wildliferesponse.net

SCAT for Inland Oil Spills: SCAT Process Part 2:

Data Submittal, STRs, SIRs, SCAT Intel, eSCAT

Objectives

- Understand the SCAT Process
- Understand the role of a SCAT Team Member within the process
- Become familiar with the forms that are used in the SCAT process



* Generic Treatments and Endpoints provided in SCAT Workplan.

Initial Treatment Guidance and Endpoints

- Generated by SCAT Coordinator/EUL/OSC
- Result will be:
  - No Further Treatment (NFT) recommended
  - Shoreline Treatment Recommendation (STR)

Example Initial Treatment Guidance and Endpoints

Habitat Type	Cleanup Endpoints	Recommended Cleanup Methods
Wetlands	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Snare boom should be staked along the front edge of oiled marsh for passively recovery of sheens. Collect heavily oiled debris by small boats at high tide. Any additional cleanup requires EU approval.
Vegetated shorelines	No mobile oiled debris, no rainbow sheen, no brown emulsion. Some silver sheen and stain may persist and be allowed to degrade naturally.	Manual removal of oily debris less than 4" diameter. Skimming and vacuum of floating oil on the water surface. Use flushing with sea water along the vegetated fringe to release trapped oil. Where remaining oil poses a significant threat to bird concentration areas, sorbent snare may be deployed. Such areas will be identified by the EU

Generate Treatment Recommendations

Option 1:

Apply general shoreline type-based Treatment Recommendations to this segment.

Option 2:

Due to specific constraints SCAT recommends unique treatment method

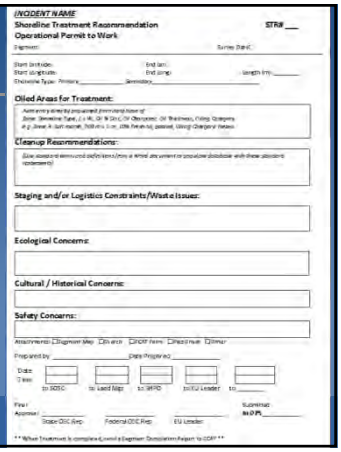
Shoreline Treatment Recommendation (STR)

Habitat Type	Cleanup Endpoint	Allowable Cleanup Methods
Sand Beaches	Sand Beaches should be visibly free of all oil and oil residue. No oil odor should be evident and there should be no subsurface oil existing.	• Manual removal with shovels/rakes; minimize removal of clean sediments on/under oiled layers • Use of heavy equipment will require additional approval. • Passive recovery of sheen with sorbents.
Marshes ***Vegetated Spoil Banks Scarps*** Forested Wetlands	General: No potentially mobile oil as evidenced by sheen remaining on substrate. Residual oil does not rub off on contact (no oil greater than stain).	• Remove loose oiled debris (use best mgt guidelines). • Passive removal using snares on a rope or other sorbent material as appropriate. • Minimize foot traffic, and avoid disturbance and removal of peat mat or soil • Other options to be determined on a site-specific basis include flushing, manual pickup of pooled oil, and monitoring. • Aggressive cleanup methods should not be employed. • Natural recovery should be considered

Constraints that may require unique STR

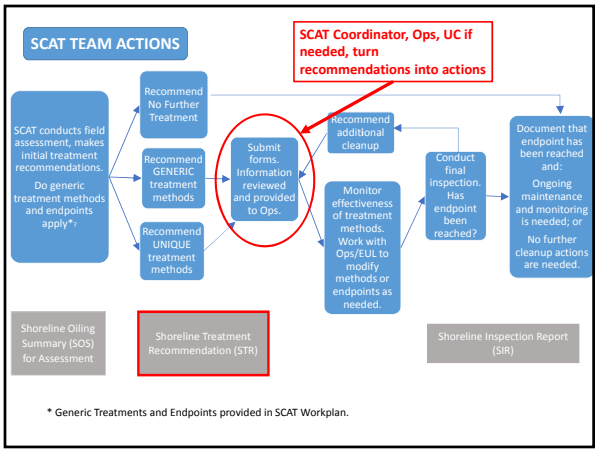
- Habitat isn't covered in general recommendations
- Habitat is flagged by resource trustees
- Significant access or safety issues

Blank Shoreline Treatment Recommendation Form


INCIDENT NAME:
Shoreline Treatment Recommendation
Operational Permit to Work
STR# ___
Oiled Areas for Treatment:
Cleanup Recommendations:
Staging and/or Logistics Constraints/Waste Issues:
Ecological Concerns:
Cultural / Historical Concerns:
Safety Concerns:

Key Components of STR

- Area for treatment
- Treatment Methods Recommended
- Staging and/or Logistical Constraints/Waste Issues
- Ecological Concerns
- Cultural/Historic Concerns
- Safety Concerns
- Signatures of SCAT Team Members

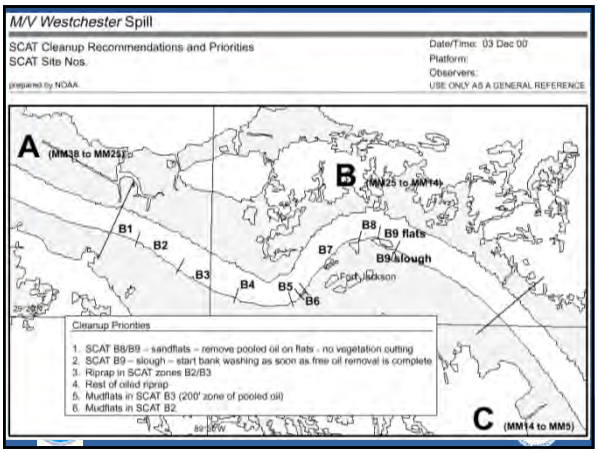


Generate Treatment Recommendations

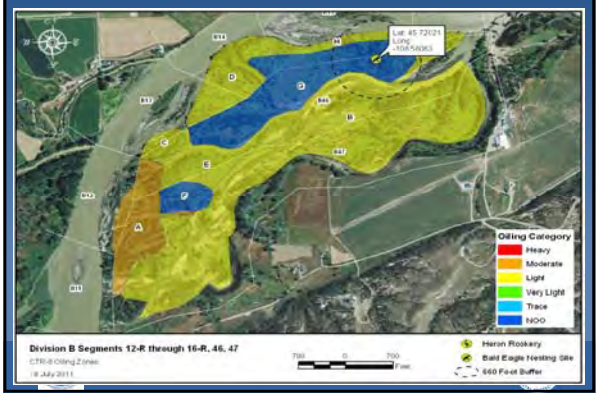
- Check for accuracy, completeness, legibility
- Data are entered and reports generated
- Generate shoreline treatment recommendations
- Generate maps and tables on shoreline oiling, treatment status, etc.
- Debrief Planning/Operations staff as needed on special issues, problems, recommendations

Products/Tools by Multi-Operational Period Incident Type

Products / Tools	Simple (CG Type 3)	Medium (CG Type 4)	Complex (CG Type 5)
Shoreline Treatment Recommend. / Priorities	Map showing segments and attached table with habitat-specific cleanup guidelines and endpoints; list priorities for cleanup	Printout of SCAT data and STR by segment/date; sort by new data, status, task force, etc.	Generate segment-specific STR from the SCAT database
Shoreline Operational Stage Map	Manual transfer of operational stage on computer-generated base map	Digitize operational stage on computer-generated base map and/or kmz file	Track operational stage in the SCAT database, to generate updated status maps using GIS
Shoreline Inspection Report	Typed list of sign-off status	Printout of updated spreadsheet list with sign-off status	Database/GIS tracking of sign-off status

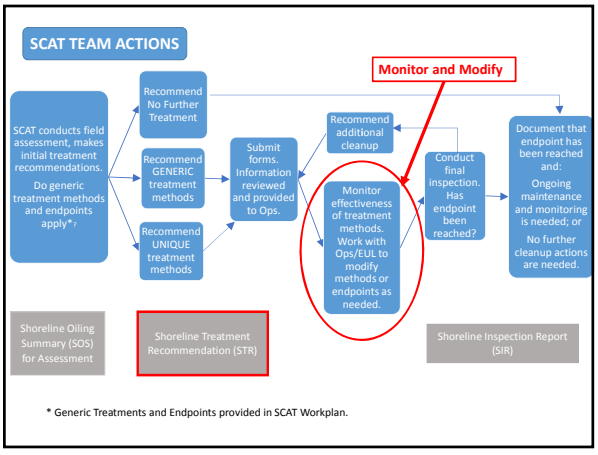


Shoreline Treatment Recommendation (STR)



- STR from Yellowstone?

Briefing the products



Assisting/monitoring treatment recommendations

I've watched, now what?

- You may be asked to:
  - Provide clarification directly to field crews
  - If methods/endpoints need to be tweaked, bring that info back to the command post
  - SCAT Coord/EUL/PSC will define your role
  - Avoid having Ops receive conflicting technical direction in the field.

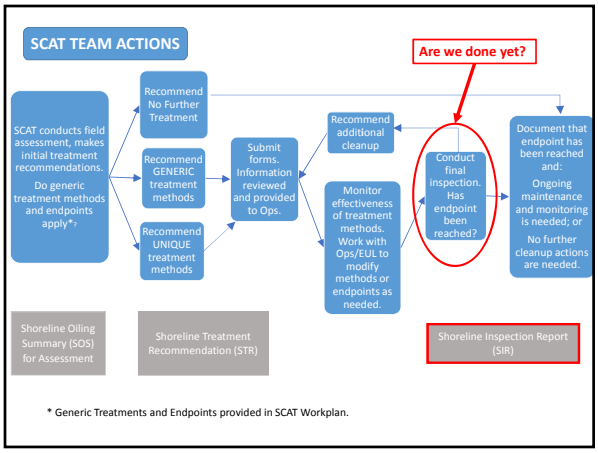
Sunoco Logistics Oak Glen Release

SCAT Treatment Recommendations – Zone 2 (Stream) **For March 31, 2014**

SCAT Leaders: SCAT Coordinator: Chris Prefer/Carolina EN TRX (302-598-1988); SCAT Ops Rep: Russell Howerton/WSKL (409-659-8430); SOSC Rep: Dale Farmer/OEPA (937-478-9177)

