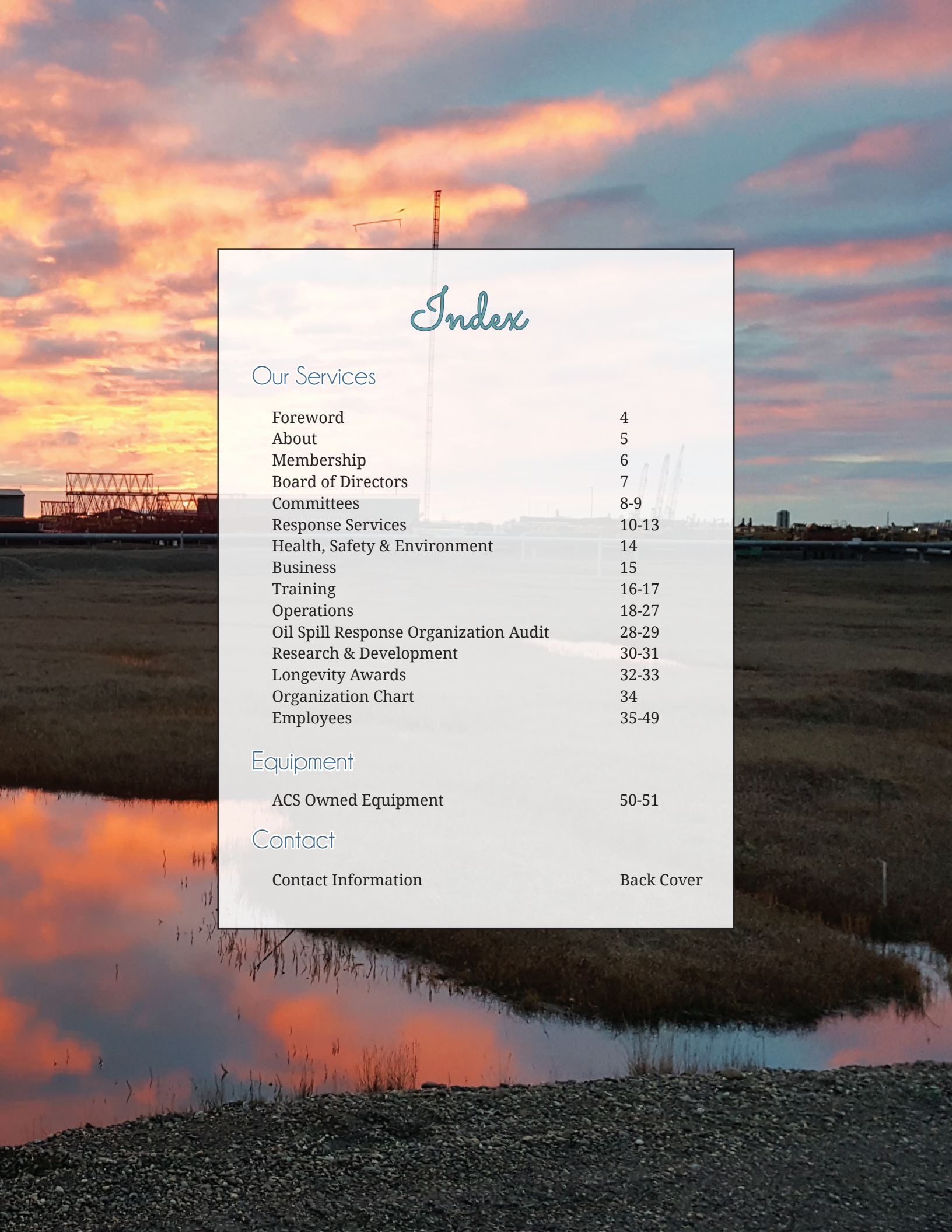
Alaska Clean Seas

2016 ANNUAL REPORT

Cover photo by Greg Watson



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Foreword

On the North Slope, our roads are occasionally smooth but often not so much. We call the condition wash-boarded, like the old time laundry devices in the days before washing machines. Occasionally, since the roads are mostly gravel, we also get a rock flying our way from passing vehicles. In the pages ahead are the highlights of 2016, as the ACS team successfully navigated several bumpy stretches of road. Due to the economic condition within the industry, there was a noted decrease in overall North Slope activity, however as a result of a shared commitment to spill prevention, 2016 had no significant spill responses.

Barkley Lloyd
President & General Manager

Looking back, it was the "year-of-the-audits" with the annual financial audit, a multi-day U.S. Coast Guard/BSEE audit, and a comprehensive multi-week member company audit. Through the dedication and professionalism of the ACS team, all of the audits were completed with no significant findings and frequent high praise for the response readiness, operational proficiency and business management procedures that continue to make ACS successful.

In keeping with our commitment to provide the best value for our member companies, ACS implemented a wide range of cost saving actions with the most challenging being staff reductions. A number of dedicated members of the ACS Team are missed daily. Difficult decisions were made as we restructured the organization, and those that remained were called upon to adapt to an increased workload, hold over to cover response readiness needs, and cross-train to learn new skills.

The software development project is in its final stages and we anticipate an implementation date in early 2017. The new system covers preventative maintenance tracking, procurement, training records, timekeeping, work/travel scheduling and accounting processes. Because of the complex suite of tasks, all departments have been involved in the development and testing phases. A huge 'thank you' goes out to all members of the team who have dedicated so many hours to the project to ensure its success.

Lastly, the Anchorage office is re-locating in January 2017. Since recently moving one position off-slope, we have outgrown our current office. This move provides the opportunity to reduce costs, obtain much needed space, and create a better work environment.

Please read on to further learn about (or remember) the changes and challenges of a demanding year. ACS is poised to meet the road ahead as we approach 38 years of consistently exceeding expectations, holding fast to our core values, and maintaining a well-deserved reputation for doing the right thing the right way.

C. Barkley Lloyd

About

Alaska Clean Seas (ACS) is a not-for-profit oil spill response cooperative whose current membership includes oil and pipeline companies that engage in or intend to undertake oil and gas exploration, development, production or pipeline transport activities on the North Slope of Alaska. Originally formed in 1979, ACS was restructured in 1990 from an equipment cooperative into a full-response organization. ACS is now poised to respond, like a fire brigade, to an emergency with trained responders and response equipment. ACS is active in fostering a common organizational structure for responding to and managing spills on the North Slope of Alaska.

Purpose

The purpose and mission of ACS is to provide personnel, material, equipment and training to its members for responding to oil spills on the North Slope. When authorized by the Board of Directors, ACS may also respond to non-member spills.

Areas of Operation

ACS' area of operation includes Alaska's North Slope, the Outer Continental Shelf off the coast of the State of Alaska, and the lands beneath navigable waters of the State of Alaska as defined in 43 U.S.C. § 1301, together with adjacent beaches, harbors, inland waterways, natural and artificial islands, shorelines and onshore facilities directly or indirectly supporting offshore explorations, development, producing and transport operations; and the TransAlaska Pipeline from pump station one to milepost 167.

Membership

Membership is available to entities that drill, explore, produce or transport oil or gas, within the area of interest. Below is general membership information.

Producing Membership

Production Operator Members are members that produce or transport oil or gas within the area of interest. These members have Board representation and voting privileges as well as bear the responsibility of funding the annual operating costs.

Fees

- New Member Initiation Fee is $500,000 and the annual fee is $50,000.
- Annual operating costs are funded through an allocation model based on production and risk categories, such as; road accessibility, proximity to water; pipeline location (off-road or off-shore).
- Daily Development Fee of $1,250 applies during the periods of transition from Inactive Member status to Producing.

Non-Producing Membership

Non-Production Operator Members are generally members that conduct exploratory drilling. These members are actively involved in the Operations Review Team Committee and have Board representation, but do not have voting rights and do not fund the annual allocated operating costs.

Fees

- New Member Initiation Fee is $100,000 and the annual fee is $20,000.
- Daily Fees: Rig Day Fee of $2,500 applies to drilling days; General Activity Fee of $625 applies to activity that poses the risk of a spill greater than one bbl. of liquid and relies on ACS response.
- Daily Development Fee of $1,250 applies during the periods of transition from Non-Producing status to Producing.

Current Membership

- Alyeska Pipeline Service Company
- Anadarko Petroleum Corporation
- Armstrong Energy, LLC
- BP Exploration (Alaska), Inc.
- Brooks Range Petroleum Corporation
- Caelus Energy Alaska, LLC
- ConocoPhillips Alaska, Inc
- Eni U.S. Operating Company, Inc.
- ExxonMobil Alaska Production Inc.
- Great Bear Petroleum Operating, LLC
- Hilcorp Alaska, LLC
- Savant Alaska, LLC

Board of Directors

John Hellén
Chairman
Caelus Energy Alaska, LLC

Whitney Grande
Vice-Chairman
Eni U.S. Operating Company, Inc.

