Regional Citizens' Advisory Council / *"Citizens promoting environmentally safe operation of the Alyeska terminal and associated tankers."*

In Anchorage: 3709 Spenard Road / Suite 100 / Anchorage, Alaska 99503 / (907) 277-7222 / FAX (907) 277-4523
In Valdez: P.O. Box 3089 / 130 South Meals / Suite 202 / Valdez, Alaska 99686 / (907) 834-5000 / FAX (907) 835-5926

December 7, 2007

Commander, 17th Coast Guard District (M)
PO Box 25517
Juneau AK 99802

Attn: LCDR Gary Koehler
District 17 (dpi)
Inspection/Investigations Division

Dear Sir:

Please find enclosed the Prince William Sound Regional Citizens' Advisory Council's application for recertification as the alternative voluntary advisory group for Prince William Sound, per Sec. 5002 (o) of the Oil Pollution Act of 1990.

The application includes the following information:

- Sections (a) through (e), narrative
- Section (f), financial and planning information
- Section (g), on the sources of RCAC funding
- Section (h), on the accessibility of our application
- Attachments and Enclosures

As discussed with you prior to submission, we have attempted to make this application both smaller and easier to review by referring the reader to our annual report (enclosed) where it covers information also need for recertification. In addition, we are submitting some of the larger backup documents-such as our budget and our contract with Alyeska-on compact disc.

If you need additional information, please contact Stan Jones in our Anchorage office or me in our Valdez office.

Sincerely,

John S. Devens

John S. Devens, Ph.D.
Executive Director

cc: Barry Roberts, Liaison
Alyeska Pipeline Service Co.

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2008 Recertification Application to the U.S. Coast Guard

Prince William Sound Regional Citizens' Advisory Council

3709 Spenard Road
Suite 100
Anchorage, Alaska 99503
907-277-7222

130 S. Meals, Suite 202
PO Box 3089
Valdez, Alaska 99686
907-834-5000

2008 Recertification Application to the U.S. Coast Guard

Prince William Sound Regional Citizens' Advisory Council

"Citizens promoting the environmentally safe operation
of the Alyeska terminal and associated tankers."

(a) Membership information

(1) Selection and appointment process

Membership in the Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) is governed by its bylaws. Member organizations are communities affected by the Exxon Valdez oil spill and interest groups with a stake in the region. Member organizations appoint individuals to represent them on the PWSRCAC Board of Directors.

Directors serve at the pleasure of the organization they represent. The bylaws require each representative be a resident of the State of Alaska. The bylaws define an Alaska resident as a person who is physically present in Alaska, intends to remain indefinitely and make a home in Alaska, has maintained a domicile in Alaska for the 12 months immediately preceding his or her appointment to the Board, and is not claiming residency or obtaining benefits under a claim of residency in another state, territory or country.

Directors serve staggered two-year terms. There is no limit to how many terms a director may serve. When a director's term expires, the member organization submits in writing the name of the person it wishes to be seated on the board. Directors are formally seated by a vote of the directors at the annual meeting in May. When a director leaves in mid-term, the member organization may appoint a replacement to fill the unexpired term, subject to formal seating by the Board of Directors.

If a member organization resigns from PWSRCAC, applications from other organizations representing the same constituency are solicited through advertisements in newspapers in the region affected by the spill.

Membership on the council's four advisory committees is open to any member of the public, subject to appointment by the council board.

(2) Board of Directors

Director	**Home**	**Organization Represented**
Pat Duffy	Valdez	Alaska State Chamber of Commerce
Stan Stephens	Valdez	Alaska Wilderness Recreation and Tourism Assoc.
Sheri Buretta	Anchorage	Chugach Alaska Corp.
Nancy Bird	Cordova	City of Cordova
John Velsko	Homer	City of Homer
Jane Eisemann	Kodiak	City of Kodiak
Stephen Lewis	Seldovia	City of Seldovia
John French, Ph.D.	Seward	City of Seward
George Levasseur	Valdez	City of Valdez
Dorothy M. Moore	Valdez	City of Valdez
Marilynn Heddell	Whittier	City of Whittier

Pete Kompkoff	Chenega Bay	Community of Chenega
John Allen	Valdez	Community of Tatitlek
Patience Andersen-Faulkner	Cordova	Cordova District Fishermen United
Blake Johnson	Nikiski	Kenai Peninsula Borough
Al Burch	Kodiak	Kodiak Island Borough
Jim Nestic	Old Harbor	Kodiak Village Mayors Association
Walter Parker	Anchorage	Oil Spill Region Environmental Coalition
Thane Miller	Valdez	Prince William Sound Aquaculture Corp.

The following organizations hold ex-officio seats on the board of directors:

Alaska Department of Environmental Conservation (ADEC); Alaska Department of Fish and Game, Division of Sport Fish; Alaska Department of Natural Resources; Alaska Division of Homeland Security and Emergency Management; Bureau of Land Management; National Oceanic and Atmospheric Administration.; Oil Spill Recovery Institute (Cordova); U.S. Coast Guard, Marine Safety Unit Valdez; U.S. Department of the Interior; U.S. Environmental Protection Agency; U.S. Forest Service

(3) Technical committee membership and residency

PWSRCAC's work is assisted by four volunteer technical committees that operate with financial and staff support from PWSRCAC. Committee volunteers are recruited annually or as needed by print and radio advertisements and by press releases in the PWSRCAC region.

The current makeup of the committees is as follows:

Oil Spill Prevention and Response Committee:
Jerry Brookman, Kenai; John French, chair, Seward; Joe Jabas, Valdez; David Goldstein, Whittier; John LeClair, Anchorage; George Levasseur, Valdez; Walter Parker, Anchorage; Gordon Scott, Girdwood; John Velsko, Homer

Scientific Advisory Committee:
Peter Armato, Seward; Jennifer Burns, Anchorage; John French, Seward; Roger Green, Hope; Agota Horel, Fairbanks; John Kennish, Anchorage; Dorothy M. Moore, Valdez; Richard Tremaine, chair, Anchorage.

TOEM: Terminal Operations and Environmental Monitoring Committee
Bob Benda, chair, Valdez; Jo Ann Benda, Valdez; Nancy Bird, Cordova; Jon Bower, Davis, Calif.; Denise Saigh, Anchorage; George Skladal, Anchorage; Stan Stephens, Valdez; Janice Wiegers, Fairbanks

POVTS: Port Operations and Vessel Traffic Systems Committee
Duane Beland, North Pole, Alaska; Cliff Chambers, Seward; Bill Conley, Valdez; Pat Duffy, Valdez; Jane Eisemann, Kodiak; Pete Heddell, Anchorage; Robert Jaynes, chair, Valdez

(b) Meetings publicized and accessible to communities

Board meetings of the PWSRCAC are publicized through press releases and advertisements in local newspapers in the region. All meetings are open to the public, with the exception of executive sessions. Committee meetings and board teleconferences are also open to the public. The public is always provided opportunity to comment.

Before board meetings, agenda packets with background information are sent to directors, ex-officio members, industry representatives and other interested parties. They are also made available on our website.

(c) Interest groups represented

Commercial fishing interests are represented on the PWSRCAC by Cordova District Fishermen United. Aquaculture interests are represented by the Prince William Sound Aquaculture Corporation.

Alaska Natives are represented by Chugach Alaska Corporation. In addition, the predominantly Native communities of Chenega Bay and Tatitlek each have a seat on PWSRCAC, and six villages on Kodiak Island are represented by the Kodiak Village Mayors' Association.

Tourism in the region is represented by the Alaska Chamber of Commerce, and recreation interests are represented by Alaska Wilderness Recreation and Tourism Association.

The Oil Spill Region Environmental Coalition represents environmental interests. The coalition consists of the Alaska Center for the Environment, Alaska Marine Conservation Council, Cook Inlet Keeper, Kachemak Bay Conservation Society, Kodiak Audubon Society, and Prince William Sound Alliance.

Municipal governments in the region are represented by the cities of Cordova, Homer, Kodiak, Seldovia, Seward, Valdez and Whittier; the Kodiak Island Borough and the Kenai Peninsula Borough; and the Kodiak Village Mayors' Association.

(d) Activities

In all of our activities, we strive for maximum cooperation with the industry companies and the regulatory agencies involved with marine transportation of North Slope crude oil. This is in keeping with our mandate under the Oil Pollution Act of 1990 to reduce complacency by promoting partnership in the common effort to minimize the risk of crude oil spills and improve the capability for responding to them, as well as minimize the environmental impacts of routine operations. As will be seen throughout this application and our annual report, we participate with industry and regulators in numerous work groups and task forces. Industry and government representatives are encouraged to attend and participate in board and committee meetings, and they are provided with agendas and background information in a timely manner. PWSRCAC routinely solicits their comments and input.

As noted, PWSRCAC's board provides ex-officio seats for various government agencies, including the Coast Guard, the EPA and the Alaska Department of Environmental Conservation.

To promote effective communication with our chief industry contact—Alyeska Pipeline Service Co.—PWSRCAC has developed standard operating procedures founded on the "no surprises" principle. Top executives of PWSRCAC and Alyeska meet quarterly to discuss relations between the two organizations, and the staffs interact daily.