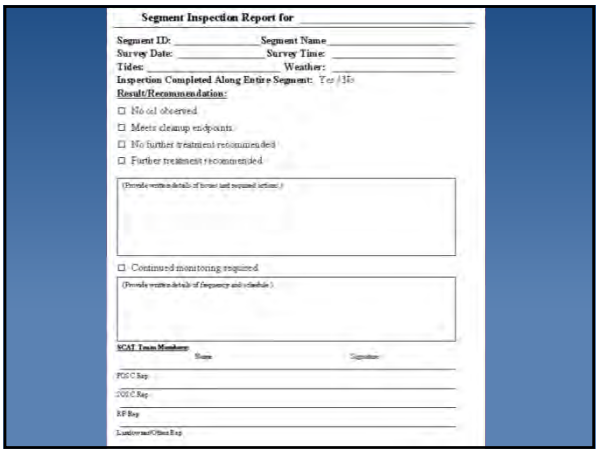
Segment	Recent Observations (3/30/14)	Treatment Recommendations
2A-01	• Lower flow • <6 discrete accumulations of concentrated oily debris. • Previous oiling under rocks reduced but still present. • <12 pockets of floating oil at ≤1ft² each (down from approx. 1m²).	• Prepare areas for thermal treatment and/or directed spraying. • Remove oily debris as encountered. • Resume flushing with 5-inch pump. • Mobilize pooled oil/oily debris into main flow to move downstream. • Flip rocks to expose oil on underside.
2A-02	• Lower flow • <6 discrete accumulations of concentrated oily debris. • Previous oiling under rocks not reassessed due to flow conditions • <12 pockets of floating oil at ≤1ft² each (down from approx. 1m²). • No significant interstitial oil discharge noted	• Prepare areas for thermal treatment and/or directed spraying. • Remove oily debris as encountered. • Resume flushing with 5-inch pump. • Mobilize pooled oil/oily debris into main flow to move downstream. • Flip rocks to expose oil on underside, focus on top layer.
2B-01 (Upper Island)	Left Descending Branch: • Lower flow • No significant oily debris. • Previous oiling under rocks reduced but still present. • <12 pockets of floating oil at ≤1ft² each (down from approx. 1m²). • Pooled oil and oiled debris upstream of snare fence. Right Descending Branch: • Pooled oil near interstitial oil discharge • Possible interstitial oil discharge and/or limit reap.	Left Descending Branch: • Prepare areas for thermal treatment and/or directed spraying. • Remove oily debris as encountered. • Resume flushing with 5-inch pump. • Mobilize pooled oil/oily debris into main flow to move downstream. • Flip rocks to expose oil on underside. Right Descending Branch: • Maintain sorbent collection of bank seep, and interstitial oil. • Remove oily debris/ removal as needed.
2B-02	• Lower flow • Floating oil at ≤1ft² each (down from approx. 1m²). • Previous oiling under rocks reduced but still present • Bathtub ring of oily debris.	• Prepare areas for thermal treatment and/or directed spraying. • Remove oily debris as encountered. • Resume flushing with 5-inch pump. • Mobilize pooled oil/oily debris into main flow to move downstream. • Splash booms to mobilize bathtub ring of oiled debris • Flip rocks as available to expose oil on underside (few rocks) • Sorbent recovery and/or flushing at subterranean oil discharge
2C-01 (Left Side Around Lower Island)	• Lower flow • Previous oiling under rocks reduced but still present • Moderate bathtub ring of oily debris. • <12 pockets of floating oil at ≤1ft² each (down from approx. 1m²).	• Prepare areas for thermal treatment and/or directed spraying. • Remove oily debris as encountered. • Resume flushing with 5-inch pump. • Mobilize pooled oil/oily debris into main flow to move downstream. • Splash booms to mobilize bathtub ring of oiled debris. • Flip rocks as available to expose oil on underside (few rocks). • Sorbent recovery and/or flushing at subterranean oil discharge.
2C-02 (Right Side Around Lower Island)	• Lower flow • Minimal presence of pooled oil and oily debris.	• No treatment needed prior to initiation of remedial phase.
2C-03 (Just up stream of Dam	• <12 pockets of floating oil at ≤1ft² each (down from approx. 1m²). • Reduced accumulated oil in hard boom above dam. • Accumulated oil fully contained. • Bathtub ring of oily debris.	• Prepare areas for thermal treatment and/or directed spraying. • Remove oily debris as encountered. • Flip accessible rocks. • Sorbent recovery and/or directed flushing of accumulated oil.

Field test of other treatment methods



Conduct Final Inspection

- Receive notification from Operations that a segment is ready for inspection
- Inspect segment against final cleanup endpoints
- Identify additional cleanup needed, using SCAT forms/sketches
- Recommend segment for final sign-off



Segment Inspection Report for _____

Segment ID: _____ **Segment Name** _____
Survey Date: _____ **Survey Time:** _____
Tides: _____ **Weather:** _____
Inspection Completed Along Entire Segment: Yes / No
Result/Recommendation:

- ☐ No oil observed.
- ☐ Meets cleanup endpoints.
- ☐ No further treatment recommended.
- ☐ Further treatment recommended.

(Provide written details of issues and required actions.)

☐ Continued monitoring required.

(Provide written details of frequency and schedule.)

SCAT Team Members: Name Signature

POSC Rep

SOSC Rep

RP Rep

Landowner/Other Rep

Meta Data and Result

Segment Inspection Report for _____

Segment ID: _____ **Segment Name** _____
Survey Date: _____ **Survey Time:** _____
Tides: _____ **Weather:** _____
Inspection Completed Along Entire Segment: Yes / No
Result/Recommendation:

- ☐ No oil observed.
- ☐ Meets cleanup endpoints.
- ☐ No further treatment recommended.
- ☐ Further treatment recommended.

Explanation if further action recommended

(Provide written details of issues and required actions.)

☐ Continued monitoring required.

(Provide written details of frequency and schedule.)

Signatures of all SCAT Team members

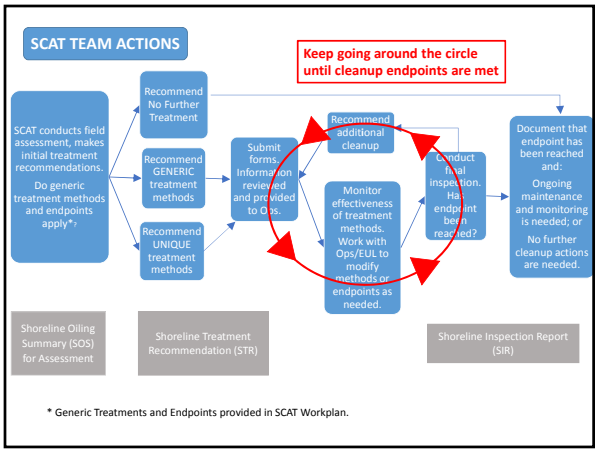
SCAT Team Members: Name Signature

POSC Rep

SOSC Rep

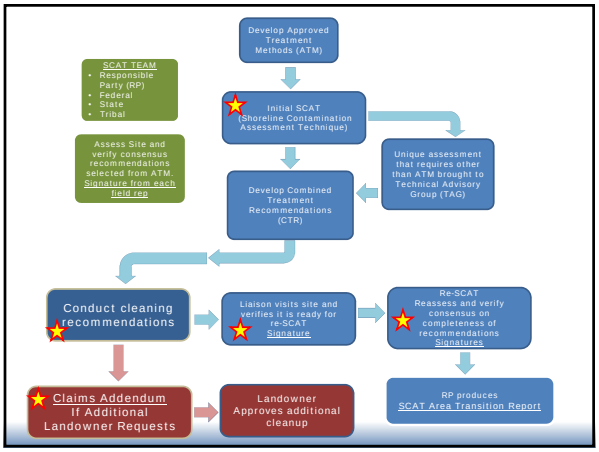
RP Rep

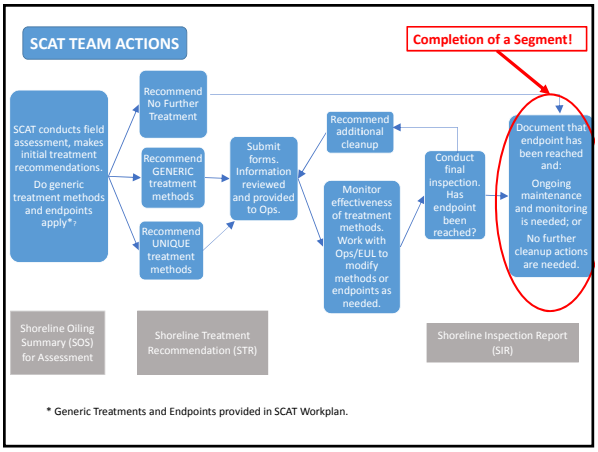
Landowner/Other Rep

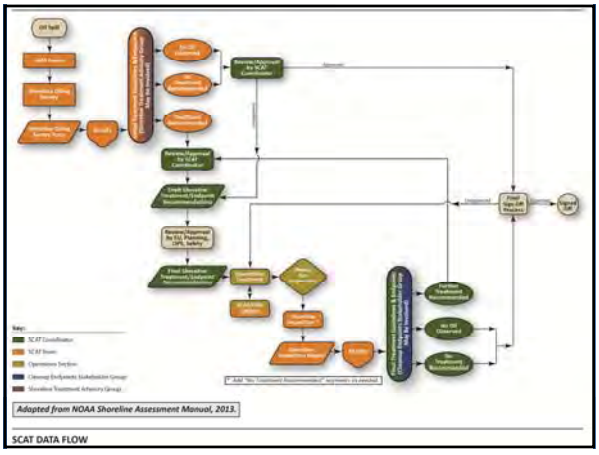


5. CLEANUP ENDPOINTS	REFER TO REVISED SHORELINE CLEANUP PLAN (28 Jan. 2007)
☐ Yes ☐ No	Floating or potentially mobile heavy oil present that is a substantial secondary pollution threat? If yes, describe:
☐ Yes ☐ No	Oily debris present that is a pollution risk and should be removed? If yes, describe:
☐ Yes ☐ No	Oil coat or stain present that is a substantial risk to the public or wildlife? If yes, describe:
☐ Yes ☐ No	Observed sheening at site that is a source of secondary pollution and a risk to wildlife? If yes, describe:
Other oiling conditions or observations:	

6. RECOMMENDATIONS	
☐ Yes ☐ No	Recommend Additional Active Cleanup (Stage 1). Comments:
☐ Yes ☐ No	Recommend continued maintenance of passive sorbent recovery for sheens (Stage 2). Comments:
☐ Yes ☐ No	Site meets the cleanup endpoints (Stage 3). Recommend natural recovery for residual pollution.
Attachments: Sketch/Map: Yes / No	Photos: Yes / No Additional Comments: Yes / No



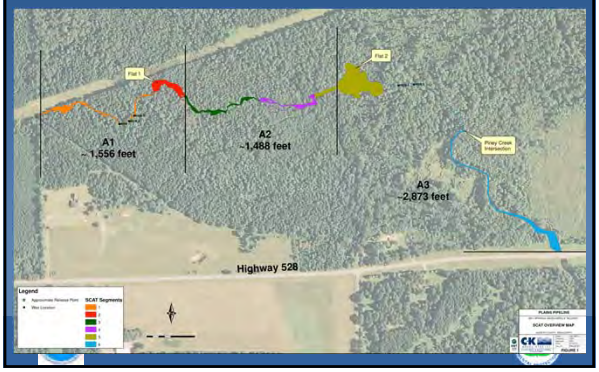




Beyond the Flowchart

How SCAT data provides intelligence to the entire response

SCAT/Ops Zones, Bay Springs-Heidelberg 8" spill, 2/2013



Barge *DM 932* spill in the Mississippi River, 2008

Shoreline Oiling Map

SCAT Field Maps and GIS

SCAT Annotated Field Sketch Map

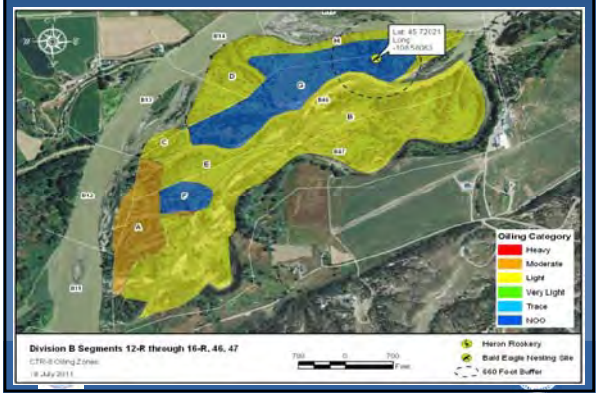
GIS Shoreline Current Oiling Layers

2-Step Process to Calculate Oiling Degree

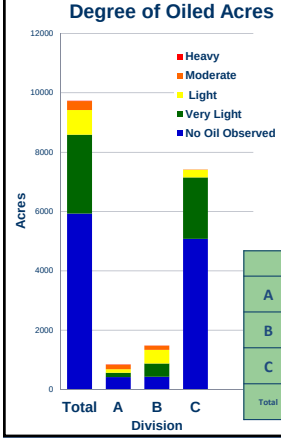
Oil Dist.	Across-shore Band Width: Wide >1.82m	Medium 0.91-1.82m	Narrow 0.30-0.91m	Very Narrow <0.30m
Continuous > 90%	Heavy	Heavy	Moderate	Light
Broken 51-90%	Heavy	Heavy	Moderate	Light
Patchy 11-50%	Moderate	Moderate	Light	Very Light
Sporadic 1-10%	Light	Light	Very Light	Very Light
Trace < 1%	Very Light	Very Light	Very Light	Very Light

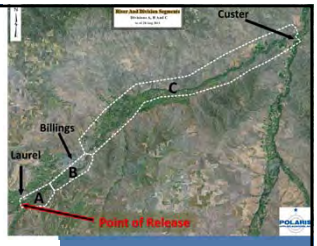
Average Oil Thickness	Initial Categorization: Heavy	Moderate	Light	Very Light
Thick/Pooled >1 cm	Heavy	Heavy	Moderate	Light
Cover 0.1-1.0 cm	Heavy	Heavy	Light	Light
Coat 0.01-0.1 cm	Moderate	Moderate	Light	Very Light
Stain/Film <0.01 cm	Light	Light	Very Light	Very Light

