

APEX 3508
MAJOR INLAND SPILL
September 2, 2015
Lower Mississippi River MM 937



RRT IV Brief
March 3, 2016

U.S. Coast Guard Marine Safety Unit Paducah, KY

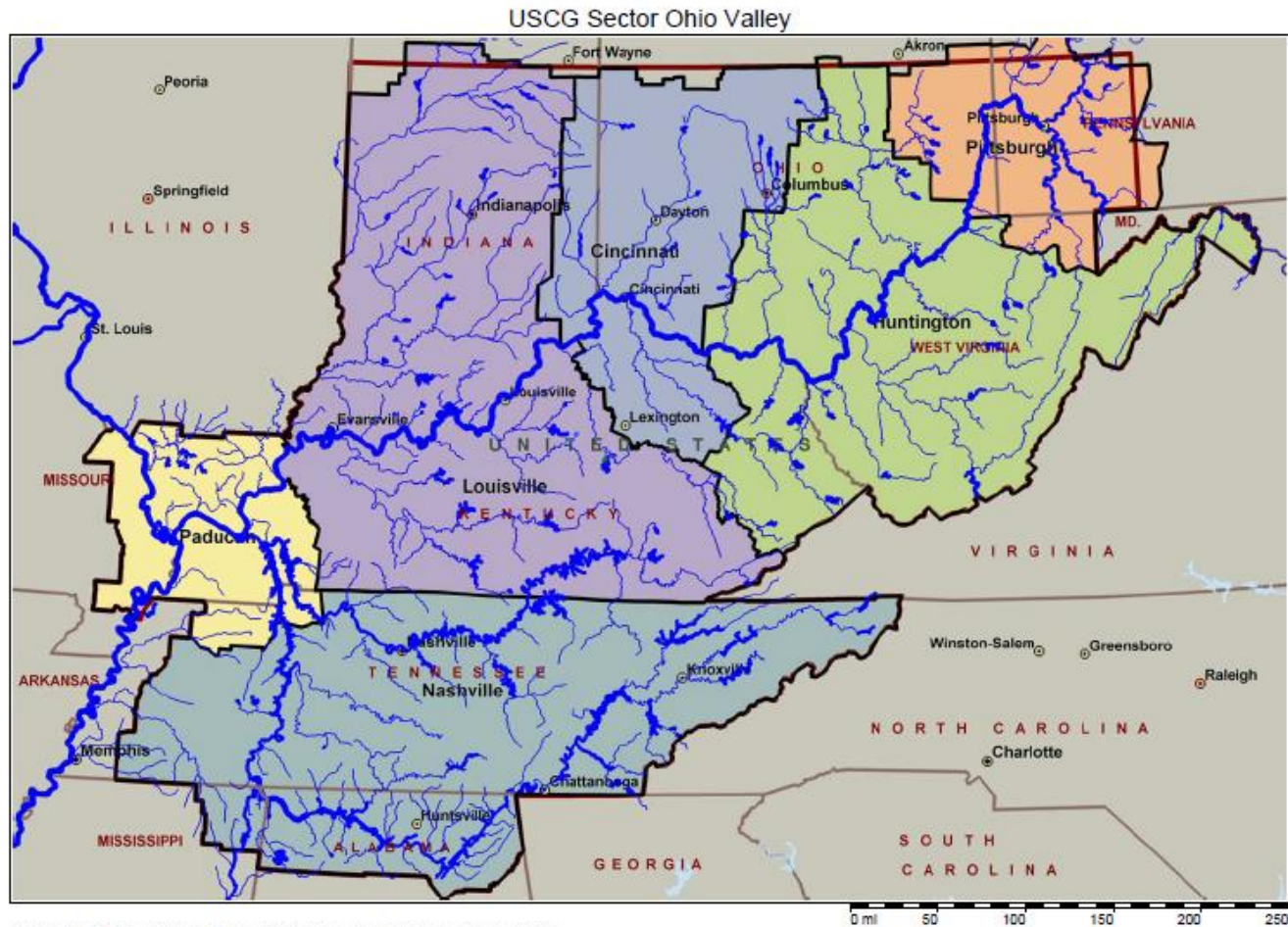


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Sector Ohio Valley



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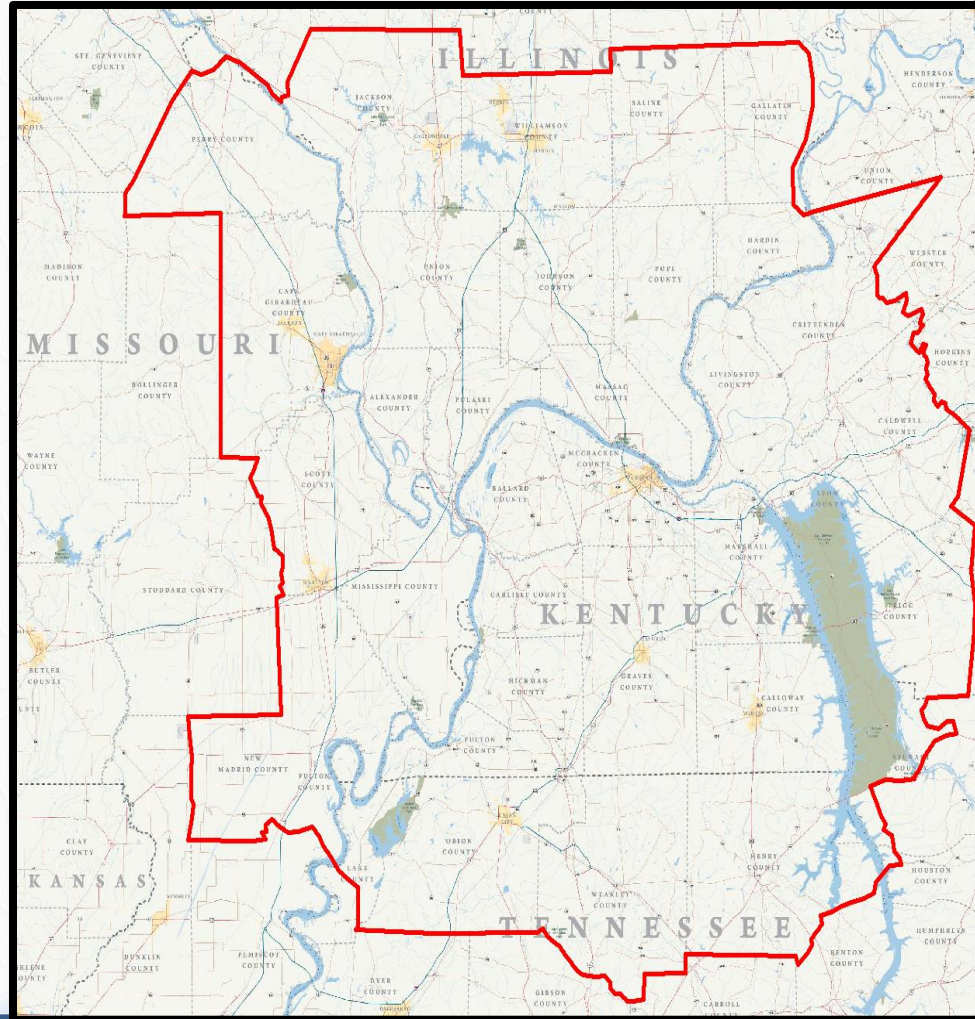
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MSU Paducah Overview

- 469 river miles on the Ohio, Cumberland, Tennessee, and Mississippi Rivers
- 3 EPA Regions
- 4 USACE Districts
- 4 States
- 8 of the 11 CG missions
- Two major lakes, Kentucky Lake & Lake Barkley, 218K Acres of water surface, 318 miles
- 5 Locks & Dams, 8 bridges
- 200+ Reportable Marine Casualties/Year
- 24 Active; 4 Civilians