PWSRCAC staff also interacts regularly with officials of the shipping companies operating oil tankers out of Valdez, and executives of these companies frequently visit the

council's Valdez and Anchorages offices on an informal basis. Also, shipper executives regularly accept invitations to address the council at board meetings.

These frequent, multi-level contacts between PWSRCAC and industry mean that each side is continuously aware of other's perspectives on a variety of issues. We expect these contacts to continue and it appears the industry also finds them of value.

PWSRCAC participates in a host of industry and/or government-sponsored group efforts, as described elsewhere in this application. The more formal groups include the Valdez Marine Safety Committee, chaired by the Coast Guard; the Non-Indigenous Species Working Group, co-chaired by PWSRCAC and U.S. Fish and Wildlife Service; the Aquatic Nuisance Species Western Regional Panel, sponsored by U.S. Fish and Wildlife Service; the Valdez Marine Terminal Strategic Corrosion Abatement Team, chaired by Alyeska; the Valdez Marine Terminal and Tanker contingency plan working groups, led by ADEC; the Geographic Response Strategies working group, co-chaired by industry and ADEC; the Prince William Sound Potential Places of Refuge working group, chaired by ADEC; the Alaska Regional Response Team and related working groups, an advisory board to Federal On-Scene Coordinator led by the Coast Guard, ADEC and EPA; and the Area and Sub-Area Committees and related working groups led by the Coast Guard, ADEC, and NOAA.

PWSRCAC has communication agreements with the U.S. Environmental Protection Agency, ADEC and the Joint Pipeline Office. In addition, informal relationships with the Coast Guard MSU Valdez provide a conduit for exchange of information and documents related to specific issues about the environmentally safe operation of the Valdez Marine Terminal and associated tankers.

In addition, the council employs contractors in Juneau, Alaska, and Washington, D.C., to monitor legislative and administrative developments at the state and federal levels in areas of council concern. These contractors advise the council on how to respond and on occasion provide oral or written testimony on behalf of the council.

In summary, PWSRCAC continues to pursue and, we believe, maintain the type of relationship with industry and government envisioned in OPA 90.

(1) Review of operations and maintenance of terminal and tankers:

(i) Terminal operations and maintenance

PWSRCAC's Terminal Operations Program is intended to monitor actual and potential environmental impacts stemming from the operation of the Valdez Marine Terminal, and to review operational and maintenance practices at the facility in the interest of mitigating those impacts. Specific objectives of the Terminal Operations Program are: (1) to monitor, to develop, and to recommend PWSRCAC positions on Terminal operations issues; (2) to support maintenance and improvement of Valdez Marine Terminal (VMT) facilities; (3) to promote compliance with existing environmental regulations; and (4) to monitor enforcement of and funding for existing environmental regulations.

This program is discussed in detail in our enclosed annual report, pages 13-16.

(ii) Tanker operations and maintenance

The Maritime Operations Program monitors and reviews port organizations, operations, incidents, and the vessel traffic system. It is discussed in the annual report, pages 5-6. One additional aspect of this program not covered in the annual report is our participation on the Valdez Marine Safety Committee, which is discussed elsewhere in this application.

(2) Review of oil spill prevention and response plans

The council's work in the area of oil spill prevention and response planning is described on pages 7-11 of the annual report.

While the description of our work on the contingency plan for the Valdez Marine Terminal is still current, some developments have occurred with respect to oil tanker contingency plans since the annual report was assembled in late summer and early fall. Accordingly, we are providing an update here of subsequent developments.

The plans were approved by ADEC On November 1, 2007, after several workgroup meetings between industry, ADEC, and PWSRCAC. The result was a contingency plan that was greatly improved since its original submission.

While several of our issues were partially resolved through this process, others remain outstanding. PWSRCAC has been active in forming a steering committee with an objective of continuous improvement of the contingency plan. ADEC has committed to partnering with industry and PWSRCAC on this committee.

(3) Monitoring drills and cleanup of actual discharges

The council devotes considerable effort to monitoring drills, exercises, and training events, as well as to the responses to actual incidents, which fortunately are relatively rare in Prince William Sound. These efforts are described in some detail on page 12 of the annual report.

In addition, we will discuss here two additional aspects of this program that were not covered in the annual report: our regular meetings with personnel from Alyeska's Ship Escort Response Vessel System, and our review of SERVS operations.

PWSRCAC and SERVS representatives meet on a monthly basis in an effort to increase communications by providing a venue to share information, pose questions and provide or request status reports. Regular topics of discussion are the SERVS operations, maintenance and exercise schedules and the Council's schedule of events and meetings. Other agenda topics include on-going or upcoming RCAC projects involving SERVS' operations.

Through the council's project, Review of SERVS Operations, staff accompanied members of the National Strike Force Coordination Center during their oil spill response organization preparedness assessment visit in Port Valdez. This assessment included inspections of response equipment, tugs and barges. In addition, RCAC staff accompanied SERVS during preventative maintenance inspections and deployment of remote spill response equipment stored at Lake Bay and Main Bay.

(4) Review or coordinate scientific studies with recognized experts

PWSRCAC has established policies and practices to ensure its independent scientific work addresses environmental issues related to the Valdez marine terminal and associated tankers. Further, PWSRCAC's work is coordinated with scientific work done by others for terminal and tanker operators in order to avoid unnecessary duplication.

PWSRCAC's Scientific Advisory Committee—one of four standing technical committees—is a primary resource in this effort. Its members are selected on the basis of scientific expertise. They review proposed research projects and provide assistance and advice

to other PWSRCAC committees**,** the PWSRCAC staff, and the board of directors on scientific methodology, data interpretation, and other subjects.

PWSRCAC maintains a database of scientific and technical experts. The database (in conjunction with newspaper and journal advertisements) is used to solicit proposals for specific studies and to select professional peer reviewers for project reports. PWSRCAC staff, committee and board members attend major conferences to maintain contact with experts in environmental science and oil-spill prevention and response, and to keep informed about current research.

The Cordova-based Oil Spill Recovery Institute has been an ex-officio member of PWSRCAC since 1997. The Institute is associated with the Prince William Sound Science Center, providing another avenue for coordination and expert oversight of PWSRCAC's scientific work. PWSRCAC regularly attends quarterly and annual meetings of the West Coast States/British Columbia Task Force and reviews scientific studies conducted by the Task Force and the members.

PWSRCAC routinely sends copies of board and committee agendas and background packets to Alyeska, oil shippers and regulators to keep them informed about proposed and ongoing scientific work. The packets include draft copies of status and final reports for review and comment.

PWSRCAC board and committee meetings are open to the public, providing regular opportunities for interested parties to monitor and comment on research projects.

All of these efforts at inclusion and coordination are reflected in the descriptions of our activities in specific topic areas in our annual report and elsewhere in this application. In particular, the reviewer is directed to the list of report abstracts, in Section E, below, and to the list of scientific and technical experts consulted, in Section (d)(10).

(5) Review developments in spill prevention and clean-up technology:

PWSRCAC monitors new technology through literature review, attendance at technical conferences and seminars, and first-hand observation of testing and use of new response tools. PWSRCAC also participates in the funding of physical oceanography and meteorological data collection projects by research institutions.

PWSRCAC supports the production of real-time and archived weather data from Prince William Sound and the Gulf of Alaska to aid mariners, provide data for computer simulation modeling and oil spill trajectory prediction, and to determine how often certain conditions occur.

The council does this through partnership projects that contribute to studies being conducted by the Prince William Sound Science Center and the University of Alaska Fairbanks to collect weather and current data.

PWSRCAC staff attends the annual Arctic and Marine Oilspill Program (AMOP) held by Environment Canada. This is a highly technical conference and often highlights new developments in oil spill response in cold climates.

PWSRCAC has a long-standing and on-going interest in the efficacy and toxicity of chemical oil-spill dispersants in water and weather conditions found in Prince William Sound. As this subject is discussed on page 17 of our annual report, and is addressed in some of the reports covered elsewhere in this application, it will not be described further here.

PWSRCAC continues to review the suitability of in-situ burning as an oil-spill response strategy for Prince William Sound.

The council will be reviewing plans by the Prince William Sound Response Planning Group (RPG) to upgrade the decanting systems on its oil spill response barges in order to improve decanting efficiency to 95 percent, which would enable the RPG to remove one response barge from service.

The council is reviewing the capabilities of the different types of Prince William Sound tanker escort tugs—Enhanced Tractor Tugs and Prevention/Response Tugs—to determine which is best suited to serve as the primary escort tug and which should serve as the secondary escort. This review will also examine what type of tug is best suited for duty at Cape Hinchinbrook, where ocean-going capability is required.

The council has launched a project to review the use of oil simulation materials in oil spill exercises. This project came into being because of the difficulty of determining the effectiveness of oil recovery tactics and sensitive area protection tactics during training and drills without an oil simulation material on the water. The project seeks to determine the pros and cons of available oil simulation materials and identify the permitting requirements for their use.

