



Ohmsett

Oil Spill Testing in Ice-Infested Waters and Implications for Inland Waterway Response

April 5-7, 2021

Grant Coolbaugh, Senior Mechanical/Test Engineer

Len Zabilansky, Principal Engineer

Ohmsett Facility

<https://ohmsett.bsee.gov>



Key Takeaways

- The challenges of oil spill clean-up testing in real- world conditions
- The challenges of simulating oil spills under icy water conditions
- The value and benefits of training under arctic/icy water condition training

Topics

- Ohmsett Overview
- Establishing a field of ice
- Testing in icy / Arctic waters
- Response training in icy/Arctic waters



Managed by U.S. Department of Interior's Bureau of Safety and Environmental Enforcement (BSEE) and operated through a contract with Applied Research Associates, Inc. since September 2018

Facility

Largest outdoor salt water test tank in North America

- 203 meters (667 feet) long
- 20 meters (65 feet) wide
- 2.4 meters (8 feet) deep
- 10 million liters (2.6M gallons)
- Wave capacity: ~1 meter (~3 feet)
- Open ocean salinity (32 -35 ppt)
- Computer controlled wave generator

Located in Leonardo, New Jersey

- One hour south of New York City
- Nearby airports:
 - Newark (35 Miles)
 - LaGuardia (64 Miles)
 - JFK (60 Miles)

Establishing a Field of Ice

Receiving and Generating Ice

- Ice testing at Ohmsett initially conducted with ice generated and shipped from the U.S. Army Corps of Engineers Cold Regions Research and Engineering Laboratory (CRREL)
- Recent ice/arctic testing performed at Ohmsett with ice generated onsite
- Ice grown in forms purchased and fabricated by Ohmsett staff



Establishing a Field of Ice

Transporting Ice

- Ice is carefully removed from cold storage refrigeration units (reefers)
- Ice is loaded onto delivery tray
- Ice is slid into boomed ice fields by machine (forklift/telehandler)



Testing in Icy/Arctic Waters

Hazardous Mass

- Testing was been conducted with 1 meter x 1 meter x 20 cm blocks
- Large ice blocks break naturally throughout the day



Testing in Icy/Arctic Waters

Test Areas

- Icy fields presents difficulties in delivering oil recovery equipment to water surface
- Winter testing may include snowy/icy winter conditions
- Addition of tank water cooling chiller increases cold water hazard



Response Training in Riverine with Ice Coverage

- Cold water rescue preparedness
- Deployment of equipment to cold and icy waters
- Safe work practices on ice



Hands-on training with oil in ice

- Complexity of oil recovery
- Difficult to find oil
- Difficult to contain oil
- Difficult to recover oil
- Safety concerns with temperature, weather and cold water
- Properly trained response personnel



Interacting with Remote ICS Decision Makers

- How and what to communicate
 - Develop common dialog with responders in field and remote ICS
- Video documentation



Training Best Practices

Competency Requirements

- 8-hr HAZWOPER
- Oil spill response safety & special considerations
- Developing response strategies



Thank You

Contact:

Grant Coolbaugh
Senior Mechanical/Test Engineer, Ohmsett
gcoolbaugh@ohmsett.com
732-866-7287

Leonard Zabilansky
Principal Engineer, Ohmsett
lzabilansky@ara.com
802-236-4671



ohmsett.bsee.gov