Shoreline Treatment Recommendation (STR)

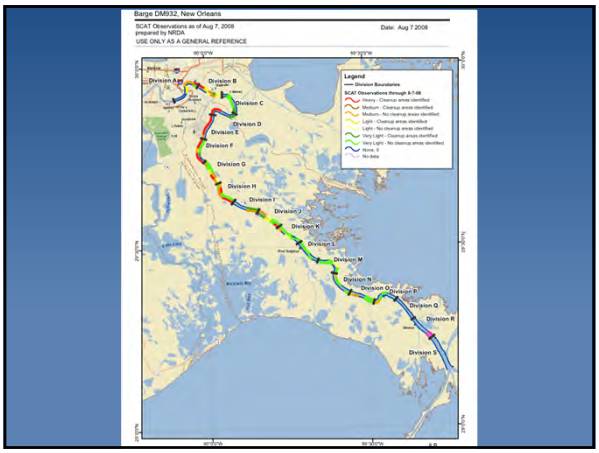


Degree of Oiled Acres



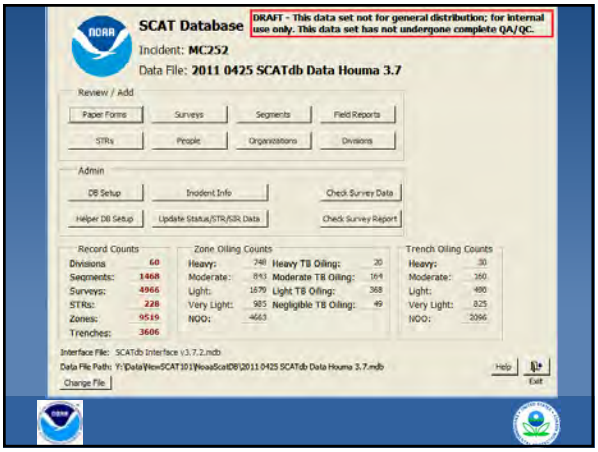


	No Oil Observed	Very Light	Light	Moderate	Heavy	Total Surveyed
A	419	144	118	154	10	845
B	432	444	463	137	1	1,476
C	5,081	2,069	253	9	0	7,412
Total	5,932	2,657	834	300	11	9,734

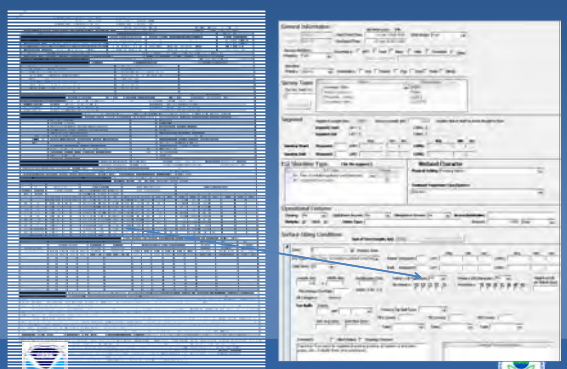


eSCAT

- Field computers for direct data capture:
  - GPS coordinates of start/end of segment
  - Waypoints for photos, pits, etc.
  - Digital photographs
  - Wireless connection for download
- Status:
  - Used during both Yellowstone and Enbridge spills

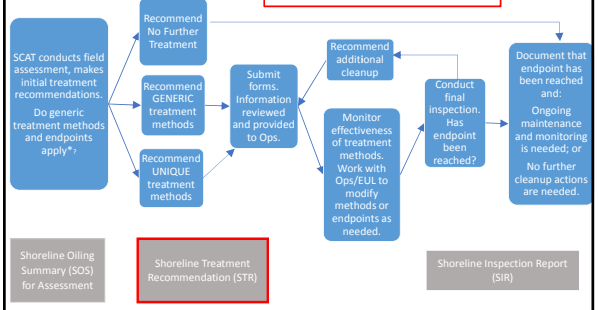


SCAT Field Data and Database



SCAT TEAM ACTIONS

QUESTIONS?



* Generic Treatments and Endpoints provided in SCAT Workplan.

Spill Response and Natural Resource Damage Assessment & Restoration

The (Very) Basics

What is Natural Resource Damage Assessment & Restoration (NRDAR)?

- Evaluates natural resources which may have been injured by hazardous substances or oil;
- Measures extent to which services provided by those resources have been affected;
- Determines the cost of restoring those resources and services (= damages); and
- Restores and/or replaces natural resources and their services.

Examples: Restored wetland habitat, parkland trails developed for public use, etc.

NRDAR is different from spill response and clean-up:

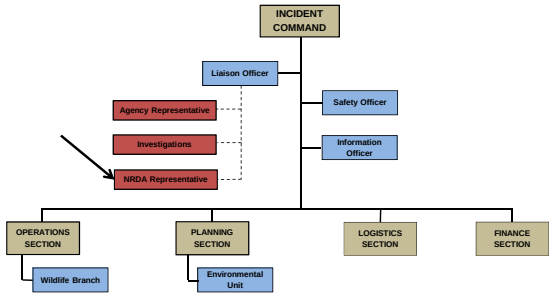
Response (Clean-Up) controls contaminant sources and/or removes pathways
("stops the harm")

NRDAR restores or replaces natural resources; *after* the response.
("fixes what's broke")

Natural Resources:
Land, Air, Water, Wildlife, Fish, Plants, Groundwater

Natural Resource Trustees:
States
Tribes
Federal Resource Management Agencies

Natural Resource Damage Assessment & Restoration and Spill Response ICS



NRDAR Authorities

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund")
  DOI Regulations 43 CFR 11
- Oil Pollution Act
  NOAA Regulations 15 CFR 990
- Clean Water Act

NRDAR References

http://www.doi.gov/restoration/index.cfm

http://www.epa.gov/superfund/programs/nrd/primer.htm

NRT-RRT Factsheet

Federal Natural Resource Trustees and ICS/UC NRT-RRT

Prepared by the National Response Team, Federal Natural Resource Trustees and the Incident Command System/Unified Command. August 1998.

Purpose: To facilitate implementation of the incident command system/unified command (ICS/UC) in managing response to oil discharges and hazardous substance releases under the National Oil and Hazardous Substances Pollution Contingency
Plan (NCP), this fact sheet describes:

· Which organizational units of an ICS/UC Federal natural resource trustees1 might work in during emergency response activities;

· Resources and assistance Federal trustees can provide during response and preparedness activities; and

· Where in ICS/UC the coordination link occurs between Federal trustee response and natural resource damage assessment (NRDA) activities.

Background: The National Response Team (NRT) has issued an Incident Command System/ Unified Command technical assistance document, Managing Response to Oil Discharges and Hazardous Substance Releases under the NCP. The technical document states, "although NRDA activities are not carried out under the direction of the Federal On-Scene Coordinator (FOSC), a means of coordination between the FOSC and the trustees needs to be established as part of pre-incident planning." This fact sheet provides information that should be useful in doing this pre-incident planning.

Natural resource trustees have responsibilities as natural resource managers to protect natural resources under their trusteeship. These same agencies have responsibilities as

natural resource trustees to assess damages to and ensure restoration of natural resources under their trusteeship.

Trustees Responsibilities in Preparedness and Emergency Response and Activities During Emergency Response

In preparedness and emergency response under the NCP, trustee representatives:

· Designate appropriate contacts in Area (ACPs) and Regional Contingency Plans (RCPs), and receive notification of discharges and releases.

· Provide technical and scientific assistance/information on natural resource issues in the preparation of ACPs and RCPs and during response activities.3

· For lands and resources under trustee agency control, identify special concerns and local agency contacts in ACPs and RCPs, and provide guidelines/concurrence to the OSC on appropriate response techniques and cleanup endpoints during response.

· Facilitate compliance with the consultation requirements of the Endangered Species Act (NOAA and DOI).

· Provide information from NRDA activities that might assist in response activities.

· NRDA responsibilities, on behalf of the public, of the trustees include:

· Determining whether a natural resource injury has occurred;

· Assessing damages for injury to, destruction of, or loss of natural resources for those resources under their trusteeship;

· Developing and implementing a plan for restoration of injured resources; and

· Obtaining compensation from the responsible party for these damages through negotiation or litigation.

In carrying out NRDA responsibilities during a response action, trustee representatives coordinate with the OSC by:

· Carrying out NRDA activities in a way that is complementary to and not in conflict with response operations.4

· Designating a lead administrative trustee to serve as the focal point for coordination between NRDA activities and response operations.5

· Providing data from NRDA activities that may support more effective operational decisions to the OSC in a timely manner. Such data can be useful to the OSC in making response decisions.

Federal land and resource managing agencies have statutory responsibilities to protect these lands and resources that may affect their actions and recommendations during an oil discharge or hazardous substance release. These laws may authorize them to take protective actions with or without OSC concurrence and to recover their costs from the responsible party. This is covered in the individual agency fact sheets in the appendix.

Trustee Participation in ICS/UC in Support of Response

Depending on the nature of the incident, trustee representatives, acting as natural resource or land managers, may participate in one or more ICS units.

Each trustee agency may have a different approach to participation in ICS. See agency appendices for more information.

Planning: Trustee representatives can provide information about sensitive resources and appropriate response techniques through this section. Planning is likely to be the most common location for trustee participation in the ICS.
Trustee representatives should participate and assist in activities affecting lands and resources under their jurisdiction. For example, trustee representatives may identify changes in protection priorities or response activities that could prevent or minimize adverse effects to natural resources.

Operations: Trustee representatives should participate and assist in implementation of wildlife response efforts. This is particularly important to ensure these efforts are in compliance with relevant laws. Trustee representatives should participate and assist in activities affecting lands and resources under their jurisdiction.

Command: For incidents with significant effect or the potential for significant effect on trust resources (e.g., critical habitat for threatened and endangered species), having a trustee representative in Command would help to ensure that information on these resources is available to and used appropriately in decision making. For incidents that threaten or affect Federal lands or resources, depending on the management agency and the laws it operates under, it may be advisable to have a representative from the affected agency as part of Command. This representative could provide guidance/concurrence on response and protection strategies commensurate with the special status of the affected or threatened lands or resources.

Logistics: When trustees have significant equipment and vehicle resources or facilities to contribute to the response, it may be useful to have trustee representatives in this section. This might be the case when a spill occurs on or threatens Federal land.

Finance/Administration: If there is significant trustee agency participation in the response, a trustee representative in this section could assist in supporting trustee personnel. This could involve dealing with time-record documents for personnel and equipment, handling cost estimates and records for trustee agency personnel, etc.

Activities in Emergency Response

Identify/Prioritize Resources at Risk: Trustees can supplement the OSC's information on sensitive resources found in the ACP. The trustees provide local expertise and up-to-date information relevant to the specifics of the incident.
Trustees also assist the OSC in priorities in the ACP for sensitive habitat and resources requiring protection.

Evaluate Protective Measures and Clean-up Strategies: Trustees can advise the OSC on determination of cleanup end-points (i.e., how clean is clean). For Federal lands or resources, the land/resource manager should have an integral role in determining the cleanup endpoint. Participate in Team Assessing Clean-up (Shoreline Clean-up Assessment Team SCAT in coastal areas): Trustees can provide resource experts to assist in assessment of clean-up activities. For Federal lands or resources, representatives of land/resources manager(s) should participate in clean-up assessment. Observations relevant to natural resource injury determination made by members of the clean-up assessment team should be provided to trustee representatives with NRDA responsibility.

Participate in Post Clean-up Inspection (Sign-off Team): Trustee participation on inspection teams at proposed completion of cleanup activities can assist the OSC in determining adequacy of cleanup. For Federal lands or resources, a representative of the land/resource manager should participate on the sign-off team.

Wildlife Rehabilitation: Trustee representatives participate through the ICS regarding appropriate response actions for injured wildlife. Trustee representatives ensure proper rehabilitation organizations are contacted and necessary permits have been obtained. They provide oversight to ensure wildlife response plans are implemented appropriately. Trustees also maintain chain of custody for wildlife that cannot be rehabilitated. Trustee representatives are responsible for development and implementation of wildlife release protocols.