(6) Review of port operations, organizations, safety systems and incidents, and recommendations made to promote safer transportation of oil

(i) Review of port operations, organizations, safety systems and incidents

As described on pages 5 and 6 of our annual report, PWSRCAC personnel monitor maritime operations and, in conjunction with the PWSRCAC Port Operations and Vessel Traffic Systems Committee, analyze issues and make recommendations for improving the navigational safety of TAPS tankers and escort vessels. These activities are carried out by routine tracking of vessel traffic with the assistance of an Automatic Information System in the council's Valdez office; recording delays, incidents, near misses and atypical situations; reviewing proposed rules, regulations, and Coast Guard guidelines; and maintaining a working relationship with shippers, SERVS, the Southwest Alaska Pilots' Association, Alaska Department of Environmental Conservation, and the U.S. Coast Guard. As described on pages 7-11 of our annual report and in Section (d)(2), above, in this application, PWSRCAC reviews and comments on state and federal oil spill prevention and response plans, often including recommendations regarding port operations and safety systems.

PWSRCAC regularly interfaces with Marine Safety Unit Valdez personnel regarding operation of and possible improvements to the vessel traffic system. As a member of the Valdez Marine Safety Committee (VMSC), PWSRCAC staff and volunteers participate in several initiatives to fund maintenance and expansion of the weather buoy system, to support collection of additional sea current data to assist mariners, and to enhance the marine firefighting capability in Prince William Sound.

(ii) Recommendations to promote safer oil transportation

PWSRCAC regularly advises regulatory agencies, shipping companies and Alyeska Pipeline Service Co. on measures that could be taken to improve the safety of oil transportation. A list of some of our advisory letters in this recertification period follows. Copies of the letters are available from the council upon request.

Jerry Brossia, JPO, 11/30/2006. PWSRCAC on the Joint Pipeline Office's Environmental Assessment No. EA-AK-993-06-020—pertaining to Alyeska's proposed modification of the TAPS Ballast Water Treatment Facility at the Valdez Marine Terminal.

Kalervo Jolma, Finnish Environmental Institute, 12/5/2006. Letter extending PWSRCAC support of Mr. Jolma's recent quote stating that dispersants and in-situ burning are "unsustainable" oil spill response methods and the research, funding and development efforts should focus on mechanical recovery.

NOAA, 12/20/2006. Letter of support for the Pacific Ships Initiative (PSI) and the associated research, development, testing and evaluation (RDTE) facility proposal. and the NOAA Ballast Water Technology Demonstration Program.

Larry Dietrick, ADEC, 1/16/2007. Request for Extension of Public Comment Period on the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan Renewal.

Kent Hustvedt, US EPA, 2/13/2007. Letter providing the EPA with an update on PWSRCAC's March 24, 2004 Petition for Reconsideration: National Emission Standards for Hazardous Air Pollutants—Organic Liquid Distribution (NESHAP OLD), and to request a final Water 9 modeling report be issued for the Valdez Marine Terminal.

Anil Mathur, Antonio Valdes, Will Jenkins, Doug Suttles, Tim Plummer, Alaska Tanker Company, Polar Tankers, Inc., SeaRiver Maritime, BP Alaska, Tesoro Petroleum, 2/28/2007. PWSRCAC letter strongly advocating a working group to review the PWS Tanker C-Plan renewal (2007).

All 60 members of House and Senate, Alaska State Legislature, 3/7/2007. Letter addressing the views of PWSRCAC regarding the State of Alaska's fund for responding to disastrous oil spills and the budget for the Division of Spill Prevention and Response (SPAR) in the Department of Environmental Conservation which works to prevent oil spills.

Rep. Bob Buch, Alaska State Legislature, 3/7/2007. Letter in support of preserving the State of Alaska's ability to prevent and respond to oil spills.

Commissioner Larry Hartig, ADEC, 3/12/2007. A letter to ADEC Commissioner, Larry Hartig regarding a letter to ADEC dated March 12, 2007 from PWS Tanker Plan Holders which documents potential shortage of open water response barge capability in Prince William Sound.

Commissioner Larry Hartig, ADEC, 3/21/2007. PWSRCAC letter Requesting to Intervene to Support ADEC's Decision Notice of Request for Adjudicatory Hearing, Valdez Marine Terminal (VMT) Tank Inspection Decisions.

Commissioner Larry Hartig, ADEC, 3/26/2007. PWSRCAC's Notice of Request for Adjudicatory Hearing, Valdez Marine Terminal (VMT) Tank Inspection Decisions.

Jean R. Cameron, Pacific States / British Columbia Oil Spill Task Force, 4/11/2007. Letter nominating Alyeska as the planholder for the VMT C-Plan for the 2007 Legacy Award and ADEC's Spill Prevention and Response Industry Preparedness and Pipeline Program, as an honorable mention.

Molly McCammon, AOOS, 4/13/2007. Letter in support of the Alaska Ocean Observing System's proposal to NOAA for Alaska Regional Coastal and Ocean Observing Systems.

Senator Bert Stedman; Representative Mike Chenault; Senator Fred Dyson; Senator Lyman Hoffman; Representative Kevin Meyer; and, Representative Reggie Joule, State of Alaska, 4/13/2007. PWSRCAC urging the State of Alaska conference committee to restore the $500,000 cut made to the SPAR in the House.

Becky Lewis, ADEC / JPO, 4/17/2007. PWSRCAC comments on the proposed Valdez Marine Terminal (VMT) Oil Spill Training Amendment. VMT C-Plan, Part 3 SID 2, Section 5. ADEC Plan No. 033-CP-4057.

Moses Coss, ADEC, 4/24/2007. PWSRCAC comments regarding Valdez Marine Terminal Air Permit Modification, Title V Operating Permit (AQ00825TVP01) Revision 3, Condition 6: Marine Vessel Visible Emission Requirements.

Ed Thompson, RPG c/o BP Exploration, 4/24/2007. PWSRCAC's comments on the 2007 PWS Tanker Oil Discharge Prevention and Contingency Plan (Core Plan). Comments on the April 2007 Consolidated Revised Draft of the PWS Tanker Core C-Plan.

Greg Jones and Betty Schorr, Alyeska Pipeline and ADEC, 4/25/2007. Letter regarding the VMT Contingency Plan Workgroup Recognition.

Representative Kevin Meyer; Senator Lyda Green; Senator Lyman Hoffman; Senator Charlie Huggins; and, Senator Bert Stedman, State of Alaska, 4/26/2007. PWSRCAC letter of concern that a series of legislative and administrative events may drastically reduce the State's ability to prevent and response to catastrophic oil spills, specifically the recent introduction of HB 238.

Ed Thompson, RPG c/o BP Exploration, 5/10/2007. PWSRCAC Comments on the Redline Draft Version of the SERVS Technical Manual.

Carl Schoch, Alaska Ocean Observing System (AOOS), 5/18/2007. PWSRCAC letter of support for the proposed project "Impact of NASA Satellite Data and Models on US Coast Guard's Decision Support Tool for Search and Rescue in the Northeastern Pacific Ocean".

Don Young, US House of Representatives, 5/29/2007. Letter thanking Congressman Young for meeting with PWSRCAC representatives earlier his year and providing more information on the threat to Alaska's marine life from invasive species.

Les Gara, Alaska House of Representatives, 5/30/2007. Letter regarding PWSRCAC's concern that the state of Alaska is unprepared for the next major oil spill, and the reluctance by the Legislature to fully fund the work of the Spill Prevention and Response Division.

Rebecca Smith, ADEC, Air Permit Program, 6/4/2007. Best Available Retrofit Technology (BART) Regulations.

Commissioner Larry Hartig, ADEC, 6/14/2007. PWSRCAC letter to Alaska Department of Environmental Conservation regarding a request for an adjudicatory hearing on the Valdez Marine Terminal contingency plan by Cascade Wildlands Project, et al.

Sarah Palin, Governor of Alaska; Larry Hartig, Commissioner, ADEC; Alaska Legislature, 6/14/2007. PWSRCAC letter regarding Department of Law placing an encumbrance on assets of State's Oil and Hazardous Substance Release Prevention and Response Fund (470 Fund).

Sarah Palin, Governor of Alaska, 6/14/2007. PWSRCAC letter regarding our concern that the Department of Law has recently put the State's ability to respond to a disastrous oil spill in jeopardy—specifically the $8.5 encumbrance on the assets of the Response Account of the State's oil and Hazardous Substance release Prevention and Response Fund (470 Fund).

Sarah Palin, Governor of Alaska; Alaska Legislature, 6/19/2007. A letter regarding non-indigenous organisms in ballast water of tankers.

Jeff Johnson, Mike Meadors, BP Shipping, SERVS, 6/21/2007. A letter regarding PWSRCAC-commissioned study to identify and determine the frequency of the Response Gap for Central PWS and Hinchinbrook Entrance.

