

SCOMM

78:17

Sam-

I think his statement
is a bit apples & oranges.

The amount going in
might be sufficient

that removal of 98-99 %
might still be insufficient.

The point is that:

- 1) "bugs" were clearly
documented to not be

The best available
technology which Alyeska
had promised as part of
its permit

- 2) effluent monitoring studies are
inconclusive according to
Alyeska, so how do they
know their facility is 99%
efficient?
- giving

Sam- you should ask
Aljesta if the 98-99%
efficiency is based on
actual studies measuring
what goes in & what
comes out or if it's based
on a model of how the
system is supposed to
work. jmk

in addition; without a
mass balance study
that statement cannot
be relied upon. direct
that question to
darr
lawn or riki ott

would some of
this debate be
resolved if
DEC was in charge
of monitoring?

question:

Harold Gerew just said
ballast transferred from
tankers is illegal but

industry has stated that
they are routine:

sanctioned under the

NPDES permit. would be
a good point to clarify.

That's what

SOATRAC does
for Sullivan Jor

(monitoring) -

maybe ~~TRAC~~ TRAC

or the Citizen's
Oversite Council

s/b in charge.

3). isn't it cumbersome to
have to judge each
Case? will they
try to replace the
current process w/
a more routine
practice?

i think a main point
that needs to be
brought out is that
if the Ballast water
treatment can handle
the transfers, washings, &
sludge, it doesn't matter
if they save money

not disposing in
portland or wherever.
if the facility is
inadequate or not
sufficiently monitored,
then it is a problem.

What are the criteria for judging individual transfers?

1) Is the bwt facility operating at maximum or overcapacity level that would require restrictions in handling transfers?

2) Can it handle other non-crude substances?

are nonpetroleum based products in ballast able to be transferred?

BUT
Can it handle it?

Pretty process
allow case by case.

Mike Williams thinks
they charter to BP
(A. Hess)

What's Am Hess

doing here? I

~~Had~~ thought Alyeska
testified, this morning,

A, B, X,

Chem., Shell,

Tesoro ??

Q? 58-59%

compare TO 3 of 10

an efficiency

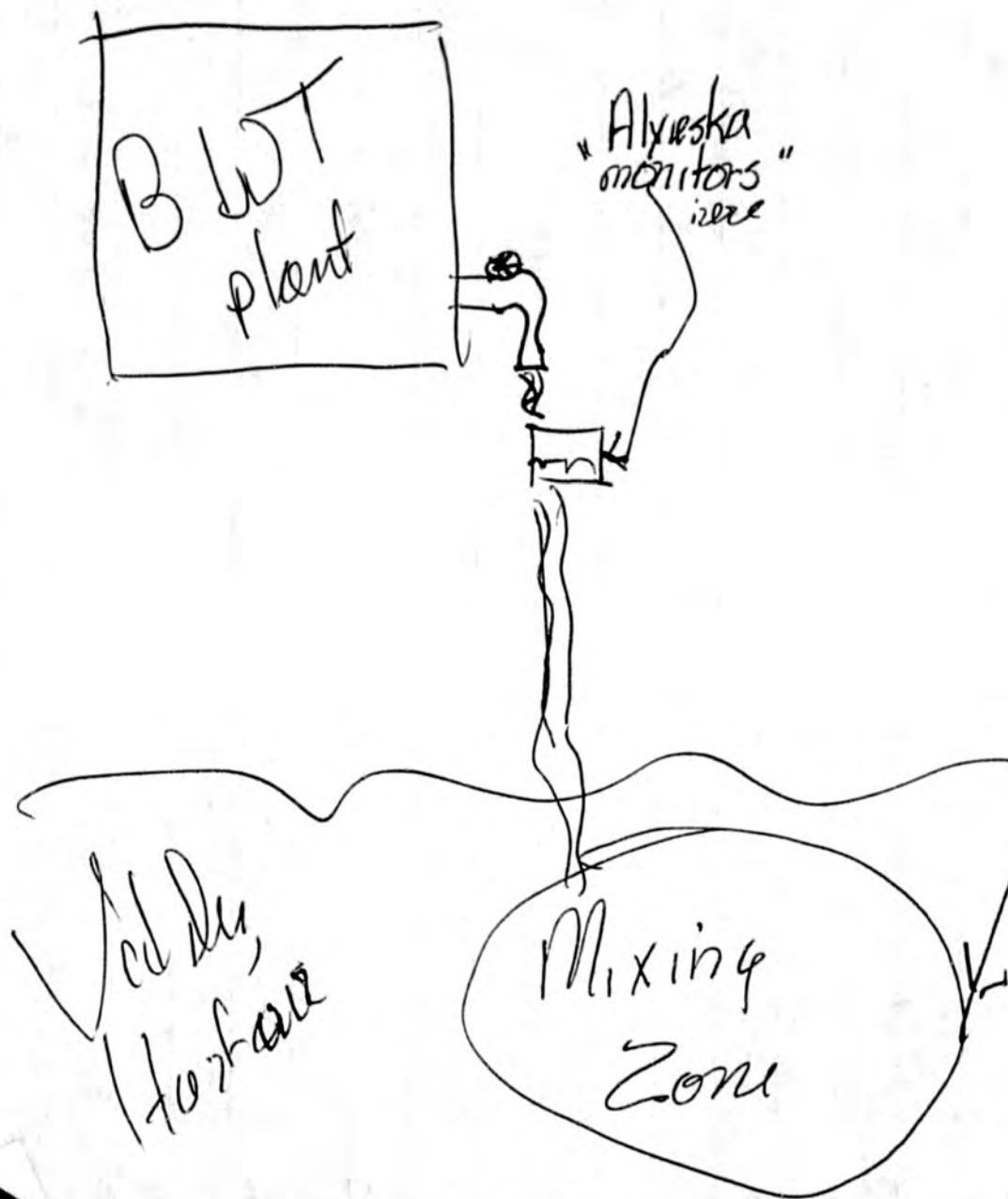
TAPS TRADE

Don Laur - DEE - Brian Briers
Invest. But flat
New Permit
83-84 - per pass or
the most later
stuff come out ~

Ricci OTT - CDEV

Lamerault - VIOLATED

↓
Mike Wilkins · JP Error / Olepka



Riki says no
monitoring
here
to actually-measure
pollution. Alaska's
monitoring was
~~called "inadequate"~~
~~by DEC~~
reanalyzed by DEC,
found errors.
Alaska ^{now} says:
its own
test was
"inconclusive"

- Riki says the system has not been "monitored".
- Dickason describes "monitoring" (Spikes, etc.)
- Ask Riki what she means by her statement (e.g., "monitors" daily emissions, but not chronic pollution, or how Veldy looks outside the system.)

(Allyssa "monitors" what comes out the spigot of the terminal - not what is in the harbour)



Oil Reform Alliance



February 19, 1992

TO: ALASKA STATE LEGISLATORS
FROM: DR. RIKI OTT *Riki Ott*
RE: ALYESKA & OIL TANKER WASTE DISPOSAL PRACTICES

Summary of Findings

Last year the Legislature held hearings and DEC and EPA conducted investigations following claims that TAPS tankers were transporting toxic, hazardous and, possibly, unknown wastes from west coast oil industry operations to Valdez for disposal into Alyeska's ballast water treatment plant (BWT). Attention focused on whether Alyeska could legally accept and the BWT could physically "treat", i.e., separate and remove from the plant's effluent, compounds associated with ballast water transferred from other vessels, the contents of tankers' slop tanks and engine room wastes, cleaning agents, and, specifically, toxic wastes from California.

* First, EPA and DEC confirmed that Alyeska was receiving transferred ballast water, cleaning agents, "slops" and engine room wastes from tankers, despite a Compliance Order (No. 1085-07-35-309A) issued to Alyeska in 1985 under the Clean Water Act to control or abate discharge of unknown quantities of toxic and hazardous substances to the BWT in the future. During Legislative hearings, owner companies testified that it was "common practice" for Alyeska to receive these wastes, yet owner companies had adamantly denied disposing of these same wastes during the 1985-1988 investigations.

* Second, EPA and DEC found that "wastes generated in engine rooms and other machinery spaces may present a significant risk to the BWT", and that "(c)ompounds contained in some of the cleaners...are toxic and may not be removed by the treatment process" (EPA 1992, Oil Tanker Waste Disposal Practices, pg. 2 and 22, respectively). DEC found that the BWT "is not adequate for all types of wastes", in specific reference to engine room wastes (DEC/SCRO 1991, Ballast Water Handling by TAPS Trade Tankers and the Alyeska Ballast Water Treatment Facility).

* Third, EPA and DEC found that some of these practices were "implicitly allowed by the BMP (Best Management Practices) Plan description of 'Tanker Ballast'" (EPA pg. 2). But because EPA had authorized the change in definition of ballast water two years previously, EPA "could find no violations of the NPDES permit issued to Alyeska" (EPA pg. 2).

* Fourth, while EPA could find no evidence that toxic or hazardous materials generated in California were being transported to Alaska, DEC found that tankers are discharging dirty ballast "intermittently along the entire west coast between Panama and Alaska...(with) the oily water monitoring equipment required by MARPOL (international law)...inoperative" DEC/Lawn 1991, Analysis of TAPS Trade Tank Vessel Ballast Discharge Records and Practices at the Valdez Marine Terminal, pg. 4).

Discussion of Findings

At first glance, it seems counter-intuitive that Alyeska owner companies would transport wastes thousands of miles away from west coast facilities specifically licensed to treat ship-board wastes and ballast water containing cleaning agents to Alyeska for disposal. For example, EPA found "tank washings generated from drydocking preparation are the most common source of transferred wastes" (EPA pg. 28). It is not logical that TAPS tanker operators would transfer these wastes, concentrated for disposal at shipyards, to other tankers and effectively dilute the wastes with more ballast water for ultimate disposal at Alyeska. Nor is it logically for Alyeska to allow cleaning agents to be disposed into the BWT: the primary goal of the BWT is to remove oil from water--cleaning agents work by suspending oil in water.

However, there are obvious economic benefits to Alyeska owners for disposing of tanker ballast water and wastes at the BWT. West coast shipyards charge fees for disposing of tanker wastes. In California, for example, these costs are substantial (\$400-\$800 per barrel) because recent legislative action (1) prohibits land disposal of oily wastes, and (2) classifies oily waste, including oily ballast water, as "California-only hazardous waste." To avoid costly disposal fees, owners opt to transfer wastes to tankers headed to Alyeska (or offshore) where disposal fees are much more reasonable--it's free.

Besides the question of the BWT's capability to "treat" (i.e., separate and remove) many of these compounds from the plant's effluent, there is the question of what impact these additional contaminants are having on the Port Valdez

environment. In 1988 the state listed Port Valdez as a "toxic impaired waterway" due to hydrocarbon pollution from the Alyeska BWT. Under the Clean Water Act, EPA is charged with implementing plans to restore water quality of waterways listed as "toxic impaired." Yet, according to Alyeska's own data, the BWT is still in noncompliance with the law for total hydrocarbons: "on 44 out of the 66 days on which TH (total hydrocarbon) measurements were taken from January through August, 1991, the projected TH measure at the edge of the mixing zone (based on modelled dilutions) would exceed 15 ppb (the state's standard)" (Alyeska letter to DEC (Mawson) No. 91-4184, File No. 7.03.04, Nov. 27, 1991). (To remedy the latter, Alyeska wants DEC to relax the state's water quality standards, rather than attempt to reduce pollutant load into the BWT.)

Recommendations (& Rationale)

- (1) Increase DEC oversight in Valdez by using the 470 Fund to staff a sufficient number of full-time positions to monitor daily all ballast water survey forms and related source documents, including ship logs, oil record books and engine room logs. (Tanker deballasting operations occur 24 hr/day, 7 day/wk. When DEC and EPA invested adequate staff and resources to ballast water oversight during both the 1985-1988 and the 1991 investigations, problems were identified and solutions adopted. However, the solutions were ineffective without adequate--full time--staff oversight.)
- (2) Pass a resolution requesting that EPA develop a cradle-to-grave chain of responsibility for marine-generated hazardous wastes similar to the manifest system in place under the Resource Conservation and Recovery Act. (RCRA is being revised this year.)
- (3) Pass a resolution requesting that our congressional delegates work to amend national law (33 CFR) to require ship owners to dispose of their wastes at the shipyard at which the tankers are serviced. (Transporting additional wastes from Outside will only exacerbate the pollution problem in Port Valdez.)

Attachment

OPINION

TAKING A STAND

Politics prevent honest appraisal of Valdez oil pollution

Editorial page editor Dennis Fradley's column on Oct. 2 claims that the Department of Environmental Conservation found "everything's OK at the Valdez ballast water treatment plant" (BWT). Nothing could be further from the truth.

But it's easy to see why the editor was confused. DEC actually released two reports. One contained over 500 pages of documentation and analyses and was written by a DEC environmental engineer Dan Lawn, the state's expert on the Alyeska BWT. The second was a very carefully worded 14-page summary of Lawn's work and was written by a lawyer, a political appointee, who was Lawn's supervisor. The lawyer's version craftily covers up the damaging documentation uncovered by the engineer. But even the lawyer's version admits there are problems at Alyeska's BWT — a person just has to read in between the lines.

For example, when Lawn documented that potential Resource Conservation and

Recovery Act hazardous engine room wastes are routinely mixed with ballast and pumped ashore at Alyeska, the lawyer admitted that the Alyeska BWT "is not adequate for all types of waste" and that engine room wastes should be mixed with cargo (crude) and taken south.

When Lawn documented that tankers routinely transfer ballast containing "residue from extensive tank washings of cargo tanks as well as engine room fuel tanks" to tankers northbound to Alyeska and that the bulk of the waste oil and resulting sludges are pumped to the BWT, the lawyer recommended that strict load-on-top procedures be followed, that more detailed information on ship wastes and ballast transfers be required, and that Alyeska conduct an analysis of what com-

pounds enter and leave the BWT.

Sounds good — except load-on-top procedures are already the law: load-on-top is the first step in properly treating ballast water and is a procedure that industry told DEC was practiced by industry when DEC was developing the required operating permits.

The second problem is that EPA and DEC took steps to halt discharge of unknown substances in unknown quantities in 1985-1988 during the first ballast water investigation. It is unsettling to realize that industry has thwarted the oversight agencies' previous efforts simply by broadening the definition of ballast water.

And last, 14 years after startup is a fine time to be wondering whether the BWT is working properly and what it is shooting out into the environment at up to 20,000 gallons per minute. It is small wonder that Port Valdez has been listed as a toxic impaired waterway since 1988 or that concentration gradients of BETX (carcinogen benzene and its derivatives)

in the water column and oily sludges in the sediment point to the Alyeska BWT as the point source of this pollution.

One fundamental was identified by the lawyer who found during the course of the investigation that "relatively few individuals have a thorough understanding of the BWT." It is ironic that this same lawyer reassigned Lawn, the state's expert on the Alyeska BWT, to non-Alyeska issues, repeating an all too familiar pattern. Lawn follows other state investigators who also documented and reported a wide range of problems with Alyeska operations and were reassigned to other work. When DEC failed to take action on these problems, many quit the department in disgust.

The reason we are not any closer to opening the Arctic Refuge is not because the oil industry continues to get "beat up" by people such as Mr. Chuck Hamel, as Mr. Fradley's column concludes. Rather, it is because the industry's own environmental track record offers proof that the

industry is failing to live up to its promises. There is too much oil in the water, too many vapors in the air, too much rust in the pipe and hazardous waste in the ballast. If Mr. Hamel hadn't uncovered it, someone else would have.

We must remember that oil is a non-renewable resource and that the oil industry may eventually pull out of Alaska. If they go pocketing profits and leaving behind a Superfund site for which we must pay to clean up, then the oil industry will claim victory. But if they go leaving behind clean air, clean water and restored tundra, then victory will belong to all of us.

Dr. Rita Ott, a commercial fisherman, has master's and doctoral degrees in marine pollution. She is a member of the Technical Advisory Group to EPA and DEC, and president of the Oil Reform Alliance. Opinions expressed in Taking a Stand do not necessarily reflect the editorial position of The Anchorage Times.



Ott

January 3, 1992

Letter No. 92-9289-G

The Honorable Sam Cotten
Alaska State Legislature
Post Office Box V (MS 3100)
Juneau, Alaska 99811

Dear Senator Cotten:

The EPA has today issued its report on Oil Tanker Waste Disposal Practices. The report exonerates Alyeska and the shipowners with the EPA stating that based upon its investigation, it can find no violation of the National Pollutant Discharge Elimination System (NPDES) permit issued to Alyeska Pipeline Service Company.

Last year the Legislature held hearings following claims made by Mr. Chuck Hamel that toxic wastes were being transported from California to Valdez for disposal in the Ballast Water Treatment Plant (BWT). Further, Mr. Hamel claimed that Alyeska was treating ballast water transferred from other vessels, the contents of the tankers' slop tanks and engine room wastes, all procedures being in violation of Alyeska's NPDES permit.

Alyeska and the tanker owners all vigorously denied bringing toxic material from California and further stated that their actions were permitted under Alyeska's NPDES permit.

The EPA conducted a full inquiry into tanker waste disposal practices and a report summarizing its findings was issued today. A copy of the executive summary is attached.

I am pleased to say that EPA's conclusions were:

- EPA has found no evidence that toxic or hazardous materials generated in California are being illegally transported via tankers and discharged to the Alyeska BWT facility.
- EPA found that the BMP Plan required by Alyeska's National Pollutant Discharge Elimination System (NPDES) permit specified that engine room waste and cleaning agents may be present in ballast water discharged to Valdez. Transferred tank washings while not specified, are implicitly allowed by the BMP Plan description of "Tanker Ballast."

Letter No. 92-9289-G
Page Two
January 3, 1992

These findings are similar to those produced by ADEC and published in Mr. Sven Brandt-Erichsen's report.

The ADEC, EPA and Alyeska are currently working together to improve the Best Management Practices Plan to eliminate any future misunderstandings. Procedures to notify EPA and ADEC when tank washings or ballast are transferred from one vessel to another will be included, a list of acceptable tank washing agents is being developed and an improved Ballast Water Survey form for tanker Masters to complete has been written.

If you have any further questions, would you please contact me.

Sincerely,



M.F.G. Williams
Vice President
Environment & Contingencies

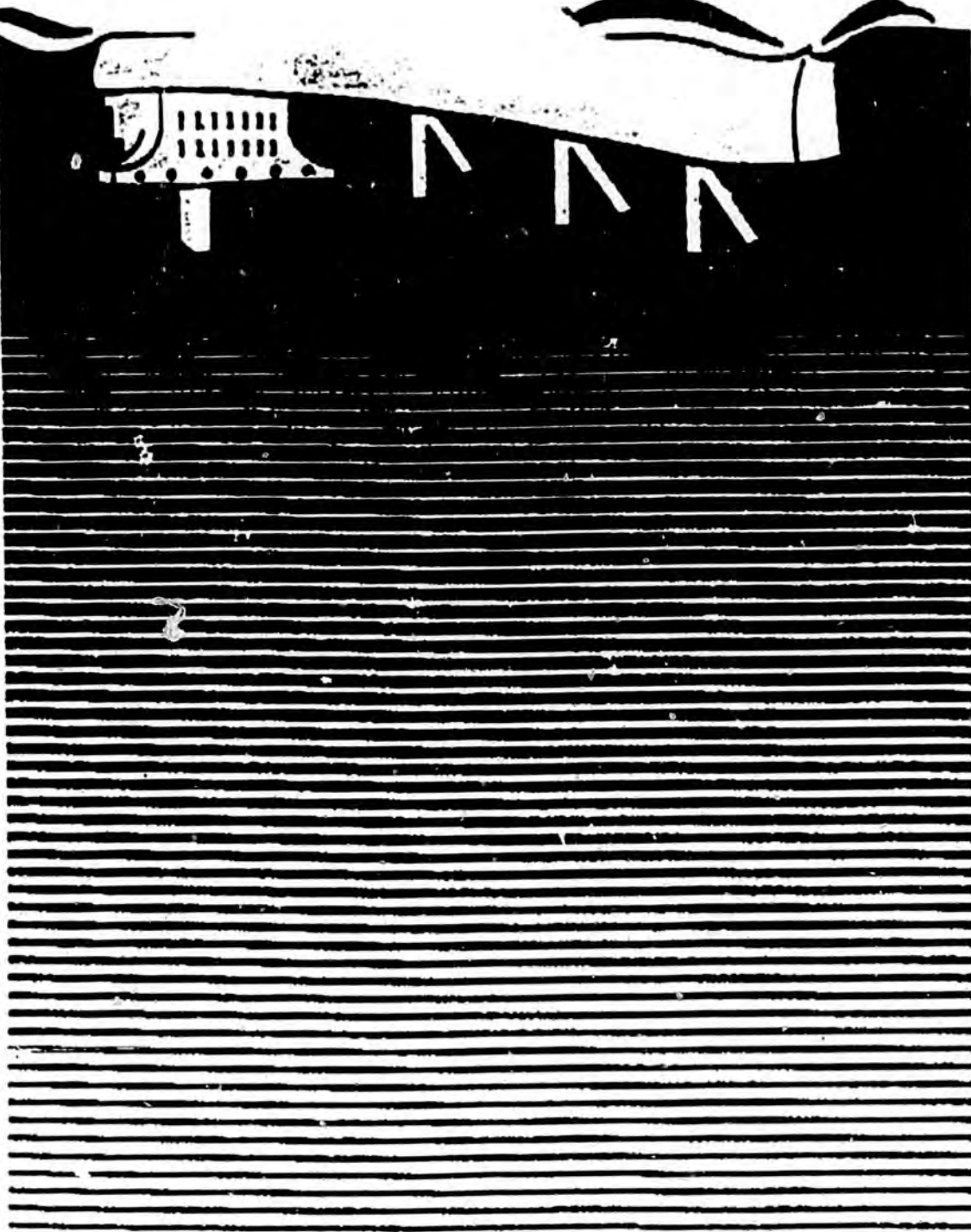
sks
92s450

Attachment



EPA 9105-01-04

Oil Tanker Waste Disposal Practices: A Review



A Review

United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Water Permitting & Compliance Division
January 1992
Alaska
Idaho
Oregon
Washington

Executive Summary

Background

In the spring of 1991, the Environmental Protection Agency, Region 10 (EPA) launched an investigation into tanker waste disposal practices for vessels discharging ballast water at the Alyeska Pipeline Services Company's Ballast Water Treatment (BWT) facility and marine terminal in Valdez, Alaska. It had been alleged by Mr. Charles Hamel that the Exxon Shipping Company was transferring "toxic wastes originating in California" to Valdez. In response, EPA decided to examine all waste streams generated on board tankers, and determine what the fate of these wastes were in addition to investigating the Exxon specific charges made by Mr. Hamel. An extensive Information Request was generated and sent to the shipping companies that operate vessels transporting Alaska North Slope (ANS) Crude.

Findings

Cargo and Fuel Tank Washings

-The Agency has learned that occasional transfer of tank washings from an ANS trade vessel to another Valdez-bound tanker is common practice.

-Another practice that appears routine involves the use of a transfer or lightering vessel to store tank washings generated on one or more tankers until the wastes can be loaded onto a Valdez-bound tanker.

-After a detailed review of the practices and the effluent quality for the Valdez facility, we have come to the conclusion that the practice of transferring tank washings (with or without use of a lightering vessel) has no noticeable impact on the BWT facility. We intend to allow this practice to continue with certain conditions, described in Section 8.2 "Transferred Tank Washings."

Cleaning Agents

-We have learned that on certain occasions, shipping companies use cleaning agents to scour cargo tanks.

-We recognize that the periodic use of cleaning agents in shipboard maintenance procedures is essential. However, there is some risk to the treatment facility unless safeguards are built in. Alyeska, EPA, and the Alaska Department of Environmental Conservation (ADEC) are currently developing a list of acceptable agents. This list will be composed only of citrus or petroleum based products. Chlorinated hydrocarbon solvents will only be allowed in spray form and can only be used in restricted circumstances.

Engine Room Waste

-We have learned that wastes from throughout a vessel at least have the opportunity to be intermixed with dirty ballast and discharged to the Valdez facility. This opportunity occurs either with the incidental or direct contamination of bilge waters or the pumping of shipboard wastes to a slop tank. Both the contents of slop tanks and bilges may then be discharged at Valdez depending on the practices of the individual shipping company.

-The wastes generated in engine rooms and other machinery spaces may present a significant risk to the BWT. Because it is possible these materials could negatively impact the treatment facility EPA, the ADEC, and Alyeska have decided to prohibit their discharge to the BWT. Shippers may combine these materials with cargo and discharge them to a refinery or consign them to a treatment facility capable of disposing of them.

Enforcement Actions

-EPA has found no evidence that toxic or hazardous materials generated in California are being illegally transported via tankers and discharged to the Alyeska BWT facility.

-EPA finds that the BMP Plan required by Alyeska's National Pollutant Discharge Elimination System (NPDES) permit specified that engine room waste and cleaning agents may be present in ballast water discharged to Valdez. Transferred tank washings while not specified, are implicitly allowed by the BMP Plan description of "Tanker Ballast."

-Based upon our investigation, we find no violations of the NPDES permit issued to Alyeska.

PREFACE

This report was prepared by the Water Permits and Compliance Branch, Water Compliance Section. Staff involved in the effort include:

Gregory L. Kellogg, Chief, Water Compliance Section
Project Leader

Tamra Cardoso, Environmental Protection Specialist
Principal Analyst

Captain John DeCarteret, U.S. Coast Guard (Ret.)
Expert Advisor

Anne Dailey, Oceanographer
Reviewer

Special thanks are owed to ADEC for sharing laboratory results and other information that was of value during this investigation.

June 10, 1991

Representative Bill Hudson, Chairman
House Special Committee for Oil and Gas
P.O. Box V
Juneau, Alaska 99801

Representative Charles Davidson, Chairman
House Resources Committee
112 Mill Bay Road
Kodiak, Alaska 99615

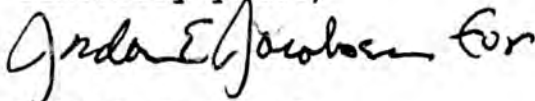
Senator Sam Cotten, Chairman
Senate Special Committee for Oil and Gas
11940 Business Boulevard
Eagle River, Alaska 99577

Re: Ballast Water Survey Form Summaries

Gentlemen:

During the first term of the Seventeenth Legislature, Alyeska Pipeline Service Company testified to various legislative committees describing operating practices of the ballast water treatment facility at the Valdez Marine Terminal. At the time of our testimony, we presented to you a summary of approximately 18 months of ballast water survey forms that we were able to review quickly before testifying. As we informed you in a subsequent letter, we undertook a review of all of the ballast water survey forms gathered since we began using that form in 1987. Please find enclosed a summary of the information derived from those forms that describe circumstances or instances during which the ballast water discharge to our facility by vessels contained something other than crude oil. We have previously provided copies of the original ballast water survey forms to your committees. Because of the large number of forms we hope that these summaries prove useful.

Sincerely yours,



Robert I. Shoaf
Assistant General Counsel

smk

Enclosure

cc: Representative Gene Cubina, P.O. Box 1969,
Valdez, Alaska 99686 (w/encl)
Senator Curt Menard, 165 E. Parks Highway,
Suite 106, Wasilla, Alaska 99687 (w/encl)

SUMMARY OF BALLAST WATER SURVEY FORMS
(Alyeska Pipeline Service Co. ballast water treatment facility)

1. FORMS REVIEWED: All--July 9, 1987 through Feb. 18, 1991

2. TOTAL FORMS REVIEWED: 3408

3. FORMS SELECTED: 315

4.	SELECTION GROUNDS:	Transferred ballast:	22
		Cleaning agent:	26
		Prior cargo not NSC:	214
		Other contaminants:	55
		Possible transferred ballast:	2
		Other:	<u>5</u>
		TOTAL:	324*

(* Total exceeds 315 because nine forms indicate two of the selected categories).

5. TRANSFERRED BALLAST:

- 22 cases (10 Exxon, 3 BP 1 Mobil)
- 3 involved a cleaning agent
- 1 involved another contaminant
- 1 involved prior cargo not ~~ANS~~ crude
- (7 involved transferred Exxon Valdez cleanup wastes approved for disposal in BWT facility by EPA and ADEC).

6. CLEANING AGENTS:

-- 26 cases total (13 Exxon,
8 BP, 4 Mobil, 1 Arco)

-- 1 involved a possible
transfer

-- 1 involved another
contaminant in addition to the
cleaning agent

-- Types of cleaning agents:

6	Dasic Deep Tank
1	Percoline-Seaclean
1	Magnus Maritec AP
3	Henrick Kold Kleen
1	Drew OC4
1	Henrick degreaser GP
1	degreaser
1	"oil spill dispersant" (Drew Ameroid Co.)
1	Daisikleen
5	Clean Break
2	Cold Wash
1	Gyro-solve/ Gyro-voyage Clean
1	Roachem
1	type unlisted

7. PRIOR CARGO NOT ANS CRUDE:

-- 214 cases total

-- 1 involved a possible
transfer

-- 50 voyages by SANSINENA II;
prior cargo = Alaska "Drift
River" crude in 49 cases

25	San Joaquin Valley crude
30	other crudes
69	non-crude petroleum products or fractions
3	combined categories
1	grain
37	type unlisted

8. OTHER CONTAMINANTS:

-- 55 cases total

-- 1 involved a possible transfer

-- Types:

- 15 degreaser *
- 13 Magnus Maritec AP *
- 1 Dasic Deep Tank *
- 1 cleaner *
- 4 diesel oil
- 7 bunker fuel
- 2 cutter stock
- 1 cutter stock & LSR
- 4 #6 fuel
- 2 lube oils
- 1 hydraulic oil
- 1 shower & bilge water
- 1 sodium nitrite
- 1 bunker tank washings
- 1 Vacuum Gas Oil

(* used to clean equipment spaces, not cargo tanks).

8. OTHER CASES:

-- 5 "Other" cases total

-- 2 involve barge UT-10 disposing of Exxon Valdez wastes with EPA and ADEC approval

-- 3 involve apparent "false positives," i.e., checking a box on the survey form in error when ballast is actually normal.