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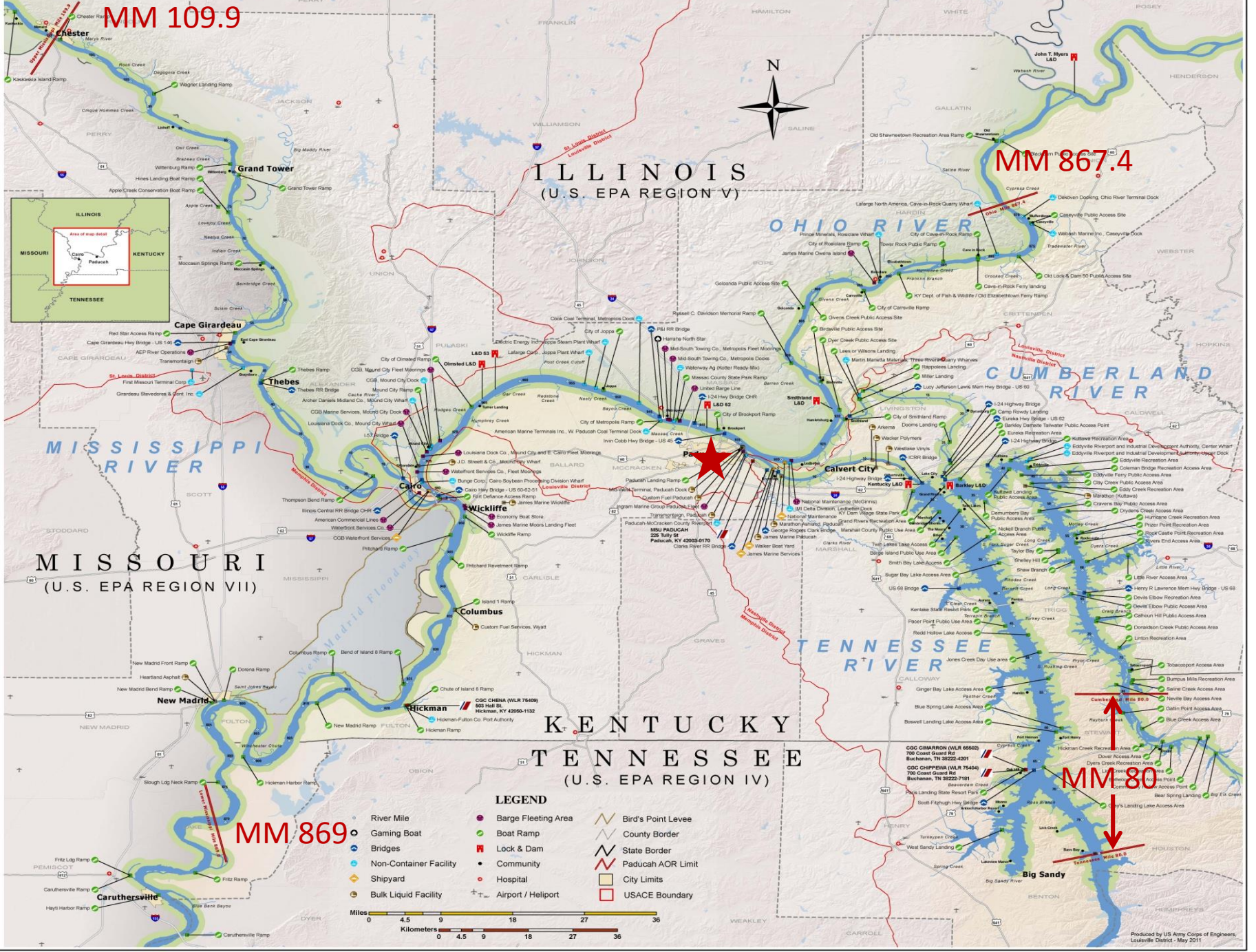


MM 109.9

MM 867.4

MM 869

MM 80



ILLINOIS (U.S. EPA REGION V)

MISSOURI (U.S. EPA REGION VII)

KENTUCKY TENNESSEE (U.S. EPA REGION IV)

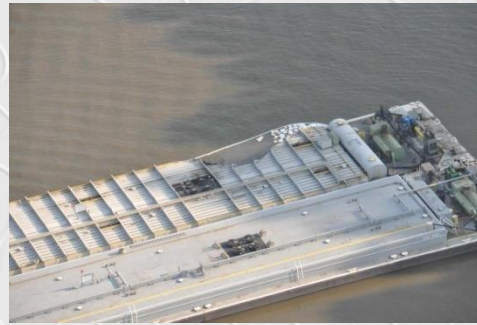
LEGEND

- River Mile
- Gaming Boat
- Boat Ramp
- Bridges
- Non-Container Facility
- Shipyards
- Bulk Liquid Facility
- Barge Fleet Area
- Boat Ramp
- Lock & Dam
- Community
- Hospital
- Airport / Heliport
- Bird's Point Levee
- County Border
- State Border
- Paducah AOR Limit
- City Limits
- USACE Boundary



Initial Response (24 Hrs)

- Dispatched MSU Team: Investigations, Inspections & Pollution Responders
- Vertical/Horizontal Briefings
- River Closure
- IMT/ICP at MSU Paducah
- Initial Requests from RP
- Resource gaps, Unified Command, ICS Process
- Media
- Established MTSRU & Sustainable ICP



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Incident Overview

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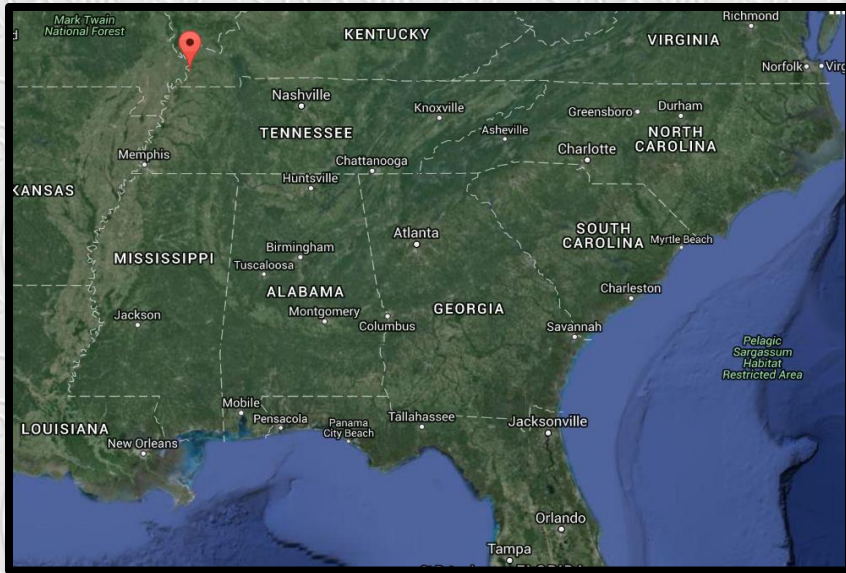


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Incident Location- LMR, MM 937



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Incident Objectives

OBJECTIVES:

- PROVIDE FOR THE SAFETY AND WELFARE OF CITIZENS AND RESPONSE PERSONNEL
- INITIATE ACTIONS TO STOP OR CONTROL THE SOURCE, AND MINIMIZE THE TOTAL VOLUME RELEASED
- CONTAIN, TREAT AND RECOVER SPILLED MATERIALS FROM THE WATER.
- CONDUCT AN ASSESSMENT AND INITIATE SHORELINE CLEANUP EFFORTS
- CONDUCT A SURVEY OF THE DAMAGE TO BARGE APEX 3508
- MINIMIZE IMPACTS TO MARINE TRANSPORTATION SYSTEM
- MINIMIZE ECONOMIC IMPACT
- IDENTIFY AND PROTECT RESOURCES AT RISK DURING THE ASSESSMENT AND RECOVERY OPERATIONS OF ANY IDENTIFIED SUBMERGED OIL.
- CONTINUE ENVIRONMENTAL MONITORING.