Wayne Stevens, Wendy Sailors, Charles Totemoff, Pete Kompkoff, Barey Uhart, Tim Joyce, James Hornaday, Carolyn Floyd, Richard Wyland, Vanta Shaefer, Bert Cottle, Lester Lunceford, Gerald McCune, John Williams, Rick Gifford, Jerome Selby, Bob Shavelson, Dave Reggiani, Roy Totemoff, and Dave Totemoff, Alaska State Chamber of Commerce, AWRTA, Chenega Corporation, Chenega IRA Council, Chugach Alaska Corporation, City of Cordova, City of Homer, City of Kodiak, City of Seldovia, City of Seward, City of Valdez, City of Whittier, Cordova District Fishermen United, Kenai Peninsula

Borough, Kodiak Island Borough, Kodiak Village Mayors' Association, Oil Spill Region Environmental Coalition, Prince William Sound Aquaculture Corporation, Tatitlek Corporation, Tatitlek Village IRA Council, 7/3/2007. Letter urging all PWSRCAC Member Entities to review and submit comments on the PWS Tanker Oil Discharge Prevention and Contingency Plan—Public Comment Period beginning June 25, 2007.

Representative Kevin Meyer, State of Alaska, 7/12/2007. PWSRCAC letter regarding the legislature's decision to audit the spill prevention and response division.

John Kotula, ADEC, 7/23/2007. Comments and request for additional information on the 2007 Prince William Sound Tanker Oil Spill Prevention and Contingency Plan and associated Vessel Response Plans.

Senator Marie Cantwell and Senator Olympia Snowe, US Senate, 7/25/2007. PWSRCAC letters to the Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard regarding a proposed amendment that would affect funding for the Oil Spill Recovery Institute.

Water Docket, US EPA, 8/6/2007. PWSRCAC comments to the US EPA Docket ID No. EPA-HQ-OW-2007-0483 Development of Clean Water Act National Pollutant Discharge Elimination System Permits for Discharges Incidental to the Normal Operation of Vessels.

Commissioner Larry Hartig, Alaska Department of Environmental Conservation (ADEC), 8/8/2007. PWSRCAC letter on the proposed Prevention Credits Task Force and inviting the Commissioner to take place in discussions with the Board on this topic at its September 2007 meeting in Kodiak.

Hon. Daniel K. Inouye, Chair and Hon. Ted Stevens, Vice Chair, Committee on Commerce, Science and Transportation; Hon. Maria Cantwell, Chair, and Hon. Olympia J. Snowe, Ranking Member, Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard of the Committee on Commerce, Science and Transportation , US Senate, 8/31/2007. PWSRCAC letter regarding S. 1578, "The Ballast Water Management Act of 2007," expressing the urgent need for the immediate passage of the bill. The protection this legislation provides decreases the risk of introducing harmful aquatic invasive species into waters of the United States where they may cause environmental and economic damage.

Becky Lewis, ADEC, 9/13/2007. Comments and request for additional information on the Valdez Marine Terminal Oil Discharge Prevention and Contingency Plan.

Becky Lewis, ADEC, 9/13/2007. PWSRCAC letter conveying additional information specifically requested by ADEC regarding Comments on the Valdez Marine Terminal Oil Discharge Prevention and Contingency Plan.

Kent Hustvedt and the Air and Radiation Docket and Information Center, US EPA, 9/25/2007. PWSRCAC letter regarding the EPA's May 11, 2007 BWTF HAPS Emission Modeling Update on the National Emission Standards for Hazardous Air Pollutants Organic Liquids Distribution Docket A-98-13, Valdez Marine Terminal Ballast Water Treatment.

Kent Hustvedt and the Air and Radiation Docket and Information Center, US EPA, 9/25/2007. PWSRCAC letter to the EPA providing an update on the status of the modifications to the VMT Ballast Water Treatment Facility, and requesting that EPA continue to hold PWSRCAC's Petition for Reconsideration on the National Emission Standards for Hazardous Air Pollutants Organic Liquids Distribution Rule in abeyance until May 31, 2008.

John Kotula, ADEC, 10/15/2007. PWSRCAC comments on the 2007 renewal of the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (including Alaska Tanker Company, Polar Tankers, SeaRiver Maritime and Tesoro Alaska).

Jerry Brossia, BLM / JPO, 11/12/2007. PWSRCAC letter regarding the proposal to require an upgraded fire-fighting vessel to the Valdez Marine Terminal.

CDR Verne Gifford, USCG, 11/12/2007. PWSRCAC letter to the US Coast Guard regarding Geographic Response Strategies in Prince William Sound.

Cecil D. McNutt, Jr, ARRT c/o USCG, 11/14/2007. PWSRCAC comments on the ARRT Revision I of the In Situ Burning Guidelines for Alaska, October 2007.

(7) Implementation of environmental monitoring strategy

As described on pages 17-20 of our annual report, PWSRCAC conducts its own environmental monitoring in Port Valdez, Prince William Sound and the Gulf of Alaska, by taking water and sediment samples and by measuring chemical levels in the tissues of native mussels. In addition, PWSRCAC reviews and comments on Alyeska Pipeline Service Company's environmental monitoring program, which is intended to measure and mitigate environmental impacts resulting from the operation of the Valdez Marine Terminal.

Alyeska Pipeline Service Company reports effluent discharges permitted under its National Pollutant Discharge Elimination System (NPDES) Permit AK-002324-8 to regulators from EPA's Region X in Seattle, WA. Copies of these monthly Discharge Monitoring Reports are also provided to the Alaska Department of Environmental Conservation and PWSRCAC. PWSRCAC staff reviews these reports when received and analyzes the reported data for adverse environmental trends.

PWSRCAC also reviews environmental monitoring work conducted in the region by other organizations, such as the Prince William Sound Science Center, and the Exxon Valdez Trustee Council sponsored research.

(8) Environmental projects undertaken

This topic is discussed on pages 17-20 of our annual report. Additional projects not covered there include:

<u>Biodegradation of dispersed crude oil</u>

This project will compare biodegradation of chemically dispersed Alaska North Slope crude oil (ANS) versus physically dispersed ANS by indigenous water column micro fauna in Prince William Sound conditions. This will provide information on whether, if chemical dispersants are used in Prince William Sound and the oil disperses, it is more likely to be biodegraded by indigenous microorganisms or to remain in the water column until it resurfaces or is washed downstream.

<u>Hull fouling as an NIS pathway</u>

Research shows that hull fouling is an important pathway for the transfer of aquatic invasive species. Past PWSRCAC research has focused on ballast water invasions, rather than hull fouling. The council, in conjunction with the US Fish and Wildlife Service, has decided to also examine the risks posed by hull fouling. This project will attempt to evaluate the risk of aquatic invasive species arriving in Prince William Sound via vessel hulls by developing and applying appropriate sampling methodologies and a sampling plan.

(9) Environmental conditions and locations monitored

The projects that fall under this topic are covered in our annual report or in other sections of this application. Accordingly, they are listed only in summary form here:

• Long-Term Environmental Monitoring Program.
• Weather and sea current data collection in Prince William Sound
• Biodegradation of dispersed oil in Prince William Sound waters
• Research on invasive species in Exxon Valdez oil spill region, in partnership with Smithsonian Environmental Research Center
• Green crab monitoring project in Prince William Sound and other waters
• Hull fouling research project
• Hydrocarbon transfer to Prince William Sound fish fry

(10) Environmental impacts assessed

Many research projects described in our annual report or in other sections of this application assess environmental impacts. Accordingly, they will only be summarized briefly here. Note that some of these projects do not directly assess environmental impacts; rather they may explore information that will permit better assessment of environmental impacts in the future:

• Long-Term Environmental Monitoring Program.
• Biodegradation of dispersed oil in Prince William Sound waters
• Bioaccumulation of dispersed oil
• Non-indigenous species research with Smithsonian center.
• Green crab monitoring project
• Hull fouling research project
• Hydrocarbon transfer to Prince William Sound fish fry

(11) Scientific experts, universities and scientific institutions consulted

Alaska Beget Consulting
James Begét, Ph.D.
3185 Edby Road
Fairbanks, AK 99709

Alaska Ocean Observing System
Carl Schoch
Molly McCammon
1007 W. Third Ave. #100
Anchorage AK 99501

Cape International, Inc
Dave Ely
222 Steward Street, Suite 207
Juneau, AK 99801

Censum Northwest LLC
Eric Heinitz
David Mora
Nolan Lattyak
2126 Pearl Beach Drive NW
Olympia WA 98502

William B. Driskell
6536 20th Ave. NE
Seattle, WA 98115

E-Tech International Inc.
Erich R. Gundlach, Ph.D.
15 River Park Drive
New Paltz, NY 12561

Merv Fingas
Environment Canada
1717 Rutherford Point SW
Edmonton, Alberta
Canada
T6W 1J6

Harvey Consulting, LLC
Susan Harvey
P.O. Box 771026
Eagle River, AK 99577

The Hendrix Group, Inc.
David Hendrix
15823 N. Barkers Landing
Houston, TX 77079

Hubbs Sea World
Ann Bowles
2595 Ingraham Street
San Diego CA 92109

Micro Specialties, Inc.
Richard M. Brown
P.O. Box 871077
Wasilla, AK 99687

NOAA/NMFS Auke Bay Laboratory
Jeffrey W. Short, Ph.D.
Marie L. Larsen

11305 Glacier Hwy
Juneau, AK 99801-6065

Nuka Research & Planning Group, LLC.
Tim Robertson
Elise DeCola
Sierra Fletcher
P.O. Box 175
Seldovia AK 99663

Payne Environmental Consultants, Inc.
James R. Payne, Ph.D.
1991 Village Park Way Ste. 206B
Encinitas, CA 92024-1997

Petro Tech Alaska
Gary Green
3591 S. Greythorne Way
Chandler, AZ 85248

Prince William Sound Science Center
Scott Pegau
P.O. Box 1185
Cordova AK 99574

Purdue University
Terry R. West, Ph.D., P.E., C.P.G.
Kyu Ho Cho, Ph.D., P.E.
5 Tall Oak Lane
West Lafayette, IN 47906

Smithsonian Environmental Research Center, Edgewater, Maryland USA
Gregory M. Ruiz, Tami Huber, Kristen Larson, Linda McCann, Brian Steves, Paul Fofonoff, and Anson H. Hines
P.O. Box 28
Edgewater, MD 21037-0028

University of Alaska Fairbanks
Steve Okkonnen
Joan Braddock
Jim Alenko
P.O. Box 755780
Fairbanks, AK 99775-5780

(e) Abstracts of ongoing reports and studies related to minimizing impacts of operations of terminal facilities and crude oil tankers. (Note: Not all reports commissioned by

PWSRCAC have abstracts. In such cases, the report's Introduction or Executive Summary is digested here.)