ALYESKA BALLAST SURVEY FORMS: 05/09/87 - 02/18/91

Date	Vessel	Notes
??/??/??	Chevron Mississippi	Prior cargo: light straight run gas (100 bbls. est. residue).
??/??/??	Chevron Mississippi	Prior cargo: Bunker Fuel Oil (BFO) (20 bbls. est. residue).
??/??/??	Admiralty Bay	Prior cargo: but type unlisted and nothing pumped ashore.
* * * * * 1987 * * * * *		
05/09/87	Exxon North Slope	Cleaning agent: Dasic deep tank O.B. (24 bbls. used).
05/09/87	Chevron Louisiana	Prior cargo: Santa Maria crude (100 bbls. est. residue).
05/14/87	Sansinena II	Prior cargo: Drift River crude (5 bbls. est. residue).
05/21/87	Reunion	Prior cargo: Heavy High Sulfur crude--amount unlisted.
05/27/87	Keystone Canyon	Transferred ballast. Comment: "Part of ballast loaded at Long Beach, CA from Crowley Barge No. 254 EX SS Brooks Range." Indicated nothing other than NSC residues to be pumped ashore.
05/31/87	Sansinena II	Prior cargo: Drift River crude (10 bbls. est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
06/04/87	Glacier Bay	Prior cargo: <u>but</u> type unlisted (est. residue listed as "none").
06/06/87	Exxon Valdez	Prior cargo: <u>but</u> type unlisted (est. residue listed as "none").
06/11/87	Arco California	Prior cargo: <u>but</u> type unlisted and nothing pumped ashore.
06/12/87	Syosset	Prior cargo: "#6 fuel oil plus heavy residual fuel oil" (300 bbls. est. residue). Comment is: "Only dirty ballast is slop residue in 7C from tank washing." Possible transfer from Portland.
06/12/87	Chevron Oregon	Prior cargo: NWCS and SMCS, <u>but</u> nothing pumped ashore.
06/14/87	Texaco Connecticut	Prior cargo: Arun condensate (100 bbls. est. residue). Comments are: "No solid residues aboard vessel. Vessel has had only one trip since leaving shipyard where all tanks were mucked clean. Arun condensate washings in slop tank amount to less than 100 bbls. of liquid."
06/19/87	Brooks Range	Cleaning agent: Percoline-Seaclean (approx. 40 bbls.). Possible transfer from Portland.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
06/19/87	Sansinena II	Prior cargo: Drift River crude (6 bbls. est. residue).
06/22/87	Mobil Meridian	Prior cargo: Drift River crude (30 bbls. est. residue).
06/25/87	Arco California	Prior cargo: <u>but</u> type unlisted.
06/28/87	Chevron Mississippi	Prior cargo: "Bunker Fuel, low sulphur fuel and light cycle oil and charging stock" (300-400 bbls. est. residue).
06/30/87	Syosset	Prior cargo: San Ardo crude--amount of residue unlisted.
07/02/87	Chevron Louisiana	Prior cargo: San Joaquin Valley crude, <u>but</u> nothing pumped ashore.
07/03/87	Mobil Meridian	Prior cargo: <u>but</u> type unlisted.
07/05/87	Sansinena II	Prior cargo: Drift River crude (5 bbls. est. residue).
07/07/87	Exxon Jamestown	Prior cargo: "Hondo 19.3."
07/09/87	Chevron Oregon	Prior cargo: "#8 cut and NWCS," <u>but</u> nothing pumped ashore.
07/17/87	Admiralty Bay	Prior Cargo: "Drift River crude <u>with</u> NSC." Amount of residue unlisted.
07/18/87	Exxon North Slope	Cleaning agent: "Dasic deep tank Q.B." - amount listed as unknown.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
07/19/87	Texaco Connecticut	Prior cargo: Canadian Cold Lake crude (100 bbls. est. residue).
07/22/87	Sansinena II	Prior cargo: Drift River crude (4 bbls. est. residue).
07/29/87	Northern Lion	Prior cargo: <u>but</u> type unlisted.
07/31/87	Exxon Benicia	Prior cargo: <u>but</u> type unlisted.
08/05/87	Exxon North Slope	Contaminant: Magnus Maritec degreaser (50 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
08/09/87	Texaco Florida	Prior cargo: Tapis Blend crude (Malaysia) ("traces" = est. residue).
08/10/87 - 08/11/87	Syosset	Prior cargo: San Ardo crude (150 bbls. est. residue).
08/13/87	Chevon California	Prior cargo: San Joaquin Valley crude.
08/21/87	Exxon North Slope	Contaminant: Magnus Maritec degreaser (55 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
08/26/87	Long Beach	Contaminant: lube oil & fuel oil (> 100 bbls. est. residue)
08/26/87	Eastern Lion	Prior cargo: <u>but</u> type unlisted and nothing pumped ashore.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
09/05/87	Chevron Mississippi	Prior cargo: Residium (20 bbls. est. residue).
09/10/87	Texaco Florida	Prior cargo: "Vacumn Gas Oil," <u>but</u> nothing pumped ashore(?).
09/11/87	Exxon North Slope	Cleaning agent: Magnus Maritec (55 gallons est. residue).
09/14/87	Antigun Pass	Contaminant: Diesel (total dirty ballast = 850 bbls.).
09/20/87	Chevron California	Prior cargo: San Joaquin Valley crude.
09/24/87	Chevron Oregon	Prior cargo: San Joaquin Valley crude (50 bbls. est. residue).
09/28/87	Exxon Houston	Transferred ballast: "43,000 bbls. of wash water transferred to the Exxon Houston from the Exxon Galveston in San Francisco." Cleaning agent: The wash water contained 18 drums of a degreaser, Dasic D.Q. The Galveston had been in service "lightering north slope crude before washing her tanks in preparation for going into dry dock." (Total ballast = 162 bbls.). NOTE: Suspected cause of BWT oil/grease exceeding 5.0 ppm on 9/30/87 is the 18 drums of degreaser. <u>See</u> Memo of 11/3/87.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
10/02/87	Syosset	Prior cargo: C.C. Feed (50 bbls. est. residue).
10/03/87	Sansinena II	Prior cargo: Drift River crude--amount of residue unlisted.
10/10/87	Chevron California	Prior cargo: "L.S.F.O. and B.F.O." (50 bbls. est. residue).
10/13/87	Texaco Connecticut	Prior cargo: <u>but</u> type unlisted. (Possible mistake.)
10/18/87	Chevron Louisiana	Prior cargo: "Charge stock" (200 bbls. est. residue).
10/21/87	Sansinena II	Prior cargo: Drift River crude--amount of residual unlisted.
10/22/87	Exxon North Slope	Transferred ballast: "Approximately 19,224 GB of (non-ANS) dirty water ballast. These slops are tank washings from the Exxon Washington containing no chemicals or additives." <u>See</u> Memo of 10/22/87. Also prior cargo: Hondo crude in transferred ballast.
10/22/87	Admiralty Bay	Cleaning Agent: Degreaser (10 gals. est. residue).
10/24/87	Chevron Oregon	Prior cargo: Nikiski residue <u>but</u> nothing pumped ashore.
10/26/87	Chevron California	Prior cargo: Light straight run (15 bbls. est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
11/04/87	Cove Trader	Prior cargo: FCC Virgin Gas Oil.
11/06/87	Sansinena II	Prior cargo: Drift River crude (5 bbls. est. residue).
11/06/87	Exxon Benicia	Contaminant: Bunker Slops (800 bbls. est. amount).
11/06/87	Cove Leader	Prior cargo: Grain.
11/07/87	Cove Liberty	Prior cargo: San Joaquin Valley crude - amount of residue unlisted.
11/13/87	Texaco Connecticut	Prior cargo: <u>but</u> type unlisted.
11/18/87	Exxon North Slope	Contaminant: Degreaser (40 gallons est. residue?). <u>The</u> explanatory note at Appendix 1.
11/18/87	Chevron California	Prior cargo: "L.S.R., asphalt," <u>but</u> nothing pumped ashore.
11/20/87	Baltimore Trader	Prior cargo: San Joaquin Valley heavy crude.
11/20/87	Eastern Lion	Prior cargo: <u>but</u> type unlisted.
11/23/87	Sansinena II	Prior cargo: Drift River crude (6 bbls. est. residue).
11/23/87	Cove Liberty	Prior cargo: San Joaquin Valley crude - amount of residue unlisted.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
11/24/87	Texaco Connecticut	Prior cargo: <u>but</u> type unlisted.
12/03/87	St. Lucia	Prior cargo: Persian Gulf crude (est. residue = 0).
12/07/87	Exxon North Slope	Contaminant: degreaser (50 bbls. est. residue). <u>See</u> explanatory note at Appendix 1.
12/12/87	Baltimore Trader	Prior cargo: San Joaquin Valley crude (30 bbls. est. residue).
12/13/87	Sansinena II	Prior cargo: Drift River crude (6 bbls. est. residue).
12/14/87	Cove Liberty	Prior cargo: San Joaquin Valley crude - amount of residue unlisted.
12/14/87	Chevron California	Prior cargo: "B.F.O./L.S.F.O./resid. from Nikiski" (75 bbls. est. residue).
12/17/87	Texaco Connecticut	Prior cargo: <u>but</u> type unlisted.
12/20/87	Admiralty Bay	Possible transfer from shore in Portland.
12/21/87	Exxon Boston	Prior cargo: Hondo California crude - amount of residue unlisted.
12/22/87	Glacier Bay	Prior cargo: Fuel oil--amount of residue unlisted.
12/25/87	Exxon North Slope	Contaminant: Magnus Maritec degreaser (50 gallons est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		<u>See</u> explanatory note at Appendix 1.
12/25/87	Chevron Mississippi	Contaminant: Bunker Fuel - amount unlisted.
* * * * *	1988	* * * *
01/01/88	Exxon Long Beach	Prior cargo: <u>but</u> type and amount of residue unlisted.
01/02/88	Cove Leader	Prior cargo: <u>but</u> type unlisted.
01/02/88	Sansinena II	Prior cargo: Drift River crude (30 bbls. est. residue).
01/05/88	BT Alaska	Prior cargo: <u>but</u> type unlisted.
01/09/88	Chevron Washington	Prior cargo: San Joaquin Valley crude (50 bbls. est. residue).
01/13/88	Exxon North Slope	Contaminant: Magnus Maritec (50 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
01/14/88	Chevron Mississippi	Contaminant: Cutter stock and LSR (200 bbls. est. residue).
01/21/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
01/27/88	Cove Leader	Prior cargo: <u>but</u> type unlisted.
01/30/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser (50 gallons est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		<u>See</u> explanatory note at Appendix 1.
02/02/88	Baltimore Trader	Prior cargo: San Joaquin Valley crude - amount of residue unlisted.
02/07/88	Chevron California	Prior cargo: Bunker fuel oil. Comment reads: "tank washings - 1 TK NSC - 2 TKS = BFO."
02/08/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
02/16/88	Chevron Mississippi	Prior cargo: Low Sulphur Residium (50 bbls. est. residue).
02/18/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser (<55 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
02/24/88	Chevron California	Prior cargo: San Joaquin Valley crude, <u>but</u> nothing pumped ashore.
02/26/88	Mt. Cabrite	Prior cargo: <u>but</u> type unlisted.
02/27/88	Chevron Oregon	Prior cargo: San Joaquin Valley crude <u>but</u> nothing pumped ashore.
03/04/88	Exxon North Slope	Contaminant: Degreaser (20 bbls. est. residue). Comment reads: "May be small trace of degreaser in ballast - amount minute." <u>See</u> explanatory note at Appendix 1.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
03/07/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
03/17/88	Texaco Connecticut	Prior cargo: <u>but</u> type unlisted.
03/20/88	Keystone Canyon	Prior cargo: <u>but</u> type unlisted.
03/23/88	Sansinena II	Prior cargo: Drift River crude (10 bbls. est. residue).
03/31/88	Exxon North Slope	Contaminant: Degreaser (10 bbls. est. residue). <u>See</u> explanatory note at Appendix 1.
04/02/88	Aspen	Contaminant: Marine D.O. (20 bbls. est. residue).
04/04/88	Chevron California	Prior cargo: San Joaquin Valley crude (50 bbls. est. residue).
04/06/88	Brooks Range	Prior cargo: <u>but</u> type unlisted.
04/07/88	Exxon Boston	Cleaning agent: Dasic - Deeptank (220 gallons used).
04/08/88	Exxon Long Beach	Cleaning agent: "oil spill dispersant 'OSD/LT' (Drew Ameroid Co.)" - 100 gallons used.
04/09/88	Mobil Meridian	Contaminant: #6 fuel (4 bbls. est. residue).
04/10/88	Sansinena II	Prior cargo: Drift River crude. Amount of residue listed as N/A.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
04/12/88	Arco Fairbanks	Prior cargo: <u>but</u> type unlisted.
04/14/88	Chevron Mississippi	Prior cargo: Bunker fuel oil and San Joaquin Valley crude (10 bbls. est. residue).
04/17/88	Exxon North Slope	Contaminant: degreaser (10 bbls. est. residue). <u>See</u> explanatory note at Appendix 1.
04/18/88	Texaco Connecticut	Prior cargo: San Joaquin Valley crude <u>but</u> nothing pumped ashore.
04/26/88	Chevron Mississippi	Prior cargo: Drift River crude (10 bbls. est. residue).
04/28/88	Sansinena II	Prior cargo: Drift River crude. Amount of residue listed as N/A.
05/03/88	Exxon North Slope	Contaminant: Degreaser (< 50 gallons residue). <u>See</u> explanatory note at Appendix 1.
05/07/88	Arco Juneau	Cleaning agents: listed as "yes," but appears to be A.N.S. C.O.W. only.
05/10/88	Texaco Florida	Contaminant: Bunker C (100 bbls. est. residue.)
05/11/88	Chevron California	Prior cargo: Fuel oil (50 bbls. est. residue).
05/14/88	Syosset	Prior cargo: #6 Fuel oil (100 bbls. est. residue).
05/21/88	Sansinena II	Prior cargo: Drift River crude. Amount of residue listed as N/A.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
05/21/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser (< 55 gallons residue). <u>See</u> explanatory note at Appendix 1.
05/23/88	Arco Alaska	Prior cargo: <u>but</u> type unlisted.
05/31/88	Chevron Mississippi	Prior cargo: Alaska residium <u>but</u> amount of residue unlisted.
06/07/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
06/07/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser (< 50 gallons residue). <u>See</u> explanatory note at Appendix 1.
06/16/88	Chevron California	Prior cargo: "Fuel, charge stock, FCC feed stock (150 bbls. est. residue)."
06/18/88	Chevron Oregon	Prior cargo: San Joaquin Valley crude (est. residue = "none").
06/22/88	Chevron Mississippi	Prior cargo: Alaska residium (20 bbls. est. residue).
06/24/88	Mobil Meridian	Cleaning agent: 50 gallons Kold Kleen.
06/25/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
07/07/88	Chevron Mississippi	Contaminant: Cutter Stock (trace).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
07/08/88	Exxon Philadelphia	Transferred ballast: "note - loaded slops from Exxon Long Beach." Cleaning agent: "Deep Tank Q.B. cold water cleaner" - amount = 966 gallons
07/14/88	Sansinena II	Prior cargo: Drift River crude.
07/16/88	Overseas New York	Transferred ballast: "Slops from 'S.S. Arco Spirit' loaded abd. ship in Long Beach, CA, 31,126 bbls. slops from Arco ship."
07/17/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser AP (50 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
07/22/88	Arco Sag River	Prior cargo: <u>but</u> type unlisted.
08/??/88	Exxon Valdez	Transferred ballast: "dirty bal. contains washings from other ship." Cleaning agent: Daisiklean (20 bbls. est. residue).
08/01/88	Sansinena II	Prior cargo: Drift River crude (20 bbls. est. residue).
08/02/88	Chevron Oregon	Prior cargo: Bunker fuel oil (100 bbls. est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
08/03/88	Exxon Philadelphia	Contaminant: "ballast contains 10 gallons degreasers along with hydrocarbons from crude oil." (No cleaning agent, slops, or bilge discharge box checked).
08/03/88	Exxon Baytown	Prior cargo: <u>but</u> type unlisted and nothing pumped ashore.
08/05/88	Exxon San Francisco	Contaminant: Bunker C (10 bbls. est. residue).
08/16/88	Chevron Louisiana	Prior cargo: Northwest charge stock (250 bbls. est. residue).
08/21/88	Exxon San Francisco	Contaminant: Bunker residue (25 bbls. est. residue).
08/26/88	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "none."
08/30/88	Mt. Cabrite	Prior cargo: <u>but</u> type unlisted.
09/03/88	Chevron Mississippi	Prior cargo: San Joaquin Valley crude (20 to 30 bbls. est. residue).
09/03/88	Mobil Meridian	Cleaning agent: Henrick Kold Kleen (55 gallons used).
09/04/88	Chevron Oregon	Prior cargo: Santa Maria crude (60 bbls. est. residue).
09/06/88	Arco Sag River	Prior cargo: Drift River crude - amount of residue unlisted.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
09/12/88	St. Lucia	Prior cargo: <u>but</u> type unlisted.
09/12/88	Chevron California	Prior cargo: FCC hydrofined (50 bbls. est. residue).
09/13/88	Sansinena II	Prior cargo: Drift River crude - amount listed as "N/A."
09/16/88	Chevron California	Prior cargo: FCC hydrofined. <u>But</u> nothing pumped ashore.
09/21/88	Chevron Louisiana	Prior cargo: Santa Maria crude (200 bbls. est. residue).
09/25/88	Arco Prudhoe Bay	Contaminant: Diesel (5 bbls. est. residue).
09/28/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
10/01/88	Chevron Mississippi	Prior cargo: Hydrofined FCC (200 bbls. est. residue).
10/01/88	Keystone Canyon	Contaminant: Lube Oils - amount unlisted.
10/02/88	Chevron California	Prior cargo: Alaska residium (100 bbls. est. residue).
10/03/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser AP (50 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
10/06/88	Exxon Long Beach	Cleaning agent: "Deeptank" (840 gallons used). Comments read: "tank cleaning chemical

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		in ballast is from washing slops."
10/09/88	Exxon Baton Rouge	Prior cargo: Tapis Blend crude (75 bbls. est. residue).
10/12/88	Mobil Meridian	Contaminant: #6 fuel (20 bbls. est. residue). "May not be all discharged as will try to retain oil on board." Comment reads: "Called BWT."
10/14/88	Arco Juneau	Prior cargo: <u>but</u> type unlisted.
10/14/88	Western Lion	Prior cargo: <u>but</u> type unlisted (?) (13.45 bbls. est. residue).
10/16/88	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "N/A."
10/17/88	Chevron Mississippi	Prior cargo: Bunker fuel oil (50 bbls. est. residue).
10/19/88	Exxon North Slope	Contaminant: Magnus Maritec degreaser AP (< 50 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
10/22/88	Mobil Meridian	Cleaning agent: Henrick Kold Kleenit (15 gallons) and degreaser (40 gallons).
10/23/88	Chevron California	Prior cargo: Alaska Residium (150 bbls. est. residue).
10/25/88	Texaco Florida	Prior cargo: Gas Oil (4 bbls. est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
11/03/88	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
11/03/88	Mobil Meridian	Contaminant: #6 fuel oil (20 bbls. est. residue).
11/09/88	Northern Lion	Prior cargo: <u>but</u> type unlisted.
11/11/88	Chevron Mississippi	Prior cargo: Residium <u>but</u> nothing pumped ashore. Comment reads: "no deballasting."
11/14/88	Chevron California	Prior cargo: Alaska Residium (50 bbls. est. residue).
11/16/88	Keystone Canyon	Contaminant: Diesel (1 bbl. est. residue).
11/18/88	Chevron Louisiana	Prior cargo: San Joaquin Valley crude (300 bbls. est. residue).
11/22/88	Mt. Cabrite	Prior cargo: <u>but</u> type unlisted.
11/25/88	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "0."
11/29/88	Syosset	Prior cargo: San Ardo crude ($\pm$ 10 to 30 bbls. est. residue).
12/01/88	Exxon Benicia	Contaminant: "degreaser" (10 gallons est. residue).
12/07/88	Chevron Mississippi	Prior cargo: San Joaquin Valley crude - amount of residue listed as "none."

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
12/08/88	Exxon Philadelphia	Contaminant: Hydraulic Oil - amount unlisted.
12/11/88	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "0."
12/19/88	Exxon Benicia	Contaminant: Degreaser (5 gallons est. residue).
12/27/88	Chevron California	Prior cargo: Alaska Residium (est. residue = 50 bbls.)
* * * * * 1989 * * * * *		
??/??/89	Chevron California	Prior cargo: "Nikiski charge stock"
01/??/89	Exxon Benicia	Contaminant: Degreaser (10 gallons est. residue).
01/11/89	Eastern Lion	Prior cargo: ASCO(?)
01/14/89	Chevron California	Prior cargo: NSC and residium.
01/17/89	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "N/A."
02/01/89	Chevron Mississippi	Prior cargo: LSR (30 bbls. est. residue).
02/04/89	Seal Island	Prior cargo: Arabian Light crude.
02/06/89	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "N/A."
02/08/89	Arco Alaska	Contaminant: Bunker-C (1 bbl. est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
02/15/89	Chevron California	Prior cargo: Alaska Residium, <u>but</u> nothing pumped ashore.
02/18/89	Atigun Pass	Contaminant: Magnus Maritec Degreaser (1 gallon).
02/23/89	Chevron Mississippi	Prior cargo: Santa Maria Charge Stock - amount of residue unlisted.
02/24/89	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "N/A."
02/28/89	Exxon Valdez	Contaminant: "cleaner" (35 bbls. est. residue). <u>See</u> explanatory note at Appendix 1.
03/07/89	Chevron California	Prior cargo: Alaska Residium - amount of residue unlisted.
03/10/89	Arco Prudhoe Bay	Prior cargo: Gas Oil (est. residue = "trace of gas oil").
03/14/89	Exxon North Slope	Contaminant: Degreaser AP (< 50 gallons est. residue). <u>See</u> explanatory note at Appendix 1.
03/15/89	Sansinena II	Prior cargo: Drift River crude - amount of residue listed as "N/A."
03/16/89	Chevron Oregon	Prior cargo: San Joaquin Valley crude - amount of residue unlisted. Comment reads: "segregated clean ballast only."

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
03/21/89	Southern Lion	Prior cargo: <u>but</u> type unlisted.
03/22/89	Chevron Mississippi	Prior cargo: (125 bbls. est. residue) "ASR/LSR 75 bbls. - bunker fuel & 50 bbls. San Joaquin Valley crude."
03/30/89	Chevron California	Prior cargo: Alaska Residium (50 bbls. est. residue).
04/15/89	Bay Ridge	Transferred ballast: "Dirty ballast taken aboard from Mobile [sic] Arctic, Sohio-BP was to have advised Alyeska of same." (Total dirty ballast = 300,000 bbls.)
04/17/89	Sansinena II	Prior cargo: Drift River crude - amount of residue unlisted.
04/23/89	Chevron California	Prior cargo (probable): San Joaquin Valley crude - amount unlisted.
05/10/89	Exxon Benicia	Transferred ballast: Exxon Valdez wastes "from barge 'Phoenix 121' 17,087 barrels (of which 14,306 is free water); from barge 'U.T. 10' 49,653 barrels (of which 2,077 is oil). . . ." Contaminants: "shower and bilge water from Exxon California."
05/13/89	Chevron California	Prior cargo: "Sumatra light crude, flushed cutter" (50 bbls. est. residue).
05/14/89	Exxon North Slope	Transferred ballast: "52K slops from Exxon

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		Valdez via barge UT-10." (Total dirty ballast = 322,000 bbls.)
05/20/89	Exxon Baton Rouge	Cleaning agents: "tank clean, Drew OC4" (500 liters used). Contaminant: bunker [slops] (2000 bbls. est. amount).
05/21/89	Exxon Long Beach	Transferred ballast: "Also discharging 40,000 bbls. slops from Crowley barge (from Exxon Valdez)." (Total dirty ballast = 304,000 bbls.)
05/23/89	Mobil Meridian	Cleaning agent: Henrick Degreaser GP (55 gallons used).
05/24/89	Prince William Sound	Prior cargo: Murban crude, Oman crude (150 bbls. est. residue).
05/25/89	Chevron Mississippi	Prior cargo: Bunker fuel oil (est. residue listed as "none").
05/27/89	Keystone Canyon	Contaminant: Dasic cold wash (20 gallons est. residue).
05/30/89	Mt. Cabrite	Prior cargo: <u>but</u> type unlisted.
05/31/89	Texaco Connecticut	Prior cargo: Virgin Gas Oil - amount of residue listed as "0."
06/03/89	Chevron Oregon	Prior cargo: "North-west charge stock" [total dirty ballast = 3000 bbls]. "Location" indicated by longitude/latitude only.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
06/09/89	Sansinena II	Prior cargo: Drift River Crude.
06/17/89	Chevron Shipping	Prior cargo: part Nikiski residium (est. residue = "none").
06/21/89	Chevron California	Prior cargo: San Joaquin Valley crude oil (50 bbls. est. residue)
06/25/89	Exxon Benicia	Contaminant: 5 gals. degreaser
06/27/89	Sansinena II	Prior cargo: Drift River Crude.
06/28/89	America Sun	Prior cargo: Barrow Island crude (300 bbls. est. residue).
06/28/89	America Sun	Prior cargo: Barrows Island Crude (300 bbls est. residue)
06/28/89	Barge UT-10	[Appears to be Exxon Valdez waste loaded in barge at Seward; comment is "cargo is NSC [500 bbls] + water [49,000 bbls]" but form also says "251 [?] EASSAYNOS MAXI" [from] barge.
07/05/89	Chevron Mississippi	Prior cargo: Alaska residium - amount of residue unlisted.
07/06/89	Chevron California	Prior cargo: "LSFO, BFO" (note: no ballast, slops, or bilge discharged at Valdez)
07/09/89	Exxon North Slope	Contaminant: MM degreaser AP (< 50 gallons used). <u>See</u> explanatory note at

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		Appendix 1.
07/13/89	Sansinena II	Prior cargo: Drift River Crude.
07/18/89	Mobil Arctic	Transferred ballast: "9400 bbls slops from ATIGUN PASS" (total ballast = $\pm$ 250,000 bbls.
07/21/89	Exxon Benicia	Contaminant: degreaser in bilge & slops (5 gals. est. residue).
07/21/89	Glacier Bay	Cleaning agents: Roachem (25 gallons used).
07/22/89	Chevron California	Prior cargo: "low sulphur fuel oil" (50 bbls. est. residue)
07/23/89	Exxon New Orleans	Contaminant: sodium nitrite (5 lbs. est. residue. [Comment: "Called BWT"]
07/26/89	Exxon Baton Rouge	Transferred ballast: "Received approximately 54,000 bbls of slops from the Barge UT-10 while alongside Berth #1." [EV waste?]
08/01/89	Sansinena II	Prior cargo: Drift River Crude.
08/03/89	Chevron California	Prior cargo: "BFO Resid." (0 bbls. est. residue)
08/13/89	Barge UT-10	Seems to be Exxon Valdez waste from Seward (40,000 bbls) of dirty ballast, but comment says "No ballast-- 135,000 gallon wash water retained on barge

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		+ _____ gallon retain oily H ₂ O."
08/16/89	Exxon Long Beach	Transferred ballast: all from other ANS vessels with no clean- ing agents
08/18/89	Sansinena II	Prior cargo: Drift River crude
08/18/89	Exxon North Slope	Contaminant: "Less than 50 gal. Degreaser" <u>See</u> explanatory note at Appendix 1.
08/19/89	Aspen	Contaminant: "10-20 gal. degreaser" -- "Rochem CO-Degreasol"
08/20/89	Chevron California	Prior cargo: Alaskan Residium (40 bbls. est. residue).
08/23/89	Exxon Benicia	Transferred ballast: "Received 36,000 bbls [out of 105,000 total] dirty ballast/tank slops from Overseas Boston-- no chemicals." Nothing but ANS crude in dirty ballast.
08/28/89	Exxon New Orleans	Transferred ballast: Shown as "EV slops" but evidently EV ballast transferred at San Diego.
09/03/89	Sansinena II	Prior cargo: Drift River Crude.
09/08/89	Exxon New Orleans	Transferred ballast: "from [barge] UT-10" taken aboard at Valdez (?) [is this EV clean- up?]; other ballast

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
		taken aboard at Ana-cortes
09/12/89	St. Lucia	Prior cargo: <u>but</u> type unlisted.
09/19/89	Sansinena II	Prior cargo: Drift River Crude.
09/23/89	Thompson Pass	Cleaning agent: "All slops and cleaning agents were pumped off in Portland." Cleaning agent was 1,500 gal. of Gamlen Clean Break.
09/24/89	Chevron California	Prior cargo: "Chevron Residium" (80 bbls est. residue)
10/05/89	Exxon Long Beach	Transferred ballast: 4000 bbls (out of 167,000 total) from NORTH SLOPE via BAYTOWN
10/06/89	Exxon New Orleans	Transferred ballast: Exxon Valdez waste.
10/06/89	Sansinena II	Prior cargo: Drift River Crude.
10/11/89	Chevron Mississippi	Prior cargo: "San Joaquin Valley Crude & BFO." Apparently 30 bbls residue est. in ballast and 15 & 25 bbls. in bilge.
10/21/89	Sansinena II	Prior cargo: Drift River Crude.
10/26/89	Chevron California	Prior cargo: Chevron residium (45 bbls. est. residue).
11/13/89	Sansinena II	Prior cargo: Drift River Crude.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
11/15/89	American Trader	Contaminant: slop tanks--10 bbls "6 oil" [#6 fuel oil?]
11/26/89	Exxon North Slope	Unclear: apparently just 50 bbl. of bilge water to be pumped ashore.
11/30/89	Sansinena II	Prior cargo: Drift River Crude.
12/01/89	Chevron California	Prior cargo: Low sulfur + bunker fuel oil. (250 bbls. est. residue)
12/03/89	Exxon Benicia	Transferred ballast: "Vessel took 2264 bbls. [out of 165,000 bbls. total] saltwater + ANSC residue from EXXON GALVESTON" in San Francisco.
12/12/89	Exxon North Slope	Unclear: apparently error on form, confusing bilge water with prior cargo.
12/18/89	Sansinena II	Prior cargo: Drift River Crude.
12/22/89	Chevron California	Prior cargo: Low sulfur fuel oil (100 bbls. est. residue)
* * * * * 1990 * * * * *		
01/05/90	Chevron California	Prior cargo: <u>but</u> type unlisted.
01/06/90	Sansinena II	Prior cargo: Drift River Crude.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
01/26/90	Chevron California	Prior cargo: "Resid (BFO)" (200 bbls. est. residue).
01/30/90	Sansinena II	Prior cargo: Drift River Crude.
02/14/90	Keystone Canyon	Cleaning agent: Cold Wash (10 gals. est. residue).
03/02/90	Chevron California	Prior cargo: Low sulphur waxy resid. (150 bbls. est. residue)
03/05/90	Mobil Meridian	Prior cargo: Pimbina (est. residue = "none").
03/22/90	Chevron California	Prior cargo: "Alaska Residium" (250 bbls. est. residue)
03/22/90	Keystone Canyon	Cleaning agent: Clean Break (Gamlen) ($\pm$ 155 gal. est. residue).
03/23/90	Sansinena II	Prior cargo: Drift River Crude.
03/28/90	Exxon Long Beach	Transfer and cleaning agent: 1430 gals of Gamlin Perolin Clean Break (out of 231,000 bbls. of ballast) transferred from NORTH SLOPE in S.F.
04/01/90	Sansinena II	Prior cargo: Tapis crude.
04/05/90	Kenai	Contaminant: bunker tank washing into slops.
05/05/90	Exxon Long Beach	Transferred ballast: 15,000 bbls. (out of 200,000) from Exxon Galveston; water only.

