No. 07-219

IN THE

Supreme Court of the United States

EXXON SHIPPING COMPANY, *et al.*,
Petitioners,

v.

GRANT BAKER, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

SUPPLEMENTAL JOINT APPENDIX VOLUME ONE

E. EDWARD BRUCE
COVINGTON & BURLING LLP
1201 Pennsylvania Ave., N.W.
Washington, D.C. 20004
(202) 662-6000

Attorneys for Petitioner Exxon Shipping Company

WALTER DELLINGER
(*Counsel of Record*)
JOHN F. DAUM
CHARLES C. LIFLAND
JONATHAN D. HACKER
O'MELVENY & MYERS LLP
1625 Eye Street, N.W.
Washington, D.C. 20006
(202) 383-5300

Attorneys for Petitioner Exxon Mobil Corporation

[Additional Counsel Listed on Inside Front Cover]

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David W. Oesting
Davis Wright Tremaine LLP
701 West 8th Avenue
Suite 800
Anchorage, AK 99501
907-257-5300

Counsel for Respondents

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF ALASKA

In re	)	No. A89-095 Civil (HRH)
the EXXON VALDEZ	)	(Consolidated)

(RE: A89-094; A89-095; A89-106; A89-140; A89-147; A89-200; A89-238; A91-103; A91-136; A91-137; A91-142; A91-416; A91-568; A92-079; A92-081; A92-089; A92-091; A92-092; A92-096; A92-098; A92-099; A92-100; A92-103; A92-105; A92-106; A92-107; A92-110; A92-113; A92-117; A92-120; A92-121; A92-124; A92-126; A92-130; A92-131; A92-133; A92-135; A92-136; A92-138; A92-142; A92-143; A92-145; A92-148; A92-151; A92-154; A92-158; A92-164; A92-167; A92-168; A92-173; A92-178; A92-180; A92-182; A92-183; A92-185; A92-188; A92-190; A92-191; A92-192; A92-194; A92-196; A92-197; A92-198; A92-200; A92-202; A92-203; A92-205; A92-206; A92-213; A92-216; A92-217; A92-219; A92-223; A92-226; A92-278; A92-353; A92-461; A92-584; A93-373; A93-375)

AFFIDAVIT OF STEVEN C. SCHROER IN OPPOSITION TO MOTION OF DEFENDANTS EXXON CORPORATION (D-1) AND EXXON SHIPPING COMPANY (D-2) FOR SUMMARY JUDGMENT ON CLAIMS OF COMMERCIAL FISHERMEN BASED ON THE DIMINISHED VALUE OF LIMITED ENTRY PERMITS AND FISHING VESSELS

STATE OF MINNESOTA)
) ss.
COUNTY OF HENNEPIN)

Steven C. Schroer, being duly sworn, deposes and says:

1. I am one of the attorneys representing private plaintiffs in the above-entitled matter. I make this affidavit on the basis of personal knowledge and am competent to testify to the matters stated herein. This affidavit is submitted in opposition to Defendants' Motion For Summary Judgment on Claims of Commercial Fishermen Based on the Diminished Value of Limited Entry Permits and Fishing Vessels.

2. Attached hereto as Exhibit 1 are copies of the title page of an expert report titled "Effect of the 1989 Exxon Valdez Oil Spill on Alaska Limited Entry Permit Values," by Natural

Resources Consultants, Inc., Jonathan Karpoff. and Roger Lohrer, dated February 24, 1993. An entire copy of this report is attached as Exhibit 2 to the Affidavit of Mark Freeberg.

3. Attached hereto as Exhibit 2 is a copy of a supplemental NRC expert report titled "Effect of the 1989 Exxon Valdez Oil Spill on Alaska Limited Entry Permit Values," dated October 29, 1993.

4. Attached hereto as Exhibit 3 is a copy of an expert report titled "The Effect of the Exxon Valdez Oil Spill on Boat Values in Prince William Sound and Kodiak," by Roger Lohrer, dated February 23, 1993.

5. Attached hereto as Exhibit 4 is a copy of a supplemental expert report titled "Supplemental Report of Roger Lohrer," which was served upon defendants on or about November 1, 1993.

6. Attached hereto as Exhibit 5 is a copy of an expert report titled "The Effect of the Exxon Valdez Oil Spill on Commercial Fishing Vessel Values in Cook Inlet, Alaska," by Roseleen L. Moore, dated February 24, 1993.

7. Attached hereto as Exhibit 6 is a copy of a supplemental expert report titled "Supplemental Report of Roseleen Moore," which was served upon defendants on or about November 1, 1993.

8. Attached hereto as Exhibit 7 is a copy of the State/Federal Natural Resource Damage Assessment Draft Preliminary Status Report on Fish/Shellfish Study No. 27: Sockeye Salmon Overescapement, revision of March 15, 1993 ("Fish Study No. 27"). Fish Study No. 27 discusses principal investigators' opinions regarding the mechanism by which Exxon Valdez-induced

overescapement into the Kenai River system (Upper Cook Inlet) and the Red Lake system (Kodiak) in 1989 has caused a decrease in Kenai River and Red Lake smolt production.

9. Attached hereto as Exhibit 8 is a copy of an expert report titled "Long-Term Sockeye Salmon Damages in Upper Cook Inlet, Kodiak and Chignik as a Result of The Exxon Valdez Oil Spill," by Dr. Phillip R. Mundy, dated February 23, 1993.

10. Attached hereto as Exhibit 9 is a copy of the "Supplemental Report of Dr. Phillip R. Mundy Regarding Long-Term Salmon Damages in Upper Cook Inlet, Kodiak and Prince William Sound as a Result of The Exxon Valdez Oil Spill," dated October 31, 1993.

11. Attached hereto as Exhibit 10 is a copy of an expert report titled "Review of Damage Assessment and Population Effects to Herring in Prince William Sound Following the Exxon Valdez Oil Spill of 1989," by Dr. Richard M. Kocan, dated February 23, 1993.

12. Attached hereto as Exhibit 11 is a copy of the "Supplemental Report on the Toxic Effects of Exxon Valdez Oil on Prince William Sound Herring," by Dr. Richard M. Kocan, dated October 29, 1993.

13. Attached hereto as Exhibit 12 is a copy of an expert report entitled "Biological Effects and Impacts of The Exxon Valdez Oil Spill on Prince William Sound Pink Salmon," by Dr. G.L. Thomas, dated February 23, 1993.

14. Attached hereto as Exhibit 13 is a copy of a supplemental expert report entitled "An opinion of long-term damages of the Exxon Valdez oil spill to Prince William Sound pink salmon," by Dr. G.L. Thomas, dated October 30, 1993.

15. Attached hereto as Exhibit 14 is a copy of an expert report entitled "Supplemental Report on the 1993 Loss of Herring to Commercial Fishers in Prince William Sound as a Result of Effects of the Exxon Valdez Oil Spill," by Natural Resources Consultants, Inc., dated October 29, 1993.

16. Attached hereto as Exhibits 15-20 are documents disseminated by Exxon through public sources such as the Oil Spill Public Information Center in Anchorage upon information and belief as part of a public relations effort to downplay long-term biological damage caused by the *Exxon Valdez* Oil Spill:

- Exhibit 15 is a copy of a report entitled "Water Quality in Prince William Sound," by Jerry M. Neff, dated April, 1990.
- Exhibit 16 is a copy of a report entitled "Two Years After: Conditions in Prince William Sound and the Gulf of Alaska," dated October 1991.
- Exhibit 17 is a copy of a report entitled "Alaskan Fisheries -- Two Years After the Spill," by William F. Royce, Thomas R. Schroeder, A.A. "Ole" Olsen, and William J. Allender, dated February 1991.
- Exhibit 18 is a copy of a report entitled "Environmental Recovery in Prince William Sound and the Gulf of Alaska," by Jenifer M. Baker, Robert B. Clark, and Paul F. Kingston, dated June 1990. (This glossy brochure, and the one that follows, Exhibit 19, are of particular interest since the authors never disclose that, upon information and belief, Exxon paid for their work.)

- Exhibit 19 is a copy of a second report by Jenifer M. Baker, Robert B. Clark, and Paul F. Kingston, entitled "Two Years After the Spill: Environmental Recovery in Prince William Sound and the Gulf of Alaska," dated November 1991.

17. Exhibit 20 hereto is a copy of a partial transcript of "The MacNeil/Lehrer NewsHour," dated May 11, 1990 (generated through the LEXIS/NEXIS database), which, upon information and belief, reflects a national television broadcast on or about that date, in which Exxon executive Otto Harrison participated. In the course of the broadcast, a reporter stated:

> Exxon is filling the information vacuum with a controversial public relations campaign in Alaska. Newspaper ads give results of selected studies commissioned by Exxon. The state calls the ads misleading and irresponsible.

During the broadcast, both Governor Steve Cowper of Alaska and Exxon Otto Harrison agreed that scientific information was being withheld from the public due to pending litigation.

18. Attached hereto as Exhibit 21 are copies of pages 1-6, 20-25, 31-43, 56-70, 95-99, 108-109, 116-127, 132-133, 143-146, 151-157, 173-178, 185-186, 218, 232-233, 237-239, 273-274, 292-294 and 321-333 from the Deposition of Roger M. Lohrer, dated July 8, 1993.

19. Attached hereto as Exhibit 23 are copies of pages 1-4, 74-76, 87-88, 104-114, 121-124, 132-135, 145-149, 200-201, 216-217, 234-246, 256-258 and 273 from the Deposition of Roseleen L. Moore, dated May 19, 1993, and a copy of Exh. 104119 to that deposition (Ms. Moore's resumé).

NRC

NATURAL RESOURCES CONSULTANTS, INC.

4055 21ST AVENUE WEST, SUITE 200
SEATTLE, WASHINGTON 98199, U.S.A.
TELEPHONE: (206) 285-3480
TELEFAX: (206) 283-8263

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SUPPLEMENTAL REPORT:

EFFECT OF THE 1989 *EXXON VALDEZ* OIL SPILL ON ALASKA LIMITED ENTRY PERMIT VALUES

Prepared for:

EXXON PLAINTIFFS' LITIGATION JOINT VENTURE

Prepared by:

NATURAL RESOURCES CONSULTANTS, INC.

DR. JONATHAN KARPOFF

MR. ROGER LOHRER

October 29, 1993

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EXECUTIVE SUMMARY

Natural Resources Consultants, Inc., Dr. Jonathan Karpoff, and Mr. Roger Lohrer were retained by the Exxon Plaintiffs' Litigation Joint Venture to investigate possible effects of the 1989 *Exxon Valdez* oil spill on Alaska limited entry permit values. An initial report on salmon limited entry permits in Upper Cook Inlet, Kodiak, and Prince William Sound was published on February 24, 1993. Subsequent to that report the Exxon Plaintiffs' Litigation Joint Venture requested an update of permit price effects on those permits previously studied and an investigation into possible oil spill effects on Prince William Sound herring purse seine limited entry permits.

Studies of factors affecting limited entry permit prices have found perceived future income and collateral loan value are of primary importance in the determination of permit values by sellers and buyers. Alaska Department of Fish and Game future run size projections are the most important information considered in projecting future income from a limited entry permit.

Impacts of the *Exxon Valdez* oil spill on the future run sizes of salmon were outlined in our February 24, 1993, report and included over-escapement, residual oil toxicity, and long-term genetic damage. Impacts of the *Exxon Valdez* oil spill on Pacific herring in Prince William Sound include induced immediate mortality of eggs and larvae present during the spill and exposed to oil, reduced resistance to disease and parasites and resulting mortality by all ages of herring exposed to oil during the spill and in areas of continued oil contamination, and decline in future recruitment due to genetic disruption of surviving adults.

The 1992 and 1993 runs of pink salmon and the 1993 run of herring into Prince William Sound were particularly poor and unexpected. Alaska Department of Fish and Game is projecting weaker than expected runs of sockeye salmon in Kodiak and Upper Cook Inlet in 1994 and possibly 1995

and beyond because of over-escapement which occurred in 1989 from oil spill-induced fishery closures. From February 1992 to the present, fishers, permit owners, buyers and brokers, and loan officers have had substantial information available to them through published literature to incorporate reported residual impacts of the *Exxon Valdez* oil spill into their projections of future run sizes of salmon in Upper Cook Inlet, Kodiak and Prince William Sound. Similar information regarding residual impacts of the spill on Prince William Sound herring fisheries have been available since the disastrous April 1993 herring fishery.

Salmon permit price analyses covering the period from 1989 through mid-year 1992 presented in the February 24, 1992 report have been extended through mid-1993 in this report. Salmon fisheries investigated include the Cook Inlet driftnet, setnet, and purse seine fisheries, Prince William Sound purse seine and driftnet fisheries, and the Kodiak purse seine fishery. Permit prices changes in these oiled-area fisheries have been compared to relevant benchmark non-oiled fisheries in Southeast Alaska and Bristol Bay. Prince William Sound herring purse seine permit value analyses, are also present in this report. The Southeast Alaska herring purse seine fishery is used as the benchmark for the herring permit price effect assessment.

Study results demonstrate that oil spill effects continue to lower limited entry permit values in all salmon fisheries studied. Seasonally measured spill effects on permit values in the Cook Inlet driftnet and setnet fisheries rose from $103,330 and $28,500 as of mid-1992 to $142,000 and $37,000 in mid-1993, respectively. The decline in Prince William Sound salmon permit values due to oil spill effects increased from $132,000 in mid-1992 to $141,000 in mid-1993. Prince William Sound driftnet permit values experienced spill effects that worsened from the mid-1992 level of $45,000 to the mid-1993 value of $64,000. Kodiak salmon purse seine permit value losses rose from $39,400 to $46,000 between mid-1992 and mid-1993 while oil spill induced losses for the Cook Inlet purse seine permit value more than doubled over the same period ($53,000 spill effect in mid-1992, $115,000 spill effect in mid-1993).

Losses were also noted in the Prince William Sound herring purse seine permit value over the period from March 1993 through September 1993. Limited entry permit market conditions are so poor for Prince William Sound herring purse seine permits as of this writing that any reasonable offer is now being considered by permit sellers. Brokers indicate the trading price for Prince William Sound herring purse seine permits is now approximately $90,000 as opposed to the $143,500 price estimate calculated through the use of the Southeast Alaska herring purse seine benchmark. Thus, the permit value loss estimate in the Prince William Sound herring purse seine due to the oil spill is $53,500 as of September 1993.

INTRODUCTION

Dr. Jonathan Karpoff, Mr. Roger Lohrer, and Natural Resources Consultants, Inc., have been retained by the Exxon Plaintiffs' Joint Venture (EPLJV) to investigate possible effects of the 1989 *Exxon Valdez* oil spill on Alaska limited entry permit values. An initial report entitled "Final Report: Effect of the 1989 *Exxon Valdez* Oil Spill on Alaska Limited Entry Permit Values" was published on February 24, 1993 (NRC, Karpoff, and Lohrer, 1993). This report presented information on the operation of the limited entry permit market, a determination of what factors fishers use to establish permit values, a determination of how the *Exxon Valdez* oil spill affected those factors, and an estimate of the dollar value of the spill effect for limited entry permits for salmon fisheries in Upper Cook Inlet (UCI), Prince William Sound (PWS), and Kodiak.

At the conclusion the EPLJV requested Natural Resources Consultants, Inc., Dr. Karpoff, and Mr. Lohrer to update their assessment of the current value of salmon limited entry permits addressed in the February 24, 1993, report. Additionally, the EPLJV asked that the limited entry permits for purse seine herring fisheries in PWS also be analyzed for possible value effects associated with the *Exxon Valdez* oil spill. Using an approach consistent with the methodology used in the February 24 report, the following sections provide an update of published information available to fishermen on the continuing effects of the *Exxon Valdez* oil spill on salmon fisheries in UCI, Kodiak, and PWS, and on the herring fishery in PWS. The report also presents estimates of the effects of this information on the limited entry permit value through the second quarter of 1993 for all salmon fisheries and through the third quarter of 1993 for the PWS herring purse seine fishery.

1989 OIL SPILL EFFECTS ON PERMIT VALUE FACTORS

In our February 24, 1993, report we investigated what factors fishers consider to determine the value of limited entry permits. We determined that perceived future income and collateral loan value were of primary importance in the determination of permit values by sellers, potential buyers, and loan officers. Alaska Department of Fish and Game (ADF&G) future run size projections were determined to be the most important information considered in projecting future income from the ownership and use of a limited entry permit. Ex-vessel product price and historical run sizes were also factors considered in projecting future income, but were not as important as the projected run size of the target species.

Beginning in February 1f992 and continuing to the present, published articles and ADF&G research reports provided substantial information on the effects of the *Exxon Valdez* oil spill on future runs sizes of salmon in UCI, Kodiak, and PWS. These effects included over-escapement, residual oil contamination, and long-term genetic effects. Similar articles and scientific reports indicating oil spill impacts on future herring runs were widely published after the poor 1993 PWS herring run in mid-April 1993 and continue to be reported through October 1993.

The effects of the *Exxon Valdez* oil spill on Pacific herring in PWS were not addressed in our February 24, 1993, report. The failure of the 1993 herring run in PWS resulted in published reports identifying possible causes for the failure of the run, foremost of which were residual effects of the *Exxon Valdez* oil spill. Reports also included projections of the impact of such residual effects on future herring runs.

Herring, primarily caught for roe, is an important resource for subsistence and commercial harvest, as well as an important prey species for marine mammals, birds, and other finfish within PWS. The return of herring to inshore water to spawn each spring corresponds with the migration of seabirds, shorebirds, sea lions, and humpback whales into PWS, along with human fishers.

The grounding of the *Exxon Valdez* on March 24, 1989, and its resulting spill of over 11 million gallons of oil coincided with the annual spring arrival of herring. As a result, adult spawning herring, juveniles, larvae, and eggs were exposed to oil contamination. Over 40% of the traditional herring spawning areas within PWS and over 90% of the areas needed for summer rearing were contaminated (Biggs and Baker, 1993). Adults, juveniles, and larvae swam through oil contaminated waters. Eggs laid down on kelp and other substrate were exposed to surface floating oils by tidal action on a daily basis. Newly hatched larvae containing high concentrations of fat that accumulate oil byproducts were exposed during the most critical period of their life cycle.

In 1989, one-year-old herring (1988 year class) were in PWS during their summer feeding cycle. The 1988 year class has been and is expected to continue to be the dominant year class in the Gulf of Alaska herring run for the next several years (the 1988 year class represented 65% of the total biomass in the 1992 PWS herring run). Offspring from spawning by the particularly strong 1988 year class are expected by ADF&G to produce additional strong year classes early into the next century (large year classes of herring have occurred in PWS every four years since 1976).

Studies on the effects of the oil contamination on herring in PWS were begun almost immediately after the oil spill. Preliminary results indicate that egg and larval mortality, lethal genetic damage, and frequency of physical deformities were higher in the oiled areas than in un-oiled areas. These effects apparently were more prevalent in 1989 than in 1990, but impacts were still measured. In 1989, stress-related hemorrhaging around the vent and enlarged gall bladders were found in adult herring, along with oil in samples of bile. The ADF&G reported that even parasites of adult herring in oiled areas migrated from the gut into the muscle tissue in an apparent attempt to avoid the toxic effects of oil in the gut of adult herring (Biggs and Baker, 1993). Internal damage to adult herring found in 1989 and 1990 suggested that the oil contamination resulting from the *Exxon Valdez* oil spill probably stunted the growth of juvenile herring in 1989 and, based on adult

samples collected in 1989 and 1990, probably weakened the fish's ability to resist diseases and parasites (Biggs and Baker, 1993).

When compared with their prevalence in un-oiled areas, herring from the 1989 year class were noticeably lacking in PWS in 1992. The paucity of herring from the 1989 year class was surprising because the 1989 herring run was one of the strongest since the early 1970s and had not been fished due to oil-induced closures of the herring grounds. The low incidence of 1989 year class herring was subsequently attributed to oil-induced mortality on egg and larvae in 1989 and juveniles in 1990. Those mortalities appeared to have affected the overall population size of this year class.

In 1992, herring returning to PWS from the 1988 year class were within the expected range of abundance. However, studies showed that hatching success of eggs collected from an oiled area was less than half that of eggs collected from an un-oiled area. Although the exact cause of this hatching success discrepancy is not yet known, genetic damage to 1988 year class individuals due to exposure to oil as actively feeding and growing individuals in 1989 has been suggested as a possible cause. If this genetic effect is borne out, it may result in a long-term decline in abundance of Pacific herring in PWS and an end to the four-year cycle of particularly strong year classes (Kocan, Baker, and Biggs, 1993).

In 1993, the PWS herring run was characterized as a disaster (*National Fishermen*, July 1993). The pre-season 1993 spawning biomass was forecast by the ADF&G at 134,133 tons, with an expected harvest of 26,827 tons (Funk, 1993). Preliminary ADF&G estimates are that only 30,000 tons of herring actually returned in 1993, with a harvest of about 4,000 tons. Those fish that did return showed an unusually high occurrence of lesions, loss of scales, and abnormal behavior, such as consuming their own spawn.

The 1988 and 1989 year classes were particularly absent in the 1993 run. Prior to the season, the 1988 year class was expected to represent about 81% of the total returning biomass (Funk, 1993). However, from preliminary age and abundance samples, it actually represented less than 50% of the biomass (*National Fishermen* July 1993). Dr. Kocan, an expert on oil effects on

herring, believes the oil spill effects have weakened the resistance of herring to disease and parasite infestation resulting in lower natural survival rates and elevated amounts of diseased fish. The ADF&G is concerned that the unexpected decline in the 1988 year class will have lasting effects on future recruitment of herring to the PWS run (*Pacific Fishing*, August 1993). If the 1988 year class does not return to PWS in 1994 in the abundance expected under normal conditions of natural mortality, it is likely that commercial and subsistence harvests of herring will be significantly curtailed and possibly halted for the foreseeable future. Predators may also be affected if herring run sizes decline to levels unable to support the food base.

Herring runs to other areas of Alaska were reasonably close to pre-season forecasts and there was no widespread evidence of similar disease or parasite infection as observed in PWS in 1993.

Additionally, investigators continue to show evidence that residual oil spill effects may be impacting pink salmon (Willette, 1993), particularly in light of the poor run to PWS in 1992 and a very poor run in 1993. Other areas have not experienced similar declines in pink salmon. In fact, many areas in the Gulf of Alaska are experiencing record runs of pink salmon.

Although sockeye salmon runs and harvest were stronger than expected in UCI in 1993, the ADF&G is still projecting a poor run in 1994 and possibly 1995 due to the large over-escapement of sockeye in 1989 caused by the *Exxon Valdez* oil spill (*The Fishermen's News*, August 1993; Schmidt et. al., 1993). Projections are for little, if any, commercial harvest of sockeye salmon in UCI during the 1994 and 1995 seasons.

DOCUMENTATION OF INFORMATION ON 1989 *EXXON VALDEZ* OIL SPILL EFFECTS

In our February 24, 1993, report we compiled copies of media articles available to fishers, permit brokers, and loan officers describing the effects of the *Exxon Valdez* oil spill on salmon fisheries in UCI, PWS and Kodiak (NRC, Karpoff, and Lohrer, 1993). Attached in Appendix 1 of the current report are copies of articles on the effects of the *Exxon Valdez* oil spill on salmon and herring fisheries in Alaska from newspapers, the ADF&G semi-monthly magazine, the *Exxon Valdez* oil spill symposium, and publications commonly read by fishers, limited entry permit brokers, and loan officers. Included in Appendix 1 are articles published in the *Anchorage Daily News* from February 1992 not presented in our original report.

Information on the over-escapement effects of the *Exxon Valdez* oil spill in UCI and Kodiak was available to the public in early 1992, **"Spill damage may show in '94 catch"** (*Anchorage Daily News*,, February 8, 1992), **"Kenai sockeye runs under scrutiny"** (*Anchorage Daily News*, March 12, 1992), and **"Red salmon runs on Kenai may be headed for crash"** (*Anchorage Daily News*, April 28, 1992). Articles related to both pink salmon and sockeye salmon continued to appear periodically throughout 1992 as evidenced in our February 24, 1993, report. Our analysis showed a measurable decline in the permit values of salmon limited entry permits in UCI, Kodiak and PWS compared with benchmark non-oil spill affected areas. These declines in permit values coincided with the release of publicly available information.

Articles on the effects of the oil spill on salmon have continued to appear in 1993. The January/February 1993 edition of *Alaska's Wildlife*, an ADF&G publication, was completely devoted to the effects of the oil spill on Alaska resources. Preliminary results of scientific studies were summarized and projections of future impacts were provided. In February 2-5, 1993, the Exxon Valdez Oil Spill Symposium was held in Anchorage, Alaska. Scientists presented abstracts and gave public talks on the to-date results of their scientific investigations into the effects of the oil spill. This symposium was widely attended and covered in the local and regional press.

In March 1993, an article **"Permit values sinking"** on declining permit values was published in the *Anchorage Daily News* (March 4, 1993). PWS was singled out as a location of particularly severe fishing conditions with the decline in pink salmon runs since 1991 and the *Exxon Valdez* oil spill was used as a benchmark for declining permit prices. In May 1993, *National Fishermen* published an article entitled **"Wrath of Exxon Valdez spill is still taking its toll on fisheries"** describing pink and red salmon and herring effects.

An unexpectedly poor herring fishery in PWS occurred in mid-April 1993. Fishers, members of the local community, and permit price brokers were aware of the poor fishery by April 15. The May 1993 edition of *The Fishermen's News* had a front page article entitled **"Herring bust surprises all."** In June 1993, *Pacific Fishing* published an editorial article entitled **"Alaska's Unsound Salmon Fishery...What Role Did the Oil Spill Play"** which outlined the results of the Exxon Oil Spill Symposium and related those results to the recent (1992) poor pink salmon run and 1993 decline in the herring run in PWS. *National Fishermen* followed in July 1993 with an article entitled **"Disaster marks Prince William Sound herring fishery."** This article presented an overview of the 1993 run, the condition of the fish, and links with the *Exxon Valdez* oil spill research being conducted, and published quotes about future impacts like **"I think we're going to see some significant problems in the herring future for some years to come"** (Alaska Sea Grant Agent, Rick Steiner). The market for PWS herring purse seine limited entry permits, while always somewhat slow immediately after the fishery, ground to a complete halt by late May or early June.

In August 1993, *The Fishermen's News* published another article on the Kenai over-escapement problem under the title **"Kenai smolt count adds up to bust--Past overescapement haunts future Upper Cook Inlet fishing seasons."** Also in August the *Anchorage Daily News* published an article on the pink salmon decline in PWS entitled **" Sound salmon run crashes--Worst pink return in decade worries fishermen, hatchery."** The article pointed out that runs of salmon to other areas were strong and PWS stood out as the exception. The article stated that fishermen believe the *Exxon Valdez* oil spill is the problem. This article was the first to publicize

the poor 1993 pink salmon run in PWS. *Pacific Fishing* addressed the poor PWS herring run in its August 1993 edition under the title "**Search Continues for Missing Herring.**" The article stated that scientists are not ruling out a link with the effects of the *Exxon Valdez* oil spill.

In August 1993, fishers blockaded the Port of Valdez and got national and international attention as they contended that the effects of the *Exxon Valdez* oil spill were still impacting their salmon and herring runs. Furthermore, they stated that money from the federal and state settlement with Exxon was not being spent appropriately to address the fishery problems. The August 23, 1993, *Seattle Post-Intelligencer* highlighted the fishers' concerns in an article entitled "**Fishermen agree to lift blockade--Babbitt backs oil-spill recovery effort.**"

The *Alaska Fishermen's Journal* of September 1993 published an article on the pink salmon decline in PWS, "**Pink Jitters in PWS--Is it late, or what?**" and on the continued expectation by ADF&G that the UCI sockeye run would be poor in 1994. The *Anchorage Daily News* of September 5, 1993, published an article entitled "**Measuring Up the Sound**" which provided an overview of the fishery problems experienced in PWS since the oil spill and related this to impacts of the *Exxon Valdez* oil spill.