Completed reports approved by the PWSRCAC Board of Directors

Title: An Assessment of the Role of Human Factors in Oil Spills from Vessels
Report Date: August 1, 2006
Author: Nuka Research & Planning Group, LLC.
Date Approved: September 8, 2006
Executive Summary:

Human factors—either individual errors or organizational failures—have been reported to cause as much as 80 percent of oil spills and marine accidents. Improvements to oil spill prevention technologies, tanker design, and systems engineering are often cited, along with improved regulatory oversight, as contributors to a general decline in the number of marine oil spills over the last decade. Yet, oil spills and industrial accidents continue to occur. This is due, in part, to the fact that human and organizational errors continue to occur despite, or sometimes because of, improved technologies.

The Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) commissioned this report to consider the role of human factors in oil spills, the relationship between technological improvements and human factors, and complementary prevention measures that may further reduce the risk of oil spills attributed to human or organizational errors. The fundamental research question addressed in this report is: *Where should we focus prevention efforts to reduce oil spills from tankers that are caused by human factors?*

This report presents general concepts related to human error, human factors, and accident causality by synthesizing published literature that considers the types of human errors and underlying human factors that commonly cause oil spills or accidents. In an attempt to relate root causes to prevention strategies that target human factors, this report reviews oil spill and marine accident data compilation and analysis practices in the US and internationally. Prevention programs and voluntary practices that target human factors are reviewed, and recommendations presented for linking spill prevention to human factors data and analysis.

This report considers the complex and dynamic interaction between human operators and engineered systems and concludes that improved technologies, redundant systems, and enhanced automation generally do not prevent oil spills caused by human error. These systems can prevent a spill from occurring if the inner hull is not punctured, or significantly reduce the impact or severity of an oil spill once it occurs; however, they cannot prevent the human or organizational errors that cause such accidents. Moreover, technological and engineering improvements in the marine sector have been shown, in some cases, to actually increase the risk of an oil spill or accident occurring due to human factors such as fatigue, skill or knowledge deficiencies, or risk compensation.

Title: Observers' Report MMS Cold Water Dispersant Tests Ohmsett Testing Facility
Report Date: June 1, 2006
Author: Nuka Research & Planning and Environment Canada
Date Approved: October 30, 2006
Abstract:

This paper is a review of some recent dispersant testing at OHMSETT. These tests were designed to measure the effectiveness of dispersant on Alaskan oils at low temperatures. The oil and water temperatures were close to the freezing point.

Ten dispersant tests were observed, 5 dispersant tests and 5 control tests. The dispersant tests showed good initial dispersion and subsequent observation showed much of the oil from these tests re-surfaced, about half within about one to two hours and most of it by next morning.

The testing method was viewed with respect to concerns raised earlier from observing and analyzing other tests. First, a report sponsored by PWS RCAC, had raised 18 concerns about dispersant tank testing.

Although many of the initial concerns were taken into account in re-designing the protocol for the current trial round, this report shows that there remain some concerns:

1. The experiment is ended at the peak of dispersion and before extensive re-coalescence occurs. Extensive re-surfacing of the oil can readily be seen after the experiment is terminated and within 1 hour of the start of the experiment.

2. No mass balance is attempted and data collected are not used to attempt mass balance.

3. Some oil was collected to presumably determine amount dispersed, however this was always collected within 45 minutes of the trail and major re-surfacing occurred after this collection. The spraying action caused a great deal of re-dispersion. Further it would be impossible to be quantitative as the sweeping operation is not completely effective and there is much oil around the tank before and after the sweeping operations.

4. The use of instrumentation was increased several-fold, however calibration of these methods and use of data remains at the initial level. and

5. There was no quantitative measure of sea energy. Wave data was collected as before with somewhat more precision.

Alternative procedures are given that take into account lessons learned during the detailed work conducted at the Imperial Oil tank in Calgary, Alberta and the SERF tank in Corpus Christi, Texas. These procedures will make it possible to reasonably estimate the effectiveness of dispersants in a large test tank.

The recommendations are that several points need attention:

1. Quantitative method of determining effectiveness,
2. Correct analytical procedures,
3. Necessity to take measurements for at least 6 hours, and
4. Ability to recover surfactant-treated oil

Title: Biological Invasions in Alaska's Coastal Marine Ecosystems
Report Date: November 1, 2006
Author: Smithsonian Environmental Research Center
Date Approved: December 11, 2006
Executive Summary:

Biological invasions are a significant force of change in coastal ecosystems, altering native communities, fisheries, and ecosystem function. The number and impact of non-native species have increased dramatically in recent time, causing serious concern from resource managers, scientists, and the public. Although marine invasions are known from all latitudes and global regions, relatively little is known about the magnitude of coastal invasions for high latitude systems.

We implemented a nationwide survey and analysis of marine invasions across 24 different bays and estuaries in North America. Specifically, we used standardized methods to

detect non-native species in the sessile invertebrate community in high salinity (>20psu) areas of each bay region, in order to control for search effort. This was designed to test for differences in number of non-native species among bays, latitudes, and coasts on a continental scale. In addition, supplemental surveys were conducted at several of these bays to contribute to an overall understanding of species present across several additional habitats and taxonomic groups that were not included in the standardized surveys.

Our standardized surveys included six different bay regions in Alaska: Ketchikan, Sitka, Prince William Sound, Kachemak Bay, Kodiak, and Dutch Harbor. Supplemental surveys were conducted primarily at Kachemak Bay and Kodiak, and an additional low-salinity site in Cook Inlet near Anchorage.

In this report, we report our findings for these sites and compare them to six other bays surveyed along western North America, between California and Washington.

Title: Exxon Valdez Oil Spill Restoration Project Final Report
Report Date: November 1, 2006
Author: Payne Environmental Consultants, Inc and NOAA Auke Bay Laboratory
Date Approved: December 11, 2006
Abstract:

The Long Term Environmental Monitoring Program (LTEMP) has been sampling mussels (and some sediments) twice annually at ten sites in Port Valdez, Prince William Sound, and nearby Gulf of Alaska sites since 1993. Samples are analyzed primarily for polycyclic aromatic and saturated hydrocarbons (PAH and SHC). New indices have been developed to quantify the proportions of a hydrocarbon signal into dissolved, particulate/oil, and pyrogenic phases. After 1999, a decreasing trend appears in total PAH (TPAH) with current values below 100 ng/g dry weight (and many below 50 ng/g).

Most currently measured samples reflect a predominantly dissolved-phase signal. This new low in TPAH likely represents ambient background levels. Furthermore, peaks and lows in total PAH trends and the similarities of the hydrocarbon signatures portray regional-scale dynamics. The five inner Prince William Sound sites have similar composition and behave similarly and yet are different from the three Gulf of Alaska sites. The two Port Valdez sites are primarily influenced by the treated ballast water discharge from the Alyeska Marine Terminal. An unreported diesel spill was detected in 2004 at Gold Creek, Port Valdez.

Title: Comparison of Wind Measurements at Nuchek Heights, Hinchinbrook Island, and at Seal Rocks NOAA Data Buoy in Hinchinbrook Entrance, Alaska
Report Date: December 7, 2006
Author: Micro Specialties, Inc.
Date Approved: December 11, 2006
Introduction:

Concurrent hourly average wind speeds and directions from data collection stations on shore at Nuchek Heights and at sea by the NOAA Seal Rocks data buoy were compared during the period from 1600 on 23 August 2004 to 1700 on 18 February 2006 Alaska Standard Time. Archived data records from both stations were retrieved and clipped to the specified time period. Data gaps or clearly anomalous recordings were set to zero so that complete time series of exactly the same length (12315 points) were available for analysis. Wind speeds were converted to statute miles per hour (mph).