PRIORITIES:

- SAFETY OF PUBLIC/COMMUNITIES
- ENVIRONMENTAL CONCERNS
- REOPENING OF RIVER WITH SUBSEQUENT MOVEMENT OF MARITIME TRAFFIC

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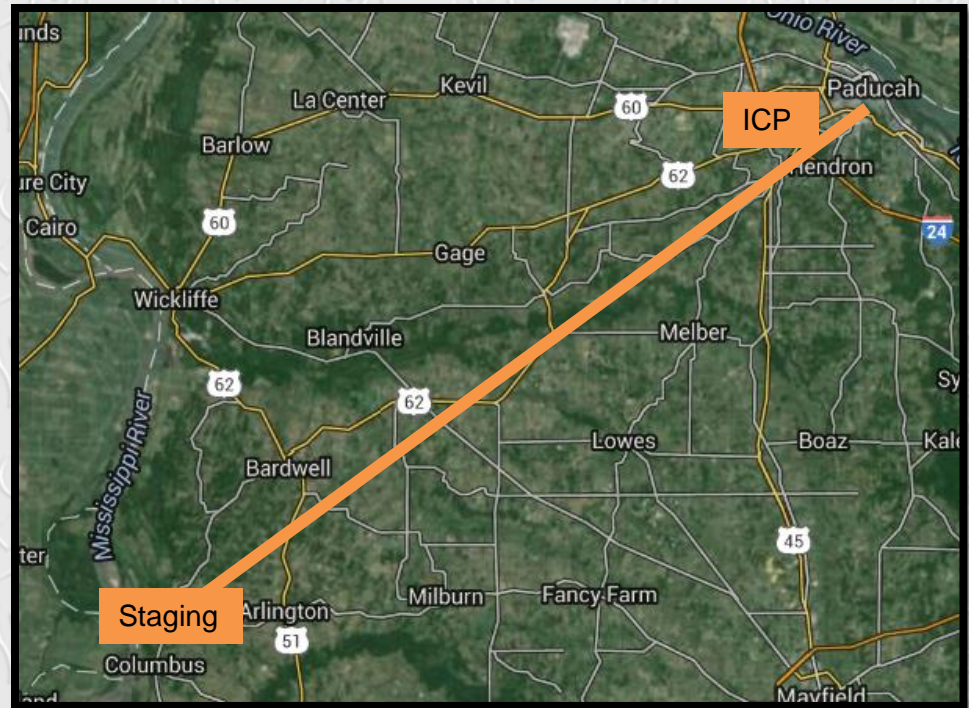
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Incident Challenges

- Incident Location
- Environment
- Connectivity
- Product Fate
- Specialized Equipment
- Traffic Management
- Timing



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Incident Summary (Type II)

Unified Command included:

FOSCR – CDR Mark Sawyer – MSU Paducah

RPIC – Jason Adams / Greg Brown – Inland Marine Services

SOSC- Robert Francis / Kevin Strohmeier – KY Dept. of Environmental Protection

<p>Number of OPS period: 8 Number of days : 23 2 SEP15 – 25 SEP 15</p> <p>River Closure: 18 miles (48 hours)</p>	<p>Total Personnel Responded : 120+ Including USCG (IMAT/NSF), NOAA, EPA, OSRO-SWS, T&T</p>	<p>Total Equipment Responded : 65 + Including various barges and tug boats, 18ft-25ft response boats, dive boats, aircraft and cranes</p>
<p>Oil Released: 120,588 gallons</p> <p>Experts believe majority of product was confined in two anomalies near incident location</p>	<p>Type of product: Clarified Slurry Oil, Group V Residual Fuels Oils (GPVFRO) referred to by industry as LAPIO (Low API Oils)</p>	<p>Resources at risk: 2 (USFWS) ESA listed freshwater mussels</p>
<p>Detection: Combination of low resolution and high resolution side scan sonar, along with overflight and dive ops were used.</p>	<p>Recovery: Combination of Cable Arm Environmental Bucket with ClamVision dredge positioning system, Vessel Submerged Oil Recovery System (VSORS) and a decanting–water polishing processes were used.</p>	<p>Oily sediment/water recovered : 3,111 Cubic Yards (~4,667 tons)</p> <p>Oily Sediment recovered (after decanting): 2,261 Cubic Yards (~3,392)</p>
<p>Number of water & sediment samples : 220 Number of samples positive for oil : 5</p>	<p>Outcome After Recovery: Both Anomalies were determined to have no more than 10% sporadic oil distribution within each 25 meter by 25 meter grid on 25 SEP 15.</p>	<p>FPN 15050 – Ceiling: \$300 K</p> <p>Costs as of 30 SEP 15: Indirect \$281,437 - Direct \$193,308 Total \$474,745</p> <p>RP- Actual as of 25SEP15 : \$2.9 million</p>

RESOURCES AT RISK

U.S. Fish and Wildlife Service (USFWS) identified two ESA listed freshwater mussels, commonly referred to as the Fat Pocketbook and Pink Mucket, at greatest potential risk within the action area. USFWS requested a species and habitat survey of the area prior to commencement of recovery operations. A mussel survey was completed on 7 Sep 15 and concluded that the action area did not contain any suitable habitat for these mussels. However, mussel observations were conducted during the recovery operations on behalf of USFWS and no mussels were observed.

The Bureau of Indian Affairs concluded no impact to the trust resources within the action area. As per Section 106 of the NHPA, the State of Kentucky Heritage Council and State Historic Preservation Office (SHPO) initially indicated potential for impacts to trust resources, however once the action area was refined to on-water activities to remove sunken oil, they concluded that recovery actions were not likely to impact historic and archeological resources.

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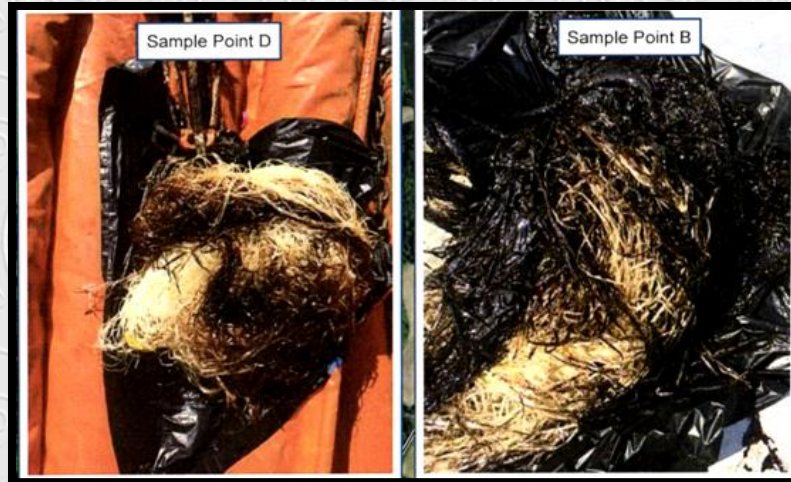


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PRODUCT-Clarified Slurry Oil



- Information on the oil provided in the safety data sheet indicated that the spilled slurry oil had a specific gravity of 1.1. Oils of this type are typically classified as Group V Oils which are known to sink in freshwater. Group V Residual fuels Oils (GPVRF) referred to by industry as LAPIO (Low API Oils)
- RCRA Information: unused product is not specifically listed by the EPA as a hazardous waste. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity (ExxonMobil MSDS)
- DOT Haz Class: Combustible Liquids
- ID Number: NA1270
- ERG Number: 1287
- Boiling Point: 400 F
- Needs to be heated to ~120 F to pump from barge

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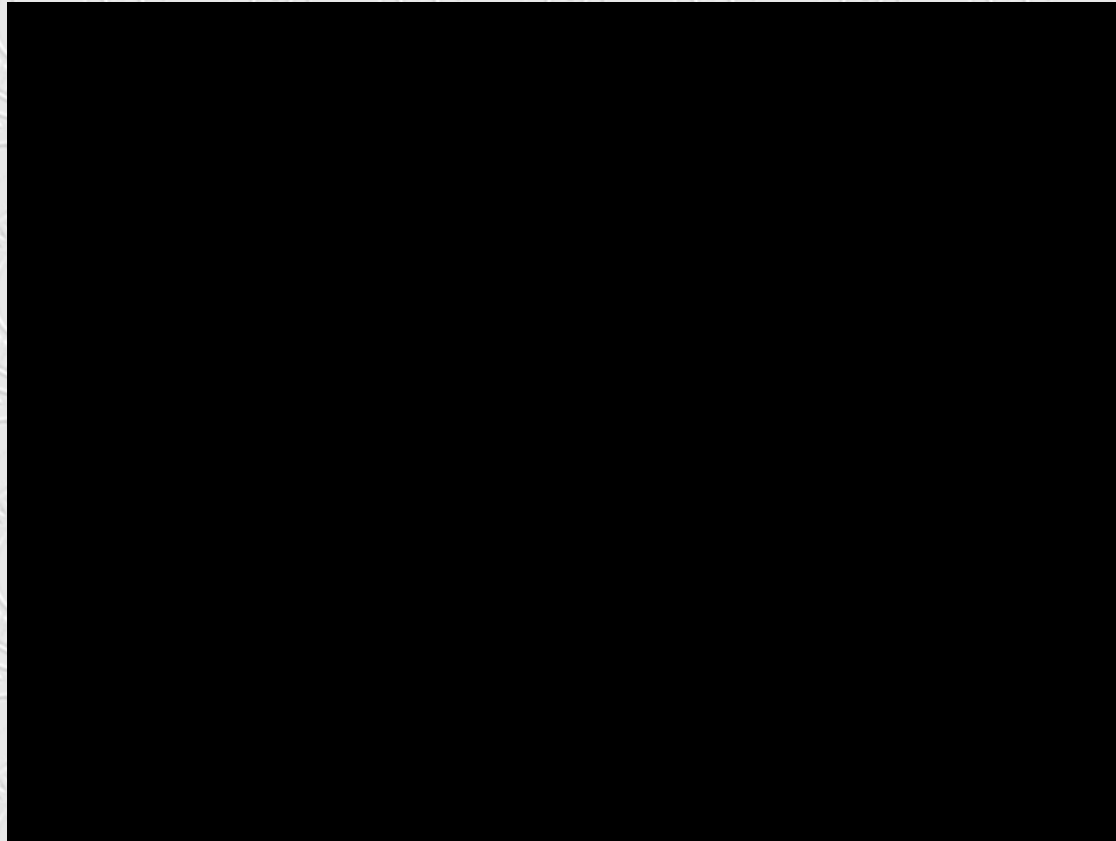