Numerous articles were published in October that discussed the fishers' blockade of the Port of Valdez and their reasons for believing the oil spill is still impacting their fisheries and livelihoods. An example was the front page article in the October 11, 1993, edition of the *Seattle Post-Intelligencer* entitled "**A fish bonanza vanishes--Alaskans blame oil for poor catches of salmon and herring.**"

From February 1992 to the present, fishers, permit owners, buyers and brokers, and loan officers have had substantial information available to them through published literature to incorporate reported residual impacts of the *Exxon Valdez* oil spill into their projections of future run sizes of salmon in UCI, Kodiak, and PWS and herring in PWS.

ANALYSES OF PERMIT VALUES

As in the February 24, 1993, report, the following analysis takes a "benchmark" approach to permit price valuation. Permit prices in un-oiled areas are used as a benchmark of appropriate price changes in oiled areas. Permit values from oiled areas analyzed in this report include the PWS herring purse seine, salmon driftnet, and salmon purse seine, Cook Inlet salmon driftnet, setnet and purse seine, and Kodiak salmon purse seine fisheries. Benchmark permit prices from un-oiled areas include the Southeast Alaska herring purse seine, Southeast Alaska salmon purse seine, and Bristol Bay salmon driftnet and setnet fisheries. The reader is referenced to the February 24, 1993, report for further background on our benchmark approach. In addition, the February 24, 1993, report thoroughly describes the relationship between permit value, long-term expectations of fishing income, and the assessment of spill effects on permit values.

Alaska Commercial Fishery Entry Commission (CFEC) permit prices were used to analyze permit price changes in the February 24, 1993, report. In this report, CFEC permit price series for each of the salmon fisheries (except the Cook Inlet purse seine fishery) have been extended through the second quarter of 1993. Unfortunately, CFEC confidentiality provisions, which specify that at least four permit transactions must take place in a subject time period before information pertaining to the value of those transactions can be released to the public, preclude the use of these data for similar analyses in the PWS herring purse seine fisheries. Lacking an appropriate CFEC price series, permit prices published in *Pacific Fishing*, a fishing industry trade journal, were used to evaluate changes in PWS herring purse seine permit values. However, we encountered a limited dataset due to few permit sales transactions during much of 1993. While we believe "offers" made by potential buyers best reflect perceptions of permit value, the large number of missing values in the "offer" price series for PWS herring purse seine fisheries precludes a quantitative analysis of permit value in this fishery based on "offer" data. State "values" posted in *Pacific Fishing* average over several, often many, months of data for confidentiality reasons and thus can lag behind more recent transactions reflected by brokers in the "market"

prices. Consequently, we have used "market" values as the next best alternative to the "offer" prices.

Regardless of the data source, spill effects calculated in this report, as well as the February 24, 1993, report, equal the dollar difference between permit prices reported for a fishery and the price predicted for that fishery using the appropriate benchmark. For example, a 10% increase in permit value in benchmark fishery "A" suggests that permit prices in oiled area "B" should have also risen by 10%. Any decrease, or increase of less than 10%, in oiled area "B" permit values is indicative of a spill effect on the permit values in that fishery. Following this approach, our objectives within the following analysis are to:

1. document actual permit prices observed in benchmark and oiled area fisheries through mid-1993;
2. calculate the rate of change in permit prices in benchmark areas;
3. apply this rate of change to oiled area permit prices and subsequently predict appropriate permit prices for these areas; and
4. for oiled areas, assess the spill effect on permit prices, or the lack thereof, by measuring the difference between actual and predicted permit prices.

Salmon fishery permit price analyses presented in the February 24, 1993, report begin immediately post-spill and are carried through mid-1992. Salmon permit price predictions in this report begin where those in the February 24, 1993, report end and run through mid-1993. Analyses of permit values in PWS herring purse seine fisheries were not conducted in the February 24, 1993, report. PWS herring purse seine permit value assessments begin with the 1993 season in April and run through September, 1993, the most current month for which permit prices are available in *Pacific Fishing*. Permit value changes prior to April 1993 in the PWS herring purse seine fishery have not been ascribed to the oil spill. To the best of our current knowledge, little, if any, information discussing potential deleterious impacts of the *Exxon Valdez* oil spill on the PWS herring purse seine fishery was available prior to the 1993 fishery. Only from that time forward has there been widespread attention paid by the media and herring purse seine fishers in PWS to the problem of reduced future returns of herring to PWS.

Prince William Sound Herring Purse Seine

Based on our review of permit price changes in the Southeast Alaska herring purse seine fishery, herring purse seine permits should have risen by 12.5% between March and September 1993. Starting from a March 1993 price of $127,500, "market" price for PWS herring purse seine permits should have reached $143,500 by September, 1993. However, market activity has slowed so much since the disastrous 1993 fishery that actual September 1993 market conditions were abysmal and the September 1993 *Pacific Fishing* "market" quotes were for "Any Reasonable Offer." Theoretically, since no market for these permits exists, this condition suggests a maximum permit value loss of $143,500 for current of herring purse seine permit holders. Permit brokers suggest that present market conditions would support a price of $90,000. Thus, we have used $90,000 as the current value of PWS permits and estimated the spill effect at $53,500, the difference between what PWS herring purse seine permit price should be based on our benchmark analysis--$143,50--and what the apparent permit price is--$90,000--as of September 1993.

Salmon Fisheries

Benchmark analyses of changes in permit value associated with oiled area salmon fisheries demonstrate a continuing pattern of damage to permit values. In each of the six fisheries analyzed, spill effects worsened between mid-1992 and mid-1993 as concern over future run sizes and harvest access permeated the market.

Salmon Purse Seine Fisheries

Salmon purse seine permit prices rose by 1% in the benchmark Southeast Alaska fishery between mid-1992 and mid-1993. Meanwhile, PWS and Kodiak salmon purse seine permit values dropped 7.5% and 8.5%, respectively. Estimated spill effects on permit values in mid-1993 are $141,000 in the PWS fishery, up from $132,000 in mid-1992. Spill effects on permit values have worsened by over $6,500 in the Kodiak fishery which are

valued at $46,000 in mid-1993. Exhibit 1 documents actual and predicted permit prices for PWS and Kodiak salmon fisheries from 1989 through mid-1993. Prices are those at the end of June of each year. With the second year in a row of lower than expected pink salmon runs to PWS, brokers report that the limited entry permit market for PWS salmon purse seine is at a standstill.

Estimates of spill effects on permit values associated with the Cook Inlet purse seine fishery represent a special case for our salmon fishery analysis since low trading volume precluded the application of CFEC data to the permit values in this fishery. *Pacific Fishing* "offer" prices were used to assess spill effect losses in the Cook Inlet purse seine fishery in our February 24, 1993, report and we have followed a similar approach in this report. The mid-1993 estimate of loss is $115,000 (actual is $60,000, predicted equals $175,000). Actual and predicted permit prices since June of 1990[1] are presented in Exhibit 2.

Salmon Driftnet Fisheries

Changes in Cook Inlet salmon driftnet permit values are presented in Exhibit 3, while those for the PWS driftnet fishery are found in Exhibit 4. Quarterly CFEC permit price data are available for the Cook Inlet fisheries, but not for the more thinly traded PWS driftnet fishery where we rely upon seasonal (July through June) information. Consequently, quarterly predicted permit prices are presented for the Cook Inlet fishery. Over the period of July 1992 through June 1993, spill effects on permit prices derived from the average of quarterly differences between actual and predicted prices equal $142,000. Quarter-specific estimates of spill effects on permit prices can be derived by subtracting actual price from the predicted permit prices presented in Exhibit 3. The permit price effects estimated at the end of June 1993 is $126,300. Seasonal permit price data for the PWS driftnet fishery indicate a $64,000 oil spill effect as of June 1993, up from $45,000 in June 1992.

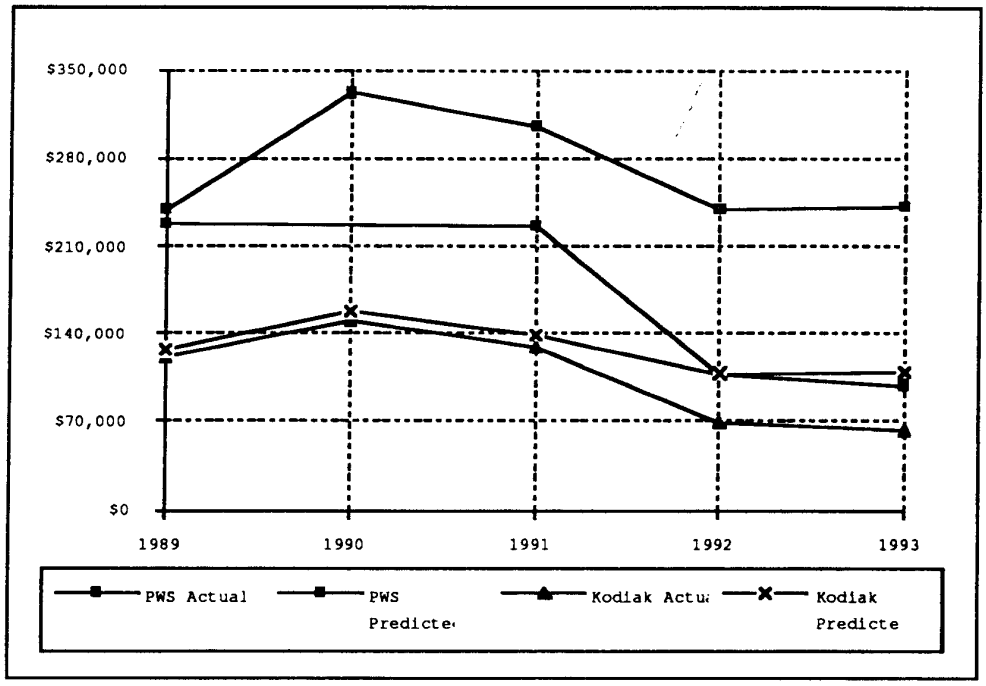
[1] *Pacific Fishing* data extend back only to December of 1989, thus precluding any analysis of price change based on this series prior to that time.

Cook Inlet Salmon Setnet Fishery

Quarterly permit price data are also available for this fishery and quarter-specific estimates of spill effects on permit prices are presented in Exhibit 5, along with seasonal effect estimates and actual and predicted quarterly permit prices. Averaged over the July 1992 through June 1993 period, these quarterly differences suggest a mean permit price spill effect of $37,200, with a current (June 1993) estimate of $44,000.

Exhibit 1. Actual and predicted value of Prince William Sound and Kodiak salmon purse seine permits by season with seasonal spill effects estimates. Source: Alaska Commercial Fisheries Entry Commission and Natural Resources Consultants, Inc.

Mid-Year	PWS Actual	PWS Predicted	Kodiak Actual	Kodiak Predicted
1989	$228,500	$239,376	$120,648	$126,391
1990	#N/A	$330,472	$151,050	$158,240
1991	$225,500	$305,210	$129,181	$139,503
1992	$107,000	$238,797	$69,735	$109,148
1993	$99,047	$240,118	$63,779	$109,752



Mid-Year	PWS Spill Effect	Kodiak Spill Effect
1989	($10,876)	($5,743)
1990	#N/A	($7,190)
1991	($79,710)	($10,322)
1992	($131,797)	($39,413)
1993	($141,071)	($45,973)

Exhibit 2. Actual and predicted value of Cook Inlet salmon purse seine permits by season with seasonal spill effects estimates. Source: *Pacific Fishing*, multiple issues; Natural Resources Consultants, Inc.

Mid-Year	Cook Inlet Seine Actual	Cook Inlet Seine Predicted	Spill Effect
1990	$185,000	$185,000	$0
1991	$120,000	$185,000	($65,000)
1992	$60,000	$113,000	($53,000)
1993	$60,000	$175,000	($115,000)

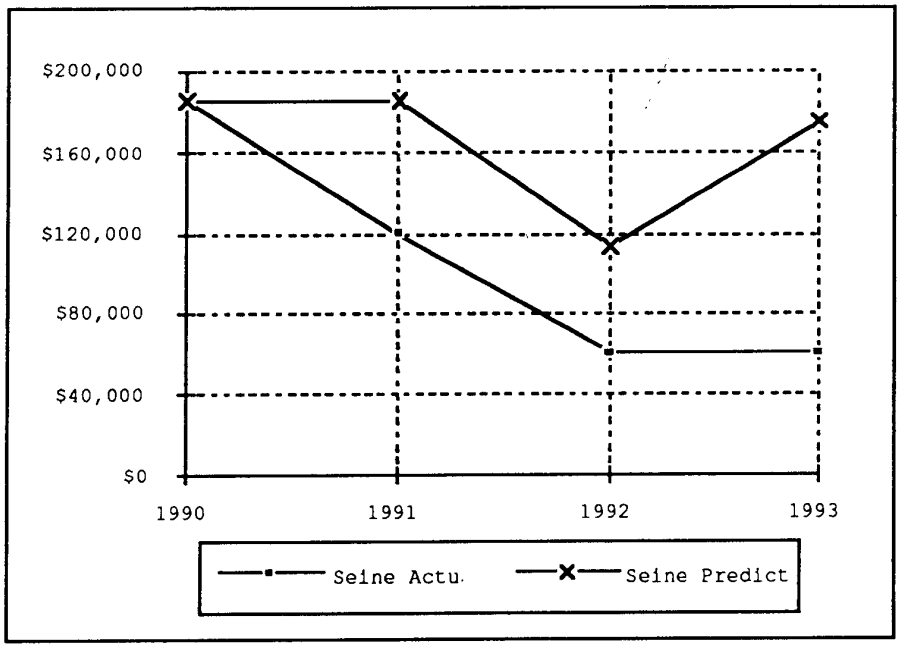


Exhibit 3. Actual and predicted value of Cook Inlet salmon driftnet permits by quarter with quarterly and seasonal spill effects estimates. Source: Alaska Commercial Fisheries Entry Commission; Natural Resources Consultants, Inc.

Year.Qtr	Cook Inlet Drift Actual	Cook Inlet Drift Predicted	Quarterly Cook Inlet Drift Spill Effect	Seasonal Cook Inlet Drift Spill Effect
1989.2	$173,353	$184,764	($11,411)	
1989.3	#N/A	$188,573	#N/A	
1989.4	$180,500	$192,381	($11,881)	
1990.1	$197,591	$210,597	($13,006)	
1990.2	$204,800	$218,281	($13,481)	($12,789)
1990.3	#N/A	$227,555	#N/A	
1990.4	#N/A	$233,505	#N/A	
1991.1	$194,444	$230,037	($35,593)	
1991.2	$176,588	$230,756	($54,168)	($44,880)
1991.3	#N/A	$203,485	#N/A	
1991.4	#N/A	$176,215	#N/A	
1992.1	$90,091	$183,651	($93,560)	
1992.2	$89,207	$202,306	($113,099)	($103,330)
1992.3	#N/A	$218,340	#N/A	
1992.4	$83,250	$234,373	($151,123)	
1993.1	$81,250	$229,693	($148,443)	
1993.2	$93,300	$219,569	($126,269)	($141,945)

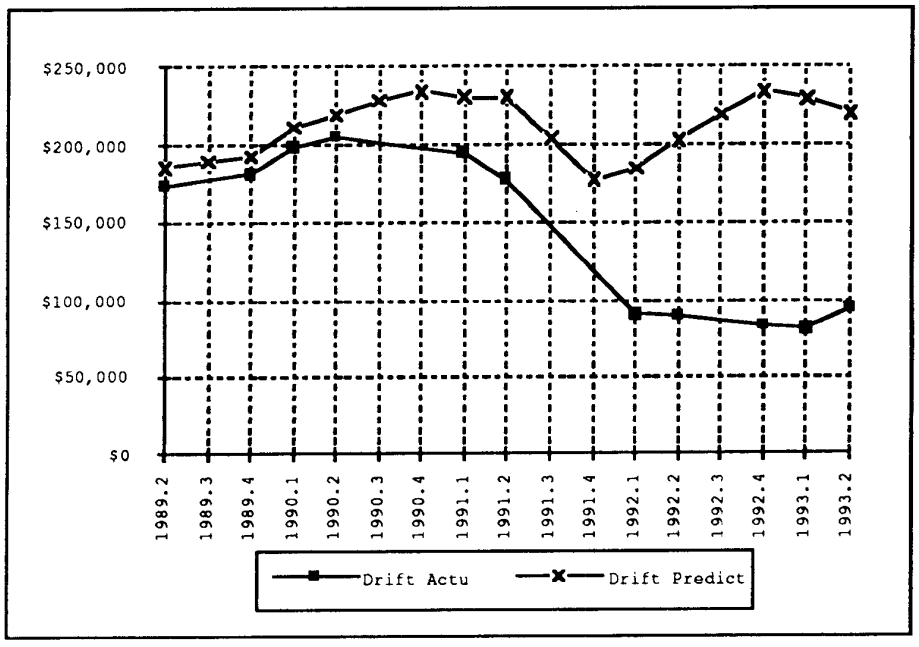


Exhibit 4. Actual and predicted value of Prince William Sound salmon driftnet permits with seasonal spill effects estimates. Source: Alaska Commercial Fisheries Entry Commission; Natural Resources Consultants, Inc.

Mid-Year	PWS Drift Actual	PWS Drift Predicted	PWS Drift Spill Effect
1989	$127,794	$136,206	($8,412)
1990	$164,339	$175,157	($10,818)
1991	$141,000	$170,430	($29,430)
1992	$96,107	$140,855	($44,748)
1993	$103,038	$167,054	($64,016)

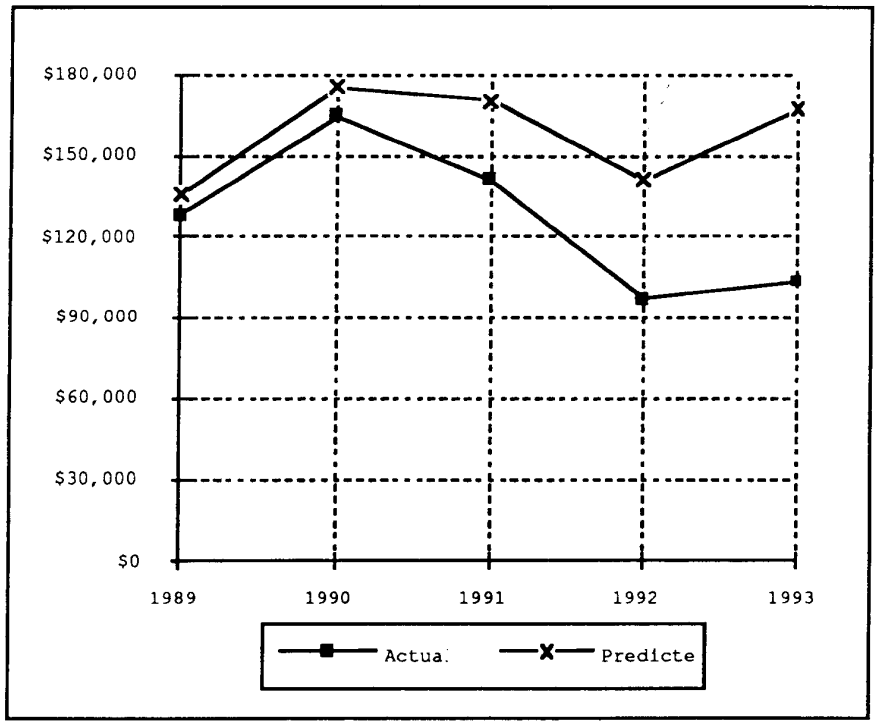
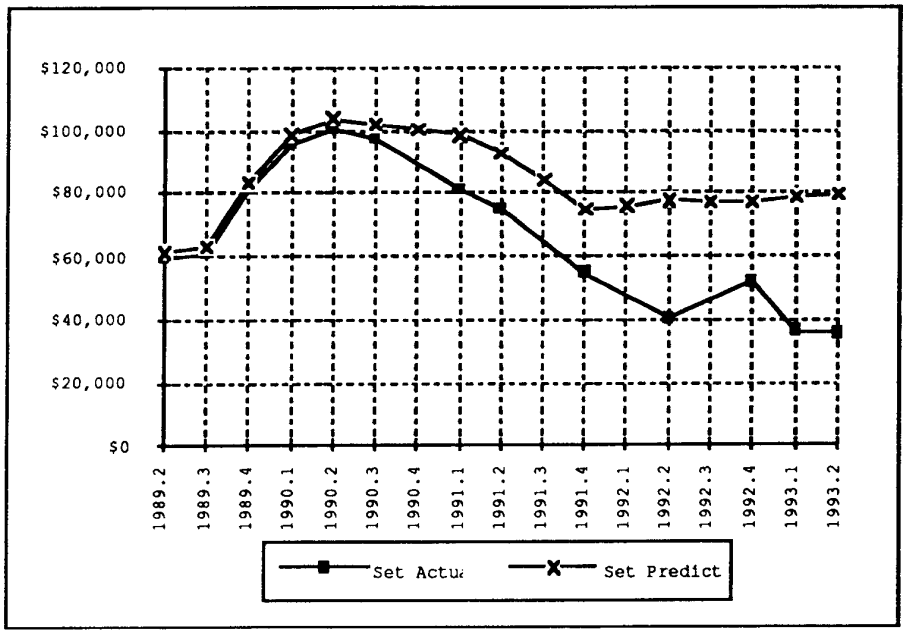


Exhibit 5. Actual and predicted value of Cook Inlet salmon setnet permits by quarter with quarterly and seasonal spill effects estimates. Source: Alaska Commercial Fisheries Entry Commission; Natural Resources Consultants, Inc.

Year.Qtr	Cook Inlet Set Actual	Cook Inlet Set Predicted	Quarterly Cook Inlet Setnet Spill Effect	Seasonal Cook Inlet Setnet Spill Effect
1989.2	$59,476	$61,259	($1,783)	
1989.3	$61,000	$62,829	($1,829)	($1,806)
1989.4	$81,250	$83,686	($2,436)	
1990.1	$95,955	$98,832	($2,877)	
1990.2	$100,550	$103,565	($3,015)	($2,776)
1990.3	$97,500	$101,862	($4,362)	
1990.4	#N/A	$100,160	#N/A	
1991.1	$81,000	$98,452	($17,452)	
1991.2	$74,500	$93,015	($18,515)	($13,443)
1991.3	#N/A	$83,928	#N/A	
1991.4	$55,000	$74,841	($19,841)	
1992.1	#N/A	$75,742	#N/A	
1992.2	$40,196	$77,402	($37,206)	($28,523)
1992.3	#N/A	$77,280	#N/A	
1992.4	$51,763	$77,159	($25,396)	
1993.1	$36,438	$78,662	($42,224)	
1993.2	$35,394	$79,441	($44,047)	($37,222)



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THE EFFECT OF THE EXXON VALDEZ OIL SPILL ON BOAT VALUES IN PRINCE WILLIAM SOUND AND KODIAK

DATED FEBRUARY 23, 1993

PREPARED BY ROGER LOHRER
DOCK STREET BROKERS
5101 BALLARD AVENUE NW
SEATTLE, WA 98107
(206) 789-5101

Dock Street Brokers has been retained by the *Exxon Valdez* Oil Spill Plaintiffs' Committee to investigate the effect of the oil spill on the value of Alaskan fishing vessels. In our best professional opinion the value of a commercial fishing vessel is intrinsically linked to the vessels' earning potential. This opinion is based on years of experience in the boat brokerage business and work with lending institutions, including the State of Alaska Division of Investments.

The majority of vessel buyers are previously committed to fishing a particular area based on their experience and/or proximity to their home. When they are in the market for a boat, it is usually to replace or "upgrade" an existing vessel, but to remain in the area they are familiar with. Obviously if their chosen area of operation has been "spoiled", or has poor predictions and their vessel is best suited for that particular area, the market value will drop accordingly.

The perceived earning potential of a fishing vessel is based on run size predictions and price of product. The *Exxon Valdez* oil spill has had a direct and substantial effect in the long-term effect on price and future harvests as is reported in various fishing journals and as perceived by commercial harvesters, i.e. potential buyers.

Dock Street Brokers has been in the business of brokering permits and vessels since 1976. We are one of the largest brokering firms in terms of volume in the business. Analysis of our vessel price valuation data indicates that we have 400 more vessels listed at the present time than prior to the oil spill. (Dock Street Broker's "Winter 1988-1989 Boat Catalog", and Dock Street Broker's "Fall 1992/Winter 1993 Boat Catalog".) There are very few potential buyers for vessels specifically designed for the oiled fisheries. The market is further complicated by a scarcity of lending institutions willing to finance such vessels. It is our opinion that the decline in available capital for vessel purchases in recent years is a reflection of the uncertainty of earning potential form these fisheries and the general decline of profitability of these fisheries. It is our best professional opinion that the *Exxon Valdez* oil spill was and is a substantial factor in the decline of available vessel-collateralized loan capital. We work extensively with Seafirst National Bank's

Maritime office and can verify they have ben reluctant to look at loan applicants from Prince William Sound fisheries since the spill.

An analysis of Dock Street Brokers' sales data indicates that vessels in non-oiled fisheries such as Bristol Bay have held fairly constant while vessels designed for oiled areas such as Prince William Sound and Kodiak have declined by as much as 25%. A comparison of sales of vessels designed for these fisheries shows a marked decline in the value of Prince William Sound and Kodiak seiners in the years since the oil spill.

Corroboration of Dock Street's conclusion that the oil spill is a substantial factor with regard to vessel values in oiled vs. non-oiled fisheries can be made by comparing the value of vessels unique to the Bristol Bay and Southeast Alaska purse seine fishery with the value of Prince William Sound seine and gillnet vessels and Kodiak seine vessels. Analysis of Dock Street Broker's sales and listings data indicates that vessels designed for non-oiled fisheries have not declined in value in the last three years as have vessels designed for oil impacted fisheries. In addition, vessels whose design does not limit their use to the Prince William Sound/Kodiak salmon seine fishery, but are also used as crabbers and longliners, have either retained their value or experienced less decline. This sharply contrasts with the decline in value of seiners and gillnetters specifically designed for Prince William Sound and/or Kodiak salmon harvest. Based upon Dock Street vessel price valuation data, Prince William Sound and Kodiak salmon seiners have declined in value between 1990 and 1991, and between 1991 and 1992 from their pre-spill offer and bid prices. We will be able to verify these statements by providing copies of our published catalogs for those periods.

MVV016C5.WP5

SUPPLEMENTAL REPORT OF ROGER LOHRER

It is my opinion, based on our sales and listings, that since 1989 to the present, because of the effects of the Exxon Valdez oil spill, the value of an average seine vessel used in Prince William Sound has decreased about $50,000 per vessel from $350,000 to $300,000. During the same period, Kodiak seine vessels lost an average of $40,000 from $300,000 to $260,000 due to the effects of the Exxon Valdez oil spill.

MVV0399E.WP5

THE EFFECT OF THE EXXON VALDEZ OIL SPILL ON COMMERICAL FISHING VESSEL VALUES IN COOK INLET, ALASKA

Prepared by: Rosaleen L. Moore
Northern Enterprises
41930 Kachemak Drive
Homer, AK 99603
907/235-8234

Dated: February 24, 1993

In my experience, values on commercial fishing vessels in the Cook Inlet area have dropped drastically in the past year, some as much as 30%. It is my opinion that the depressed market in Cook Inlet commercial fishing vessels is the direct result of the Exxon Valdez oil spill.