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
05/16/90	Chevron Mississippi	Contaminants: "Vacuume Gas Oil (cutter)" from slops
05/28/90	Western Lion	Prior cargo: "Marib Crude API 41.6" (795 bbls. est. residue).
06/03/90	Chevron Mississippi	Prior cargo: "Bunker Fuel Oil" (residue-trace).
06/05/90	Chevron California	Prior cargo: San Joaquin Valley crude (40 bbls. est. residue).
06/21/90	Chevron Louisiana	Prior cargo: "Alaska Residium/Virgin Gas Oil" (60 bbls. est. residue).
06/22/90	Overseas Boston	Cleaning agent: "gyro-solve, gyro-voyage clean" (550 gallons used).
07/02/90	Overseas Juneau	Prior cargo: "Isthmus" (residue amount unknown)
07/12/90	Arco Texas	Unclear: seems to have checked "yes" instead of "no" on question re prior cargo being other than ANS crude.
07/15/90	Chevron Oregon	Prior cargo: "NWCS" (est. residue = 0).
07/22/90	Chevron California	Prior cargo: low sulphur fuel oil (80 bbls. est. residue).
07/23/90	Prince William Sound	Prior cargo: <u>but</u> type unlisted.
08/21/90	Chevron Washington	Prior cargo: "BFO" (est. residue = trace)

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
08/24/90	Chevron California	Contaminant: Cutter Stock (100 bbls. est. residue).
09/09/90	Chevron California	Prior cargo: Tesoro residium (150 bbls. est. residue).
10/04/90	Exxon Benicia	Cleaning agent: 1000 gals. Clean Break (total ballast = 155,668 barrels). Note: vessel came from Portland, but ballast taken on in Seattle.
10/15/90	Exxon Long Beach	Transferred ballast: 51,000 bbls. tank cleaning slops (water and NSC residue only, no cleaning agents) taken from EXXON SAN FRANCISCO. Total ballast = 260,000 bbls.
10/16/90	Glacier Bay	Cleaning agent: Unitor-Rochem Cold Wash (110 gals. used).
11/04/90	Chesapeake Trader	Prior cargo: "Gasoline, AllGas [?], Diesel Jet" (est. residue of 1459 bbls. "Clean Product" to be pumped ashore).
12/04/90	Admiralty Bay	Prior cargo: Grain (est. residue = 0).
* * * * * 1991 * * * * *		
01/23/91	Western Lion	Prior cargo: Brent crude (772 bbls. est. residue).

<u>Date</u>	<u>Vessel</u>	<u>Notes</u>
02/03/91	Mt. Cabrite	Prior cargo: North Sea crude (Sullum Voe) (est. residue = 0 or "not known").
02/05/91	Chevron Mississippi	Prior cargo: "SJV-HM" (San Joaquin crude?) (20 bbls. est. residue)
02/15/91	Seal Island	Prior cargo: "Brent Blend C.O." (est. residue = none).
02/18/91	Exxon North Slope	Cleaning agent: 1650 gal. Unitor Rochem Clean Break.

APPENDIX 1

The EXXON NORTH SLOPE senior deck officers had a routine maintenance program which required cleaning the ship's pumproom and manifold containments every trip. Although weather and other variables precluded the maintenance from being done every trip, the chief mates routinely included the use of cleaning agents on every Alyeska form to make sure "the vessel was covered" and also to alert Alyeska that a small amount of cleaning agent may be in the ship slop tank. The amount of cleaning agent varied each time, but it was usually 10 to 20 gallons. However, since the amount was not always measured, and since it was definitely below one drum (55 gallons) they would routinely show the amount as < 55 (below 55 gallons).

The recordings in terms of bbls. on the 12/7/87, 3/4/88, 3/31/88, 4/17/88 and 2/28/89 forms were completed by a different chief mate and evidently included the total of water and cleaning agent.

EPA

will let you know where we are on that issue. We are, in cooperation with the Alaska Department of Environmental Conservation, actively investigating those allegations. I can't go into much detail on the investigation at this time, but I can let you know what we have learned so far. Also, I want you to know what we are doing at this point to assure strict compliance with the wastewater discharge permit. We have met with Alyeska, Exxon, and representatives of the tanker fleet to better define on-board tanker practices. To date, we have learned the following:

- The tanks are cleaned with seawater and cleaning agents are sometimes used.
- When ships go to dry dock, usually in Portland, Oregon, cleaning wastes are transferred to northbound tankers.
- The oil and water components of the wastes stratify in the tank.
- The water portion is discharged to the ballast water treatment facility.
- The oily wastes are left on the tanker, mixed with crude oil, and sent south to a refinery.

Now to address what we don't know:

- We don't know what cleaning agents are being used to clean cargo tanks.
- We don't know the composition of those agents.
- We don't know what cleaning agents and other materials may be in bilge waters.
- We don't know the extent to which bilge waters are transferred to northbound vessels, if at all.
- We don't know whether toxic wastes unrelated to tanker operations are or have been discharged in ballast water at Valdez.

PURPOSE #1 - EXTENT OF TAPS TANKER PRACTICES

BACKGROUND

Independent investigation by Boston Globe maritime reporter William Coughlin has corroborated recent allegations by Charles Hamel that Exxon and other TAPS tankers have been transporting tank washings, "slops", tank cleanings, and diesel sludges in their ballast water for disposal at Alyeska (Media - 2/19/91 article).

During the House Oil & Gas oversight hearings, TAPS shippers acknowledged that transfer of tank washings between vessels for transportation to and disposal at the Alyeska BWT facility was common practice, but denied transfers of "liquid cargo" (tank washings and cleanings) from shore terminals to tankers. However, Alyeska testified that:

"The available facilities on the West Coast have a limited capacity to receive and treat tank washings and ballast. As a result, either the ballast may be stored on shore and then returned to vessel for its subsequent trip to Valdez or they are transferred to another north bound TAPS trade vessel for discharge to [Alyeska Testimony, Pg. 4, 3/15/91 Minutes]."

Sample DEC ballast water discharge certificate affidavits, in concert with engineer log books and a deposition, show that tank washings are transferred from ship to ship (which was acknowledged by the shippers at the 3/15/91 hearing) and also that tank cleanings are transferred from shore to vessel. This set of documents also indicates that the DEC reporting procedure for ballast water discharge fails to identify when substances other than "normal" ballast are discharged at Alyeska.

Ship repair yards charge substantial fees for disposal of tank cleanings prior to drydock. At \$3.90 per barrel (Port of Portland fee), disposal of 50,000 barrels of tank cleanings (average quantity for large tankers) amounts to nearly \$200,000. Vessels are drydocked at least once every two years for USCG inspection, but can be drydocked more often depending on repairs. Alyeska does not charge for disposal of tank cleanings through its BWT facility.

During testimony before the House Oil & Gas committee, Exxon and BP stated that diesel sludge from their diesel powered tankers is collected in barrels, shipped south, analyzed by EPA to determine if it is a RCRA hazardous waste, then disposed of accordingly. Records documenting chain of custody and receipts for disposal have been requested from these shippers.

Shippers also testified during House Oil & Gas hearings that small amounts of "90 percent" petroleum based cleaning agents were used to wash tanks between cargo trips. Shippers stated that use of such cleaning agents is expected to increase in the future. The assumption is that since the cleaning agents are petroleum based, they will be removed from the water by the Alyeska BWT facility prior to discharge of the effluent. Records documenting the chemical composition of the cleaning agents and the quantity of compounds currently in use have been requested.

QUESTIONS

- industry
- 1) Have tanker washings, slops, tanker cleanings, or sludge (hereafter "substances") been introduced through the cargo lines or over the deck of tankers in your fleet and transported to Alyeska from January 1, 1986, to the present? If so, what type of substances?

industry

 - 2) Have "substances" been introduced from other vessels in your service, or independently employed, including those in the TAPS trade destined for drydock and those vessels not in the TAPS trade, to tankers in your fleet and transported to Alyeska from January 1, 1986, to the present? If so, what types of substances?

industry

 - 3) Have "substances" been transferred from shore tanks or barges to tankers in your fleet north bound to Alyeska from January 1, 1986, to the present? If so, what types of substances?

industry

 - 4) Have diesel powered tankers in your fleet transferred or discharged diesel sludge to ballast water, via slop tanks or other such intermediate routes, for disposal at Alyeska from January 1, 1986, to the present?

industry 5) Have any tankers in your service decanted "clarified bottom water" from their dirty ballast tanks into their segregated ballast tanks upon traversing the Gulf of Alaska?

industry 6) Where and/or how does your company dispose of tank pre-drydock cleanings? How much does this cost per barrel and total (average) per tanker? Are there records for receipts from the shipyard, collection company or reclaimer?

industry 7) Does your company employ the use of barges to dispose of or hold tank pre-drydock cleanings?

industry 8) Do you use cleaning agents to wash cargo tanks? If so, what is the chemical composition of these cleaning agents?

PURPOSE #2 - LEGALITY OF TAPS TANKER PRACTICES

BACKGROUND

Transportation, handling, discharge, and disposal of oily ballast, oily sludges and slops is regulated by state, federal, and international law, including the state water quality standards, the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the international convention for the prevention of pollution by ships, 1973, and amended in 1978 (MARPOL 73/78).

EPA and DEC are currently investigating the legality of TAPS tanker practices and testified at the House hearings on 3/18/91 that the NPDES permit does mention, in the BMP plan, that cleaning agents may be in ballast water, but not other material (engine sludges, slops and tank cleanings).

Jim Dickson, Captain of the Port Authority for the Sullom Voe terminal in Scotland, stated that in his opinion, "EPA and DEC are very generous in their approval of additional dirty ballast/washings/slops at Valdez. . . It appears to me that Alaska is being used as a dumping ground due to failures by Federal Government, ship owners and USCG to ensure compliance with MARPOL" (Stats.b & Regs.- Dickson fax) Lt. Commander John McQueeney, USCG, has reviewed this issue and will be available to answer questions at the Senate hearings.

QUESTIONS

- 1) Can tank washings, tank cleanings, slops, and diesel engine sludges be legally discharged by incoming tankers at the Alyeska BWT facility under the NPDES permit? Under MARPOL?
- 2) When ballast material is transferred from tanker to tanker, is this lightering process regulated by the USCG? Under MARPOL?
- 3) When ballast material or liquid cargo is transferred between tankers and barges, is this lightering process regulated by the USCG? Is disposal of waste material from barges regulated under MARPOL?

EPA
DEC
USCG

USCG

USCG

EPA
DEC

4) When was the BMP plan modified to include cleaning agents in the ballast water?

EPA
DEC

5) What other modifications have occurred in either the NPDES permit or the BMP plan that would substantially change either the amount or the content of incoming ballast water and when did these changes occur?

industry/EPA

6) How are water and solids handled from the Alyeska crude oil storage tanks?

PURPOSE #3 - SUMMARY OF PAST INVESTIGATIONS

BACKGROUND

Investigations into similar allegations by Charles Hamel were initiated in 1985 by EPA (Bob Athmann and John Hahn), DEC (Bill Lamoreaux, Dan Lawn and Bob Martin), and Assistant Attorney Generals (Loni Levy, Jeff Cole and their associates). The investigations substantiated most of the allegations, but were discontinued in 1988.

QUESTIONS

- EPA/DEC
- 1) Summarize the findings of the investigation initiated in 1985. What, if any, changes in TAPS tanker or BWT operations occurred as a result of these findings? What, if any, changes in regulatory oversight occurred as a result of these findings?

 - DEC
 - 2) When were the DEC ballast water discharge certificate affidavits first developed and what was the original intent? Are the forms adequate to detect additions to ballast water such as tank cleanings, tank washings, slops and sludge?

 - DEC
 - 3) Who is responsible for checking the forms? How often and how carefully are they checked?

PURPOSE #4 - ABILITY OF BWT FACILITY TO COMPLY WITH LAWS

BACKGROUND

As approved by Congress in 1977, the BWT facility was designed in construction phases that corresponded to anticipated increased pipeline throughput. Alyeska promised in the right of way lease covenants to stay abreast of technology developments and to continually upgrade equipment.

Alyeska is currently operating with a BWT facility that fails to carry out the original intent of Congress. Pipeline throughput has increased four fold without the required facility expansion and upgrading. The technology gap has meant the absence of such basic measurement data that it has taken the State's full attention to evaluate whether Alyeska complies with minimum state and federal standards.

Monitoring studies have shown that increasing levels of hydrocarbons are accumulating in the sediment of Port Valdez. This trend indicates that the BWT facility is either overloaded or was not designed properly (i.e., faulty computer modeling), or both, as treatment is resulting in incomplete removal of hydrocarbons from the effluent.

Since 1986 (after the biological treatment system was installed), one field study, contracted by Alyeska, has been conducted to verify compliance with state water quality standards. Valdez District Engineer and Supervisor, Dan Lawn reviewed the data and reported 508% more "apparent and probable" permit violations than reported by Alyeska. (DEC documents - ADEC Review of Alyeska's Data Report, March, 1986)

Alyeska now claims that these mixing zone verification studies were conducted before the BWT impound basins were converted into biological treatment units. (Alyeska testimony, Pg.12, 3/15/91 Minutes) This indicates that there have been no field verification studies for the system currently in use at Alyeska to show compliance with state water quality standards in the mixing zones.

A mixing zone for hydrocarbons and other chemicals discharged into Port Valdez is currently allowed under the NPDES permit. A mixing zone is a volume of water in which the State's water quality standards are exceeded to allow dilution of effluent. Water quality standards must be met at the boundary of the mixing zone.

According to the state's water quality standards, a mixing zone is not allowed if "pollutants discharged could bioaccumulate; concentrate or persist in the environment; cause carcinogenic, mutagenic, or teratogenic effects; or otherwise present a risk to human health" (18 AAC 70.032. (a)(1)). The carcinogenic properties of benzene, a compound present in the effluent, and its derivatives (i.e., metabolites) are well established.

Not only is a mixing zone allowed under the NPDES permit, but the size of the mixing zone was substantially increased 16-fold in the 1980 NPDES permit. This also runs counter to state water quality standards which state that "a mixing zone must be as small as practicable" (18 AAC 70.032.(d)). (DEC Documents - Balden Audit, Pg. 12, 1988)

QUESTIONS

- EPA
- 1) How do the present pollution control systems (i.e., the BWT and sludge facilities) at Alyeska compare to the original design drawing approved by Congress?
 - 2) How often annually is the BWT facility operating at or near maximum capacity? (Note: Alyeska testified on 3/15/91 that tankers were required to queue up because of limited capacity of the BWT holding tanks. Alyeska Testimony, Pg. 12, 3/15/91 Minutes.)
 - 3) How much money is lost per hour for tankers that have to "queue" to deballast (as indicated in House Oil & Gas hearings)?
 - 4) ~~How much profit has Alyeska made for the owner companies since startup?~~
 - 5) Did DEC or the Attorney General ever audit Alyeska's (or Alyeska's contractors') scientific monitoring studies? If so, what did the audits show?
- EPA/
Alyeska

- EPA
- 6) What has the Technical Advisory Group (TAG) recommended to improve BWT operations? Have any TAG recommendations been adopted by DEC and EPA?
- EPA
- 7) Why is a mixing zone allowed for Alyeska? Is it possible for Alyeska to meet the state's water quality standards without a mixing zone?

PURPOSE #5 - ABILITY OF REGULATORY AGENCIES TO MONITOR ALYESKA

BACKGROUND

During House Oil & Gas hearings, EPA and DEC testified that they do not believe that the level of oversight and monitoring is sufficient to ensure permit compliance. Further, Art Ronimus from DEC testified that the staff in the Valdez office do not currently have the background or expertise to monitor Alyeska, but are on a "learning curve." DEC has undergone extensive personnel turnover in the last two years and consequently lacks staff and supervisors with experience Alyeska operations.

Although federal and international (MARPOL) law regulate discharge and disposal of ballast water and sludge, many countries are finding that "Coast Guard investigative and prosecution efforts are seriously inadequate and do little to deter polluters" (Media - 2/25/91 Boston Globe article).

It is important to realize that materials loaded onto TAPS tankers as ballast could impair water quality in Port Valdez, yet these practices may receive little regulatory oversight from the USCG at ports where these transfers occur.

QUESTIONS

- 1) What level of oversight, in terms of number of staff, qualifications of staff, staff hours, and resources, has your agency committed to monitoring Alyeska operations since January 1, 1986?
- 2) Does your agency believe this is a sufficient level of oversight? If not, why not?
- 3) How closely was Alyeska monitored for compliance in the year following the Exxon Valdez spill compared to prior and later years?
- 4) Has your agency ever conducted independent studies to

EPA/USCG

EPA/USCG

EPA/USCG

EPA/USCG 5) How confident is your agency that Alyeska is complying with state, federal, and international law based on your monitoring capabilities?

EPA/USCG 6) Has there been any communication among the USCG Marine Safety Office Valdez and the other Marine Safety Offices regarding TAPS tanker ballast water practices? If so, what did the communication entail?

DOCUMENT PACKAGE #1

1. Letter from EPA Regional Administrator Robie Russell to Alyeska President George Nelson 8/15/88

Summary of 1985-1988 investigation by EPA into allegations that tankers were bringing material to Valdez other than Alaska North Slope (ANS) crude oil and water and discharging it to the ballast water treatment (BWT) facility with dilution of bad ballast a frequent occurrence.

EPA publicly dismisses allegations:

"The recommendation resulting from that review is that no additional formal enforcement action against Alyeska is appropriate at this time. We arrived at this conclusion because the allegations could not be substantiated, or have already been addressed by EPA and resolved by Alyeska as a result of previous Section 308 and Section 309 actions."

2. Pages 1, 2, 10 & 11 of EPA Review of Subpoenaed Records by Robert Athmann (file reference: TSCA subpoena no. 1086-07-21-2610)

Investigation findings show that allegations were substantiated:

* "7/4/82. . . Stuyvesant has approximately 14,000 barrels of an unknown substance that they will discharge ashore with there (sic) ballast. (Might be some sort of chemical - i.e. caustic)."

* "T/V Kenai received on 7/1/85 contaminated ballast/slop from barge "Anax 25" and on 9/26/85 loaded 6600 bbls of slop from tanker Atigan Pass via barge Phoenix 120 into port slop tanks." Record shows tanker deballasted in Valdez. "No entry could be found regarding the contents of the ballast tanks of the tanker, Kenai."

* "5/28/85 . . . ballast water being charged out of tank 94 looked "ugly" so ballast from tankers Mobil Meridian and Admiralty Bay were being added to tank 94 in hopes of diluting

it. . . the ballast water in tank 94 came from Arco Juneau and Arco Alaska."

* "3/8/82. . . B.T. San Diego had high hydrogen sulfide content and treatment consisted of the use of hydrogen peroxide and diluting with ballast from the Mobil Arctic."

* "9/10/81. . . Sohio Resolute arrived at Valdez after coming out of a shipyard where its ballast had been put ashore and returned to the ship after repairs were completed."

* "7/8/82. . . the tanker Thompson Pass had 3,400 barrels of slop on board from a bunker barge in Long Beach."

* "10/18/84 . . . tanker Keystone Canyon had approximately 12,000 barrels of slop from a barge in California, contents unknown."

* "5/17/84 . . . tanker Manhattan caused foamy water in the DAF system and that the tanker had just come from dry dock."

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10

1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101



Aug 15 1988

SDO	TLP	ILH	ATS	TCH	JFL
Info Discard	RECEIVED				
Info Return	AUG 15 1988				
Prep. Resp.	G. M. NELSON				
Action	SEC				
	FILE				

REPLY TO WD-131
ATTN OF

George M. Nelson, President
Alyeska Pipeline Service Corporation
1835 S. Bragaw Street
Anchorage, Alaska 99512

Dear Mr. Nelson:

This is to let you know that the Environmental Protection Agency (EPA), Region 10, has completed a detailed investigation of allegations that the Alyeska facility violated its National Pollution Discharge Elimination System wastewater discharge permit. The investigation included interviews with Alyeska employees, ship's crews, and other people familiar with the ballast water treatment operation, a review of EPA and Alaska Department of Environmental Conservation files, review of Alaska Public Utilities files, and a review of ship deballasting records and Alyeska ballast water treatment records.

The recommendation resulting from that review is that no additional formal enforcement action against Alyeska is appropriate at this time. We arrived at this conclusion because the allegations could not be substantiated, or have already been addressed by EPA and resolved by Alyeska as a result of previous Section 308 and Section 309 actions.

We anticipate continued compliance by Alyeska with Clean Water Act requirements. To help ensure this, we intend to continue our work with the company to make sure environmental requirements are understood and that procedures promoting compliance are in place.

The priority attention you have given to permit issues we have raised is appreciated. It has resulted in improved wastewater control and treatment; and, as a result, better protection of the important water resource.

Sincerely,

Robie G. Russell
Robie G. Russell
Regional Administrator

Alyeska Pipeline Service Company
Valdez, Alaska

Report Re: Review of Subpoenaed Records

By: Robert J. Athmann

File Reference: TSCA Subpoena No. 1086-07-21-2610
Region 10 Water Division NPDES Permit Files
Region 10 Water Division Compliance Section Files
State of Alaska Public Utilities Commission
Alaska Dept. of Environmental Conservation - Valdez
Report of Investigation dated 4/14/87 by Robert J. Athmann
An evaluation of ship deballasting and shore facility
ballast water treatment records at the Alyeska Pipeline
Service Co.

Scope:

This report sets forth the results of reviewing the copies of documents obtained from Alyeska Pipeline Service Company pursuant to TSCA subpoena during the period 2/18/87 through 4/24/87 at Valdez and Anchorage. Substantive material located in the files referenced above is summarized in this report and is used throughout to augment specific information extracted from Alyeska records. Statements made to EPA personnel during previous investigation of Alyeska's ballast water treatment plant and allegations about the company's operational and reporting practices have been incorporated as the basis for this review of Alyeska's records to determine if substantiation of those allegations exist in documentary form.

Table of Contents:

- I. Background
- II. Synopsis
- III. Details
 - III-1 Flow Monitoring Meters
 - III-2 Volume of Discharge
 - III-3 Settling Time
 - III-4 Toxic or Hazardous Material in Ballast
 - III-5 Disposal of Toxic and Hazardous Substances
 - III-6 Recycling of Sludge and Sediment
 - III-7 Oil Spills
 - III-8 Sampling and Analytical Procedures

IV. Individuals Interviewed and Referenced

V. List of Records Reviewed

Investigator: Walter J. Ittman Date: 11/2/81

Supervisor: Paul A. Sayer Date: 11/24/87

-10-

III 4 Allegations were made by Blake, Hoodle, and ~~that~~ that incoming tankers were bringing material to Valdez other than AIS crude oil and water and discharging it to the BHT, and according to Erlene Blake, dilution of suspect or bad ballast water had occurred frequently.

BHT Operator's Daily log entry dated 6/6/82, P. 199, at 0100 hours, bears a BHT technicians note that water from the Stuyvesant "... appears to have had some foam in it at sometime or another... might cause the GFO to be ... higher than normal." No entries were found indicating the source of the foam or its effect was even determined. The Stuyvesant had completed deballasting into tank 93 at 0925 hours on 6/5/82. Tank 93 charging to the DAF system was begun at 1930 hours, 6/5/82 and was completed at 1730 hours on 6/6/82. According to the Grease and Oil log, the GFO test results for 6/6/82 was 8.7 mg/l.

BHT Operator's Daily log dated 7/4/82, P. 275, bore a technician's note that, "... the Stuyvesant has approximately 14,000 barrels of an unknown substance that they will discharge ashore with there (sic) ballast. (Might be some sort of chemical - i.e. caustic) (pH in sample taken was 6.30 - 0.2)." The note indicates an order was given that samples were to be obtained and stored indefinitely. No record could be found regarding test results on those samples. The grease and oil test results for that day as recorded in the Grease and Oil log was 2.8 mg/l. The Daily Lab Work Sheets, Daily Lab Test Results, and Monthly Summaries for 1982 were not provided by Alyeska for review pursuant to the ISA subpoena. According to Jonne Ponto, legal aid at Alyeska, those records could not be located. During the interview on 2/23/87, Larry Shier stated that he conducted an investigation of the incident in 1985 and was not able to determine whether samples had been taken or that any tests had been conducted on the Stuyvesant's ballast water. Entries in the Marine log dated 7/3/82, P. 256, and 10/5/82, P. 60, indicate samples of the Stuyvesant's ballast were taken with instructions to test for anything unusual. A BHT Task Force list of action items dated 2/28/86 indicates an assignment to Larry Shier and Ivan Henman to investigate Stuyvesant allegations.

On 2/18/87 Daniel Lawn, Alaska Dept. of Environmental Conservation, Valdez, Alaska, provided copies of Oil Record Book for Ship's regarding the tanker Kenal for the period 6/26/85 through 7/5/85 and 9/23/85 through 9/26/85 which bear entries that the T/V Kenal received on 7/01/85 "... contaminated ballast/slop from barge "Anax 25" and on 9/26/85, "... loaded 5600 bbls of slop from tanker Atigan Pass via barge Phoenix 120 into port slop tanks..." The loading and deballasting log shows the Kenal arrived at Valdez on 7/1/1985 with 68,249 barrels of ballast. During the review of records at Alyeska's offices in Anchorage during the period, 2/3/87 - 3/13/87 the Berth Operator's logs for the time span 1/16/85 - 9/7/85 for Berth #4 were reviewed. No entry could be found regarding the contents of the ballast tanks of the tanker, Kenal.

The Daily Pass-on log - laboratory, dated 7/1/85, p. 43, bears an entry to the effect that the lab had received some samples from some ship, not identified, which was so bad it almost made them all ill. No indication was made as to any identification of the ship or the contents of the ballast. The BHT Operator's Daily log dated 6/30/85, p. 242, bears an entry at 0740 hours about a very strong unusual chemical smell especially in the flotation building and that samples were taken. Water from tank 94 was being charged to the DAF system at the time. Ships deballasting

-11-

to tank 94, were the Arco Juneau, Overseas Juneau, and Texaco Florida. The Loading and Deballasting logs indicate the source of ballast for those vessels respectively were Cherry Point, San Francisco, and Tacoma. According to the Daily Lab Work Sheets and Monthly Summaries, test results for 6/30/85 and 7/1/85 were not unusual with pH at 6.4 on 6/30 and at 6.4 on 7/1. Oil and grease was recorded as 4.0 on 6/30 and 3.0 on 7/1. No other test results are indicated.

BHT Operator's Daily log dated 5/28/85, p. 172 bears the entry indicating that ballast water being charged out of tank 94 looked "muddy" so ballast from tankers Mobil Meridian and Admiralty Bay were being added to tank 94 in hopes of diluting it. According to the log, the ballast water in tank 94 came from the tankers Arco Juneau and Arco Alaska. The Daily Lab Work Sheet from 5/28/85 shows grease and oil composite test results at 7.6 mg/l.

Marine log dated 3/8/82, p. 54 bears an entry to the effect that the ballast from B.T. San Diego had high hydrogen sulfide content and treatment consisted of the use of hydrogen peroxide and diluting with ballast from the Mobil Arctic. According to the BHT Operator's Daily Log dated 3/8/82, p. 226, an entry at 0645 hours indicates that the BHT stopped charging out of tank 92 due to high sulfides, 10 ppm, and switched deballasting from two other vessels, the Arco Saginaw River, and American Sun to tank 92 as well as adding peroxide. The Bay Tanker San Diego had been the source of the ballast.

Marine log dated 9/10/81, p. 202, bears an entry indicating that the tanker Sohlo Resolute arrived at Valdez after coming out of a shipyard where its ballast had been put ashore and returned to the ship after repairs were completed. According to the BHT Operator's Daily log entries for the period 9/10/81 through 9/12/81, the Sohlo Resolute had discharged its ballast into tank 94 and personnel from Sohlo were at Valdez conducting tests.

Marine log dated 7/8/82, p. 274, bears an entry indicating that Marine operators found, during an inspection prior to deballasting, that the tanker Thompson Pass had 3,400 barrels of slop on board from a bunker barge in Long Beach. The entry states the slops were not unloaded per instructions from BHT.

Marine log dated 10/18/84, p. 103 bears an entry indicating the tanker Keystone Canyon had approximately 12,000 barrels of slop from a barge in California, contents unknown. Instructions were to keep a 90 tank empty to receive this ballast. According to the BHT Operator's Daily log dated 10/19/84 an entry at 1530 hours indicates a technician took pre-deballasting samples from the tanker, which deballasted into tank 93. No record could be found regarding the samples of ballast from the Keystone Canyon. The Loading and Deballasting log shows that the ballast source for this vessel was Los Angeles.