Title: Field Notes and Critical Observations from the OHMSETT Heavy Oil Dispersant Trials, October 13-16, 2003
Report Date: October 13, 2003
Author: Payne Environmental Consultants
Date Approved: December 11, 2006
Introduction:

This report contains the transcriptions of tape-recorded notes and observations completed by Dr. James Payne during a PWS RCAC-sponsored field audit of the 13-16 October 2003 heavy fuel oil dispersant tests completed by SL Ross and Alun Lewis Consultancy at the MMS OHMSETT facilities in Leonardo, New Jersey. The draft report delivered to PWS RCAC in October 2003 contained initial observations only and figures were supplied as separate files on compact disk (CD). This final report contains all the time/date-stamped figures referenced in the earlier report (compiled in Appendix A in the order called out in the text) along with additional data from SL Ross that were not available at the time the original report was prepared.

The objectives of the tests were to correlate the OHMSETT experiments with at-sea trials of dispersant effectiveness on heavy fuel oils completed in the UK in June 2003 (Colcomb et al., 2005) and obtain additional data on defining the actual limiting viscosity of oil for dispersant use. In addition, the tests were designed to allow correlation of two semi-quantitative methods of monitoring dispersant effectiveness (in-situ fluorescence with USCG SMART and UK Protocols) and direct measurement of residual nondispersed oil on the water surface at the end of each test. Samples of the fuel oils and dispersants were also made available to the U.S. EPA and Environment Canada for independent smaller-scale laboratory tests to see if the results from the EPA's baffled-flask and Environment Canada's swirling-flask tests could be correlated with each other and the data from the larger-scale studies.

In addition to Dr. Payne's original tape-recorded observations and photo-documentation, this final report also compares his evaluations with observations and findings from the final reports on the wave-tank experiments (Trudel et al., 2005; SL Ross et al., 2005). Detailed comparisons of the results from the wave-tank studies with the at-sea trials and the parallel laboratory studies with these same oils and dispersants completed by the U.S. EPA and ExxonMobil Research and Engineering (Clark et al., 2005), are outside the scope of this project; however, a summary of the results presented in Trudel et al. (2005) and SL Ross et al. (2005) is provided.

Title: Prince William Sound Escort and Response System: Issues and Policies December 2006: Task 3
Report Date: December 1, 2006
Author: Nuka Research and Planning Group
Date Approved: January 25, 2007
Introduction:

Due to Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) concerns about the quality and continuity of the Prince William Sound (PWS) Ship Escort and Response Vessel System (SERVS), the Contingency Plan Project Team has studied and considered key tanker escort and response system issues.

PWSRCAC contracted Nuka Research and Planning Group, LLC to review reports and analyses commissioned by PWSRCAC from 2004-2006, as well as previous relevant documents.

This report proposes policies for consideration by the Board of Directors based on the recommendations of the Contingency Plan Project Team. If adopted, these policies will serve as

the basis for future PWSRCAC efforts to ensure that the tanker escort and response system provides efficient and effective oil spill prevention and response in Prince William Sound. This report will also help future PWSRCAC staff and other interested stakeholders understand the key issues considered and decisions taken through the end of 2006.

As a summary document, this report primarily references studies and documents commissioned and reviewed by the PWSRCAC or SERVS.

Title: Contingency Plan Considerations for Prince William Sound Tanker Escort System
Report Date: August 14, 2006
Author: Harvey Consulting, LLC and Nuka Research and Planning Group, LLC
Date Approved: January 18, 2007
Executive Summary:

Harvey Consulting, LLC and Nuka Research and Planning Group, LLC examined sections of the C-plan that pertain to the tanker escort system. The information in these sections was reviewed for internal consistency and compliance with decision documents issued by the Alaska Department of Environmental Conservation (ADEC). Special emphasis was placed on insuring that the escort system, as described, in the C-plan complies with ADEC's Best Available Technology (BAT) findings.

This report, conducted as Task 1a of the Prince William Sound Regional Citizens' Advisory Council's (PWSRCAC) Tug Project, is intended to aid the 2007 C-plan review by examining the BAT documentation regarding the types of tugs that are considered BAT for various escort functions in PWS. The report focuses on escorts for laden tankers; though the escort system is described for tankers in ballast, specific BAT tugs are not specified.

Title: Adapting Tanker C-Plan Scenario 809 For Gulf of Alaska Response
Report Date: September 26, 2006
Author: Cape International, Inc for Nuka Research and Planning Group, LLC
Date Approved: January 18, 2007
Executive Summary:

This report analyzes a post-72 hour and out-of-region response for a large spill occurring during moderate or building weather. It adapts Scenario 809 from the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Tanker C-Plan) to calculate the number of tugs or towing vessels needed for a sustained response in the Gulf of Alaska.

Title: Response Gap Estimates for Two Operating Areas in Prince William Sound
Report Date: January 22, 2007
Author: Nuka Research and Planning Group, LLC
Date Approved: January 25, 2007
Executive Summary:

Prince William Sound Regional Citizens' Advisory Council (RCAC) has commissioned a study to identify and determine the frequency of the Response Gap in two areas of Prince William Sound. A Methods Report, describing the proposed methods, data, and analyses to be used in this study, was developed, reviewed, and approved in April 2006.

To quantify the Response Gap for PWS, this study began by assembling historical datasets of the environmental factors known to affect the open-water mechanical response system used in PWS. Datasets were developed for two of the operating areas in PWS: Central PWS and Hinchinbrook Entrance. Each dataset contained observations related to four

environmental factors: wind, sea state, temperature, and visibility (limited to daylight and darkness). These datasets were used in a "hindcast" to evaluate how often environmental conditions exceed the maximum response operating limits while Hinchinbrook Entrance closure limits were not reached.

Title: VMT System Integrity Issues
Report Date: April 5, 2007
Author: Harvey Consulting, LLC
Date Approved: May 2, 2007
Executive Summary:

During May of 2006, a concerned citizen requested that Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) make inquiry into specified and unspecified reports from other concerned individuals pertaining to the integrity of tank welds whose failure was alleged to have potential for producing a "tsunami of oil" in Port Valdez. The VMT Systems Integrity project was created in July of 2006 to examine integrity issues associated with the reports and to ensure that any identified integrity issues do not pose an increased risk for spillage of oil.

PWSRCAC tasked Harvey Consulting with assisting staff in identifying specific integrity issues that may be further explored by a welding or other expert and preparing a report including the review of collected information and citing any recommended findings. Harvey Consulting produced a set of four reports and a summary set of findings documents covering issues associated with Tanks 55, 16, 5, and 93.

Title: Review of Out-Of-Region Equipment Resources Listed By Prince William Sound Planholders
Report Date: July 6, 2007
Author: E-Tech International Inc.
Date Approved: July 19, 2007
Executive Summary:

Alaska statue AS 46.04.030 requires that crude oil tank vessels carrying more than 500,000 barrels (b) show equipments and other resources sufficient to contain or control, and cleanup a 300,000 b discharge within 72 hours. Additionally, the plan holder shall maintain additional equipment, personnel and resources sufficient to contain, control and cleanup a maximum discharge within the shortest possible time.

The purpose of this review is to:

1. Review contractual relationships between the planholder and SERVS.
2. Review contractual relationship(s) between the planholder and out-of-region equipment.
3. Analyze planholder submittals to verify that adequate resources are available and under contract to build 14 Nearshore Task Forces.

This report reviews the relevant portions of the following documents:

- Alaska Tanker Company, LLC. Integrated Vessel Response Plan,
  Contains two versions varying by section: Version 13, 1 July 2006 and Version 14, April 2007.
- ConocoPhillips, ConocoPhillips Marine, Polar Tankers, Inc. Vessel Response Plan (VRP) and Shipboard Oil Pollution Emergency Plan (SOPEP), Revision 22 Review Copy,

Volume I or II and II of II—Vessel & Shoreside Personnel, June 2007; and Digest of Volume I—Vessel & Shoreside Personnel, June 2007.

- SeaRiver Maritime Inc. Oil Discharge and Contingency Plan, Application Form for Approval dated 19 January 2007 comprising (a). Emergency Response Plan Core. Letter with revised copy dated 26 October 2006, and (b) Emergency Response Plan, Alaska State Appendix, Transmittal letter dated 19 January 2007.
- Tesoro, Tesoro Alaska Company. Prince William Sound Vessel Oil Discharge Prevention and Contingency Plan. Application form for Approval dated 11 April 2007.

Title: A Legal Analysis of the Requirements of "Best Available Technology" (AS 46.04.030(e)) As Applied to Tug Escort Vessels in the 2007 Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan
Report Date: July 6, 2007
Author: Joseph N. Levesque, Esq.
Date Approved: July 19, 2007
Introduction:

This paper is offered and presented as part of the 2007 Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan ("2007 Tanker CPlan") review process. It represents the position of the Prince William Sound Regional Citizens Advisory Council (PWSRCAC) regarding its concerns that some of the Tug Escort Vessels (hereafter "Tug Escorts") currently stationed and in use in Prince William Sound are inadequate in light of present available technology, and therefore do not comply with the Alaska Department of Environmental Conservation's (ADEC) Best Available Technology (BAT) requirements as mandated in Alaska Statute 46.04.030 and implemented under ADEC's adopted regulations. In order to comply with statutory requirements, all Tug Escorts required in the 2007 Tanker C-Plan must be high performance tugs such as Enhanced Tractor Tugs ("ETT) and Prevention/Response Tugs (PRT).1

Title: Valdez Marine Terminal Storage Tank Mechanical Integrity Investigation
Report Date: September 14, 2007
Author: The Hendrix Group
Date Approved: September 20, 2007
Executive Summary:

Prince William Sound Regional Citizens Advisory Council (PWSRCAC) requested The Hendrix Group, Inc.'s assistance to investigate the alleged tank integrity issues for Valdez Marine Terminal (VMT) Tank Number 55 and Tank Number 16. The tank mechanical integrity issues were based on allegations of irregularities associated with repairs and inspections made to the two tanks by contractors and employees of the Alyeska Pipeline Service Company (APSC) during the 2002 time frame.