Martin Parsons
Alyeska Pipeline Service Company

Mark Hanley
Anadarko Petroleum Corporation

Damien Bilbao
BP Exploration (Alaska), Inc.

Dean Walker
ConocoPhillips, Alaska Inc.

Brien Reep
ExxonMobil Production Company

Stephen Radcliff
Glacier Oil & Gas for Savant Alaska

John Barnes
Hilcorp Alaska, LLC

Chuck Wheat
*Armstrong Energy, LLC**

Jack Laasch
*Brooks Range Petroleum Corporation**

Buzz Yohman
*Great Bear Petroleum Operating LLC**

** Non-Producing Operator Member*

Response Services

Mutual Aid Emergency Response Levels

Tier 1 - A spill incident in which the area resources can effectively respond to the spill without assistance.
Tier 2 - A spill incident in which resources outside the immediate area, but still available on the North Slope, are required. A phone call to ACS can put into effect the Mutual Aid Agreement which makes available the spill response personnel and spill response equipment slope-wide.
Tier 3 - An extremely large incident or an incident lasting several months may require resources from off the slope. This would be considered a Tier III event. Resources are available through Master Service Agreements.

Mutual Aid Agreement

Each member of Alaska Clean Seas has the option to enter into a Mutual Aid Agreement. This agreement provides members with efficiencies and cost savings by sharing resources among all members in the event of an oil spill. It outlines the terms and conditions under which each member company can make available their employees, contractors, equipment, materials and supplies to each other in the event of an oil spill. ACS facilitates the agreement among members.

Equipment

Response equipment totaling over $75,000,000 is owned by ACS and member companies. All equipment is maintained by ACS. Member company owned equipment is available through the Mutual Aid Agreement. The inventory includes over 315,000 feet of oil containment boom (including approximately 19,000 feet of fire boom), 210+ skimmers, six helitorch aerial ignition systems, two helitorch mixers, 90 vessels, two 125 barrel mini-barges, twelve 249 barrel mini-barges, one 650 barrel barge, and 290+ storage tanks and bladders of various sizes. Also included is an extensive marine off-shore response capability. Mobile facilities are also available, such as the Bird Stabilization Center.

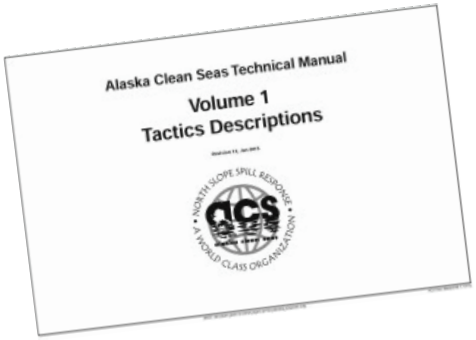
Facilities

Emergency Operations Centers located in Alpine, Kuparuk, Milne Point, and Prudhoe Bay are available through the Ballot Agreements

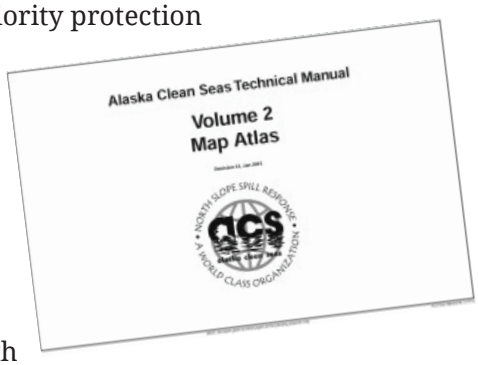
ACS Technical Manual

The ACS Technical Manual is the primary guidance document for oil spill response on the North Slope. It was developed in 1999 to provide descriptions of spill response tactics for use during contingency plan development and spill response activities. The manual is a living document and is revised as new tactics or equipment are identified.

Volume I lists spill response tactics in a variety of conditions and seasonal variations. It also provides summary lists of equipment, realistic maximum operating limitations, and a list of ACS master service agreements. A pocket Field Guide is available for field responders.



Volume II provides a map atlas of the North Slope. These maps show priority protection sites, general environmental sensitivities, air and vessel access, countermeasure considerations, and pre-staged spill response equipment.



Both Volumes of the Technical Manual are available online at alaskacleanseas.org under Documents.

Some services that may be needed during a major spill response event may not be available on the North Slope. ACS maintains agreements with over 40 providers of a variety of services for member company access or use during a response.

Additionally, the Alaska Department of Natural Resources has approved ACS access to the North Slope Archaeological Data which can be reviewed during a spill response event to ensure these sites are properly protected.

Response Personnel

Trained and qualified spill response personnel are mandatory in any spill response event. ACS accesses these personnel through three different resources as shown below. ACS has developed the following five labor categories for spill responders: General Laborer, Skilled Technician, Team Leader, Vessel Operator (Nearshore) and Vessel Operator (Offshore). Each of these categories have minimum requirements for qualification.

VRT Training in Prudhoe Bay

Village Response Team (VRT)

In 2016, ACS contracts with UIC Arctic Response Services to provide a North Slope Village Response Team. The team consists of residents from Anaktuvuk Pass, Atqasuk, Barrow, Barter Island,Nuiqsut, Point Hope, Point Lay, and Wainwright.

SRT Joint Exercise Training

North Slope Spill Response Team (NSSRT)

Over 500 volunteers are trained and qualified on the North Slope to make up the NSSRT. Combined with Alaska Clean Seas personnel, a minimum of 115 spill response personnel are available on the North Slope each day.

ACRT Training Academy in Kenai

Auxiliary Contract Response Team (ACRT)

ACS maintains contracts with companies off-slope in the event additional spill response personnel are needed. Presently the companies are CCI Industrial Service, PENCO Environmental Services and National Response Corporation Alaska. Over 700 qualified spill responders are available through these contracts.

Response Services

Permits Maintained by ACS

ACS maintains permits for oil spill training events and emergency oil spill response activities for the North Slope.

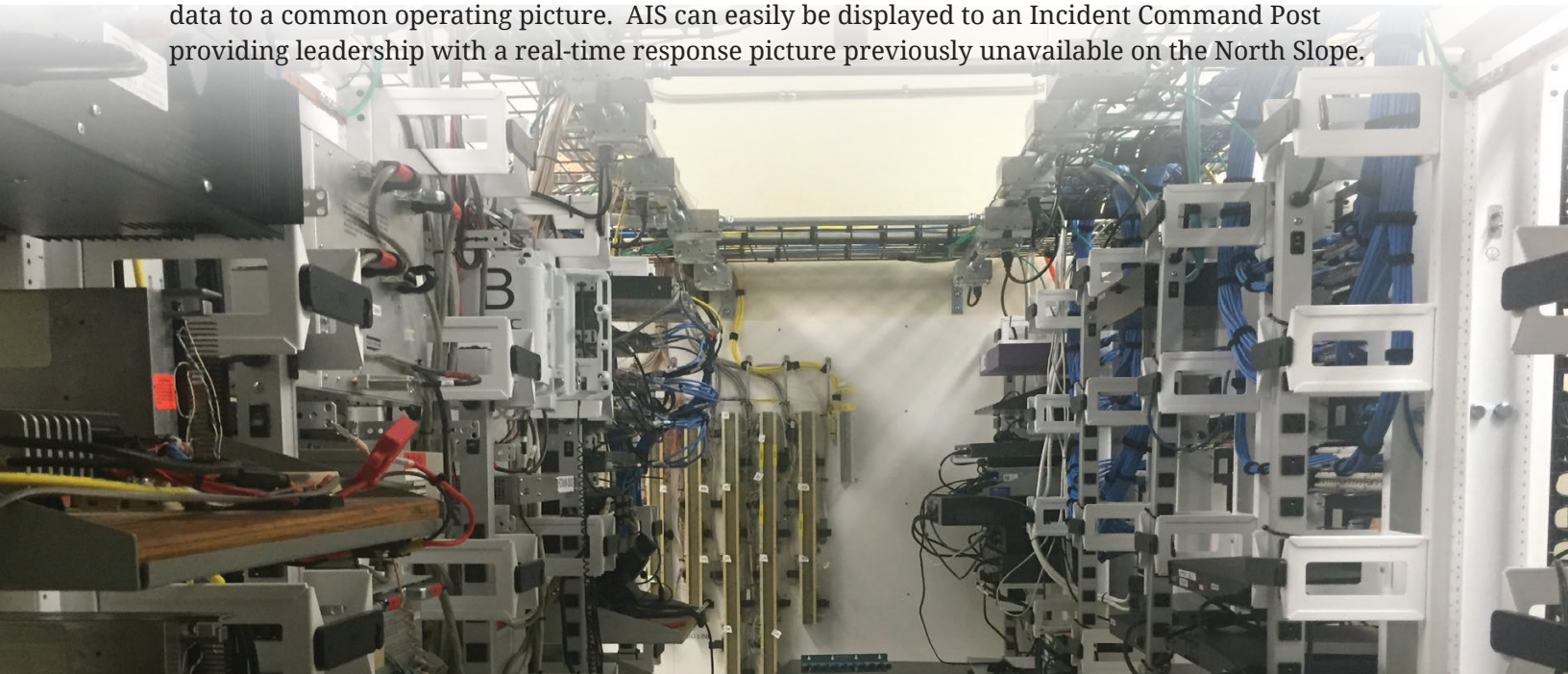
- *Alaska Department of Natural Resources Land Use Permits*
- *Alaska Department of Natural Resources Fish Habitat Permits*
- *Alaska Department of Fish and Game Bird and Mammal Hazing Permit*
- *Alaska Department of Fish and Game Mammal Stabilization, Transport & Disposal Permit*
- *U.S. Fish and Wildlife Service Capture, Salvage and Rehabilitation of Migratory Birds & Raptors Permit*
- *North Slope Borough Development Oil Spill Emergency Use Permit*
- *Bureau of Land Management Oil Spill Response Training in the NPRA Permit*
- *Alaska Department of Environmental Conservation Black Smoke Open Burn Approval for In-Situ Burn Training Permit*