BHT Operator's Daily log dated 5/17/84, p. 259 bears an entry at 0955 hours that ballast from the tanker Manhattan caused foamy water in the DAF system and that the tanker had just come from dry dock where it was painted. A high grease and oil was expected and on p. 262 an entry

DOCUMENT PACKAGE #2

1. DEC ballast water discharge certificate affidavit for EXXON VALDEZ 2/28/89

Reports discharge of segregated ballast (58,000 L.T.) and unsegregated ballast (27,340 L.T.): "all ballast discharged ashore for treatment via Alyeska . . . "

Does not report anything unusual in dirty ballast.

2. Alyeska ballast water survey #1301442 for EXXON VALDEZ 2/28/89

Reports discharge of 197,000 barrels.

Lists 35 bbls of cleaner in the dirty ballast.

3. Engineer's Relief Note files written by Second Engineer Ray M. Jones 2/20/89 pg. 15

"Exxon Philly discharging slopes to us."

4. Alyeska ballast water survey from S.T. OVERSEAS NEW YORK 7/16/88

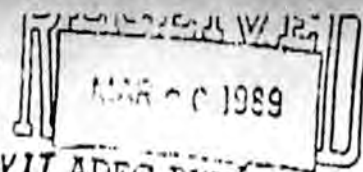
Example of ballast water survey form listing transfer of slops from S.S. ARCO SPIRIT.

SIGNIFICANT POINTS FROM DOCUMENTS:

* DEC and Alyeska ballast water survey forms are inadequate as reporting of substances other than North Slope crude residue are inconsistent.

②

DEPARTMENT OF ENVIRONMENTAL CONSERVATION



BALLAST WATER DISCHARGE CERTIFICATE AFFIDAVIT ADEC PWSBO

PORT, CITY, FACILITY, OR DOCK NAME ALYESKA TERMINAL, VALDEZ, AK. DATE FEB. 23, 1989
(WHERE CARGO IS TO BE TAKEN ON)

VESSEL SV EXXON VALDEZ 692966 OF USA
(NAME AND OFFICIAL NUMBER) (NATION OF REGISTRY)

VESSEL OPERATOR EXXON SHIPPING CO. LAST PORT VISITED SAN FRANCISCO, CA.

ADDRESS 800 BELL STREET, HOUSTON, TEXAS 77251-1512 DATE OF DEPARTURE FEB. 23, 1989

VOYAGE NUMBER 04-99 TIME TO LOAD CARGO (HRS) 14.0 HRS.

ARRIVAL DATE & TIME THIS PORT 2/28/89 1000 EST DEPARTURE DATE & TIME 3/1/89 1100

NATURE OF CARGO TO BE LOADED AT THIS PORT (TYPES & QUANTITY) CRUDE OIL

ANS CRUDE 1287000 G.BBLS.

QUANTITY OF SEGREGATED BALLAST THIS TRIP 58000 L.T. TONS

LOCATION (POINT) OF DISCHARGE(S) ALYESKA TERMINAL, VALDEZ, AK. EP, 2W, 44W

QUANTITY OF BALLAST IN CARGO TANKS THIS TRIP 27340 L.T. TONS

LOCATION, POINT, OR TREATMENT FACILITY WHERE DISCHARGED ALYESKA TERM, VALDEZ

TANKS WASHED THIS TRIP N/A

TANK WASHING SYSTEM ***** WATER WASH ***** CRUDE OIL WASH *****

TIME DEBALLASTING STARTED STOPPED

PERCENT SULFUR IN BUNKER (IF KNOWN) NA

OR IF THE VESSEL DID DISCHARGE BALLAST AT SEA OR IN THE WATERS OF THE STATE SINCE LEAVING THE LAST PORT, BRIEFLY DESCRIBE THE METHOD USED TO AVOID EXCEEDING THE ALLOWABLE MAXIMUM CONCENTRATION OF OIL RESIDUE IN THE DISCHARGED BALLAST (SUCH AS DISCHARGING FROM "DEDICATED" BALLAST TANKS, SEGREGATED BALLAST TANKS, TREATING THE BALLAST, USING THE LOT PROCEDURE, ETC.); INCLUDING THE AMOUNTS OF BALLAST DISCHARGED AND WHEN:

NO BALLAST DISCHARGED AT SEA, ALL BALLAST

DISCHARGED ASHORE FOR TREATMENT VIA ALYESKA PIPELINE SERVICE COMPANY, VALDEZ ALASKA *****

I, GUY KLEESS, CHIEF MATE
(NAME)

A. MASTER OF THE ABOVE VESSEL,

HEREBY CERTIFY THAT ALL INFORMATION I HAVE PROVIDED ON THIS AFFIDAVIT IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT ANY MISREPRESENTATION OR CONCEALMENT MAY BE GROUNDS FOR CRIMINAL PROSECUTION UNDER AS 16.03.790. I FURTHER CERTIFY THAT THERE HAS BEEN NO DISCHARGE BALLAST FROM THE AFOREMENTIONED VESSEL AT SEA DURING THE PERIOD OF TIME FROM DEPARTURE OF THE VESSEL ENROUTE TO THE STATE FROM A PORT OUTSIDE THE STATE TO ARRIVAL AT A PORT IN THE STATE, OF WHILE IN TRANSIT BETWEEN PORTS WITHIN THE STATE, EXCEPT FOR BALLAST WATER OR TANK CLEANING WASTE WHICH CONTAINED LESS THAN THE QUANTITY OF PETROLEUM PERMITTED BY THE WATER QUALITY STANDARDS OF THE STATE AND WHICH IN NO CASE CONTAINED IN EXCESS OF 50 PPM OIL RESIDUE.

SIGNED

AT VALDEZ, ALASKA
(PORT)

DATE FEB. 28, 1989

WITNESS

ALASKA MARITIME AGENCIES
P.O. BOX 1170

ADDRESS

VALDEZ, ALASKA 99586

ABOVE IN LIEU OF OWNER

MASTER

EXXON SHIPPING CO.

ADDRESS

HOUSTON, TX

COPIES OF ALASKA STATUTES AND ALASKA WATER QUALITY STANDARDS ARE AVAILABLE UPON REQUEST FROM THE DEPARTMENT.

DELIVER TO ANY DEPARTMENT REPRESENTATIVE AT PORT OR MAIL IMMEDIATELY TO:

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FOR PORTS IN COOK INLET, SEWARD & WHITTER

SOUTHCENTRAL REG. OFFICE
338 DEHALI STREET
ANCHORAGE, ALASKA 99501

FOR PORTS IN CORDOVA & VALDEZ

PRINCE WILLIAM SOUND REG. OFFICE
POUCH E
VALDEZ, ALASKA 99686

FOR PORTS IN SOUTHEASTERN ALASKA TO YAKUTAT

SOUTHEASTERN REG. OFFICE
POUCH OA
JUNEAU, ALASKA 99811

note:
Signed by
Ch. Mate Kleess
for Joe Hazelwood

PLEASE SUBMIT THIS AFFIDAVIT AS SOON AS POSSIBLE AFTER LOADING

Alyeska pipeline

SERVICE COMPANY

Ballast Water Survey

1301442

Ship Name <u>EXXON VALDEZ</u>		Berth <u>FIVE</u>	Date <u>28 FEB 89</u>
In From <u>SAN FRANCISCO</u>		Outbound To <u>LONG BEACH</u>	
Information Provided By <u>CHIEF MATE GUY KLEESS</u>		Form Completed By <u>GUY KLEESS</u>	
Amount of Dirty Ballast to Discharge <u>197,000</u> (bbls.)	Location Dirty Ballast Taken Aboard: <u>SAN FRANCISCO BAY</u>	Into Tanks: <u>1C, 3C, 5C</u>	
Were Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No	Method of Washing: ☐ C.O.W. ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used ☒ Yes ☒ No	Amount of Cleaning Agent Used: <u>35 BBL</u> gal.	Type and Name of Cleaning Agent: <u>DAISY</u>	
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No	Cargo if Other than NSC:	Estimated Amount of Other Residue to be Pumped Ashore: bbls.	
Will Slop Tank Contents be Pumped Ashore? ☐ Yes ☒ No	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☒ Yes ☐ No	List Other Residues and Estimate Amounts: <u>35 BBLS CLEANER</u>	
Will Bilge Water be Discharged? ☐ Yes ☒ No	Are there any unusual substances in the Bilge Water? ☐ Yes ☒ No	If Yes, Identify	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ships file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments			

2/20/89

- Time work on S/W service pumps re-patching
the found bottom and cover needed Tensioning
repairs. Sea now - now runs on order. (Tubal pump)
- Work on Turbo (M/R) stopped awaiting
spare part from ABB. Fromely BDC
- Still lightening to Bay town.
- Excess Philly discharging Slopes to
us.
- Pumping ballast.

note
2nd Sngc
Ray M. Jones
notes

Ship Name S.T. OVERSEAS New York		Berth 3	Date July 16, 1988
In From Long Beach, CA.		Outbound To Long Beach, CA.	
Information Provided By Michael T. Gordinich /m		Form Completed By Michael T. Gordinich /m	
Amount of Dirty Ballast to Discharge Approx. 96000 (bbls)	Location Dirty Ballast Taken Aboard 2P, 2S, 3C, 4C, 5C		Into Tanks Long Beach, CA
Were Dirty Ballast Tanks Washed Prior to Filling? ☒ Yes ☐ No	Method of Washing ☒ COW ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used ☐ Yes ☒ No	Amount of Cleaning Agent Used - gal.	Type and Name of Cleaning Agent -	
Was Last Cargo Other than North Slope Crude? ☐ Yes ☐ No	Cargo if Other than NSC -	Estimated Amount of Other Residue to be Pumped Ashore - bbls	
Will Slop Tank Contents be Pumped Ashore? ☒ Yes ☐ No	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☐ Yes ☒ No	List Other Residues and Estimate Amounts	
Will Bilge Water be Discharged? ☐ Yes ☒ No	Are there any unusual substances in the Bilge Water? ☐ Yes ☐ No	If Yes, Identify	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ship's file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments stops from "S.S. Arco Spirit" Loaded ABO ship in Long Beach, CA. 31,126 BBLs stops from Arco ship.			

DOCUMENT PACKAGE #3

1. DEC ballast water discharge certificate affidavit from SS EXXON BATON ROUGE #524619 4/16/89

Reports discharge of segregated ballast (7500 L.T.) and unsegregated ballast (31,200 L.T.).

Does not report anything unusual in dirty ballast.

2. Alyeska ballast water survey for EXXON VALDEZ 4/16/89

Reports discharge of 195,000 bbls.

Does not report anything unusual in dirty ballast.

3. Alyeska ballast water survey for EXXON HOUSTON 2/21/89

Reports EXXON HOUSTON outbound for Barber's Point, Hawaii.

4. Summary of deposition of First Mate Claude Wendell Dees from EXXON BATON ROUGE to the State of Alaska on 2/20/91 pg.1, 18

Deposition indicates EXXON BATON ROUGE "picked up some slop tank content left behind by the EXXON HOUSTON which had been cleaned out at Hawaii before drydocking."

SIGNIFICANT POINTS FROM DOCUMENTS:

* DEC and Alyeska ballast water survey forms are inadequate as reporting of substances other than North Slope crude residue are inconsistent; i.e., ballast water survey forms for EXXON BATON ROUGE do not mention liquid cargo from Hawaii.

* Substances (liquid cargo) are transferred from shore terminals in contrast to testimony of EXXON Shipping Co. President A. Elmer (3/15/91 House Oil & Gas).

* There is no chain of custody for liquid cargo transferred from shore; i.e., content unknown.

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

BALLAST WATER DISCHARGE CERTIFICATE RECEIPT

PORT, CITY, FACILITY, OR DOCK NAME VALDEZ, ALASKA DATE 4-16-89
(WHERE CARGO IS TO BE TAKEN ON)

VESSEL SS EXXON BATON ROUGE, #524619 OF U.S.A.
(NAME AND OFFICIAL NUMBER) (NATION OF REGISTRY)

VESSEL OPERATOR EXXON SHIPPING COMPANY LAST PORT VISITED Honolulu, Hawaii

ADDRESS 3400 East Second St., Benicia, Ca. 94510 DATE OF DEPARTURE 4-9-89

VOYAGE NUMBER 009 TIME TO LOAD CARGO (HRS) _____

ARRIVAL DATE & TIME THIS PORT 4-16-89 0200 EST DEPARTURE DATE & TIME _____

NATURE OF CARGO TO BE LOADED AT THIS PORT (TYPES & QUANTITY) _____

ALASKA NORTH SLOPE CRUDE OIL

QUANTITY OF SEGREGATED BALLAST THIS TRIP 7500 TON

LOCATION (POINT) OF DISCHARGE(S) Alaska

QUANTITY OF BALLAST IN CARGO TANKS THIS TRIP 31,200 TON

LOCATION, POINT, OR TREATMENT FACILITY WHERE DISCHARGED Alaska

TANKS WASHED THIS TRIP None

TANK WASHING SYSTEM _____ WATER WASH _____ CRUDE OIL WASH _____

TIME DEBALLASTING STARTED 4-16-89 2310 STOPPED _____

PERCENT SULFUR IN BUNKER (IF KNOWN) _____

IF THE VESSEL DID DISCHARGE BALLAST AT SEA OR IN THE WATERS OF THE STATE SINCE LEAVING THE LAST PORT, BRIEFLY DESCRIBE THE METHOD USED TO AVOID EXCEEDING THE ALLOWABLE MAXIMUM CONCENTRATION OF OIL RESIDUE IN THE DISCHARGED BALLAST (SUCH AS DISCHARGING FROM "DEDICATED" BALLAST TANKS, SEGREGATED BALLAST TANKS, TREATING THE BALLAST, USING THE LOT PROCEDURE, ETC.); INCLUDING THE AMOUNTS OF BALLAST DISCHARGED AND WHEN:

MASTER OF THE ABOVE VESSEL,

(NAME)

I HEREBY CERTIFY THAT ALL INFORMATION I HAVE PROVIDED ON THIS AFFIDAVIT IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT ANY MISREPRESENTATION OR CONCEALMENT MAY BE GROUNDS FOR CRIMINAL PROSECUTION UNDER AS 46.03.790. I FURTHER CERTIFY THAT THERE HAS BEEN NO DISCHARGE OF BALLAST FROM THE AFOREMENTIONED VESSEL AT SEA DURING THE PERIOD OF TIME FROM DEPARTURE OF THE VESSEL ENROUTE TO THE STATE FROM A PORT OUTSIDE THE STATE TO ARRIVAL AT A PORT IN THE STATE, OF WHILE IN TRANSIT BETWEEN PORTS WITHIN THE STATE, EXCEPT FOR BALLAST WATER OR TANK CLEANING WASTE WHICH CONTAINED LESS THAN THE QUANTITY OF PETROLEUM PERMITTED BY THE WATER QUALITY STANDARDS OF THE STATE AND WHICH IN NO CASE CONTAINED IN EXCESS OF 50 PPM IL RESIDUE.

SIGNED David Whitty AT VALDEZ, ALASKA
(PORT)

DATE _____

WITNESS _____

DAVID M. WHITTY
MASTER

ADDRESS _____

3400 East Second St., Benicia, Ca 94510
ADDRESS

COPIES OF ALASKA STATUTES AND ALASKA WATER QUALITY STANDARDS ARE AVAILABLE ON REQUEST FROM THE DEPARTMENT.

LIVER TO ANY DEPARTMENT REPRESENTATIVE AT PORT OR MAIL IMMEDIATELY TO:

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FOR PORTS IN COOK INLET, SEHARD & WHITTER

FOR PORTS IN CORDOVA & VALDEZ

SOUTHCENTRAL REG. OFFICE
338 DEHALI STREET
ANCHORAGE, ALASKA 99501

PRINCE WILLIAM SOUND REG. OFFICE
POUCH E
VALDEZ, ALASKA 99686

FOR PORTS IN SOUTHEASTERN ALASKA TO YAKUTAI

SOUTHEASTERN REG. OFFICE
POUCH OA
JUNEAU, ALASKA 99811

PLEASE SUBMIT THIS AFFIDAVIT AS SOON AS POSSIBLE AFTER LOADING

Ship Name <i>Exxon Mar Rouge</i>		Berth <i>4</i>	Date <i>4-16-89</i>
In From <i>Hawaii</i>		Outbound To <i>San Francisco, Ca.</i>	
Information Provided By		Form Completed By <i>C. Wendell R. Den C/M</i>	
Amount of Dirty Ballast to Discharge <i>195,000</i> (bbls)	Location Dirty Ballast Taken Aboard <i>Hawaii</i>		Into Tanks <i>1C, 2C, 3C, 4C, 5C</i>
Were Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No	Method of Washing ☐ COW ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used ☐ Yes ☒ No	Amount of Cleaning Agent Used <i>_____</i> gal		Type and Name of Cleaning Agent <i>_____</i>
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No	Cargo if Other than NSC	Estimated Amount of Other Residue to be Pumped Ashore bbls	
Will Slop Tank Contents be Pumped Ashore? ☒ Yes ☐ No	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☐ Yes ☒ No	List Other Residues and Estimate Amounts	
Will Bilge Water be Discharged? ☒ Yes ☐ No	Are there any unusual substances in the Bilge Water? ☐ Yes ☒ No	If Yes, Identify	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ships file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments			

Ship Name <u>Exxon Houston</u>		Birth <u>S</u>	Date <u>2-21-89</u>
In From <u>Long Beach, CA</u>		Outbound To <u>Barber's Pt., HI</u>	
Information Provided By <u>D. Madinger - CM</u>		Form Completed By <u>Same</u>	
Amount of Dirty Ballast to Discharge <u>175,000</u> (bbls.)	Location Dirty Ballast Taken Aboard <u>Long Beach, CA</u>	Into Tanks <u>IX, X, & 4C, 5C</u>	
Were Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No	Method of Washing: ☒ C.O.W. ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used ☐ Yes ☒ No	Amount of Cleaning Agent Used — gal.	Type and Name of Cleaning Agent: —	
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No	Cargo if Other than NSC: —	Estimated Amount of Other Residue to be Pumped Ashore: — bbls.	
Will Slop Tank Contents be Pumped Ashore? ☐ Yes ☒ No	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☐ Yes ☒ No	List Other Residues and Estimate Amounts: —	
Will Bile Water be Discharged? ☐ Yes ☒ No	Are there any unusual substances in the Bile Water? ☐ Yes ☒ No	If Yes, Identify: —	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ships file. If BWT process is adjusted, then attach a copy of this form to the BWT Patch Data Sheet.			
Comments			

SUMMARY OF THE DEPOSITION OF
CLAUDE WENDELL DEES

2/20/91

Page

Examination by Mr. Gerry

- 4 Brought no documents with me.
- 5 5705 Fairway Drive, Zachary, Louisiana. Telephone 504-654-9635. Serving as transportation allocator with Exxon Shipping in Baton Rouge for 15 months.
- 6 Previously served as chief mate and second mate with Exxon Shipping. 49 years old, business administration degree from LSU. After first year of college, went to sea in the mid-60's, obtaining seaman's document as an ordinary seaman. In the late 60's AB endorsement; third mate's license in the 70's, second mate's license in the mid-80's and chief mate 1987 or 88. Brief sailing experience with Seafaror's International Union and then went with Exxon in 66 or 67.
- 8 Quit 3 times and hired back 3 times. Sailed on EXXON BATON ROUGE, EXXON SAN FRANCISCO, EXXON PHILADELPHIA and EXXON VENICIA.
- 9 BATON ROUGE and VENICIA are automated steam vessels. Never sailed on a diesel. Into Valdez 20 or 30 times. No pilotage for Valdez.
- 10 Primarily on the BATON ROUGE and we discharged in San Francisco, Washington, Hawaii and Long Beach. BATON ROUGE is 75,000 tons.
- 11 Primary responsibility is as a scheduler at the Baton Rouge Exxon Refinery of all vessels that call there.
- 12 When we leave for Valdez, we use seawater for ballast and nothing else. We never have taken sludge from other vessels produced by diesel and discharge it where the ballast would be discharged in Valdez.
- 13 Never taken ballast from a refinery and discharged it up north.
- 14 The BATON ROUGE has segregated ballast tanks but it also takes sea water and put it in tanks that had crude in it and it's known as dirty ballast. The dirty ballast is discharged at Alyeska. The segregated ballast tanks could hold a total of about 50,000 to 60,000 barrels.

- 219 I don't recall going to Hiri Marine Terminal in Honolulu. We picked up some slop tank content left behind by the EXXON HOUSTON which had been cleaned out at Hawaii before drydocking. I think that was on the previous trip and not this trip and we took it back to Valdez for discharge as dirty ballast.
- 220 I don't recall how much slop we picked up.
- 220-221 It's possible that sometimes during the trips I've made someone flushed their shoreline back to the ship.
- 221 They would ask permission before doing it. I don't recall it happening but it's possible.
- 222 On the trip to Hawaii, we gauged our tanks to determine water content. We gravitated some of it out into one tank.
- 223 That would be in the oil record transfer book which is different from the voyage file. It might also be in the bridge log or the voyage file.
- 224 When we arrive at a terminal we give them a notice of readiness. Before arriving at Alyeska we advised them by radio how much cargo we're going to load and at what rate and how much dirty ballast we have to discharge. This is later confirmed before we get there.
- 225 I don't recall ever seeing a form called Ballast Water Discharge Certificate Affidavit, Department of Environmental Conservation, State of Alaska.

EXAMINATION BY MR. GRIFFIN

- 225 We carried only dirty ballast back to Valdez and clean ballast.
- 226 I may have had 150,000 barrels in 3 center tank. No oil water mixture off loaded at Hawaii was later loaded back on to the BATON ROUGE for the trip to Valdez, nor was any oil that was off loaded at Hawaii loaded back on the BATON ROUGE for that trip.

EXAMINATION BY MR. BLANK

- 227 Alyeska has questioned on their pre-transfer conference where the dirty ballast was generated and also they

DOCUMENT PACKAGE #4

1. Alyeska ballst water survey for EXXON BERNICIA 5/10/89

Reports transfers from Barge "Phoenix 121" of 17,087 bbls "(of which 14,306 is free water)" and from Barge "UT-10" of 49,653 bbls "(of which 2,077 is oil)."

2. Exxon declaration of inspection for discharge of slops from Barge Phoenix to Exxon Bernicia 5/9/89

Reports transfer of "slops from Exxon Valdez - 24,000 bbl of oil" and unidentified amount of water to the barge Phoenix.

SIGNIFICANCE OF DOCUMENTS:

- * Documents transfer of liquid cargo:

- * from barges lightering TAPS trade tankers, and

- * from barges lightering non-TAPS trade tankers.

- * Documents transfer of liquid cargo of unknown or unidentified content; i.e.,

- * Barge Phoenix 121:

- 17,087 bbl transferred - 14,306 bbl of water = 2,781 bbl of what?

- * Barge UT-10:

- 49,653 bbl transferred - 2,077 bbl of oil = 47,576 bbl of what?ts

Ship Name Exxon Benicia		Berth Four	Date 5/10/89
In From SAN FRANCISCO		Outbound To SAN FRANCISCO	
Information Provided By J. Poulos C/M		Form Completed By J. Poulos C/M	
Amount of Dirty Ballast to Discharge 213,682 (bbls.)	Location Dirty Ballast Taken Aboard SAN FRAN, BARGE UT-10 & PHOENIX 121		Into Tanks 5C, 4C, 3C, 1C
Were Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No EXCEPT IC	Method of Washing ☒ C.O.W. ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used? ☐ Yes ☒ No	Amount of Cleaning Agent Used gal.	Type and Name of Cleaning Agent	
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No	Cargo if Other than NSC	Estimated Amount of Other Residue to be Pumped Ashore bbls.	
Will Slop Tank Contents be Pumped Ashore? * ☒ Yes ☐ No SEE ATTACH C	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☒ Yes ☐ No	List Other Residues and Estimate Amounts: SHOWER & BILGE WATER FROM ELLER CALIFORNIA	
Will Bilge Water be Discharged? FROM TUG EXXON NO CALIFORNIA ☒ Yes ☐ No	Are there any unusual substances in the Bilge Water? ☐ Yes ☒ No	If Yes, Identify	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ships file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments: from Barge "Phoenix 121" 17,087 bbls (of which 14,306 is free water) from Barge "U.T. 10" 49,653 bbls (of which 2,077 is oil)			

3657 (1/88) * See Ballast Water Survey 5-9-89 from barge UT-10. Off-loading Bilge water was approved by night shift. BWT informed of substance @ 0710 5/10/89 (JB)

PLEASE FILL IN HIGHLIGHTED AREA

Alyeska pipeline
SERVICE COMPANY

THIS SURVEY IS FOR THE
OILY WATER OFFLOADED TO THE **Ballast Water Survey**
BENICIA FROM THE BARGE PHOENIX.

Ship Name EXXON BENICIA		Birth FOUR	Date 5-9-89
In From SAN FRANCISCO		Outbound To SAN FRANCISCO	
Information Provided By J. Poulos ym; & Mitch GORDON		Form Completed By J. Poulos ym; Mitchel GORDON	
Amount of Dirty Ballast to Discharge Approx 24,000 (bbls)	Location Dirty Ballast Taken Aboard Prince William Sound	Into Tanks 4C	
Were Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No	Method of Washing ☐ COW ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used ☐ Yes ☒ No	Amount of Cleaning Agent Used N/A gal.	Type and Name of Cleaning Agent N/A	
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No	Cargo if Other than NSC unknown	Estimated Amount of Other Residue to be Pumped Ashore Same 24,000 bbls	
Will Slop Tank Contents be Pumped Ashore? ☐ Yes ☒ No	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☒ Yes ☐ No	List Other Residues and Estimate Amounts unknown	
Will Bilge Water be Discharged? ☐ Yes ☒ No	Are there any unusual substances in the Bilge Water? ☐ Yes ☒ No	If Yes, Identify —	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ships file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments SLOPS LOADED FROM BARGE PHOENIX.			

NAME OF VESSEL: BARGE PHOENIX DISCHARGES SLOPS TO EXXON BENICIA

DATE: 5/09/89

An oil transfer operation may not be conducted to or from a vessel unless each respective person in charge has determined by inspection and initiated in the appropriate space that each specific requirement has been met.

DELIVERER	RECEIVER
☒ A. Mooring lines are adequate for all anticipated conditions	☒
☒ B. Cargo hoses and/or loading arms long enough for intended use are attached to fixed connections and have met test and identification requirements	☒
☒ C. Cargo hoses are adequately supported to prevent kinking or other hose damage and strain on the couplings	☒
☒ D. The transfer system is properly lined up for discharging or receiving oil	☒
☒ E. Each flange connection on the cargo system not being used during transfer operations is securely blanked or shut off	☒
☒ F. Cargo hoses and/or loading arms are connected to the manifolds using suitable gasket material and with the exception of a full threaded or approved quick connect coupling, suitable bolts are used in at least every other hole (minimum of 4 bolts) for ANSI standard flange couplings	☒
☒ G. All connections are leak free except for packing glands, etc.	☒
☒ H. Each overboard discharge and sea suction valve connected to the cargo system is sealed or latched in the closed position except when used to receive or discharge ballast in compliance with 33 CFR 157	☒
☒ I. Adequate spill containment have been provided for each hose handling and loading arm area, oil transfer manifold and connection, tank vent overflow and fill pipe	☒
☒ J. Each drain and scupper of the spill containment system is closed by the required mechanical means	☒
☒ K. Monitoring devices (if required by COTP) are installed and operating properly	☒
☒ L. Operable communication systems are provided between the facility and the vessel(s) with procedures established and understood between persons in charge	☒
☒ M. Emergency shutdown system is in position and operable	☒
☒ N. Adequate spill containment equipment is available and can be readily deployed	☒
☒ O. Persons in charge of the transferring and receiving stations report condition of readiness and agree to begin the transfer operation	☒
☒ P. Qualified and designated personnel are in charge and on duty at the facility and the vessel(s) control stations, conducting transfer operations in accordance with and having in possession a copy of the facility operations manual and/or vessel(s) oil transfer procedures	☒
☒ Q. At least one person is present during transfer operations who fluently speaks the language(s) of both persons in charge	☒
☒ R. Each (nonmetallic) cargo hose has no unrepaired loose covers, kinks, bulges, soft spots or any other defect which would permit the discharge of oil through the hose material and no gouges, cuts or slashes that penetrate the first layer of hose reinforcement	☒
☒ S. Adequate fixed lighting of each terminal and vessel(s) transfer connection point and work area is provided	☒
☒ T. The inert gas system (if being operated) is being operated as necessary to maintain an inert atmosphere, in compliance with 48 CFR 32.53-5	☒
☒ U. Persons in charge of the transferring and receiving stations have held a conference to assure the mutual understanding of the following details of the transfer operations:	☒
☒ 1. Product identity to be transferred: SLOPS FROM EXXON VALDEZ - 24,000 BARREL OIL	☒
☒ 2. Sequence of transfer operation: START SLOP, INCREASE WHEN ONLY OIL STOP, NOTIFY, SLOP, AFTER LINE-UP SWITCH RESUME	☒
☒ 3. Transfer rate of flow: ~ 3,000 / HR.	☒
☒ 4. Name or title and location of each person participating in transfer operation	☒
☒ 5. Details of the transferring and receiving systems	☒
☒ 6. Critical stages including starting, stopping, topping and shutdown	☒
☒ 7. Emergency procedures including transfer shut down, containment, notification and cleanup of oil spill	☒
☒ 8. Watch and shift arrangements	☒
☒ 9. Applicable federal, state and local rules	☒

The following item is to be filled out by vessel(s) personnel only.

The requirements as set forth in detail in 48 CFR 38.38-20 concerning the display of warnings, repair work authorization, boiler and galley fire safety, fire or open flames, the determination and designation of safe smoking areas, and the inert gas system have been met.

I certify that I have read, understand and agree with the foregoing as initiated and agree to begin / continue operation.

PERSON IN CHARGE (DELIVERER)			PERSON IN CHARGE (RECEIVER)		
SIGNATURE/TITLE	TIME	DATE	SIGNATURE/TITLE	TIME	DATE
Mitch Laddan	0800	5/9/89	C/M	0235	5/09/89

MONITORING CONTRACT



Official Business

Alaska State Legislature

P.O. Box V
State Capitol
Juneau, Alaska 99811

May 21, 1991

John Sandor, Commissioner
Dept. of Environmental Conservation
P.O. Box O
Juneau, AK 99811

Dear Commissioner:

Today, the House and Senate passed HB 75, the FY 92 operating budget. HB 75 appropriates \$175,000 from the Oil and Hazardous Substance Release Response Fund to the Department of Environmental Conservation to fund a contract with the Prince William Sound Regional Citizens Advisory Council (RCAC) to develop an independent testing and monitoring program for the ballast water treatment facility in Valdez.

