



Non-Floating Oil: Detection and Recovery

2018 Prevention First Symposium

Jim Elliott

President, American Salvage Association
Vice President / COO, Teichman Group





“...the technological complexities of attempting lengthy, industrial style work underwater will require a vastly different collection of experts, equipment, and operational plans than those commonly used for oil spill response.”

U.S. Coast Guard and National Oceanic and Atmospheric Administration



*The Coast Guard “created the Nonfloating Oil application and procedures to **meticulously** and **qualitatively** assess Nonfloating Oil classifications.*

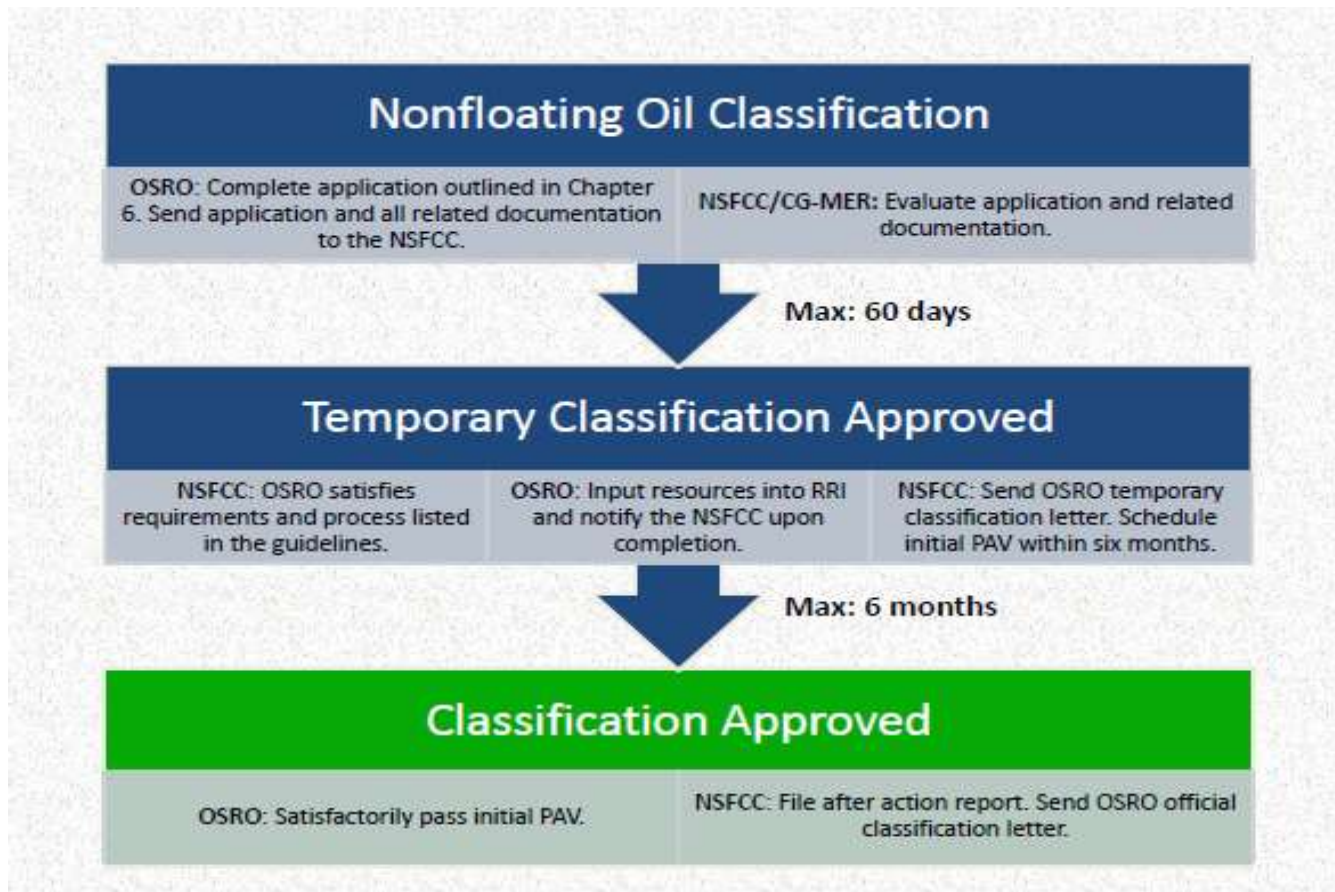
*“Effective on **November 30, 2016 (extended to July 1, 2017)**, all previous Group V OSRO ‘listings’ will be removed from the Response Resource Inventory.*

*Furthermore, all Facility and Vessel response plan holders who may handle, store, or transport Group V oils **shall only list Nonfloating Oil classified OSROs** or provide the required information in accordance with the regulatory Group V Response Plan Development and Evaluation Criteria.”*

U.S. Coast Guard (MSIB 07-16)



Guidelines for the U.S. Coast Guard Oil Spill Removal Organization Classification Program



U.S. Department of
Homeland Security

United States
Coast Guard



Commanding Officer
United States Coast Guard
National Strike Force Coordination Center

1461 North Road Street
Elizabeth City, NC 27909
Phone: 252-331-6000
FAX: 252-331-6012

16465

MAR 16 2017

T & T Marine Salvage, Inc.
Attn: Jim Elliott
9723 Teichman Rd.
Galveston, TX 77554

Dear Mr. Elliott,

Your application for your Nonfloating Oil (NFO) classification letter has been reviewed and approved as outlined in the Coast Guard Oil Spill Removal Organization (OSRO) Classification Guidelines dated March 2016. Your OSRO classification number is 115; please use this number in all future correspondence to this office. If there are changes in the core equipment described in your application that would diminish NFO response capability in any port for which T & T Marine Salvage, Inc. holds this classification, you shall report it to the NSFCC. Your company maintains several classifications which are listed in enclosure (1).