The efforts described in this report were a joint effort funded by Prince William Sound Regional Citizens' Advisory Council and Alyeska Pipeline Service Company. In addition to jointly funding the effort, Alyeska provided complete access, as and when requested, to its quality documentation, personnel, and physical plant that greatly aided the exploration of the tank integrity issues described herein.

Title: Earthquake, Landslide and Tsunami Hazards in the Port Valdez area, Alaska
Report Date: July 18, 2007

Author: James Begét, Ph.D.—Alaska Beget Consulting
Date Approved: September 20, 2007
Executive Summary:

The 1964 earthquake demonstrated that the Valdez area is subject to enormous earthquakes and coeval tsunamis. The geologic record of prehistoric earthquakes and tsunamis in the Valdez area has not previously been studied.

Historic and prehistoric paleotsunami deposits were identified during this study at sites near Shoup Bay, at Saw Island in the Valdez Marine Terminal, and at a site near Solomon Gulch. Paleotsunami deposits are distinctive sediments found in certain geologic settings that record deposition by large prehistoric tsunamis. Large tsunamis are usually coeval with great earthquakes, and the history of tsunamis in the Valdez area is interpreted as a proxy record of past great earthquakes. Multiple accelerator mass spectrometry radiocarbon dates and conventional radiocarbon dates indicate major prehistoric earthquakes also created large tsunamis in the Valdez area ca. 950-1000 yr B.P., ca. 3800 yr BP. and ca. 4300 yr BP. A large landslide near the VMT dated to 5800 yr BP may have been triggered by a still older earthquake.

The tsunami dated to ca. 950-1000 yr BP was higher and affected a larger inland area at the eastern end of Port Valdez than the historic 1964 tsunami. The 950-1000 yr BP tsunami was probably caused by submarine landslides from the Shoup Bay Moraine and the Valdez Glacier Stream and Lowe River fan deltas. Some of the extensive submarine landslide deposits on the floor of Port Valdez appear to pre-date the 1964 earthquake, and may be correlative with the 950-1000 yr BP event. The tsunamis at 3800 and 4300 yr BP may also have been larger than the 1964 event, but were not as large as the 950-1000 yr BP event. The 950-1000 yr BP earthquake may have been significantly larger than the 1964 earthquake. Little could be determined about the magnitude of a possible earthquake that may have caused a large landslide dated to 5800 yr BP.

Prior estimates of seismic hazards in the Valdez area have been based on an assumption that future earthquakes will resemble the 1964 event, and an educated guess that such events will recur only every few thousand years. The actual duration between great earthquakes in the Valdez area has apparently varied between ca. 500-2800 years, with some previous earthquakes and tsunamis being larger than the 1964 event. The discovery and documentation of records of four great earthquakes within the last 4300 years and possibly as many as five earthquakes in 5800 years shows that the duration of quiet intervals between large earthquakes in the Valdez area is variable and can be shorter than assumed in prior seismic safety evaluations. Even assuming a repeat of the shortest interval found between prehistoric earthquakes, another giant subduction zone earthquake similar to the 1964 event is unlikely to occur for hundreds of years. A small but real possibility exists, however, that a local earthquake on a different fault or a large but distant earthquake might cause submarine landslides and generate dangerous local tsunamis in Port Valdez.

Title: Rock Slope Stability of the VMT
Report Date: September 2007
Author: Terry R. West, Ph.D., P.E., C.P.G. and Kyu Ho Cho, Ph.D., P.E.
Date Approved: September 20, 2007
Executive Summary:

The primary purpose of this project was to evaluate the stability of rock slopes of the VMT during potential earthquake conditions. Field reconnaissance and a detailed fracture survey

of the rock slopes were conducted by Dr. Terry R. West and his associates in July and August 2006.

During the fracture survey more than 300 discontinuity values were measured in the field.

The discontinuity data were measured on those relatively critical slopes including the Ballast Water Treatment Plant ("BWT Slope"), the Power House and Vapor Recovery Plant ("PVR Slope"), the West Manifold Building ("WM Slope"), the West Tank Farm Slope ("WTF Slope"), and the East Tank Farm Slope ("ETF Slope"). Discontinuity data were also obtained from the less critical slopes including the Power House Road Slope, the Tea Shelter Slope, and the rock quarries located on the southern portion of the VMT site.

Using these fracture data and existing rock cut information available at the time of this investigation, an analysis of rock slope stability was conducted using kinematic and factor of safety (deterministic) methods. Because of the uncertainty of the information, the probability of failure method was also employed to evaluate the stability of the VMT slopes in this study. Assumptions concerning rock mass strengths were made based on the literature and experience of the authors.

Title: Northward Spread of Marine Nonindigenous Species along Western North America: Forecasting Risk of Colonization in Alaskan Waters Using Environmental Niche Modeling
Report Date: September 20, 2007
Author: Catherine E. DeRivera, Brian P. Steves, Gregory M. Ruiz, Paul Fofonoff, Anson H. Hines
Date Approved: November 20, 2007
Abstract:

Marine nonindigenous species (NIS) pose problems to natural resource management and conservation of coastal habitats. They are of particular concern in regions, such as Alaska, that have a wealth of natural resources and have not suffered as greatly as other regions from habitat destruction, pollution, or previous invasions. Because biological invasions are on the rise worldwide and potentially cause economic or ecological harm, it is important to develop tools to predict which areas are susceptible to species introductions. To address this goal, we examined the performance of an environmental niche modeling technique in predicting whether coastal waters of Alaska could be colonized by the northward spread of nonindigenous species present to the south.

We collected global geographically-referenced occurrence records for four species that have invaded regions outside of their native ranges, including western North America. These organisms were selected to encompass a taxonomically diverse group with different life-history and habitat distributions. Our four species were: (a) the barnacle, *Balanus improvisus*; (b) the European green crab, *Carcinus maenas*; (c) the club tunicate, *Styela clava*; and (d) the Atlantic periwinkle, *Littorina saxatilis*. We used species records along with relevant global environmental data in an environmental niche modeling framework, GARP (Genetic Algorithm for Rule-set Prediction). We projected the niche models onto nearshore habitats to visualize the potential geographic ranges of the four species in coastal Alaska and elsewhere. We tested these predictions using known occurrences from successfully established and failed introduced populations of each species. The models had low error rates and multiple runs of the models had high overlap in accurately predicting occurrence records.

Our analyses indicate that Alaskan coastal waters are at risk of invasion by nonindigenous species now present in western North America. Abiotic conditions exist in Alaska

and other uncolonized regions that could support populations of all four species examined. More broadly, these results suggest that many nonindigenous species along the west coast may have the capacity for northward spread to Alaska.

Models developed from sampling all the available (global) occurrence records outperformed ones that sampled from the native range data alone, which, in turn, did better than sampling data from a single long-established invaded region. It is noteworthy that the models of *Carcinus maenas* trained with all (global) data predicted a similar but greater potential range in Alaska than results from highly labor-intensive laboratory measures of larval development under different thermal regimes. Thus, environmental niche models can provide quick, valuable, and cost-effective forecasting information as a first critical step in examining potential high risk areas for NIS.

Title: Aquatic Noise Pollution from Oil Tankers and Escort Vessels in Prince William Sound, Its Effects and Impacts on the Marine Environment of the Sound - Literature Search from 1980 to Present.
Author: Hubbs-SeaWorld Research Institute
Date Approved: November 20, 2007
Executive Summary:

This report summarizes the results of a review of available literature on the effects of anthropogenic (human-made) aquatic noise on fish and marine mammals of Prince William Sound, Alaska (PWS, the Sound). The review focuses on potential effects of noise from vessel traffic associated with the Trans Alaska Pipeline System (TAPS), including oil tankers and their tug escorts. Other vessels operating in PWS, such as cruise liners, fishing boats, recreational boating, ferries, and ships used for scientific research were considered as potential contributors to the noise environment.

TAPS tankers and their escorts travel the Sound along a single shipping lane from the Hinchinbrook Entrance to the Port of Valdez. One to two transits by TAPS tankers and their escorts are made per day. Given this limited traffic, TAPS vessels are unlikely to be the only substantial contributor to the noise environment in the Sound. Therefore, noise from all vessels would have to be estimated to determine the contribution of TAPS vessels to any cumulative potential for impact on fish and marine mammals.