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Product Demo



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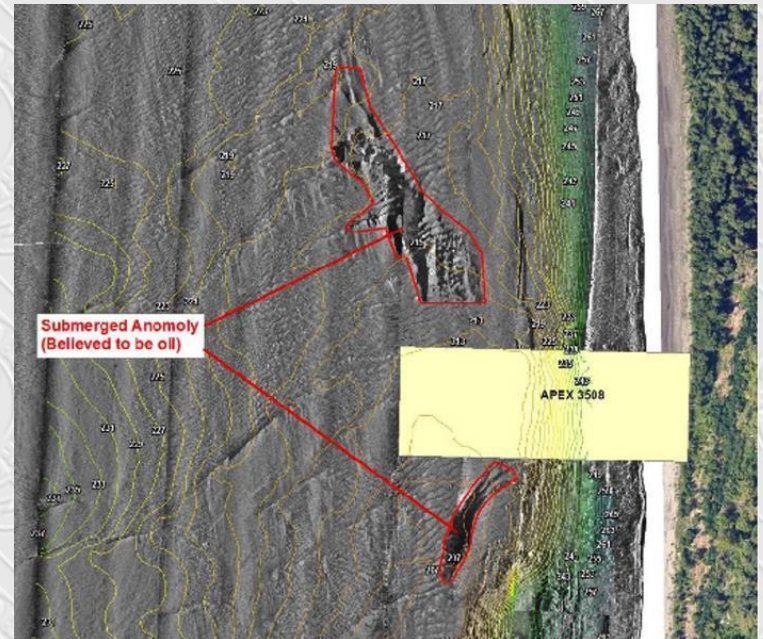
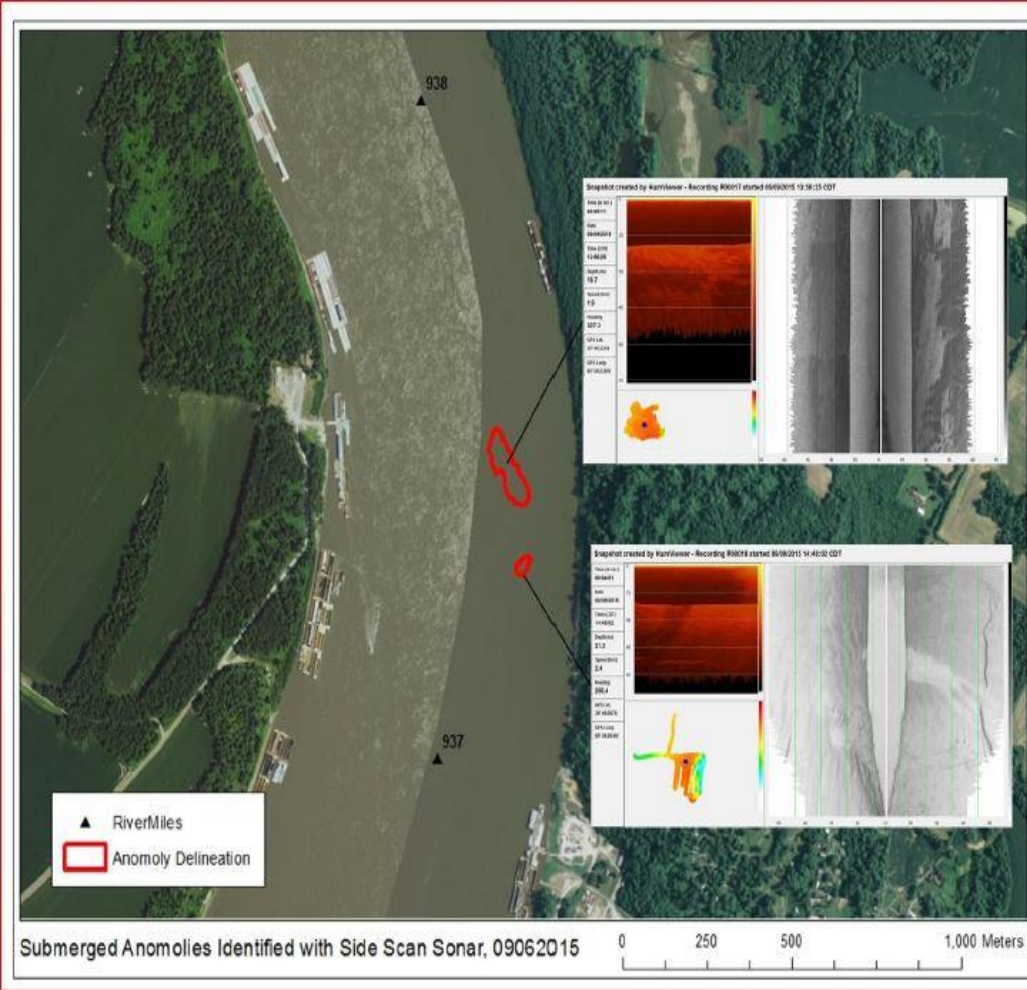


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Low Resolution SSS from 4-7SEP15



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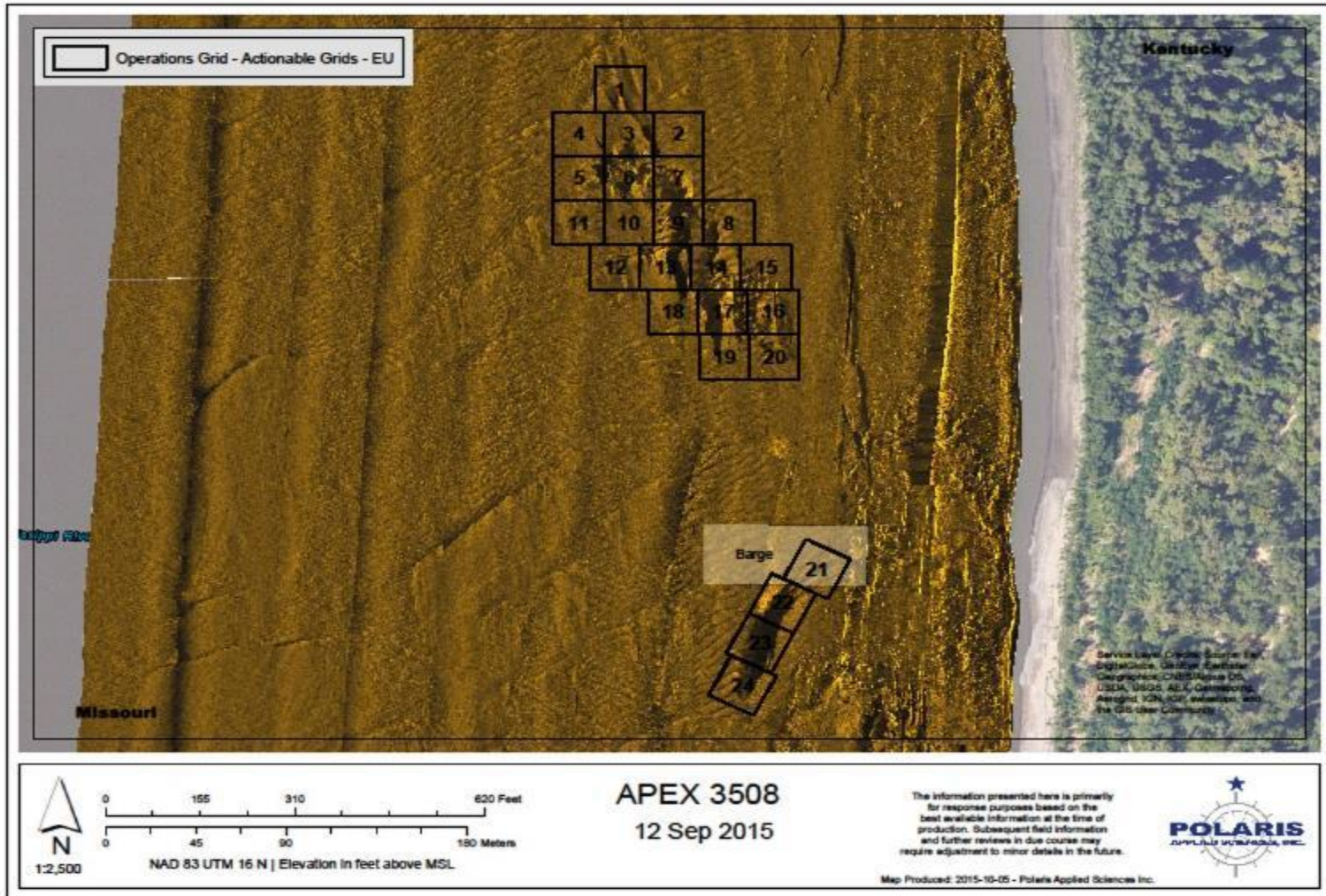