If you have any questions or would like more information regarding your classifications, please contact the NSFCC using the contact information found in enclosure (2).

Thank you for your participation in the OSRO Classification program.

Sincerely,

A handwritten signature in blue ink that reads "William Carter".

W. Carter
Captain, US Coast Guard

Red = not likely effective; **yellow** = may be effective; **green** = most likely effective

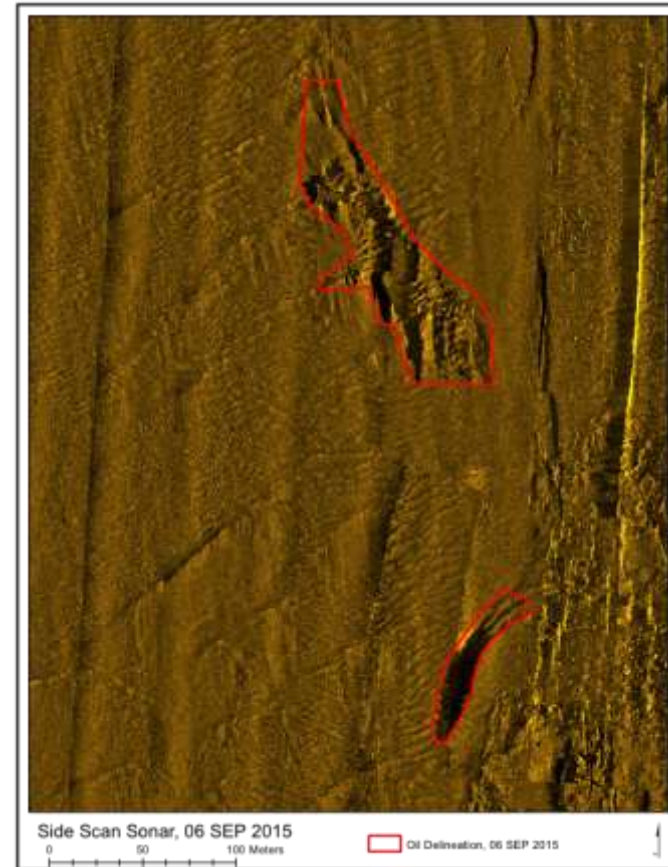
	Suction Dredge	Diver Vacuum	Diver Pump	Excavator	Grab Dredge	Environmental Clamshell	Sorbents/V-SORS	Trawls and Nets	Manual Removal Shallow Water	Manual Removal by Divers	Agitation/ Refloat
Water Depth (ft)											
- < 5 ft	Yellow	Red	Red	Green	Green	Green	Yellow	Yellow	Green	Green	Green
- 5-40 ft	Green	Green	Green	Yellow	Green	Green	Green	Red	Green	Green	Yellow
- 40-80 ft	Red	Green	Green	Red	Green	Green	Green	Yellow	Red	Yellow	Red
- > 80 ft	Red	Green	Green	Red	Green	Green	Yellow	Yellow	Red	Red	Red
Water Visibility											
- > 5 ft	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Green
- < 5 ft	Green	Yellow	Yellow	Green	Green	Green	Green	Green	Yellow	Green	Green
Water Current											
< 1 (kt)	Green	Green	Green	Yellow	Green	Green	Green	Green	Green	Green	Green
-1-2 kt	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
- >2 kt	Yellow	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red	Yellow



Detection Capabilities









- Sonar Systems
- Cameras / Video
- Diver Observation
- Towed and Stationary Sorbents
- Laser Fluorosensors
- Visual Observations
- Bottom Sampling
- Water Sampling




Sonar Systems



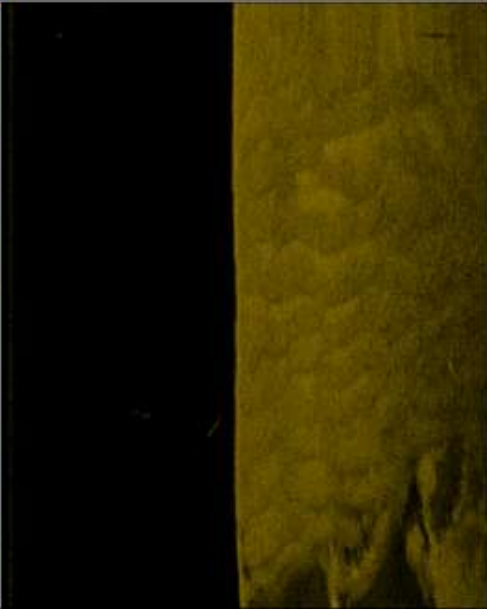
Marine Sonic SeaScan HDS



120 Left



Right 120



Depth	ft	Speed	mph	10:08:52 AM	Temp. 1	°F
57.3	N 36°46.279'	1.4	09/04/15	82.7		
	W 089°06.952'					