Trustee NRDA Liaison with ICS/UC

NRDA Liaison with ICS/UC

Exchange of information between and coordination of natural resource damage assessment and response activities can be beneficial by preventing natural resource injury or losses, avoiding duplication of data-gathering, and allowing for efficient use of available personnel and equipment. Most NRDA activities occur outside of the ICS/UC. The appropriate place within the ICS for emergency response information exchange and

coordination to occur depends on the nature of the response and the trustees involved (see trustee agency appendices).

· The Planning Section is responsible for collection, evaluation, dissemination, and use of information about the incident, including information about natural resources. This is often a logical place for the liaison between trustee NRDA work and incident response. The trustee liaison is provided by the lead administrative trustee or other personnel designated to serve this function. The person within the Planning Section responsible for working with the lead administrative trustee may be the Scientific Support Coordinator or other personnel designated to serve this function. Because most of the NRDA activities are conducted outside the ICS/UC, it is extremely important for the person, within the Planning Section working with the lead administrative trustee, to communicate the NRDA operations to the unified command and response operations to the lead administrative trustee.

· The Command Staff may be the most appropriate place for liaison for incidents with significant natural resource injury concerns or where trustee concerns are not adequately addressed through the Planning Section.

Natural Resource Injury Determination Activities

Natural resource trustees determine if a NRDA is appropriate for a specific incident. Making this determination may or may not require data collection.

Injury documentation requires gathering information on spilled/released product pathways, documenting exposure to specific resources along those pathways, and quantification of injuries caused by the product. Direct or indirect exposure to the product may injure/disrupt natural resources and/or services provided by those resources.

Within the first 24-48 hours, trustee representatives usually focus their efforts on gathering and preserving perishable data. Water column data are generally collected as soon as possible. A source sample of the product with appropriate chain of custody is collected and archived for future characterizations.

Trustees, the RP, and the OSC need to collect similar physical, chemical, and biological data. They also need sample and laboratory protocols. Coordination of worker health and safety plans, work plans, protocols, and activities is advantageous to all parties and should be pursued. Where coordination cannot occur, trustees must ensure that injury determination activities do not interfere with response activities.

Emergency Restoration: During a response, trustee representatives may take emergency restoration actions that are feasible or necessary to minimize continuing or prevent additional injury. Emergency restoration activities initiated by trustee representatives should not interfere with the ongoing response. Trustee emergency restoration authority is exercised through NRDA emergency provisions of CERCLA and OPA.7 Each trustee

agency may have a different approach to emergency restoration. See agency appendices for more information.

Endnotes

1 Natural resource trustees are:

(a) FEDERAL OFFICIALS designated by the President:

· SECRETARIES OF INTERIOR, AGRICULTURE, DEFENSE, & ENERGY as land managing agencies, for natural resources located on, over, or under land administered by each agency.

· SECRETARIES OF COMMERCE AND INTERIOR for general categories of natural resources, including their supporting ecosystems.

(b) STATE OFFICIALS designated by the Governor.

(c) INDIAN OFFICIALS designated by the governing body of any Indian tribe.

(d) FOREIGN OFFICIALS designated by the head of any foreign government (for OPA releases only).

Federal and State Agencies and Indian Tribes may be co-trustees for the same natural resource.

Detailed information on natural resource trustees and emergency response may be found in a training module on the World Wide Web address:
http://www.doi.gov/oepc/response/a00.htm.

2 Information about individual natural resource trustee agencies is attached as appendices to this document.

3 The NCP requires the OSC to "coordinate all response activities with the affected natural resource trustees and, for discharges of oil. . . consult with the affected trustees on te appropriate removal action to be taken" [40 CFR 300.135(j)(2)]. The NCP also requires the OSC to consult with the Department of the Interior (DOI) and the National Oceanic and Atmospheric Administration (NOAA) before using chemical countermeasures in spill situations not covered by a preauthorization plan [40 CFR 300.910(b)].

4 40 CFR 300.615(c)(3)(ii)

5 40 CFR 300.3059e) and 300.615(c)(3)(ii)

6 40 CFR 400.305

7 15 CFR 990.26 and 43 CFR 11.21

Appendix A: Federal Natural Resource Trustees

Department of Commerce National Oceanic and Atmospheric Administration
Department of the Interior

TO BE ADDED:

Appendix B: State Natural Resource Trustees
Appendix C: Indian/Tribal Natural Resource Trustees
Appendix D: Foreign Officials Natural Resource Trustees

Best Viewed in Netscape 3.0 or Microsoft Internet Explorer 3.0. If technical difficulties have been encountered, please e-mail us. Last Modified: August 22, 2003.

Wisconsin Emergency Management – Emergency Services

Todd M. Nehls

Deputy Director
Emergency Police Services
Todd.nehls@wisconsin.gov
608-444-0003

Wisconsin Emergency Management – Emergency Services

- What do we do?
- How are we accessed?
- What do we bring?

Emergency Services

- Emergency Police Services – Todd Nehls
  - Coordinate state-wide mutual aid and EMAC
  - Deploy for both pre-planned and emerging events
  - Maintain deployable WEM Equipment
  - Aligned Law Enforcement Response Teams (ALERT)
- Emergency Fire Services – Keith Tveit
  - Coordinate state-wide mutual aid (MABAS) and EMAC
  - Deploy for both pre-planned and emerging events
  - Maintain deployable WEM Equipment
  - REACT Center

How are we accessed?

- Pre- Event (NASCAR, PGA, FTD, NGA)
  - Planning teams
  - Equipment request
- Direction of the Administrator
  - Situational Awareness
- Disasters (Floods, tornadoes)
  - WEM Duty Officer
  - State Sheriff or Fire Chief

Wisconsin Emergency Management specialized equipment:

- Mobile Communications Center (MCC)
- ACU 1000 Communications Trailer (Auxiliary)
- Self-erecting light tower
- Small portable tower
- Portable Radio Cache

Who can request:

- State Agency Representatives
- County or Tribal Emergency Management Directors
- County Sheriffs
- US Marshals
- Police Chiefs
- Fire Chiefs

MCC-Mobile Command Center

- 44 foot converted trailer - Self-Sustaining
- 5 Dispatch areas w/wireless work stations
- Communications/Planning area
- ACU1000 and ACU2000
- High Frequency, VHF-Lo, VHF-Hi, UHF, Aircraft, Marine, and 7/800MHz Radios
- All State, National, and Federal Interoperable frequencies
- Heating and Air Conditioning
- 20KW generator on board and Shore Power capable
- On board cellular bi-directional amplifier
- Cellular VTC available on request
- POTS, FAX, and Internet (via BGAN and/or cellular)
- On board wired and wireless Ethernet
- Telescoping video camera monitoring
- On board VHF Repeaters for MARC1 and VTAC36
- 40 foot Telescoping repeater antenna mast

80' Light/Repeater Mobile Tower

- Self-erecting mobile telecommunication and lighting tower trailer designed for rapid deployment.
- 80' maximum height
- 30 minute setup
- On board VHF Repeaters for MARC1 and WEM STWD
- On board ACU-M tied to both VHF Repeaters and a VHF WISCOM control station
- 18KW generator
- 6 High-Powered Halogen light bulb array
- 3 VHF antennas

EPS 22' Communications Trailer

Self-Sustaining
Dispatch area
Communications/Planning area
Limited Cooking Facilities
ACU1000
High Frequency, VHF-Lo, VHF-Hi, UHF, Aircraft, Marine, and 7/800MHz Radios
All State, National, and Federal Interoperable frequencies
Heating and Air Conditioning
5KW generator on board and Shore Power capable
On board cellular bi-directional amplifier
Cellular VTC available on request
POTS, FAX, and Internet (via BGAN and/or cellular)

Radio Cache at JFHQ

- 55 - VHF digital portables: WISCOM and conventional interop channels
- 20 - 7/800MHz digital portables: WISCOM, conventional, and ARMER interoperable channels
- 30 - UHF analog portables: UHF interoperable channels
- 20 - VHF analog portables: VHF interoperable channels
- Portable VHF analog Repeater and duplexers for 16 primary interop repeater channels
- Portable VHF analog Repeater and duplexer for VTAC36
- 2 - Portable UHF Repeaters for UHF interoperable channels
- Staff equipped with satellite telephones

QUESTIONS?

Response Considerations

The following factors should be considered:

- Fire and explosion potential of vapors at or near the spill site
- Personal and human life safety considerations (See safety considerations)
- Potential adverse effects of the oil
- Proper use of safety equipment
- Heat stress/stroke or hypothermia
- Small boat safety
- Management of volunteers

Speed is essential in recovery efforts:

- Oil spreads and drifts rapidly; containment and recovery will be more effective if carried out before oil spreads over wide areas.
- Evaporation rapidly increases oil viscosity.

Three-Tiered Response Consideration:

Although every spill is unique, the consideration of discharge volume, location, and possible impacts allows spill events to be categorized according to three tiers.

Tier 1: Accidental discharges occurring at or near a vessel or facility as a result of disruption in routine operations. Impacts are low and in-house response capability is adequate.

Tier 2: Medium-size spills occurring within the vicinity of vessel or facility as a consequence of a non-routine event. Significant impacts are possible and external (regional) support for adequate spill response, e.g., assistance from a local spill cleanup co-operative, is required.

Tier 3: Large spills occurring either near or remote from a vessel or facility as a result of a non-routine event, requiring substantial resources and support from national or worldwide spill co-operatives to mitigate effects perceived to be wide-reaching, i.e., spills of national significance.

Water Response

A boom is a floating physical barrier used to control the movement of oil. Boom is typically the first mechanical response equipment taken to a spill site. It is used to:

1) contain slicks for removal by skimmers or burning,
2) deflect or divert slicks towards a collection area or away from sensitive resources,
3) exclude slicks from selected areas and protect sensitive shorelines and amenities, and
4) ensnare oil by the addition of sorbent material.

Boom is manufactured in a wide variety of designs, sizes, and materials for different applications. Personnel responsible for selection and use of boom should:

• Understand the function of basic components and ancillary fittings common to most boom.

• Identify the boom in terms of its expected location of use, sea conditions, and spill response operation.

DIVERSION (FOR CONTAINMENT AND COLLECTION)

Booming in a Stream

The objective of stream booming is to remove oil from the fastest water and divert it to slower water. A stream can be boomed by deploying the boom either upstream or downstream. In either case, the boom is first set out on the stream bank. Before the boom is deployed, rig anchor points on the boom. The boom is attached to a shore anchor, and then the boom is either towed upstream to a midstream anchor point, or the boom is allowed to drift down-stream with the current. Once the boom is set, intermediate anchors are set as needed to ensure that the boom maintains the proper configuration (remembering that the current perpendicular to the boom should not exceed ¾ knot).

Water Response Continued

Current Calculations

Table 1 presents the time for floating debris to drift 100 feet. This is most accurately determined by placing two markers at a spacing 100 feet apart. Floating debris is then thrown into the water approximately 20 feet upstream of the first marker. Determine the time it takes the debris to transit the distance between the two markers in seconds. This assumes that the minimum escape velocity under a boom perpendicular to the current (90 degrees) is 0.7 knots. Table 1 also provides an estimate of the length of boom required for deflecting oil at a specified angle for a 100-foot profile (perpendicular width) to the current. It also provides an estimate of the number of anchors or shoreline tiebacks required for that length of boom assuming anchor points are required every 50 feet.