This appropriation language is a result of extensive hearings in both the Senate and House on the ballast water treatment plant at the Valdez Marine Terminal. Those hearings documented substantial concerns regarding the adequacy of the monitoring at the plant by both the terminal operator and the agencies with regulatory responsibility.

It was our conclusion that state and federal agencies charged with oversight do not have sufficient information on the origins or composition of the ballast water being treated at the plant. Serious questions have been raised as to whether hazardous wastes, specifically tank washings, tank cleanings and diesel engine and other sludges, are being run through the system, whether the system is capable of treating these wastes and if the Port Valdez is in fact an "impaired waterway".

The funding provided for by section 20(e) of the operating budget will enable DEC to contract with RCAC to develop, in consultation with the Citizens' Oversight Council, a plan for testing and monitoring the ballast off-loaded to the ballast water facility, the effluent discharged into the Port Valdez and the long term effects on the biological system in Prince William Sound.

As articulated by the appropriation language, it is intended that RCAC should utilize 470 funds for the contract and that costs be recovered from Alyeska Pipeline Service Company. If the Department chooses to develop an alternative mechanism of direct payment or reimbursement from Alyeska, this would be consistent with the legislative intent of this appropriation section, provided the "direct billing" arrangement fully provides RCAC with the resources needed to adequately develop and implement the testing and monitoring program.

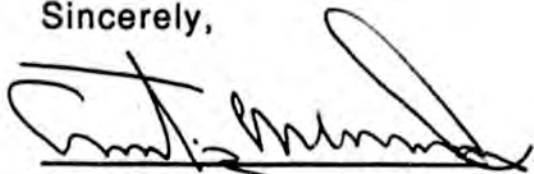
Regardless of the mechanism developed by the Department for recovery of the program costs, it is critically important to the fulfillment of the purpose of this appropriation that the study be performed without any perception of bias. Therefore, in forwarding this responsibility to the Department it is imperative that the testing and monitoring program developed and implemented by the RCAC in consultation with the Citizens' Oversight Council be free of any undue influence by Alyeska or the owner companies. In other words, Alyeska and the owners should not be allowed to direct or control the scope or depth of the program, the environmental consultant contract criteria or the contractor selection process.

We also would like to encourage you to process the contract with RCAC as soon as possible as we believe that development and implementation of an independent testing and monitoring program is a first step toward resolving many of the questions surrounding the ballast water treatment facility and the effluent discharges into Prince William Sound.

We look forward to working with you on development and implementation of this very important program and appreciate your recent efforts to step up oversight and investigation of tanker practices and operations.

Page 3
BWT Monitoring Program

Sincerely,



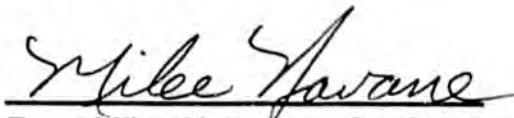
Senator Curt Menard, Chair
Senate Transportation Committee



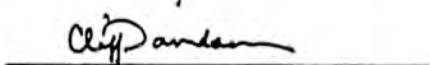
Senator Pat Pourchot, Co-Chair
Senate Finance Committee



Senator Bettye Fahrenkamp, Chair
Legislative Council



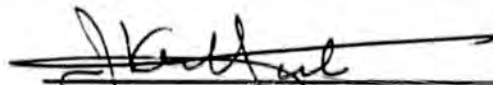
Rep. Mike Navarre, Co-Chair
House Committee on Finance



Rep. Cliff Davidson, Chair
House Committee on Resources



Senator Sam Cotten, Chair
Senate Oil & Gas Committee



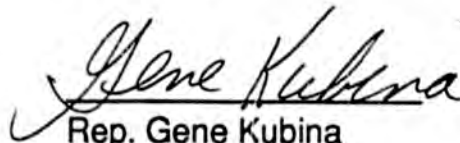
Senator Jay Kerttula, Co-Chair
Senate Finance Committee



Rep. Bill Hudson, Chair
House Committee on Oil & Gas



Rep. Kay Brown, Chair
DEC Budget Subcommittee



Rep. Gene Kubina
District 6

DEPT. OF ENVIRONMENTAL CONSERVATION

OFFICE OF THE COMMISSIONER
P.O. BOX O, JUNEAU, AK 99811-1800

(907) 465-2600
Fax: (907) 586-1391

May 15, 1991

The Honorable Sam Cotten
Chairman, Senate Special Committee on Oil and Gas
Alaska State Senate
P. O. Box V
Juneau, AK 99811

Dear Senator Cotten:

During recent hearings by the Senate Transportation Committee, you requested answers to three questions posed to the Department staff.

Does DEC have the necessary statutory authority to charge Alyeska for the State's monitoring of the BWT facility through user fees?

Yes, the Department would be able to charge back to Alyeska any costs it incurred to conduct monitoring required under the facility's NPDES permit. It is normal practice for the holders of these federal permits themselves to be responsible for conducting monitoring. EPA has told us they are not aware of any case where either a regulator or a third party is required to conduct the monitoring for a permit holder.

Does DEC believe the State should be responsible for monitoring of the facility, with the cost charged back to Alyeska?

The Department believes that the best use of the Department resources is to carefully monitor the work of Alyeska and its contractors while continuing to perform random sampling ourselves using DEC's on-scene resources and our Douglas laboratory. The DEC does not believe it is necessary to charge these costs back to Alyeska. Second, we support Senator Menard's suggestion that Alyeska contract with the Regional Citizens' Advisory Council's Monitoring Committee to provide arms-length oversight of their ballast water monitoring, just as now occurs at Sullom Voe in Scotland. We believe that was one of the original purposes of the RCAC, both in federal law and in their contract with

May 15, 1991

Alyeska. Third, Alyeska has invested substantial resources in an on-site laboratory. This laboratory is certified by the State's Douglas lab annually. As a means of verifying this lab's performance, DEC will conduct random sampling as outlined in the enclosed memorandum.

We anticipate Alyeska will continue its own monitoring efforts in order to track test results of others. I expect this effort to be mutually beneficial as verification of test results will be necessary for establishing sample analysis validity.

What is the status of the Department's current monitoring program?

There are two components to this answer; there is the information provided by Alyeska and its contractor as a result of the NPDES permit's conditions, and the monitoring DEC is doing beyond the requirements of the permit.

Much information is provided under the NPDES permit. There are a number of monitoring reports available which are required under the NPDES permit. I have enclosed four recent reports, including a summary report of environmental monitoring. No adverse impacts are noted by these or other reports.

Our Department has gathered additional information through its efforts at implementing the sampling and monitoring plan which has been enclosed. We will continue with this effort. We are meeting with Alyeska, the TAPS tanker fleet, and EPA to document tanker practices, operations, and other aspects of the BWT facility which may adversely impact the environment or conditions of the NPDES permit as is appropriate. One result is the ballast water survey form is being revised to more accurately represent the discharge of ballast water.

The Technical Advisory Group (TAG) will be an important part of our effort to improve the BWT monitoring program. As convener of this group, we will take a more active role reviewing the TAG's recommendations. As important issues are raised, we will consult with EPA, Regional Citizens' Advisory Committee (RCAC), and other interested groups to make certain that all relevant indicators are included in either required or voluntary monitoring programs.

The Department of Environmental Conservation has put in place a comprehensive plan to monitor the operations of the Alyeska Ballast Water Treatment (BWT) Facility. Our monitoring plan covers all aspects of the BWT: influent and effluent monitoring, tanker practices, operations, and environmental impact. This plan reflects heightened concerns about the need for increased regulatory oversight of this facility and I expect that over time, as data is gathered, we will have greatly increased our knowledge of this facility.

I have enclosed a memorandum prepared by the Southcentral Regional Office which outlines the sampling plan we have instituted.

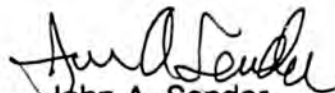
May 15, 1991

Results of DEC tests conducted since February do not indicate a permit violation. More testing will be necessary to determine if permit violations are occurring or if additional monitoring is needed. Test dates and environmental monitoring is reviewed as the Department receives it. It will take time to understand the results of the studies and data.

The Department is exercising proper regulatory oversight for the BWT. Certainly, improvements are always possible, but the existing NPDES and DEC plan addresses the significant issues raised about this facility's operator and DEC's oversight.

If I may be of further assistance, please don't hesitate to contact me. I will keep you updated as our monitoring program continues.

Sincerely,


John A. Sandor
Commissioner

ENCLOSURES: Sampling Plan Memo
 Monitoring Reports (4 each)

cc: Senator Curt Menard (with enclosures)

Sheila Gottehrer, Executive Director
Regional Citizen's Advisory Council

Mike Williams, Vice President for Environment and Contingencies
Alyeska Pipeline Service Company

Svend Brandt-Erichsen, Regional Administrator
ADEC - Southcentral Region (w/o enclosures)

Art Ronimus, Environmental Engineer
ADEC - Southcentral Regional Office (w/o enclosures)

Janice Adair, Special Assistant to Commissioner
ADEC - Juneau (w/o enclosures)

Doug Redburn, Environmental Manager
ADEC - Water Quality Management - Juneau (w/o enclosures)

Gunny
FYI

Alaska State Legislature



Sen. Curt Menard, Chair
Sen. Lloyd Jones, Vice-Chair
Sen. Bettye Fahrenkamp, Member
Sen. Drue Pearce, Member
Sen. Dick Shultz, Member

P.O. Box V
Juneau, AK 99811

907 465-4921

Senate Transportation Committee

May 21, 1991

John Sandor, Commissioner
Department of Environmental Conservation
P.O. Box 0
Juneau, AK 99811-1800

Dear Commissioner:

Thank you for copying me with your letter of May 15 to Senator Cotten and providing copies of the monitoring reports.

I am encouraged by the interest you have expressed in increasing our knowledge of the ballast water treatment facility, influent and effluent monitoring, tanker practices, operations and environmental impacts on Prince William Sound. Hopefully this heightened concern will result in increased regulatory oversight of the facility and tanker operations. I was not aware that DEC had a comprehensive BWT monitoring plan and would appreciate your forwarding a copy to me.

I also appreciated your comments of support for the independent monitoring and testing contract with RCAC. I am looking forward to working with DEC, RCAC and the Citizens' Oversight Council in the development of the program and seeing the concerns raised during recent House and Senate committee hearings adequately addressed.

After your comments before the Senate Resources Committee regarding DEC's renewed investigation into tanker operations and practices, my staff spoke with Svend Brandt-Erichsen in Anchorage regarding progress on the investigation. It's my understanding that the investigation at this time is focusing on a historical review of documents pertaining to tanker operations and possible permit violations. I would be interested in

Page 2

Commissioner Sandor

receiving the report or statement of findings which is drafted as a result of this documents investigation.

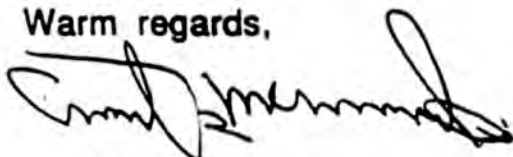
Also, to familiarize myself with the types of records which DEC maintains, I would like you to provide me with a representative sampling of the types of documents which your staff is reviewing as a part of their investigation.

From what I have read about the members of the Technical Advisory Group (TAG), they appear to be a competent group of scientists. I encourage you to avoid duplication in your monitoring and oversight efforts and therefore support utilizing the TAG's expertise wherever possible in resolving issues which have arisen surrounding oversight of the BWT and in improving our monitoring program. I would like to know when you intend to convene the TAG so that I or a member of my staff could attend the meeting. Also, I would be interested to know what the NPDES permit requirements are related to participation by the TAG in monitoring report development and review of completed reports?

Lastly, I would like to request that you forward me a copy of the NPDES permit which applies to BWT plant operations.

I look forward to working with you and your staff on resolution of these ballast water issues through the interim and appreciate your renewed investigation into tanker operations and alleged permit violations. I believe that we can improve our regulatory oversight and monitoring of the ballast water facility.

Warm regards,

A handwritten signature in black ink, appearing to read "Curt Menard", written over a horizontal line.

Senator Curt Menard, Chair
Senate Transportation Committee

Alaska State Legislature

Sen. Curt Menard, *Chair*
Sen. Lloyd Jones, *Vice-Chair*
Sen. Bettye Fahrenkamp, *Member*
Sen. Drue Pearce, *Member*
Sen. Dick Shultz, *Member*

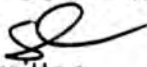


P.O. Box V
Juneau, AK 99811
907 465-4921

Senate Transportation Committee

MEMORANDUM

TO: CS HB 75 Conference Committee Members

FROM: Senator Curt Menard, Chair 
Senate Transportation Committee
Senator Sam Cotten, Chair 
Senate Oil & Gas committee

RE: Conference Committee Front Section Request

DATE: May 10, 1991

We would like to request your support for the **Senate** language in the front section of HB 75 which provides \$175,000 of contract funding to DEC for independent environmental monitoring and testing at the Alyeska ballast water treatment facility in Valdez. (Senate CS for CS for House Bill 75 p. 4, lines 22-26).

The DEC will contract with the Prince William Sound Regional Citizens Advisory Council (RCAC), a group of community and local government representatives established by Congress under the Oil Pollution Act of 1990 and charged with ensuring that the Alyeska terminal and tanker operations are conducted in an environmentally sound manner.

Extensive hearings were held earlier this session by House and Senate Oil & Gas and Transportation Committees regarding the State's oversight and monitoring of the ballast water treatment plant at Alyeska. The consensus derived from the hearings was that independent environmental testing, monitoring and verification of Alyeska's monitoring and testing program is essential and should be implemented.

We would appreciate your support of the Senate language.

Alaska State Legislature

Sen. Curt Menard, *Chair*
Sen. Lloyd Jones, *Vice-Chair*
Sen. Bettye Fahrenkamp, *Member*
Sen. Drue Pearce, *Member*
Sen. Dick Shultz, *Member*

P.O. Box V
Juneau, AK 99811
907 465-4921

Senate Transportation Committee

TO: Senator Pat Pourchot, Co-Chair
Senator Jalmar Kerttula, Co-Chair
Senate Finance Committee

FROM: Senator Curt Menard, Chair
Senate Transportation Committee

Senator Sam Cotten, Chair
Senate Oil and Gas Committee

DATE: April 23, 1991

RE: Alyeska Terminal Ballast Water Testing & Monitoring

The purpose of this memorandum is to ask for your support in making an amendment to the front section of the operating budget regarding use of the Oil and Hazardous Substances Release Response Fund (the 470 Fund) to provide for an appropriation of \$175,000 to the Department of Environmental Conservation, in consultation with the Citizens' Oversight Council on Oil and Hazardous Substances, to fund an independent testing and monitoring program for the ballast water treatment facility. A proposed amendment with appropriate language is attached for your consideration.

DISCUSSION

Recent events and revelations have led the Senate Transportation and Oil & Gas Committees to hold extensive hearings on the ballast water treatment plant at the Valdez Marine Terminal. Those hearings have raised substantial questions regarding the adequacy of the monitoring at the plant by both the terminal operator and the

agencies with regulatory responsibility. In order to ascertain the quality of terminal monitoring and to restore public confidence in the state's regulatory oversight of the facility, we would like to propose funding for alternative independent studies examining the situation at the plant.

Background

In 1974, the state entered into a "Right-of-Way Lease for the Trans-Alaska Pipeline" with seven oil companies. In the lease, the owner companies covenant that :

"Lessees shall manage, supervise and implement the construction, operation, [and] maintenance [of the TAPS] in accordance with the best practicable engineering technology available. . . to the extent allowed by the state of the art and the development of technology."

The lessees also promised to minimize pollution from TAPS.

This lease required the owner companies to appoint a common agent to operate and maintain the TAPS. The owners appointed Alyeska Pipeline Service Company as their common agent and Alyeska serves in that capacity today.

Alyeska is owned by Amerada Hess Pipeline Corporation, ARCO Pipe Line Company, Exxon Pipeline Company, Mobil Alaska Pipeline Company, Phillips Alaska Pipeline Corporation, BP Pipelines (Alaska), Inc.. and Unocal Pipeline Company. Alyeska's three main shareholders are ARCO Pipe Line Company, Exxon Pipeline Company, and BP pipelines (Alaska), Inc.. (formerly Sohio Alaska Pipe Line Company), which together own over ninety percent of the shares of stock in Alyeska.

Ballast Water Treatment System

Some of the most challenging environmental issues associated with the Trans-Alaska Pipeline are posed by the operation of Alyeska's Valdez Marine Terminal.

Tankers arrive at the terminal carrying ballast water in their cargo holds to keep the tankers stable during the voyage north. More ballast water is used in the winter because seas are worse.

Unsegregated ballast water mixes with residual oil in the holds of the tankers and therefore becomes contaminated. The ballast is off-loaded and treated in Alyeska's ballast water treatment (BWT) system.

The BWT is intended to reduce the contamination from the ballast water, particularly of BETX (benzene, ethylbenzene, toluene, and xylene), which are among the most actively toxic components of crude oil. The ballast water is then discharged into Valdez Bay. The BWT is regulated under a National Pollution Discharge Elimination System (NPDES) permit. The NPDES permit sets pollutant effluent limits and other conditions for operating the BWT. The state role in NPDES permitting is to impose any conditions necessary to certify "reasonable assurance" that Alaska's water quality standards are being met.

In 1986, Alyeska modified the system to add a biological (bug) treatment component. These organisms are supposed to eat most of the last remaining vestiges of the toxics and other polyaromatic hydrocarbon compounds in the effluent water before discharge. Alyeska chose to add the bugs as the least expensive method of improving the BWT performance during permit review, not because these bugs were necessarily the most effective technology.

Although it is regulated, the BWT facility is still discharging approximately 18 million gallons of wastewater — containing 152 pounds of BETX — on a daily basis. That is a discharge of 27.7 tons of BETX per year. Accordingly, permit inspection and monitoring is an ongoing intensive task.

The Problem

Recent allegations about what is being brought to Alaska as ballast water have raised concerns about the adequacy of the monitoring being done at the BWT. Currently, Alyeska performs routine self-monitoring on the effluent and the results are cross-checked and monitored by the Alaska Department of Environmental

Conservation (DEC). Each tanker calling at the terminal fills out a report, called a Ballast Water Survey Report, that details what is contained in the ballast water. However, this report does not indicate the origin of the ballast load.

On the basis of the testimony and materials developed during the Senate Transportation and Oil & Gas Committee hearings, it is apparent that the state and federal agencies charged with oversight do not have an independent and adequate grasp of the origins or the constituents of the ballast water being treated at the plant. There have been allegations that hazardous wastes (especially, tanker washings) are being run through the system and that the system is not capable of treating these wastes. Thus, these hazardous wastes are being discharged into Valdez Bay. Current effluent sampling will not necessarily detect these substances because they are not listed among the pollutants identified for testing.

The expectation of the people of the State of Alaska, especially since the 1989 Exxon Valdez oil spill, is that **we must no longer rely on industry self-monitoring and self-regulating** because it too often leads to the complacency that allowed this accident to happen.

MONITORING PROPOSAL

We would like to propose a multi-faceted approach to address this problem. The central proposal would entail a legislative appropriation from the Oil and Hazardous Substance Release Response Fund (470 Fund) of \$175,000 to the Department of Environmental Conservation to contract for independent testing and monitoring of the BWT facility.

1. The first step would be to establish an independent technically-proficient group that is capable of understanding the complexities of the BWT and overseeing additional monitoring and studies.

This group would consist of toxicologists, as well as scientists with expertise in RCRA hazardous wastes and wastewater treatment. This group would oversee, review, and advise the Department of Environmental Conservation on the monitoring

methods, sampling protocols, and results analysis. Costs associated with this group would include travel and per diem, reimbursement of telephone costs, and a retainer fee for the days spent working on this contract. It is estimated that this work could be done for about \$100,000.

2. An additional step that should be taken is to determine what substances are actually entering the BWT from tankers.

In order to accomplish this, an investigator would be hired to track down where the ballast water is being taken on by the tankers that load at Valdez. Until the ballast water is tracked to the source, it will be impossible to adequately monitor to determine if hazardous wastes are being sent through the BWT or to impose regulatory limits on what the terminal may accept from tankers. The tanker ballast water survey reports should be verified; tanker ballast loads should be traced back to their source. A contract for a full-time, six-month investigation would probably cost about \$50,000.

3. An informal advisory body could then be established to oversee a long-term regulatory approach based upon the results of the monitoring data.

The purpose of this group would be to help the legislature and regulatory agencies determine what level of monitoring and oversight is necessary given the information provided by the technical group and the investigator. (Is the state confident that the BWT is effectively treating wastes? Is it working as designed? Can it handle the priority pollutants? Can it handle other toxics?) This body would consist of the following:

- A Citizens' Oversight Council representative
- An EPA representative
- A DEC representative
- An Alyeska representative
- A PWS Regional Citizens Advisory Council member

The costs associated with this stage would be \$25,000 for travel, per diem, telephone, and miscellaneous office expenses.

In summary, total expenses for the entire effort described above would be \$175,000.

* * * * *

Thank you for your consideration of this proposal. Your assistance with this request would be greatly appreciated. If you need further information, please let us know or contact Johanna Munson, staff to the Senate Transportation Committee (465-2679) or Ginny Fay, staff to the Senate Oil & Gas Committee.

The sum of \$175,000 is appropriated from the Oil and Hazardous Substance Release Response Fund to the Department of Environmental Conservation for the development and implementation, in consultation with the Citizen's Oversight Council on Oil and Hazardous Substances, of an independent monitoring, testing and investigation of the Alyeska Terminal Ballast Water Treatment facility.

May 16, 1991

To: Sam
From: Ginny
RE.: Contract with RCAC for Alyeska Ballast Water Monitoring

I wanted to bring you up to date on some recent information regarding the Alyeska ballast water treatment facility and the appropriation to RCAC for independent monitoring.

Tanker Washings

The Boston Globe is expected to present a major article regarding a tanker washing incidence. Supposedly approximately 55,000 barrels of tanker washings were off loaded from the Arco Spirit, Arco Independence, and the Overseas Boston in Los Angeles to two Crowley Maritime barges on March 27. These washing were then loaded onto the Valdez-bound Tonsina for disposal at the BWT facility.

As a result of substances in the washings that could potentially be in violation of the NPDES permit, the EPA ordered that only a conservative cut be made below the oil layer during the Tonsina deballasting at the Alyeska BWT facility. This was to insure that only the water fraction be transferred. The remaining washings were then returned south. The problem arises, however, because supposedly these same washings were again returned to Valdez and deposited at the BWT facility without notifying the EPA. Johanna Munson spoke with Harold Geren of the EPA who could not explain why the washing were discharged the second time.

Alyeska Testimony at the Joint Ballast Water Committee Meetings

On April 11, Alyeska presented a chart showing daily maximum BETX effluent concentrations. Based on the chart presented of effluent levels from August 1989 through July 90, Alyeska testified that "[s]ince March 1990, the monthly average (of BETX emissions) has flattened out altogether." This testimony is at best misleading because information on effluent levels through December 1990 (attached), clearly illustrate that the monthly average has NOT

"flattened out."

Ballast Water Monitoring Contract

According to Richard Fineberg, who recently completed a contract for RCAC on the Alyeska BWT facility, there are factions within RCAC that gave him a bad time about his criticisms of Alyeska in his report--which I read and did not find objectionable. Richard is concerned that RCAC will be influenced by industry in contracting for the monitoring. To prevent this from happening, Johanna and I are working on a letter for your and Curt's signatures that stresses the importance of independent, objective research.

Attachment

From the desk of


Richard A. Fineberg
Juneau, Alaska 99801

401 8th St. - Apt. 208
tel 907 / 463-3568

To: Johanna Munson & Ginny Fay

Date: May 13, 1991

Re: Alyeska Materials on Ballast Water Treatment

In testimony before the House Oil & Gas Committee March 15, Gene Dickason, Alyeska Pipeline Service Co.'s Environmental Manager, presented an overhead chart that showed "BETX Final Effluent Daily Values" through December 1990. But in the information packet Alyeska distributed on that day, the company replaced the overhead chart with a chart that terminated on July 31, 1990. The chart submitted to the House for the record omitted the December 1990 BETX spike and thus appeared to support Alyeska's claim that "[s]ince March 1990, the monthly average (of BETX emissions) has flattened out altogether." This claim and the chart were contained in an Alyeska report presented that day, "Valdez Marine Terminal Ballast Water Treatment: Operations, History and Effects."¹

I requested the overhead chart from Alyeska several times during the preparation of my draft report on ballast water treatment for the Regional Citizens' Advisory Council. However, Alyeska did not respond to my information requests until after the draft report was completed and circulated to the RCAC's Terminal Operations and Environment Committee April 8. Andy Spear of House Oil & Gas advises me that although he asked Alyeska to provide the chart on more than one occasion, he never received it.

Subsequent to completion of my draft report, Alyeska did produce a copy of the overhead chart.

The version of "Valdez Marine Terminal Ballast Water Treatment: Operations, History and Effects" distributed at the Senate hearings of April 9-11 appears identical to the House version, except that Alyeska removed the charts tracking BETX values for the treatment plant effluent of the. It is my understanding that the overhead chart was shown to the committee. However, your committee records do not appear to include a copy of that chart.

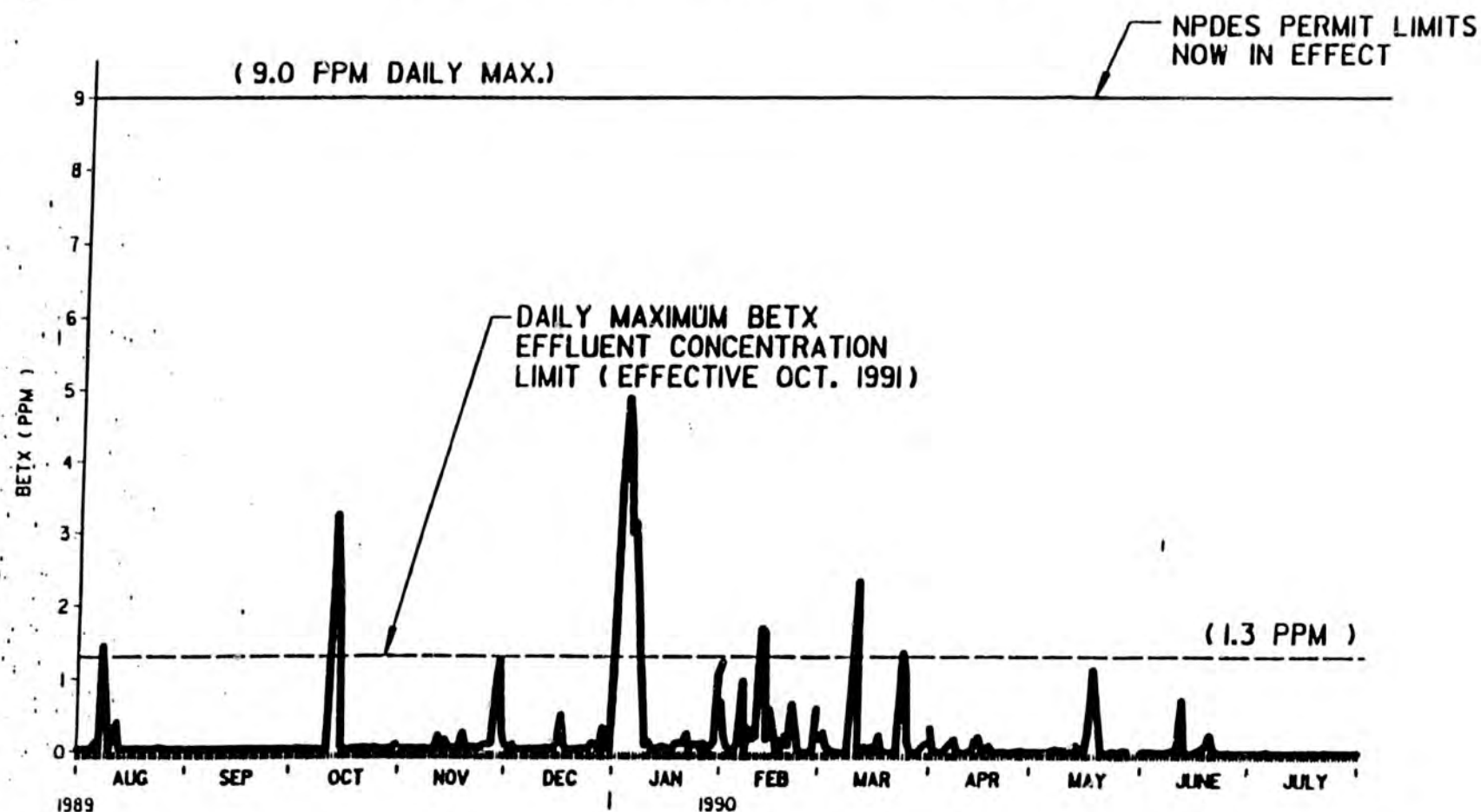
Attached are the outdated chart Alyeska provided the House Oil & Gas Committee March 15 and the chart running through December 1990, which Alyeska provided subsequent to the circulation of my draft report.

Note that the extension of the chart into the winter months appears to render false Alyeska's claim that "[s]ince March 1990, the monthly average (of BETX emissions) has flattened out altogether."

¹ Alyeska Pipeline Service Co., Feb. 1991, p. 3 and attachment.