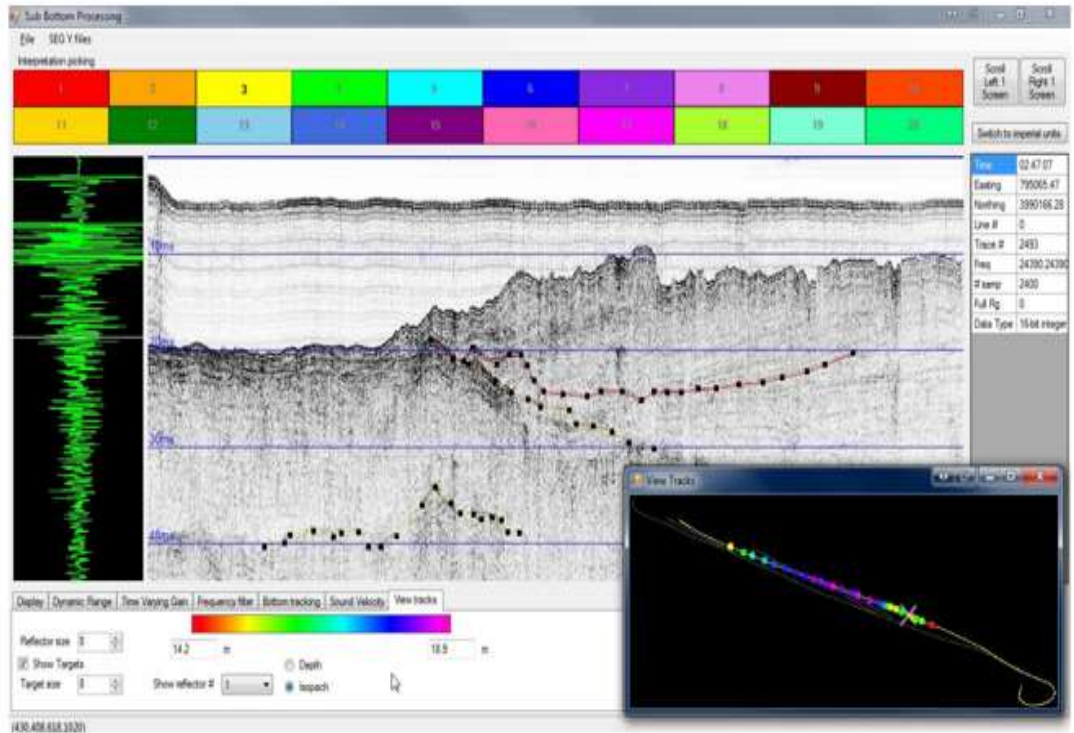


Sonar Systems

Odom M42 - SINGLEBEAM



- eChart
- Silas Acquisition V3.3.1.0
- Silas Processing V3.3.1.0
- PocketMax3



Sonar Systems



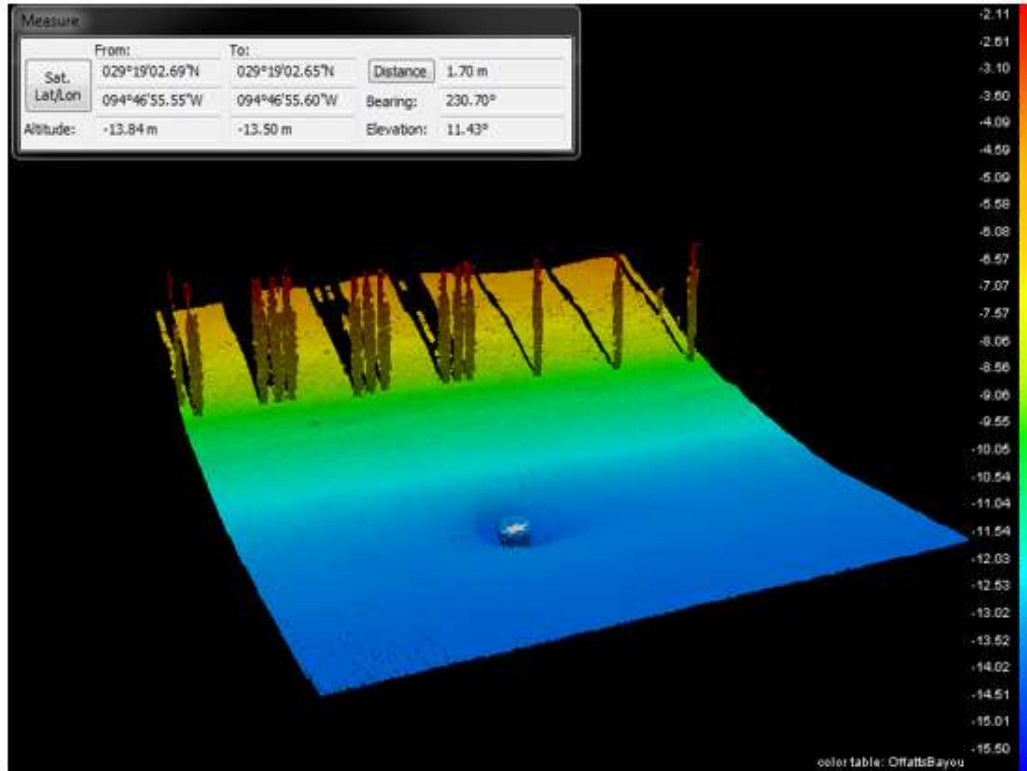
T50P - MULTIBEAM

TELEDYNE RESON
Everywhere you look

applanix
A TRIMBLE COMPANY

VALEPORT

- MV_POSView - Shortcut
- POSPac MMS 7.2
- Sonar UI
- Teledyne PDS Control Center
- Valeport Datalog X2
- Valeport Terminal X2