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High Resolution SSS 07SEP15



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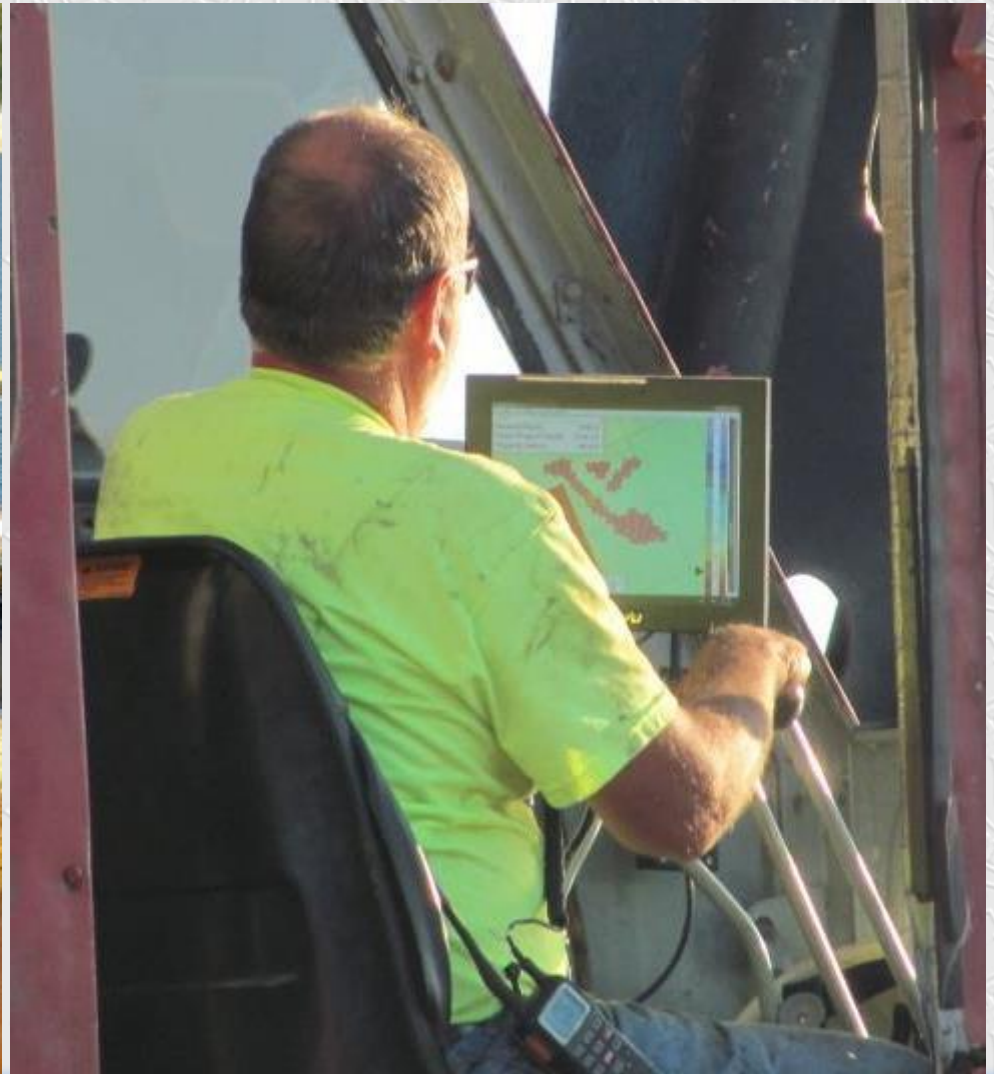


