



Bureau of Safety and Environmental Enforcement

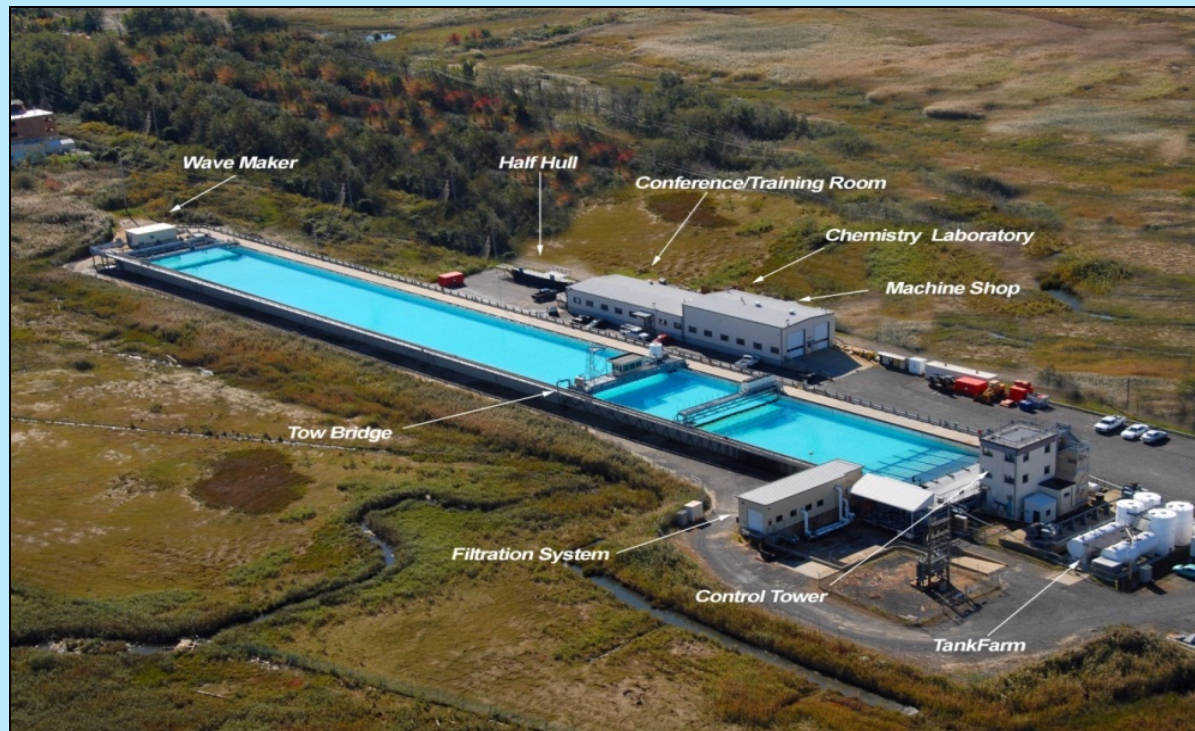
Oil Spill Response Research Program

Craig Ogawa
Oil Spill Response Division
Pacific Region Unit



Agenda:

- Background
- Website
- Technology Development
- FY 2012/13 Research Projects





□ Program Background

- MMS/BOEMRE/BOEM/BSEE Reorganization
- Oil Spill Response Division
- OSRR Program
- Ohmsett



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Oil Spill Response Research (OSRR)



For more than 25 years, BSEE (and former organizations) have aggressively maintained a comprehensive, long-term research program dedicated to improving oil spill response options. The major focus of the program is to improve the methods and technologies used for oil spill detection, containment, treatment, recovery and cleanup. The OSRR program is a cooperative effort bringing together funding and expertise from research partners in government agencies, industry and the international community.

OSRD's Response Research Unit (RRU) manages the funding for numerous research projects chosen to meet selected major topics each year. White Papers and research proposals are solicited through a Broad Agency Announcement (BAA) that is published on the Federal Business Opportunities website at www.fbo.gov.



The RRU also manages the National Oil Spill Response Test Facility, located in Leonardo, New Jersey. The name Ohmsett is an acronym for "Oil and Hazardous Materials Simulated Environmental Test Tank." Ohmsett is the largest outdoor saltwater wave/tow tank facility in North America. Ohmsett allows full scale oil spill response testing, training and research with oil in a realistic marine environment. For more information visit [the Ohmsett Website](#).