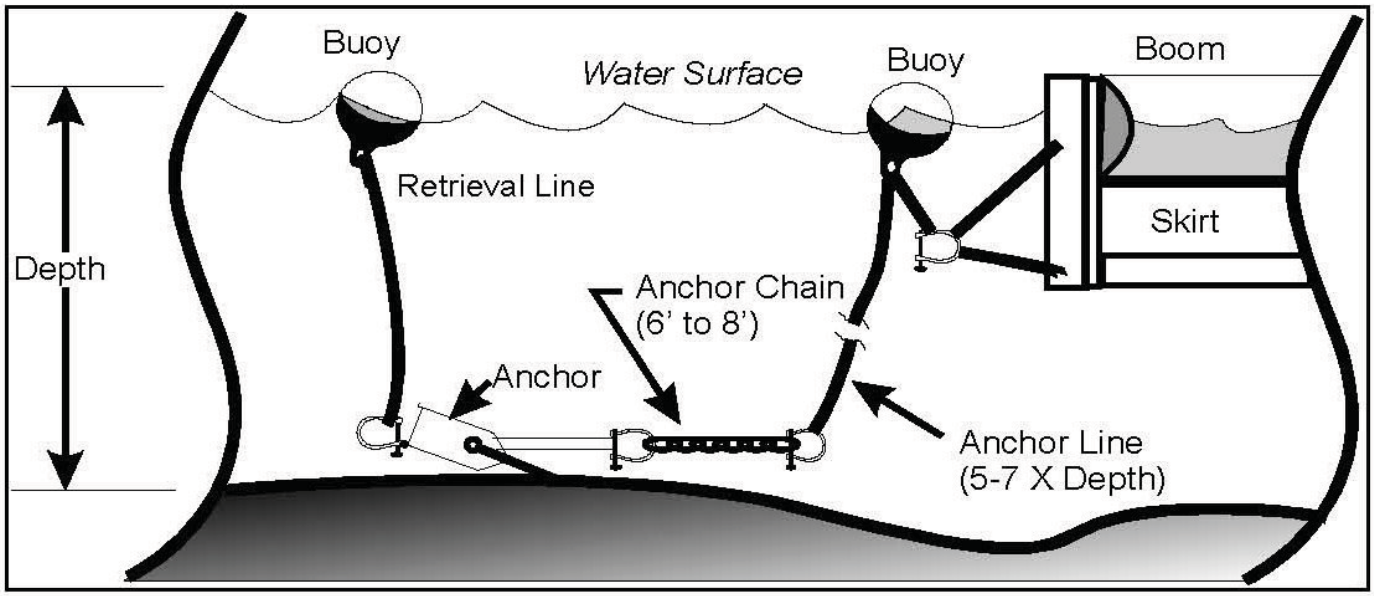
Time to Drift 100 Feet (seconds)	Velocity (ft/sec)	Velocity (m/sec)	Velocity (knots)	Max Boom Deflection Angle (degrees)	Boom Required for 100-foot Profile to Current (feet)	Anchors if Placed Every 50 feet (number)
6	16.7	5.1	10.00	4.0	1,429	30
8	12.5	3.8	7.50	5.4	1,071	22
10	10.0	3.1	6.00	6.7	857	18
12	8.3	2.5	5.00	8.0	714	15
14	7.1	2.2	4.29	9.4	612	13
17	5.9	1.8	3.53	11.4	504	11
20	5.0	1.5	3.00	13.5	429	10
24	4.2	1.3	2.50	16.3	357	8
30	3.3	1.0	2.00	20.5	286	7
40	2.5	0.8	1.50	27.8	214	5
60	1.7	0.5	1.00	44.4	143	4
>86	≤1.2	≤0.35	≤0.70	90.0	100	3

Water Response Continued

Anchoring

Anchor line (rode) tension should be held close to the bottom to ensure that the anchor holds properly. This is obtained by using the proper scope of line and the appropriate length and weight of chain. Approximately six to eight feet of chain should be attached to the anchor shaft to keep the anchor at the proper angle for digging in and setting properly. Rode should be at least five to ten times the depth of water in order to hold in swift currents, as shown in Figure 2. The mooring leg should provide a good horizontal restraint to the boom without pulling it down below the surface in swift currents.

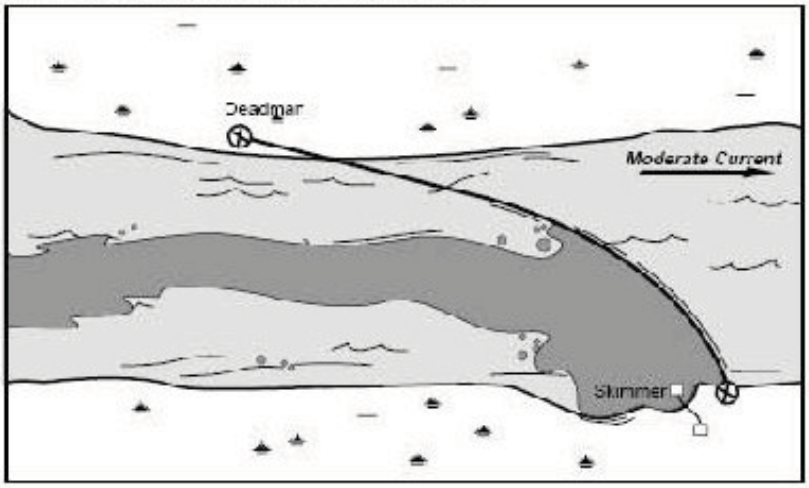
A buoy is used about 10 feet from the boom to help prevent downward tension. A buoy, can be attached to the leading edge of the boom if additional buoyancy is needed in swift currents. An anchor retrieval line is attached to the crown of the anchor (anchor trip) and has a separate buoy. This aids in positioning the anchor during deployment and breaking the anchor free for retrieval. Permanent anchoring systems should be designed to handle all conditions that may be encountered. Multiple anchors may be required for heavy current and ice conditions. When using multiple anchors, it is usually safer to deploy them separately, using the pull of the boat to ensure each is set.



Boom Sets

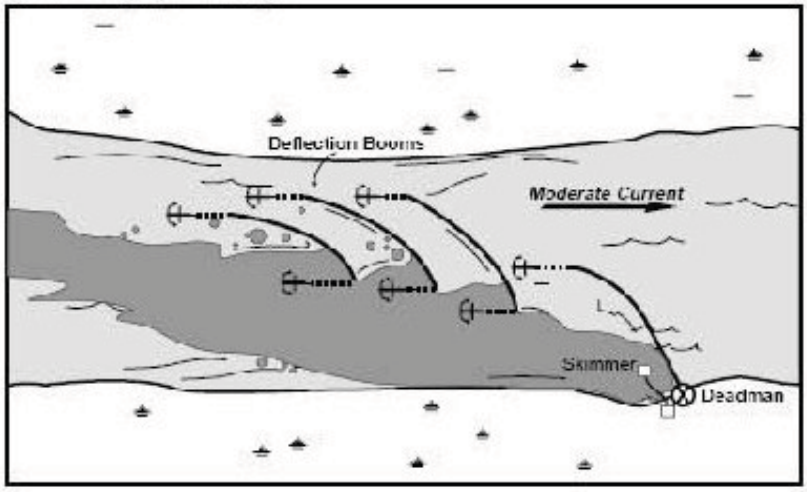
Diversionary (single boom): A boom is deployed from one bank at an angle to the current and anchored midstream or on the opposite bank for diverting the oil to an eddy or other quiet-water collection point on the shoreline. Alternatively, a single long boom can be used in a multichannel stream to divert oil so that it stays in one channel.

Deflection /Diversionary (Single Boom)



Diversionary (cascade): Several booms are deployed in a cascade fashion when a single boom can't be used because of a fast current or because it's necessary to leave openings for boats to get through. This configuration can be used in strong currents where it is impossible or difficult to deploy one long boom. Shorter sections of boom used in a cascade deployment are easier to handle in fast water. However, more equipment is needed than when a single boom is used.

Diversionary (Cascade)

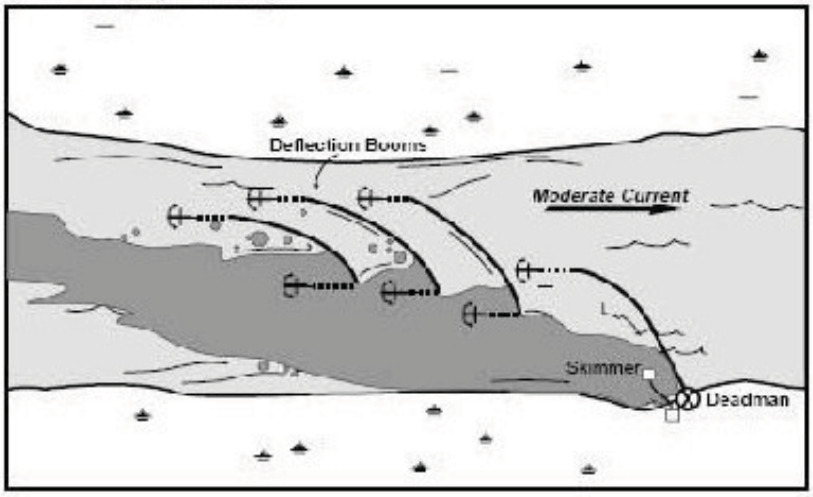


Boom Sets Continued

Booming in Open Water

Deflection booming is often used where the water current is greater than 1 knot or where exclusion boom does not protect the shoreline. Deflection booming diverts oil to locations that are less sensitive or more suitable for recovery. Boom is anchored at one end at the shoreline, while the free end is held at an angle by an anchor system. Deflection boom is deployed at an angle to the current to reduce and divert surface flow. This allows the oil to move along the boom and eliminates vortexes and entrainment. Anchoring is usually placed every 50 feet depending on the current. Anchoring distance will vary depending on current. Cascading deflection boom involves two or more lengths of boom ranging from 100 feet to 500 feet placed in a cascading formation in the water. The lead boom deflects the slick, and subsequent booms placed downstream of the lead boom continue the deflec- tion process until the slick is directed to the desired area.

Diversionary (Cascade)



Deployment Considerations and Limitations

The optimum angle of boom deployment depends on the current speed and the length and type of boom. The angle is smaller in strong currents than in weak currents and decreases as boom length increases. The more stable the boom is, the larger the optimum deployment angle is for a given current speed. Because deflection booms significantly reduce surface current, successive booms are deployed at increasingly larger angles.

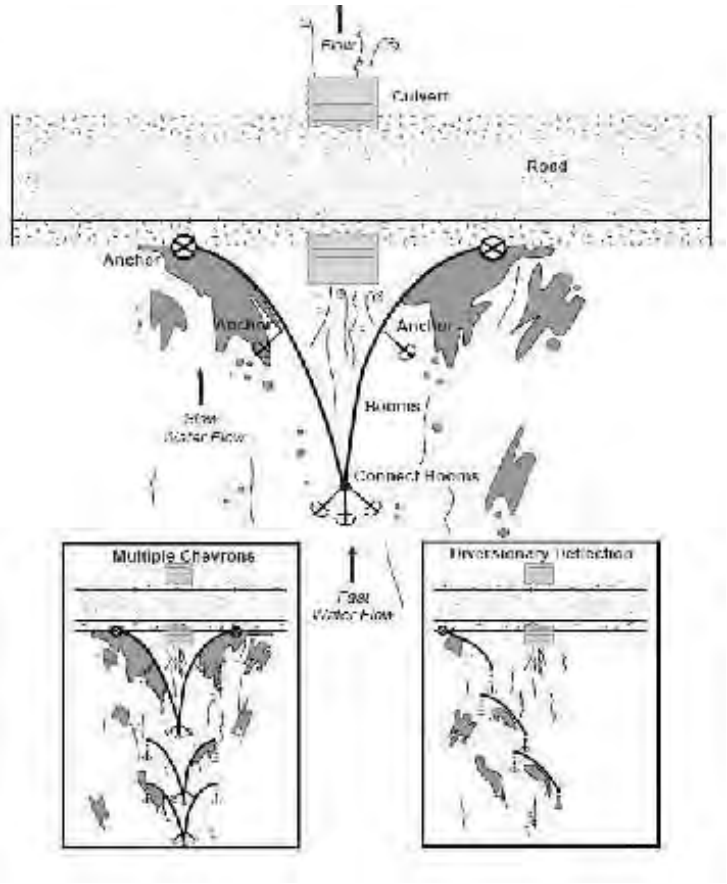
Don't assume 100% containment with one boom system

Readjust angles and widths between boom sections as current and wind change. Constantly monitor near-shore boom systems to prevent escape of oil.

Boom Sets Continued

Booming at a Culvert

In many spill response situations it may be necessary to prevent the oil from flowing into a culvert. Blocking the culvert introduces the risk of washing out the feature that is above the culvert, in most cases a road. Under these circumstances boom should be deployed in either a multiple chevron or a diversionary deflection configuration. This will deflect the oil from the mouth of the culvert and cause it to collect along the road.



Deployment Considerations and Limitations

- 8x6 Delta boom is most commonly used for this tactic
- The speed of the current perpendicular to the boom must be maintained at ¾ knot or less to prevent oil loss.
- The number and configuration of booms depend on flow rate and number of collection sites. With any boom system do not assume 100% containment with one system.
- An assortment of skimmers can be used alongside the roadway. When selecting a skimmer, consideration must be given to oil viscosity, available capacity, and volume of oil to be recovered.