I base my opinion on my professional experience and knowledge in the Alaska commericial fishing industry. In particular, I have been involved in the Alaska commerical fisheries for over 30 years and have been actively selling vessels for others for 13 years. Our business has specialized in Cook Inlet vessels. I am a past board member and chairman of Alaska Commercial Fisheries and Agriculture Bank which is a cooperative bank dealing in financing commercial fishing activities in Alaska.

Further, I base my opinion on the knowledge that the Cook Inlet drift fishery is facing a very uncertain future because of the Exxon Valdez oil spill. The Upper Cook Inlet drift fleet was not able to fish in 1989 due to oil in the fishing area. It is well understood that far too many fish entered the Kenai river system as a result of the drift fleet not being able to fish in 1989. It is also well understood that such a huge overescapement will have a drastic effect on the run size in the following years.

The outlook is a low return in 1993, and possibly no commercial fishing in 1994, 1995 and 1996.

MVV016D3.WP5

PLX 16600

SUPPLEMENTAL REPORT OF ROSELEEN MOORE

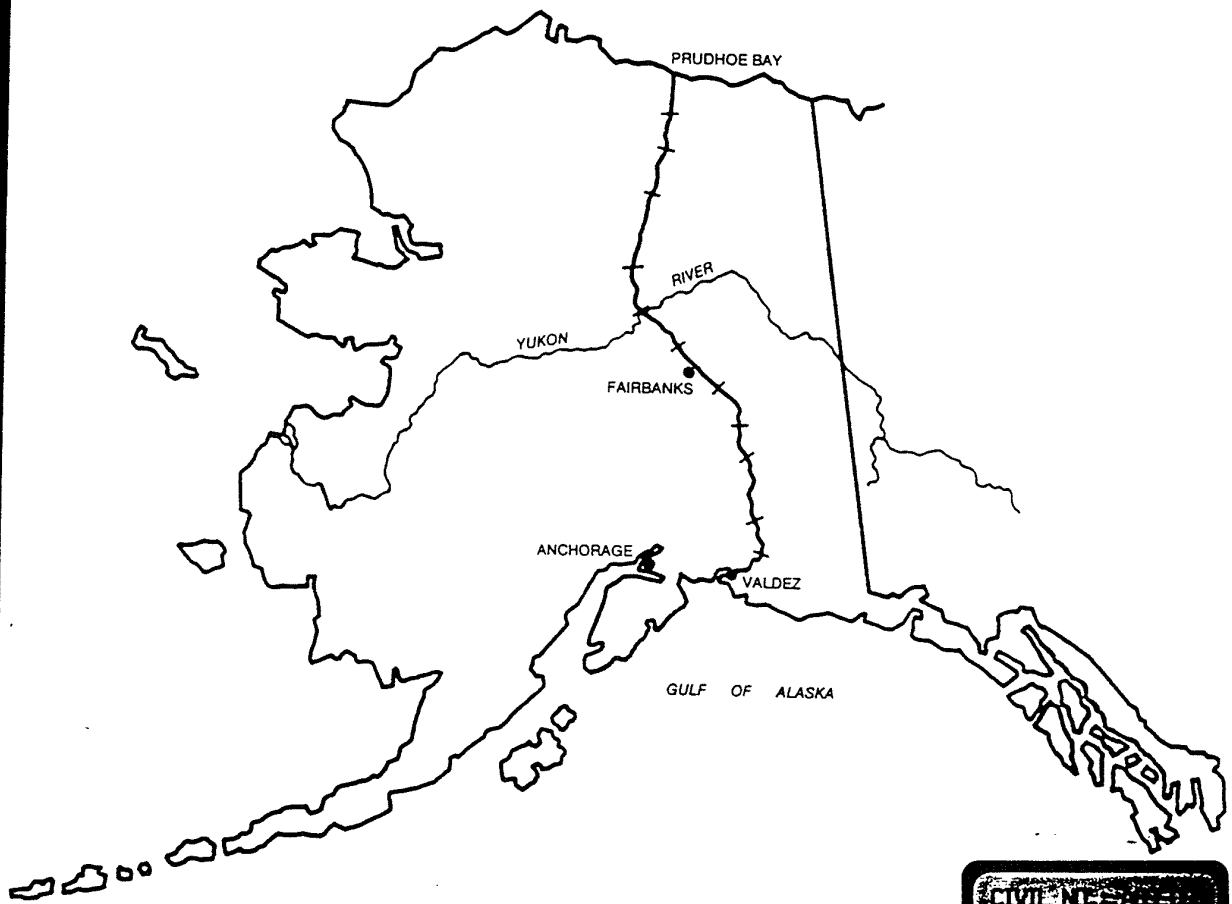
Based upon information in our files, the average of Upper Cook Inlet drift vessels sold prior to the Exxon Valdez oil spill (and the two months immediately following) was $72,000. The average price has dropped approximately $20,000 per vessel to $52,000 at this time because of the effects of the Exxon Valdez oil spill.

MVV0399F.WP5

OIL SPILL CONTINGENCY PLAN

PRINCE WILLIAM SOUND

JANUARY 1987



CIVIL NO.
PLAINTIFF'S
NUMBER

Alyeska pipeline SERVICE COMPANY

PLEX3-001

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ACE 1286177

option that could be used alone or in conjunction with these techniques. To do so in an effective and timely manner, however, requires advance planning.

Government approvals must be in place to assure dispersants will be an option available to Alyeska. Presently, we have an agreement with Biegert Aviation to respond to our request for dispersant application. Mobilization time to Valdez, Alaska may vary from 18 to 72 hours. Due to the location of the dispersant applicator's facilities. i.e., Chandalar, Arizona, it would be difficult to effectively apply dispersants due to the time-consuming decision making process and the travel time of the dispersant applicators. Predetermined dispersant application areas under certain applicable conditions would encourage Alyeska to make the necessary expenditures to shorten the mobilization time.

Presently, Alyeska has approximately 45 barrels of Corexit 9527 located at the Valdez Marine Terminal. There are various other stockpiles located throughout Alaska. The Alaska Clean Seas'. *Alaska Oil Spill Chemical Application Manual* gives a thorough review of dispersant application in the state of Alaska.

304 EXCLUSION

Exclusion actions are steps taken to prevent spilled oil from contaminating a specific area. These actions are usually taken for a definite purpose, primarily to protect:

300

Human life

Wildlife and/or wildlife habitats

Property

Areas of aesthetic beauty

Exclusion actions are also taken to prevent oil from contaminating areas that are very difficult or impossible to clean or for a combination of the above reasons.

Exclusion steps should be taken after the initial response action to contain the spill. Assessment of the spill's size and its possible movement are required for effective, efficient exclusion. If initial containment actions have not contained all the spilled oil, exclusion actions may be required. The Terminal Superintendent or Reconnaissance Supervisor will determine need for exclusion actions during assessment of the spill incident.

Oil-on-water movement depends on the volume of oil, its physical properties, the tidal current, and the wind speed and direction. After initial spreading occurs, the movement largely depends on the tidal current and the wind speed and direction. These two factors must be considered in making exclusion action decisions. If the current and/or wind conditions at the time of a spill indicate that uncontained oil may move to one of the sensitive areas discussed below, appropriate exclusion actions for that area must be taken. Any forecast changes in wind speed and/or direction must also be considered. Exclusion actions for the threatened area must be taken if the spill might not be fully contained when the anticipated change occurs.

Booms with a cylindrical float and a suspended skirt will generally be used for exclusion. When all available boom is in use, additional booms may be fabricated on site. Annex 905 of the General Provisions discusses the correct use of the various types of booms and gives emergency boom construction information. Booms may be deployed by any of the vessels at the terminal. Mooring launches or tugs should be used for towing booms to the site when the distance is great and/or speed is important.

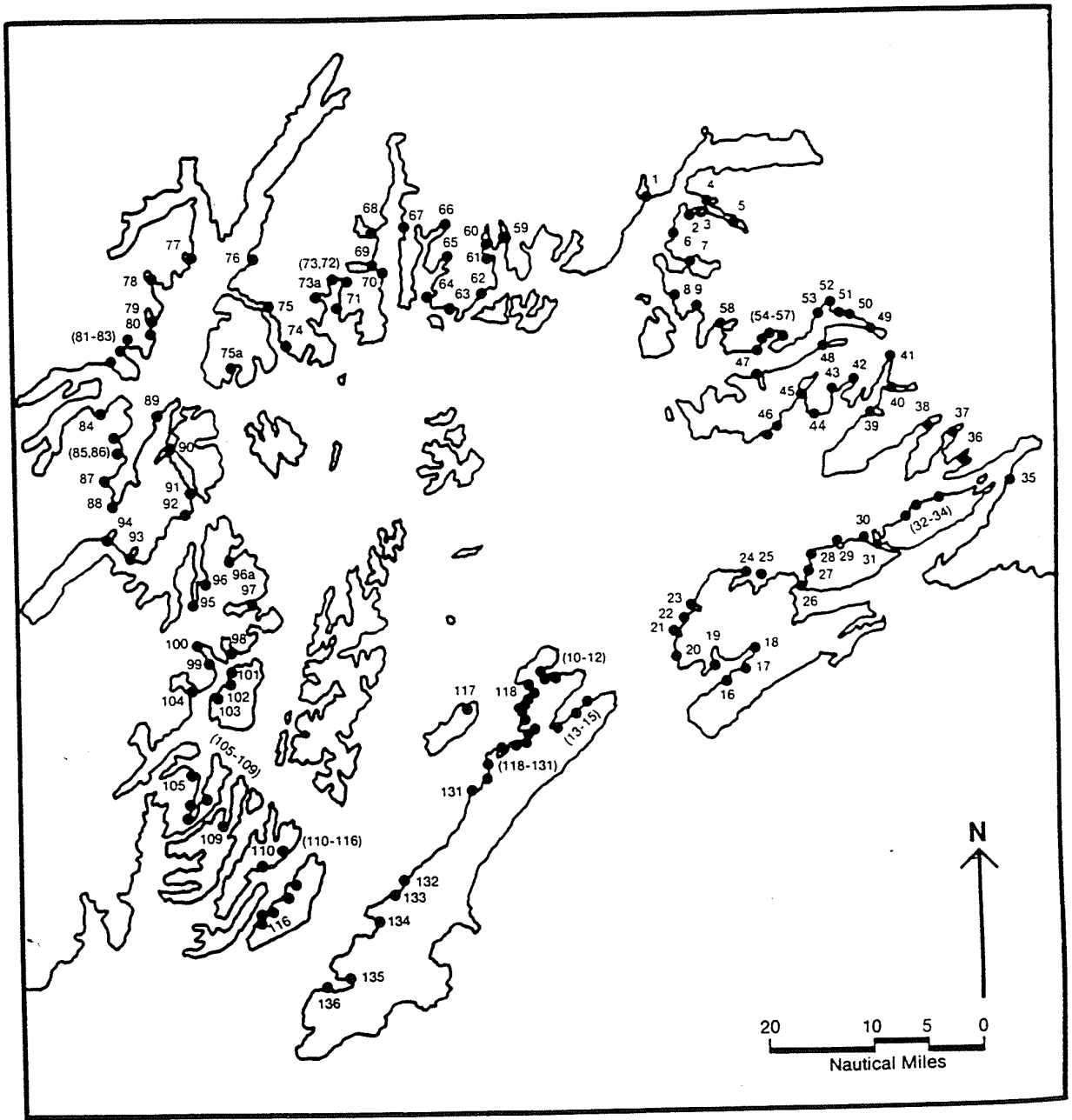
Two primary methods will be used in exclusion booming—enclosure and diversion. Enclosure involves completely closing off an area, such as a harbor, bay inlet or land form. Diversion booming is used to deflect oil that is moving in a dominant direction from a critical area to a less critical area or further out into the body of water. This method works well in conjunction with cleanup or skimming procedures as it tends to concentrate the oil and direct its path.

It is theorized that the two most probable areas in Prince William Sound that would be subject to oil spills from marine vessels in trade with Alyeska's Valdez Terminal are the Valdez Arm and Hinchinbrook Entrance.

PLEX3-002

Therefore, the exclusion sites for these two areas are presented in the first of the numerical listing of the predesignated exclusion sites in Prince William Sound. Figure 304-1 shows the numerical location of the exclusion sites. Detailed photo maps are provided showing the exclusion sites. An index of the exclusion sites showing detailed area maps and and exclusion site photos is given in Figure 304-2. Area maps and exclusion site photos follow Figure 304-2. Detailed descriptions of the individual exclusion sites are interspersed with the exclusion site photos. The sensitivity of the exclusion sites by months is given in Figure 304-115 at the end of th site photos.

The scattered communities listed below are located within Prince William Sound. If an oil slick is approaching



Note: NUMBERS REFER TO EXCLUSION SITES AND ACTIONS RECOMMENDED TO PROTECT SENSITIVE AREAS LISTED IN FIGURE 304-2.

EXCLUSION SITES

Figure 304-1

PLEX3-003

SAWMILL BAY (SITE 1)

Sawmill Bay is a small inlet in the northwestern shore of Valdez Arm. Stellar Creek (ADFG 153), a major salmon spawning stream, drains into the western bay forming a delta. Twin Falls Creek (ADFG 152), a salmon spawning ground, is at the head of Sawmill Bay and forms a large tidal flat. Eelgrass beds and butter clams are found within the bay. Sawmill Bay is used by sport fishermen.

Site 1. Sawmill Bay Entrance (Figure 304-11): To block oil from Sawmill Bay, the oil must be diverted at the entrance to the bay. The anchor point will depend upon the location of the oil as it approaches the entrance. Deploy about 1,000 feet of boom from the west shore or the east shore at the entrance to the bay at an angle to direct the oil toward shore. Depending on slick width, it may be necessary to deploy boom across the entrance from both shores.

JACK BAY (SITES 2, 3, 4 & 5)

Jack Bay is a long, narrow fjord in the eastern shore of Valdez Arm. Harbor seals, crab, black and brown bear, and birds inhabit the area. The southern shore near the entrance is a herring spawning ground. Eelgrass beds are in the heads of the small coves in the bay. During the summer, sport fishing for salmon is common.

There are four salmon spawning streams within Jack Bay—Leushakoff Creek (ADFG 121), Gregorieff Creek (ADFG 123), Vlaskoff Creek (ADFG 129) and Naomoff Creek (ADFG 127).

Site 2. Leushakoff Creek (Figure 304-12): Leushakoff Creek (ADFG 121), a salmon spawning ground, drains into a cove on the south shore of Jack Bay just inside the entrance. This cove is also a herring spawning ground.

To prevent oil from affecting the creek, deploy about 1,500 feet of boom from an anchor point on shore at an angle that will direct the oil toward shore. The location of the anchor point will depend on the location of the slick and its width as it approaches the creek. When diverting from an anchor point on the eastern shore, actions must be taken to prevent oil from reaching Gregorieff Creek in the next cove to the east.

Site 3. Gregorieff Creek (Figure 304-12): Gregorieff Creek (ADFG 123), a salmon spawning stream, empties into a small cove on the southern shore of Jack Bay east of Leushakoff Creek. The cove is also a herring spawning ground. Deploy about 1,000 feet of boom across the cove at the cove narrowing to protect the delta above midtide level.

Site 4. Vlaskoff Creek (Figure 304-13): Vlaskoff Creek (ADFG 129) is a salmon spawning stream on the north shore of Jack Bay. Eelgrass beds occur at its mouth. Deploy about 1,500 feet of boom across the mouth of the creek from the small peninsula on the south shore to the north shore to prevent oil from affecting the delta above midtide level. If this is not possible because of strong currents, deploy about 1,200 feet of boom from an anchor point on the small peninsula at an angle that will divert incoming oil into the small cove to the west of the boom.

Site 5. Naomoff Creek (Figure 304-14): Naomoff Creek (ADFG 127) empties into the head of Jack Bay, forming a large tidal flat. Eelgrass beds occur here. The creek is a major producer of chum and pink salmon.

To prevent oil from affecting Naomoff Creek, diversion booming will be necessary. Location of the anchor point will depend on the location of the slick within the bay. Before the slick reaches the creek delta, deploy about 1,000 feet of boom across the bay at an angle that will direct oil toward shore for pickup. Depending on slick width, it may be necessary to deploy boom from anchor points on both shores.

DONALDSON CREEK (SITE 6: Figure 304-15)

Donaldson Creek (ADFG 120) is a spawning ground for pink salmon located on the east shore of Valdez Arm north of Galena Bay.

Deploy about 1,000 to 1,600 feet of boom in a U-shape in advance of the approaching slick before it reaches the delta. This will contain oil within the boom and prevent oil from affecting the creek delta.

GALENA BAY (SITE 7)

Galena Bay is a large bay in the east shore of Valdez Arm. Hardshell clams are found along its shores and otters frequent its waters. The U.S. Forest Service maintains two recreational cabins in the bay. Galena Bay was named for lead ore deposits in the vicinity and was the location of extensive copper mines. The abandoned townsite of Galena Bay was once an Eskimo village that became a copper mining town during the early 1900s.

PLEX3 - 004

Four salmon spawning streams empty into Galena Bay: Turner Creek (ADFG 114), Millard Creek (ADFG 115), Duck River (ADFG 116) and Indian Creek (ADFG 117).

Site 7. The Narrows (Figure 304-16): To prevent oil from reaching these four streams, deploy about 2,500 feet of boom across the Narrows from the southern peninsula to the northern peninsula.

TATITLEK NARROWS (SITES 8 & 9)

Tatitlek Narrows is a long, narrow passage between Busby and Bligh Islands and the mainland. This passage is a bird concentration area and sea otters frequent its waters. The area is also a herring spawning ground. Two salmon spawning streams empty into the Narrows-Gladhaugh Creek in Virgin Bay and Borodkin Creek in Boulder Bay. The Native Village of Ellamar was an abandoned copper mining and fish canning area. It is located in Virgin Bay on the east shore of Tatitlek Narrows. The Native village of Tatitlek is south of Ellamar.

Site 8. Gladhaugh Creek (Figure 304-17): Gladhaugh Creek (ADFG 106), a salmon spawning stream, drains into Virgin Bay on the eastern shore of Tatitlek Narrows just north of Ellamar.

Deploy about 1,000 feet of boom east of the small peninsula on the north shore across the creek delta to the mainland to protect the delta above midtide level.

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Site 9. Borodkin Creek (Figure 304-18): Borodkin Creek (ADFG 100), a salmon spawning stream, empties into the head of Boulder Bay, a large bay on the southeastern shore of Tatitlek Narrows.

Deploy about 600 feet of boom across the entrance to the mouth of the creek to prevent oil from affecting the delta above midtide level.

ROCKY BAY (SITES 10, 11 & 12)

Rocky Bay is a large inlet in the northern end of Montague Island, west of Zaikof Bay. Rocky Bay has three salmon spawning areas: Rocky Creek (ADFG 759), Unnamed Creek 758 (ADFG 758), and Curren Creek (ADFG 760). Sea otters and harbor seals frequent its waters. The upper end of the bay is a herring spawning ground. Sea birds concentrate in this area.

Site 10. Unnamed Creek 758 (Figure 304-19): Unnamed Creek 758 (ADFG 758) is a salmon spawning stream at the head of Rocky Bay. Deploy about 1,000 feet of boom from the sandspit east to the mainland.

Site 11. Rocky Creek (Figure 304-19): Rocky Creek (ADFG 759), a major salmon spawning stream, drains into the southern shore of the head of Rocky Bay. Deploy about 1,000 feet of boom across the inlet between the two small peninsulas to prevent oil from affecting the creek delta above midtide level.

Site 12. Curren Creek (Figure 304-19): Curren Creek (ADFG 760) is a salmon spawning stream draining into a small inlet in the south shore of Rocky Bay. Deploy about 1,000 feet of boom from the sandspit south to the mainland.

ZAIKOF BAY (SITES 13, 14 & 15)

Zaikof Bay is a large inlet in the northern end of Montague Island, east of Rocky Bay. Sea otters inhabit the area. There are four salmon spawning streams emptying into the bay—Udall Creek (ADFG 770), McKernan Creek (ADFG 771), Rosswog Creek (ADFG 774), and Pautzke Creek (ADFG 775).

Site 13. Udall Creek and McKernan Creek (Figure 304-20): Udall Creek (ADFG 770) and McKernan Creek (ADFG 771) together form a large delta as they empty into the head of Zaikof Bay. Deploy about 1,000 to 1,600 feet of boom in a U-shape in advance of the slick; contain oil before it reaches creek deltas.

PLEX3-005

Site 14. Rosswog Creek (Figure 304-20): Rosswog Creek (ADFG 774) is a salmon spawning stream on the south shore of Zaikof Bay. Divert oil before reaching creek delta. Deploy about 1,000 feet of boom from the shore anchor point. The location of the anchor point will depend on the slick location as it approaches the delta. If this is not feasible, deploy about 1,000 to 1,600 feet of boom in a U-shape in advance of the slick to prevent oil from affecting delta above midtide level.

Site 15. Pautzke Creek (Figure 304-21): Pautzke Creek (ADFG 775), a major salmon spawning stream, drains into the eastern shore of Zaikof Bay. Deploy about 750 feet of boom across the entrance to the inlet into which the creek drains to protect the delta above midtide level.

PORT ETCHES (SITES 16, 17, 18 & 19)

Port Etches is a small fjord in southwest Hinchinbrook Island. Sea otters, sea lions and harbor seals frequent its waters. The area is inhabited by brown bear, Sitka blacktailed deer, tufted puffins, Brandt's cormorants and has numerous salmon producing streams. This area is used for recreational purposes, hunting, and commercial and sport fishing.

From the 1790s until 1867, Russia operated a sea otter pelt trading outpost, Fort Constantine, near the Native village of Nuchek. Nuchek was abandoned in 1930.

There are five salmon spawning streams in Port Etches—Etches Creek (ADFG 806), Garden Cove Creek (ADFG 808), Garden Creek (ADFG 810), Nuchek Creek (ADFG 812), and Constantine Creek (ADFG 815).

Site 16. Etches Creek (Figure 304-22): Etches Creek (ADFG 806), a salmon spawning ground, empties into a small, unnamed cove on the southern shore of Port Etches. A spit encloses the cove, except for the creek mouth. Deploy about 1,500 feet of boom from the wooded peninsula west to the mainland to protect the creek delta above the midtide level.

Garden Cove

Garden Cove, a small cove on the south shore of Port Etches, contains two salmon spawning streams—Garden Cove Creek (ADFG 808) and Garden Creek (ADFG 810). These two creeks, together with smaller drainage courses, form a large tidal flat.

Site 17. Offshore Garden Cove (Figure 304-23): Deploy about 1,000 feet of boom from the shore of the cove entrance closest to the approaching oil slick at an angle that will direct oil toward shore and/or away from the cove.

Site 18. Nuchek Creek (Figure 304-24): Nuchek Creek (ADFG 812) is a major salmon spawning ground for pink and chum salmon. The creek enters the head of Port Etches and, together with numerous smaller drainage courses, forms a large tidal flat. Eelgrass beds ring the head of the port.

Deploy about 1,500 feet of boom from the small peninsula on the south shore of the entrance at an angle that will direct oil away from the head and toward shore. It may be necessary to deploy boom from the peninsula on the north shore of the entrance if oil is not entirely diverted by the south boom.

Constantine Harbor

Constantine Harbor is within Port Etches on its northern shore. It is protected from the Sound by a bar more than a mile long that rises approximately 20 feet above high tide. This bar connects the mainland of Hinchinbrook Island with the onetime island of Nuchek. The entrance to Constantine Harbor is approximately 650 feet wide. The harbor provides adequate anchorage for small boats.

PLEX3-006

The harbor is ringed by eelgrass beds. Sea otters frequent its waters. Brown bear and Sitka blacktailed deer inhabit the area. Constantine Creek (ADFG 815) empties into the harbor at its head and at low tide forms, with smaller creeks entering the head, a large tidal flat. Hardshell clams are found on the flat. Constantine Creek is a major spawning ground for pink and chum salmon.

Site 19. **Entrance to Constantine Harbor (Figure 304-25):** Deploy about 900 feet of boom across the entrance of Constantine Harbor north of Phipps Point to prevent oil from entering the harbor.

BEAR CAPE CREEK (SITE 20; FIGURE 304-26)

Bear Cape Creek (ADFG 816) is a salmon spawning stream located in a small pocket beach approximately two miles north of Bear Cape on the west shore of Hinchinbrook Island.

Deploy about 300 feet of boom across the creek delta to prevent oil from affecting the delta above midtide level.

DEER CREEK (SITE 21; FIGURE 304-27)

Deer Creek (ADFG 817), a salmon spawning stream, drains into the head of Deer Cove on the west shore of Hinchinbrook Island. Deer Cove is enclosed by a spit except for the cove drainage channel.

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Deploy about 1,600 to 2,000 feet of boom offshore in a U-shape in advance of the approaching slick. This will contain oil within the boom and prevent oil from affecting the creek delta.

JUANIA CREEK (SITE 22; FIGURE 304-28)

Juania Creek (ADFG 818), a salmon spawning stream, empties into an unnamed cove on the west shore of Hinchinbrook Island north of Deer Cove.

Deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick. This will contain oil within the boom and prevent oil from affecting the creek delta.

BROWN BEAR CREEK (SITE 23; FIGURE 304-29)

Brown Bear Creek (ADFG 821) is a major salmon spawning stream located at the head of Shelter Bay on the northwestern shore of Hinchinbrook Island. The entrance to Shelter Bay is between two small spits and is shallow with strong currents. Deploy about 900 feet of boom across the entrance to the bay between the two spits to prevent oil from entering the bay.

ANDERSON BAY (SITE 24; FIGURE 304-30)

Anderson Bay is a large bay in the north shore of Hinchinbrook Island. Oil entering the bay would endanger sea otters and birds and would be difficult to recover. Two salmon spawning streams drain into Anderson Bay—Eagle Creek (ADFG 827) and Anderson Creek (ADFG 828).

Deploy about 1,500 feet of boom from the wooded area at the end of the spit on the west shore of the entrance to the bay. The boom should be angled to direct oil toward shore and away from the entrance to the bay.

DOUBLE BAY (SITE 25; FIGURE 304-31)

Double Bay is a large bay on the north shore of Hinchinbrook Island. Sea otters and harbor seals frequent its waters. The Forest Service maintains a recreational cabin here. Three salmon spawning streams empty into the head of the bay—Bear Creek (ADFG 829), Double Bay Creek (ADFG 830), and Double Creek (ADFG 831).

PLEX3-007

To prevent oil from affecting these three creeks, oil must be prevented from entering Double Bay. Deploy about 1,500 feet of boom from the wooded end of the spit at the western shore of the entrance to the bay at an angle that will divert oil toward shore and away from Double Bay. It may be necessary to perform the same action from the eastern shore of the entrance if the oil has not been entirely diverted by the west boom.

When diverting oil from the western shore of the entrance, precautions must be taken to prevent oil from entering Anderson Bay to the west.

HAWKINS ISLAND CUTOFF (SITES 26 & 27)

Hawkins Island Cutoff lies between the western shore of Hinchinbrook Island and the eastern shore of Hawkins Island. The passage is shallow with extensive tidal flats.

Three creeks on Hinchinbrook Island in the southern part of the Cutoff are major pink salmon spawning streams—Honker Creek (ADFG 834), Cutoff Creek (ADFG 835), and Dan Creek (ADFG 836). One creek on Hawkins Island in the northern part of the Cutoff is a salmon spawning ground—Hawkins Cutoff Creek (ADFG 843).

Site 26. **Entrance Hawkins Island Cutoff (Figure 304-32)**: The three major spawning streams on Hinchinbrook Island which drain into the Cutoff (Honker, Cutoff and Dan Creeks) can be protected from an oil spill by the same action. Oil must be prevented from entering the Cutoff. Deploy about 1,500 feet of boom from the west shore of the Cutoff entrance at an angle that will divert oil away from the entrance or toward shore. The location chosen as the anchor point will depend on the location of the slick as it approaches the entrance. It may be necessary to perform the same action from the eastern shore if the oil has not been entirely diverted by the west boom.