[http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research-\(OSRR\).aspx](http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research-(OSRR).aspx)

□ Website



Click on the categories below to bring up more information on our efforts in the subject area

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□ Website



Project Number	883
Date of Summary	March 9, 2012
Subject	Using Oil Herding Agents for Rapid Response In Situ Burning of Oil Spills on Open Water
Performing Activity	S.L. Ross Environmental Research Ltd.
Principal Investigator	Mr. Ian Buist
Contracting Agency	Bureau of Safety and Environmental Enforcement
Estimated Completion	Completed
Description	<p>The objective of this research was to evaluate the feasibility of using herders to enable in situ burning as a rapid-response technique in open water. This research was accomplished by performing experiments in the laboratory with the US Navy's hydrocarbon based herder formulation and the best silicone herder formulation to find the most effective product for various water temperatures. Experiments were conducted at the Ohmsett National Oil Spill Response Research and Renewable Energy Test Facility located in Leonardo, NJ to determine the persistence of the herder monolayer in realistic waves.</p> <p>This project was a continuation of TAR Projects 554 and 617 that examined the use of chemical herders to improve response countermeasures in pack-ice conditions, in salt marshes, and for use in open water with dispersants.</p>
Progress	<ul style="list-style-type: none"> ● Project kickoff meeting was conducted March 22, 2011. ● Full-scale Ohmsett experiments were conducted May 14-21, 2011. ● The Final Report has been reviewed and accepted by BSEE on March 1, 2012. SL Ross will look to present a shorter version of the approved final report during the Arctic and Marine Oilspill Program (AMOP) on June 5-7, 2012.
Reports	
AA	"Research on Using Oil Herding Agents for Rapid Response <i>In Situ</i> Burning of Oil Slicks on Open Water," S.L. Ross Environmental Research Ltd., February 28, 2012.

□ Website



FINAL REPORT

RESEARCH ON USING OIL HERDING AGENTS FOR RAPID RESPONSE *IN SITU* BURNING OF OIL SLICKS ON OPEN WATER

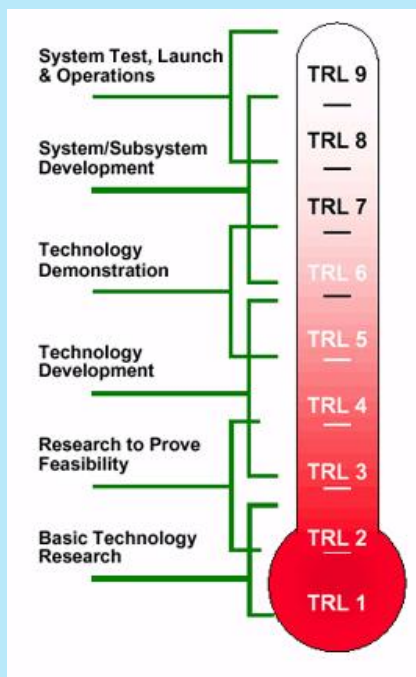
for:
U.S. Department of the Interior
Bureau of Safety and Environmental Enforcement
Oil Spill Response Research (OSRR) Program
Herndon, VA

by:
S.L. Ross Environmental Research Ltd.
Ottawa, ON

February 28, 2012



□ Technology Development Projects



Technology Readiness Levels



Interagency Coordinating Committee on Oil Pollution Research
(ICOPR)

Advancing Spill Prevention and Response Capabilities

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□ FY 2012/3 Research Projects