Sonar Systems

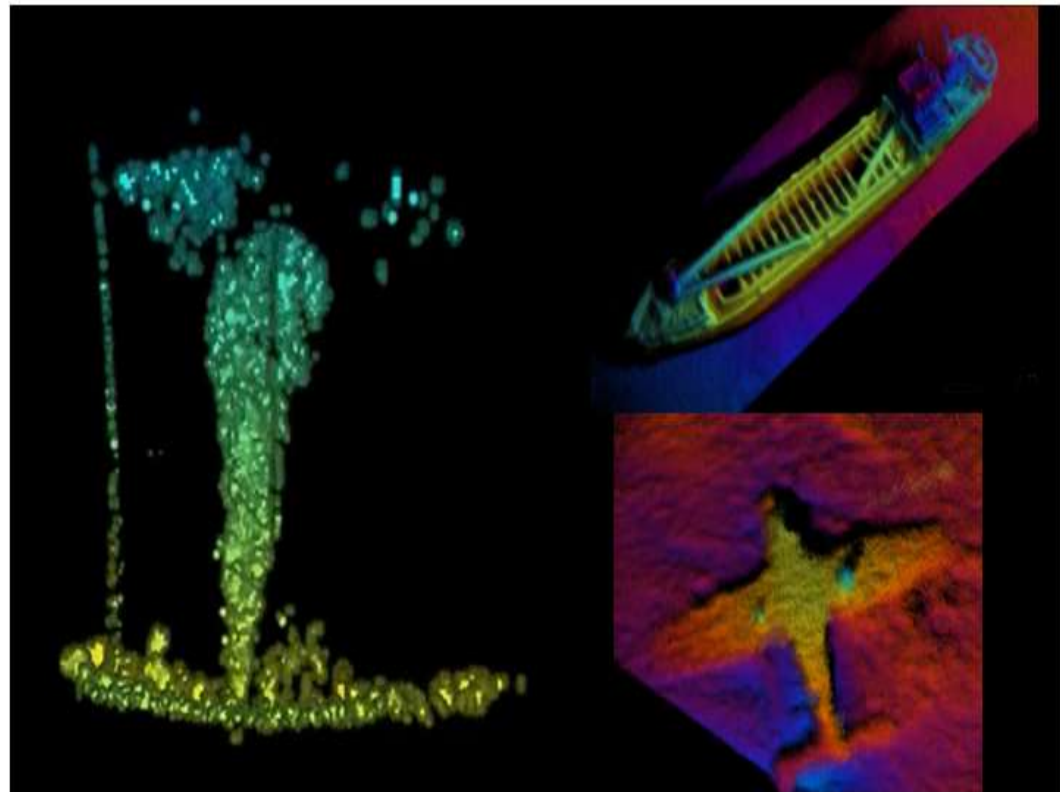


CODA - ECHOSCOPE



Coda Octopus
Sound Underwater Intelligence

- DIU Application
- DIU Setup
- Downlink
- Ethernet Comm Out
- Ethernet Comm with Sonar Head
- Ethernet Comm with Viewer
- F180 Ethernet Import
- Orchestrator
- Shutdown DIU
- Underwater Survey Explorer



Sonar Systems



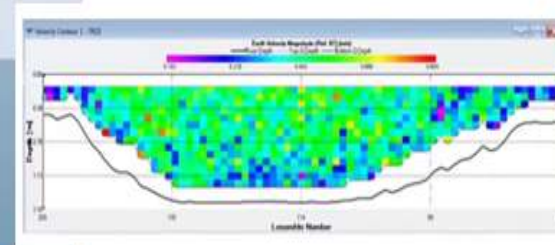
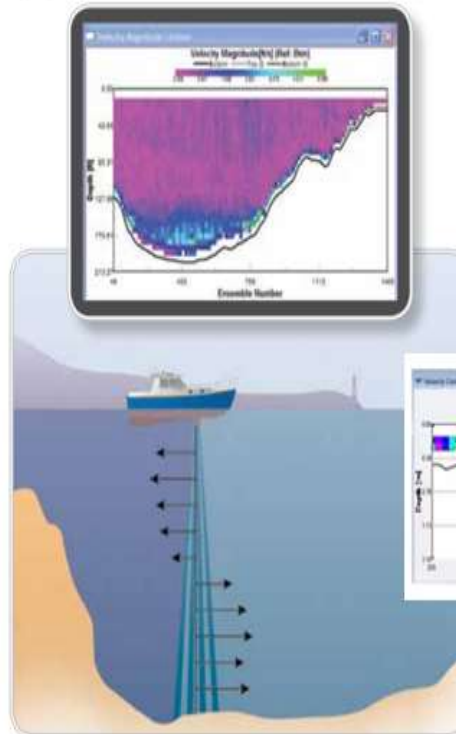
ADCP – CURRENT PROFILER