Site 27. **Hawkins Cutoff Creek (Figure 304-33)**: Hawkins Cutoff Creek (ADFG 843) empties into a large lagoon on the west shore of Hawkins Island. Extensive tidal flats are formed at low tide. Oil should be contained on open waters before it reaches the shore. Deploy about 1,000 to 2,000 feet of boom offshore in a U-shape in advance of the approaching slick. This will contain oil within the boom and prevent oil from affecting the tidal flat.

MAKAKA CREEK (SITE 28; FIGURE 304-34)

Makaka Creek (ADFG 844), a major salmon spawning stream, drains into a long lagoon on the north shore of Hawkins Island and forms a large delta. The lagoon empties during low tide except for the stream drainage channel. Deploy about 250 feet of boom from the spit at the east shore of the entrance to the lagoon west to the mainland.

HAWKINS CREEK (SITE 29; FIGURE 304-35)

Hawkins Creek (ADFG 847) is a major salmon spawning stream on the north shore of Hawkins Island west of Makaka Creek. The creek drains into a small lagoon that empties at low tide. Hawkins Creek joins with an unnamed stream as it emerges into Orca Bay and forms a large delta. Deploy about 350 feet of boom across the entrance to the lagoon from the east spit to the west spit.

ROLLINS CREEK (SITE 30; FIGURE 304-36)

Rollins Creek (ADFG 849) empties into a small lagoon just west of the entrance to Canoe Passage on the north shore of Hawkins Island. To exclude oil from this area, deploy about 1,000 feet of boom from the spit on the west across the entrance of the lagoon to the spit on the east.

PLEX3-008

CANOE PASSAGE (SITE 31; FIGURE 304-36)

Canoe Passage divides central Hawkins Island. Sitka blacktailed deer and brown bear inhabit the area. The southern section is a bird nesting area. Hardshell clams and eelgrass beds are found along its shores. There are two pink salmon spawning streams draining into Canoe Passage—Canoe Creek (ADFG 850) and Zillesendoff Creek (ADFG 851). To prevent oil from affecting Canoe Passage, deploy about 900 feet of boom across the Passage at the narrowing south of the small cove on the west shore.

CEDAR BAY (SITE 2; FIGURE 304-37)

Cedar Bay is a small bay on the north shore of Hawkins Island. Emptying into the lagoon at the head of the bay are three salmon spawning streams—Cedar Creek (ADFG 856), Spruce Creek (ADFG 857), and Hemlock Creek (ADFG 858). To exclude oil from this area, deploy about 200 feet of boom across the entrance to the lagoon.

WINDY CREEK (SITE 33; FIGURE 304-38)

Windy Creek (ADFG 861), a major salmon spawning stream, empties into the head of Windy Bay, a large inlet in the north shore of Hawkins Island. Deploy about 1,000 feet of boom across the narrow neck of the upper bay to prevent oil from affecting the head.

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ORCA CREEK (SITE 34; FIGURE 304-39)

Orca Creek (ADFG 863) is a salmon spawning stream at the head of a small inlet on the north shore of Hawkins Island. Deploy about 900 feet of boom across the entrance to the inlet to protect the creek delta above the midtide level.

HUMPBACK CREEK (SITE 35; FIGURE 304-40)

Humpback Creek (ADFG 11), a salmon spawning stream, drains into Orca Inlet south of Shepard Point. To prevent oil from affecting the creek delta, deploy about 1,000 feet of boom from the mainland at an angle that will divert oil toward shore. The location of the anchor point will depend on the location of the slick as it approaches the creek delta.

SIMPSON BAY (SITES 36 & 37)

Simpson Bay, located at the head of Orca Bay, is divided into two inlets. Alice Cove, located in the north shore of the entrance to Simpson Bay, is a recreation and hunting resort. Raging Creek (ADFG 23) and Simpson Creek (ADFG 26) are salmon spawning streams at the head of Simpson Bay. These streams will be protected by actions taken at exclusion sites 36 and 37.

Site 36. Raging Creek (Figure 304-41): Raging Creek (ADFG 23), a chum salmon spawning stream, is located in a lagoon at the head of the south arm of Simpson Bay. There are eelgrass beds and hardshell clams in this area. To prevent oil from reaching this creek, deploy about 200 feet of boom across the narrow passage at the entrance to the lagoon into which the creek drains.

Site 37. Simpson Creek (Figure 304-42): Simpson Creek (ADFG 26), a salmon spawning stream, drains into the head of the north arm of Simpson Bay. Deploy about 1,000 to 2,000 feet of boom offshore from the delta in a U-shape in advance of the approaching slick. This will contain oil within the boom and prevent oil from affecting the creek delta.

SHEEP BAY (SITE 38; FIGURE 304-43)

Sheep Bay is a long bay in southeastern Prince William Sound. Brown and black bears, sea otters and harbor seals inhabit the head of the bay. In winter, deer forage on the beaches. Herons, geese and arctic terns nest at the head of the bay. The area is used by recreationists for crabing and claming.

PLEX3-009

Emptying into the head of Sheep Bay are two major salmon spawning streams—Koppen Creek (ADFG 35) and Sheep River (ADFG 36). These streams will be protected by actions at exclusion site 38.

To prevent oil from reaching the head of Sheep Bay, deploy about 1,500 to 1,800 feet of boom across the entrance to the head.

PORT GRAVINA (SITES 39 THROUGH 46)

Port Gravina is a large fjord in eastern Prince William Sound. In 1790, Salvador Fidalgo, a Spanish explorer, named the port after a prominent Spanish naval officer, Frederico Gravina.

Mountain goats and brown, black and glacier bears inhabit the area. Birdlife, including bald eagles and ducks, is plentiful. Three members of the whale family can be seen during the summer—sei, killer and humpback whales. Sea otters and sea lions frequent its waters. Eelgrass grows at the head of the port and, generally, at the heads of the numerous bays and inlets opening into Port Gravina. Herring roe-on-kelp is harvested in April and June near the southern shore of the entrance to the port. Crab, shrimp, herring, halibut and salmon are the major fisheries.

Within Port Gravina are one important bird and wetland area, Hells Hole, and seven important salmon spawning grounds—Comfort Creek (ADFG 46), Beartrap River (ADFG 48), Gravina River (ADFG 50), Control Creek (ADFG 52), Olsen Bay Creek (ADFG 51), Carlson Creek (ADFG 57), and St. Matthews Creek (ADFG 56).

Site 39. Comfort Creek (Figure 304-44): Comfort Creek (ADFG 46), a pink salmon spawning stream, is located at the head of Comfort Cove, a small, narrow inlet in the southern shore of Port Gravina. To prevent oil from affecting Comfort Creek, deploy approximately 1,000 feet of boom across the entrance to the cove.

Site 40. Beartrap River (Figure 304-45): Beartrap River (ADFG 48), a major pink and chum salmon spawning stream, drains into the head of Beartrap Bay at the upper end of Port Gravina. To prevent oil from affecting the river, deploy about 600 feet of boom across the bay at its narrowest point from the "island" north to the mainland.

Site 41. Gravina River (Figure 304-46): Gravina River (ADFG 50) empties into the head of Port Gravina forming a large tidal flat. The river is a spawning ground for pink and chum salmon. If oil reaches this area, exclusion will be difficult because of the width of the port at its head.

Deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick. This will contain oil within the boom and prevent oil from affecting the river delta.

If this method is not feasible or does not contain oil, diversion booming should be undertaken before the slick reaches this area. The location of the anchor points will be dependent on the location of the slick and its width as it approaches the Gravina River delta.

Olsen Bay

Olsen Bay is a large inlet in the north shore of Port Gravina. Since 1954, the National Marine Fisheries Service and the Alaska Department of Fish and Game have been using this area to study the spawning and life history characteristics of the pink salmon at Olsen Creek at the head of the bay. Related studies concerning bear feeding habits have also been done. The shores of inner Olsen Bay are lined by eelgrass beds.

Site 42. Control Creek (Figure 304-47): Control Creek (ADFG 52), a major salmon spawning ground, is located on the western shore of Olsen Bay, a large inlet in the north shore of Port Gravina. To prevent oil from affecting the creek, deploy about 750 feet of boom from the small peninsula at the entrance across to the mainland.

PLEX3-010

Site 43. Olsen Bay Creek (Figure 304-48): Olsen Bay Creek (ADFG 51), a major salmon spawning ground, empties into the head of Olsen Bay forming a large tidal flat. To prevent oil from entering this area, deploy about 1,200 feet of boom across the entrance to the creek between the points where the passage narrows at the delta entrance.

Site 44. Carlsen Creek (Figure 304-49): Carlsen Creek (ADFG 57), a pink salmon spawning ground, is located on the northern shore of Port Gravina east of Saint Matthews Bay. Deploy about 1,000 feet of boom at an angle that will prevent oil from affecting the creek delta above midtide level. The location of the anchor point will be dependent on the location of the slick as it approaches the delta.

Site 45. St. Matthews Creek (Figure 304-50): St. Matthews Creek (ADFG 56), a major salmon spawning stream, empties into the head of St. Matthews Bay, a long inlet in the north shore of Port Gravina. Sea otters inhabit the waters of the bay. To protect the creek, oil should be contained before it reaches the head of the bay. Deploy about 1,600 to 2,000 feet in a U-shape in advance of the approaching slick.

Depending on the width and location of the slick within St. Matthews Bay, diversion booming may be feasible. Divert oil before it reaches St. Matthews Creek delta.

Site 46 (A and B). Hell's Hole: Hell's Hole is a series of lagoons on the north shore of the entrance to Port Gravina. The area is a marsh and is one of the larger wetlands in the southcentral region of Alaska. Hell's Hole is a major bird nesting, resting and feeding area.

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Site 46A. Lagoon 1 (Figures 304-51A & 304-51B): To prevent oil from entering this lagoon, deploy about 600 feet of boom between the two spits at the outside entrance to the lagoon.

Site 46B. Lagoon 2 (Figure 304-51B & 304-51C): To prevent oil from entering this lagoon, deploy about 750 feet of boom between the two wooded spits in the entrance to the lagoon.

PORT FIDALGO (SITES 47 THROUGH 58)

Port Fidalgo is a large fjord in eastern Prince William Sound. The port was named after Salvador Fidalgo who explored the Sound for Spain in the late 1700s. Numerous abandoned copper mines can be found in the hills of Port Fidalgo.

Mountain goats and brown and black bears inhabit the area. Waterbirds and bald eagles are numerous. Humpback whales can be seen in the summer. Sea lions follow the herring into Port Fidalgo in late fall and early spring. Harbor seals and sea otters inhabit its waters. Eelgrass grows at the head of the port and numerous bays and inlets open into it. Herring, roe-on-kelp is harvested in April and June in the shallow waters near the entrance to Port Fidalgo. Clams, crab, herring and salmon are the major fisheries.

Within Port Fidalgo are fourteen important salmon spawning grounds: Irish Creek (ADFG 76), Whalen Creek (ADFG 80), Unnamed Creek 82 (ADFG 82), Keta Creek (ADFG 83), Fidalgo River (ADFG 85), Sunny River (ADFG 87), Unnamed Creek 86 (ADFG 86), Short Creek (ADFG 88), Fish Creek (ADFG 89), Unnamed Creek 90 (ADFG 90), Unnamed Creek 91 (ADFG 91), Kirkwood Creek (ADFG 93), Rock Creek (ADFG 94), and Lagoon Creek (ADFG 99).

Site 47. Irish Creek (Figure 304-52): Irish Creek (ADFG 76), a major pink salmon spawning stream, drains into the head of Irish Cove, a small inlet in the south shore of Port Fidalgo. The entrance to the cove is a herring spawning area. To prevent oil from entering this area, deploy about 800 feet of boom across the cove at the narrows inside the entrance.

Site 48. Whalen Creek (Figure 304-53): Whalen Creek (ADFG 80) is a major pink salmon spawning ground at the head of Whalen Bay, a small, narrow inlet in the south shore of Port Fidalgo. To prevent oil from reaching this area, deploy about 1,800 feet of boom across the upper end of the bay from the south shore to the small peninsula on the north shore.

PLEX3-011

Site 49. Unnamed Creek 82 (Figure 304-54): Unnamed Creek 82 (ADFG 82) is a salmon spawning stream in the southeastern arm of the head of Port Fidalgo. To prevent oil from affecting the creek delta, deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick.

Site 50. Keta Creek (Figure 304-55): Keta Creek (ADFG 83), a major salmon spawning stream, drains into the head of Port Fidalgo, east of Fidalgo River. To prevent oil from affecting the creek delta, deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain the oil within the boom.

Site 51. Fidalgo River (Figure 304-55): Fidalgo River (ADFG 85), a salmon spawning ground, drains into the head of Port Fidalgo forming a large tidal flat. To prevent oil from affecting the river, deploy about 1,500 feet of boom from the eastern shore of the island (on the west side of delta) at an angle that will divert oil toward shore and/or away from the mouth of the river. Deploy about 300 feet of boom from the north shore of the island to the peninsula to prevent oil from entering through the small passage between them.

If this is not practical, deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

Site 52. Sunny River and Unnamed Creek 86 (Figure 304-55): Sunny River (ADFG 87) and Unnamed Creek 86 (ADFG 86) enters the northern shore of the head of Port Fidalgo forming a large tidal flat. The two streams are spawning ground for chum salmon. Harbor seals frequent this area.

To prevent oil from affecting this area, deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain the oil within the boom. If this is not feasible, actions should be taken to protect the river mouths. Deploy about 2,000 feet of boom north from the island at the mouths to the mainland and deploy about 600 feet of boom south from the island to the mainland.

Site 53. Short Creek (Figure 304-56): Short Creek (ADFG 88) is a salmon spawning stream emptying into the north shore of Port Fidalgo. To prevent oil from affecting Short Creek, deploy about 1,000 to 1,600 feet of boom from the mainland, west of creek delta, at an angle that will direct oil toward shore and away from the delta.

Fish Bay

Fish Bay is an inlet in the north shore of Port Fidalgo. Eelgrass beds and hardshell clams are found along its shore. Emptying into the bay are five salmon spawning streams—Fish Creek (ADFG 89), Unnamed Creeks 90 and 91 (ADFG 90, 91), Kirkwood Creek (ADFG 93), and Rock Creek (ADFG 94).

Site 54. Fish Creek and Unnamed Creek 90 (Figure 304-57): Fish Creek (ADFG 89), a major salmon spawning ground, empties into the head of Fish Bay forming a large delta. Unnamed Creek 90 (ADFG 90), a salmon spawning stream, empties into the head of Fish Bay just west of Fish Creek. To prevent oil from affecting this area, deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

Site 55. Unnamed Creek 91 (Figure 305-57): Unnamed Creek 91 (ADFG 91), a salmon spawning stream, drains into the northern shore of Fish Bay. Deploy about 1,500 to 1,800 feet of boom around the delta to protect the delta above midtide level. Boom should be anchored on shore and in water out from delta.

Site 56. Kirkwood Creek (Figure 304-58): Kirkwood Creek (ADFG 93), a salmon spawning stream, drains into Fish Bay. To prevent oil from affecting the creek, deploy about 1,500 of boom at an angle that will divert oil toward shore and/or away from the mainland. Anchor point should be located south of the creek delta.

Site 57. Rock Creek (Figure 304-58): Rock Creek (ADFG 94), a salmon spawning stream, empties into the west shore of the entrance to Fish Bay. To prevent oil from affecting this creek, deploy about 1,600 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

PLEX3-012

Site 58. Lagoon Creek (Figure 304-59): Lagoon Creek (ADFG 99), a major salmon spawning ground, drains into the head of Landlocked Bay forming a large tidal flat. Landlocked Bay is a large bay in the north shore of Port Fidalgo. To prevent oil from entering the head of the bay, deploy about 2,100 feet of boom across the bay from the mainland to the peninsula in the narrows. If this is not feasible due to currents, divert oil toward shore before it reaches the creek delta.

LONG BAY (SITES 59, 60 & 61)

Long Bay is a large bay in northern Prince William Sound, west of Columbia Bay. The bay is divided at its head into two long arms. Harbor seals frequent its waters.

There are five salmon producing streams within Long Bay. Salmon producing streams located within the west arm are Billy's Hole (ADFG 219) and Vanishing Creek (ADFG 216), major salmon producers, and West Long Bay Creek (ADFG 217). Salmon producing streams located within the east arm are Long Creek (ADFG 214) and East Long Bay Creek (ADFG 215).

Site 59. Entrance East Arm (Figure 304-60): To prevent oil from affecting Long Creek (ADFG 214) and East Long Bay Creek (ADFG 215) at the head of the east arm of Long Bay, oil should be contained before reaching this area. Deploy about 1,500 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

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Site 60. Billy's Hole (Figure 304-61): To prevent oil from affecting Billy's Hole (ADFG 219), a major salmon spawning ground, deploy about 300 feet of boom from the large island west to the mainland and about 300 feet of boom east to the mainland.

Site 61. Head West Arm (Figure 304-61): To prevent oil from affecting Vanishing Creek (ADFG 216) and West Long Bay Creek (ADFG 217), deploy about 1,800 feet of boom across the entrance to the head of west arm at the narrows. If this is not possible, deploy about 900 feet of boom from the large island east to the mainland and about 1,800 feet of boom from the southern end of the island west to the mainland.

EICKELBERG CREEK (SITE 62; FIGURE 304-62)

Eickelberg Creek (ADFG 221) drains into the northeast shore of the head of Eickelberg Bay. To prevent oil from affecting the creek, deploy about 1,000 feet of boom from the mainland east of the creek at an angle that will divert oil toward shore.

BACKYARD CREEK (SITE 63; FIGURE 304-63)

Backyard Creek (ADFG 224), a salmon spawning ground, empties into the east shore of Fairmount Bay. Deploy approximately 600 feet of boom across the narrows from the peninsula to the mainland.

WELLS BAY (SITES 64, 65 & 66)

Wells Bay is a bay in north Prince William Sound, west of Glacier Island. The area is a bird habitat, particularly for bald eagles and Canadian geese. Sea otters frequent its waters. Four salmon spawning streams drain into Wells Bay—Granite Creek (ADFG 227), Cedar Creek (ADFG 229), Wells River (ADFG 234), and Unnamed Creek 233 (ADFG 233).

Site 64. Granite Creek (Figure 304-63): Granite Creek (ADFG 227) is a salmon spawning stream at the head of Granite Bay, an inlet in the east shore of Wells Bay. Deploy about 600 feet of boom across the narrows in the center of the bay to prevent oil from reaching the head of the bay.

Site 65. Cedar Creek (Figure 304-64): Cedar Creek (ADFG 229) is a major salmon spawning ground at the head of Cedar Bay, a small inlet in the east shore of Wells Bay. Deploy about 200 feet of boom from the island west to the mainland and about 300 feet of boom from the island east to the mainland.

PLEX3-013

Site 66. **Wells River and Unnamed Creek 233 (Figure 304-65):** Wells River (ADFG 234) drains into the head of the eastern arm of Wells Bay. The river is the third largest producer of pink and chum salmon in Prince William Sound. Deploy about 2,000 to 3,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

This action will also protect Unnamed Creek 233 (ADFG 233), a salmon spawning ground at the head of Wells Bay, south of Wells River.

UNAKWIK INLET (SITES 67 THROUGH 70)

Unakwik Inlet is a long, narrow fjord in north Prince William Sound. The inlet is inhabited by numerous wildlife species: clams, crabs, shrimp, salmon, sea otters and harbor seals. The inlet is a bird concentration area, particularly Kittlitz's murrelets. Icebergs are numerous in its waters. The northeast shore near Miner's Lake was the epicenter for the 1964 Alaska earthquake.

Important salmon spawning grounds within Unakwik Inlet are Cannery Creek (ADFG 241), Jonah Creek (ADFG 259), Siwash River (ADFG 264), and Unakwik Creek (ADFG 265).

Site 67. **Cannery Creek (Figure 304-66):** Cannery Creek (ADFG 241) is a major salmon spawning stream on the eastern shore of Unakwik Inlet. To prevent oil from affecting the creek, deploy about 1,500 feet of boom from the mainland south of the stream delta but north of the small island at an angle that will direct the oil toward shore.

The Alaska Department of Fish and Game's Cannery Creek Hatchery is located in Unakwik Inlet across from Jonah Bay on the eastern side of the inlet. The hatchery raises pink salmon primarily, with a small population of chum salmon. The fry are released to open salt water in April and May. Adult salmon return in July and August.

Although it would require unique wind and current conditions to move oil into Unakwik Inlet, the hatchery could be protected by deflective booming. During April or May, diversion booming near the mouth of Unakwik Inlet would probably be most effective.

Site 68. **Jonah Creek (Figure 304-67):** Jonah Creek (ADFG 259) is a major salmon spawning stream that empties into the head of Jonah Bay on the west shore of Unakwik Inlet. At the entrance to the bay, deploy about 300 feet of boom west from the small island to the mainland and about 900 feet of boom east from the small island to the mainland.

Site 69. **Siwash River (Figure 304-68):** Siwash River (ADFG 264) is a major salmon spawning stream at the head of Siwash Bay in the western shore of Unakwik Inlet. To prevent oil from affecting the river, oil should be diverted toward shore. Deploy about 1,000 feet of boom across the entrance to the bay from two locations—the small peninsulas on the north and south shore.

Icebergs are present in this area and should be avoided.

Site 70. **Unakwik Creek (Figure 304-68):** Unakwik Creek (ADFG 265) enters the western shore of Unakwik Inlet just south of the entrance to Siwash Bay. Deploy about 900 feet of boom across the entrance to the small inlet into which the creek drains from the peninsula north to the mainland.

EAGLEK BAY (SITES 71, 72 & 73)

Eaglek Bay is a bay in north Prince William Sound, west of Unakwik Inlet. Harbor seals frequent its waters.

There are three important spawning streams in Eaglek Bay—Blackbear Creek (ADFG 276), Canyon Creek (ADFG 279), and Eaglek River (ADFG 282).

PLEX3-014

Site 71. **Blackbear Creek (Figure 304-69):** Blackbear Creek (ADFG 276) is a salmon spawning stream draining into the eastern shore of Eaglek Bay. Deploy about 900 feet of boom across the entrance to the delta area.

Site 72. **Canyon Creek (Figure 304-70):** Canyon Creek (ADFG 279) is a salmon spawning stream at the head of Eaglek Bay. Deploy about 300 feet of boom from the island north to the mainland and about 300 feet of boom south from the island to the mainland.

Site 73. **Eaglek River (Figure 304-70):** Eaglek River (ADFG 282) is a salmon spawning stream at the head of Eaglek Bay. Deploy about 1,500 feet of boom from the mainland south of the delta at an angle that will direct oil toward shore.

Site 73a. Eaglek Bay (Figure 304-70a): The Prince William Sound Aquaculture Hatchery Association's Cascade Falls Hatchery is located in northwest Prince William Sound in Eaglek Bay. This hatchery will be developed over the next several years and anticipates having fish in the water in 1990. The hatchery plans to raise salmon very similar to the Esther Lake Hatchery. Fry, juvenile fish or returning adult salmon are expected to be in the hatchery tidewater area from mid-March through early October. Juvenile salmon are held in rearing ponds from mid-September and released in late June.

This hatchery will be a considerable distance from the tanker traffic lane. However, should an oil spill threaten the hatchery, the holding areas would be boomed to protect the ponds. Boom could also be deployed to divert oil away from the hatchery area.

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ESTHER PASSAGE (SITES 74 & 75)

Esther Passage is a narrow passage between Esther Island and the mainland in northwest Prince William Sound. Because the waters are protected, the passage is used by recreational boaters for hunting black bear, salmon fishing, camping and sightseeing.

Two important salmon spawning grounds empty into the east shore of the passage—Esther Passage Lake (ADFG 300) and Triple Creek (ADFG 303).

Site 74. **Esther Passage Lake (Figure 304-71):** Esther Passage Lake (ADFG 300) is located on the eastern shore of Esther Passage and is a major producer of sockeye salmon. To protect this area, deploy about 300 feet of boom across the mouth of the drainage channel from the lake.

Site 75. **Triple Creek (Figure 304-72):** Triple Creek (ADFG 303) is a pink salmon producing stream on the eastern shore of Esther Passage, north of Esther Passage Lake. The creek forms a large delta as it empties into a small inlet in the passage. To protect the creek delta, deploy about 1,500 to 1,800 feet of boom around the delta to protect the delta above the midtide level. Boom should be anchored on shore and in water out from the delta.

Site 75a. Esther Island (Figure 304-72a): The Prince William Sound Aquaculture Hatchery Association's Esther Lake Hatchery is located on salt water at a tail end of Esther Lake near Wells Passage. Five species of Pacific salmon are raised at this hatchery. Fry, juvenile fish or returning adult salmon are in the hatchery tidewater area from mid-March through early October. Juvenile salmon are held in rearing ponds from mid-September and released in late June.

This hatchery is a considerable distance from the tanker traffic lane. However, if an oil spill is threatening this hatchery, the holding areas would be boomed to protect the ponds. Boom could also be deployed at the small inlet to divert oil away from the hatchery area.

COGHILL RIVER AND LAKE (SITE 76; FIGURE 304-73)

The Coghill River and Lake system is located on the eastern shore of College Fjord north of Port Wells and is the second largest producer of commercially fished pink and chum salmon and a large producer of sockeye salmon. The area has a large concentration of black bear.

PLEX3-015

If an oil spill occurs from tanker traffic in the tanker route, it is highly unlikely that oil will reach this area. If oil is approaching this area, actions should be taken that will prevent oil from affecting the tidal flat at the mouth of the river. The tidal flat area is extensive and will require protection by containing oil on open water before it reaches this area.

PORT WELLS (SITES 77 THROUGH 82)

Port Wells is a long fjord in northwest Prince William Sound, west of Esther Island. Its waters are inhabited by numerous wildlife species: crab, shrimp, harbor seals and birds. There are six important salmon spawning grounds within Port Wells—Lagoon Creek (ADFG 414), Mill Creek (ADFG 421), Hummer Creek (ADFG 425), Pirate Cove Creek (ADFG 428), Meacham Creek (ADFG 430), and Swanson Creek (ADFG 432).

If an oil spill occurs from tanker traffic in the tanker route, it is highly unlikely that oil will reach Port Wells.

Site 77. Lagoon Creek (Figure 304-74): Lagoon Creek (ADFG 414) is a salmon spawning ground at the head of Harrison Lagoon in the west shore of Port Wells. To prevent oil from reaching this stream, deploy about 600 feet of boom across the entrance to the lagoon.

Site 78. Mill Creek (Figure 304-75): Mill Creek (ADFG 421) is a major salmon spawning stream at the southwestern end of the head of Bettles Bay, an inlet in the west shore of Port Wells. The mouth of Mill Creek is a large tidal flat. Oil should be contained on open water, or diverted away from the tidal flat, before it reaches this area.

Site 79. Hummer Creek (Figure 304-76): Hummer Creek (ADFG 425) is a salmon spawning ground at the head of Hummer Bay, an inlet in the west shore of Port Wells. The mouth of Hummer Creek is a large tidal flat. Oil should be contained on open water, or diverted away from the tidal flat, before it reaches this area.

Site 80. Pirate Cove Creek (Figure 304-77): Pirate Cove Creek (ADFG 428) is a salmon spawning ground at the head of Pirate Cove, a small inlet in the western shore of Port Wells. Deploy about 300 feet of boom from the small peninsula on the north shore south to the mainland to protect this area.