Reports In Progress, But Not Yet Approved By The PWSRCAC Board Of Directors As Of The Date Of This Application

Title: Vessel Fouling in Prince William Sound: Nonindigenous Species Analysis
Project Manager: Lisa Ka'aihue
Introduction:

Most objects placed in the ocean for extended periods of time become "fouled" with marine organisms. Barnacles, anemones, sponges, algae, bryozoans, tunicates, hydroids, amphipods and isopods are a few of the many organisms that comprise fouling communities.

Most of these organisms spend the larval stage of their lives drifting on the ocean currents as part of the plankton. Eventually they mature and attach themselves to solid objects, such as vessel hulls, where they will remain the rest of their adult lives or until removed.

Although fouling organisms can easily be observed living on the rocks in tide pools, these communities also commonly establish themselves on docks, pilings, mooring and navigational buoys and ships where they pose ecological problems and impact human activities. When fouling communities become established on the bottom of ships, it increases the risk of further spreading the impacts of invasive nonnative species and can have catastrophic effects on native ecosystems.

The marine ecosystem of the North Gulf of Alaska is an extensive and unique environment with freshwater inputs from the Alaska Coastal Current, streams, rivers, glaciers, and snow fields. To the south, the oceanographic regime is much warmer. The Alaska Peninsula forms a barrier to the Bering Sea which is a much colder climate. There is considerable vessel traffic in the region: freighters from Asia, tankers from the contiguous 48 states and numerous fishing vessels that ply both the Gulf of Alaska and the Bering Sea frequent Prince William Sound. To date, the fouling communities that encrust the hulls of these vessels are poorly described. One recent German study found that hull fouling had a higher number of nonnative species than ballast water and tank sediment.

Vessels from outside the region will continue to provide a source of nonindigenous species, both from ballast water and hull fouling. It would be prudent to initiate a baseline sampling program to identify the common fouling community species on hulls of ships that visit the various ports in Prince William Sound and Southcentral Alaska, as well as other Alaska waters that could be at risk of secondary spread from initial invasions. We expect that the sources of hull fouling species will be diverse, depending on where each ship has been since the hull was last cleaned, and in some cases the sources will be outside Prince William Sound. The project will note any nonindigenous species found on ship hulls and their relative abundance. The baseline thus obtained can be used for comparison with similar future data and possibly with the community found on rocky shores nearby at the same times that the hull sampling is done. For the former purpose, it will be important to obtain information about each vessel's travels during its hull fouling time so that differences in ship traffic among years can be taken into account. This information can be used with reference to the latter purpose, to see whether hull fouling communities on ships that have traveled locally are more similar to the community found on rocky shores nearby, than for ships that have traveled through Southeast Alaska or further south, or Asia.

Title: Review of the Valdez Marine Terminal Maintenance Program
Author: PetroTech Alaska
Executive Summary:

Before seeking the renewal of a series of Right-of-Way (ROW) grants and leases for the TAPS and the VMT, Alyeska researched best methods and technologies applicable to their ongoing maintenance programs for the TAPS and the VMT. An objective was to provide evidence of a total maintenance program that would ensure the long-term integrity of the TAPS and the VMT.

The application of principles and concepts embodied by Reliability Centered Maintenance (RCM) programs was determined to be the best way to sustain the integrity of most of the equipment and facilities associated with the operation the TAPS and the VMT. This determination was reached following significant input from and support from the Joint Pipeline Office (JPO), a regulatory oversight agency comprised of seven state and six federal agencies that shared overlapping regulatory and management responsibilities related to common carrier pipelines in Alaska.

Reliance on Alyeska's ability to successfully develop and implement an RCM program customized to specifically meet the operational needs of TAPS and the VMT was important in the JPO's evaluation of Alyeska's applications for the renewal of a series of ROW grants and leases that had been obtained from federal and State of Alaska government agencies.

This report examines and evaluates the specific aspects of the Alyeska Management System that sets forth policies and procedures in place that reflect both the development and maturation of the RCM and total maintenance programs at the VMT.

Title: Prince William Sound Oil Spill Recovery Rate Analysis
Project Manager: Dan Gilson
Executive Summary:

State of Alaska regulations and the Prince William Sound Tanker Oil Discharge Prevention and Contingency Plan (Cplan) require that there is sufficient response capability to meet the Response Planning Standard (RPS) of containing and cleaning up 300,000 barrels of oil in 72 hours. Within this plan, the shipping companies developed numerous response strategies to meet the RPS including an open water response and a Nearshore response.

The open water response represents the major high volume recovery strategies and includes four large TransRec skimming and containment systems and one dedicated self propelled dynamic plane skimming system. The Nearshore response consists of two main areas: free oil recovery and shoreline protection. Nearshore free oil recovery has been designed for fragmented oil slicks in more restricted waters that have escaped initial open water collection activities. The initial Nearshore response consists of four free oil recovery task forces using basic free oil containment and collection techniques with standard "U" and "J" configurations using locally available fishing vessels, boom, and small containment barges.

In 2006, the state approved substituting these U and J Boom Module containment boom with Current Busters as an improvement to each of the four task forces and the overall response system. The change initiated concerns that equivalency for the substitution of response equipment was not adequately analyzed. This project will be divided into three different tasks. Task 1 will perform a literature review for recent analyses performed for spill response encounter rates. Task 2 will be to identify the encounter rates for various recovery tactics which include the Current Buster and "U" and "J" Boom configurations for the Nearshore response. Task 3 will be to analyze the overall recovery rates for each of the Nearshore Task Forces and the five open water task forces within the 72 hour window considering the maximum spill dispersion of 300,000 barrels.

Title: Literature Search—Hydrocarbon Transfer to Prince William Sound Fish Fry
Project Manager: Joseph Banta
Executive Summary:

The Trans Alaska Pipeline (TAP) introduces Alaska North Slope crude oil into Port Valdez through the Ballast Water Treatment Facility (BWTF), shipboard ballast water escapes and oil spills. Measuring the TAP hydrocarbon pollution in the marine ecosystem is one of PWSRCAC's missions. One of the key organisms in the pelagic food web is the copepod *Neocalanus plumchrus*. It is known from a PWSRCAC project that this copepod is picking up hydrocarbons in Port Valdez from the BWTF. This demonstrates the bioavailability and uptake of polynuclear aromatic hydrocarbons (PAHs) by this copepod at very low, environmentally relevant concentrations. This project addresses water quality by considering hydrocarbon pollution in the food web.

As the first phase of work on this project, PWSRCAC is commissioning a literature search in order to find all relevant research that has been done in the subject area. PWSRCAC views this project as a gap analysis that will help us determine whether or not research has been done on the transfer of oil to fish from their food, and if so, to what extent this research has been done. Respondents should demonstrate expertise in gathering, reviewing, and abstracting collected scientific literature, and discuss how they will do so for this project's subject area.

Title: Non-mechanical Response Gap Estimate: Literature Review and Recommended Limits
Report Date: September 5, 2007
Author: Nuka Research and Planning Group, LLC
Executive Summary:

Prince William Sound Regional Citizens' Advisory Council (PWSRCAC) has contracted Nuka Research and Planning Group, LLC (Nuka Research) to analyze the response gap that may exist for non-mechanical response operations at two locations in Prince William Sound.

Improved technology, planning, and environmental monitoring efforts over the past two decades have greatly enhanced the ability to respond to an oil spill in Prince William Sound. However, PWSRCAC believes there are still times that tankers are transiting the Sound when weather conditions would preclude a response. In February 2007, the PWSRCAC Board of Directors approved a report by Nuka Research, "Response Gap Estimates for Two Operating Areas in Prince William Sound." This report analyzed mechanical response limits in terms of five environmental factors and compared these to data from two National Oceanic and Atmospheric Administration (NOAA) buoys located in the Central Sound and at Hinchinbrook Entrance and civil twilight tables. The outcome of the analysis indicated how often—as a percentage of time—a mechanical response would be precluded by environmental conditions, yet Hinchinbrook Entrance remained open so tankers could theoretically be transiting the Sound.

(f) Financial summary

(1) Budget and spending plan for coming year—See enclosed CD.

(2) Work Plans for budget-approved studies and projects—See enclosed CD.

(3) Short-term strategy covering budget year—See enclosed CD.

(4) Long-term plan with goals, objectives and operating environment over next 3 to 5 years—See enclosed CD.

(5) Previous year's financial report—See enclosed CD.

(g) PWSRCAC funding

PWSRCAC's primary funding source is a long-term contract with Alyeska Pipeline Service Co. It provides approximately $3 million per year. A copy is included on the enclosed CD.

PWSRCAC also receives money from other sources for various projects. In the current year, we are budgeted to receive $35,000 in such funds from the State of Alaska to assist with the cost of a fire-fighting symposium. This information is listed on the page numbered '11 of 134' in the PDF file of our current-year budget on the enclosed CD.

(h) Accessibility of Application

PWSRCAC will inform the public of its recertification application through newspaper advertisements (see Attachment 1) and a press release (see Attachment 2).

Copies of the application will be available on the council website or free in printed from by request to the PWSRCAC offices.

Attachments

Attachment 1: Newspaper Advertisement

Attachment 2: Press Release

Enclosures

Enclosure 1: CD with information on PWSRCAC budget and on the Alyeska funding contract.

Enclosure 2: PWSRCAC's latest annual report, "2006-2007 In Review."