ACS continues to sponsor meetings with the natural resource agencies, member company representatives, and response contractors to improve working relationships and capabilities for wildlife response on the North Slope. Contracts for professional assistance are maintained with the Alaska Sealife Center, Alaska Zoo, Pet Stop, and International Bird Rescue.

Communications

ACS's telecommunication center houses equipment that supports day-to-day operations and spill response operations. Using a VHF repeater system on the North Slope, ACS is able to communicate throughout its key operational areas on the slope. ACS also owns 13 VHF and UHF portable repeaters to extend its area of coverage.

Alaska Clean Seas partners with Marine Exchange Alaska in support of the maritime Automatic Identification System (AIS), a fully automatic marine vessel identification system. Vessels operating off the coast of the North Slope outfitted with an AIS transceiver receive and transmit data that includes: vessel name, position, direction of travel, course over ground, and speed. AIS provides more situational awareness than radar, horns, and plotters and is not affected by sea state or weather. During a response AIS can assist member companies by contributing critical data to a common operating picture. AIS can easily be displayed to an Incident Command Post providing leadership with a real-time response picture previously unavailable on the North Slope.



North Slope Radio Channel Assignments
ACS owns 200 VHF and UHF radios and utilizes an Iridium Satellite Telephone System. All of these systems combined with a Mobile Response Center provide exceptional communications capability during any spill event on the North Slope.

ACS is currently licensed to operate:

- 4 Statewide VHF Oil Spill Tactical Channels
- 20 ACS Fixed VHF Repeater/Talk Around Channels
- 12 Portable VHF Repeater/Talk Around Channels
- 4 ACS Logistics VHF Repeater/Talk Around Channels
- 7 Marine Channels

Mobile Command Centers

Excellent communications capability is the cornerstone of any successful spill response. ACS and member companies maintain three separate mobile command centers which provide full on-site radio, phone and fax capabilities.

ACS provides contingency communications response support for exploration drilling. During exploration ACS employs several technologies to meet Contingency Plans. We send all exploration projects out with a “Drilling Kit”. Drilling kits contain a minimum three Motorola XPR 6550 hand held radios, three charging stations and extra batteries. Kits also have a more powerful Motorola XPR 4550 mobile radio with a power supply and antenna. The kits may also include cellular and/or satellite communication equipment as needed.

Health, Safety & Environmental

VPP

ACS achieved OSHA's Voluntary Protection Program (VPP) Star status in 2008. The VPP Star status is a testament of a level of excellence in Health and Safety management systems. In 2014, ACS went through OSHA's required renewal process to maintain the VPP Star status for another 5 years. OSHA representatives conducted an onsite visit at ACS Base in Deadhorse and a thorough review of ACS safety programs, training records, investigations and safety achievements. ACS continues to be an OSHA VPP Star site. ACS is currently in the process of mentoring other companies to help them achieve OSHA VPP status to help promote safe working environments.

HSE Programs

ACS has a number of safety essential programs it relies on for consistency, compliance and providing the tools to its employees to do the job safely. These programs are reviewed annually to reflect any regulatory changes or changes in the working environment to maintain a safe and healthy workplace.

Our Commitment

Our HSE goals provide the foundation to all activities, from jobs on the slope to play at home. In order to achieve our organizational goals we strive to keep all members of our team focused on maintaining the highest levels of commitment to safety.

ConocoPhillips Environmental Award

The ACS team in Kuparuk was presented with a 2016 Environmental Award. These awards are presented to groups or individuals in the field who the Environmental team identifies as having gone above and beyond in their contributions to ConocoPhillips' culture of environmental care and compliance. Among other notable achievements, the ACS Team in Kuparuk provides excellent all-around communication regarding spill status, timely processing of aerosol can crushing for disposal, new wildlife deterrent strategies, ensures summer follow-up inspection of key winter spills, works hard to maintain a trained Spill Response Team despite challenges, and readily responds to wildlife and spill events. They also played a significant role in maintaining ConocoPhillips' open and positive relationship with the regulatory agencies for spill reporting and cleanup. Their work ethic, attitude, and professionalism is recognized.

Business

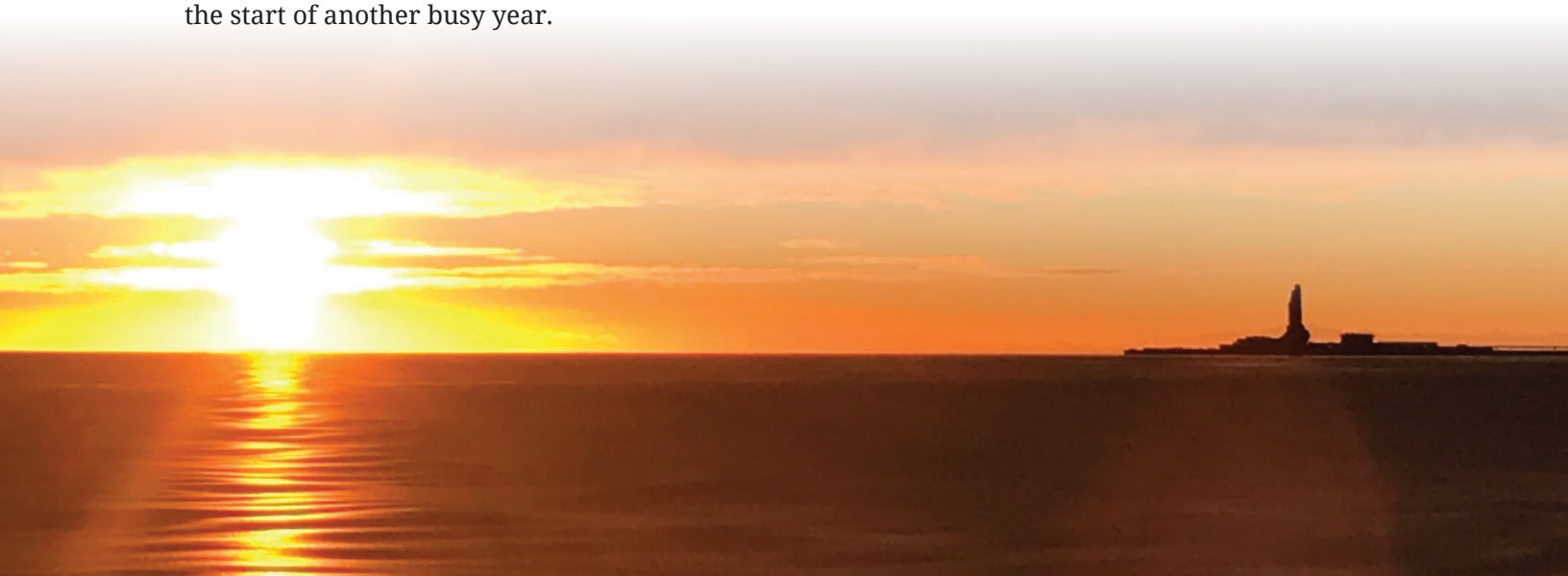
2016 was a busy year. In addition to the annual financial audit, a comprehensive Member Company audit took place in August. ExxonMobil was the Lead, with support from ConocoPhillips and BP. The scope of the audit was to evaluate operational procedures, risk identification and control measures and company policies. Following months of coordination and preparation, the audit team spent three weeks between the Business Office in Anchorage and the Base Facility in Deadhorse. They conducted numerous interviews; examined equipment maintenance, inventory, contracts and procurement records, IT procedures, personnel training records, the environmental management program and safety documentation. At the conclusion of the audit some minor areas of improvement were recommended for building security, network security policies, and procedural changes related to contracting. Overall the audit team was impressed with the personnel knowledge, experience, and overall readiness to respond.