TELEDYNE RD INSTRUMENTS
A Teledyne Technologies Company

TELEDYNE TSS
A Teledyne Technologies Company

Hemisphere

- DMSView For Windows
- VmDas
- WinRiver II
- PocketMax3

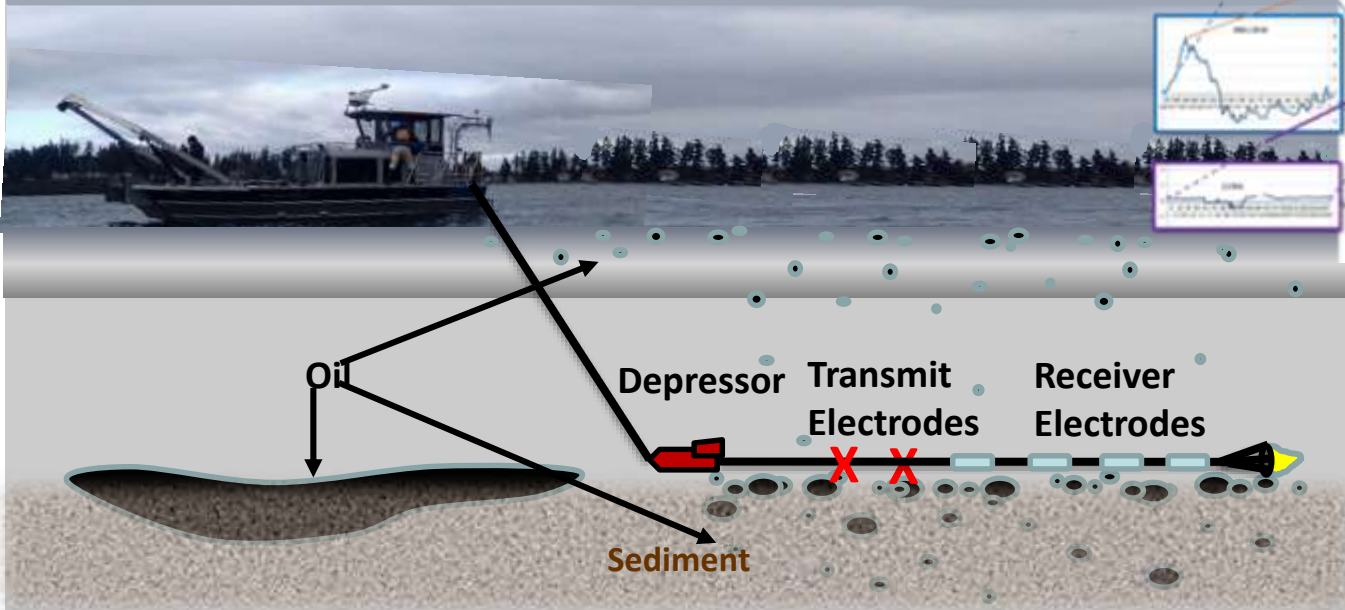
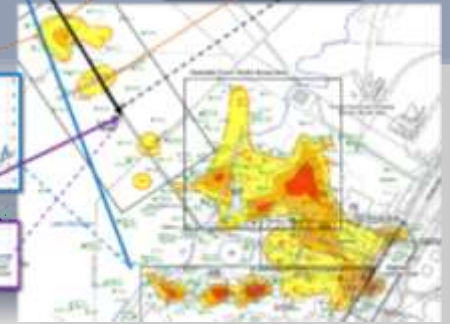
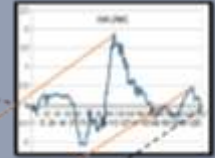


Marine Induced Polarization



Marine Induced Polarization A Detection Technology for Non-Floating Oil

Freshwater Field Measurements:
Lake Washington

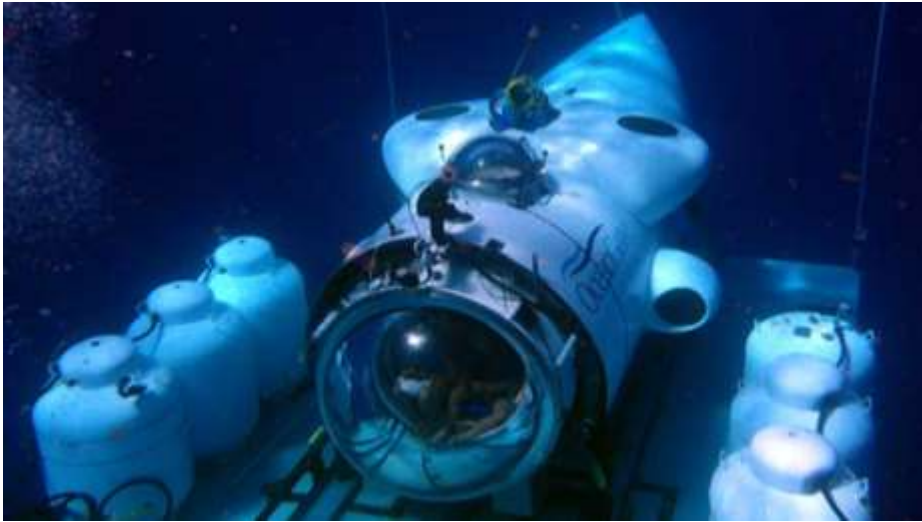


Patented technology for wide-area, cost effective
detection & mapping of hydrocarbons

Underwater Visualization



Underwater Visualization



Diver Observations





Towed or Stationary Sorbents



Visual Observations



Recovery Capabilities



- Suction Dredge
- Diver-Directed Pumping and Vacuuming
- Mechanical Removal
- Sorbent / V-SORS
- Trawls and Nets
- Mechanical Removal
- Agitation / Refloat