A screenshot of the FEDBIZOPPS.GOV website. The header includes the site name 'FEDBIZOPPS.GOV' with a star icon, 'Federal Business Opportunities', and the 'E.GOV USA.GOV' logo. A navigation menu contains 'Home', 'Getting Started', 'General Info', 'Opportunities', 'Agencies', and 'Privacy'. A large search box is prominent, with the text 'Search more than 29,500+ active federal opportunities.' Below this are several filters: 'Posted Date' (set to 'Last 30 Days'), 'See-also Code' (set to 'Any'), 'Place of Performance' (set to 'Any State or Territory'), and 'Type' (set to 'RFV'). There are also fields for 'Keyword / Solicitation #' and 'Agency'. A 'Search' button is at the bottom of the search area. To the right of the search box, there are sections for 'RECOVERY' (with a 'SEARCH RECOVERY OPPORTUNITIES' button), 'SMALL BUSINESS EVENTS' (with a 'SEARCH SMALL BUSINESS EVENTS' button), and 'VENDOR COLLABORATION' (with a 'VENDOR COLLABORATION' button). At the bottom left, there are two login sections: 'Buyers / Engineers' and 'Vendors / Citizens', each with a 'Username' field, a 'Password' field, and a 'Login' button. A 'Forgot Password' link is also present in each section. A lightbulb icon with the text 'ATTENTION: Agency users are responsible for properly uploading controlled, unclassified materials to FBO using the access control procedures for document packages and attachments detailed in the FBO Buyers Guide. Do not upload ANY classified materials to FBO.' is located above the login sections.

Broad Agency Announcement
or Request for Proposals
posted on Federal Business
Opportunities

Interagency Agreements

Unsolicited Proposals
FAR Subpart 15.6

➤ FY 2012 New Awards

OSRR # 1000 Woods Hole
Oceanographic Institution

*Oil Spill Detection and Mapping
under Arctic Sea Ice using
Autonomous Underwater
Vehicles*

PI: Drs. Ted Maksym and
Hanumant Singh



Objective: The goal of this project is to evaluate and develop an AUV-based system for detection and mapping of oil in ice-infested waters from underneath the water and/or ice.



➤ FY 2012 New Awards

OSRR # 1001 US EPA and DFO Canada



Fisheries and Oceans
Canada

Pêches et Océans
Canada

Dispersant Effectiveness, In-Situ Droplet Size Distribution, and Numerical Modeling to Assess Subsurface Dispersant Injection as a Deepwater Blowout Oil Spill Response Option



PIs: Drs. Albert Venosa and Kenneth Lee

Objective: This project will address the operational performance of the subsurface injection of dispersants into deepwater blowouts by developing methods focused on oil transport after dispersant injection.



➤ FY 2012 New Awards

OSRR # 1002 Applied Research Associates

*Acoustic Assessment of Subsea
Chemical Dispersant Efficacy*

PI: Dr. Paul Panetta

Objective: To develop acoustic techniques to measure the droplet size distribution for subsea release of crude oil and dispersants in the presence of natural gas. It will build off of the results of ARA's previous proof-of-concept study for using ultrasound to assess dispersant efficacy by measuring oil droplet sizes.



➤ FY 2012 New Awards

OSRR #1003 S L Ross
Environmental Research Ltd.

*Subsea Chemical Dispersant
Research*

PI: Randy Belore and
Dr. Paul Panetta

Objective: To advance the state of the art and knowledge in chemical dispersant use when injected into a subsea oil, or oil and gas release. SL Ross will investigate the role of natural gas in the gas-dispersant-oil system and evaluate measurement methods to quantify the oil drop and gas bubble plumes resulting from a treated or untreated subsea release.





➤ FY 2012 New Awards

OSRR #1004 National Research Council (NRC) - Ocean Studies Board

Responding to Oils Spills in Arctic Environments

PI: Dr. Deborah Glickson

Objective: The National Research Council will assess the current state of the science regarding oil spill response and environmental assessment in the Arctic region (with a specific focus on the regions north of the Bering Strait), with emphasis on potential impacts in U.S. waters.