Also this year, an effort was launched to move the Business Office to a new location. After ten years at our current location, we've outgrown the space. In the current economic climate, rental rates have decreased in the midtown area and this provided an opportunity for cost savings. A team was formed and, over a 4-month period, found the right place (convenient to our members and relatively close to the airport) at a better value. We are moving to 3300 C Street, in mid-January. We look forward to welcoming everyone to the new location.

In order to improve efficiency and reduce costs, the Training/Business Analyst position was moved off-slope to the Business Office. Leah Romines accepted the position, gave up her slope schedule, and joined the Anchorage office staff in July. The move has proven to be beneficial in improving business functionality and reducing costs. She is a welcome addition with her positive, energetic personality.

Completing the design and implementation of CORE, our new line of business software, has been exceptionally challenging due to personnel reductions and the need to thoroughly test the program before going live. The new program replaces a proprietary software program, is web-based, and eliminates volumes of paper-based processes. In order to achieve the performance we expect from CORE, a large team of employees tested the program to ensure ACS business needs are met. The Go-Live date will be the second week in April.

The upcoming first quarter, between the move and the software implementation, promises to be the start of another busy year.



Training

The training staff provides continuous oil spill training support to the member companies. This support includes classroom presentations, field practicals, tabletop exercises, and deployment drills. With over 3,000 instructor hours per year, hundreds of training development hours, and extensive oil spill response experience, their expertise radiates throughout their lessons.

SRT Training

Spill response training is provided weekly in 2-4 hour sessions to each of the North Slope Spill Response Teams. Several 2-3 day sessions are conducted each year for the North Slope Village Response Team and the Auxiliary Contract Response Teams. ACS instructors provide the spill response training at the pump stations and response centers along the Alyeska pipeline. Specialized training is also provided by both ACS instructors and professionals from outside the organization. Courses range in length from 2 hours to several days.

ICS Training

ACS follows the National Incident Management System (NIMS). Through an agreement with Emergency Management Services International (EMSI) ACS is presenting EMSI training classes to member companies. Classes include Intermediate ICS 300, ICS-339, Division and Group Supervisor, Planning Section Workshop, Situation Unit Workshop, and Resource Unit Workshop. More classes will be developed and presented as necessary. ICS training is provided to member company teams both on and off the North Slope.

Specialized Training

Alaska Clean Seas periodically schedules several different specialized courses for the North Slope Spill Response Teams. Advanced Oil Spill Responder courses are held at Ohmsett, New Jersey. These courses provide students the opportunity to operate different types of skimmers in different types of wave conditions and in oil on water.

The Advanced Oil Spill Response in Ice training course is a week long course held at the Cold Regions Research & Engineering Laboratory (CRREL) in Hanover, New Hampshire. This course

Eastern Operating Area Spill Response Team

Endicott Boom Deployment

provides students the opportunity to practice tactics for delineation, containment and recovery of oil under ice.

ACS periodically sponsors the Oiled Wildlife Response Workshop at the Alaska Sealife Center in Seward, Alaska. This three-day course provides students a basic understanding of animal care and treatment to assist professionals in oiled pinniped response activities.

Bird Hazing Training, taught by an instructor from the U.S. Department of Agriculture (USDA) teaches students how to identify different species, which deterrent tools to use and how to develop a hazing strategy based on an oil spill scenario. Students also learn firearm safety and how to operate different pyrotechnics used in bird hazing.

Polar Bear Hazing is an eight hour course instructed by ACS trainers authorized by the US Fish & Wildlife Service. This course provides trained responders knowledge of the regulations protecting this unique species of bear outlined by the Endangered Species Act and the Marine Mammal Protection Act. Students are taught to understand polar bear biology, behavior, and techniques to limit interaction between humans and bears through attractants management, passive hazing, and active hazing. Instruction of proper techniques and equipment enables effective hazing while providing the safest environment for bears and responders alike.

Drills and Exercises

ACS assists in both tabletop and field deployment exercises. Tabletop walk-through exercises provide an excellent training atmosphere in which students work through a scenario with instructor guidance. Field deployment exercises are conducted year-round in a variety of weather conditions. As leaders in cold weather spill response, ACS personnel are able to provide realistic conditions and activities to the field response training exercises.

Endicott Decon Training

Eni Survival Suit Training

Operations

2016 was a very challenging year for ACS in many ways, especially when it came to providing continuous oil spill response coverage to our member companies. ACS was hit with several illnesses and long term absences due to medical recoveries and family needs. Thankfully, the ACS team was able to step up and many employees worked over in their positions as well as in other fields and came on shift early to cover the absence of a colleague. While it was challenging for management to juggle schedules at times, the entire ACS team stepped up and once again provided our members with exceptional customer services.

Despite being a challenge at times, these absences provided an opportunity for our Training Specialists, Warehouse Technicians and Base Mechanics to provide coverage and support in outlying fields. This valuable experience deepened our bench strength and widens our overall knowledge and capability level tremendously throughout the organization.

Not only did personnel from ACS Base in Deadhorse have the opportunity to work in the outlying areas, there were also cases of Spill Technicians from the areas offering much needed assistance in the ACS Base Shop. Typically, field personnel will drop off response equipment at ACS Base for winterization, say hello and leave. On two separate occasions this year, Outlying Area Technicians brought the equipment to Base and offered their help in the shop. Not only was this a great help to the Lead and Base Mechanics, it will also allow these Spill Technicians to handle some winterization tasks on their own in the future. They knew we have been short staffed and that equipment PMs were becoming due so they jumped in to assist. This kind of teamwork and willingness to help each other is what makes ACS such a great place to work.

The ACS Response vessels were launched during the first week of July with full operations including SRT Training and Vessel Operator Training beginning immediately and continuing through September. The vessels were removed from the water on October 4th in anticipation of a typical freeze up. Two vessels were transported to the ACS marine maintenance shop at Santé Fe pad to begin repairs. The remainder of the fleet remained at West Dock on trailers until October 30th when the water conditions appeared to prevent vessel operations. Close monitoring of ice conditions required us to maintain a contract marine crew through the second week of November due to unexpected ice movement keeping local waters relatively and unexpectedly ice free. The season extended two weeks longer than historically due to a late freeze. ACS and the contract marine crew were response ready for the entire open water season from early July until mid-November.

We continue to work towards the ideal design and construction of a mooring facility for our West Dock fleet of spill response vessels. Our Board of Directors has been supportive, visiting West Dock this summer to increase their understanding of the mooring challenges and voting unanimously to fund a conceptual design of moorage facilities for the ACS fleet. We will be working closely in 2017 with our contractor to develop a mooring design fit for purpose.

The economic environment in 2016 provided the opportunity to take a careful look at our budget and identify cost saving measures both internally for ACS and externally for our members. Each and every budget line item under Operations and Maintenance was examined. The ACS Operations staff was challenged to bring forth ideas that would reduce cost at no loss in response readiness. Creative and resourceful ideas resulted in over $200,000 in savings. Even with a reduced workforce and budget, the ACS team was able to perform the same work safely, efficiently and effectively.

While the economic climate continues to fluctuate, we can be sure that 2017 will offer new challenges and opportunities. We are confident that ACS will continue to find ways to provide more and more value to our members. We look forward to a safe and productive 2017.

Kuparuk Jet Boat on Harrison Bay

Northstar RoBoom Deployment

EOA SRT

Operations

Marine Operations

Winter maintenance included the installation of new battery boxes on the Bay Boats replacing the original metal boxes and relocating master switches to the lower cabin for easier access. Hydraulic plumbing was replaced between the various hydraulic pumps and reservoirs on all four Bay Boats, eliminating leaks caused by corroded fittings. The original Bay Boat fuel filters and valve bodies were replaced due to corrosion. Both 38 foot Munsons received rebuilt fuel pumps and new injectors to improve hard starting. The Munsons also received all new coolant hoses along with the addition of tank sight glasses and valves to easily drain and refill the system when needed.