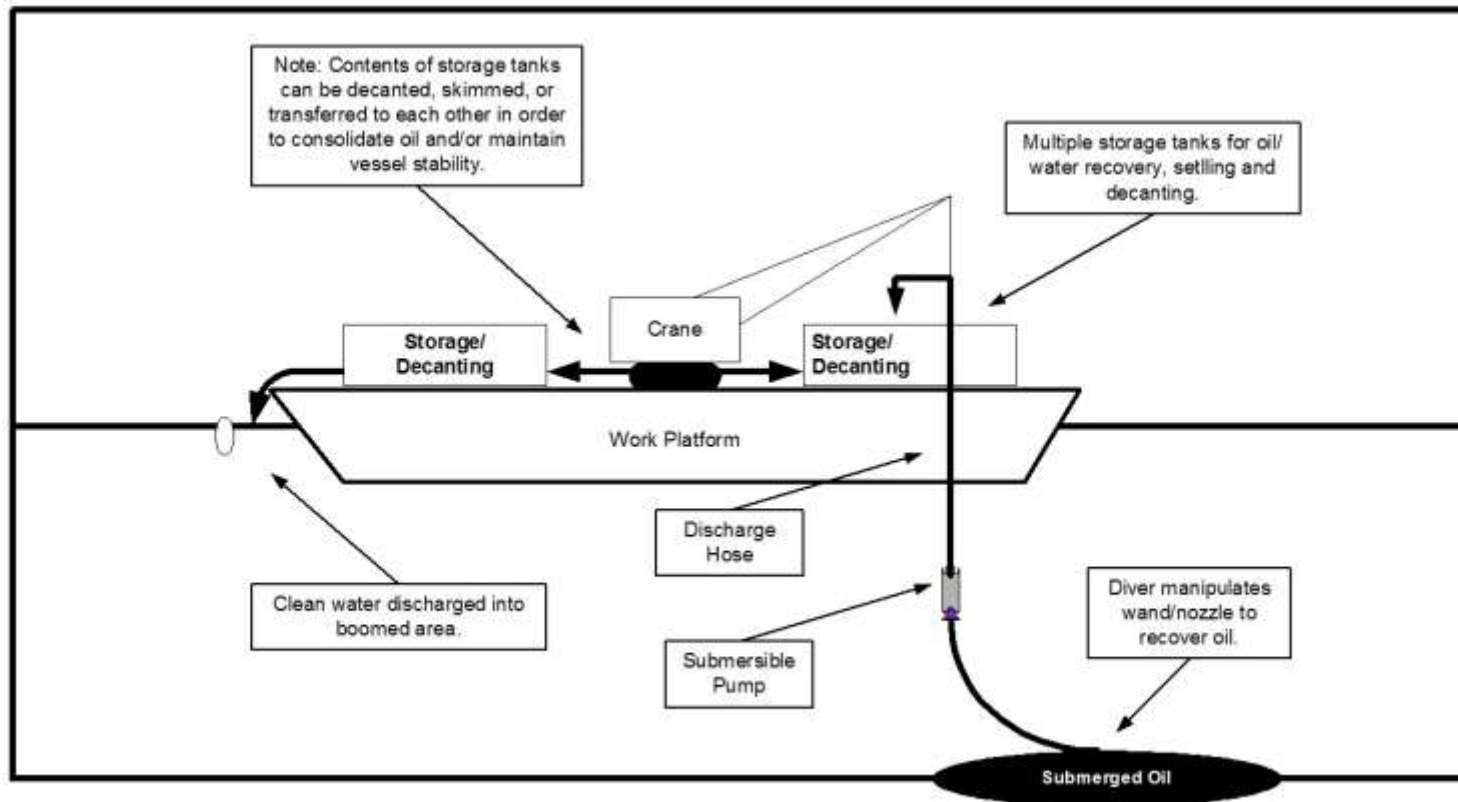


Suction Dredge

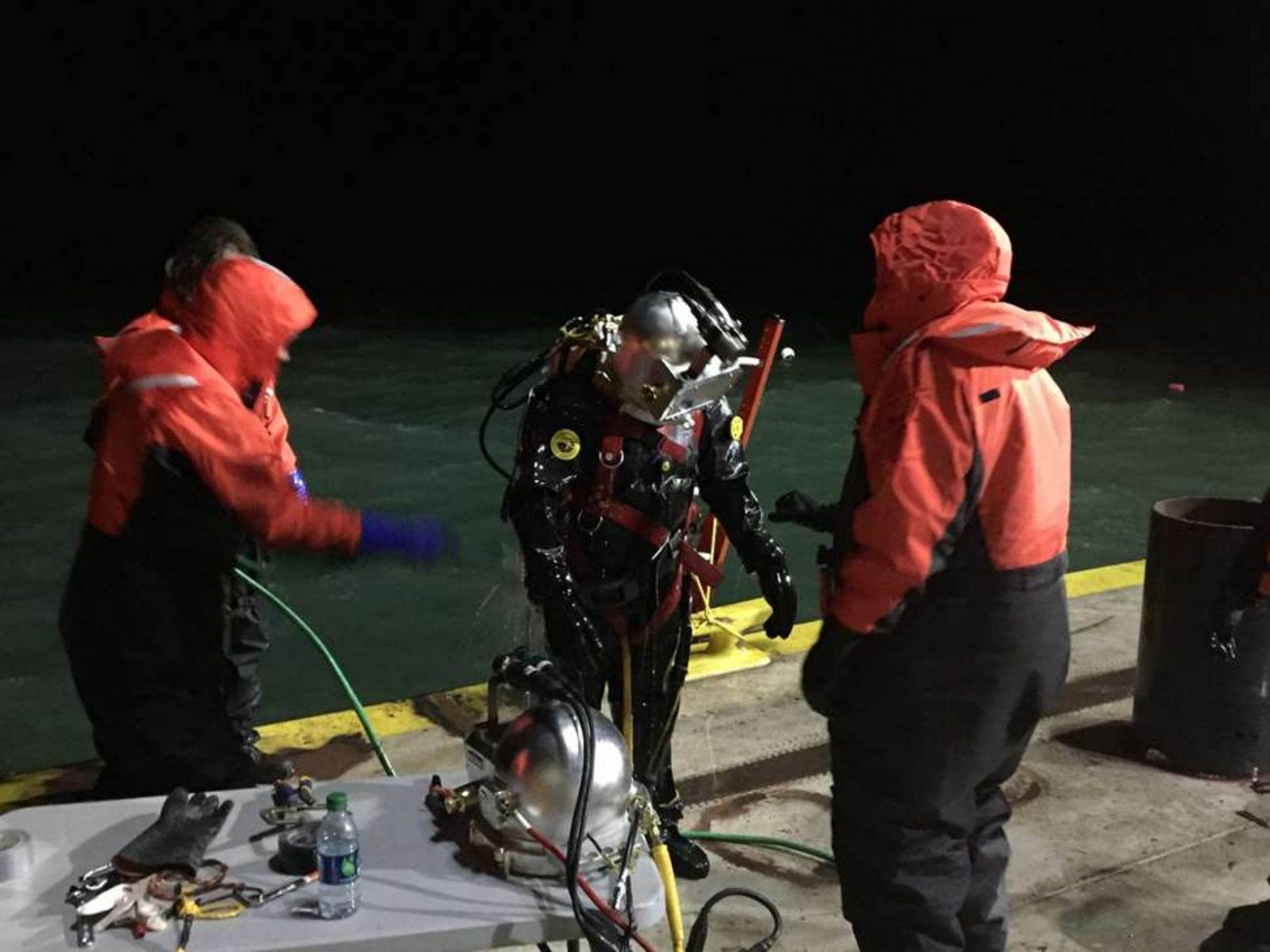




Diver Directed Pumping System









Morris J. Berman

Mechanical Removal



Sorbents / V-SORs



Containment



Gabion Baskets



X-Tex Curtains



Sediment Curtains



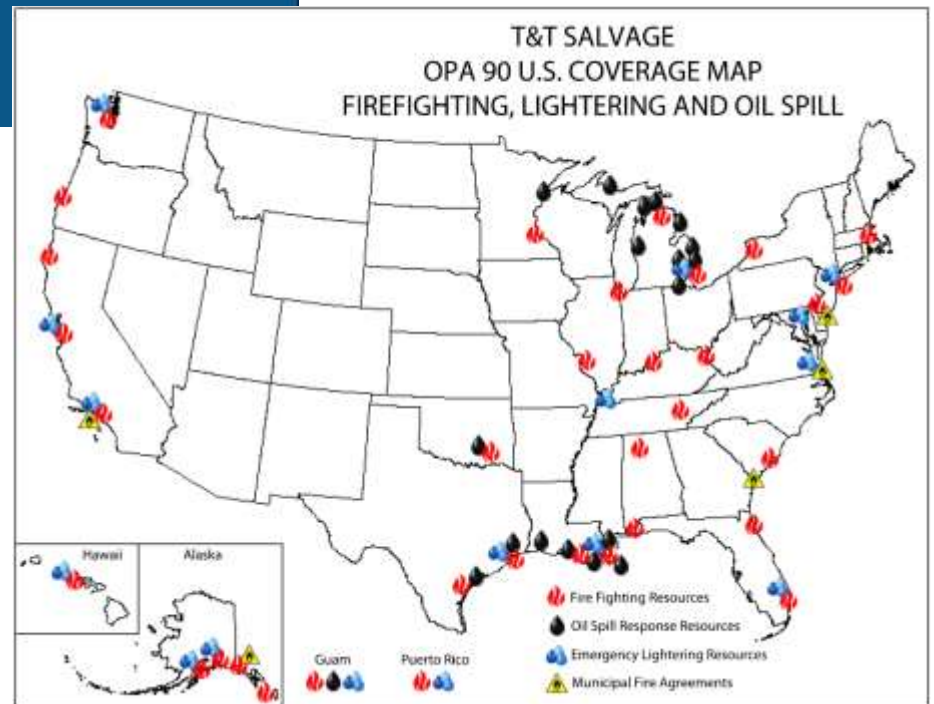