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Clamshell & Clam vision



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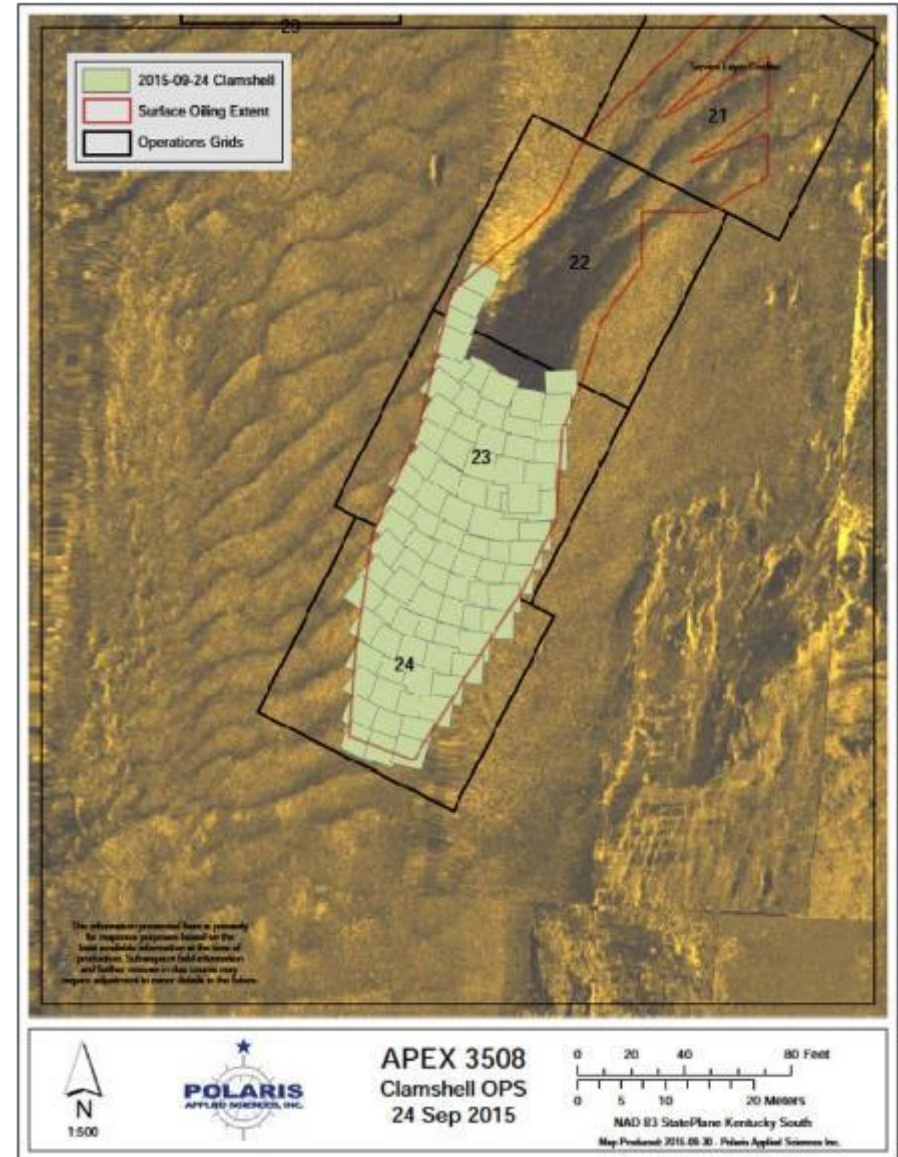
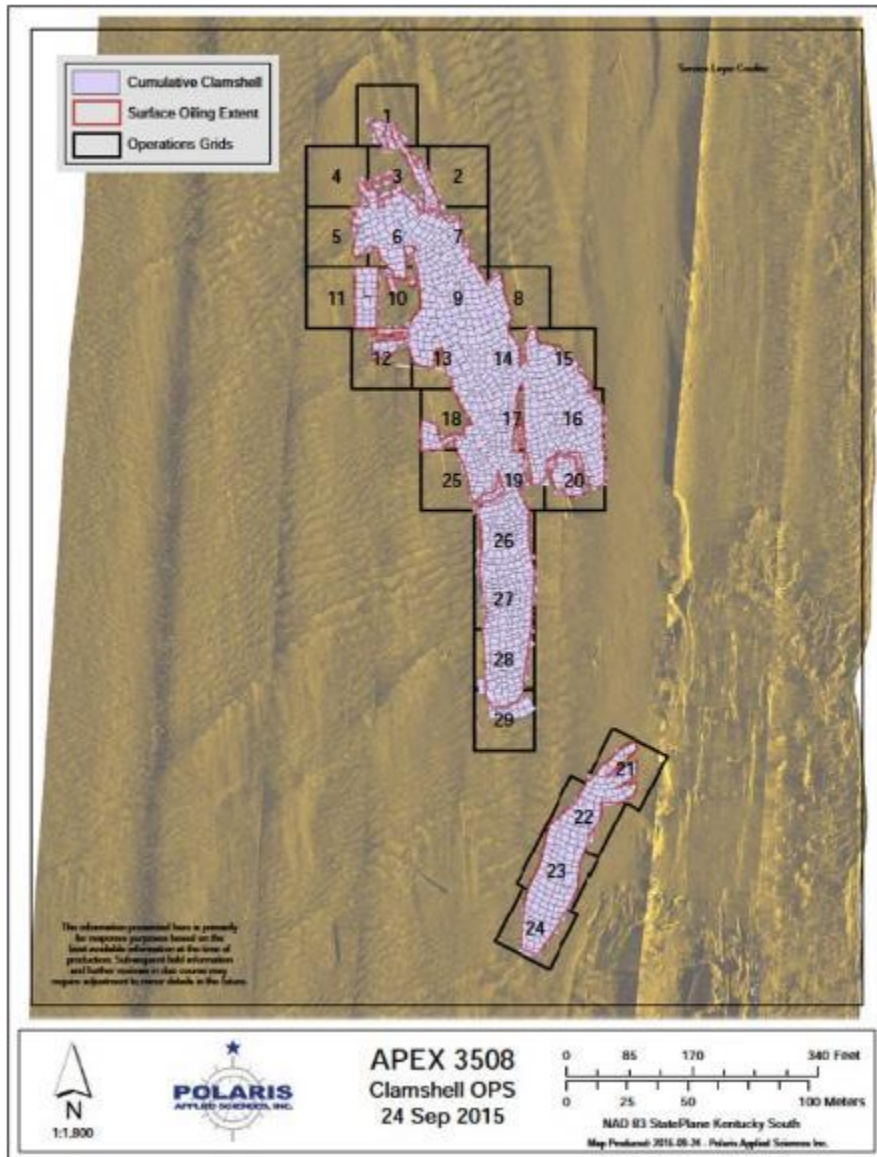


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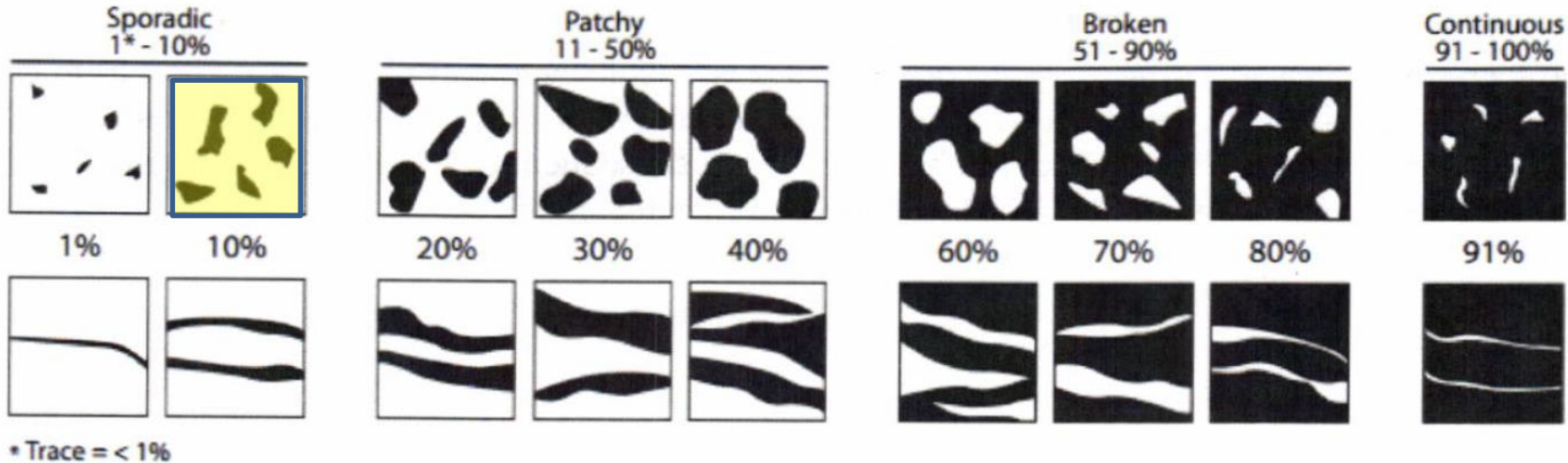


Clam Vision Data Results



Endpoint Validation Plan

Figure 1. Percent Cover Estimation Chart



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Vessel Submerged Oil Recovery System