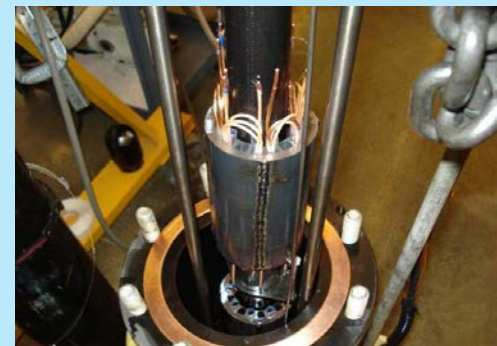
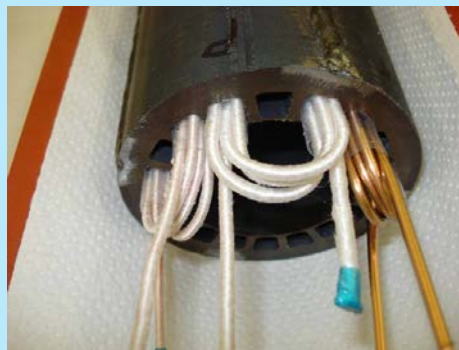
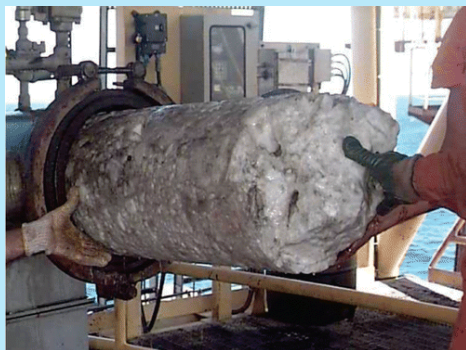
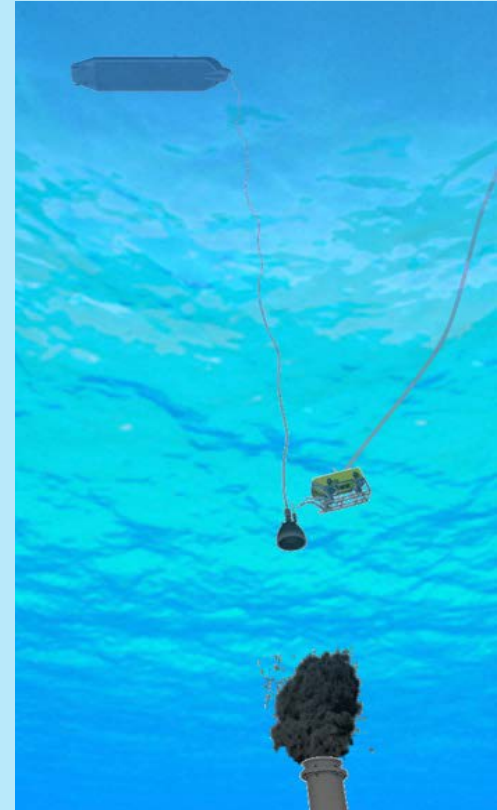
➤ FY 2012 New Awards

OSRR #1005 Composite Technology
Development, Inc. (CTD)

*Rapidly Deployable Thermal Hydrate
Preventer for Subsea Oil Spill Mitigation*

PI: Dr. Matthew Hooker

Objective: The goal of this proof-of-concept project is to demonstrate the feasibility of a Thermal Hydrate Preventer (THP) system that will provide a tool that can be used to quickly mitigate subsea oil spills.



➤ FY 2012 New Awards

OSRR # 1006 Louisiana State University

Development of Real Time Monitoring Protocol for Assessing Volatile Organic Compound Impacts on Response and Cleanup Workers Safety During Surface and Subsurface Dispersant Operations

PI: Dr. Edward Overton



Objective: To develop real-time and passive monitoring protocols to effectively determine the impact of dispersant use and VOC release, in both surface and subsurface applications, on oil spill response worker safety.



➤ FY 2012 New Awards

OSRR # 1007 Worcester
Polytechnic Institute (WPI)

*Burning Behavior of Oil in Ice
Channels*

PI: Dr. Ali Rangwala

Objective: Assess in-situ burn efficiency of oil spills in icy conditions and establish a new experimental and modeling framework for exploring oil spill burning on ice. This will enable quantifying combustion efficiency as well as point of extinction for liquid fuel spills in icy conditions.



➤ FY 2012 New Awards

OSRR #1008 Technology Systems, Inc.

*Coordinated Oil-spill Response Network
(CORN)*

PI: Charles Benton

Objective: To develop a Network which will benefit response command centers by enabling them to provide clear mission profiles to vessels, share up-to-date oil spill/response information, collect field data for input into models used to reflect and predict conditions, and maintain and distribute a Common Operational Picture across all participants.