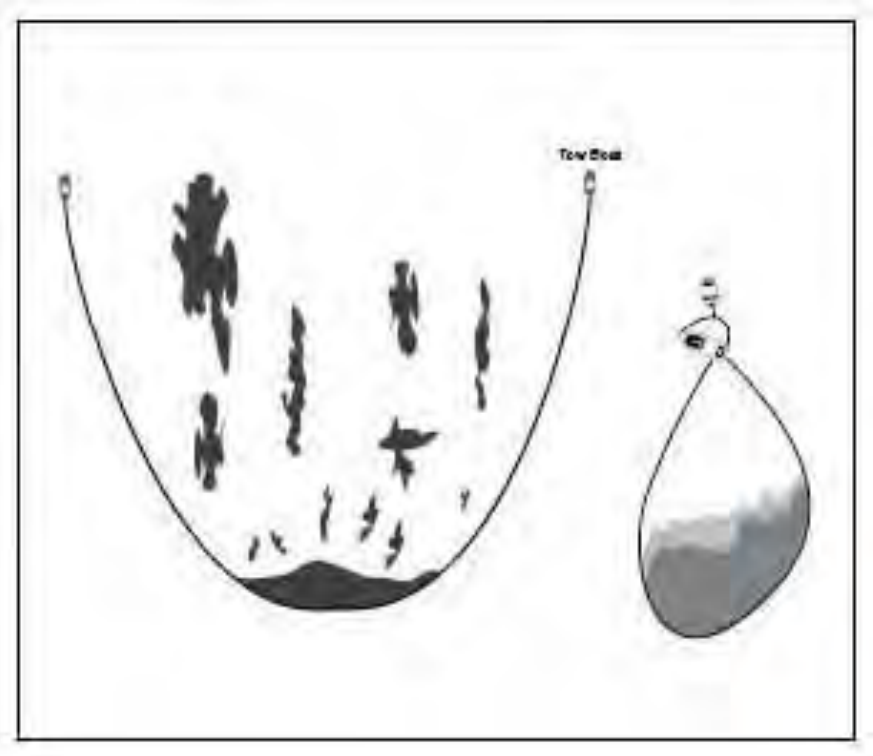
Boom Sets Continued

CONTAINMENT AND COLLECTION

Containment in Open Water

Exclusion and deflection tactics (also outlined in this appendix) are often used as part of the containment and collection strategies. Once contained, there are a variety of recovery tactics that can then be used to recover the oil. The type of containment tactic depends highly on the location of the spill, whether in water or on land, and the environmental conditions, whether there is snow or ice present.

In larger areas of open water two boats, as shown in the illustration, can tow containment booms of up to 1000 feet. This method can be used for temporary containment and/or transport of oil.



Water Response Continued

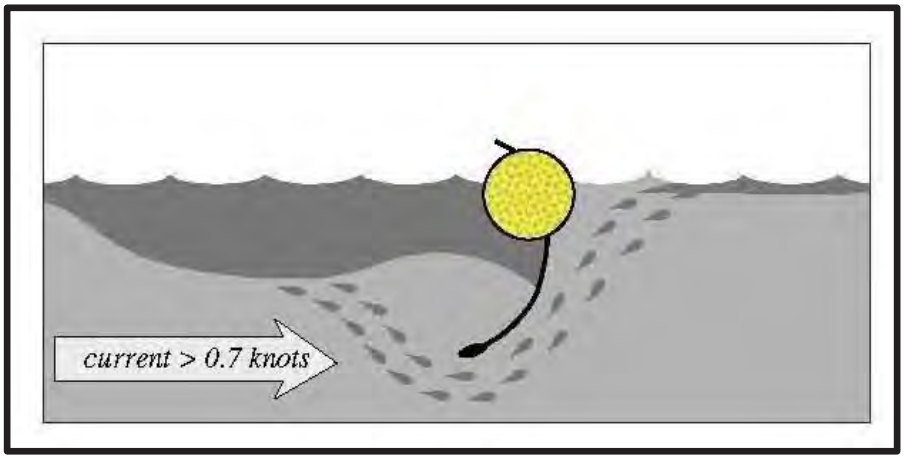
Boom Failure

There are five basic types of operational boom failure:

- Entrainment
- Drainage
- Splash-over
- Submergence
- Planing

Each type of failure is discussed below.

Entrainment Failure

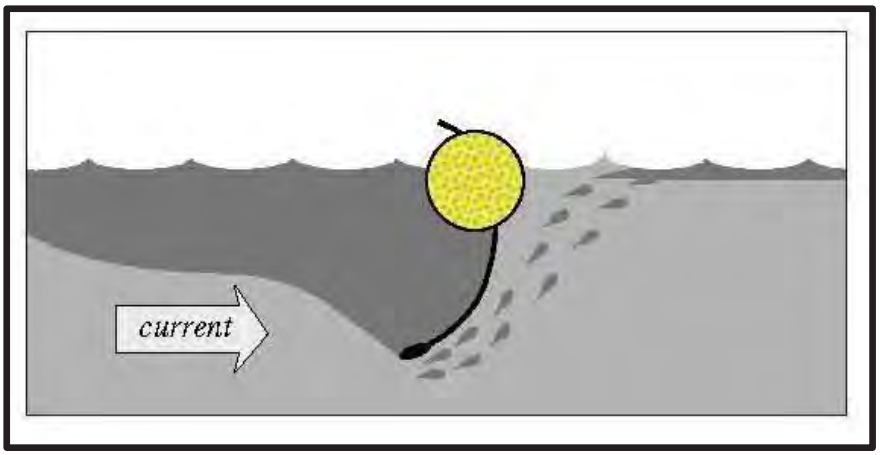


Entrainment failure generally occurs at current velocities between 0.7 and 1.0 kts. A head-wave forms upstream of a boom and turbulence occurs on the downstream side of a head-wave. This turbulence causes oil droplets to escape under a boom. The amount of oil lost during entrainment failure depends on the thickness of oil in a head-wave. The velocity at which a head-wave becomes unstable and oil droplets flow under a boom is called the critical velocity.

1 knot: 45-90° 2 knots: 20-30° 3 knots: 15-20° 4 knots: 10-15°

Water Response Continued

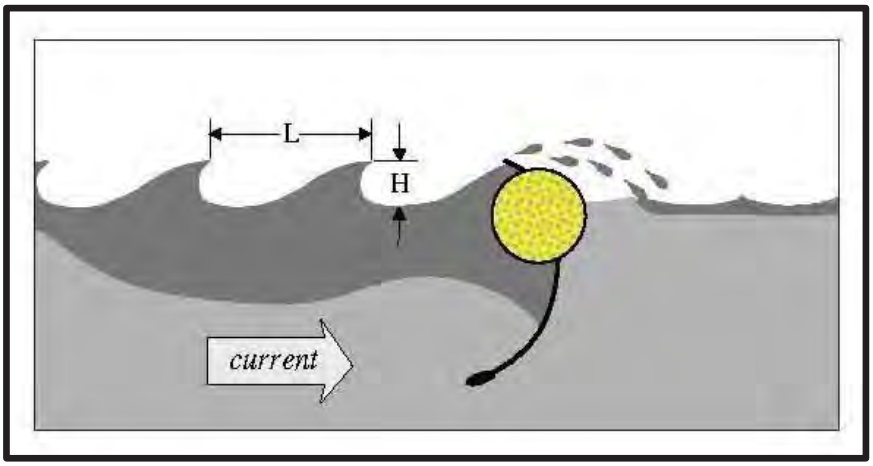
Drainage Failure:



Drainage failure rarely occurs. It can happen when a small boom is used to hold so much oil that oil flows down the face of the boom, escaping to the other side.

Increasing skirt depth is not usually a solution since it increases the potential for planing.

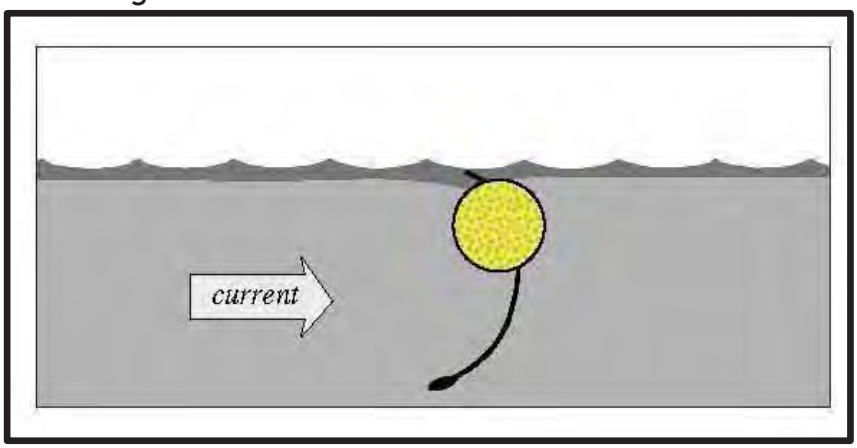
Splash-over Failure:



Splash-over failure may occur in choppy water when wave height is greater than boom freeboard and the wave length/height (L/H) ratio is less than 10:1. Most booms, however, perform well in gentle, rolling swells, even when the wave height is much larger than the freeboard.

Water Response Continued

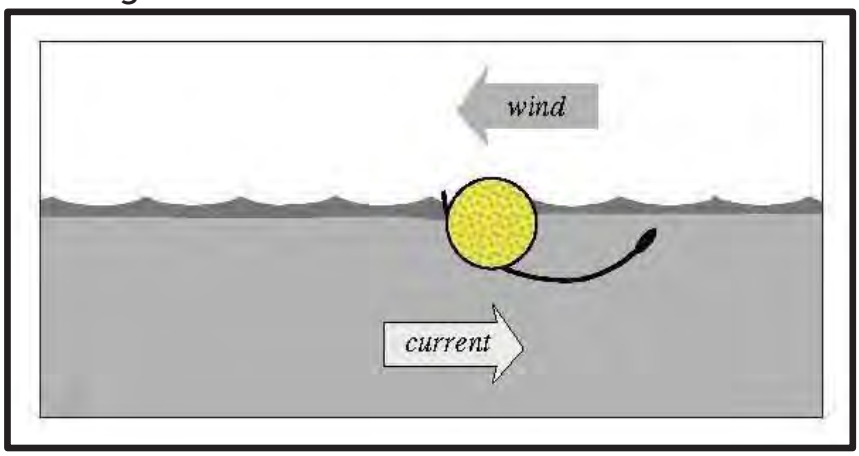
Submergence Failure:



Submergence failure may occur when a boom is deployed or anchored in a fast current or is being towed at a high velocity. The tendency for boom to submerge at a given velocity is determined by the boom's reserve buoyancy (the buoyancy in excess of that required to keep a boom afloat in still water). Higher reserve buoyancy reduces the tendency to submerge.

Submergence failure is not common because entrainment failure usually occurs at a much lower speed.

Planing Failure:



A strong wind and strong current moving in opposite directions may cause a boom to heel flat on the water surface. The resulting loss of oil is called planing failure. This failure is most likely to occur when a boom has inadequate ballast or when an internal tension member is near or above the waterline.

Oil spill response training

Upper Mississippi River / La Crosse area Oct. 2-4, 2014

As crude oil production has expanded in the Northern Plains, the number of trains carrying oil has increased on the major rail routes in the Upper Midwest and along the Upper Mississippi River corridor. Trains travel along and through hundreds of miles of wildlife refuges and sensitive natural areas, increasing the risk of potential environmental damage.

Concerns about spills and other accidents have led to greater scrutiny of train traffic and calls for more safety controls at state and federal levels.

For example, Minnesota amended its "Spill Bill" in 2014 to include specific requirements for any railroad operating a unit train, which is a train with more than 25 tankers carrying oil or other hazardous substances. One requirement is additional training for emergency responders along rail routes.