Chart #1

BETX FINAL EFFLUENT DAILY VALUES

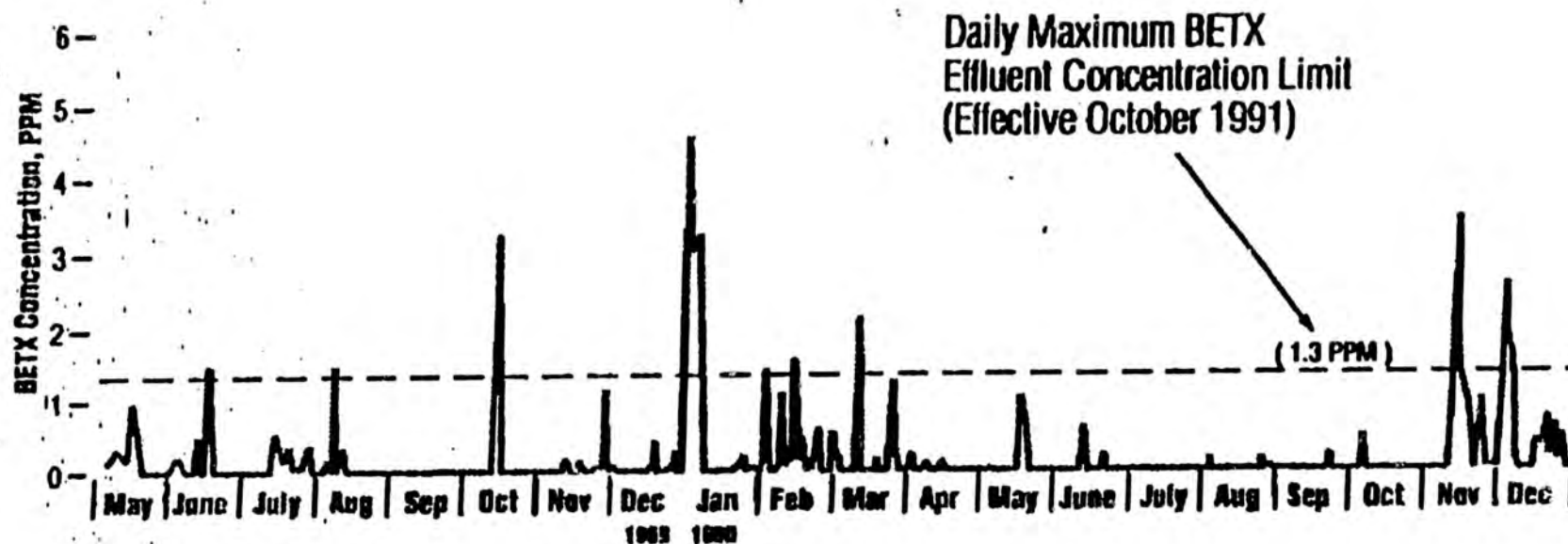


Alyeska pipeline
SERVICE COMPANY

Page 1 of 1

BETX Final Effluent Daily Values

May 1989 through December 1990



Alyeska pipeline

SERVICE COMPANY

1328 SOUTH BRADAW STREET, ANCHORAGE, ALASKA 99512. TELEPHONE (907) 278-1811 TELEEX 090-25127

April 15, 1991

Letter No . 91-8405-G
File No. B-4.00

Mr. Harold Geren
U.S. Environmental Protection Agency
Region 10
1200 Sixth Ave.
Seattle, WA 98101

Subject: Discharge of Cargo Tank Ballast Water from the
Tanker EXXON New Orleans into the Alyeska Ballast
Water Treatment Facility

Dear Mr. Geren:

This letter is to request authorization from the EPA for the discharge of transferred ballast water into our treatment system in Valdez. On or about April 17, 1991, approximately 40,000 barrels of cargo tank wash water will be transferred from the tanker EXXON Long Beach to the EXXON Galveston. These washings are sea water and Alaska North Slope crude oil. No cleaning agents were used in the wash water. The wash water will then be transferred from the EXXON Galveston to the EXXON New Orleans. The EXXON New Orleans is scheduled to arrive at the Valdez Terminal on or about April 22, 1991, at which time the wash water would be transferred to the Ballast Water Treatment facility.

If you have any questions concerning this request, please call me at (907) 265-8437.

Very truly yours,



for R.L. Mikkelsen
Environmental Permits Manager

RLM/rr

cc: Steve Provant, ADEC
Art Ronimus, ADEC
Simon Mawson, ADEC
Jerry Brossia, SPCO

rlm6561



MAR 28 1991

Reply to
Attn of: WD-137

Richard L. Mikkelsen
Manager, Environmental Permits
Alyeska Pipeline Service Co.
1835 South Bragaw Street
Anchorage, Alaska 99512

Re: NPDES Permit No. AK-002324-8, Transferred Cargo Tank
Washings and the Tonsina

Dear Mr. Mikkelsen:

This letter is in response to your request (dated March 26, 1991) for approval to discharge approximately 55,000 barrels of ballast water containing cargo tank washings from the Arco Spirit, Arco Independence, and the Overseas Boston which have been transferred to the Valdez-bound Tonsina. The last three cargos on the barges used to transfer the wash water were bunker fuel oil.

In accordance with Part I.B.2. of the Alyeska NPDES permit, the Environmental Protection Agency is hereby authorizing discharge of the cargo tank wash water to the BWT as requested. We have consulted with the Alaska Department of Environmental Conservation (ADEC), and they concur with this decision. The granting of this request is based upon our understanding, as stated in the attachment to your letter, that no cleaning agents or other chemicals have been used during the cargo tank washings, and that gravity separation of the residual oil and wash water will take place before discharge to the BWT. EPA also understands that a conservative cut will be made below the oil during deballasting to insure that only the water fraction will be transferred to the BWT. Only the water fraction is authorized for discharge. This decision is also based on the understanding that acceptance of these wastes by Alyeska will not result in violation of the NPDES permit. Discharge of this wastestream should be discontinued if it is determined that the discharge is causing a violation of the terms of the NPDES permit.

In light of the characteristics of bunker fuel oil (previous cargos in the transfer barges), additional precautions should be taken to insure that oil and/or sludge above and/or below the ballast water is not transferred to the BWT. A monitoring tool (oil/water interface probe or marine moisture electric probe) should be used during the transfer. Alyeska should provide assurance that no bunker fuel or sludges are discharged to the BWT from the Tonsina by submitting the gauge record of the oil/water interface probe measurements to EPA and ADEC. Additionally EPA requests that a sample of the ballast water off-loaded from the tank containing the tank washings be collected and analyzed for priority pollutants, plus any other tests that ADEC request. The analytical results shall be submitted to ADEC and EPA. ADEC may also want to collect a split sample for analysis. Steve Provant, ADEC-Valdez, or Art Ronimus, ADEC-Anchorage, should be contacted regarding collection of a split sample.

Questions concerning the above may be addressed to Anne Dailey at (206) 553-2110.

Sincerely,



Harold E. Geren, Chief
Water Permits and Compliance Branch

cc: John Sandor, ADEC-Juneau
Svend Brandt-Erichsen, ADEC-Anchorage
Art Ronimus, ADEC-Anchorage
Steve Provant, ADEC-Valdez
Roger Gale, BP Oil

Alyeska pipeline

SERVICE COMPANY

1608 SOUTH BRAGAN STREET ANCHORAGE, ALASKA 99512 TELEPHONE (907) 275-1611 TELEX 08025127

March 26, 1991

Letter No. 91-8334-G
File No. B-4.00
(transferred ballast)

Mr. Harold Geren
U.S. Environmental Protection Agency
Region 10
1200 Sixth Avenue
Seattle, WA 98101

Subject: Discharge of Cargo Tank Water from the Tanker
Tonsina into the Alyeska Ballast Water Treatment
Facility

Dear Mr. Geren:

This letter is to request authorization from the EPA for the discharge of transferred ballast water into our treatment system in Valdez. The attached letter to Gene Dickason from Captain Roger Gale describes the details of the transfers. The tanker carrying the transferred water is the Tonsina and she is due to arrive in Valdez on approximately April 2, 1991.

Your prompt response to this request would be appreciated. Because the barges used to transfer the wash water had previous cargoes other than North Slope Crude (bunker oils) please inform us if your office wishes Alyeska to collect and analyze samples of the water from the Tonsina should you approve discharge at Valdez.

If you need additional information on this request please call me at (907) 265-8437.

Very truly yours,



R. L. Mikkelsen
Environmental Permits Manager

lab/rln646L

cc Steve Provant, ADFC
Art Ronimus, ADEC
Simon Mawson, ADEC
Jerry Brossia, SPCO

1312

BP OIL

BP Oil Company
200 Public Square
Cleveland, Ohio 44114-2275
(216) 586-4141

March 25, 1991

Oscar E. Dickason
Manager, Environmental Dept.
Alaska Pipeline Service Co.
1835 South Bragaw St.
Anchorage, Alaska 99512

YSD	LT2	WJS	RLM	LLM	CRB
CJO	ENVIRONMENT				RAM
TRB	MAR 25 1991				SLM
SOH	✓ L. A. Dickason				LAB
MLS					PD
WGR	FILE	KLK	TEM	BLM	

Dear Gene

3 11.00 TRANSFERRED
BULKING

Re: Transferred Cargo Tank Washings

The ARCO SPIRIT, ARCO INDEPENDENCE and the OVERSEAS BOSTON have been redelivered to owners, and are expected to proceed into lay-up. All three vessels carried out full crude oil washing of their cargo tanks, followed by water rinsing, prior to leaving our service. The tank washings from these vessels will be transferred via barges to the TONSINA, for carriage to and disposal via the Valdez BWT facility. Total volume of tank washings to be transferred is approximately 55,000 BLS.

No tank washing or other cleaning agents were used by any of the vessels involved, and the last three cargoes on the barges employed in the transfer, have been verified to have been bunker oils.

The TONSINA is currently scheduled to arrive in Valdez on or about the 2nd of April.

Yours truly,



R. A. Gale
Manager, Marine Transportation

cc: J. A. Maslen
G. Clark, Keystone

RAG:LLB



APR 18 1991

Reply to
Attn of: WD-137

Richard L. Mikkelsen
Manager, Environmental Permits
Alyeska Pipeline Service Co.
1835 South Bragaw Street
Anchorage, Alaska 99512

Re: NPDES Permit No. AK-002324-8, Cargo Tank Washings
Transferred from the EXXON Long Beach to the EXXON New
Orleans

Dear Mr. Mikkelsen:

This letter is in response to your request (dated April 15, 1991) for approval to discharge transferred ballast water. Approximately 40,000 barrels of ballast water containing cargo tank washings from the EXXON Long Beach will be transferred to the Valdez-bound EXXON New Orleans.

In accordance with Part I.B.2. of the Alyeska NPDES permit, the Environmental Protection Agency is hereby authorizing discharge of the cargo tank wash water to the Ballast Water Treatment Facility (BWT) as requested. We have consulted with the Alaska Department of Environmental Conservation (ADEC), and they concur with this decision. The granting of this request is based upon our understanding, as stated in your letter, that the tank washings contain only seawater and Alaska North Slope crude oil and that no cleaning agents or other chemicals have been used during the cargo tank washings. We also understand that gravity separation of the residual oil and seawater will take place before discharge to the BWT. A conservative cut shall be made below the oil during deballasting to insure that only the water fraction will be transferred to the BWT. Only the water fraction is authorized for discharge.

This decision is also based on the understanding that acceptance of these wastes by Alyeska will not result in violation of the NPDES permit. Discharge of this wastestream should be discontinued if it is determined that the discharge is causing a violation of the terms of the NPDES permit.

ADEC may want to collect a ballast water sample for analysis. Steve Provant, ADEC-Valdez, should be notified of the EXXON New Orleans' arrival time so that collection of a sample could be arranged.

Questions concerning the above may be addressed to Anne Dailey at (206) 553-2110.

Sincerely,



Harold E. Garen, Chief
Water Permits and Compliance Branch

cc: Svend Brandt-Erichsen, ADEC-Anchorage
Art Ronimus, ADEC-Anchorage
Steve Provant, ADEC-Valdez

Alaska State Legislature



Senate

SENATOR BETTYE FAHRENKAMP
CHAIRMAN, LEGISLATIVE COUNCIL
CHAIRMAN, ADMINISTRATIVE REGULATION
REVIEW COMMITTEE
119 N. CUSHMAN STREET, SUITE 201
FAIRBANKS, ALASKA 99701
OFFICE (907) 452-4882
HOME (907) 456-2899

WHILE IN JUNEAU
P.O. BOX V
JUNEAU, ALASKA 99811
CAPITOL, ROOM 125
OFFICE (907) 465-3834
HOME (907) 780-6027

MEMORANDUM

TO: Senator Menard, Chair, Transportation Committee and
Senator Cotten, Chair, Special Committee on Oil and
Gas.

FROM: Senator Bettye Fahrenkamp *AF*

DATE: April 10, 1991

SUBJECT: Alyeska Ballast Water Treatment

Although I have not been able to attend the hearings on Alyeska's ballast water treatment plant (BWT), my staff has closely followed this issue. In addition, we have reviewed background materials and testimony.

I find it interesting that with as much as has been written on the subject of the Valdez Terminal's ballast water treatment, we actually know so little. Charges have been leveled and detailed explanations presented. These are my perceptions:

1. Contaminated ballast has been transferred from other tankers and shore holding tanks to TAPS tankers heading for Valdez. That ballast was then discharged to the BWT.
2. Some of that ballast contained tank cleaning agents of unknown (90% petroleum base) composition.
3. In the past, EPA and DEC documentation, testing and tracking procedures have been inadequate to answer questions about exactly what was in contaminated ballast and where it originated.

What is the problem here? Frankly, I'm less concerned with what goes into the BWT than with what comes out. Our focus should be on the question of hydrocarbon pollution in the water and sediment in Prince William Sound. We need to know if the mixing zone model used to evaluate the plant's operation is valid. The question of BETX or metabolites of BETX accumulating in the sediments must also be addressed.

It appears that some BWT effluent monitoring and testing by Alyeska was sloppy and inconclusive. After the experience of the oil spill and the recent controversy over pipeline structural testing, I believe self-monitoring by Alyeska is inappropriate.

The Department of Environmental Conservation does not have the expertise or facilities to maintain adequate periodic testing necessary to answer questions about pollution from the BWT.

Therefore, I urge the committees to consider asking the Technical Advisory Group to prepare a Request For Proposals from private environmental consulting firms. The purpose would be to implement a monitoring and testing project designed to minimize uncertainties surrounding the Alyeska ballast water treatment facility.

OVERVIEW

Alaska State Legislature

Sen. Curt Menard, *Chair*
Sen. Lloyd Jones, *Vice-Chair*
Sen. Bettye Fahrenkamp, *Member*
Sen. Druc Pearce, *Member*
Sen. Dick Shultz, *Member*

P.O. Box V
Juneau, AK 99811

907 465-4921

Senate Transportation Committee

OVERVIEW

SENATOR CURT MENARD, CHAIRMAN

The Alyeska Marine Terminal in Port Valdez and the TransAlaska Pipeline System (TAPS) tanker fleet play vital roles in the movement of North Slope oil to market. The state shares regulatory responsibility with the federal government for overseeing this entire system--from wellhead to tanker.

Following the Exxon Valdez oil spill, the industry, state and federal governments, and public worked together to reduce the risk of oil spills. Given the recent controversy regarding oil tanker ballast water and the 1988 declaration of Port Valdez as a "toxic impaired waterway," many issues regarding marine oil pollution from oil tankers still remain.

Tankers arrive at the TAPS Valdez Marine Terminal carrying ballast water in their cargo holds to keep the tankers stable during the voyage north. More ballast water is used in the winter because seas are worse. Unsegregated ballast water mixes with residual oil in the holds of the tankers, and therefore becomes contaminated. The ballast water is off-loaded and treated in Alyeska's ballast water treatment system (BWT). In addition to the usual ballast water of tankers arriving at Valdez, questions have been raised regarding the transfer of ballast water between tankers to be unloaded at the Alyeska facility. The tanker industry recently stated that the transfer of ballast water from other North Slope tankers to northbound tankers is a common practice.

The BWT is intended to reduce the contamination from ballast water, particularly of BETX (benzene, ethylbenzene, toluene, and xylene), which are the most actively toxic components of crude oil. After treatment, the ballast water is discharged into Valdez Bay. The BWT is regulated under a National Pollution Discharge Elimination System (NPDES) permit. The

NPDES permit sets effluent levels and other conditions for operating the BWT facility. The state's role in the NPDES permitting process is to impose necessary conditions to certify "reasonable assurance" that Alaska's water quality standards are met.

When the Valdez facility was initially planned, permitted and constructed, Alyeska agreed to provide a state-of-the-art BWT facility. In addition, as part of the TAPS Right-of-Way lease, Alyeska contracted with the state to prevent or abate any environmental damage, including marine pollution. However, Alyeska has failed to install or use several of the key components to the state-of-the-art system over the years. Instead, Alyeska modified the BWT system in 1986 to add a biological or "bug" treatment component.

The bugs are supposed to "eat" most of the remaining toxins and other polyaromatic hydrocarbons in the effluent water before discharge from the BWT facility. Alyeska chose to add the bugs as the least expensive method of improving the BWT performance during the permit review, not because bugs were the most effective technology. This biological treatment component has been criticized as suboptimal in the cold Alaska environment.

After the EPA issued a proposed new NPDES permit, Alaska certified the permit only with more stringent limits on the amount of BETX in the effluent. Alaska also imposed some additional conditions to assure compliance with state law. Alyeska aggressively challenged each term of the state's certificate, as well as the EPA's NPDES permit, in a series of administrative proceedings in both the state and federal arenas. Alyeska unsuccessfully sued the state of Alaska to challenge the permit terms, including the reduced BETX limits.

Although regulated, the BWT facility is still discharging approximately 18 million gallons of wastewater, containing 152 pounds of BETX per year. Permit inspection and monitoring of this level of discharge is an intensive task. As a result of reductions to the Alaska Department of Environmental Conservation budget in 1982, Alyeska has essentially been self-monitoring. This has resulted in considerable controversy regarding scientific methods and acceptable levels of discharge at the facility.

Questions regarding tanker ballast water transfers and washings are further complicated because of inconclusive monitoring results--without accurate information on the BWT facility performance, it is difficult to determine if the facility can handle additional tanker ballast water and washings.

It became apparent during the March 15 and 18, House Special Committee on Oil and Gas hearings, that many factors may have contributed to the deterioration of the Valdez waterway. The Senate committees will further explore the issues brought forward during the House hearings and, if necessary, to make recommendations to reduce the risk from chronic pollution in Port Valdez.

Alaska State Legislature

Sen. Curt Menard, *Chair*
Sen. Lloyd Jones, *Vice-Chair*
Sen. Bettye Fahrenkamp, *Member*
Sen. Drue Pearce, *Member*
Sen. Dick Shultz, *Member*

P.O. Box V
Juneau, AK 99811

907 465-4921

Senate Transportation Committee

SENATE TRANSPORTATION AND OIL & GAS COMMITTEE HEARINGS

APRIL 9 & 11, 1991

ALYESKA BALLAST WATER TREATMENT & TAPS TANKER OPERATIONS

The purposes of the Senate Transportation and Oil & Gas Committee oversight hearings are to:

- 1) determine the extent to which TAPS tanker operators are transporting tank washings, "slops," tank cleanings, and diesel sludges in their ballast water for disposal at Alyeska from vessels within and outside the TAPS trade (hereafter "these practices") and the impact of these additional inputs on the BWT facility;
- 2) determine the extent to which these practices are allowed under state, federal, and international law;
- 3) determine the extent to which past investigations into these practices, initiated in 1985 by DEC and EPA, were resolved;
- 4) determine the extent to which the Alyeska ballast water treatment (BWT) facility is capable of meeting state and federal water quality permits;
- 5) determine the extent to which the regulatory agencies (DEC, EPA, and the Coast Guard) are capable of overseeing the Alyeska BWT facility and TAPS tanker operations and monitoring these operations for compliance with state, federal, and international laws and/or how regulatory agencies are presently overseeing Alyeska;

laws and/or how regulatory agencies are presently overseeing Alyeska;

- 6) determine the extent to which the Alyeska BWT and TAPS tanker operations, past and present, and the level of regulatory oversight contributed to the designation of Port Valdez as a toxic impaired waterway in 1988; and
- 7) determine appropriate action and recommendations.

PURPOSE #1 - EXTENT OF TAPS TANKER PRACTICES

BACKGROUND

Independent investigation by Boston Globe maritime reporter William Coughlin has corroborated recent allegations by Charles Hamel that Exxon and other TAPS tankers have been transporting tank washings, "slops", tank cleanings, and diesel sludges in their ballast water for disposal at Alyeska (Media - 2/19/91 article).

During the House Oil & Gas oversight hearings, TAPS shippers acknowledged that transfer of tank washings between vessels for transportation to and disposal at the Alyeska BWT facility was common practice, but denied transfers of "liquid cargo" (tank washings and cleanings) from shore terminals to tankers. However, Alyeska testified that:

"The available facilities on the West Coast have a limited capacity to receive and treat tank washings and ballast. As a result, either the ballast may be stored on shore and then returned to vessel for its subsequent trip to Valdez or they are transferred to another north bound TAPS trade vessel for discharge to [Alyeska Testimony, Pg. 4, 3/15/91 Minutes]."

Sample DEC ballast water discharge certificate affidavits, in concert with engineer log books and a deposition, show that tank washings are transferred from ship to ship (which was acknowledged by the shippers at the 3/15/91 hearing) and also that tank cleanings are transferred from shore to vessel. This set of documents also indicates that the DEC reporting procedure for ballast water discharge fails to identify when substances other than "normal" ballast are discharged at Alyeska.

Ship repair yards charge substantial fees for disposal of tank cleanings prior to drydock. At \$3.90 per barrel (Port of Portland fee), disposal of 50,000 barrels of tank cleanings (average quantity for large tankers) amounts to nearly \$200,000. Vessels are drydocked at least once every two years for USCG inspection, but can be drydocked more often depending on repairs. Alyeska does not charge for disposal of tank cleanings through its BWT facility.

During testimony before the House Oil & Gas committee, Exxon and BP stated that diesel sludge from their diesel powered tankers is collected in barrels, shipped south, analyzed by EPA to determine if it is a RCRA hazardous waste, then disposed of accordingly. Records documenting chain of custody and receipts for disposal have been requested from these shippers.

Shippers also testified during House Oil & Gas hearings that small amounts of "90 percent" petroleum based cleaning agents were used to wash tanks between cargo trips. Shippers stated that use of such cleaning agents is expected to increase in the future. The assumption is that since the cleaning agents are petroleum based, they will be removed from the water by the Alyeska BWT facility prior to discharge of the effluent. Records documenting the chemical composition of the cleaning agents and the quantity of compounds currently in use have been requested.

QUESTIONS

- 1) Have tanker washings, slops, tanker cleanings, or sludge (hereafter "substances") been introduced through the cargo lines or over the deck of tankers in your fleet and transported to Alyeska from January 1, 1986, to the present? If so, what type of substances?
- 2) Have "substances" been introduced from other vessels in your service, or independently employed, including those in the TAPS trade destined for drydock and those vessels not in the TAPS trade, to tankers in your fleet and transported to Alyeska from January 1, 1986, to the present? If so, what types of substances?
- 3) Have "substances" been transferred from shore tanks or barges to tankers in your fleet north bound to Alyeska from January 1, 1986, to the present? If so, what types of substances?
- 4) Have diesel powered tankers in your fleet transferred or discharged diesel sludge to ballast water, via slop tanks or other such intermediate routes, for disposal at Alyeska from January 1, 1986, to the present?

- 5) Have any tankers in your service decanted "clarified bottom water" from their dirty ballast tanks into their segregated ballast tanks upon traversing the Gulf of Alaska?
- 6) Where and/or how does your company dispose of tank pre-drydock cleanings? How much does this cost per barrel and total (average) per tanker? Are there records for receipts from the shipyard, collection company or reclaimer?
- 7) Does your company employ the use of barges to dispose of or hold tank pre-drydock cleanings?
- 8) Do you use cleaning agents to wash cargo tanks? If so, what is the chemical composition of these cleaning agents?

PURPOSE #2 - LEGALITY OF TAPS TANKER PRACTICES

BACKGROUND

Transportation, handling, discharge, and disposal of oily ballast, oily sludges and slops is regulated by state, federal, and international law, including the state water quality standards, the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and the international convention for the prevention of pollution by ships, 1973, and amended in 1978 (MARPOL 73/78).

EPA and DEC are currently investigating the legality of TAPS tanker practices and testified at the House hearings on 3/18/91 that the NPDES permit does mention, in the BMP plan, that cleaning agents may be in ballast water, but not other material (engine sludges, slops and tank cleanings).

Jim Dickson, Captain of the Port Authority for the Sullom Voe terminal in Scotland, stated that in his opinion, "EPA and DEC are very generous in their approval of additional dirty ballast/washings/slops at Valdez. . . It appears to me that Alaska is being used as a dumping ground due to failures by Federal Government, ship owners and USCG to ensure compliance with MARPOL" (Stats.b & Regs.- Dickson fax) Lt. Commander John McQueeney, USCG, has reviewed this issue and will be available to answer questions at the Senate hearings.

QUESTIONS

- 1) Can tank washings, tank cleanings, slops, and diesel engine sludges be legally discharged by incoming tankers at the Alyeska BWT facility under the NPDES permit? Under MARPOL?
- 2) When ballast material is transferred from tanker to tanker, is this lightering process regulated by the USCG? Under MARPOL?
- 3) When ballast material or liquid cargo is transferred between tankers and barges, is this lightering process regulated by the USCG? Is disposal of waste material from barges regulated under MARPOL?

- 4) When was the BMP plan modified to include cleaning agents in the ballast water?
- 5) What other modifications have occurred in either the NPDES permit or the BMP plan that would substantially change either the amount or the content of incoming ballast water and when did these changes occur?
- 6) How are water and solids handled from the Alyeska crude oil storage tanks?

PURPOSE #3 - SUMMARY OF PAST INVESTIGATIONS

BACKGROUND

Investigations into similar allegations by Charles Hamel were initiated in 1985 by EPA (Bob Athmann and John Hahn), DEC (Bill Lamoreaux, Dan Lawn and Bob Martin), and Assistant Attorney Generals (Loni Levy, Jeff Cole and their associates). The investigations substantiated most of the allegations, but were discontinued in 1988.

QUESTIONS

- 1) Summarize the findings of the investigation initiated in 1985. What, if any, changes in TAPS tanker or BWT operations occurred as a result of these findings? What, if any, changes in regulatory oversight occurred as a result of these findings?
- 2) When were the DEC ballast water discharge certificate affidavits first developed and what was the original intent? Are the forms adequate to detect additions to ballast water such as tank cleanings, tank washings, slops and sludge?
- 3) Who is responsible for checking the forms? How often and how carefully are they checked?

4/9/91
DAN
LAWN
Bill Lamoreaux
↓

Comment:

- Alyeska, Gene Dickason
- Oil Reform Alliance, Riki Ott

PURPOSE #4 - ABILITY OF BWT FACILITY TO COMPLY WITH LAWS

BACKGROUND

As approved by Congress in 1977, the BWT facility was designed in construction phases that corresponded to anticipated increased pipeline throughput. Alyeska promised in the right of way lease covenants to stay abreast of technology developments and to continually upgrade equipment.

Alyeska is currently operating with a BWT facility that fails to carry out the original intent of Congress. Pipeline throughput has increased four fold without the required facility expansion and upgrading. The technology gap has meant the absence of such basic measurement data that it has taken the State's full attention to evaluate whether Alyeska complies with minimum state and federal standards.

Monitoring studies have shown that increasing levels of hydrocarbons are accumulating in the sediment of Port Valdez. This trend indicates that the BWT facility is either overloaded or was not designed properly (i.e., faulty computer modeling), or both, as treatment is resulting in incomplete removal of hydrocarbons from the effluent.

Since 1986 (after the biological treatment system was installed), one field study, contracted by Alyeska, has been conducted to verify compliance with state water quality standards. Valdez District Engineer and Supervisor, Dan Lawn reviewed the data and reported 508% more "apparent and probable" permit violations than reported by Alyeska. (DEC documents - ADEC Review of Alyeska's Data Report, March, 1986)

Alyeska now claims that these mixing zone verification studies were conducted before the BWT impound basins were converted into biological treatment units. (Alyeska testimony, Pg.12, 3/15/91 Minutes) This indicates that there have been no field verification studies for the system currently in use at Alyeska to show compliance with state water quality standards in the mixing zones.

A mixing zone for hydrocarbons and other chemicals discharged into Port Valdez is currently allowed under the NPDES permit. A mixing zone is a volume of water in which the State's water quality standards are exceeded to allow dilution of effluent. Water quality standards must be met at the boundary of the mixing zone.

According to the state's water quality standards, a mixing zone is not allowed if "pollutants discharged could bioaccumulate; concentrate or persist in the environment; cause carcinogenic, mutagenic, or teratogenic effects; or otherwise present a risk to human health" (18 AAC 70.032. (a)(1)). The carcinogenic properties of benzene, a compound present in the effluent, and its derivatives (i.e., metabolites) are well established.

Not only is a mixing zone allowed under the NPDES permit, but the size of the mixing zone was substantially increased 16-fold in the 1980 NPDES permit. This also runs counter to state water quality standards which state that "a mixing zone must be as small as practicable" (18 AAC 70.032.(d)). (DEC Documents - Balden Audit, Pg. 12, 1988)

QUESTIONS

- 1) How do the present pollution control systems (i.e., the BWT and sludge facilities) at Alyeska compare to the original design drawing approved by Congress?
- 2) How often annually is the BWT facility operating at or near maximum capacity? (Note: Alyeska testified on 3/15/91 that tankers were required to queue up because of limited capacity of the BWT holding tanks. Alyeska Testimony, Pg. 12, 3/15/91 Minutes.)
- 3) How much money is lost per hour for tankers that have to "queue" to deballast (as indicated in House Oil & Gas hearings)?
- 4) How much profit has Alyeska made for the owner companies since startup?
- 5) Did DEC or the Attorney General ever audit Alyeska's (or Alyeska's contractors') scientific monitoring studies? If so, what did the audits show?

- 6) What has the Technical Advisory Group (TAG) recommended to improve BWT operations? Have any TAG recommendations been adopted by DEC and EPA?
- 7) Why is a mixing zone allowed for Alyeska? Is it possible for Alyeska to meet the state's water quality standards without a mixing zone?

PURPOSE #5 - ABILITY OF REGULATORY AGENCIES TO MONITOR ALYESKA

BACKGROUND

During House Oil & Gas hearings, EPA and DEC testified that they do not believe that the level of oversight and monitoring is sufficient to ensure permit compliance. Further, Art Ronimus from DEC testified that the staff in the Valdez office do not currently have the background or expertise to monitor Alyeska, but are on a "learning curve." DEC has undergone extensive personnel turnover in the last two years and consequently lacks staff and supervisors with experience Alyeska operations.