VSORS Deploying Snare



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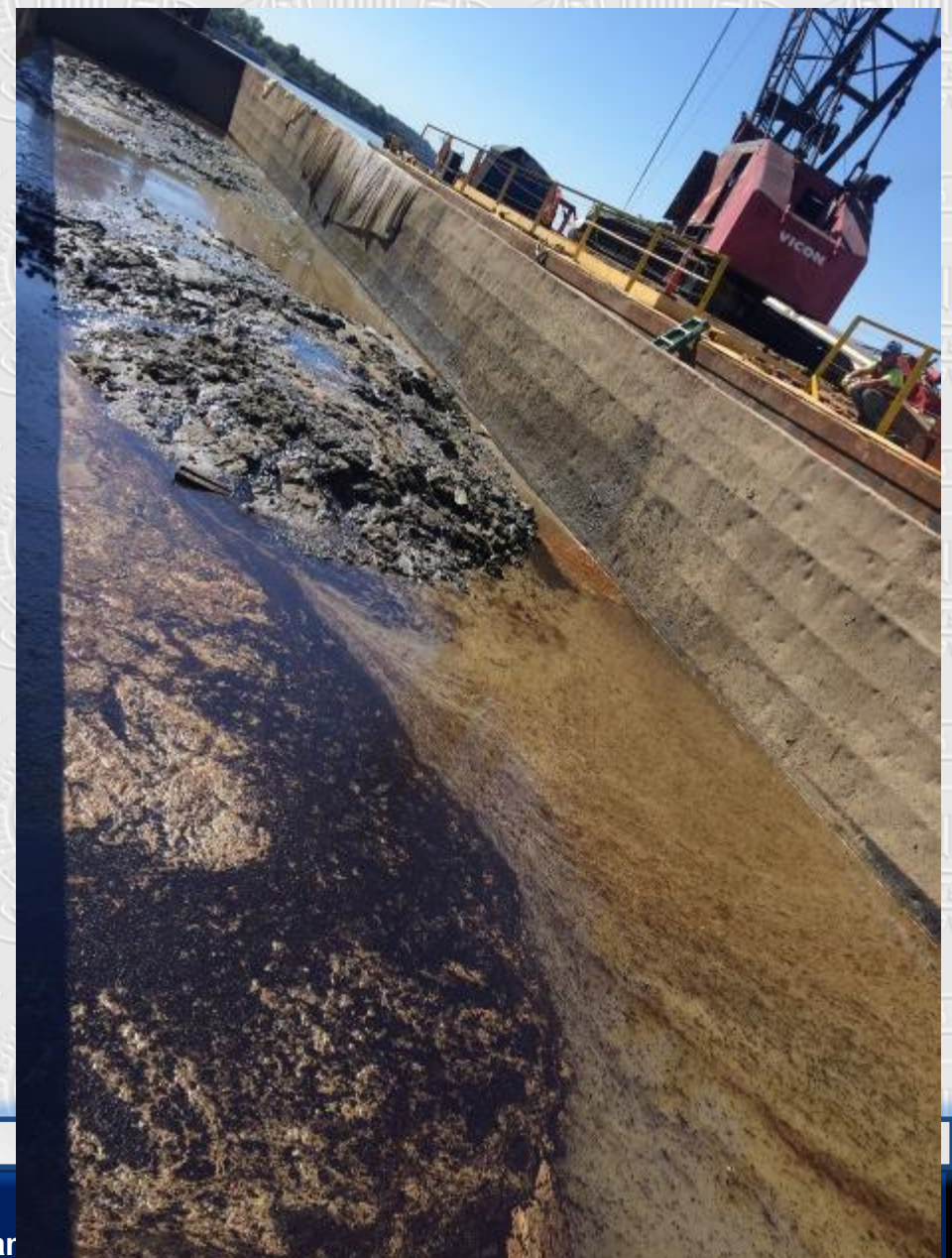
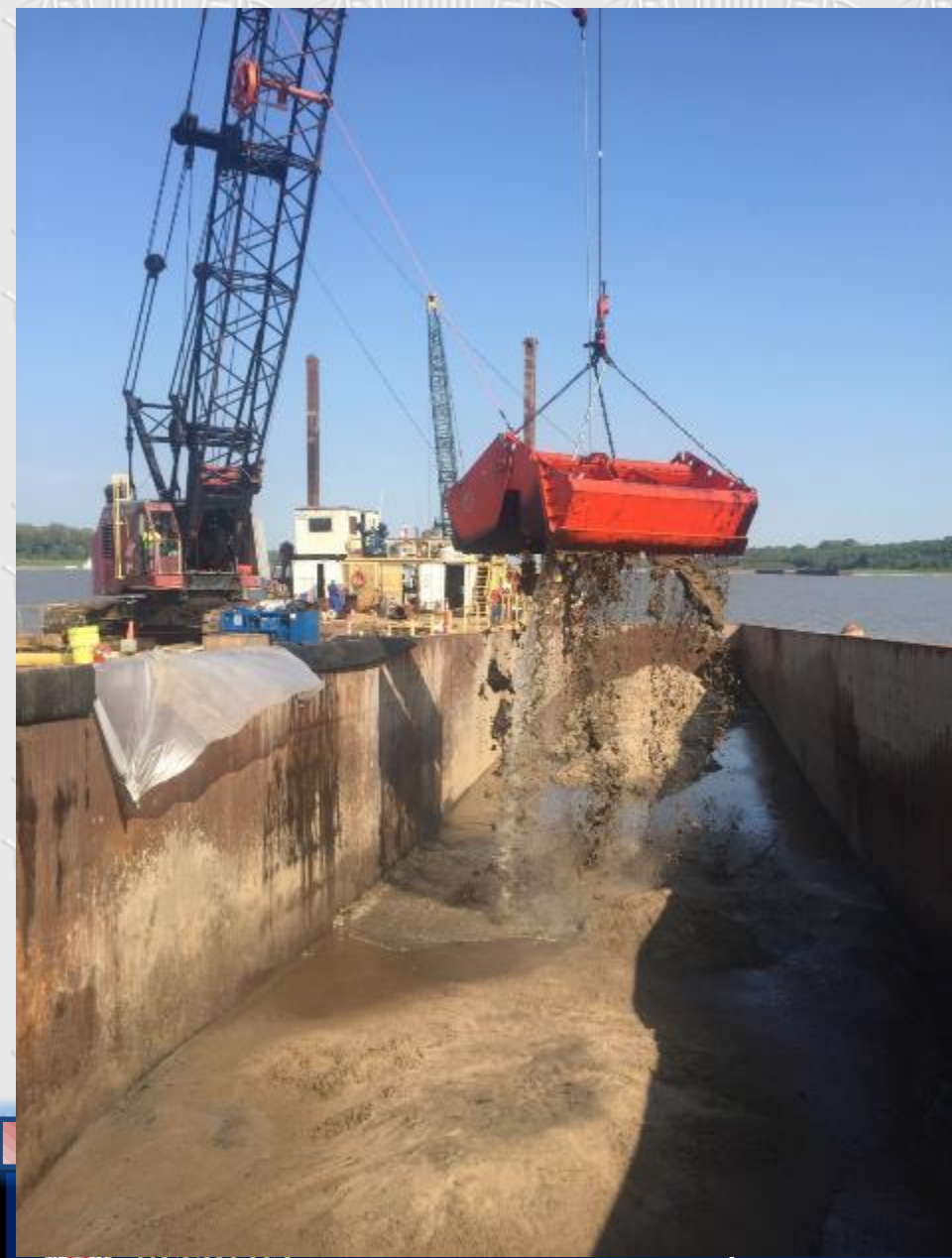


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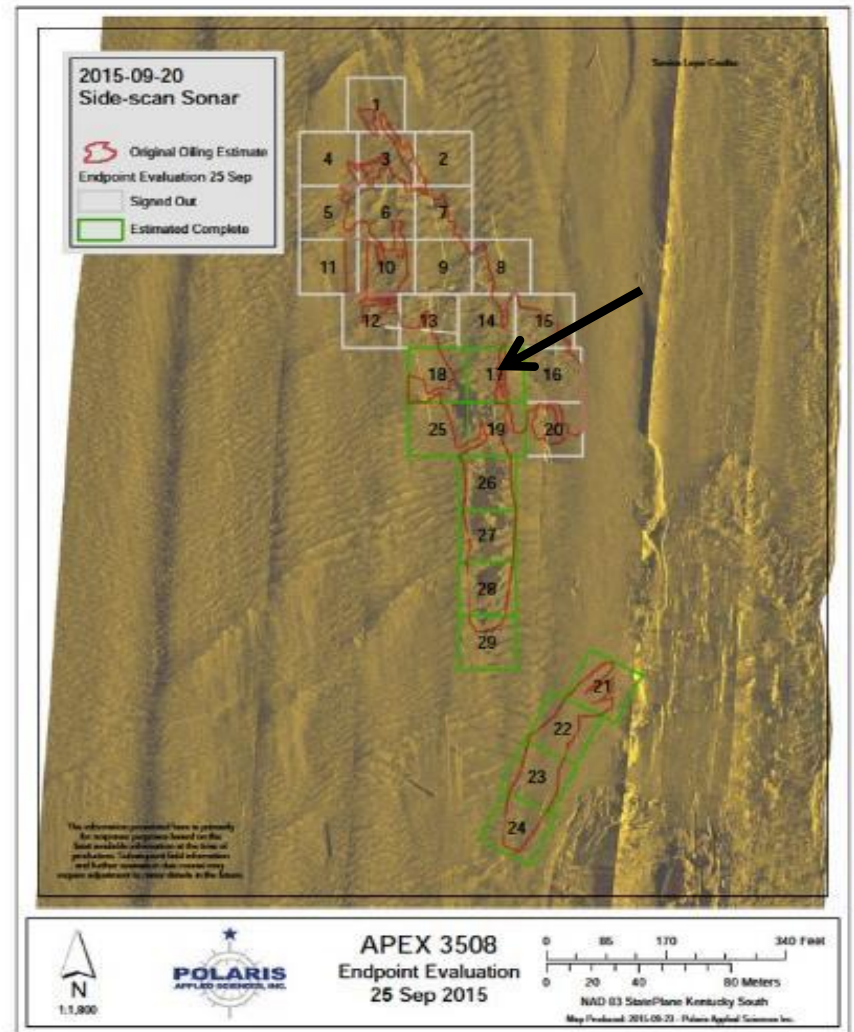
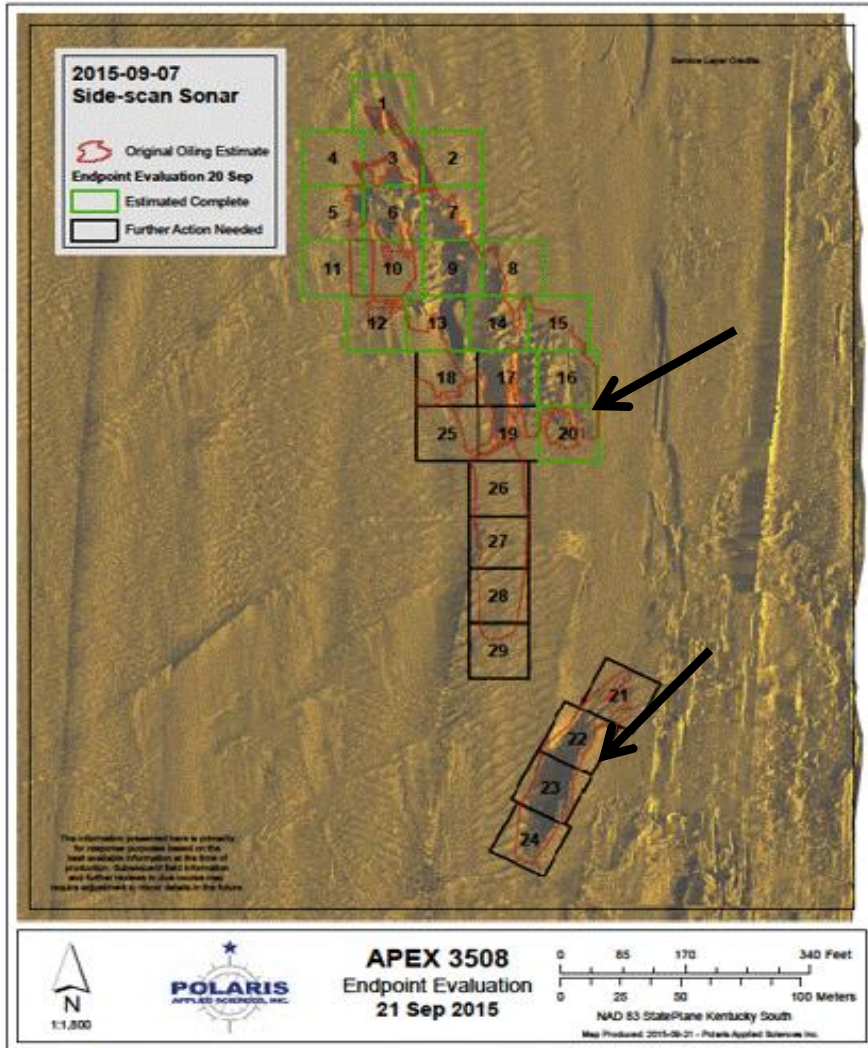
Recovered Oily Sediment