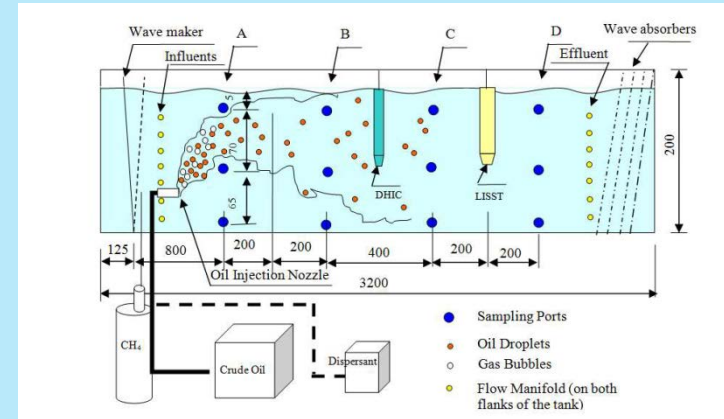
➤ FY 2012 New Awards



OSRR #1009 US EPA and DFO Canada

Evaluation of Oil Fluorescence Characteristics to Improve Forensic Response Tools

PIs: Drs. Albert Venosa, and
Kenneth Lee



Objective: To translate oil fluorescence R&D into operational tools for spill response by generating a comprehensive Excitation Emission Matrix Spectroscopy (EEMS) database to provide fluorescence peak information as a function of oil type, weathering state, concentration and DORs; identifying wavelengths best suited for oil monitoring; conducting wave tank experiments to determine submersible sensors capable of providing data comparable to scanning and/or fixed wavelength laboratory fluorimeters for rapid deployment during response efforts.

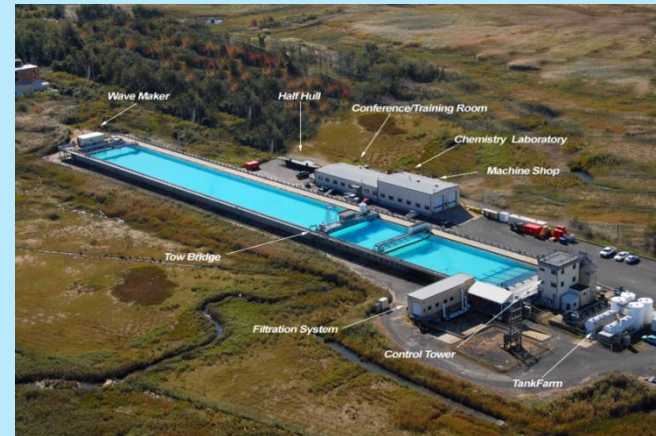


➤ FY 2012 New Awards

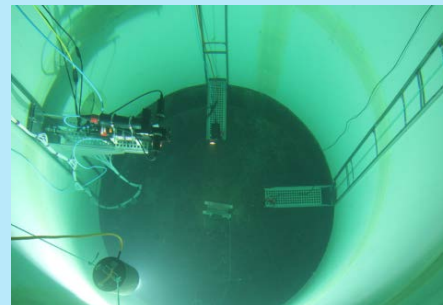
OSRR #1011 S L Ross Environmental Research Ltd.

Evaluation of Feasibility of Conducting Subsea Dispersant Research at Ohmsett

PI: Randy Belore



Objective: To identify and provide rough cost estimates for the upgrades that would be required at Ohmsett to enable it to be used by researchers to study the process of direct injection of dispersants in subsea oil and gas well blowouts.



➤ FY 2012 New Awards

OSRR #1012 Naval Research
Laboratory

*Efficient Atomization and
Combustion of Emulsified Crude
Oil*

PI: Dr. Steven Tuttle

Objective: To assess the effectiveness of low pressure atomizing burners as a means to augment in situ burning of emulsified crude oil while minimizing pump infrastructure requirements.





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IT'S ALL THERE, IF IT'S NEEDED

Lori Phillips, daughter of Mr. and Mrs. Lyle Phillips, 1601 S. 11th St., looks over the bunk beds which are a feature of the furnishings in the basement fallout shelter on public display at 1938 Bancroft St. Note stocks of canned goods, reading matter, and water jugs, besides the refuse can.

The shelter is built to withstand atomic fallout radiation and to sustain a family of five in safety from such danger. It was built as a demonstration unit by the Office of Civil Defense Mobilization and will be open to public view from 2 to 4 and 7 to 9 p.m. Fridays and Saturdays. (Staff Photo)

[http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research-\(OSRR\).aspx](http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research-(OSRR).aspx)