Although federal and international (MARPOL) law regulate discharge and disposal of ballast water and sludge, many countries are finding that "Coast Guard investigative and prosecution efforts are seriously inadequate and do little to deter polluters" (Media - 2/25/91 Boston Globe article).

It is important to realize that materials loaded onto TAPS tankers as ballast could impair water quality in Port Valdez, yet these practices may receive little regulatory oversight from the USCG at ports where these transfers occur.

QUESTIONS

- 1) What level of oversight, in terms of number of staff, qualifications of staff, staff hours, and resources, has your agency committed to monitoring Alyeska operations since January 1, 1986?
- 2) Does your agency believe this is a sufficient level of oversight? If not, why not?
- 3) How closely was Alyeska monitored for compliance in the year following the Exxon Valdez spill compared to prior and later years?
- 4) Has your agency ever conducted independent studies to corroborate Alyeska's findings? If so, when? If not, why not? Would such studies be desirable?

- 5) How confident is your agency that Alyeska is complying with state, federal, and international law based on your monitoring capabilities?
- 6) Has there been any communication among the USCG Marine Safety Office Valdez and the other Marine Safety Offices regarding TAPS tanker ballast water practices? If so, what did the communication entail?

DEFINITIONS

BMP plan	best management practices plan is treated as an extension of the NPDES permit by EPA, DEC, and industry
BWT	ballast water treatment
COW	crude oil washing system involving high pressure spraying of tank walls with water, sometimes followed with a solvent wash
MARPOL 73/78	international convention for the prevention of pollution by ships, 1973, as amended in 1978 (MARPOL = MARine POLLution)
NPDES	national pollution discharge elimination system
oily slops	cargo drainings, washings, and other oil mixtures (33 CFR pg. 302)
oily sludge	high molecular weight polycyclic aromatic hydrocarbons, heavy metals, metal particles, sediment particles, and other substances that settle out of ballast water during treatment and/or transportation
tank washings	originate when cargo tanks are washed between cargo trips with crude oil washing system involving high pressure water and sometimes solvents or cleaning agents
tank cleanings	originate when cargo tanks are washed in preparation for drydock with corrosive compounds and solvents that strip crude oil and metal scale from tank walls producing sludge
TAG	Technical Advisory Group - created in the 1989 NPDES permit and composed of six

scientists with DEC and EPA as co-chairs and Alyeska as a non-voting member. Purpose to advise DEC and EPA on BWT issues.

TESTIMONY

4/9/91



Oil Reform Alliance

ORAL TESTIMONY OF RIKI OTT
ON BEHALF OF THE OIL REFORM ALLIANCE

BEFORE THE SENATE TRANSPORTATION AND OIL & GAS COMMITTEES
APRIL 9, 1991

MY NAME IS RIKI OTT. I AM A CORDOVA RESIDENT AND COMMERCIAL FISHER. I HAVE A MASTERS IN OIL POLLUTION AND A DOCTORATE IN SEDIMENT POLLUTION. I AM TESTIFYING AS PRESIDENT OF THE OIL REFORM ALLIANCE. I AM ALSO A MEMBER OF THE TECHNICAL ADVISORY GROUP AUTHORIZED UNDER EPA'S DISCHARGE PERMIT TO ADVISE EPA AND DEC ON BALLAST WATER TREATMENT ISSUES AT ALYESKA.

THE SAME COST-CUTTING MEASURES BY INDUSTRY AND LACK OF OVERSIGHT BY REGULATORY AGENCIES THAT LED TO THE EXXON VALDEZ DISASTER ARE ALSO LEADING TO CHRONIC POLLUTION OF PORT VALDEZ. JUST AS WE WORKED TO REDUCE RISK TO THE PUBLIC AND THE ENVIRONMENT FROM CATASTROPHIC OIL SPILLS, WE MUST NOW WORK TO REDUCE RISK FROM CHRONIC POLLUTION.

SINCE 1988, PORT VALDEZ HAS BEEN DESIGNATED A TOXIC IMPAIRED WATERWAY BY THE STATE BECAUSE OF DOCUMENTED VIOLATIONS OF THE STATE'S WATER QUALITY STANDARDS AND ACCUMULATION OF HYDROCARBONS FROM THE TERMINAL IN THE SEDIMENT OF PORT VALDEZ.

TO ME, WHEN HYDROCARBONS ACCUMULATE IN SEDIMENT, IT IS THE FIRST REAL INDICATION OF CHRONIC POLLUTION. IT MEANS, IN A NUTSHELL, THAT THE BALLAST WATER TREATMENT (BWT) SYSTEM IS FAILING TO REMOVE HYDROCARBONS FROM ITS EFFLUENT AS PREDICTED, FOR WHATEVER REASON.

WHAT WENT WRONG? WE NEED ONLY LOOK TO THE CONTENT OF INCOMING BALLAST WATER FROM TAPS TANKERS AND OUTGOING EFFLUENT FROM THE BWT SYSTEM.

INDEPENDENT INVESTIGATION BY BOSTON GLOBE MARITIME REPORTER WILLIAM COUGHLIN HAS COLLABORATED ALLEGATIONS BY CHARLES HAMEL THAT EXXON AND OTHER TAPS TANKERS HAVE BEEN TRANSPORTING TANK WASHINGS & CLEANINGS, SLOPS, AND DIESEL SLUDGES IN THEIR BALLAST WATER TO ALYESKA FOR DISPOSAL.

WHEN THESE SAME ALLEGATIONS AROSE IN 1985, EPA AND DEC CONDUCTED A THREE YEAR INVESTIGATION INTO THE MATTER. AT THE TIME, THE ALLEGATIONS WERE EMPHATICALLY DENIED BY THE

SHIPPERS. DEC AND EPA EVENTUALLY DROPPED THE INVESTIGATION, PUBLICLY DISMISSING THE ALLEGATIONS.

HOWEVER, EPA'S REPORT ON THE INVESTIGATION, KEPT SECRET UNTIL THIS MOMENT, INDICATES THAT EPA HAD, IN FACT, DOCUMENTED NUMEROUS CASES OF TRANSFERS OF TANK WASHINGS & CLEANINGS, SLOPS, AND UNKNOWN MATERIALS FROM BARGES, SHORE TERMINALS AND NON-TAPS TRADE VESSELS TO TAPS TANKERS FOR DISPOSAL AT ALYESKA.

IT IS EXTREMELY DISCONCERTING THAT SOME OF THE PRACTICES DENIED BY INDUSTRY IN 1985 (YET VERIFIED BY EPA INVESTIGATORS), ARE NOW OPENLY REFERRED TO AS "COMMON PRACTICE." FURTHER, VESSEL RECORDS AND OTHER DOCUMENTS PROVE THAT SHIPPERS STILL TRANSFER TANK CLEANINGS FROM BARGES, SHORESIDE TERMINALS AND FROM OTHER VESSELS TO TAPS TANKERS IN STARK CONTRAST TO EXXON SHIPPING COMPANY PRESIDENT A. ELMER'S TESTIMONY THAT:

"THESE CHARGES ARE CATEGORICALLY FALSE AND TOTALLY UNFOUNDED." (3/15/91 HOUSE OIL & GAS.)

CONVERSATIONS WITH WEST COAST SHIP REPAIR YARD OPERATORS, BARGE COMPANY OWNERS AND PAST ALYESKA EMPLOYEES REVEAL THAT IS AND WAS COMMON PRACTICE FOR TANKERS COMING INTO DRYDOCK TO TRANSFER THEIR CLEANINGS ONTO EITHER A "TANKER OF OPPORTUNITY" (A TAPS TANKER COMING OUT OF DRYDOCK) OR A BARGE FOR HOLDING TO RETURN TO ALASKA OR FOR DISPOSAL ASHORE.

THESE TRANSFERS BYPASS BOTH THE SHIP REPAIR YARD DISPOSAL FEES AND U.S. & INTERNATIONAL LAW (MARPOL 73/78) WHICH REQUIRES THAT LARGE AMOUNTS OF SLUDGE AND TANK CLEANINGS BE DISPOSED OF AT LICENSED SITES AND, USUALLY, INCINERATED" (COUGHLIN 1991).

ACCORDING TO JIM DICKSON, POLLUTION CONTROL OFFICER AT SULLOM VOE, SCOTLAND:

"IN MY OPINION, EPA AND DEC ARE VERY GENEROUS IN THEIR APPROVAL OF ADDITIONAL DIRTY BALLAST, WASHINGS, [AND] SLOPS AT VALDEZ... IT APPEARS TO ME THAT ALASKA IS BEING USED AS A DUMPING GROUND DUE TO FAILURES BY THE FEDERAL GOVERNMENT, SHIP OWNERS AND USCG TO ENSURE COMPLIANCE WITH MARPOL" (FAX MEMO 4/4/91).

CONGRESS CERTAINLY NEVER INTENDED PRINCE WILLIAM SOUND TO BECOME AN INDUSTRIAL WASTE DUMP FOR THE WEST COAST OIL INDUSTRY. CONGRESS MANDATED IN THE TAPS RIGHT-OF-WAY AGREEMENT THAT BWT OPERATIONS BE ROUTINELY REVIEWED AND MAINTAINED WITH BEST AVAILABLE TECHNOLOGY (BAT). THE REQUIREMENT FOR BAT AT ALYESKA PRECEDED SIMILAR REQUIREMENTS FOR THE REST OF THE NATION BY NEARLY A DECADE. CLEARLY

ALYESKA WAS A STATE-OF-THE-ART FACILITY WHEN FIRST CONSTRUCTED, BUT IT HAS NOT BEEN MAINTAINED AS PROMISED. THE TERMINAL WAS NEVER SCALED UP IN SIZE TO HANDLE CURRENT PIPELINE THROUGHPUT. A SHORTAGE OF CRUDE OIL STORAGE TANKS FORCES ALYESKA TO USE TANKERS FOR "STORAGE" AND MOVE CRUDE INTO TANKERS AS FAST AS POSSIBLE. THIS MEANS TANKERS ARE OFFLOADING BALLAST WATER - AND PROCESSING IT - AS FAST AS POSSIBLE.

THE BWT FACILITY IS OVERLOADED: IT HAS ONLY THREE OF THE FIVE BALLAST WATER HOLDING TANKS PLANNED FOR CURRENT PIPELINE THROUGHPUT. THE VOLUME OF WATER PROCESSED BY THE BWT PLANT HAS INCREASED BY ALMOST FIFTY PERCENT COMPARED TO THE VOLUME TREATED BETWEEN JULY 1984 AND JUNE 1985.

THE BIOLOGICAL TREATMENT SYSTEM IS SIMPLY NOT OPERATING EFFICIENTLY AND IT IS NOT BAT. FOR COMPARISON, THE DOW CHEMICAL/UPJOHN PLANT IN NEW HAVEN, CT: X

- 1) CAPTURES AND DESTROYS BETX GASES EMITTED FROM THE IMPOUND BASINS (ALYESKA VENTS INTO THE ATMOSPHERE);
- 2) HAS A FLOW RATE THROUGH THE PLANT OF 400 GALLONS PER MINUTE (ALYESKA AVERAGES OVER 11,000 GPM); AND
- 3) REMOVES SLUDGE DAILY FROM THE SYSTEM AND ENCASES IT IN CONCRETE FOR BURIAL.

THE PRIME FUNCTION OF A BWT IS TO ELIMINATE TOXIC SUBSTANCES FROM THE EFFLUENT BEFORE IT REACHES THE RECEIVING ENVIRONMENT. THE BULK OF WASTE MATTER GENERATED BY OILY WASTEWATER TREATMENT IS IN A FORM OF OIL SLUDGES, PRINCIPAL REPOSITORIES OF HAZARDOUS AND TOXIC COMPOUNDS SEPARATED FROM THE WASTESTREAM.

THE ORIGINAL ALYESKA PLANT DESIGN INCLUDED A SLUDGE INCINERATOR - A ROTARY KILN CAPABLE OF HANDLING UP TO 3,000 POUNDS OF SLUDGE PER HOUR. NO SLUDGE INCINERATOR HAS EVER BEEN BUILT.

THE ALYESKA FACILITY IS LARGELY SELF-MONITORING AND THERE HAS BEEN NO FIELD STUDY TO DATE TO VERIFY COMPLIANCE OF THE BWT EFFLUENT WITH THE STATE'S WATER QUALITY STANDARDS. IN FACT, NO ONE HAS A CLEAR UNDERSTANDING OF THE PHYSICAL OR BIOLOGICAL PROCESSES OCCURRING IN THE IMPOUND BASINS. FOR A FACILITY THAT IS ALLOWED TO LEGALLY DISCHARGE 32 TONS PER YEAR OF HIGHLY TOXIC AND CARCINOGENIC COMPOUNDS, I FIND THIS

inexcusable

IN SUMMARY, IT IS SMALL WONDER THAT PORT VALDEZ WAS DECLARED A TOXIC IMPAIRED WATERWAY. CONTRIBUTING FACTORS INCLUDE:

- 1) FAILURE OF TAPS TANKER OPERATORS TO FOLLOW THE LETTER AND SPIRIT OF U.S. AND INTERNATIONAL LAW BY TRANSPORTING TOXIC AND HAZARDOUS WASTES TO ALASKA;
- 2) FAILURE OF ALYESKA TO MAINTAIN A STATE-OF-THE-ART BWT FACILITY AND TERMINAL;
- 3) FAILURE OF EPA TO UPHOLD THE CLEAN WATER ACT AND PROVIDE OVERSIGHT OF ALYESKA;
- 4) FAILURE OF DEC TO UPHOLD THE STATE'S WATER QUALITY STANDARDS BY ALLOWING A MIXING ZONE FOR CARCINOGENIC COMPOUNDS; AND
- 5) FAILURE OF THE USCG TO INVESTIGATE AND PROSECUTE POLLUTERS AS REQUIRED UNDER U.S. AND INTERNATIONAL LAW.

IN CONCLUSION, THERE ARE A GROWING NUMBER OF CITIZENS WHO ARE DEEPLY CONCERNED ABOUT THE CHRONIC POLLUTION OF PORT VALDEZ. TO MANY OF US, THIS SYMBOLIZES THE STATE'S INABILITY TO EFFECTIVELY REGULATE ITS LARGEST INDUSTRY.

IT WILL BE VERY DIFFICULT FOR THE OIL REFORM ALLIANCE TO SUPPORT FUTURE OIL AND GAS DEVELOPMENTS UNLESS THE STATE TAKES FORCEFUL STEPS TO MITIGATE FURTHER DAMAGE TO ... AND PROVES ITSELF A REGULATOR CAPABLE OF BALANCING RESPONSIBLE DEVELOPMENT WITH PUBLIC CONCERNS AND ENVIRONMENTAL PROTECTION.

SOONP

PRINCE WILM

THANK YOU FOR THE OPPORTUNITY TO TESTIFY.

Dow Chemical/UpJohn plant, New Haven, CT

The Dow Chemical/UpJohn plant in New Haven, CT, uses a biological treatment system with off gas capture. The plant processes oil as well as other chemicals. The off gas capture system is used primarily to remove volatile hydrocarbons - BEIX - from the air. The biological treatment system is COVERED, unlike at Alyeska, by an inflatable building. The air is recirculated; contaminated air is drawn off through a carbon adsorption system. The ultimate aim, according to company representatives at the plant, is to install stripping towers (with off gas capture) to reduce the BEIX in the effluent to acceptable levels.

The impound basin for the biological treatment system at the Dow Chemical/UpJohn facility covers a two acre site. Wastewater flows through the impound basin at a rate of 400 ppm (compared to Alyeska's maximum rate of 20,000 ppm). Sludge collects at the bottom of the basin and is removed DAILY. The sludge is then encased in concrete for permanent burial.

Operations at the Dow Chemical/UpJohn plant bring several important concerns to light. First, when a biological treatment system is utilized as BAT in other areas, the plant simultaneously utilizes an off gas capture system so that BEIX are not merely transferred from the water into the air but are, in fact, removed and destroyed. Second, stripping towers with off gas capture are also considered BAT and could be relatively inexpensively and easily installed at Alyeska. Third, where is the sludge at Alyeska? In the Lower 48, sludge is handled with extreme caution to ensure that these compounds are destroyed (sludge incinerators) or permanently removed (burial). The U.S. Navy operates oily wastewater treatment facilities at all major shore installations; their dissolved air flotation cells generate up to 100,000 gallons per day of sludge (Karr & Lysyj - see attachments). Yet Alyeska claims to be doing the impossible: operating an oily wastewater treatment system that does not generate sludge.

Stripping towers with off gas capture have been the subject of several recent memorandums between the Cordova District Fishermen United (CDFU) and Charles Hamel and the parent owner companies (see attachments). The CDFU and Hamel suggested stripping towers as a viable technology that would enable Alyeska to meet the state's air and water quality standards. Alyeska rejected this technology because of the complications involved with pumping the water in the impound basins up to the level of the stripping tower. However, Alyeska completely overlooked the fact

that the physical differences in height between the dissolved air flotation cells and the impound basins would enable the stripping towers to be operated by gravity, not pumps.

It is time to have an independent engineering firm audit the entire terminal and offer an opinion. In addition to Alyeska's, as to what technology is needed by the terminal to meet the proposed NPDES permit requirements. Similar problems have been addressed by citizens and communities concerned with air and water quality issues in the Lower 48.

Santa Barbara County

The Energy Division of the Santa Barbara County Resources Management Department operate two monitoring programs with 100% cost offset provided by the oil companies which drill in the Santa Barbara Channel. The Environmental Quality Assurance Program is designed to monitor the oil companies during construction phases to ensure that the companies do the things they said they would do. The Permit Compliance Program is designed to monitor the oil companies during the construction and operation phases to ensure the facilities are meeting the appropriate standards. In both programs, the County contracts and pays expert consultants to oversee the oil companies. The County is then reimbursed by the oil companies each month. Three months worth of contract fees are held in bond in case the oil industry's payments are delayed. If the oil industry does not pay the County for three months and the bond money is utilized, the County is empowered to shut down the oil companies.

In addition, the Santa Barbara County permits are written with "reopener clauses." These clauses list specific conditions which, if not met by the oil industry, will automatically trigger reopening of the permit instead of having to wait for the permit to expire. The importance of including reopener clauses in both the EPA NPDES permit and the state's 401 certification for Alyeska should not be underestimated.

Tosco refinery, San Francisco, CA

This refinery has a policy of zero tanker emissions during liting (loading of oil). The vapors are collected and sent to the shore-based vapor recovery system. The Air Quality Management Division of Los Angeles County is currently writing regulations similar to those for the Tosco refinery.

9-91 NOV 22:59 Charles Homer
Alyeska Pipeline Service Company
Valdez, Alaska

Report Re: Review of Subpoenaed Records

By: Robert J. Athmann

File Reference: TSCA Subpoena No. 1086-07-21-2610
Region 10 Water Division NPDES Permit Files
Region 10 Water Division Compliance Section Files
State of Alaska Public Utilities Commission
Alaska Dept. of Environmental Conservation - Valdez
Report of Investigation dated 4/14/87 by Robert J. Athmann
An evaluation of ship deballasting and shore facility
ballast water treatment records at the Alyeska Pipeline
Service Co.

Scope:

This report sets forth the results of reviewing the copies of documents obtained from Alyeska Pipeline Service Company pursuant to TSCA subpoena during the period 2/18/87 through 4/24/87 at Valdez and Anchorage. Substantive material located in the files referenced above is summarized in this report and is used throughout to augment specific information extracted from Alyeska records. Statements made to EPA personnel during previous investigation of Alyeska's ballast water treatment plant and allegations about the company's operational and reporting practices have been incorporated as the basis for this review of Alyeska's records to determine if substantiation of those allegations exist in documentary form.

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IV. Individuals Interviewed and Referenced

V. List of Records Reviewed

Investigator: Robert J. Ittner Date: 11/23/87
Supervisor: Paul A. Soyars Date: 11/24/87

III 4 Allegations were made by Blake, Hoodle, and ~~REDACTED~~ that incoming tankers were bringing material to Valdez other than AIS crude oil and water and discharging it to the BHT, and according to Erlene Blake, dilution of suspect or bad ballast water had occurred frequently.

BHT Operator's Daily log entry dated 6/6/82, P. 199, at 0100 hours bears a BHT technicians note that water from the Stuyvesant "... appears to have had some foam in it at sometime or another... might cause the G&O to be ... higher than normal." No entries were found indicating the source of the foam or its effect was even determined. The Stuyvesant had completed deballasting into tank 93 at 0925 hours on 6/5/82. Tank 93 charging to the DAF system was begun at 1930 hours, 6/5/82 and was completed at 1730 hours on 6/6/82. According to the Grease and Oil log, the G&O test results for 6/6/82 was 8.7 mg/l.

BHT Operator's Daily log dated 7/4/82, P. 275, bore a technician's note that, "... the Stuyvesant has approximately 14,000 barrels of an unknown substance that they will discharge ashore with there (sic) ballast. (Might be some sort of chemical - i.e. caustic) (pH in sample taken was 6.30 - OK)." The note indicates an order was given that samples were to be obtained and stored indefinitely. No record could be found regarding test results on those samples. The grease and oil test results for that day as recorded in the Grease and Oil log was 2.8 mg/l. The Daily Lab Work Sheets, Daily Lab Test Results, and Monthly Summaries for 1982 were not provided by Alyeska for review pursuant to the ISCA subpoena. According to Tonne Ponto, legal aid at Alyeska, those records could not be located. During the interview on 2/23/87, Larry Shier stated that he conducted an investigation of the incident in 1985 and was not able to determine whether samples had been taken or that any tests had been conducted on the Stuyvesant's ballast water. Entries in the Marine log dated 7/3/82, P. 256, and 10/5/82, P. 60, indicate samples of the Stuyvesant's ballast were taken with instructions to test for anything unusual. A BHT Task Force list of action items dated 2/28/86 indicates an assignment to Larry Shier and Ivan Henman to investigate Stuyvesant allegations.

On 2/18/87 Daniel Lawn, Alaska Dept. of Environmental Conservation, Valdez, Alaska, provided copies of Oil Record Book for Ship's regarding the tanker Kenal for the period 6/26/85 through 7/5/85 and 9/23/85 through 9/26/85 which bear entries that the T/V Kenal received on 7/01/85 "... contaminated ballast/slop from barge "Anax 25" and on 9/26/85, "... loaded 6600 bbls of slop from tanker Atigan Pass via barge Phoenix 120 into port slop tanks." The loading and deballasting log shows the Kenal arrived at Valdez on 7/7/1985 with 68,249 barrels of ballast. During the review of records at Alyeska's offices in Anchorage during the period, 2/3/87 - 3/13/87 the Berth Operator's logs for the time span 1/16/85 - 9/7/85 for Berth #4 were reviewed. No entry could be found regarding the contents of the ballast tanks of the tanker, Kenal.

The Daily Pass-on log - laboratory, dated 7/1/85, p. 43, bears an entry to the effect that the lab had received some samples from some ship, not identified, which was so bad it almost made them all ill. No indication was made as to any identification of the ship or the contents of the ballast. The BHT Operator's Daily log dated 6/30/85, p. 242, bears an entry at 0740 hours about a very strong unusual chemical smell especially in the flotation building and that samples were taken. Water from tank 94 was being charged to the DAF system at the time. Ships deballasting

-11-

to tank 94, were the Arco Juneau, Overseas Juneau, and Texaco Florida. The Loading and Deballasting logs indicate the source of ballast for those vessels respectively were Cherry Point, San Francisco, and Tacoma. According to the Daily Lab Work Sheets and Monthly Summaries, test results for 6/30/85 and 7/1/85 were not unusual with pH at 6.4 on 6/30 and at 6.4 on 7/1. Oil and grease was recorded as 4.0 on 6/30 and 3.0 on 7/1. No other test results are indicated.

BHT Operator's Daily log dated 5/28/85, p. 172 bears the entry indicating that ballast water being charged out of tank 94 looked "ugly" so ballast from tankers Mobil Meridian and Admiralty Bay were being added to tank 94 in hopes of diluting it. According to the log, the ballast water in tank 94 came from the tankers Arco Juneau and Arco Alaska. The Daily Lab Work Sheet from 5/28/85 shows grease and oil composite test results at 7.6 mg/l.

Marine log dated 3/8/82, p. 54 bears an entry to the effect that the ballast from B.T. San Diego had high hydrogen sulfide content and treatment consisted of the use of hydrogen peroxide and diluting with ballast from the Mobil Arctic. According to the BHT Operator's Daily log dated 3/8/82, p. 226, an entry at 0645 hours indicates that the BHT stopped charging out of tank 92 due to high sulfides, 10 ppm, and switched deballasting from two other vessels, the Arco Saginaw River, and American Sun to tank 92 as well as adding peroxide. The Bay Tanker San Diego had been the source of the ballast.

Marine log dated 9/10/81, p. 202, bears an entry indicating that the tanker Sohlo Resolute arrived at Valdez after coming out of a shipyard where its ballast had been put ashore and returned to the ship after repairs were completed. According to the BHT Operator's Daily log entries for the period 9/10/81 through 9/12/81, the Sohlo Resolute had discharged its ballast into tank 94 and personnel from Sohlo were at Valdez conducting tests.

Marine log dated 7/8/82, p. 274, bears an entry indicating that Marine operators found, during an inspection prior to deballasting, that the tanker Thompson Pass had 3,400 barrels of slop on board from a bunker barge in Long Beach. The entry states the slops were not unloaded per instructions from BHT.

Marine log dated 10/18/84, p. 103 bears an entry indicating the tanker Keystone Canyon had approximately 12,000 barrels of slop from a barge in California, contents unknown. Instructions were to keep a 90 tank empty to receive this ballast. According to the BHT Operator's Daily log dated 10/19/84 an entry at 1530 hours indicates a technician took pre-deballasting samples from the tanker, which deballasted into tank 93. No record could be found regarding the samples of ballast from the Keystone Canyon. The Loading and Deballasting log shows that the ballast source for this vessel was Los Angeles.

BHT Operator's Daily log dated 5/17/84, p. 259 bears an entry at 0955 hours that ballast from the tanker Manhattan caused foamy water in the DAF system and that the tanker had just come from dry dock where it was painted. A high grease and oil was expected and on p. 262 an entry

**STATEMENT BY
BILL LAMOREAUX
CONCERNING
ALYESKA PIPELINE SERVICE COMPANY
BEFORE THE
SENATE TRANSPORTATION AND
OIL & GAS COMMITTEES**

My name is Bill Lamoreaux. Currently I am the District Manager for the Anchorage District Office of the Department of Environmental Conservation. I have worked for the Department since June of 1981, initially as the District Office Coordinator in Anchorage, then as Regional Supervisor for the Southcentral Regional Office until January 1991. Prior to my working for the department, I worked nearly ten years for the U.S. Environmental Protection Agency in Anchorage as an Environmental Engineer. I have a Bachelor of Science degree in Civil Engineering and a Master of Science degree in Environmental Engineering from San Jose State College in California. I have been licensed in Alaska as a Civil Engineer since about 1976.

Since commencing operations in August of 1977, Alyeska Pipeline has operated under three federally issued and state certified NPDES permits. The first permit was effective January 30, 1975 and expired on December 1, 1979. This permit regulated total oil and grease discharges for the ballast water treatment system and provided for a reasonably small mixing zone in Port Valdez in which to achieve the state Water Quality Standard (WQS) of 0.15 milligrams per liter (mg/l) total hydrocarbons. At this time, the state did not have a water quality standard for aromatic hydrocarbons.

The second permit's effective date was September 12, 1980 and expired June 1, 1983. This permit added limitations for total aromatic hydrocarbon discharges through limits imposed on benzene, toluene, and xylenes (BTX). This was a departure from the first permit and was primarily the result of new state WQS which placed importance on aromatic hydrocarbons. Also, this permit allowed for a much enlarged mixing zone in which to achieve the new state Water Quality Standard of 0.10 mg/l total aromatic hydrocarbons in the receiving water.

From June 1983 until November 14, 1990 (the time of issuance of the third and most recent permit) Alyeska operated under the terms of the second permit as allowed by EPA regulations. During this time, extensive reviews and evaluations were ongoing concerning the operations of the ballast water treatment plant and its potential impacts on Port Valdez as well as an investigation of numerous complaints of improper practices at the facility and by the tanker operators. I will summarize these issues shortly.

At the time of the development of the first and second permits, I worked for the U. S. Environmental Protection Agency (EPA). My function was working on industrial NPDES permits and thus I was one of the principal engineers who developed the conditions placed in the first and second Alyeska permits. In June of 1981, I went to work for the Department of Environmental Conservation (ADEC) and in 1985 was promoted to Regional Supervisor in which capacity I remained until January 1991. In this capacity, I was responsible for the state certification of federal NPDES permits within the Southcentral Regional Office which included Valdez.

Since the commencement of activities at the Alyeska terminal in Valdez to the present, the department has dealt with a number of issues concerning the ballast water treatment plant. It would involve writing a book to fully discuss all of these issues in full detail. What I will try to accomplish here is to outline the more significant issues that have been handled relating to the operation of the ballast water treatment plant.

As stated earlier, the initial permit regulated total oil and grease as opposed to aromatic hydrocarbons. A mixing zone was provided in which the discharged treated water could mix before being required to meet the WQS for total hydrocarbons. Because of uncertainty by the agencies in the ability to meet these standards, a dispersion study was required as a permit condition as well as a number of long term biological and receiving water studies. The dye study, conducted by contractors working for Alyeska, verified that Alyeska could not meet the state's hydrocarbon standard while discharging at the permitted levels. Also, Alyeska experienced problems at the facility caused by hydrogen sulfide in the incoming ballast water which inhibits the plants ability to remove oil and grease. This resulted in numerous effluent violations during the term of the permit. The source of the problem was traced back to ballast water transferred onto TAPS vessels in Panama. Basically as I remember it, smaller ships coming from the Gulf of Mexico and passing through the Panama Canal off loaded ballast water onto a ship anchored off the coast of Panama. The smaller vessels would then pick up a load of Prudhoe Bay crude and return through the canal. The TAPS vessels would off load their oil cargo to this same offshore vessel and pick up ballast water which had originated from the smaller

vessels. For a number of reasons, this method of handling the ballast contributed to the formation of hydrogen sulfide bacteria which when introduced into the Alyeska facility, caused serious treatment problems. Pretreatment with hydrogen peroxide was ultimately used to solve this problem. Throughout this time, I do not recall anyone requiring that the practice of transferring ballast water should be discontinued.