Site 81. Meacham Creek (Figure 304-78): Meacham Creek (ADFG 430) is a salmon spawning ground at the northwestern end of the head of Pigot Bay, an inlet in the west shore of Port Wells. To protect the mouth of this creek, oil should be contained on open water, or diverted, before reaching this area.

Site 82. Swanson Creek (Figure 304-78): Swanson Creek (ADFG 432) is a major salmon producing stream at the southwestern end of the head of Pigot Bay, an inlet in the west shore of Port Wells. Deploy about 600 feet of boom from the peninsula at the entrance north to the island and about 150 feet of boom west from the island to the mainland.

LOGGING CAMP CREEK (SITE 83; FIGURE 304-79)

Logging Camp Creek (ADFG 435) is a salmon spawning ground at the head of Logging Camp Bay, a small inlet in the north shore of Passage Canal. To protect Logging Camp Creek, deploy about 900 feet of boom across the entrance to the bay.

TEBENKOFF CREEK AND BLACKSTONE CREEK (SITE 84; FIGURE 304-80)

Tebenkoff Creek (ADFG 450) and Blackstone Creek (ADFG 451) are salmon spawning grounds in the south shore of the entrance to Blackstone Bay. Oil should be contained on open water before reaching the stream mouths. If this is not feasible, exclusion actions should be taken at the stream mouths to protect the deltas above midtide level.

PLEX3-016

COCHRANE BAY (SITES 85 THROUGH 89)

Cochrane Bay is a large bay south of Port Wells in northwestern Prince William Sound. Harbor seals frequent its waters. Within the bay are located five important salmon spawning streams—Halferty Creek (ADFG 454), Paulson Creek (ADFG 455), Parks Creek (ADFG 458), Cochrane Creek (ADFG 461), and Wickett Creek (ADFG 469).

Site 85. Halferty Creek (Figure 304-81): Halferty Creek (ADFG 454) is a salmon spawning stream in the western shore of Cochrane Bay. To protect this area, deploy about 900 feet of boom across the entrance to the inlet into which the creek drains.

Site 86. Paulson Creek (Figure 304-81): Paulson Creek (ADFG 455) is a major salmon spawning stream in the western shore of Cochrane Bay. To protect this area, deploy about 600 feet of boom across the entrance to the small inlet into which the creek drains.

Site 87. Parks Creek (Figure 304-82): Parks Creek (ADFG 458) is a major salmon spawning ground in the west shore of Cochrane Bay. Oil should be diverted before it reaches this area. Deploy about 1,500 feet of boom from two locations—the north and the south shore of the entrance to the creek—at an angle that will direct oil toward shore and/or away from the creek.

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If this is not feasible, contain oil on open water before it reaches the area.

Site 88. Cochrane Creek (Figure 304-83): Cochrane Creek (ADFG 461) is a salmon spawning stream at the head of Cochrane Bay. To protect this area, deploy about 1,800 feet of boom across the head of the bay at its narrowing. If this is not feasible, oil should be diverted away from the head of the bay, or contained on open water, before it reaches the area.

Site 89. Wickett Creek (Figure 304-84): Wickett Creek (ADFG 469) is a salmon spawning stream in the eastern shore of Cochrane Bay. Deploy about 300 feet of boom across the inlet into which the creek drains. Boom should be deployed from the small peninsula inside the inlet on the north shore across to the south shore.

CULROSS PASSAGE (SITES 90 & 91)

Culross Passage is a long, narrow passage between Culross Island and the mainland. The passage heads south from the Port Wells area and enters Port Nellie Juan. The passage is a bird concentration area. There are two important salmon spawning streams draining into the passage—Shrode Creek (ADFG 476) and Culross Creek (ADFG 479).

Site 90. Shrode Creek (Figure 304-85): Shrode Creek (ADFG 476) is the number one pink salmon producing stream in Prince William Sound. Shrode Creek is located at the head of Long Bay in the western shore of Culross Passage. Deploy about 300 feet of boom across the narrows at the entrance to the upper bay.

Site 91. Culross Creek (Figure 304-86): Culross Creek (ADFG 479) is a salmon spawning ground in the western coast of Culross Passage. To protect this creek, deploy about 300 feet of boom across the entrance to the delta.

PORT NELLIE JUAN (SITES 92 THROUGH 96)

Port Nellie Juan is a large fjord in western Prince William Sound south of Culross Island. Harbor seals inhabit its waters. There is herring fishing near East Finger Inlet within the Port. Five important salmon spawning grounds are located within the Port—Mink Creek (ADFG 480), East Finger Creek (ADFG 484), West Finger Creek (ADFG 485), Chimensky Lagoon (ADFG 495), and McClure Creek (ADFG 498).

PLEX3-017

Site 92. Mink Creek (Figure 304-87): Mink Creek (ADFG 480) is a salmon spawning stream in the west shore of Port Nellie Juan. To protect this area, deploy about 600 feet of boom from the small island south to the mainland and about 450 feet of boom north to the mainland.

Site 93. East Finger Creek (Figure 304-88): East Finger Creek (ADFG 484) is a salmon spawning stream at the head of East Finger Inlet, a small inlet in the north shore of Port Nellie Juan east of Kings Bay. Deploy about 1,200 feet of boom across the inlet at its narrowing.

Site 94. West Finger Creek (Figure 304-89): West Finger Creek (ADFG 485) is a major salmon spawning stream located at the head of West Finger Inlet, a small inlet in the north shore of Port Nellie Juan east of King's Bay. Deploy about 1,500 feet of boom from the peninsula on the east shore of the entrance at an angle that will direct oil toward shore. If this is not feasible, it may be possible to enclose the inlet at its narrowing by deploying about 1,200 feet of boom across the inlet.

Site 95. Chimensky Lagoon (Figure 304-90): Chimensky Lagoon (ADFG 495) is a major salmon spawning ground at the head of the western arm of McClure Bay. Deploy about 1,000 feet of boom across the entrance to the western arm between the two small peninsulas. If this is not feasible, deploy about 300 feet of boom across the narrow entrance to the lagoon.

Site 96. McClure Creek (Figure 304-90): McClure Creek (ADFG 498) is a salmon spawning stream at the head of the eastern arm of McClure Bay.

Deploy about 1,500 feet of boom across the entrance to the eastern arm. If this is not feasible, deploy about 600 feet of boom across the central arm at its narrowing.

Site 96a. Main Bay (Figure 304-90a): The Alaska Department of Fish and Game's Main Bay Hatchery is located in western Prince William Sound between Port Nellie Juan and Knight Island Passage. The hatchery primarily raises chum salmon with a small pink salmon population. It has one holding pond and expects to increase the holding area to 5-10 acres in the future. The facility may also develop a deep (75') small quantity (100 gpm) salt water intake in the future. The salmon are placed in the holding ponds in early April and held through May. The adult salmon return in July and August.

This hatchery is a considerable distance from the tanker traffic lane. However, should oil threaten the holding ponds during April or May, the ponds would be protectively boomed. Diversion booming at or near the mouth of the bay may also be helpful to divert oil from the facility.

ESHAMY LAGOON (SITE 97; FIGURE 304-91)

Eshamy Lagoon is a major salmon spawning area in Eshamy Bay in the west shore of Knight Passage in western Prince William Sound. Whales frequent its waters. Within Eshamy Lagoon are three major salmon spawning streams and one salmon spawning lake—Self Creek (ADFG 508), Eshamy River (ADFG 511), Ellshansky Creek (ADFG 510), and Eshamy Lake. Eshamy River and Lake are the largest producer of sockeye salmon in Prince William Sound.

To exclude oil from this area, deploy about 800 feet of boom across the entrance to Eshamy Lagoon.

DANGEROUS PASSAGE (SITES 98 THROUGH 104)

Dangerous Passage is a long, narrow passage between Chenaga Island and the mainland. Harbor seals frequent its waters. Within Dangerous Passage are ten important salmon spawning grounds—Paddy Creek (ADFG 601), Ewan Creek (ADFG 603), Erb Creek (ADFG 694), Unnamed Creek 620 (ADFG 620), Totemoff Creek (ADFG 621), Brigaloff Creek (ADFG 623), Jackpot Lakes Creek (ADFG 608), Kompkoff Creek (ADFG 610), Jackpot Bay Creek (ADFG 611), and Jackpot Creek (ADFG 613).

PLEX3-018

Site 98. Paddy Creek (Figure 304-92): Paddy Creek (ADFG 601), a salmon spawning stream, empties into the head of the east arm of Paddy Bay, a bay in the north shore of Dangerous Passage. To protect Paddy Creek, deploy about 400 feet of boom across the entrance to the narrow inlet into which the creek drains.

Site 99. Erb Creek (Figure 304-93): Erb Creek (ADFG 604), a major salmon spawning ground, empties into the western shore of Ewan Bay in the north coast of Dangerous Passage. To protect Erb Creek, deploy about 1,000 feet of boom from the peninsula at the mouth of the stream west to the mainland and about 750 feet of boom from the peninsula east to the mainland.

Site 100. Ewan Creek (Figure 304-93): Ewan Creek (ADFG 603), a major salmon spawning stream, empties into the head of Ewan Bay on the north shore of Dangerous Passage. To protect Ewan Creek, deploy about 400 feet of boom at the narrow entrance between the two peninsulas at the head of the bay.

Site 101. Unnamed Creek 620 (Figure 304-94): Unnamed Creek 620 (ADFG 620) is a salmon spawning stream on Chenega Island emptying into the south shore of Dangerous Passage. To protect this creek above midtide level, deploy about 500 feet of boom across the small cove into which the creek drains.

Site 102. Totemoff Creek (Figure 304-94): Totemoff Creek (ADFG 621), a major salmon spawning stream on Chenega Island, empties into the south shore of Dangerous Passage. Deploy about 500 feet of boom across the entrance to the creek mouth to prevent oil from affecting the delta above midtide level.

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Site 103. Brigaloff Creek (Figure 304-94): Brigaloff Creek (ADFG 623), a salmon spawning ground on Chenega Island, empties into the south shore of Dangerous Passage. To protect this area, deploy about 400 feet of boom across the entrance of the inlet into which the creek drains.

Site 104. Jackpot Bay (Figure 304-95): Jackpot Bay is a bay in the north shore of Dangerous Passage. Within the bay are four important salmon spawning grounds—Jackpot Lakes Creek (ADFG 608), Kompkoff Creek (ADFG 610), Jackpot Bay Creek (ADFG 611), and Jackpot Creek (ADFG 613). To protect this area, deploy about 1,100 feet of boom across the narrow entrance to the head of Jackpot Bay.

WHALE BAY (SITES 105, 106, 107 & 108)

Whale Bay is a large bay in southwestern Prince William Sound, southwest of Chenega Island. Harbor seals frequent its waters. Four important salmon spawning streams empty into Whale Bay—Claw Creek (ADFG 632), Pablo Creek (ADFG 633), Unnamed Creek 634 (ADFG 634), and Whale Creek (ADFG 636).

Icebergs often obstruct the entrance to Whale Bay.

Site 105. Claw Creek (Figure 304-96): Claw Creek (ADFG 632), a salmon spawning stream, empties into Whale Bay, a bay southwest of Chenega Island. To protect the creek delta above midtide level, deploy about 900 feet of boom from the wooded island west to the mainland and about 200 feet of boom east to the mainland.

Site 106. Pablo Creek (Figure 304-97): Unnamed Creek 634 (ADFG 634), a salmon spawning ground, drains into the head of the south arm of Whale Bay, a bay southwest of Chenega Island. To protect this area, deploy about 1,500 feet of boom from the mainland north of the creek delta at an angle that will direct oil toward shore and away from delta.

Site 107. Unnamed Creek 634 (Figure 304-97): Unnamed Creek 634 (ADFG 634), a salmon spawning ground, drains into the head of the south arm of Whale Bay, a bay southwest of Chenega Island. To protect this creek, deploy about 750 feet of boom from the small peninsula at the creek mouth north to the mainland to protect the delta above midtide level.

Site 108. Whale Creek (Figure 304-98): Whale Creek (ADFG 636), a salmon spawning ground, empties from the east shore of the south arm of Whale Bay, a bay southwest of Chenega Island. To protect this area, deploy about 1,000 feet of boom across the entrance to the small inlet into which the creek drains.

PLEX3-019

BAINBRIDGE PASSAGE (SITE 109)

Bainbridge Passage is a long, narrow passage in southwestern Prince William Sound between Bainbridge Island and the mainland. The passage leads from Knight Passage into Port Bainbridge. Within Bainbridge Passage are two important salmon spawning grounds Johnson Creek (ADFG 655) and Halverson Creek (ADFG 656).

Site 109. Johnson Creek and Halverson Creek (Figure 304-99): Johnson Creek (ADFG 655) and Halverson Creek (ADFG 656) are salmon spawning streams that empty into the head of an unnamed bay in the north shore of Bainbridge Island. To prevent oil from affecting these creeks, oil should be contained on open water before reaching the area. If this is not feasible, enclosure booming should be undertaken at the entrance to the inlet into which each creek drains.

EAST EVANS ISLAND (SITES 110 & 111)

Evans Island lies east of Bainbridge Island in the southwestern corner of Prince William Sound. Sawmill Bay on the east shore of Evans Island is the site of numerous abandoned canneries and the Prince William Sound Aquaculture Corporation. Two important salmon spawning streams are found on the east shore of Evans Island--Bjorne Creek (ADFG 665) and O'Brien Creek (ADFG 666).

Site 110. Bjorne Creek (Figure 304-100): Bjorne Creek (ADFG 665), a salmon spawning stream, empties into a small cove on the east shore of Evans Island. To protect this area, deploy about 1,500 feet of boom from the peninsula north to the mainland to protect the delta above midtide level.

Site 111. O'Brien Creek (Figure 304-101): O'Brien Creek (ADFG 666), a major pink salmon spawning ground, empties into the head of Crab Bay, a small bay within Sawmill Bay on the east coast of Evans Island. To protect this creek, deploy about 1,000 feet of boom from the small peninsula at the entrance to the inlet into which the creek drains west to the mainland.

Site 111a. San Juan (Figure 304-101a): The Prince William Sound Aquaculture Hatchery Association's San Juan Hatchery is located on Evans Island in Southwest Prince William Sound. It is located on salt water in Sawmill Bay. This is primarily a pink salmon hatchery with a small population of chum salmon. Young salmon are in the hatchery tidewater area from mid-March to the first of June and mid-July to the first of September.

It is highly unlikely any oil from the tanker traffic lane would impact this hatchery. However, if oil threatens the hatchery, the holding areas would be boomed to protect the ponds. Diversion booming may also help protect the hatchery facilities.

WEST LATOUCHE ISLAND (SITES 112 THROUGH 116)

Latouche Island lies west of Montague Island in the southwestern corner of Prince William Sound. Harbor seals and sea otters frequent the waters off the west shore. Herring fishing occurs off the northern end of the island. Located on the west shore of the island are six important salmon spawning grounds—Hayden Creek (ADFG 677), Horseshoe Creek (ADFG 676), Falls Creek (ADFG 673), Latouche Island Creek (ADFG 674), Big Bay (ADFG 672), and Montgomery Creek (ADFG 670).

Site 112. Hayden Creek (Figure 304-102): Hayden Creek (ADFG 677), a salmon spawning ground, empties into a small inlet in the west shore of Latouche Island. To protect this stream, deploy about 750 feet of boom across the entrance to the small inlet.

Site 113. Horseshoe Creek (Figure 304-102): Horseshoe Creek (ADFG 676), a salmon spawning ground, empties into Horseshoe Bay on the west shore of Latouche Island. To protect this area, deploy about 1,500 feet of boom across the entrance to Horseshoe Bay.

Site 114. **Falls Creek and Latouche Island Creek (Figure 304-103):** Falls Creek (ADFG 673), a major salmon spawning stream, drains from the west shore of Latouche Island into Latouche Passage. Latouche Island Creek (ADFG 674) empties into Latouche Passage north of Falls Creek. The deltas of the two creeks merge during ebb tide. To protect this area, deploy about 1,500 to 2,000 feet of boom in a U-shape in advance of the approaching slick. This will contain oil within the boom and prevent oil from affecting the creek deltas.

Site 115. **Big Bay (Figure 304-103):** Big Bay (ADFG 672), a salmon spawning stream, drains into a small lagoon on the west shore of Latouche Island. Deploy about 1,200 feet of boom around the delta to protect the delta above midtide level. Boom should be anchored on shore and in water out from delta.

Site 116. **Montgomery Creek (Figure 304-104):** Montgomery Creek (ADFG 670), a salmon spawning ground, drains into a lagoon on the west shore of Latouche Island. To protect the creek delta, deploy about 1,500 feet of boom from the mainland north of the creek delta at an angle that will direct oil away from the delta and toward shore.

GREEN CREEK (SITE 117; FIGURE 304-105)

Green Creek (ADFG 788) is a major pink salmon spawning ground on the west coast of Green Island, north of Gibbon Anchorage. The northwestern shores of Green Island are herring spawning grounds. Sea otters and harbor seals inhabit the waters around the smaller island along its coast. Green Island is a bird concentration area.

300

To protect Green Creek, deploy about 1,500 feet of boom from shore at an angle that will direct the oil toward shore. Location of the anchor point will be dependent on the location of the slick as it approaches Green Creek.

WEST MONTAGUE ISLAND (SITES 118 THROUGH 136)

Stockdale Harbor

Stockdale Harbor is located in the northwest shore of Montague Island. Harbor seals and sea otter frequent its waters. Eelgrass beds line its shores. Herring spawn along the shores of the harbor and its small islands. Four salmon spawning grounds are located within the Stockdale Harbor—Dry Creek (ADFG 754), Unnamed Creek 753 (ADFG 753), Stockdale Creek (ADFG 752), and Unnamed Creek 751 (ADFG 751).

Site 118. **Dry Creek (Figure 304-106):** Dry Creek (ADFG 754), a salmon spawning stream, empties into a small inlet in Stockdale Harbor. To protect this area, deploy about 400 feet of boom across the entrance to the inlet into which the creek drains.

Site 119. **Unnamed Creek 753 (Figure 304-106):** Unnamed Creek (ADFG 753) is a salmon spawning ground in Stockdale Harbor. To protect this stream delta above midtide level, deploy about 1,100 feet of boom around the delta. Boom should be anchored on shore and in the water out from the delta.

Site 120. **Stockdale Creek (Figure 304-16):** Stockdale Creek (ADFG 752) is a salmon spawning ground in Stockdale Harbor. To protect this stream delta above midtide level, deploy about 1,100 feet of boom around the delta. Boom should be anchored on shore and in the water out from the delta.

Site 121. **Unnamed Creek 751 (Figure 304-106):** Unnamed Creek 751 (ADFG 751) is a salmon spawning ground in Stockdale Harbor. To protect this stream delta above midtide level, deploy about 1,100 feet of boom around the delta. Boom should be anchored on shore and in the water out from the delta.

Port Chalmers

Port Chalmers is a number of small inlets and coves in the west coast of Montague Island south of Stockdale Harbor. Herring spawn in the shallow waters near Shad Creek. Sea otters and harbor seals frequent its waters. Hardshell clams can be found from Cabin Creek south to Wilby Creek. Within Port Chalmers are ten important salmon spawning streams—Unnamed Creek 750 (ADFG 750), Shad Creek (ADFG 749), Unnamed Creek 748 (ADFG 748), Cabin Creek complex (ADFG 747, 747-1, 747-2), Schumann Creek (ADFG 746), Wild Creek (ADFG 745), Wilby Creek (ADFG 744), and Chalmers River (ADFG 741).

Site 122. Unnamed Creek 750 and Shad Creek (Figure 304-107): Unnamed Creek 750 (ADFG 750) and Shad Creek (ADFG 749) are important salmon spawning grounds in Port Chalmers on the west coast of Montague Island. The deltas of these two creeks merge during low tide. To prevent oil from affecting this area, deploy about 1,800 feet of boom around the delta area to protect it above midtide level. Boom should be anchored on shore and in water out from the delta.

Site 123. Unnamed Creek 748 (Figure 304-107): Unnamed Creek 748 (ADFG 748), a salmon spawning stream, empties into a small inlet in Port Chalmers. To protect this area, deploy about 1,000 feet of boom across the inlet at the narrowing near the delta.

Site 124. Cabin Creek complex (Figure 304-107): The Cabin Creek complex is a major salmon spawning area. The complex is a number of streams that have a common outlet into Port Chalmers—Cabin Creek (ADFG 747), Unnamed Stream 747-1 (ADFG 747-1), and Unnamed Stream 747-2 (ADFG 747-2). To protect this area, deploy about 750 feet of boom across the entrance to the inlet into which the complex drains.

Site 125. Schumann Creek (Figure 304-107): Schumann Creek (ADFG 746), a salmon spawning stream, empties into a small inlet in Port Chalmers on the west shore of Montague Island. Deploy about 1,500 feet of boom across the entrance of the inlet from the peninsula on the south shore north to the mainland to prevent oil from affecting the delta above midtide level.

Site 126. Wild Creek (Figure 304-107): Wild Creek (ADFG 745) is a salmon spawning stream draining into a small inlet in Port Chalmers. Deploy about 1,800 feet of boom from the peninsula on the north shore to the peninsula on the south shore to prevent oil from affecting the delta above midtide level.

Site 127. Wilby Creek (Figure 304-107): Wilby Creek (ADFG 744) is a salmon spawning stream draining into Port Chalmers on the west shore of Montague Island. To protect this creek, deploy about 1,800 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from delta.

Site 128. Chalmers River (Figure 304-108): Chalmers River (ADFG 741), a major salmon spawning ground, forms a large delta as it empties into Port Chalmers on the west coast of Montague Island. To protect this river delta, oil should be contained on open water before reaching the area. Deploy about 1,500 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain the oil within the boom. If this is not practical, oil should be diverted to shore and/or away from the delta before it reaches the Chalmers River delta.

Midwest Montague Island

Site 129. Kelez Creek (Figure 304-109): Kelez Creek (ADFG 740), a salmon spawning stream, drains from a small lagoon that empties during low tide on the west coast of Montague Island, south of Port Chalmers. To protect this stream, deploy about 2,500 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from the delta.

Site 130. Swamp Creek (Figure 304-109): Swamp Creek (ADFG 739), a major salmon spawning stream, drains from a small lagoon on the west coast of Montague Island, south of Port Chalmers. To protect this stream, deploy about 2,500 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from the delta.

Site 131. Unnamed Creek 735 (Figure 304-110): Unnamed Creek 735 (ADFG 735), a salmon spawning ground, flows from a small lake on the west shore of Montague Island. To protect this stream, deploy about 1,500 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from the delta.

Site 132. Unnamed Creek 719 (Figure 304-111): Unnamed Creek 719 (ADFG 719), a salmon spawning stream, drains from the west coast of Montague Island. To protect this stream, deploy about 2,500 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from the delta.

PLEX3-022

Site 133. Unnamed Creek 717 (Figure 304-111): Unnamed Creek 717 (ADFG 717), a salmon spawning stream, drains from the west coast of Montague Island. To protect this stream, deploy about 2,500 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from the delta.

Site 134. Quadra Creek (Figure 304-112): Quadra Creek (ADFG 711) is a salmon spawning ground at the head of Hanning Bay in the west coast of Montague Island. Sea otters frequent the waters of the bay. To protect this stream, oil should be contained on open water before it reaches this area. Deploy about 1,500 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

MacLeod Harbor

Site 135. MacLeod Creek (Figure 304-113): MacLeod Creek (ADFG 707) is a salmon spawning ground at the head of MacLeod Harbor in the west shore of Montague Island. Sea otters frequent the waters of the harbor. MacLeod Creek, together with numerous other streams, forms a large tidal flat. To protect this area, oil should be contained on open water before it reaches this area. Deploy about 1,500 to 2,000 feet of boom in a U-shape in advance of the approaching slick to contain oil within the boom.

Site 136. Trap Creek (Figure 304-114): Trap Creek (ADFG 701), a salmon spawning stream, empties into a lagoon on the south shore of the entrance to MacLeod Harbor. Sea otters frequent the waters of the harbor. To protect Trap Creek, deploy about 1,500 feet of boom around the delta, which will protect the delta above midtide level. Boom should be anchored on shore and in water out from the delta.

300

PLEX3-023

Prince William Sound Tanker Casualty: Spill Amount 200,000 Barrels

Alyeska Pipeline Service Company has been requested to respond to a scenario of a 200,000-barrel spill in Prince William Sound. APSC believes it is highly unlikely a spill of this magnitude would occur. Catastrophic events of this nature are further reduced because the majority of tankers calling on Port Valdez are of American registry and all of these are piloted by licensed masters or pilots. Nonetheless, should such an incident occur, the following is our overview of the initial response to that scenario. Attached is an oil spill trajectory of the oil movement. A spill of this magnitude would require considerable resources and logistical operations, the minute details of which are not included in this scenario because the details are not useful in long-term response planning. This scenario will not address the circumstances responsible for the loss of cargo or of the fate of the tanker. Once a tanker is immobilized, the U.S. Coast Guard will determine future movement of the vessel.

Assumptions

The following assumptions are made in presenting the response to the scenario: The sea state and weather conditions are in and remain in a state conducive to oil containment and cleanup. For example, winds less than 15 knots, sea state less than 5 feet, currents less than 1.6 knots, waves less than 2 feet, visibility equal to or greater than 2 miles.

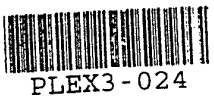
The spill incident occurs through some failure of the tanker crude tanks and does not discuss other disaster possibilities such as collision or fire.

Conditions

In addition to the above assumptions on sea state, the weather is assumed to be conducive to oil spill cleanup and remains in this mode for the response actions. For this particular scenario and trajectory input, the date of June 22 at 6:00 a.m. was chosen for the spill incident with winds from the east at 5 knots. The location is 60° 30' 5" North, and 147° 2' 0" West longitude. The tanker has a cargo amount of 550,000 barrels. The trajectories show two possibilities—one is an instantaneous spill of 200,000 barrels and a second is a 10,000 barrel per hour spill that continues for 20 hours. Figure 306-6 shows the trajectory oil spill movement. It is approximately 30 miles to the site from the Valdez Terminal; an average speed of 12 knots is used to determine the travel time to the area for the Crowley tugs. An approximate speed of 8 knots is used for towed equipment and 20 knots for the workboats without tows. Figure 306-4 is a summary of equipment capacity and response times. Figure 306-5 is a table of equipment in the first response effort.

Immediate Response Actions

On notification of the pollution incident, the following response actions would be simultaneously initiated. The closest empty or light loaded tanker will be directed to the spill site with an estimated maximum arrival time of 12 hours. The initial response would include moving containment booms, skimmer equipment, support equipment and personnel to the site. Additional backup personnel and equipment from the pump stations along the line would be mobilized. Private commercial vessels from the Valdez small boat harbor would be employed to assist in booming and logistical support. Aircraft in Valdez would be employed to assist in the response with overflights, communication or logistics. This would immediately be backed up with air support from our eleven on-call flight services contractors. APSC would request U.S. Coast Guard Pacific Strike Team assistance through the Valdez U.S. Coast Guard office. In addition, all oil spill contractors in the state of Alaska would be asked to mobilize and move to the site as soon as possible to respond to the spill. Also, a request to the local cooperatives, CIRO and Alaska Clean Seas, would be made for any additional equipment that they could supply to this area. See Figure 607-1 for a summary of air transport response times and Figure 607-2 for vessel response times. A request would be made to the Association of Petroleum Industry Co-op Managers to respond with available equipment and personnel that can be located in the West Coast area. The International Bird Rescue Research Organization would be immediately requested to mobilize and prepare for movement to Prince William Sound. A request would be made immediately to the OSC to apply dispersants to the oil slicks. Biegert Aviation and other dispersant contractors would be requested to mobilize in Valdez and be prepared to apply dispersants. A request to open-burn slicks on the ocean and debris and oil on the shoreline would also be made immediately to the OSC.



to open-burn slicks on the ocean and debris and oil on the shoreline would also be made immediately to the OSC.