Underway hours for the season increased 20% primarily due to supporting the Quintillion fiber optic cable installation. Vessel Operator and weekly NSSRT training sessions were well attended and continued to account for the majority of the underway hours. Along with the Mutual Aid Drill, there were several large NSSRT joint exercises throughout the summer at both West Dock and Oliktok Point.

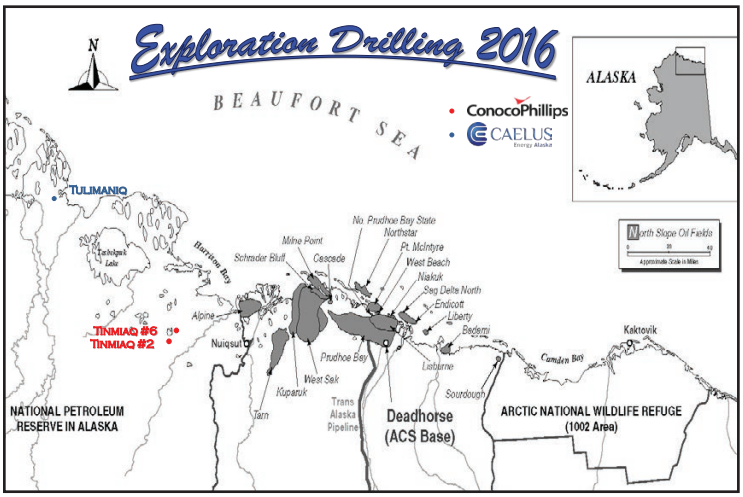
Improvements to the Lemming mooring barge were made by replacing synthetic mooring lines with multiple lengths of ¾" chain. The stern anchors were also pulled from the water, overhauled with all new lines and hardware then repositioned. Ballast was also added to the barge in an effort to ground the barge and improve stability by reducing movement.

Exploration Drilling Operations

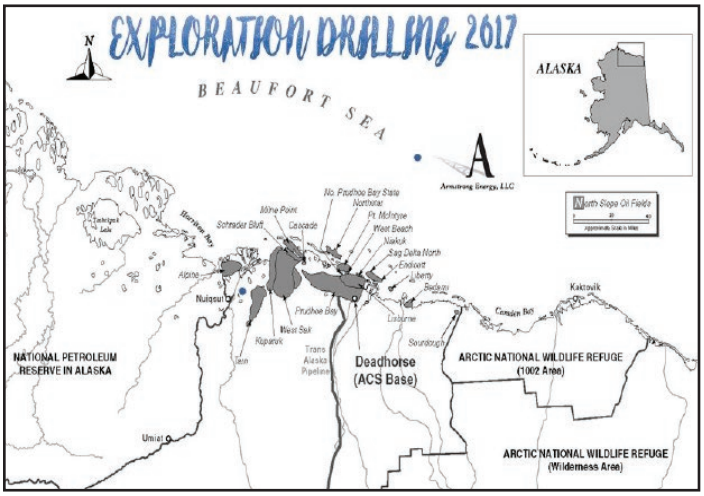
The ACS drilling technician program is intended to provide immediate spill response capability at remote locations. Drilling Technicians provide environmental support and compliance assurance at the ground level.

For the 2016 Exploration Drilling Season ACS supported two members ConocoPhillips and Caelus Energy Alaska. ConocoPhillips drilled two wells southwest of Alpine in the NPR-A called Tiŋmiaq #2 and Tiŋmiaq #6 supported ACS Drilling Technicians along with Midway ice road camp. For the season ACS had over 4,700 man hours supporting ConocoPhillips. Caelus Energy Alaska drilling one exploration well in the NPR-A in the shallow waters of Smith Bay called Tulimaniq. ACS supported the drilling effort with a day and night shift which accounted for nearly 2,900 man hours.

For the 2017 exploration season, Armstrong Oil & Gas will explore a new location along the Colville River. Twenty technicians went through orientation in November of 2016 in preparation for the 2017 season.



2016 Drilling Map



2017 Proposed Drilling Map

Operations

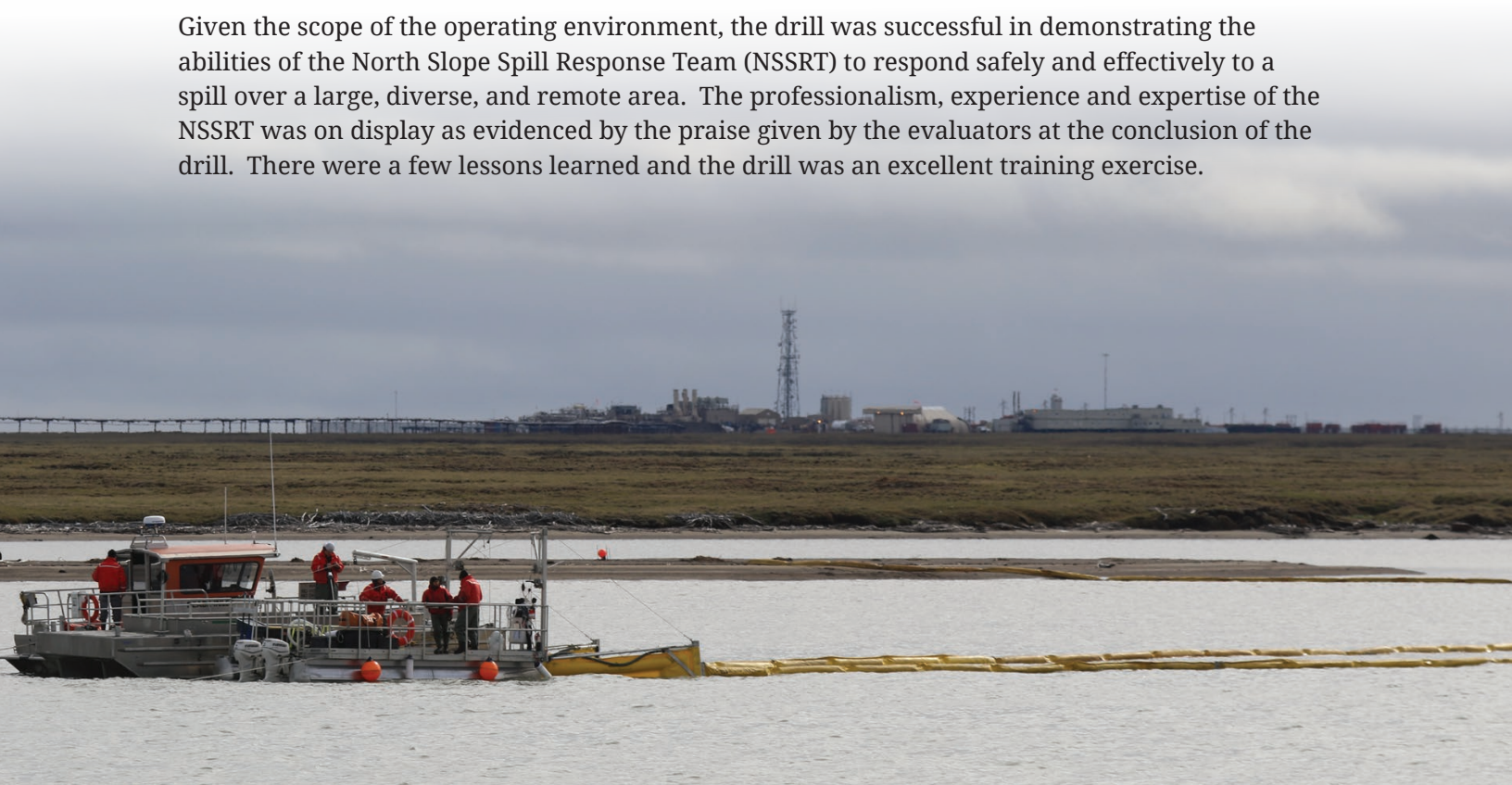
Mutual Aid Drill

Caelus Energy Alaska hosted the Mutual Aid Drill on August 3, 2016. The drill simulated a response to a pipeline spill over Kalubik creek between Caelus' Nuna developmental site and the onshore Oooguruk Tie in Pad (OTP). The Incident Management Team (IMT) was ramped up in Anchorage at the Caelus offices and ran simultaneously with the field operations. Given the geographical diversity of the area, the scenario gave the field responders the ability to demonstrate a wide range of spill response tactics. The field drill encompassed operations over three primary areas: Harrison Bay, Kalubik Creek, and Oliktok Point.