Storage and Treatment





Logistics





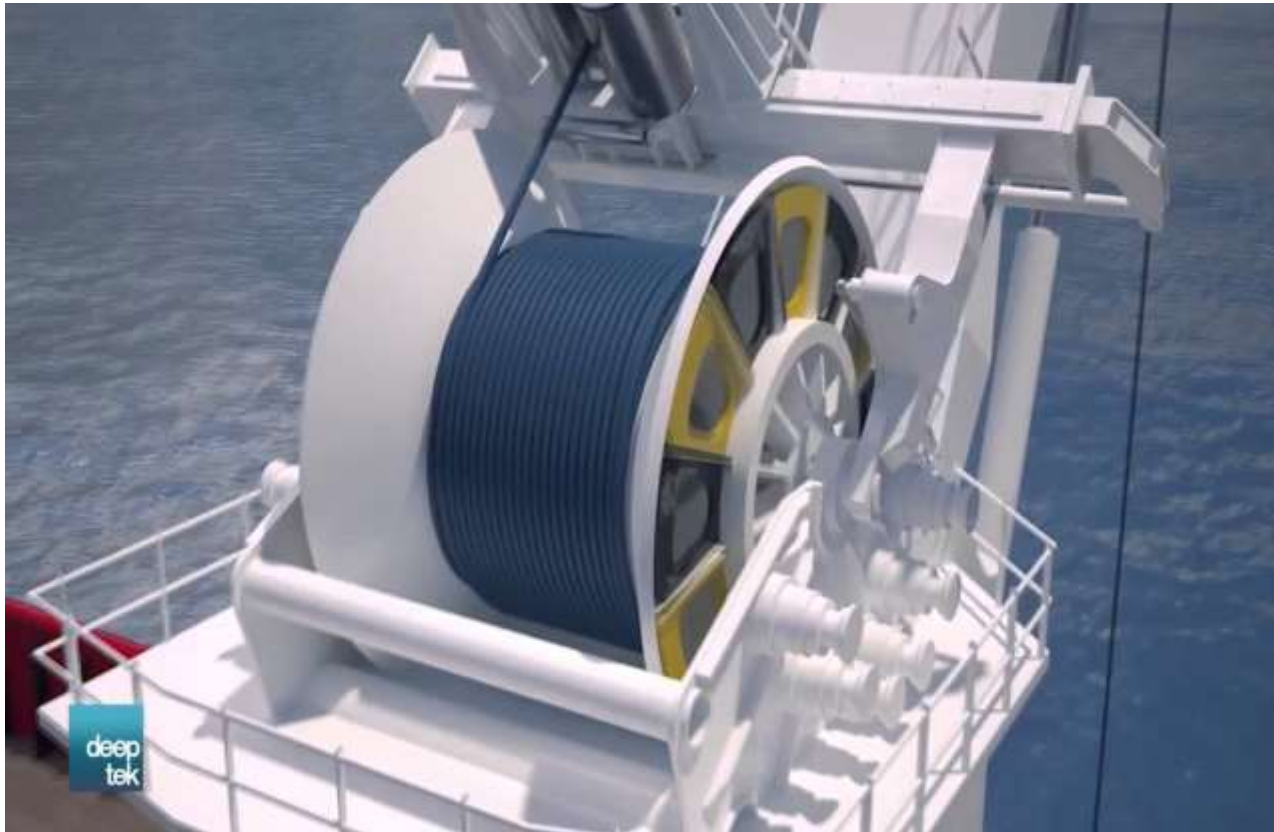


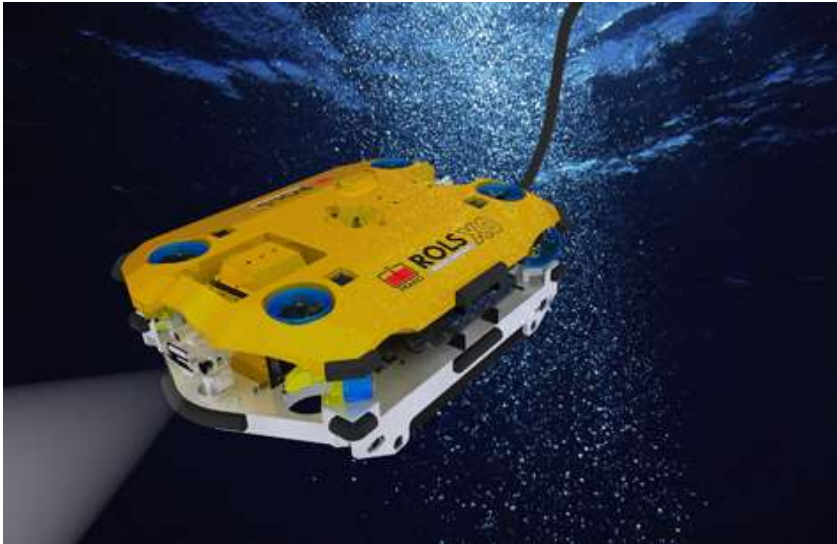
Environmental Conditions





All Ocean Depths





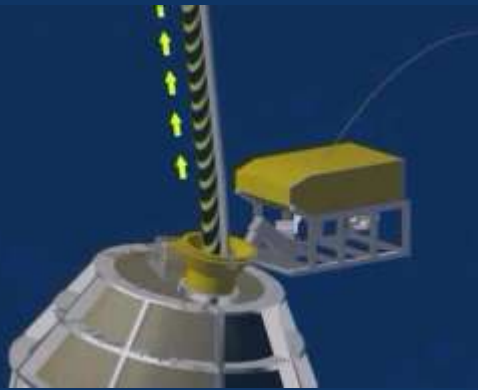
ROLS II

ORT 300



T/V PRESTIGE

~12,000 fsw

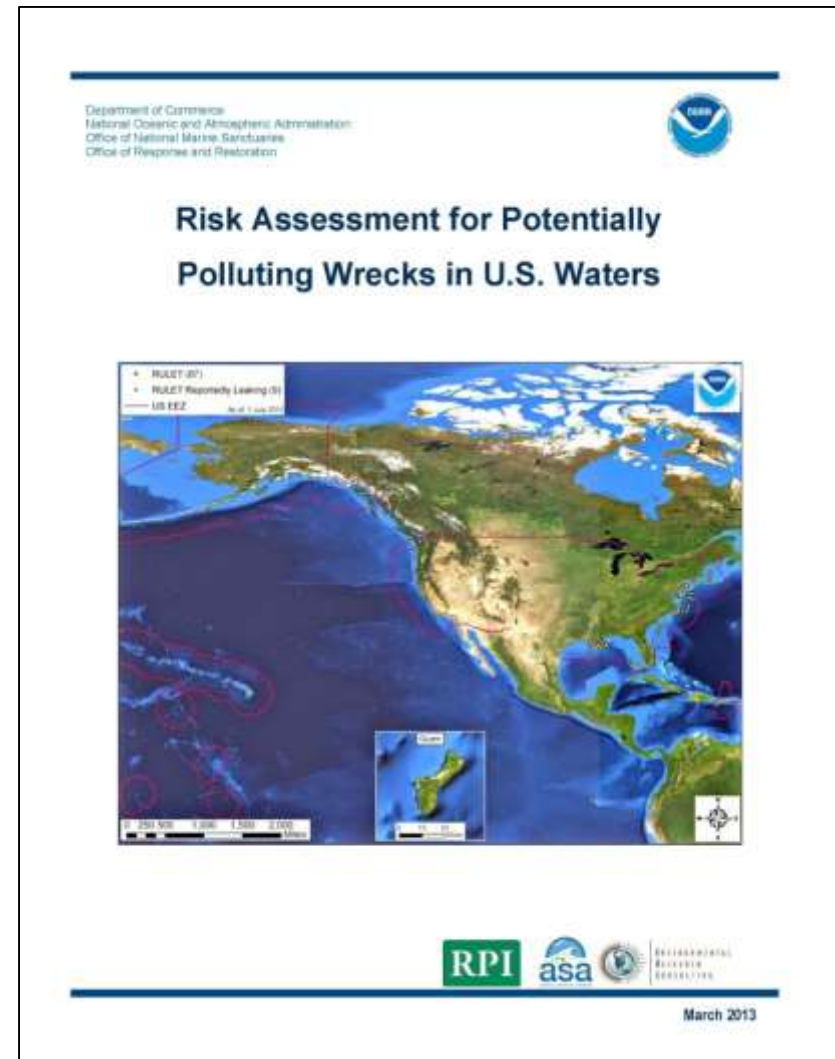




RULET



- 20,000 wrecks identified in US waters
- 573 met screening criteria:
 - Built after 1891
 - Steel, iron or concrete hull construction
 - Tanker/tank barge or at least 200' or 1,000GT
- 107 may pose substantial pollution threat based on casualty information
- 10 are leaking





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