In response to these issues, the Upper Mississippi River Hazardous Spills Coordination Group is hosting rail spill response training Oct. 2-4, in the La Crosse, Wis. area. This training will help prepare emergency responders at all levels to quickly mitigate a large oil release on a sensitive natural resource area that is popular for recreation. This exercise will simulate response to a rail-based release of oil impacting the Mississippi River. The training will focus on the following key components of response:

- Unified command, which is a formal way of organizing several entities under one command structure;
- Boom deployment, which is placing equipment on the water to hold a substance such as oil in place to prevent spreading and to facilitate removal;
- Wildlife protection and oiled-wildlife capture and rehabilitation; and
- Communications.

Participants in the La Crosse exercise

A diverse partnership of public and private sector responders are participating in the training, involving nearly 100 individuals and several organizations. Some participating agencies have the important role of managing issues of potential loss of life, public hazard risks and personal property damage, while others focus on the welfare of wildlife and natural resources. Below are some of the participating partners.

Local partners

- Wisconsin cities of Campbell, La Crosse, Onalaska, and Shelby, Fire and Police Departments
- Wisconsin counties of Buffalo, La Crosse , Monroe, and Vernon

State agencies

- Iowa Dept. of Natural Resources
- Minnesota Dept. of Natural Resources
- Minnesota Homeland Security and Emergency Management
- Minnesota Pollution Control Agency
- Wisconsin Emergency Management
- Wisconsin Dept. of Natural Resources
- Wisconsin Dept. of Transportation

Federal agencies

- Civil Air Patrol
- Federal Railroad Administration
- National Weather Service
- U.S. Army Corps of Engineers
- U. S. Coast Guard
- U.S. Dept. of Agriculture
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

Private partners

- BNSF Railway and Canadian-Pacific Railway, including their technical and response contractors
- J.F. Brennan
- Midwest Fuels
- Xcel Energy

Mississippi River natural resources

This training will focus on a spill to the Goose Island Complex on the Wisconsin side of Pool 8 of the Upper Mississippi River. This complex is an area of unique ecological significance, featuring extensive backwater marshes and floodplain forests. This area also hosts large numbers of waterfowl during the fall migration. In addition, the largest campground in Wisconsin is here, and the area is a popular hunting and fishing destination.

In its entirety, the Mississippi River and its floodplain sustain a diverse population of living things, and is home to nationally and globally significant ecosystems, including:

- 260 species (at least) of fishes;
- 38 documented species of mussel;
- 50 species of mammals;
- 145 species (at least) of amphibians and reptiles; and
- 40 percent of the nation's migratory waterfowl and 60 percent of all North American birds use the river or its basin corridor during their spring and fall migrations.

The Upper Mississippi River also provides water for 23 public water systems serving nearly 3 million people.

About the Upper Mississippi River Hazardous Spills Coordination Group

The Upper Mississippi River Hazardous Spills Coordination Group (UMR Spills Group) is a working group of the Upper Mississippi River Basin Association (UMRBA). The UMR Spills Group membership includes five states and four federal agencies, focusing on the coordination of people and resources along the Mississippi to protect and be prepared for large spills and emergencies.

UMRBA is a regional interstate organization formed by the governors of Illinois, Iowa, Minnesota, Missouri and Wisconsin to coordinate the states' river-related programs and policies, and work with federal agencies that have river responsibilities. UMRBA is involved with programs related to commercial navigation, ecosystem restoration, water quality, aquatic nuisance species, hazardous spills, flood risk management, water supply, and other water resource issues. For more information, visit www.umrba.org.

NEWS RELEASE

DATE: Monday, Sept. 29, 2014

CONTACTS: Ed Culhane, Wisconsin DNR communications, 715-781-1683
Cathy Rofshus, Minnesota Pollution Control Agency, 507-206-2608
Tom Kendzierski, Wisconsin DNR spill coordinator, 715-839-1604
Larry Dean, U.S. Fish & Wildlife Service, 612-713-5312
Sgt. Randy Rank, La Crosse Police Department, 608-789-7240

SUBJECT: Emergency responders train for large oil spill

LA CROSSE – A coalition of federal, state and local emergency responders will conduct three days of training here this week to prepare for a large-scale train incident with crude oil spilling from tank cars into Mississippi river.

Training will begin Thursday at the Stoney Creek Hotel and Conference Center in Onalaska and will expand Friday and Saturday onto the Mississippi River, with equipment being launched at the La Crosse Municipal Boat Harbor.

On-water drills will include the placement of deflection booms designed to divert or contain an oil spill along with mock oiled-wildlife collection and rehabilitation efforts by natural resource managers. Officials are working with print, broadcast and online media to alert the public that this is an exercise and not a real emergency.

"The energy boom has brought a lot of crude oil in regular proximity to high value natural resources and refuge areas," said exercise director David Morrison of the Minnesota Pollution Control Agency. "One of our tasks as emergency responders is to prepare for the worst by practicing rapid containment and recovery, wildlife protection and habitat preservation."

Officials said the primary goal of responders to any train incident involving crude oil would be to protect human safety.

The training is organized by the Upper Mississippi River Hazardous Spills Coordination Group, a coalition of state and federal agencies with emergency response responsibilities, with support from local governments, private-sector partners, and the Upper Mississippi River Basin Association.

The training will focus on four functions – unified command, boom deployment, wildlife protection and rescue, and communications.

Unified command is a formal way of organizing several entities into a single incident command structure. Boom deployment refers to various methods of placing equipment on the water to hold a substance such as oil in place to prevent spreading and facilitate removal.

Wildlife protection includes the use of “hazing” to prevent birds from entering a dangerous environment and use of various techniques to rescue birds and animals affected by a spill.

Communications involves the rapid dissemination of information to the public in the event of an emergency.

Agencies conducting the drill include the Wisconsin Department of Natural Resources, the U.S. Environmental Protection Agency, the U.S. Fish & Wildlife Service, the U.S. Department of Agriculture Wildlife Services, several local fire and police departments, Wisconsin Emergency Management, county emergency managers, Minnesota officials, the Civil Air Patrol, and others. Representatives from BNSF Railway, Canadian Pacific Railway, and several private businesses will take part in the drill as well.

-30-

MEDIA ADVISORY

CONTACTS: Cathy Rofshus, Minnesota Pollution Control Agency, 507-206-2608
Ed Culhane, Wisconsin DNR, 715-781-1683

Editors/reporters:

Take a ride on the Mississippi River:

Observe / photograph spill response training close up

Editors / Reporters: RE: Mississippi River/LaCrosse spill response training

Outdoor News Conference at 1:30 p.m. Friday, Oct. 3

La Crosse Municipal Harbor Boat Landing

Featuring representatives from:

- Wisconsin Department of Natural Resources
- Minnesota Pollution Control Agency
- U.S. Fish & Wildlife Service
- La Crosse Police Department

MEDIA BOAT RIDES AVAILABLE!!

1:30 P.M. – FOLLOWING THE CONFERENCE, BOATS WILL BE AVAILABLE TO TAKE JOURNALISTS OUT ON THE RIVER TO OBSERVE AND PHOTOGRAPH SPILL EXERCISES IN THE AREA OF GREEN ISLAND.

Media Links

KSTP
http://kstp.com/article/stories/S3577917.shtml?cat=1

La Crosse Tribune
http://lacrossetribune.com/news/local/emergency-responders-prepare-for-mississippi-river-oil-spill-in-three/article_07380577-5b28-50b5-b527-f7932b53f148.html

http://lacrossetribune.com/news/state-and-regional/wi/emergency-responders-prepare-for-oil-spill/article_058a6174-9dd6-5a91-af2e-32c7c5669464.html

http://lacrossetribune.com/news/local/emergency-responders-prepare-for-real-world-disaster-in-mock-river/article_56280f3d-fad7-54ad-a480-e9fd37c7c0c5.html

Minnesota Public Radio
http://www.mprnews.org/story/2014/10/03/mississippi-river-states-prep-for-oil-spill

Wisconsin Public Radio
http://www.wpr.org/agencies-prepare-possible-rail-accidents-oil-spill-simulations-mississippi-river

http://www.wpr.org/emergency-responders-simulate-massive-oil-spill-mississippi

KSTP.COM — 5 EYEWITNESS NEWS

Emergency Responders Prepare for Oil Spill in Mississippi

Created: 10/02/2014 7:25 AM KSTP.com

Nearly 100 emergency responders are training this week on how to handle a large oil spill on the Mississippi River caused by a train derailment.

The training is a response to rapidly rising rail shipments of crude oil from North Dakota that pass by the Mississippi. North Dakota has more than doubled its oil production in the last two years to more than 1 million barrels a day.

Federal, state and local emergency responders gathering in the La Crosse area will practice deploying booms to contain a spill, learn how to deal with oil-covered wildlife and train in communication and organization.

David Morrison of the Minnesota Pollution Control Agency is directing the exercise. Morrison says the energy boom is bringing a lot of crude oil in regular proximity to natural resources and refuge areas.

Emergency responders prepare for Mississippi River oil spill in three-day exercise

9 HOURS AGO • BY CHRIS HUBBUCH

Nearly 100 emergency responders from federal, state and local agencies in three states will spend three days this week training for how to handle a large oil spill on the Mississippi River.

In field drills, crews will practice deploying booms to contain a spill, how to collect oil-covered wildlife as well as organization and communication.

Emergency crews took part in a “tabletop” exercise last summer, but this will be the first such functional exercise to be held in this area, said Dave Hokanson, water quality program director for the Upper Mississippi River Basin Association.

The training, which begins today, is a response to exponential growth of crude oil shipments by rail.

About seven unit trains pass through La Crosse County each day carrying up to 21 million gallons of volatile crude oil from the Bakken formation in South Dakota.

Minnesota recently updated its laws to require railroads to provide additional training for emergency responders along routes with oil train shipments.

While a train derailment could result in an explosion or other urban disaster, this exercise is focused on responding to an environmental disaster.

“Not that those aren’t important things,” Hokanson said. “But we wanted to see what would happen if we had product in the water.”

Organizers chose La Crosse for its location on the Upper Mississippi National Fish and Wildlife Refuge. Hokanson said the combination of moving water, backwaters and floodplain forest — as well as sizable populations of migrating waterfowl — give the area ecological significance and provide responders a variety of challenges.

“We want to test our ability to form a unified command, test our ability to deploy boom on the water, evaluate impacts to wildlife and habitat, and test communications,” Hokanson said.

The event is organized by the Upper Mississippi River Hazardous Spills Coordination Group, a coalition of state and federal agencies, with support from local government and private sector partners, including Canadian Pacific and BNSF railroads, the two carriers moving crude oil down either side of the Mississippi River.

LaCrosseTribune.com

Emergency responders prepare for oil spill

OCTOBER 02, 2014 7:28 AM

ONALASKA, Wis. (AP) — Nearly 100 emergency responders are training this week for the possibility of a large oil spill on the Mississippi River caused by a train derailment.

The training is a response to rapidly rising rail shipments of crude oil from North Dakota that pass by the Mississippi. North Dakota has more than doubled its oil production in the last two years to more than 1 million barrels a day.

Federal, state and local emergency responders gathering in the La Crosse area will practice deploying booms to contain a spill, learn how to deal with oil-covered wildlife and train in communication and organization.

David Morrison of the Minnesota Pollution Control Agency is directing the exercise. Morrison says the energy boom is bringing a lot of crude oil in regular proximity to natural resources and refuge areas.

LaCrosseTribune.com

Emergency responders prepare for real-world disaster in mock river spill

OCTOBER 04, 2014 12:00 AM • BY CHRIS HUBBUCH

The situation was artificial but nevertheless plausible: a southbound train derailed in the night, spilling 150,000 gallons of volatile crude oil into the Mississippi River backwaters off Goose Island.

Dozens of emergency responders from federal, state and local agencies — as well as the private sector — from three states convened in La Crosse on Friday to respond to the mock disaster in a drill designed to test their ability to contain and clean a spill, collect oil-covered wildlife and coordinate among each other in a chaotic situation.

The exercise, which included a day and a half of training, is a response to exponential growth of crude oil shipments by rail.

Recent derailments, notably the oil train that derailed and exploded in Lac-Mégantic, Canada, killing 47 people in 2013, have focused attention on the danger to life and property as this volatile fuel passes through population centers on its trip from South Dakota's Bakken shale formation to refineries along the East and Gulf coasts.

But this drill simulated an environmental disaster in which thousands of gallons of toxic oil is released into the Upper Mississippi River National Fish and Wildlife Refuge, one of the nation's largest, most ecologically diverse natural resources.