Decanting / Water Polishing



High Resolution SSS Before



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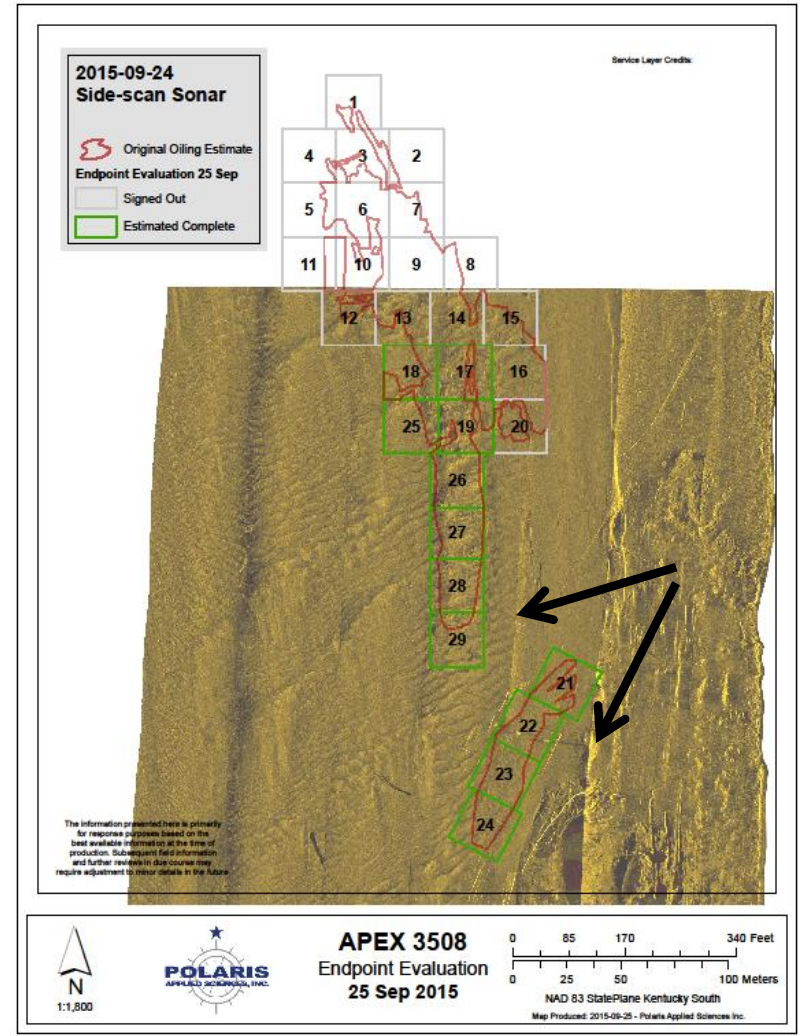
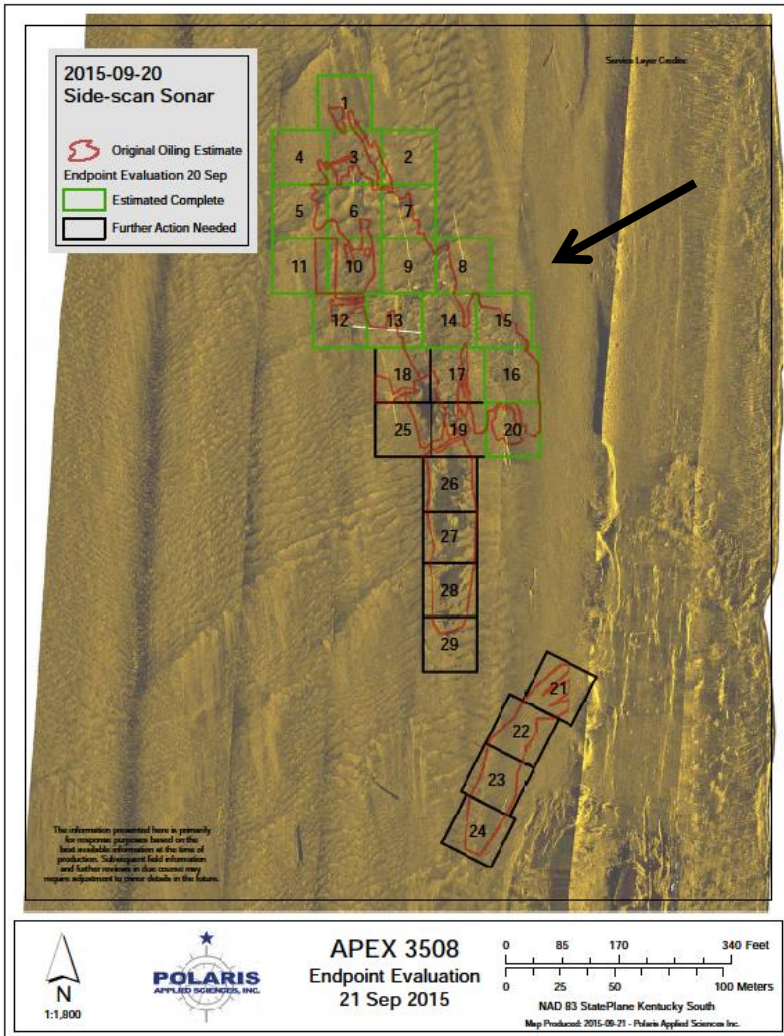


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High Resolution SSS After



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Lesson Learned

- Benefit of Salvage and Marine Firefighting Regs: unique position for submerged oils
- State/local asset awareness
- Robust Environmental Specialists and SSC
- MTSRU establishment & make-up
- External resourcing/consultation (IMAT, EPA, State, RRT, Strike Team, USFWS)
- ERMA & CG need for standard COP system
- Develop local FOSC Guide & ICS software proficiency (local planning capacity)
- Unified, Unified Command
- Validation of API Submerged Oil Field Guide (Draft)
- Consider use of UAVs for future responses & build capability locally
- Info distribution: Incident HSIN site, email, JIC, and SIT slide

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