105 responders from the NSSRT participated from all of the Mutual Aid Partners. Additionally there was participation from personnel of 10 federal, state, and local agencies. Three groups of evaluators were formed of representatives from the Alaska Department of Environmental Conservation (ADEC), US Coast Guard, the North Slope Borough and industry representatives. These evaluators were tasked with observing and critiquing the performance of responders at Kalubik creek, the staging area, decontamination, forward operating base, on-water containment and recovery, and the IMT (Anchorage).

There was a concerted effort at Oliktok Point to accommodate all of the boats, equipment and personnel for the staging and decontamination areas. Inland on Kalubik Creek, three separate teams demonstrated the ability to access and complete a variety of containment and recovery tactics in shallow waters. Near shore, there were two groups tasked with conducting shoreline assessment (SCAT) and prioritizing the protection of sensitive shoreline areas. Additionally, there were two task forces consisting of six teams offshore that demonstrated recovery tactics from vessels in Harrison Bay. The forward operating base was set up at OTP and succeeded in providing cohesion, coordination, and communication between the IMT in Anchorage and the various field operations.

Given the scope of the operating environment, the drill was successful in demonstrating the abilities of the North Slope Spill Response Team (NSSRT) to respond safely and effectively to a spill over a large, diverse, and remote area. The professionalism, experience and expertise of the NSSRT was on display as evidenced by the praise given by the evaluators at the conclusion of the drill. There were a few lessons learned and the drill was an excellent training exercise.



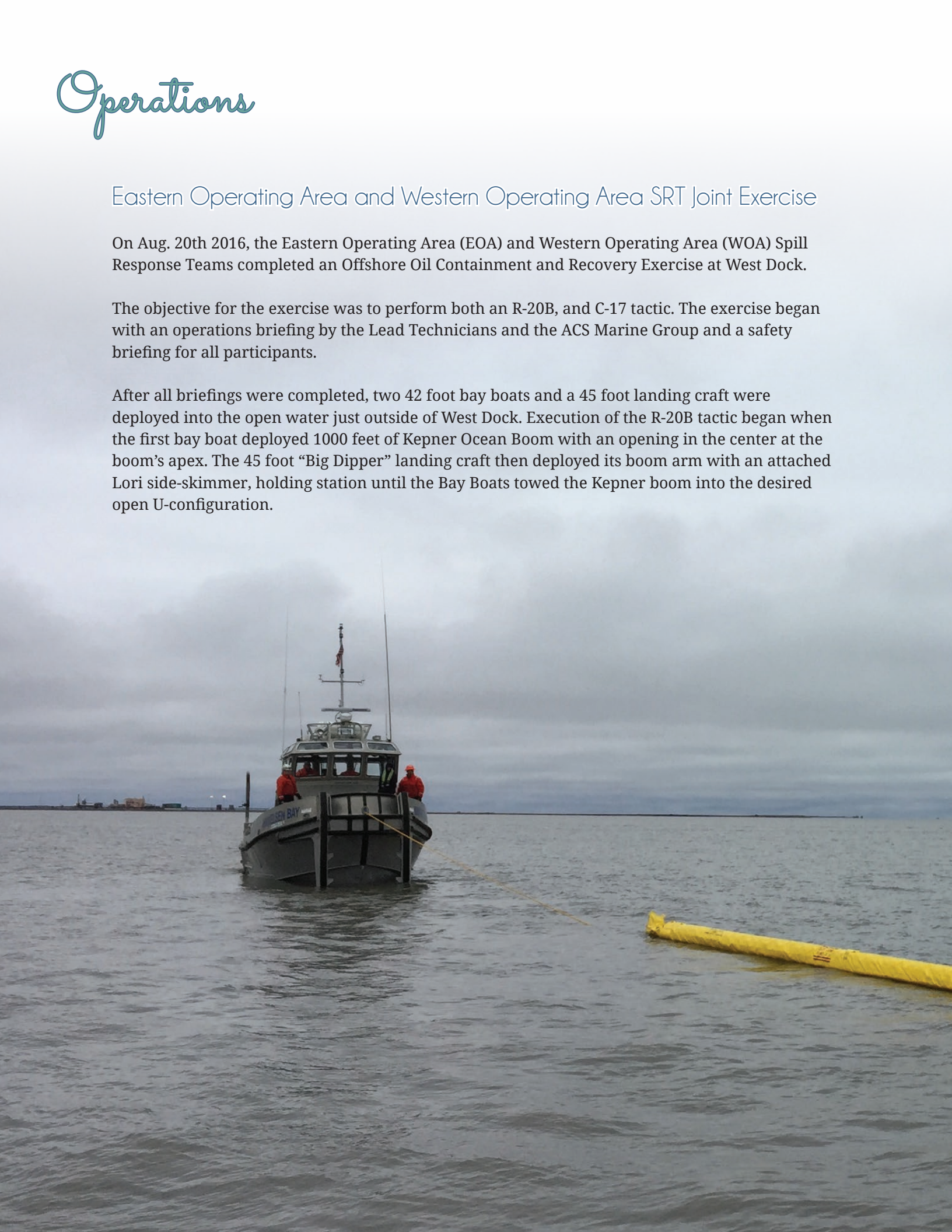
Operations

Eastern Operating Area and Western Operating Area SRT Joint Exercise

On Aug. 20th 2016, the Eastern Operating Area (EOA) and Western Operating Area (WOA) Spill Response Teams completed an Offshore Oil Containment and Recovery Exercise at West Dock.

The objective for the exercise was to perform both an R-20B, and C-17 tactic. The exercise began with an operations briefing by the Lead Technicians and the ACS Marine Group and a safety briefing for all participants.

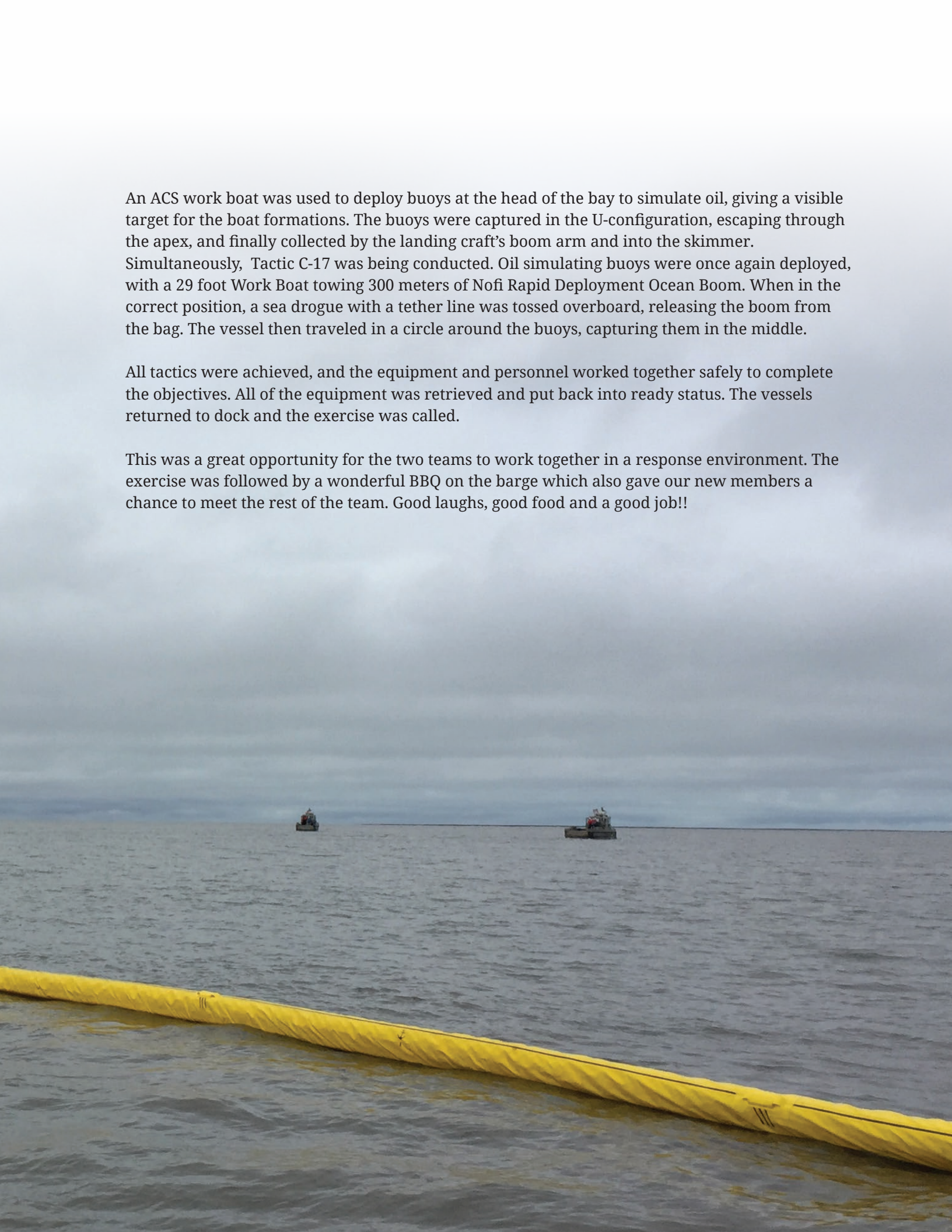
After all briefings were completed, two 42 foot bay boats and a 45 foot landing craft were deployed into the open water just outside of West Dock. Execution of the R-20B tactic began when the first bay boat deployed 1000 feet of Kepner Ocean Boom with an opening in the center at the boom's apex. The 45 foot "Big Dipper" landing craft then deployed its boom arm with an attached Lori side-skimmer, holding station until the Bay Boats towed the Kepner boom into the desired open U-configuration.