Spanning four states, the 240,000-acre refuge is home to 119 species of fish, 51 mammals, dozens of mollusks and more than 300 species of birds. Up to half the world's population of canvasback ducks stop in the refuge each year during their fall migration, while 3.5 million human visitors use it for hunting, fishing and recreation, injecting an estimated $226 million into the local economies.

And two railways — on either side of the river — run the entire 261-mile length, carrying about 45 trains a week each filled with up to 3 million gallons of oil, according to industry records filed with state emergency officials.

Fake disaster, real weather

Battling stiff winds, firefighters deployed floating booms to keep the mock oil out of Target Lake and surrounding wetlands.

The original scenario described a spill off Goose Island, but the actual location was not important, said Jim Stockinger, an emergency response specialist with the Minnesota Pollution

Control Agency.

“It’s the skills of reading the river, what the water’s trying to do,” he said.

Most important, participants said, was the chance to meet those from other agencies and learn what roles they play and what resources they bring.

“You don’t know all the players,” Stockinger said. “To me that’s the value of these drills.”

As firefighters and pollution specialists worked to contain the spill, wildlife officials practiced reconnaissance.

In the event of a real disaster, they would need to assess the level of damage to wildlife and find ways to contain and collect them while keeping healthy critters away.

In addition to rehabilitation facilities, they would also need to set up “a pretty big morgue,” said Dave Warburton, of the U.S. Fish and Wildlife Service.

The Bakken crude being transported through the Upper Mississippi River corridor is heavier, said Cathy Rofshus of the Minnesota Pollution Control Agency, which makes it harder to remove from water and wildlife.

While the disaster was artificial, the weather was very real.

The plan was to direct the “spill” into the municipal marina for collection, but wind gusts over 30 mph made it difficult to keep the booms in place, so the crews pulled out of the water early.

That was a luxury, but responders can still learn from the experience, said La Crosse Fire Chief Gregg Cleveland.

“Today was a typical day,” he said. “That oil’s not going to stop just because the weather conditions aren’t conducive.”

Responders had access to a battery of equipment trucked in from across the country.

The BNSF railroad brought a trailer packed with 1,000 feet of floating boom for containing a spill, a skimmer for collecting oil and absorbent materials.

The USDA had air-fired nets for capturing oil-coated birds and a variety of devices — from a coyote decoy to pyrotechnics — for scaring off clean ones.

Wisconsin Emergency Management sent an $800,000 communications trailer packed with radios, phones and computers to allow dispatchers to coordinate agencies that might otherwise not be able to talk to one another.

“I believe the resources are available to us,” Stockinger said. “The question is how quickly we can get the equipment to where we need it.”

What’s in place now may not be sufficient.

The city has about 800 feet of usable boom, said Capt. Jeff Schott, head of the La Crosse Fire Department’s hazmat squad. But the long skirts make them unwieldy in moving water.

“The first response capability is critical,” Cleveland said. “What we do in the first hour to three hours is critical.”

The nearest BNSF spill trailer, which carries 1,000 feet of boom along with a skimmer and absorbent materials, is a good three hours away in the Twin Cities. But BNSF has offered to station two — along with a fire trailer — in La Crosse.

While the trailers were offered as part of negotiations to put a second set of tracks through the city, BNSF spokeswoman Amy McBeth said they will likely be in place next year.

“Regardless of that project we would want to have that equipment here,” she said.

But Schott cautioned that with a spill of the size prescribed in Friday’s drill, responders would need all the equipment from Minneapolis to the Quad Cities, and the cleanup would take months.

And a spill doesn’t have to be massive to cause extensive damage, Stockinger said.

“It’s not so much the volume to me as the resource,” he said. “A thousand gallons can do as much damage as a million gallons in the right place.”

The U.S. Department of Transportation is in the process of drafting new rules covering the shipment of hazardous materials by rail — including reduced speed limits and higher standards for the tank cars used to ship Bakken crude oil.

But some lawmakers worry those rules don’t go far enough.

In a recent letter, Rep. Ron Kind and Sen. Tammy Baldwin urged Secretary of Transportation Anthony Foxx to go further, asking for: stabilization of crude oil before transport, a quicker phase out of the old tank cars, stricter braking and speed regulations and increased transparency about what is being shipped.

The 0.003 percent

Railroads actually have a strong record for handling hazardous materials, with 99.997 percent of the approximately 1.7 million carloads of hazmat reaching their destination without release caused by an accident, according to the Association of American Railroads.

But Stockinger says disasters are inevitable, and his job is to prepare.

“As an emergency responder, I only care about the 0.003 percent,” Stockinger said. “It’s not a matter of if: It’s a matter of when; it’s a matter of where.”

Mississippi River states prepare for an oil spill -- not if, but when

Elizabeth Baier · La Crosse, Wis. · Oct 3, 2014 Environment

Emergency responders attempt to bring in an oil containment boom on the Mississippi River Friday. *Alex Kolyer / For MPR News*

LISTEN **Story audio**

4min 13sec (http://www.mprnews.org/listen/?name=/minnesota/news/features/2014/10/03/msriver_oil_prep_20141003)

If a train derailed near the Mississippi River between Wisconsin and Minnesota, spilling some 150,000 gallons of crude oil into the water, it would be a disaster of immense proportions.

A spill of such magnitude would require a huge response, one that would involve equipment and people from the federal government and agencies in three different states — Wisconsin, Minnesota and Iowa — La Crosse Fire Captain Jeff Schott said.

• **Topic:** Environment (http://mprnews.org/environment)

"That would be private, all public entities, all the way up from Minneapolis, all the way down to the Quad Cities," he said. "You're talking months. So we would have to be diligent about making those contacts and getting them all here. La Crosse would be a busy place for a while."

Emergency responders attempt to bring in an oil containment boom on the waters of the Mississippi River Friday in La Crosse, Wis. *Alex Kolyer / For MPR News*

With that in mind, for the first time nearly 100 federal, state and local emergency responders are training this week on how to handle such a spill, a response to the rapidly growing rail shipments of crude oil from North Dakota that pass by the Mississippi.

In February, a Canadian Pacific train spilled about 12,000 gallons of crude oil along 70 miles of track between Red Wing and Winona. The Minnesota Pollution Control Agency required the company to clean up portions of the spill where puddles of oil accumulated, even though the oil did not seep into the river.

During a drill on Friday, crews fought wind and waves to pull a 300-foot boom away from Target Lake. The lake is within the Upper Mississippi River National Wildlife and Fish Refuge near La Crosse. Workers had set up the giant rope-like structure hours earlier as part of the simulated oil spill.

Heidi Young and Eric Bankes help pull in an oil containment boom outside La Crosse, Wis. A coalition of federal, state and local emergency responders conducted training to prepare for a large-scale oil on the Mississippi River Friday. *Alex Kolyer / For MPR News*

"We have this whole bunch of backwater area between Minnesota and Wisconsin here," said Jim Stockinger, an emergency response specialist for the MPCA, as he considered what would happen in a real oil spill. "We're trying to keep oil out of these back water areas 'cause they're incredible habitat areas for various birds and fish and all kinds of wildlife and getting oil into there would be tremendously hard to clean up."

The agencies chose the riverfront site to practice responding to an oil spill because of its ecology of backwater marshes and floodplain forests. The area is also home to flocks of migratory birds, and is a popular hunting and fishing area.

Concerns about spills and other accidents have led to greater scrutiny of train traffic and calls for more action on the part of state and federal officials.

Stockinger said the training marks the first time so many agencies and railroad companies have come together to practice deploying booms, learning how to clean oil-covered wildlife and training in communication and organization — techniques that they likely will need to use some day.

Paul Wolf, of USDA Wildlife Services, demonstrates the use of a net gun on decoy geese Friday during a drill in La Crosse, Wis. The nets could be used to capture wildlife, if necessary, in an emergency response situation. *Alex Kolyer / For MPR News*

"It's not a matter of if, it's a matter of when and it's a matter of where," he said. "Railroads have a tremendous safety record. They'll tell you 99.997 percent of their cargo gets to its destination without incident. And that's a number I think we can all believe and be confident in. But as an emergency responder in this field, I only care about the 0.003 percent."

If there, those who direct the cleanup will have to ensure that all of the responders work together, said Lisa Olson-McDonald, west central regional director for Wisconsin Emergency Management.

"It might not be one head person, but there will be one person from police, one person from fire, one person from fish and wildlife," she said. "And they'll get together in this unified command."

On Friday, crews found moving equipment to the site of a spill proved more challenging than they thought.

An emergency responder helps maneuver an oil containment boom from shore during practice drills on the Mississippi River Friday in La Crosse, Wis. *Alex Kolyer / For MPR News*

If there were a spill involving BNSF Railway, the company would deploy its own equipment and contractors to help with clean up, said Amy McBeth its director of public affairs.

"We're working with the La Crosse fire department on ... an agreement to stage additional equipment here," she said. "That's in the works and we're hopeful that we'll get that agreement soon and that would include a fire trailer and two spill trailers."

Broadcast dates

MPR News Update
10:36 PM · Oct 5, 2014

About the author

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Elizabeth Baier, based in Rochester, covers news in southeastern Minnesota for MPR News.

Published on *Wisconsin Public Radio* (http://www.wpr.org)

Agencies Prepare For Possible Rail Accidents With Oil Spill Simulations On Mississippi River

25 Federal, Local, State Agencies Will Participate In 3-Day Exercise
By Maureen McCollum
Updated:
Thursday, October 2, 2014, 1:40pm

Amid increasing concerns about an increase in trains carrying highly volatile oil through Wisconsin, emergency responders will hold a three-day exercise to prepare for the possibility of oil tanker accidents along the Mississippi River.

For the next few days, 25 local, state, and federal agencies will take part in a series of simulated oil spills on the water, working together to make sure people that people are safe, cleanup is fast, and that natural resources are protected.

Dave Hokanson, the water quality program director for the Upper Mississippi River Basin Association, said the drills will give officials a chance to practice deploying different strategies for containing and removing oil from the river. He said that it will also give them a chance to try out those strategies both on “the faster moving main channel, as well in the slower water or marshy areas.”

While police may focus on making sure people are safe, the U.S. Fish and Wildlife Service will work to protect natural resources and wildlife. Spokesman Larry Dean said they'll be practicing different scenarios to prepare staff for an accident in the biologically sensitive Upper Mississippi River National Wildlife and Fish Refuge.

"For example, in an oil spill there might be oiled birds that we would have to tend to, or distract … so they don't walk into an oiled area," said Dean.

Published on *Wisconsin Public Radio* (http://www.wpr.org)

Emergency Responders Simulate Massive Oil Spill On Mississippi

25 Agencies Walk Through Mock-Evacuation Of Residents, Animals
By Maureen McCollum
Updated:
Saturday, October 4, 2014, 1:05pm

Emergency responders from 25 local, state, and federal agencies simulated an oil spill on the Mississippi River on Friday as part of an exercise to prepare for potential rail accidents, as the number of trains carrying volatile crude oil through the region increases.

In the exercise scenario, a train derailed on the south side of La Crosse, spilling 150,000 gallons of Bakken oil. Hundreds of people live nearby, so emergency responders had to figure out what it would take to evacuate them. They also hypothetically rescued 2,000 canvasback ducks migrating through the region.

Paul Wolf, a wildlife biologist with the U.S. Department of Agriculture's Wildlife Services Program in Minnesota, said a number of devices would be used to rescue wildlife, including a net gun.

“If we get in an area where the animals are just staying out of reach and we can’t get up close enough to them with a landing net, we use this. It’s operated just like a firearm,” he said.

During the exercise, emergency responders also deployed booms on the river to contain an imaginary oil spill.

La Crosse firefighter and hazardous materials team member Jeff Schott said local responders do not have the resources to respond to this type of accident alone.

“A spill this magnitude, we’d have to pool all the resources collectively from the three states. That would be private, all public entities, all the way up from Minneapolis all the way down to the Quad Cities.

Schott also said that a spill similar to the one simulated as part of the drill would be take a long time to clean up.

“You’d see this going well past 24-hour operational period. You’re talking months. La Crosse would be a busy place for a while, we’ll just say that,” he said.

BNSF owns the railroad that travels along the Mississippi River in Wisconsin. The rail company and others are working to get more emergency equipment to local responders.