It is expected the agencies response actions would include the following: The regional response team would be immediately mobilized. The decision process on dispersant application would be begun immediately. There would be a joint meeting between the U.S. Coast Guard, EPA, Alyeska, Alaska Department of Environmental Conservation, U.S. Fish and Wildlife Service and possibly other government entities, to keep all affected parties apprised of the situation and, hopefully, to facilitate the decision making on the response alternatives.

As a result of the initial coordination meeting, it was decided certain response priorities would have to be made as this would be a long-term impact and cleanup situation.

The trajectories indicate that oil will threaten Eleanor Island, Naked Island, Lone Island, Perry Island and the Pigot Bay area, Culross Island and the Main Bay area shorelines. Although it is unlikely oil will reach Main Bay, as a precaution the fish hatchery will be boomed immediately. Some of the exclusion area numbers 79 through 92 may be impacted by the oil movement. The first areas of consideration would likely be exclusion areas 81, 82 and 83.

Second considerations would include areas 79, 80, 89, 90, 91 & 92, and third consideration would likely be sites 84 through 88. These sites are considered sensitive, primarily because they are salmon spawning areas. Additional sites or other areas may have a higher priority, depending on the oil movement and other additional information that may become available. The oil spill trajectory indicates the above priorities are likely to be the most significant. This information is listed in Section 300. One of the oil spill response contractors would be directed to Whittier with the sole task of providing exclusion booming in these areas with the above-listed priority, unless other priorities were agreed to among the agencies and Alyeska at the coordination meeting.

300

PRINCE WILLIAM SOUND SCENARIO RESPONSE TIMES

Vessel	Storage Cap. (bbls)	Recovery Rate (bbls/hr)	Vessel Speed/Prep Time (knts)	(hrs)	Travel to Spill with Prep Time (hrs)
Tugs	N/A	N/A	12	0	2.5
2 Mooring Launches	N/A	N/A	8	0.5	3
Towing:					
Marco Class V	40	428			
Marco Class VII	80	428			
2 Vikoma Seapacks	w/1500' boom each				
2-21' Monarks	N/A	N/A	20	0	1.5
1-26' Monark	N/A	N/A	20	0	1.5
1-26' Monark	N/A	N/A	8	0.25	2.75
Towing:					
1 Vikoma Seapack	w/1500' boom				
Tug & Contingency Barge with/	4700	N/A	8	2.5	5.0
Sea Skimmer	N/A	536			
Equipment	1976 (bladders)				
Towing:					
2 Vikomas	w/1500' boom each				

PRINCE WILLIAM SOUND SCENARIO RESPONSE TIMES

Figure 306-4

PLEX3-025

Distribution of Oil

It is estimated that approximately 50% of the oil will be recovered at sea, either directly after the spill or at a later time by being washed off of the rocks, contained and skimmed off of the water. Approximately 15 percent of the spill will evaporate during the time it is moving toward the shoreline and prior to removal. Of the oil that remains approximately 15 percent of the oil will be recovered from the shore, primarily by washing the oil off of the rocks and recovering it on the water. Fifteen percent of the oil will naturally disperse and approximately 5 percent will remain in the environment.

Environmental Considerations

Along with the salmon spawning areas and the sea bird colony areas there are some purse seine and drift gill net areas around Esther Island in the Port Wells area. There is also some ground fish activity on the west side of Naked Island, Eleanor Island, Ingot Island and the Port Wells area.

Section 600 of the Prince William Sound Contingency Plan gives us the Sea Bird colony areas that would likely be impacted by a spill of this nature. The Naked Island group, Eleanor Island, Bald Head Criss Island, Dutch group, Perry Island, Fool Island, Egg Rock, and Esther Rock are likely impact areas of the sea bird colonies. There is a possibility that Smith Island and Little Smith Island sea bird colonies may also be impacted with a slight wind change. The most likely effective protection of the sea bird colonies is to prevent the oil from impacting the shore lines at all. This can be done of course only by dispersing the oil at sea, or allowing an open burn of the oil at sea. Since the timely application of dispersants is so important it is necessary that the decision process for allowing dispersant application be approved prior to an incident such as this. It will allow the oil industry to stockpile the necessary dispersants and application means so that resources such as the sea bird colonies can be protected in the most reasonable manner.

This has been a brief initial response to the spill scenario of a 200,000 barrel catastrophic event. There would, of course, be a long term cleanup of the spill on the various beaches of Prince William Sound. In reviewing the aspects of this size spill it becomes very apparent how important it is to have dispersants approved so that they can be used very effectively to prevent the continuing input of oil into the small bays and shorelines in Prince William Sound. Burning also has to be looked at as a very good alternative to the cleanup in Prince William Sound on the various inlets and bays in which oil may accumulate.

PLEX3-026

PRINCE WILLIAM SOUND SCENARIO INITIAL EQUIPMENT

Initial Equipment to Prince William Sound Oil Spill:

2 Terminal Tugs and Two Mooring Launches

Contingency Barge B&R 126-1 with the following:

- Vikoma seaskimmer and power unit
- Marco power block
- Life raft
- Inflated fenders
- 2 Stop systems (Tanker Lightering Systems)
- 3,000 feet containment boom
- 1,000 feet sorbent boom
- 20 bales sorbent pads
- 1 50,000 gallon bladder
- 1 20,000 gallon bladder
- 1 10,000 gallon bladder
- 1 3,000 gallon bladder
- 2 3" diesel pumps (Komara skimmer pumps) & 100 feet 3" hose

2 21' Monark workboats

2 26' Monark workboats

Towed:
- Marco Class V skimmer
- Marco Class VII skimmer
- 5 Vikoma seapacks (7500' of boom)

Initial Manpower: 15 minimum and tug crews

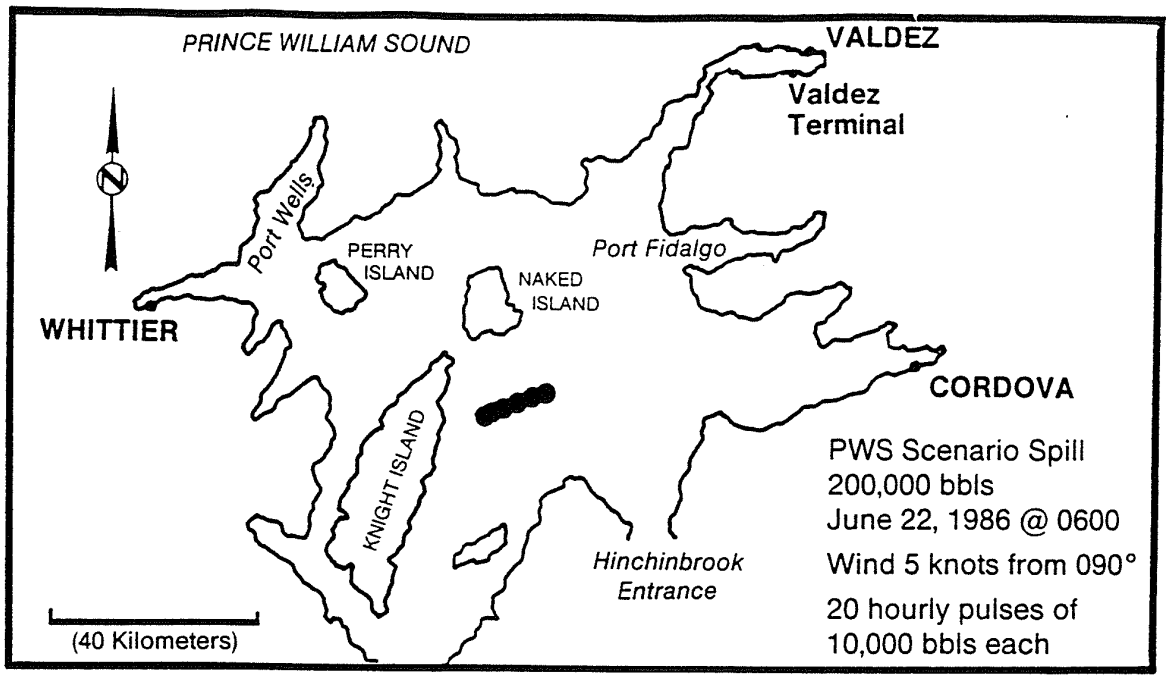
Supplies:

- Radios
- Fuel and oil
- Anchors and line
- Life lines
- Life jackets
- Rubber gloves
- Rain suits
- Rubber boots
- Plastic bags
- Cleanup tools
- Batteries

PRINCE WILLIAM SOUND SCENARIO INITIAL EQUIPMENT

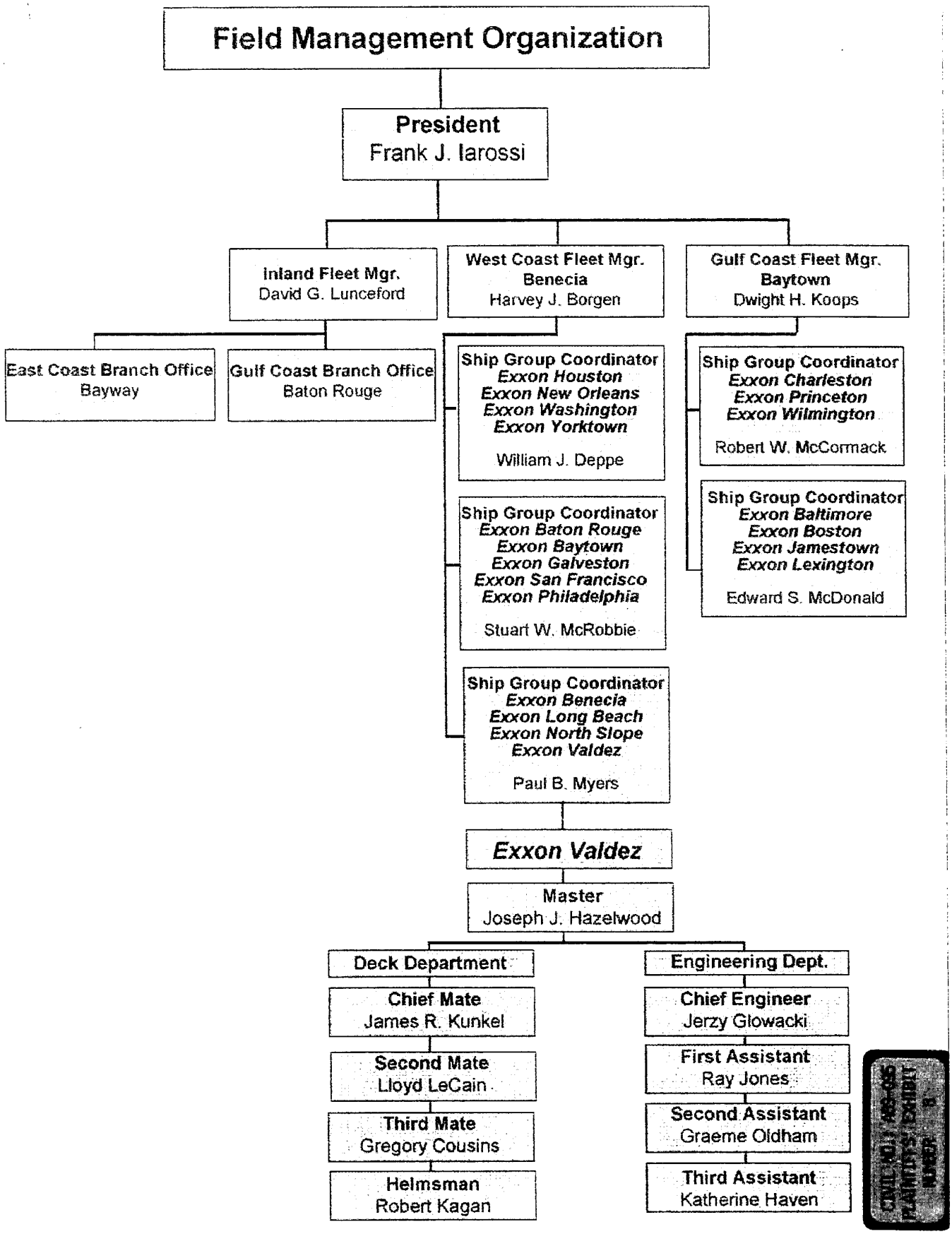
Figure 306-5

PLEX3-027



PRINCE WILLIAM SOUND OIL SPILL SCENARIO **Figure 306-6**

PLEX3 - 028


Field Management Organization
President
Frank J. Iarossi
Inland Fleet Mgr.
David G. Lunceford
West Coast Fleet Mgr.
Benecia
Harvey J. Borgen
Gulf Coast Fleet Mgr.
Baytown
Dwight H. Koops
East Coast Branch Office
Bayway
Gulf Coast Branch Office
Baton Rouge
Ship Group Coordinator
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Exxon New Orleans
Exxon Washington
Exxon Yorktown
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Ship Group Coordinator
Exxon Charleston
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Exxon San Francisco
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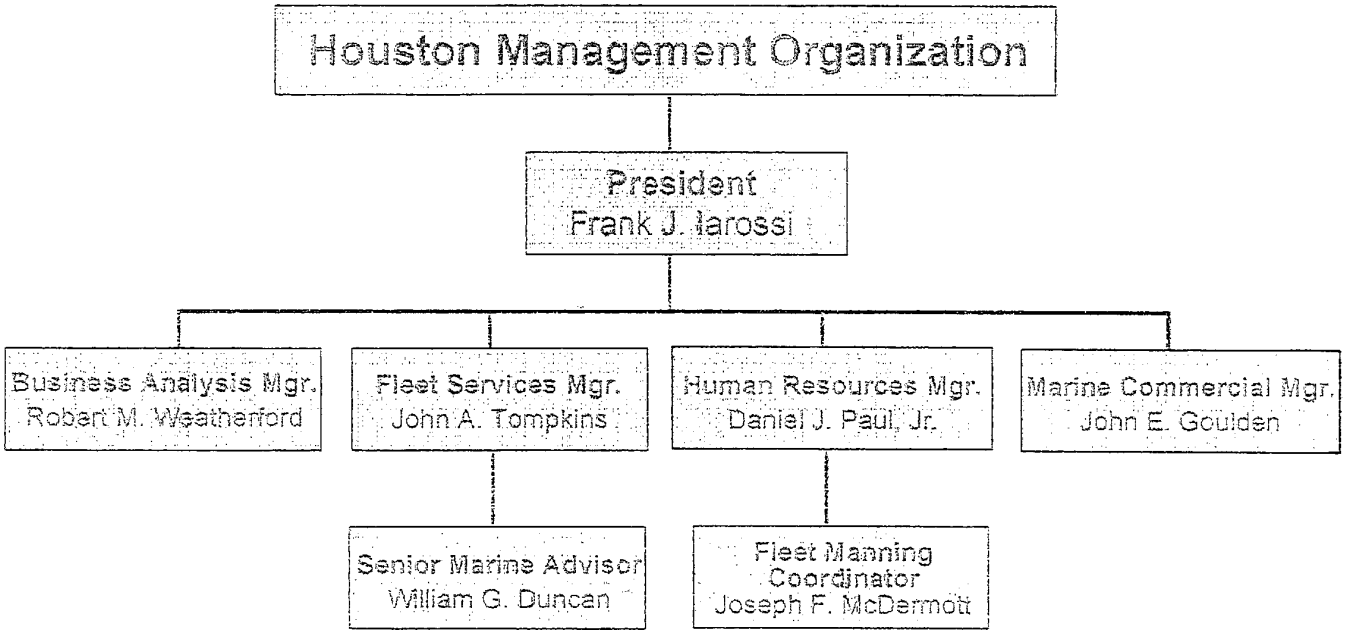
Exxon Boston
Exxon Jamestown
Exxon Lexington
Edward S. McDonald
Ship Group Coordinator
Exxon Benecia
Exxon Long Beach
Exxon North Slope
Exxon Valdez
Paul B. Myers
Exxon Valdez
Master
Joseph J. Hazelwood
Deck Department
Chief Mate
James R. Kunkel
Second Mate
Lloyd LeCain
Third Mate
Gregory Cousins
Helmsman
Robert Kagan
Engineering Dept.
Chief Engineer
Jerzy Glowacki
First Assistant
Ray Jones
Second Assistant
Graeme Oldham
Third Assistant
Katherine Haven


Houston Management Organization
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Frank J. Iarossi
Business Analysis Mgr.
Robert M. Weatherford
Fleet Services Mgr.
John A. Tompkins
Human Resources Mgr.
Daniel J. Paul, Jr.
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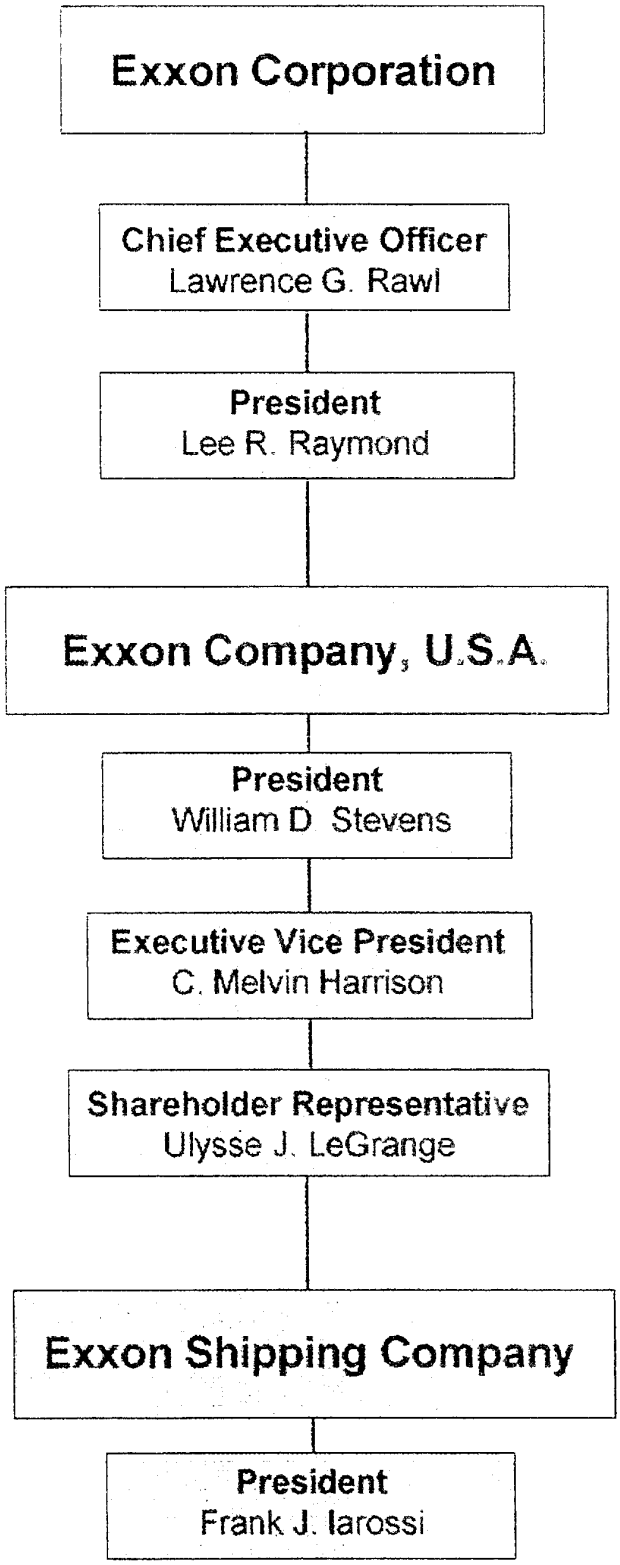
John E. Goulden
Senior Marine Advisor
William G. Duncan
Fleet Manning
Coordinator
Joseph F. McDermott


Exxon Corporation
Chief Executive Officer
Lawrence G. Rawl
President
Lee R. Raymond
Exxon Company, U.S.A.
President
William D Stevens
Executive Vice President
C. Melvin Harrison
Shareholder Representative
Ulysse J. LeGrange
Exxon Shipping Company
President
Frank J. Iarossi

I. TO BE COMPLETED BY EMPLOYEE

(LAST NAME, FIRST, MIDDLE INITIAL, (LAST) MAIDEN NAME)

Joseph T. Hazlewood

SOCIAL SECURITY NUMBER: 071-38-8376

DEPARTMENT NAME & PAYROLL LOCATION (SHIP/PLANT)

[X] SEAGOING [ ] INLAND EAST COAST BRANCH [ ] INLAND GULF COAST BRANCH

FIRST DAY OF DISABILITY: 4-1-85

I hereby authorize the attending physician to release the information requested below to determine my eligibility for payment under the Company's disability plan. I understand this information must be provided within fifteen (15) days, if appropriate, each Thirty (30) days thereafter, or disability payments may be withheld.

EMPLOYEE'S SIGNATURE _____ DATE _____

II. TO BE COMPLETED BY EXXON MEDICAL COMPANY REPRESENTATIVE

TYPE OF DISABILITY: [ ] OCCUPATIONAL INJURY [ ] NON-OCCUPATIONAL INJURY [ ] SICKNESS

AUTHORIZED DEPARTMENT SIGNATURE _____ DATE _____

III. TO BE COMPLETED BY A LICENSED PHYSICIAN

CIVIL NO. A89-095
PLAINTIFF'S EXHIBIT
NUMBER 010

HISTORY

EXXON COMPANY, U.S.A.

MAY 14 1985

MEDICAL DEPARTMENT
HOUSTON, TEXAS 77252-2180

DIAGNOSIS

300.40 and 305.02 (DSM-III)

TREATMENT

(1) Individual psychotherapy
(2) Group therapy
(3) Medical therapy
(4) AA
(5) lectures, seminars, workshops pertaining to alcoholism

TREATMENT DATES

PRESENTLY FIT FOR REGULAR WORK: [ ] YES [X] NO

PRESENTLY FIT FOR WORK WITH RESTRICTIONS: [ ] YES [X] NO

If still not now able, I estimate patient may return to full duty on _____. In the meantime, any restrictions recommended as a result of this disability are:

Mr. Hazlewood will complete our 28 day program. It is recommended (given the nature of his job) that after discharge, Mr. Hazlewood be given a leave of absence to get involved in AA + aftercare.

SIGNATURE OF ATTENDING PHYSICIAN: [signature] M.D.

ADDRESS: Box 426 Amityville N.Y. 11701

DATE: 4/15/85

PAY ENCLAVE: You or the patient please return any forms in self-addressed envelope corresponding with Branch location shown

[X] Exxon Shipping Company, Compensation & Benefits, P. O. Box 1512, Houston, Texas 77251-1512

[ ] Exxon Shipping Company, Personnel Assistant, P. O. Box 61, Linden, N.J. 07036-0061

[ ] Exxon Shipping Company, Personnel Assistant, P. O. Box 411, Baton Rouge, La. 70821-0411

(516) 264-4000

E739900056B-6

6

7771070375-5

Date: 3/27

Memo From: D. H. KOOPS

To: WJD/SWS

OIL SPILL LITIGATION
WORK PRODUCT OF EXXON
Prepared for Counsel
Do Not Reproduce or Circulate
Do Not Place in Unprotected Files

Bill / Stu -

Attached is a first-pass analysis by Mike Stelzer of the officer work hour data for January.

I'll express this to you today and give copies to Bob / Joe.

Save Energy! - Doug

cc: KWM/DFH w/att.

EXXON SHIPPING COMPANY

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S7306755109-0

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Pursuant To Protective Order
in the Exxon Valdez Oil Spill Litigation

PLEX13-001

CIVIL NO.: A89-095
PLAINTIFFS EXHIBIT
NUMBER 13

MEMORANDUM

TO: Dwight H. Koops	SUBJECT: Fleet Licensed Officer Analysis of Work Hours
FROM: Michael A. Stalzer	DATE: March 19, 1990

OIL SPILL LITIGATION
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Prepared for Counsel
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Background

There are safety concerns about the number of hours individuals have been working in the fleet. These concerns arose in the 80's when manning reductions were occurring and additional responsibilities were being shifted to the fleet officers with no accounting for the additional time required to do these tasks. Workshops were held concerning fatigue during the Fleet Conferences in 1988 and in small groups in August and November of 1989. The purpose of these group meetings was to identify specific tasks which could be eliminated or modified and to make recommendations as to how the work load could be reduced. In October and November of 1989 supplemental deck officers were stationed in the ports of San Francisco and Valdez and extra third mates were assigned to the Exxon Baytown and Exxon Galveston. In November a draft circular letter concerning maximum work hours was sent to the fleet which the fleet officers were instructed to follow. Recently the fleet officers have documented their work hours for January 1990 and added suggestions for reducing the work load.

Analysis

The data received confirms managements own observations and the feed back which the fleet has provided to management concerning the number of hours worked.

- Complete data was received for 94 positions, incomplete data was received for 6 positions, and no data was received from 2 positions.
- The work rule guidelines were violated 74 out of the 94 positions or 78.7% of the time.
- The data indicates that the work load is heaviest in the deck department when compared to the engine department. The deck department had 123 incidents of 15 work hours or more per day verses 47 for the engine department. The deck department had 32 incidents of 340 work hours or more per month verses 24 for the engine department.
- The data indicates that the work load is heaviest for the senior officers in each department.
- Of the 20 positions which did comply with the guidelines 7 of these or 35% were concentrated on the Exxon Baytown and the Exxon Galveston which have four mates.

This was a first pass effort to analyse the data. Substantial additional time and effort would be required to further analyse the 200 plus pages of data.

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PLEX13-002

Recommendations

In the interest of safety it is management's responsibility to insure that the guidelines are followed. The additional tasks were assigned by management and as such management must prioritize them and decide which ones will be eliminated or reduced. The changes must be consistent throughout the fleet. As a suggestion management should ask: "Would we be willing to pay overtime to an officer to do this task?" The fleet feels strongly that:

- A return to overtime for the master and officers will eliminate the unnecessary and redundant work, it will improve efficiency and it will provide a better mechanism for stewardship.
- The deck department needs to get back to the basics of navigating the vessel without expending so much time on other activities.
- The engine department needs to get back to the basics of keeping all mechanical equipment operating.

The suggested tasks for reduction or elimination are listed below and have not been prioritized.

Adminstration

- Stop or reduce licensed evaluations to a yearly occurence.
- Stop or reduce unlicensed evaluations to only those individuals seeking promotion or to a yearly occurence.
- Stop or simplify the Safety Awards Programs and the required record keeping.
- Stop or reduce on board Stewardship process.
- Stop the detailed on board forecasting, budgeting, tracking, and reviewing.
- Find a better solution to the travel agent duties of the master.
- Send all the reliefs at one time to a vessel rather than one at a time over three or four days.
- Stop or reduce the number of shore requests to the vessels without providing the manpower to carry out the request.
- Eliminate lengthily justifications of requests required of vessels.
- Put all paperwork on the computer including port logs and all requisitions.

Radio/Telex

- Reduce shore staff message requests from the vessels.
- Reduce or eliminate the sending of messages from the vessel to multiple addresses.
- Reduce the message content and duplication.
- Further automate weather reports and Nav. area bulletins.

Computer

- Provide more flexibility in the time permitted in the posting of the overtime.
- Improve the speed of the computer system.
- Train vessel personnel better in the use of the computer system.
- Stick with the computer software for four years before changing.