An ACS work boat was used to deploy buoys at the head of the bay to simulate oil, giving a visible target for the boat formations. The buoys were captured in the U-configuration, escaping through the apex, and finally collected by the landing craft's boom arm and into the skimmer. Simultaneously, Tactic C-17 was being conducted. Oil simulating buoys were once again deployed, with a 29 foot Work Boat towing 300 meters of Nofi Rapid Deployment Ocean Boom. When in the correct position, a sea drogue with a tether line was tossed overboard, releasing the boom from the bag. The vessel then traveled in a circle around the buoys, capturing them in the middle.

All tactics were achieved, and the equipment and personnel worked together safely to complete the objectives. All of the equipment was retrieved and put back into ready status. The vessels returned to dock and the exercise was called.

This was a great opportunity for the two teams to work together in a response environment. The exercise was followed by a wonderful BBQ on the barge which also gave our new members a chance to meet the rest of the team. Good laughs, good food and a good job!!



Operations

Eni US Operating Co. Inc. - Emergency Response Drill

On September 21, 2016, ACS supported Eni US Operating Co. Inc (Eni) for their Level III Emergency Response Drill. ACS equipment was deployed in conjunction with a forward operations post at the Nikaitchuq Operations Center (NOC) Pad, which was then conferenced in with Eni's Houston Crisis Management Team (CMT) and the Anchorage Incident Management Team (IMT).

The comprehensive scenario was developed in part to thoroughly test ACS Spill Responders and Eni Spill Response Team Member skills, as well as ACS's tactics and equipment.

ACS responded with personnel and several Bay Boats to conduct containment & recovery operations. The Eni Spill Response Team (SRT) was mobilized and demonstrated proficiency to serve as on-land and on-water recovery groups. ACS Bay Boats deployed 1,000 feet of Kepner self-expanding boom and skimmers to demonstrate the ability to safely and quickly conduct on-water recovery operations. The primary focus was to protect the environment through minimizing the simulated spread of oil using several hundred feet of shore seal boom. Additionally, a wildlife group conducted initial efforts to set up noise cannons which would be used to deter mammals and birds though a full deployment was not achieved due to the unexpected arrival of an actual polar bear sighted in the distance.

The drill was a successful demonstration of ACS readiness and commitment to Eni's Emergency Response Plan and the Incident Management System (IMS).


HARRISON BAY


CAMDEN BAY


MIKE

Planning

U.S. Coast Guard Oil Spill Response Organization Audit

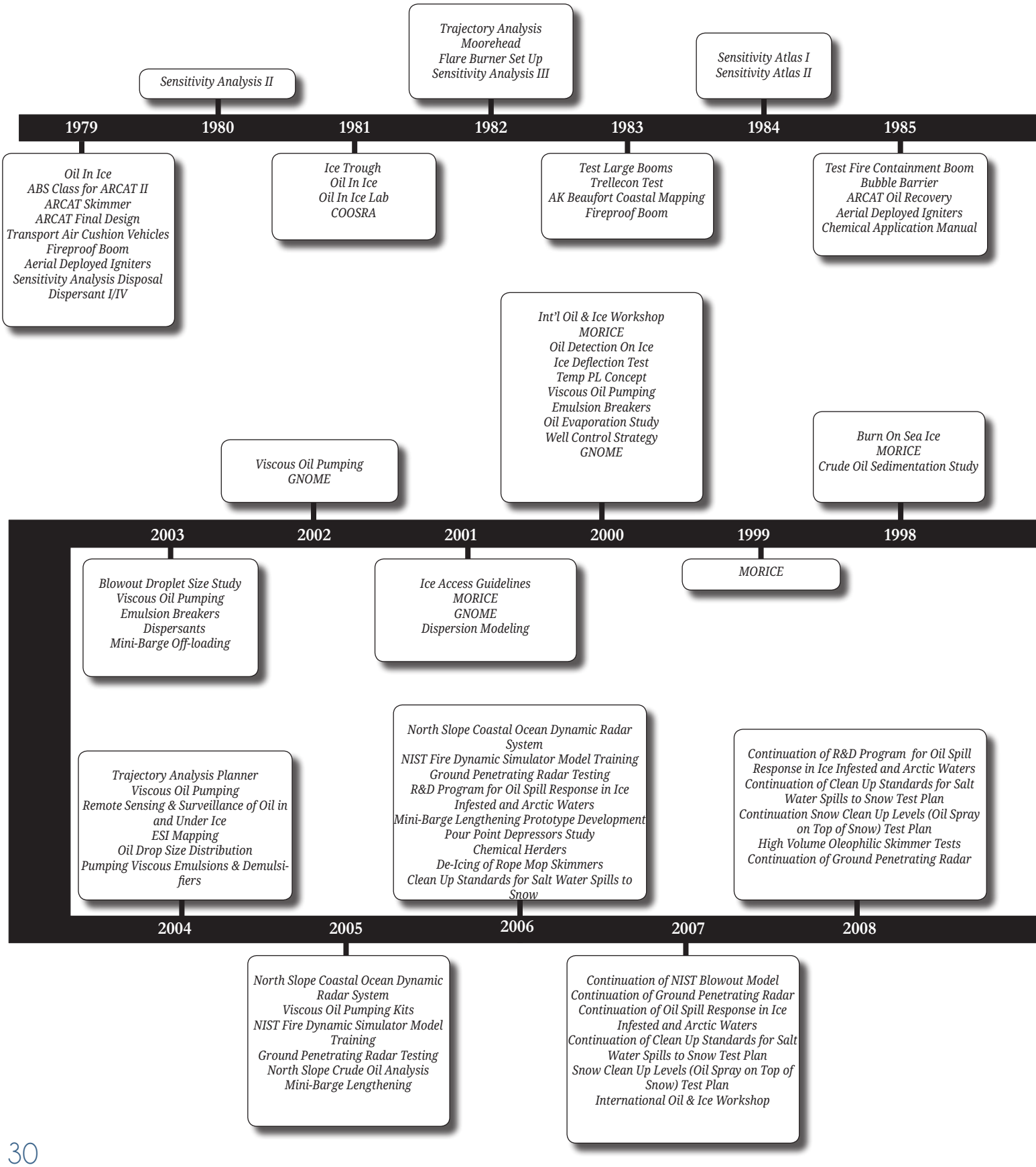
In August 2016, representatives from the U.S. Coast Guard (USCG) and the Bureau of Safety and Environmental Enforcement (BSEE) came to Prudhoe Bay to conduct an audit of the Response Resource Inventory (RRI) database. Nine USCG personnel, representing five separate pollution response units (Sector Anchorage, the Pacific Strike Team, the Incident Management Assistance Team and the National Strike Force Coordination Center), and one representative from BSEE's Alaska Oil Spill Preparedness Division visited 12 different equipment locations to conduct the audit: ACS Base, West Dock, Endicott, GPB EOA and WOA, Milne Point, Kuparuk, Eni Nikaitchuq (NOC and SID), Oooguruk Island (ODS and OTP) and Alpine. This was the first time that most of the auditors had been to the North Slope and seen the wide variety of equipment and operating environments that are here.