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S7399099550-5

PLEX13-003

Operational

- Contract out safety gear checking and cleaning quarterly. This includes cleaning and waxing of the zippers of the survival suits.
- Contract out lifeboat quarterly check and survey.
- Contract out all interior and exterior painting and chipping during shipyards.
- Contract out selected Planned Maintenance items.
- Adjust the Planned Maintenance man hour requirements to what is available on the vessel.
- Contract out diesel service to main engines and generators.
- Contract out to have all MSA air bottles filled and Mako compressor tested every six months.
- Improve continuity in all ratings.
- Add extra personnel for tank inspections.
- Add extra personnel for all special projects.
- Add extra personnel for tank cleaning.
- Add an extra third mate to all vessels.
- Add an extra third engineer to all vessels.
- Reduce the number of shipboard meetings. Posted notices should suffice.
- Reduce the number of shipboard/shore staff meetings on board.

Training

- Do not conduct training on board.
- Do not conduct training on board while in port.
- Reduce the safety training to what is required by law under CFR regulations and USCG NAVICs.
- Provide better training to the users of any new equipment prior to having to use the equipment on board. Both the Net 90 and the SIMS/SPAS computer systems are examples where users indicated they were not adequately trained.
- Eliminate First Responder training unless an additional person is added to the vessel to do the training.

Labor Flexibility

- Bargain an unlicensed position to assist with the daily supervision.
- Continuity in unlicensed assignments.

Joe. Boston ?

Mechanical Improvements

- Have a REO float between the vessels keeping the radios, telex, and walkie talkie equipment operational.
- Put the mercury vapor light ballasts in a weather tight enclosure such as the rope locker on the 75's.

Reassignment of Duties

- Reassign the Safety Officer's duties to the engine department.
- Reassign the Steward Department Designee to the engine department as they have to handle repairs to the ovens or freezers.

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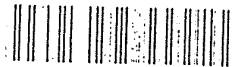

PLEX13-004

NUMBER OF INCIDENTS 15 HOURS OR MORE WORKED PER DAY JANUARY 1990

	M	CM	2M	3M	XM	CE	1AE	2AE	3AE	XAE
Jamestown	X	1	0	0		1	2	1	0	0
New Orleans	1	3	/	0		3	1	0	0	
Baytown	0	2	0	0		1	0	1	1	
Galveston	/	5	0	0	0	3	2	2	/	
Benicia	0	0	0	0		0	0	0	0	
North Slope	7	5	0	0		4	3	0	0	
Long Beach	6	4	0	0		0	2	/	0	
Philadelphia	4	3	1	/		4	0	0	0	
San Francisco	3	5	2	0		3	1	1	0	/
Baton Rouge	/	12	3	0		2	7	0	0	
Wilmington	7	14	2	0	1	X	0	0	0	
Charleston	2	29	0	0	1	2	0	0	0	
Total	30	83	8	0	2	23	18	5	1	0
Average	3.3	6.9	0.7	0	0.6	2.1	1.5	0.4	0.1	0

ACTUAL REPORTED WORK HOURS JANURAY 1990

	M	CM	2M	3M	XM	CE	1AE	2AE	3AE	XAE
Jamestown	XXX	339	347	351		334	341	340	336	327
New Orleans	292	361	///	332		325	346	284	344	
Baytown	290	350	326	328	///	326	310	316	288	
Galveston	///	328	309	290	304	342	337	339		
Benicia	389	345	348	326		384	365	360	347	
North Slope	404	397	325	360		369	372	299	333	
Long Beach	374	389	333	344		331	365	266	285	
Philadelphia	369	388	321	///		374	350	331	315	
San Francisco	345	390	365	344		374	370	355	341	///
Baton Rouge	///	398	355	385		341	375	358	377	
Wilmington	398	449	380	401	384	XXX	350	386	360	
Charleston	357	479	379	359	357	328	310	303	289	
Incidents > 340	7	10	6	7	2	6	9	4	5	0

The work guidelines limit the maximum number of work hours per month to 340.

Compliance	1	0	4	4	1	1	1	3	4	1

= Positions which complied with the 15 hour and 340 hour guidelines.
7 = Incomplete data received.
X = No Data received from the Master Exxon Jamestown or C/E Exxon Wilmington.

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S7399099552-1 S7306755113-2

PLEX13-005

JANUARY LICENSED FLEET WORK HOURS

SUGGESTIONS, COMMENTS, AND CRITICISMS RECEIVED

Adminstrative

- o Stop evaluations for unlicensed.
- o Put all paperwork on the computer - requisitions, port logs, etc.
- o Port logs should be computerized. The Galveston"s are. Why not everyone else?
- o Reliefs arriving throughout the entire port stay increases the paper work administration duties.
- o Remove or find a better solution to the travel agent duties of the master.

Radio/Telex

- o Reduce sending of message to multiple locations.
- o Radio duties are taking on average 1 hour per day with 2 hours required for arrival and departure.
- o Reduce amount of port information sent via telex.

Computer

- o SPAS/SIMS computer system is time consuming and not time saving. It now takes twice the time to enter crew o.t. There were many complaints that the SPAS/SIMS computer system was not working properly, was slow and individuals were not adequately trained.
- o The randomly assign "SIMS" parts numbers increases time to find the parts.
- o When SIMS or the computer system does not work double record keeping is necessary.
- o SIMS is slower than ZILOG for locating parts.
- o Don't change computer systems so frequently. Better training would help.
- o The deadline for the posting of overtime creates peak excessive hours.

Operational

- o In locations when only one shore gang available for docking only call half the crew. This may be a labor issue.

Labor/Personnel

- o Bargain a "Bosun/AB" to assist with daily supervision.
- o Continuity would help reduce work load.
- o Add additional 3 mate to vessels.
- o Add additional 3 AE to vessels.
- o Adjust PM requirements of man-hours to the actual hours permitted by current crew size.
- o Add extra personnel to handle special projects and tank inspections.

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S7306755114-0

S7399099553-9

PLEX13-006

Mechanical

- A REO floating between vessels to keep equipment operational.
- It is unsafe and a waste of time to write up shipyard items when some items seem to be arbitrarily canceled.
- Put Mercury vapor light ballasts in a weather tight enclosure such as the rope locker (on 75's).
- Consider shore side contract labor to do selected PM's.
- Set up a service contract for the diesel vessels.
- Set up a "Exxon" service team for the diesel vessels.
- Supply a good engine room logging system to take care of the log book record keeping duties of the engineers.

Other

- Supplemental deck officers in S.F. and VDZ a great improvement toward reducing deck department workload.
- Re-assign Safety Officer duties to the engineers.
- Higher work hours for the Master and deck officers likely in summer on the west coast due to fog. Suggest another survey in the month of July.
- Do NOT conduct training on board and while in port. It is extremely time consuming.
- The 150 mile restriction has increased weather time on the bridge for the master and deck officers.
- Under current ESC guidelines the officers may not get a chance to go ashore for many weeks. Consideration should be given to shorter sea tours.
- Get back to the basics of the Deck Department navigating and the Engine Department keeping the vessels mechanical systems running and reduce or eliminate other duties.
- Return to Paid OT for the officers which would eliminate redundant work and improve efficiency.
- Eliminate time sheets, steward department designee, computer files and hard copies, cell phones, reduce/review labor intensive safety and training programs.

18081

S7399099554-7
S7306755115-7
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PLEX13-007

TRANSCRIPT OF RADIO TRANSMISSIONS RECORDED BY THE VESSEL TRAFFIC CENTER, VALDEZ ALASKA ON MARCH 23 AND 24, 1989, RELATING TO THE GROUNDING OF THE EXXON VALDEZ

CIVIL NO.: A89-095
PLAINTIFFS' EXHIBIT
NUMBER 90 A

2124.28 - EV ... traffic. EXXON VALDEZ.

VTC EXXON VALDEZ Traffic.

EV Underway from berth 5. Estimating Entrance Island at 2215.

AJ Valdez Traffic. The ARCO JUNEAU.

2124.55 - VTC EXXON VALDEZ. Valdez traffic. Roger that, sir underway. Ah she's clear for the oneway zone. And inbound--the BARTLET's inbound. They've got Entrance Island 2150. Ah you're clear as soon as they're through. Over.

EV Roger that for the BARTLET. Thank you. Out.

VTC Traffic clear.

2125.09 - EV Break. Calling the ferry E. L. BARTLET. EXXON VALDEZ.

AJ ... Calling Valdez Traffic.

2125.32 - EV E. L. BARTLET. EXXON VALDEZ.

EV ... Channel 13.

ELB BARTLET, back to the call on 13.

2125.38 - EV E.L. BARTLET, Ah EXXON VALDEZ. We are just underway from Ah berth 5 here. We'll favor the north side and ah meet you port to port. Ah we'll ah be at Entrance Island at 2215, so you should be through and well clear. Okay?

2125.50 - ELB Real fine. Thanks for the call. BARTLET clear.

EV EXXON VALDEZ standing by.

ELB Valdez traffic. BARTLET

VTC BARTLET Traffic.

2147.43 - ELB BARTLET back. We're clear of the Narrows at Entrance Island. Ah we'll give you a call call when we're all passed.

VTC ... Traffic. Roger out.

ELB BARTLET

ELB Valdez Traffic. BARTLET.

	VTC	BARTLET. Traffic.
2224.44 -	ELB	BARTLET back. We're ah alongside. Checking all the system ... - tonight.
	VTC	Have a good evening. Valdez Traffic out.
	ELB	Roger, out.
	EV	Pilot boat BERING. EXXON VALDEZ.
	BE	EXXON VALDEZ. BERING.
2229.12 -	EV	Yeah, we're at ah ah Middle Rock here. See you in about 50 minutes. Okay?
	BE	Okay, one five minutes. Ah BERING out.
	EV	Five zero, 50.
	BE	Okay, thank you. BERING
	EV	EXXON VALDEZ.
2249.31 -	EV	... - out Traffic. EXXON VALDEZ. Potato Point outbound increasing speed.
2249.36 -	VTC	Traffic. Roger out.
2249.37	EV	.... Report please.
2249.38	VTC	Traffic. Roger out.
2249.40	EV	Yeah, ah Ice report please.
2249.45 -	VTC	There are numerous small pieces of ice ah from Freemantle all the way down to Glacier Island, and they had to deviate over into the North-bound lane ah for about a half an hour. Over.
2249.56 -	EV	Err Roger that. Ah EXXON VALDEZ.
2249.56 -	VTC	Traffic clear.
2324.50 -	EV	Ah, Valdez Traffic. EXXON BA ah VALDEZ.
2324.54 -	EV	EXXON VALDEZ traffic.
2324.58 -	VTC	Valdez Traffic. Go ahead.

2325.01 - EV	Yes. We've ah departed the pilot or disembarked the pilot. Excuse me. And this time hooking up to sea speed and ETA Naked Island 0100. Over.
2325.19 - VTC	Roger that, sir. Request an updated ice report when you get down through there. Over.
2325.24 - EV	Okay. I was just about to tell you that, ah, judging by our radar, I will probably divert from, ah, the TSS and end up in the, ah, inbound lane if there's no conflicting traffic. Over.
2325.42 - VTC	Ah no reported traffic. I've got the CHEVRON CALIFORNIA ah ah one hour out. Then the ARCO ALASKA is ah right behind them, but they're an hour out from Cape Hinchinbrook. Ah out on that. Over.
2325.53 - EV	That'd be fine. Yeah. We we may end up over in the, ah, inbound lane, outbound transit. Ah, we'll notify you when we leave the, ah, TSS and, ah, cross over the separation zone. Over.
2326.07- VTC	Roger that. Be waiting your call. Traffic out.
2326.10 - EV	Okay. EXXON VALDEZ over. Standing by 13 and 16.
2330.45 - EV	Ah, Valdez Traffic. EXXON VALDEZ. W-H-C-B. Over.
2330.50 - VTC	Valdez Traffic. Over.
2330.54 - EV	Yeah At the present time, ah I'm going to alter my course to two, zero, zero and reduce speed to about 12 knots to, ah, wend my way through the ice, and ah, Naked Island ETA might be a little out of whack but, ah, once we're clear of the ice out of Columbia Gla... Bay, we'll give you another shout. Over.
2331.16 - VTC	Roger that, sir. Be awaiting your call. Traffic standing by.
2344.45 - ST	Valdez Traffic. The STALWART.
2344.51 - VTC	STALWART Traffic.
2344.53 - ST	... Yes, was that 0100 for the CHEVRON CALIFORNIA.

2345.03 - VTC They got 00 ah 15.

2345.07 - ST Ah could you repeat that?

2345.08 - VTC They're showing 0015 for Cape Hinchinbrook.

2345.12 - ST Thank you. STALWART.

2345.13 - VTC Traffic clear.

Date: March 24, 1989

0017.21 - CC Calling Valdez Traffic. CHEVRON CALIFORNIA.

0017.35 - VTC CHEVRON CALIFORNIA. Valdez Traffic.

0017.38 - CC CHEVRON CALIFORNIA to Valdez Traffic. Ah abeam Cape Hinchinbrook at 0015, ah estimating Naked Island about 0200.

0017.53 - VTC CHEVRON CALIFORNIA. Valdez Traffic. Err Roger. We have the EXXON VALDEZ outbound estimating Naked Isling, Naked Island 0100, and he should be able to give you a pretty good ice report. Over.

0018.07 - CC Yeah. Okay. Sounds good. Ah we'll talk to him on his way out then. Ah thank you very much.

0018.11 - VTC Traffic out.

0026.41 - EV Yeah, Valdez Traffic. EXXON VALDEZ. Over.

0026.46 - VTC EXXON VALDEZ. Valdez traffic.

0026.55 - EV Yeah. Ah, it's VALDEZ back. Ah, we've--ah, should be on your radar there--we've fetched up, ah, hard aground north of, ah, Goose Island off Bligh Reef. And, ah, evidently, ah, leaking some oil, and, ah, we're gonna be here for a while. And, ah, if you want, ah, so you're notified. Over.

0027.44 - VTC EXXON VALDEZ. Valdez Traffic. Ah roger. Are you just about ah about a mile north of Bligh Reef?

0027.57 - EV Yeah. That's correct. Over.

0028.01 - VTC Roger that.

0028.03 - EV Okay. I'll give you a status report, ah, ascertain the situation. Over.

0028.10 - VTC Standing by.

0031.35 - VTC Tug STALWART. Valdez Traffic.

ST The STALWART back to Valdez Traffic. Go ahead.

VTC Ah we have the ah EXXON VALDEZ aground at ah Bligh Reef. Ah request you proceed ah for possible assist. Over.

ST Roger, Roger. We'll be underway in just a few minutes.

VTC EXXON VALDEZ. Valdez Traffic.

EV EXXON VALDEZ back. Over.

VTC Yes, sir. Could you give me the on-scene weather down there?

0038.47 - EV Ah, it's blowing, ah, northerly a little bit, ah, drizzle, visibility, ah, two miles. Over.

VTC Roger. What was the wind speed?

EV Ah, ten knots right now. Over.

VTC Roger that. Ah slight sea?

EV Yeah, it's kinda indeterminate, ah, right now. It's ... ah, slight sea. Over.

VTC Roger that. Thank you very much. Traffic out.

VTC CHEVRON CALIFORNIA. Valdez traffic.

CC Ah CHEVRON CALIFORNIA back to Valdez traffic. Go ahead.

0041.55 - EV Yes, sir. Good morning. Ah pending ah disposition of the EXXON VALDEZ sir--as soon as ah we get his situation resolved. Ah the Captain of the Port has closed the port to ah all traffic in and out. Over.

CC Okay. Roger, copy that. Ah any idea on ah expected ah reopening of the port there? Over.

VTC Ah not at this time. Ah we'll have to get some further information. Traffic out.

	CC	Okay. Roger. We'll go down to a slow bell then, and ah we'll probably be proceeding over towards Knowles Head then. CHEVRON CALIFORNIA W-C-G-N.
	VTC	CHEVRON CALIFORNIA. Valdez traffic.
	VTC	CHEVRON CALIFORNIA traffic.
0048.00 -	CC	CHEVRON CALIFORNIA. Ah I just wanna confirm ah the port is closed, and ah and we are to proceed to Knowles Head. Is that correct?
	VTC	Roger that.
	CC	Ah roger. We'll be ah--we'll ah ... Knowles Head. We'll, do you wanna get up on the track line there, and we'll ah let you know when we get up there.
	VTC	Roger that. Traffic out.
	ST	Ah Valdez traffic. The STALWART.
	VTC	STALWART traffic. Go ahead.
	ST	Ah we're underway heading toward the VALDEZ now.
	VTC	Traffic. Roger.
	VTC	Pilot boat BERING. Valdez traffic.
	BE	Traffic. BERING.
	BE	Valdez Traffic. BERING.
	VTC	Bravo. BERING. Valdez Traffic. Shift to channel two two, please.
	BE	Roger.
	BE	BERING on 22.
	VTC	Bravo BERING. Valdez traffic. Ah have you been copying ah, ah the EXXON VALDEZ?
	BE	Yea, that's a roger. Ah understanding ah STALWART'S on their way out and the port is closed 'til further notice.

0059.41 - VTC Roger, ah we'd like you ah to get underway ah in the--either the BARONOF or CHIRIKOF or whatever you have, and ah, ah do a ah little reconnaissance of the situation for us, if you could?

BE Ah, yea. Ah any particulars? Yea, we'll head out ah, ah. Okay. I'll go wake everybody up and we'll head out.

VTC So Roger that. Ah do you also have ah enough people on board to possibly send the SILVER BULLET in to pick up some Coast Guard ah personnel?

BE Ah yeah. When? Ah, ah ASAP on that?

VTC Roger that. Ah yeah, if you could get the SILVER BULLET underway and send her into town and ah pick up a couple of Coast Guard people to ah go to the scene, and if you could ah give us a recon report on the ah amount of oil, particularly that ah might be leaking out. Ah over.

BE Yeah. Roger that. Um I'll, I'll get right back to you. Okay? Stand by. Um Are they pretty hard aground? They are leaking oil?

VTC Roger. At first report that seems to be the situation.

BE Okay. Ah stand by. Ah I'll get back to you in a couple of minutes. Okay.

VTC Roger that. Swish, shifting back to 13. Out.

AA Valdez Traffic. Valdez Traffic. ARCO ALASKA KSBK.

VTC ARCO ALASKA Traffic.

0102.03 - AA ... personnel. We'll be departing the lanes in about half an hour. We'll give you a call when we do.

0102.27 - VTC ARCO ALASKA. Valdez traffic, roger. We also have the CHEVRON CALIFORNIA departing the lanes and heading to Knowles Head also. Traffic out.

CC Ah CHEVRON CALIFORNIA to Valdez traffic. Ah we'll be departing the lane here ah in 2 or 3 minutes. Over.

VTC Traffic, roger out.

BE Valdez Traffic. The BERING.

VTC BERING Traffic.

BE Ah 22.

VTC Two Two.

VTC BERING traffic.

BE Traffic BERING.

VTC BERING Traffic. Go ahead.

BE Valdez Traffic. BERING.

VTC BERING Traffic. Go ahead.

0105.58 - BE Yeah, I understand ah you want ah to take some people out to ah to ah, ah--somewhere.

VTC Roger. We have the EXXON VALDEZ hard aground on Bligh Reef and presumably leaking oil. If you have enough people, ah we'd like you to go down there with the pilot boat ah to evaluate the situation, ah see what kind of damage they've sustained. And, if you have enough people, if you could send the SILVER BULLET into town to pick up some Coast Guard people.

0106.54 - BE Yeah, roger, okay. Ah we'll do that and ah I guess you can figure that there'll be somebody in there ah within the hour. Okay?

VTC Roger that. Thanks very much, and we'll be standing by on 13. Traffic out.

BE Out BERING.

0107.29 - COTP EXXON VALDEZ. This is the Captain of the Port on channel 13. Over.

EV EXXON VALDEZ back. Over.

COTP EXXON VALDEZ. This is ah the Captain of the Port, Commander McCall. Good evening. Ah do you have aaa anymore of an estimate as to your situation at this time? Over.

EV Ah, not at the present, ah, Steve. Ah, ... or ah, a little problem here with the third mate, but ah, we are working out way off the reef. We've ah, the vessel's been holed, and, ah we're ascertaining-- right now we're trying to just to get her off the reef and, ah, we'll get back to you as soon as we can. Over.

COTP Roger on that. Ah yeah, I've got you know -- we've got all our our plan mechanisms in way to give you what assistance we can, ah, ah, ah you know take it take it slow and easy, and ah you know ah I'm telling you the obvious, but you know take it slow and easy ah and we're getting help out as fast as we can. Ah and I'd appreciate ah when you get around, if you can give me a fairly good-- if you can give me an update whenever as to ah the general location where you suspect it might be ah and ah and ah of the stability info. Over.

EV Okay. We're, ah, pretty good shape right now stability-wise. We're, ah, just trying to extract her off the, ah, shoal here, and, ah, you can probably see me on your radar and, ah, once we get underway, I'll let you know. Do another, ah, damage control assessment. Over.

COTP Ah roger, Yeah. Ah and let me know--again, ah before you make any drastic attempt to get underway, you make sure you don't you know start start doing any ripping. You got a rising tide. You got about another--about an hour and a half worth of worth of tide in your favor. Ah once you hit that max, ah I wouldn't recommend ah, ah doing much wiggling. Ah over.

EV Okay. Yeah, I think it's, ah, major damage is kinda been done. We kinda rock and rolled over it, and, ah, we're just kinda hung up in the stern here. We're just, ah, we'll drift over it. I'll get back to you. We'll be standing by thirteen sixteen EXXON VALDEZ clear.

COTP Captain of the Port. Out.

BE Valdez Traffic. BERING.

VTC BERING Traffic.

0110.07 - BE Yeah, how many ah personnel are you going to have coming out?

	VTC	Ah two Coast Guard and one ADEC.
	BE	Roger. Okay.
	VTC	Ah BERING Traffic. Ah Coast Guard dock okay?
	BE	Yeah. Roger. That'd be just fine.
	VTC	Traffic out.
	CH	Calling the BERING. This is the CHIRIKOF.
0118.12 -	BE	CHIRIKOF. This is BERING. Go ahead.
		12. Over.
	CH	12.
	AA	Valdez Traffic. ARCO ALASKA K-S-B-K.
	VTC	ARCO ALASKA. Valdez Traffic. Over.
0126.54 -	AA	We will depart the lanes in 10 minutes.
	VTC	Traffic. Roger. Out.
	CH	EXXON VALDEZ. ... CHIRIKOF.
	EV	Yeah, VALDEZ back. Over.
0131.36 -	CH	Yeah. This is CHIRIKOF back. Ah I'm just ah about a mile away ah heading in your direction. Ah do you want to send a man down ah for any kind of a visual?
	EV	Ah, not at this time. Ah, got a pilot aboard us? Over.
	CH	Ah, okay. Ah I'll be there in just a second.
	EV	Ah, okay. Ah, we'll ... there'll be a ladder on the port side. Over.
	CH	Is it my understanding you have a pilot on board?
	EV	Ah, no. Not at this time. Ah, I do have the pilotage for this area, but, ah, no pilot, ah. Southwest Pilot on board. Over.
	CH	Yeah, Roger. I neither have a pilot on board myself. So, ah I'll be there in just a minute.

	EV	Very well, EXXON VALDEZ standing by thirteen and sixteen.
	AA	Valdez Traffic. ARCO ALASKA.
	VTC	ARCO ALASKA traffic.
0139.01 -	AA	We are exiting the lanes. Will give you a call when we get the anchor down.
	VTC	Traffic. Roger, out.
	VTC	SILVER BULLET. Valdez traffic.
	SB	Ah traffic. That is SILVER BULLET.
0151.26 -	VTC	SILVER BULLET Traffic. Could I have an ETA please?
	SB	Ah yeah. It looks like maybe 20 to 30 minutes. We're just coming up on Middle Rock.
	VTC	Roger that. Thank you. Traffic out.
	SB	Bullet out.
0159.03 -	COTP	EXXON VALDEZ. This is Valdez Traffic. Channel 13. Over.
	EV	The EXXON VALDEZ.
	COTP	Ah Valdez. Ah Valdez. EXXON VALDEZ. Valdez Traffic. Yeah. Ah any update captain yet?
	EV	We're ah still surveying ah tanks ah trying to assess the damage. Over.
	COTP	Ah roger. Ah do you have capacity on board to ah internally transfer if you need to? Over.
	EV	Yes, ah we could do that.
	COTP	Okay. That's ah --obviously, you know better than I do, but that's highly recommended if ah once you determine ah which tanks are holed, to drop the head if you can. Over.
	EV	Yes, roger that.
	COTP	And you're still working at trying to get off? Over.

	EV	No. Our engines are stopped right now. Ah we're going to wait ah til ah there's a little more water underneath us.
	COTP	Ah, roger on that. Ah we've got negative further. Standing by. Out.
	EV	VALDEZ clear.
	CC	Valdez Traffic. CHEVRON CALIFORNIA.
	VTC	CHEVRON CALIFORNIA Traffic.
0215.48 -	CC	CHEVRON CALIFORNIA. We're at anchor at Knowles Head at this time. Ah redhead is bearing ah 075. 4.1 miles.
	VTC	CHEVRON CALIFORNIA. Valdez Traffic roger, and you'll be joined by the ARCO ALASKA shortly. Have a good day. Traffic out.
	CC	Roger, ah CHEVRON CALIFORNIA clear and standing by.
0223.12 -	VTC	Pilot boat CHIRIKOF. Valdez traffic.
	CH	Valdez Traffic. CHIRIKOF.
	VTC	Ah Two Two, please.
	CH	Roger.
	VTC	Pilot boat CHIRIKOF. Valdez Traffic.
	CH	Valdez Traffic. CHIRIKOF. Go ahead.
0223.25 -	VTC	Yes, sir, ah could you ah give us initial assessment of ah what's going on down there?
	CH	Well, ah I just made a little survey around the ship here, ah, around the edge of the shoal. Ah, there's quite a bit of oil extending down, ah, more than half a mile, about a half mile or so south of the ship and ah quite a bit of oil out that way. It looks like it's all heading that direction too. Nothing headed ah ah north okay.
	VTC	Roger. Was that ah straight south?
	CH	Ah, just relatively. Ah I don't know exactly ah, ah what the compass heading would be but ah pretty much, yes, ah due south.

VTC Roger that. Ah one other question. Do you happen to ah or could you determine if ah Bligh Reef buoy is ah okay?

CH I'm sorry. Bligh Reef buoy is which?

VTC Is ah Bligh Reef buoy on station and ah watching properly?

CH Ah, yeah, it's lighted. I'm not ah certain that it's on station, but I know it is lighted.

VTC Roger that. Stand by one, please.

VTC Ah CHIRIKOF Traffic ah -- is Busby Island light also watching properly?

CH Affirmative.

VTC Stand by one please.

0228.05 - VTC Ah CHIRIKOF. Valdez Traffic. Ah roger. Thank you very much. Ah we've got a whole bunch of people heading in that direction. Ah and I'm assuming that ah Lieutenant Commander Falkenstein will be ah on the ah SILVER BULLET, and he'll be ah representing the Captain of Port and the on-scene commander. Ah so if you could stand by until ah they get there, see if ah if they need you for anything else. Over.

CH Yes, roger that. Ah we'll be standing by here.

VTC Thanks again. Traffic out.

CH CHIRIKOF.

0241.42 - ? Radio traffic (garbled static).

VTC Vessel calling. This is Valdez Traffic. Over.

0242.28 - AB ... Valdez Traffic. Valdez Traffic. This is the ADMIRALTY BAY KILO ALFA Charlie KILO. Over.

0244.27 - ST EXXON VALDEZ. STALWART. Channel 10.

EV VALDEZ back on 13. Over.

ST You want to go over to channel 10? This is STALWART.

EV Sure thing.

0247.25 -	SB	CHIRIKOF. Calling the CHIRIKOF. SILVER BULLET.
	SB	CHIRIKOF. Calling the CHIRIKOF. This is the SILVER BULLET.
0250.26 -	SB	No contact. All clear.
0250.49 -	ST	SILVER BULLET. This is STALWART. Can I help you?
0251.32 -	CH	EXXON VALDEZ. The CHIRIKOF on 13.
	SB	CHIRIKOF. Calling the CHIRIKOF. SILVER BULLET.
	CH	SILVER BULLET. SILVER BULLET. This is CHIRIKOF.
	SB	... Ah lines are pretty broken up. Ah should we go back into the Hole or head down to Bligh Reef, or what?
	CH	Do you have men on board?
	CH	Yeah, come on out here, Julie.
0259.53 -	SB	CHIRIKOF. SILVER BULLET.
	CH	SILVER BULLET. This is CHIRIKOF.
0300.24 -	SB	.... Ah approaching down here. Are you still down here by the tanker or are we going to board these guys onto the CHIRIKOF, or what?
	CH	Ah, what what time are you going to be here? What's your ETA?
0311.22 -	SB	Ummm, CHIRIKOF, I don't know how you're reading me. You're broken and unreadable so ah, yeah, ah BULLET clear.
	CH	CHIRIKOF.
	VTC	EXXON VALDEZ. This is Valdez Traffic. Over.
	EV	The EXXON VALDEZ.
0319.20 -	COTP	EXXON VALDEZ, roger. This is the Captain of the Port. Ah have you had a chance to ah, ah detect whether or not any any noticeable amount of oil has dropped out of any tanks, and, if so, which tanks are they? Over.

EV Yes, ah let me talk to the chief mate. Ah he can give me exact ah amounts.

COTP Roger.

EV Valdez Traffic. EXXON VALDEZ.

COTP EXXON VALDEZ. This is Valdez traffic. Over.

0321.47 - EV Yes. Ah the initial figure is ah 138,000 and these-- ah the chief mate's taking ah another check on it right now.

COTP Ah, which tank is that or tanks? Over.

EV Right now ah umm our starboard slop tank, 2 starboard wing tank, and possibly 5 center.

COTP Roger. And you said starboard? Over.

EV Roger.

COTP Ah roger on that. Ah and that was barrels correct?

EV It's correct.

COTP Roger. Thank you much.

EV Valdez out.

VTC EXXON VALDEZ. Valdez Traffic.

EV EXXON VALDEZ.

0323.06 - VTC Yes, just to inform you if you need -- ah if you need him, we have your agent ah here at traffic center. Over.

EV Okay, thank you.

VTC Traffic out. Base clear.

AA Valdez Traffic. ARCO ALASKA.

VTC ARCO ALASKA Traffic.

0325.14 - AA Yes. Ah we anchored ah 0315 at Redhead's BEARING 060, 2.75 miles.

VTC Ah this is BERING. 060. Can you say again distance?

	AA	2.75.
		That's 2 decimal 7? Over.
	AA	Decimal 75.
	VTC	ARCO ALASKA. Valdez traffic ah roger. Thank you very much. Ah you'll be joined also by the ADMIRALTY BAY a little bit later. Have a good day. Traffic out.
	CH	Ah EXXON VALDEZ. CHIRIKOF.
	EV	EXXON VALDEZ.
0327.10 -	CH	Is there a possibility of getting a ladder over on ah the starboard side?
	EV	We have ah a ladder rigged on the ah port side.
	CH	Yeah, roger. Copy that. Fine. Ah I'm trying to stay out of the oil. That's where most of the oil is. Over on the port side.
	EV	Okay. Ah we could rerig it for you on the starboard side if that's better.
	CH	Ah that's what I'd like to do is kinda stay out of the oil as much as possible. Ah, let me go over and take a little look, port side.
	EV	Okay.
	EV	CHIRIKOF. EXXON VALDEZ.
	CH	VALDEZ. CHIRIKOF.
0329.25 -	EV	We're shifting that ah pilot ladder over to the starboard side now.
	CH	Roger. Okay. Thank you.
0346.19 -	VTC	ADMIRALTY BAY. Valdez Traffic one three.
0407.21 -	BE	CHIRIKOF. BERING.
	CH	BERING. CHIRIKOF.
	BE	Channel nine.
	VTC	EXXON VALDEZ. Valdez Traffic.
	EV	EXXON VALDEZ.

0408.0 -	VTC	EXXON VALDEZ. Valdez Traffic. Ah request to know ah how much lightering hose you have on board over.
	EV	Stand by one.
	EV	Valdez Traffic. EXXON VALDEZ.
	VTC	Traffic. Go ahead.
0409.36 -	EV	Yeah, we have 2 50-foot, ah 6-inch hoses. Over.
	VTC	Thank you very much. Traffic out.
	EV	VALDEZ out.
	VTC	ADMIRALTY BAY. VALDEZ TRAFFIC.
	AB	ADMIRALTY BAY.
0449.37 -	VTC	Yes sir. We have the ARCO ALASKA 060, 2.75 to Redhead. The CHEVRON CALIFORNIA 075, 4.1 miles. Over.
	AB	Ah roger that Traffic.
	VTC	Roger that. We'll be waiting your call when anchored with bearing and range. Traffic out.
	AB	ADMIRALTY BAY. KILO ALFA CHARLIE KILO standing by on 13, 16, 22. Out.
	VTC	CHEVRON CALIFORNIA. Valdez Traffic.
	CC	CHEVRON CALIFORNIA. Go ahead.
	VTC	Channel two two please.
	CC	Roger two two.
	VTC	CHEVRON CALIFORNIA. Valdez Traffic.
	CC	CHEVRON CALIFORNIA. Go ahead.
0458.00 -	VTC	Yes sir. Ah we'd like to know if you have any lightering hose on board ah and, ah if so, how much and what size?
	CC	Stand by please.
	CC	Ah CHEVRON CALIFORNIA to Valdez Traffic.
	VTC	Traffic. Go ahead.

CC Ah, the chief mate just went down ah check his records ah there ah. We've got we've got ah I think about ah a couple of 4-inch and a couple of 6-inch hoses, and I'll ah confirm the length to you as soon as he comes back up.

VTC Ah roger. Standing by.

VTC ARCO ALASKA. Valdez Traffic.

AA ALASKA K-S-B-K.

0459.44 - VTC Ah channel two two please.

AA ARCO ALASKA back on two two.

VTC ARCO ALASKA. Valdez Traffic. Ah request to know if you have any lightering hose on board and, if so, how much and what size. Over.

AA ARCO ALASKA back. Ah we got ah 2 ah twenty-five foot length of 6-inch hose.

VTC That was 2 twenty-five foot lengths of 6-inch. Is that correct?

AA Correct.

VTC Ah roger. And do also ah have reducers for those?

AA Ah roger. We should have reducer for that ah ...

VTC Ah roger that. Ah you may be contacted later on ah -- by Exxon to ah to see ah about borrowing them for this transfer operation that they have planned. Over.

AA Roger that.

VTC Thank you very much. Traffic out.

CC CHEVRON CALIFORNIA to Traffic.

VTC CHEVRON CALIFORNIA. Go ahead.

0501.16 - CC Yeah, those ah hoses we have are 2 four-inch twenty-five footers and 2 six-inch twenty-five footers.

	VTC	Roger that. Thank you very much. Ah as I told the ARCO ALASKA, you may be contacted by Exxon later on to see about ah borrowing them. Over.
	CC	Roger. We'll be standing by.
	VTC	Thank you very much. Traffic out.
	VTC	ADMIRALTY BAY. Valdez Traffic.
	AB	This is ADMIRALTY BAY.
0502.01 -	VTC	Ah channel two two please.
	AB	Two two.
	VTC	ADMIRALTY BAY. Valdez Traffic.
	AB	This is ADMIRALTY BAY Traffic. Go ahead.
	VTC	Yes sir. Did you copy ah what I just passed to the ARCO and the CHEVRON?
	AB	Yes I did traffic, and we have about the same on board. We have 2 twenty-five foot sections of six-inch hose and we also have any -- most any type reducers that you would need.
	VTC	Ah roger that. Thanks very much. And ah we'll if necessary, you'll probably be contacted by Exxon to ah use them later on today. Traffic out.
	AB	Okay thank you. ADMIRALTY BAY out.
	?	Valdez (broken transmission) HELENKA B BYE 6137 channel 22 do you receive?
0511.06 -	CG Radio	HELENKA B. This is Coast Guard Valdez radio. Stand by one.
	HB	Coast Guard. This is HELENKA B (broken transmission) on channel 22. Do you copy?
	CG Radio	HELENKA B. Valdez radio. Over.
	CG Radio	Valdez Coast Guard. HELENKA B on 22 (broken transmission).
	HB	Ah this is ah HELENKA shifting back to channel 16.

0513.27 - AB HELENKA B. The traffic's trying to call you on channel 22.

HB Ah HELENKA B. Roger. Thank you. I can't copy them.

AB HELENKA B the traffic is trying to call you on channel 22.

HB Ah HELENKA B. Roger. Thank you. I can't copy them.

0513.55 - VTC HELENKA B. Valdez Traffic. Channel one three.

VTC HELENKA B. Valdez Traffic. Channel two two.

HB Ah Coast Guard. Valdez. HELENKA B. Ah I have you ah fine now. Ah are you receiving me? Over.

VTC Loud and clear. Go ahead.

HB Yeah, roger. Ah I'm wondering ah we're just ah passing Knowles Head enroute to ah Two Moon Bay and ah did you have a ship aground in the vicinity? Over.

VTC Ah, we have a ship aground at Bligh Reef. Over.

HB Yeah, roger. Is there any danger of ah any oil spill? Over.

VTC Roger, that.

HB Okay, I got ah I recovered some 2,700 logs. They're not ah ah I was going to tow them to ah Two Moon but if there's oil in the water, I'm not going to ah contaminate them and if that's going to pose a problem for our company, ah, could you tell me when this happened? Over.

VTC Approximately 0030.

HB Yeah, okay. I'm sorry to hear that sir. Ah It's -- ah real sorry to hear that, but ah I guess we'll stay in touch with you when the coast is clear for ah towing those logs in so we don't want to contaminate them. Over.

VTC Roger that. Ah are you running light right now?

HB Yeah, roger. Just few pieces of heavy equipment on deck from ah Cordova to ah Two Moon Bay. Ah no tow. Over.

VTC Ah roger that. Ah we may be contacting you later on ah to possibly transfer some ah lightering hoses from the vessels at Knowles Head ah to ah Bligh Reef so that ship can be unloaded. Over.

HB HELENKA B. Roger. We'll be ah Two Moon Bay unloading this stuff. Ah we should be unloaded by ah 0830 and ah free at that time to assist, and ah we'll just be standing by ah channel 16 and 13. Over.

VTC Roger, that. Thank you very much. Traffic out.

HB Yeah, okay. Yeah. Fine. Thank you ah. HELENKA B.

0517.37 - CG Radio ... This is 323. Valdez radio. Eighty One. Over.

Fox .... This Trooper Fox. Are you on there?

CG Radio Trooper Fox. Valdez Traffic. Go.

Fox Yes. Ah I was briefly talking with Bob ... there about the use of dispersants. I just wanted to make sure that before anybody does anything like that, ah to contact James Brady. I'll say again -- James Brady. B-R-A-D-Y. In Cordova. He's the Fish and Game ... biologist and ah he'd be the person who could advise on ah security status. Okay?

VTC Trooper Fox, Valdez Traffic. Yeah, Mike, thanks thanks a lot on that. Yeah, we'll we'll take of that.

Fox That's all. Thanks.

Roger out.

JF Valdez Traffic. The tug JEFFREY FOSS.

0524.08 - VTC Vessel calling us. Valdez Traffic. Stand by one please.

VTC Vessel calling us. This is Valdez Traffic. Over.

0525.51 - JF This is Valdez Traffic. This is the tug JEFFREY FOSS. Our present position is 60 degrees, 24 minutes north, 147 degrees, 07 minutes west, off of Montague Point. We have the ah FOSS 255 loaded oil barge in tow, my SOA is 10 knots, my length overall is 1,400 feet, and my draft is 14 feet. We have dangerous cargo on board. Our destination is Cordova. Our last port of call is Kodiak. We have no impairments. We have alternate communications, and we have a manual on board.

VTC JEFFREY FOSS. Valdez Traffic. Roger. What's your next port of call call after Cordova? Over.

JF Guess we will be ah headed to Seattle.

VTC JEFFREY FOSS. Valdez Traffic. Roger. Do you have ETA for the traffic lane?

JF Yes Traffic. We'll be at the lanes at 0-5-50. I'll be crossing the lanes at 0-6-05 and at Johnstone Point at 0-6-55.

VTC JEFFREY FOSS. Valdez Traffic. Roger. Thank you very much and we have no opposing traffic, and ah we'll be waiting your call 10 minutes prior crossing lanes. Traffic out.

JF This is JEFFREY FOSS standing by.

VTC EXXON VALDEZ. This is Valdez Traffic.

EV This is EXXON VALDEZ. Go ahead.

0541.34 - VTC Yes sir, I was wondering if we might get an updated weather report from you. Over.

EV Give me about 5 minutes and I'll give it to you.

VTC Traffic out.

EV Valdez Traffic. EXXON VALDEZ.

VTC This is Traffic. Go ahead.

0543.32 - EV Yes, ah weather report here. Barometric pressure is 29.6, 34 degrees, it's ah partly cloudy out here, and the wind is from the northeast at about 5 knots.

VTC Roger. Ah how's your visibility?

	EV	It looks like ah 12 miles plus. Pretty clear out here.
	VTC	Thank you very much. Traffic out.
	EV	Would you like a ah weather report at 2 hourly intervals or something like that?
	VTC	I think ah every 4 would be sufficient. Over.
	EV	Okay, fine. Every 4 we'll plan on. If you want any other information, let us know. We'll give it to you right away.
	VTC	Roger that. Thank you very much. Traffic out.
	EV	EXXON VALDEZ clear.
0547.01 -	323	Traffic 3-2-3, 13. Over.
	JF	Valdez Traffic. The JEFFREY FOSS.
	VTC	JEFFREY FOSS. Valdez Traffic.
0550.58 -	JF	Thought we would request permission to cross the lanes at this time?
	VTC	Roger that. We have the ah tanker EXXON BATON ROUGE inbound. He will be at Hinchinbrook at 7:30. Traffic out.
	JF	Roger. Thank you. Standing by.
	VTC	3-2-3. Valdez Traffic.
	323	Traffic. 3-2-3.
0551.56 -	VTC	Do you have any marine operator channels?
	323	Stand by. What channel do you want?
	VTC	Ah do you have two eight [2-8]?
	323	Stand by.
	VTC	Traffic 3-2-3. Roger. We have 2-8.
	323	Roger that, ah, going to eight one.
	VTC	3-2-3 traffic.
	323	Traffic. 3-2-3. Over.

VTC Roger. Ah tell ah Trooper Fox that ah to stand by to ah for a call ah from Glenallen office. Over.

323 Traffic 3-2-3 ah which channel is that going to be coming over on?

VTC They'll be calling on 16, shifting to 2-8.

0722.51 - VTC EXXON BATON ROUGE. Valdez Traffic.

EBR Valdez Traffic. EXXON BATON ROUGE.

0723.47 - VTC Ah yes sir. We would like you to proceed ah to Naked Island, ah at which time ah you'll be taking orders from the from the on-scene commander ah ah at the site of ah Bligh Reef. Over.

EBR Okay, roger that. If you could pass information along to them, ah I don't know how much water alongside the ship, but if there is a lot of water ah, let's say within the hose reach of the vessel, I have stern anchor and bow anchors, and I can use my anchor as and moor myself to the VALDEZ and stand off the vessel pretty far.

VTC Roger that. Ah so far we've lined up approximately 200-or 400 feet of hose. Ah I don't know how many lines they want to run. Ah but ah I think you can work that out shortly. Ah you should be in radio range ah as soon as you get around the corner. Over.

EBR Okay, roger. At this time I'll report that I'm, of course, inbound at Cape Hinchinbrook. Our ETA at Naked Island will be eight minutes after nine. ETA at Bligh Reef 26 minutes after 10.

VTC EXXON BATON ROUGE. Valdez Traffic. Roger. Thank you very much. Traffic out.

EBR EXXON BATON ROUGE. Standing by 13 and 22.

0725.27 - VTC EXXON VALDEZ. Ah Valdez Traffic. Did you copy?

VTC EXXON VALDEZ. Valdez Traffic.

EV EXXON VALDEZ. Go ahead.

VTC Ah yes sir. BATON ROUGE estimating Naked Island Naked Island at 0908 and Bligh Reef at 1026. Ah he'll be waiting further instructions. Ah you should be able to contact him by radio probably in about a half hour. Traffic out.

EV EXXON VALDEZ. Thank you. Out.

0735.21 - SW Pilots W-A-B-9-8-2 Southwest Pilots. BEARING. W-Y-Z-4-9-1-4.

0744.29 - SW Pilots W-A-B-9-8-2 Southwest Pilots. BERING. W-Y-Z-4-9-4. Calling WAB982.

VTC EXXON VALDEZ. Valdez Traffic.

EV Valdez Traffic. EXXON VALDEZ. Go ahead.

0746.02 - VTC Yes sir. I have your agent on the phone again. Ah they have ah an EXXON-chartered helicopter en route VALDEZ ah to ferry supplies back and forth. Ah is there anything you need at this time? Or do you need any additional hose?

EV Ah what we need is some additional reducer. Over.

VTC What size?

EV Hello. Ah yeah. This is the EXXON VALDEZ. We need to have the ability to go from 16 inches down to 6 inches once, and the ability to go from 16 inches down to 8 inches once. This is in addition to everything else that was ordered. Over.

EBR EXXON VALDEZ. This is the EXXON BATON ROUGE.

VTC Stand by please.

EV (interrupted) ROUGE. EXXON VALDEZ.

0747.11 - EBR Yes, ah we may have some reducers if you need them. We got a stack on board here.

EV Yeah, okay. What we need to do is ah we got 16-inch headers. We've ordered enough right now to maybe take care of 2 hoses. If possible, we wanna to try to give you 4. If that is the case, we need to have the ability to go from 16 to 6 once and from 16 to 8 once.

EBR Okay, I understand that. Listen, is there anyway we can ah set up a little bit of ah time where you can sit down and talk about this so we know draft alongside and stuff like that?

EV Ah okay, roger that. Ah you know we'll work that out when you get closer.

EBR Okay. Yeah. All considering, if if you guys don't have any water alongside I have a stern anchor and we could drop both anchor with the tug pushing us in, to where we'll have more than enough water to take a full load. And maybe I'll put lines over to you, so, I mean that's a consideration. Right now, we can't take that much.

EV Okay, I copy that. Ah what do you think you could take right now?

EBR I would say ah we could probably take 400,000.

EV Okay, I copy that. About 400,000 and ah what kind of draft would that bring you to?

EBR That would be our summer load line at that point, 40...let's say 41, foot.

EV Okay, thank you.

EBR Ah one other consideration, we do have dirty ballast of 148,000, and it would take us ah --we could drop ah--you know decant that out and come in with ah less dirty ballast, and that way we could take more. That's also a consideration.

EV Okay. Well, someone, someone else will have to make that decision. Ah okay. We're--I seriously doubt if we're going to be able to load you to 41. Ah, ah we'll take another look at it here when you get closer.

EBR Roger. Like I say, I can get with that hose string, depending on how you want to do it, um I can be off your ship up to the length of that hose and still have stability where it won't worry about parting it.

EV Okay. All right, I understand. I see what you're saying. Ah we'll we'll ah have to take a look at here when you get closer cause ah ah I think we have fenders on the way right now also.

EBR Yeah, okay. Roger. Um Yeah, if you have the draft alongside we can do it, but I understood you only have 35 feet so, ah like I say, when you guys can get us down there on the side of the ship we're going along, then we can talk about this.

EV Roger that.

EBR This is EXXON BATON ROUGE standing by 13/16.

BE EXXON BATON ROUGE. Pilot boat BERING.

EBR Ah pilot boat BERING. The EXXON BATON ROUGE.

0749.52 - BE Ah channel 10 please, Captain.

EBR Channel 10.

VTC EXXON BATON ROUGE. Valdez Traffic.

EBR EXXON BATON ROUGE back.

0750.35 - VTC Yes sir. Ah if you could please check to see if you have those 2 reducers. Ah if not, get back to us and we'll try to line them up elsewhere. Over.

EBR Okay, roger that. Ah we'll get back to you as soon as possible. EXXON BATON ROUGE standing by 13/16.

VTC Traffic out.

VTC EXXON VALDEZ. Valdez Traffic.

EV Ah EXXON VALDEZ go ahead.

0751.29 - VTC Ah yes sir. Ah was there anything else you required from ah shoreside ah on that helicopter. Over.

EV Stand by.

VTC Standing by.

EBR EXXON VALDEZ. EXXON BATON ROUGE.

EV Ah go ahead EXXON BATON ROUGE.

0751.56 - EBR I have another length of hose if you want that helicopter to pick it up and bring it over there.

EV Ah it will probably be easier just to transfer it when you get here. Over.

EBR Okay, ah we have a problem. It's on our poop deck, and it weighs a lot. So we'll have to manhandle it into position. Maybe that helicopter could assist us with that.

EV Okay, well ah I'm sure she'll be flying around out here and we'll see how things work. Ah what is it--a six inch? Ah over.

EBR I believe ah that one person says 8 and the other says 6. I have a feeling it might be the ah 8-inch.

EV Okay. Very good. All right I'll check when you get here.

VTC EXXON VALDEZ, Valdez Traffic.

EV Traffic. VALDEZ back.

0803.41 - VTC Yes, is ah Commander Falkenstein aboard?

EV Stand by one please.

EV Valdez Traffic. EXXON VALDEZ. Go ahead. Over.

0804.28 - VTC EXXON VALDEZ. Valdez Traffic. Ah roger. Be advised when the EXXON BATON ROUGE ah clears Naked Island, ah he'll be instructed to take ah further instructions from the on-scene commander. And the Captain of the Port would like you to call him on MARSAT. Over.

EV Roger. EXXON VALDEZ standing by on 13.

VTC Traffic out.

0804.56 -	SW Pilots	W-A-B-9-8-2 Southwest Pilots. The BERING. W-Y-Z-4-9-1-4. Calling W-A-B-9-8-2.
	?	This is W-A-B-9-8-2.
	SW Pilots	Nine, Bob.
	?	Nine.
	VTC	EXXON VALDEZ. Valdez Traffic.
	EV	The EXXON VALDEZ. Over.
0811.06 -	VTC	Yes sir. Ah could we get the current weather again? We have some aircraft ah en route to we would pass along to them. Over.
	EV	Would you stand by one, please.
	EV	Valdez Traffic, EXXON VALDEZ.
	VTC	Go ahead.
0812.20 -	EV	It's ah --we have north winds at ah 10 knots. Ah sea waves at ah 1 to 2 feet. Ah temperature is 38 degrees. Over.
	VTC	Roger. Your visibility, skycover, and ah ceiling? ....
	EV	Overcast. Ah ten to 12 miles visibility. Estimate the ah ceiling at ah 2,000 feet. Over.
	VTC	EXXON VALDEZ. VALDEZ Traffic. Ah roger. Thank you very much. Traffic out.
	EV	VALDEZ clear.
	EBR	VALDEZ Traffic. EXXON BATON ROUGE.
	VTC	EXXON BATON ROUGE. VALDEZ Traffic.
0815.31 -	EBR	Could we have a position for the VALDEZ? Latitude and longitude and/or bearing off of the something?
	VTC	Roger. I have him ah 203 degrees true. 13 decimal 2 miles from Potato Point radar. Lat. Long 60 - 51 decimal 4, 1-4-6-5-2 decimal 3. Over.
	EBR	Roger. Copy that. Thank you very much.

VTC Traffic out.

CC VALDEZ Traffic. CHEVRON CALIFORNIA, W-C-G-N.

VTC CHEVRON CALIFORNIA Traffic.

0816.42 - CC Yes sir. Um Can you tell me the name of that little ah freighter or whatever it is that's coming after our ship to pick up the hoses for the EXXON VALDEZ?

VTC That is the HELENKA B. H-E-L-E-N-C-A B. Bravo.

(Note: The correct spelling of the vessel's name is HELENKA B)

CC That's HELENKA B. Thank you very much. Ah CHEVRON CALIFORNIA calling the HELENKA B on channel 13.

HB Ah this is HELENKA B to CHEVRON CALIFORNIA. Go ahead.

CC Ah yes sir. Let's go to 10. Okay?

HB Roger. Shifting channel 10.

0819.42 - CH Calling the BERING. The BERING. The CHIRIKOF.

BE BERING. Go ahead.

CH 12.

BE 2.

CC CHEVRON CALIFORNIA. W-C-G-N to the ah HELENKA B on 13.

HB HELENKA B. Go ahead.

0820.24 - CC HELENKA B, how about 10 again?

HB Roger. 10.

AB ADMIRALTY BAY the HELENKA B. Channel 13.

HB ADMIRALTY BAY.

0822.47 - AB Roger. Channel 10, please.

HR Channel 10.

0831.35 - EBR EXXON VALDEZ. This is the EXXON BATON ROUGE.

	EV	EXXON BATON ROUGE. EXXON VALDEZ.
	EBR	The EXXON BATON ROUGE.
0835.15 -	EV	The EXXON VALDEZ. Ah wanna go channel 9?
	EBR	Channel 9.
0839.12 -	HB	ADMIRALTY BAY the HELENKA B. I'll be up to your ah port quarter in five minutes.
	BA	CHIRIKOF. BARANOF.
	CH	Ah CHIRIKOF back.
0841.55 -	BA	12th.
0842.31 -	EV	CHIRIKOF. EXXON VALDEZ. Over.
	EV	CHIRIKOF. CHIRIKOF. EXXON VALDEZ calling.
	CH	The VALDEZ. CHIRIKOF.
0842.52 -	EV	Please stand by.
	CH	Roger.
	EV	CHIRIKOF. EXXON VALDEZ. Ah over.
	CH	Sure Go ahead.
0844.18 -	EV	Yeah, captain. Can you ah take a few passes back and forth and try to pin point the exact location of that lump and ah how far out it extends for me? Over.
	CH	Okay. Right now I'm reading 36 feet and my transducer is on my stern. Ah it looks like it's just just right opposite your ah plimsol marks.
	EV	How far out does it extend? Over.
	CH	Well, I'm probably ah 100 feet or so from from ah from your ship.
	EV	Does it extend beyond you or does it drop off pretty quick?
	CH	Stand by one here.
0845.23 -	CH	Can you seen me?

EV Yes we can. Over.

CH Okay. I'm reading 35, 36 and now to 37, 38.

EV Roger. Thank you very much, captain. There aren't any other lumps fore or aft of us are there?

CH Ah aft. I'll have to go back there and double check, but ah there's ah like 50 feet, I think, behind you. Ah maybe in the 40's. I'm down to 43 feet now.

EV Okay. Thank you very much, captain. If you could just take a pass and make sure that there's nothing else if that's the one we've got to worry about I'd appreciate it. Over.

CH Okay. Ah what ah depths do you want to know about?

EV Anything higher than 36 feet or in that range and ah where approximately there at we're looking at when bringing ah the EXXON BATON ROUGE alongside I want to know ah if the 36 foot lump here is the controlling factor. Over.

CH Okay. I've been ah maneuvering back and forth of you all morning, and that's all I've found. Ah, however, I guess you don't want me to go any further than I am out right now, huh?

EV It looks like it'll be plenty fine, captain.

CH Okay. I'll make a couple of passes here and then go around your stern and check that.

EV Thank you. Over.

EBR EXXON VALDEZ. EXXON BATON ROUGE.

EV This is the EXXON VALDEZ back to the EXXON BATON ROUGE.

0848.05 - EBR Yes. You can pass along at a 30 foot draft and considering dirty ballast and clean ballast that would be retained. We'll carry 270,000 barrels of cargo.

EV Okay. Thank you very much.