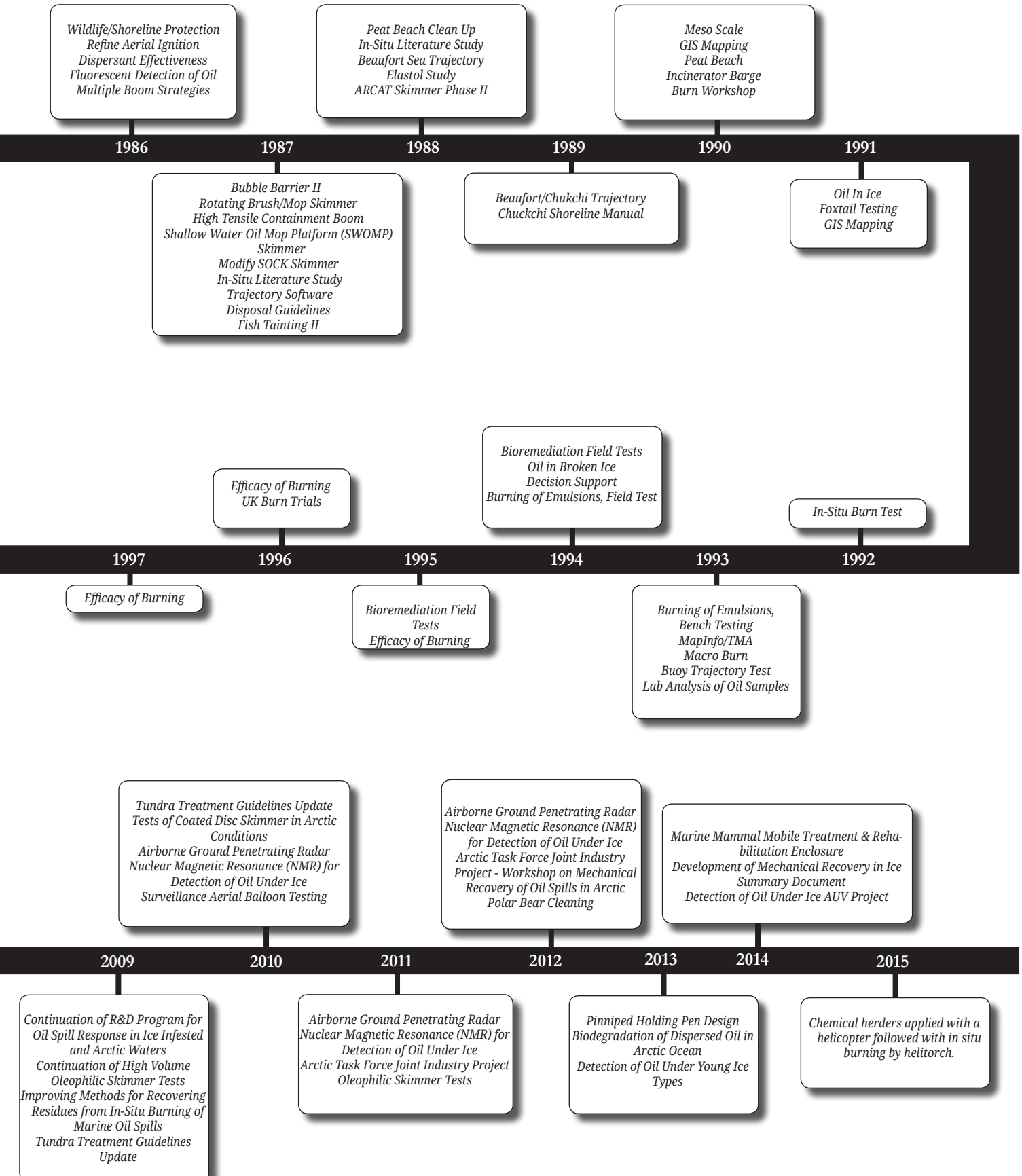
Through long days and many miles of gravel roads, they inventoried and verified every piece of equipment in the RRI database and started about 50 random pieces of equipment. All inventoried items on RRI List were found to be accurate and all inspected equipment was in good order and functioned correctly. The ACS Base site visit also included an inspection of equipment maintenance records and personnel training records.

In addition to the Oil Spill Response Organization (OSRO) audit, the three members from the Incident Management Assistance Team in Norfolk, VA, shipped a satellite voice, data and internet communications system here that they successfully tested for the first time from the Arctic.

During the entire week, the auditors continued to be impressed at the knowledge, experience and professionalism of the entire ACS Team. Throughout all the site visits, they commented on how everyone knew their equipment and its operation, its capabilities, and the specific operational challenges in their areas. They enjoyed the enthusiasm and motivation that each and every ACS person puts into their jobs. In the course of the site visits, they were able to take a cold, windy Bay Boat ride out around STP, take airboat rides to see the pre-deployed boom in the Kuparuk and Sag Rivers, ride along on a function check of an Arktos, and test fire a fox-hazing paintball launcher. They saw abundant wildlife, including two polar bears. They got to know how ACS does things day to day here, and they greatly appreciated all of the information and assistance they received.

Research & Development Timeline




1986
Wildlife/Shoreline Protection
Refine Aerial Ignition
Dispersant Effectiveness
Fluorescent Detection of Oil
Multiple Boom Strategies
1987
Bubble Barrier II
Rotating Brush/Mop Skimmer
High Tensile Containment Boom
Shallow Water Oil Mop Platform (SWOMP)
Skimmer
Modify SOCK Skimmer
In-Situ Literature Study
Trajectory Software
Disposal Guidelines
Fish Tainting II
1988
Peat Beach Clean Up
In-Situ Literature Study
Beaufort Sea Trajectory
Elastol Study
ARCAT Skimmer Phase II
1989
Beaufort/Chukchi Trajectory
Chuckchi Shoreline Manual
1990
Meso Scale
GIS Mapping
Peat Beach
Incinerator Barge
Burn Workshop
1991
Oil In Ice
Foxtail Testing
GIS Mapping
1992
In-Situ Burn Test
1993
Burning of Emulsions,
Bench Testing
MapInfo/TMA
Macro Burn
Buoy Trajectory Test
Lab Analysis of Oil Samples
1994
Bioremediation Field Tests
Oil in Broken Ice
Decision Support
Burning of Emulsions, Field Test
1995
Bioremediation Field
Tests
Efficacy of Burning
1996
Efficacy of Burning
UK Burn Trials
1997
Efficacy of Burning
2009
Continuation of R&D Program for
Oil Spill Response in Ice Infested
and Arctic Waters
Continuation of High Volume
Oleophilic Skimmer Tests
Improving Methods for Recovering
Residues from In-Situ Burning of
Marine Oil Spills
Tundra Treatment Guidelines
Update
2010
Tundra Treatment Guidelines Update
Tests of Coated Disc Skimmer in Arctic
Conditions
Airborne Ground Penetrating Radar
Nuclear Magnetic Resonance (NMR) for
Detection of Oil Under Ice
Surveillance Aerial Balloon Testing
2011
Airborne Ground Penetrating Radar
Nuclear Magnetic Resonance (NMR) for
Detection of Oil Under Ice
Arctic Task Force Joint Industry Project
Oleophilic Skimmer Tests
2012
Airborne Ground Penetrating Radar
Nuclear Magnetic Resonance (NMR)
for Detection of Oil Under Ice
Arctic Task Force Joint Industry
Project - Workshop on Mechanical
Recovery of Oil Spills in Arctic
Polar Bear Cleaning
2013
Pinniped Holding Pen Design
Biodegradation of Dispersed Oil in
Arctic Ocean
Detection of Oil Under Young Ice
Types
2014
Marine Mammal Mobile Treatment & Reha-
bilitation Enclosure
Development of Mechanical Recovery in Ice
Summary Document
Detection of Oil Under Ice AUV Project
2015
Chemical herders applied with a
helicopter followed with in situ
burning by helitorch.

Equipment

ACS Owned Equipment

Description	Quantity
Skimmers	75
Barges	13
Tanks and Bladders	61
Vessels	43
Boom	138,218 feet
Semi Truck	1
Boom Truck	1
Mechanics Trailer	1
Passenger/Work Trucks	12
Front End Loaders (w/ attachments)	2
Bobcat/Skid Steer Loaders	7
Warehouse Fork Lifts	3
Kubota ATV's (w/ Mattracks)	5
Snowmachines	8
Light Plants & Stands	25
Diesel Generators	38
Indirect Fired Heaters	6

Description	Quantity
20’ x 40’ Connexes	196
Portable Communication Towers	2
Portable Communication Shelters	2
Handheld & Mobile Radios	404
Hydraulic Power Units	75
Flat Bed (w/ Container Lugs)	1
14 Passenger Bus	1
Gasoline Generators	11
Direct Fired Heater	1
Heli-Torch (55 gallon)	6
Heli-Torch Batch Gel Mixers	2
Mobile Command Center	1
Envirovacs	2
Portable Warm-up Trailers	2
Weatherports	24
Bird Stabilization Center	1
Pumps	167 39,379 GPM

The ACS Equipment Manual can be viewed online at www.alaskacleanseas.org under Documents.