As I stated earlier, the second permit issued to Alyeska shifted emphasis from total hydrocarbons to the more toxic component of aromatic hydrocarbons. Both research work sponsored by EPA and the new state Water Quality Standards for total aromatic hydrocarbons resulted in effluent limits of 6 mg/l and 9 mg/l average and maximum respectively for BTX. These limits were generally being achieved in the effluent by Alyeska at that time based on work conducted by Ihor Lysyj but could not be achieved at the boundaries of the original mixing zone specified in the first permit. For a number of reason, the Department of Environmental Conservation selected to redefine a new expanded mixing zone in which to meet the new standard. Again, Alyeska was required as a permit condition to conduct mixing zone verification studies to determine compliance with the WQS. Additionally, other long term biological, sediment, and receiving water studies were continued.

This permit had an additional requirement in it to conduct a study of the advanced treatment alternatives which might be used to define Best Available Treatment. This level of treatment was suppose to be achieved by all industrial dischargers by 1983 and EPA recognized that they were not going to be able to promulgate national guidelines for this

class of industry by this time.

Without going into a lot of detail, neither the EPA or ADEC were impressed with the mixing zone study, other receiving water studies, or the treatment alternatives studies. For example, even though the raw data for the mixing zone study showed clear violations of the states standard for aromatic hydrocarbons at the boundary of the expanded mixing zone, the summary and conclusions of the report stated that state standards were achieved. The treatment alternative studies failed to thoroughly explore treatment alternatives which would result in BETX reductions in the mid ranges such as 50%. What was studied was the cost associated with nearly a complete removal of BETX which resulted in exceptionally high cost figures. It was the agencies concerns with these industry sponsored studies and other onsite observations made of the facility that set the stage for the extensive review process which commenced in the early 1980's.

At the time of the expiration of the second NPDES permit, the EPA was faced with a very real fiscal shortfall which prevented the agency from immediately initiating a permit review. As a result, the expired permit was allowed to continue in force until the agency could take up the Alyeska issue. The state likewise allowed the old permit to continue in effect while awaiting action by EPA.

Even with these monetary constraints, both the EPA and ADEC began to identify a number of concerns with the operations of the ballast water facility and its possible impacts on Port Valdez. Many of the concerns originated from our review of reports,

studies, and staff observations of the operations of the terminal. Others were issues brought to our attention by other individuals outside the two agencies. Following is a list of some of these issues:

- 1) Was sludge being removed from the wastewater, or instead being discharged into the harbor? What is the composition of the sludge accumulating in the plant? Are the effluent limitations being met?
- 2) Were hazardous substances, or other harmful wastes, being discharged into the BWT plant and passing into the harbor with the treated effluent?
- 3) Have there been spills associated with the treatment facility that were not reported or under-reported?
- 4) Were records, reports, or monitoring results falsified or juggled in order to present satisfactory figures to regulatory agencies? Did the sampling procedures used bias the results?
- 5) Had violations of the NPDES permit occurred? Specifically, had modifications of the treatment plant gone unreported, was the plant being operated efficiently, or were removed wastes being re-introduced into the treatment plant and ultimately discharged into the harbor?

6) Had the plant operator or associated contractors maintained adequate safety precautions to protect workers.

7) Had the treatment plant undergone significant modifications without the required ADEC plan review and approval?

Many of these questions were multi facet. For example No. 4 above not only involved the effluent monitoring and reporting, it also included questions related to the ongoing research work being done in Port Valdez concerning water quality, mixing zone compliance, and biological studies. Questions such as whether Alyeska properly handled effluent samples to obtain accurate results were raised and examined and whether the scheduling of sampling was timed such to bias the results.

The two agencies initiated a review of these concerns with a twofold purpose. First was to determine if any of the identified problems were grievous enough to justify administrative or other legal action, and secondly to determine what criteria was appropriate for the next permit.

The departments activities concerning this review covered a period of time from 1983 until the present and involved technical personnel from Valdez, Anchorage, Wasilla, and Juneau plus several small contracts with noted experts. Probably the most intense review period occurred in 1985 and 86 when concerns raised by Mr. Charles Hamel received substantial media attention. By this time, we were well aware of most of the issues,

however Mr. Hamel did introduce a few new ones such as the possible dumping of drums of waste products into the ballast water treatment plant and the possible importation of ballast water containing other than Prudhoe Bay residues.

Following is a brief overview of the problems which were identified at the facility and actions taken to correct them:

1) Effluent sampling and handling procedures for BETX were incorrect and biasing the results downward. When corrections were made as requested by the agencies, Alyeska immediately had trouble meeting existing permit conditions. This situation lasted for many months and until other plant modifications were made to improve overall treatment of the ballast water. The newest permit now has specific criteria on correct quality assurance/quality control procedures to be followed in the collection, handling, and analysis of samples.

2) Waste materials other than ballast water such as drums of various products were dumped into areas which would find their way into the ballast treatment plant. Again, initial action taken by the agencies stopped such practices. The new permit now specifically specifies what is allowed to enter the ballast water treatment system. An in house "Best Management Practices Plan for the Valdez Ballast Water Treatment Facility" has been developed which specifically address what can and cannot be routed to the treatment plant.

3) It was determined that discharges from the ballast water treatment plant, even when within effluent permit limits, often violated the states WQS at the boundary of the mixing zone. The new permit has a reduced effluent limit for BETX which should assure that WQS are continuously maintained at the boundary of the mixing zone. This effluent limit is 1.3 mg/l and was determined by back calculating from the outer boundary of the mixing zone to the effluent pipe using actual dilutions measured in the field. This 1.3 mg/l limit is now also recognized by EPA as being the Best Available Treatment (BAT) level required of all industries.

4) Studies contracted by Alyeska as required by the permit and other studies presented to the agencies concerning treatment issues did not stand up to peer review. Besides conducting our own detailed analysis of the information at hand, ADEC pushed for the creation of the Technical Advisory Group (TAG) to review projects at various stages before completion and to offer technical opinions concerning the scope and purpose of the work, methods used and draft conclusions. The TAG is now officially recognized in the current permit.

5) It was concluded that on at least an infrequent basis, ballast water was received at the terminal that may have been contaminated with substances other than residues of Prudhoe Bay crude. As a result a condition was added to the new permit that provides for random sampling of incoming ballast water and a regular review of ship's records by Alyeska at the time of receiving ballast water.

Limitations on what kind of ballast or bilge waste that can be received in Valdez have been defined.

6) Our investigation verified that a major dismantling of the ballast water treatment plant had occurred and that the facility was not operated as originally planned. These modifications were never reported to the agencies and approval of the changes never received. As a result the new permit clarifies the obligations for written plan approval from ADEC for any modification to the plant. Further the drastically reduced effluent limit in the new permit now make it absolutely mandatory for Alyeska to operate the facility as effectively as possible.

The listing above is only a very brief and oversimplified summary of the issues that were dealt with from about 1983 to the present. The Department's ability to research out the allegations made by outside sources and to research the many issues recognized by our own technical staff in both Anchorage and Valdez, was controlled by the limited resources available. As ADEC's research intensified around 1985, it became necessary to divert personnel from other Department activities and functions to work on the Alyeska issues. The Department has invested many person-years of effort to thoroughly investigate the issues I have only roughly outlined.

The result of all this effort is a new substantially more comprehensive permit with controls and limitations which hopefully will prevent a recurrence of the problems of the past. What remains at this point in time, is adequate oversight by appropriate regulatory and

technically trained personnel to guarantee that the most efficient job of treatment is accomplished at the facility in the future and that any biological impacts identified in ongoing research studies are properly dealt with. I am encouraged by the changes I have seen at the facility and with a new attitude among the Alyeska staff. Had we had that same attitude in the late seventies and early eighties, I am sure many of the problems we have had to deal with would not have existed and the tremendous effort put out by the Department staff would not have been necessary.

In so far as enforcement, the two agencies jointly worked on orders to Alyeska during our investigations to correct activities at the facility and to collect needed information. Other potential actions such as civil actions for past violations were considered but never initiated. In the end, such enforcement was not necessary to achieve the level of compliance we now have.

Testimony of
Oscar E. Dickason, Ph.D.
Alyeska Pipeline Service Company

Before the
Senate Transportation Committee
and the
Senate Special Committee on Oil and Gas

April 9, 1991

Juneau, Alaska

My name is Gene Dickason and I am the Manager of Alyeska Pipeline Service Company's Environment Department. Alyeska appreciates the opportunity to testify before the Senate Transportation Committee and the Senate Special Committee on Oil and Gas on the Ballast Water Treatment (BWT) facility in Valdez. My testimony today will address charges that Alyeska has received and processed un-permitted substances at the Valdez BWT facility.

To begin, I would like to state that Alyeska is in full compliance with the terms and conditions of the NPDES permit granted by EPA and concurred upon by ADEC for the operation of the BWT facility at Valdez. If, by discussing the exact operations of our facility and the operations of the tankers unloading ballast at Valdez, we can generate confidence among you that our facility is operating in an environmentally responsible manner, then we will happily do so. It is in that light that I make the following remarks.

First, let me describe ballast water treatment generally. The facility at Valdez is designed to clean oily water from incoming tankers and terminal operations. Two processes are used to treat the oily water: mechanical oil/water separation techniques are used to recover oil from the oily water and biological treatment is used to remove dissolved hydrocarbons. Water from this system is then discharged into Port Valdez, as allowed by an NPDES permit for the facility. The new permit limits the amount of aromatic hydrocarbons (BETX) in the effluent to 1.3 ppm. Except for occasional exceedances, Alyeska has been meeting this standard for several years.

Before I discuss tanker operations and the BWT facility, I will provide a brief regulatory history of the BWT facility at Valdez.

It has been a policy of the United States to encourage the onshore disposal and processing of oily water from tank vessels since it became apparent that marine disposal of unprocessed ballast was environmentally unsound.

This policy was formalized with the passage of the Ports and Tanker Safety Act of 1978, the Prevention of Pollution from Ships Act of 1980 and the ratification of the International MARPOL Conventions in 1973 and 1978.

The United States and the State of Alaska implemented this policy by requiring in the original federal and state Right-of-Way Agreements that Alyeska build and operate a BWT facility at the Valdez Marine Terminal. Since that time Alyeska has received a series of three NPDES permits issued in 1975, 1980 and 1989 for the discharge of treated water into Port Valdez. The current permit was originally granted in June, 1989 and was slightly modified in November of last year.

The permit requires Alyeska to operate the BWT facility under a series of operating rules known as Best Management Practices Plan or BMPP. In concert with the permit, this series of procedures agreed to by Alyeska, EPA and DEC spells out the detailed processes Alyeska must undertake to correctly implement the NPDES permit. The BMPP associated with the current BWT NPDES permit for was approved in 1987 and has been amended from time to time since then.

The Issues

Recently charges have been made that tankers have collected toxic wastes from West Coast sources and "dumped" them into Alyeska's BWT facility. My response to these charges will take three parts. First I'll describe a bit of regulatory history of specific relevance to this case, then I'll discuss the four major areas of concern we have been working with EPA, ADEC and the tanker owners to resolve. Finally I'll summarize our BWT facility's excellent environmental record.

The issue of inappropriate discharge into the Valdez BWT facility is not new. In 1985 similar assertions were made regarding illegal use of Alyeska's terminal as an illicit dumping site for toxic substances. At that time the EPA investigated this allegation and in 1988 determined that "no additional enforcement action is appropriate at this time." The allegations "could not be substantiated or had already been addressed by EPA and

resolved by Alyeska." The State of Alaska also conducted an investigation into these charges and found no reason to take action against Alyeska. With a few exceptions, industry practices have remained constant since the time of that investigation.

Another aspect of the regulatory history of Port Valdez was its inclusion in 1988 on a list of toxic-affected waters. Port Valdez's inclusion was based on potential occasional violations of water quality criteria at certain depths and stations in September and October of 1985 when the water column was vertically stratified, meaning the effluent may not have been diluted to the degree desired prior to reaching the perimeter of the mixing zone. Despite the inclusion of Port Valdez in this list the DEC recently concluded that: violation of water quality criteria at the boundary of the permitted mixing zone does not necessarily mean that biological impairment is occurring in Port Valdez.

Since the 1985 study Alyeska has taken steps to further improve the BWT facility. In the fall of 1986 Alyeska installed a biological treatment unit at the BWT which reduced aromatic hydrocarbons in the effluent by 85%. Computer modelling indicates that while the BWT facility effluent is meeting new criteria it will not produce aromatic hydrocarbon concentrations that exceed state water quality standards at the edge of the mixing zone.

Alyeska and the Prince William Sound Tanker Association have made a good faith effort since the current allegations were made to cooperate with the EPA or ADEC to review and evaluate tanker operations that might affect the performance of the BWT system. As recently as March 8, 1991, we met with ADEC and EPA officials, at Alyeska's request, to explain tanker operations, and to identify questions that must be resolved in order for Alyeska to accommodate all reasonable tanker practices. The tenor of the meeting was constructive; the regulators were genuinely interested in learning about the tanker practices and resolving open issues.

To identify and characterize tanker operations that might affect BWT performance, Alyeska reviewed all 1484 Ballast Water Survey forms

submitted by tankers as part of their deballasting procedures since June 1989, when the current permit became effective.

Upon arrival at the Terminal, tanker captains submit their forms, which detail the types and quantities of ballast to be off-loaded. This type of documentation is required before any ballast are off-loaded. A copy of a submitted Ballast Water Survey Form is attached.

Of the 1484 forms, 71 indicated that ballast water was affected by something in addition to ANS crude oil originating on board the deballasting vessel. You will note that the attached form is one of the forms indicating anomalous ballast. Alyeska's summary of the 71 forms provided to the EPA and DEC is attached. As you can see the 71 incidents noted fall into four categories: 1) Transferred Ballast, 2) Cleaning Agents, 3) Prior Cargo Not ANS Crude and 4) Other Contaminants. Alyeska shared this information with the EPA and DEC to provide a basis for review and discussion of normal operations of tankers in the TAPS trade. A representative of the Prince William Sound Tanker Association attended the meeting to provide first-hand knowledge.

Transferred Ballast

Transfers of ballast water and tank washings from one vessel in the TAPS trade to another vessel bound for Valdez are fairly common and occur when vessels are going into dry dock, need to have a tank inspected or are leaving the TAPS trade on behalf of a particular owner or charterer.

Vessels are required to enter dry dock at least once every two and one-half years. Recently, the Coast Guard has requested that the six vessels in the TAPS trade in the 165,000 dwt class undergo semi-annual structural inspections. These activities require tanks to be washed, before entering a shipyard or other facility. The available facilities on the West Coast have a limited capacity to receive and treat tank washings and ballast. As a result, either the ballast may be stored on shore and then returned to vessel for its subsequent trip to Valdez or they are transferred to another north bound TAPS trade vessel for discharge to the BWT facility in Valdez.

The end result is the same. Ballast water from ANS trade vessels is treated at our BWT facility using procedures designed to recover and treat the oil in the water. While we are reviewing this issue with EPA and DEC, case by case prior approval will be required before Alyeska can receive "transferred ballast". Since February, Alyeska has had four requests for this approval. Alyeska will only seek approval if the transferred ballast comes from another vessel in the TAPS trade.

Cleaning Agents

In order to thoroughly clean a tank to make it safe under OSHA standards for human entry, cleaning agents are sometimes used. Our present permit allows Alyeska to accept crude tank washings from TAPS trade vessels containing petroleum-based cleaning agents, as ballast into our BWT system. We believe that petroleum based cleaning agents do not have a deleterious effect on our system and do not contain other harmful substances. We will be working with the EPA and DEC to develop a list of approved cleaning agents that are compatible with the BWT system.

Prior Cargo Not ANS Crude

As you can see from the attachment, during the last 20 months 40 vessels arrived in Valdez whose prior cargo was not ANS crude oil. We believe each of the prior petroleum cargoes was compatible with the BWT system and did not cause any problems for us in meeting our permit limits. A preliminary review of our BWT performance during that same period of time indicates that there was no correlation between these prior cargoes and system upsets.

The EPA and DEC agreed that our permit allows Alyeska to receive ballast contaminated with non-ANS crude prior cargoes and indicated that they knew of no reason that those cargoes should negatively affect our permit compliance.

Other Contaminants

It is inevitable that the operation of tankers will consume fuel and a variety of lubricants. Relatively small amounts of these petroleum products are captured in vessel bilges, along with water. Under existing regulations and operations, these waters may be discharged to the BWT facility, for oil recovery and treatment. Most of these used petroleum products, that are not dissolved in water, are retained on board, mixed with the tankers crude oil cargo and are ultimately transferred to a refinery. Discussions with the agencies will continue, in order to identify engine room practices and to verify that these sources of oily water do not impair the performance of the BWT facility. We are cooperating with the agencies in an attempt to resolve any concerns they may have.

Alyeska has never processed, to its knowledge, the materials generated by repairs or cleanings once a vessel is in dry dock, such as the settled solids removed by hand from the vessel tanks.

Alyeska is satisfied that these discussions will yield a better understanding of tanker practices by the regulatory agencies and allow Alyeska to fully accommodate the necessary operations of the tankers that carry ANS crude.

Environmental Studies of Port Valdez --

I would also like to briefly comment on the general issue of the environment in Port Valdez after almost 14 years of operation of the BWT facility. Port Valdez is probably the most carefully scrutinized marine environment in all Alaska, if not the world. The level of study and examination of the physical environment as well as the plant and animal communities has been as comprehensive as any done anywhere in the world for a facility such as this. These studies conclude that the marine life in Port Valdez appears not to have been adversely affected at all by the operation of the BWT facility.

As an example of the impacts of this project let me summarize a recent series of experiments required by our permits. An independent contractor attempted to find out what concentration of the actual BWT effluent would

be necessary to kill two of the most sensitive marine creatures naturally occurring in the area, coon-striped shrimp and pink salmon smolts. The idea was to place a group of each into water with increasing concentrations of effluent and judge their reactions. Remember that the effluent when released into Port Valdez is immediately diluted and significant concentrations never actually exist in the water column.

The results were that it was impossible to determine the acute toxicity as required by the Department of Environmental Conservation because of the high survival rates of the fish and shrimp in 100% BWT effluent. Given the high dilution rate of the effluent when it is discharged this demonstration of the effluent's relatively low toxicity should quell much of the controversy surrounding the BWT facility's impact on Port Valdez.

Another issue recently raised is "heavy metals." Critics imply that Port Valdez is being polluted with an unacceptable level of heavy metals discharged from the BWT facility. Heavy metals monitoring was required under previous BWT NPDES permits. Alyeska complied with the requirements, monitored the heavy metals levels in the effluent and notified EPA as required. However the level of heavy metals found in the effluent was so low that EPA eventually reduced the permit's metals monitoring requirement so that we only monitor for zinc, which is used for cathodic protection against corrosion in the vessels. Periodic testing since then has failed to show significant quantities of heavy metals.

It has also been asserted that the identification of trace amounts of hydrocarbons in the bottom sediments of Port Valdez indicates chronic pollution. This is wholly untrue and represents a fundamental misreading of the studies and reports written on this issue. Although trace amounts of hydrocarbons have been identified in the sediments of Port Valdez there has never been any evidence that these very small amounts negatively affect any element of the plant or animal life in Port Valdez. In their report titled: "Environmental Studies in Port Valdez, Alaska: 1989" Drs. Feder and Shaw, from UAF's Institute of Marine Science, found no evidence that marine terminal operations negatively affect the organisms in Port Valdez.

Procedural Changes

Alyeska has examined its BWT intake procedures in light of the recent concern with the issue of transferred ballast. While agency review is underway, Alyeska has agreed to take additional steps to assure EPA and DEC that unacceptable materials are not off-loaded to, or treated by, the BWT facility at Valdez. For the time being, Alyeska and the affected tanker owners have agreed to seek EPA approval on a case by case basis before discharging any ballast transferred from other vessels, or associated "washings", into the BWT facility at Valdez. A memorandum was sent to all tankers in the Valdez trade making them aware of the new procedures. A copy of that memorandum is attached for your review. These interim procedures will evolve as discussions with the EPA and DEC continue.

Additionally, Alyeska is obtaining from the tanker owners information about the contents of the cleaning agents used during periodic crude tank cleanings. We have no knowledge of cleaning agents being used other than those we are permitted to handle at the BWT, but we will gather additional information on this issue.

In conclusion I would like to emphasize four points made in these comments:

1. Alyeska has not violated the terms of the current NPDES permit for the BWT facility at Valdez.
2. The BWT facility is treating substances the facility was designed to treat; and that state and federal law require us to treat.
3. An elaborate legal and administrative system has been established to insure that vessel operators fully disclose the contents of any discharges into the BWT facility at Valdez, and

4. We are fully cooperating with the EPA and ADEC to learn even more about on-vessel operations that might affect the BWT facility and Port Valdez.

Alyeska appreciates the opportunity to present this information to the Committees. I would be pleased to provide further information on any of these issues.

Attachments:

- 1) February 1991 Valdez Marine Terminal Ballast Water Treatment Operations, History and Effects
- 2) Ballast Water Survey Form, Exxon Long Beach, 5/5/90
- 3) Summary of Ballast Water Survey Forms
- 4) Memorandum, March 4, 1991, Captain T.F. Plummer to Tank Vessels

**VALDEZ MARINE TERMINAL
BALLAST WATER TREATMENT**

- Operations, History and Effects -

February 1991

Alyeska pipeline
SERVICE COMPANY

VALDEZ MARINE TERMINAL
BALLAST WATER TREATMENT

- Operations, History and Effects -

- I. BWT Operations
 - A. Elements
 - B. Facilities
- II. BWT History
 - A. The Law and Permits
 - B. Standards and Compliance
- III. BWT Effects
 - A. Environmental Studies
 - B. Conclusions

I. BWT OPERATIONS

A. ELEMENTS

Tankers arriving at Alyeska's marine terminal in Valdez almost invariably contain ballast water: seawater taken on for stability by tankers after they have delivered their cargo at the prior port of call. When carried in a ship's tanks which are otherwise used for oil, the ballast water becomes contaminated with the remnants of the oil previously contained there.

This "non-segregated" ballast must be discharged into the ballast water treatment (BWT) system for processing by Alyeska. The oil content of the ballast water as it is pumped from the vessels is usually less than 1 percent.

The Alyeska BWT system has a two-fold purpose: (1) to recover crude oil from the ballast water and (2) to separate and process the water in order to return it safely to the sea. The residue oil separated out during treatment is returned to the crude oil system. The remaining water, when processed sufficiently to remove contaminants, is discharged through a diffuser into the waters of Port Valdez.

During the past 13 years, more than 10,000 tankers have arrived at the Alyeska terminal in Valdez. The BWT facilities process about 16 million gallons of ballast water daily.

B. FACILITIES

The Alyeska BWT system has been an integral part of the Trans Alaska Pipeline System since its inception. Although the BWT plant was designed initially to remove oil and grease compounds, the process also removed some aromatic hydrocarbons. The regulations at the time required only oil and grease removal. The BWT system now involves a three-step process as illustrated in Attachment 1 and described below: two steps to remove insoluble oil and one step to treat the soluble fraction of the oil in the water.

Settling Tanks

After a vessel docks at the Valdez terminal, the ballast water is piped to one or more of three settling tanks for the initial stage of oil recovery. Each of the three tanks has a 430,000 barrel capacity. Oil naturally floats on water, and the oil separation process uses this principle.

As the oil floats to the surface of the water, floating skimmer pans siphon off the oil from the top of the tank. The oil is then piped to one of two oil storage tanks nearby where it remains until it is returned to an outgoing vessel. This initial oil recovery process is usually complete in less than four hours.

Dissolved Air Flotation

The water which has been clarified through the separation process in the settling tanks then flows through a pipe to the Dissolved Air Flotation (DAF) chambers, a special recovery plant containing six cells, for further oil recovery. This stage of the BWT process relies on microscopic bubbles of air and a polymer to accelerate the process of separating the remaining oil from the water.

The air bubbles and the polymer attract the oil molecules and cause them to float to the surface. The polymer forms a sticky microscopic lattice in the water. The air bubbles float the polymer to the surface, attracting and holding together the oil molecules which have risen to the tops of the DAF cells. The recovered oil is piped to one of two oil storage tanks, and the waters flow on to the impound basins for biological treatment.

Biological Treatment

In the early days of operation, Alyeska's impound basins were used for final collection prior to discharge. If upstream processes did not work properly, then the contents of the basins could be recycled for further treatment. The two parallel impound basins, each approximately 380' by 225' by 13' deep, have sloped sides, except for the discharge ends which are vertical concrete walls. Surface underflow and overflow weirs retain any surface pollutants. The working volume of each basin is approximately 135,000 barrels (5,500,000 gallons).

In 1986, Alyeska decided, on its own, to add a biological treatment process in the two impound basins. The process is based on the discovery that, if the proper conditions exist, certain microbes will 'eat' dissolved oil molecules converting this oil to carbon dioxide, water and more organisms. Specifically, the microbes reduce the concentration of water soluble chemicals (aromatic hydrocarbons) which are present in the crude oil and become dissolved in the ballast water, four of which are collectively known as BETX (benzene; ethylbenzene; toluene; xylene).

The number of microbes which are found in the ballast water from the ships varies depending on where the vessel picked up the ballast water, how long the ballast water has been in the oil tanker and the degree to which the tanker's voyage involved agitation or calm sailing. The BWT system operators work to ensure a proper environment to increase both the population and activity of these oil-eating microbes.

The microbes live in water and need oxygen and nutrients to metabolize the BETX. The ballast water acts as a seawater medium to which nitrogen and phosphorous are added as nutrients. Oxygen is added through the use of aerators which float on the surface of the impound basins. Like most living things, the microbes occasionally perform at less than optimal levels, causing an 'upset' or rise in BETX levels to occur. As seen in Attachment 2, such upsets have not exceeded the current permit limit. Since March of 1990, the monthly average has flattened out altogether.

Because of recent and pending Federal regulations, Alyeska is building new treatment facilities. A new concrete structure, separated into two large tanks, will replace the lined impound basins which have been in use since 1977. The two concrete tanks will facilitate further improvements in the biological treatment process, particularly in mixing, aeration and process controls.

Air strippers will be installed at the end of each of the new tanks and will be used only if necessary to handle the infrequent occasions when an 'upset' has occurred and the oil-eating activity of the microbes decreases. Without the air strippers, these occasional upsets could result in BETX effluent concentrations above regulated levels. The new facilities are due to be operational by February of 1991 and will cost approximately \$30,000,000.

After biological treatment, the ballast water then flows to an outfall line which terminates at the diffuser. The outfall diffuser system was designed to maximize the dilution of the treated ballast with the natural waters in Port Valdez. The treated water travels a distance of 1200 feet in the pipe before reaching the first diffusion port or outlet.

Effluent is discharged through 20 diffuser ports spaced at approximately ten-foot intervals. Water depths along the 200-foot long diffuser range from 200 to 270 feet. Diffusion takes place in the "mixing zone" the area of water near the terminal where mixing is permitted and where compliance with State water quality standards is measured.

II. BWT HISTORY

A. THE LAW AND PERMITS

The Clean Water Act

The objective of the Federal Water Pollution Control Act (U.S.C. 466 et seq.), now known as the Clean Water Act, is to restore and maintain the chemical, physical and biological integrity of the Nation's waters.

Under the Clean Water Act, Alyeska is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit in order to discharge processed water from the BWT facility. The Environmental Protection Agency (EPA) has the authority for issuing the NPDES permit which can be in effect for any period up to five years. If EPA fails to issue a new permit in a timely manner, the provisions of the previous permit remain in effect until the new permit is issued.

Although the responsibility for developing and issuing the permit rests with the EPA, the Alaska Department of Environmental Conservation (ADEC) is authorized to add to NPDES permits such provisions as are necessary to meet State water quality standards or are otherwise related to water quality. Water quality standards are enforceable limits placed on concentrations of a pollutant in the receiving water. ADEC must certify that the water discharged under an NPDES permit meets State water quality standards before EPA can issue the permit.

The First Permit

The first NPDES permit for the BWT was issued in 1975, two years prior to start-up of the pipeline and three years after the passage of the Clean Water Act. It placed limits on oil and grease, acidity and flow volumes. These categories of limits are standard practice worldwide for such facilities, and, as seen in Attachment 3, these are still the only three categories of limits required at the Sullom Voe terminal in the Shetland Islands of Great Britain today.

Additionally the original permit required Alyeska to develop a monitoring program to determine the effects of the ballast water discharge on water quality and marine biota of Port Valdez. Prior to the beginning of terminal operations, the University of Alaska's Institute of Marine Science (IMS) conducted baseline studies to obtain data to use comparatively in subsequent monitoring studies.

The Second Permit

The second NPDES permit was issued to Alyeska in 1980. The limits on oil and grease (reported as total hydrocarbons) were unchanged,

but the EPA imposed reductions on discharge volumes. The permit also required Alyeska to conduct monitoring studies.

With this permit, the EPA additionally imposed limits, for the first time, on aromatic hydrocarbons, specifically BETX -- substances which had coincidentally been removed in the BWT facility without regulation. The limits imposed on BETX were based on performance studies of the treatment plant and were set at 6 parts per million (ppm) for a daily average and 9 ppm for a daily maximum. Besides imposing specific restrictions for BETX, the EPA also required a study of available technology to reduce BETX.

In response, Alyeska invested heavily in research to find the best way to gain control over and further reduce BETX. Among the methods investigated was biological treatment. Experts were unsure, however, whether the biological treatment method would work in the specific environment at Valdez.

More studies revealed that, despite the relative cold in Valdez and other adverse conditions, biological treatment might indeed be the answer. In 1986, after a series of bench tests, Alyeska decided to try full scale biological treatment. Soon it became apparent that the biological process was a resounding success: the average reduction of BETX varies between 80 and 90 percent.

This permit expired by its terms in June 1983. Alyeska had applied for renewal eleven months before, but EPA did not issue a new permit until 1989. In the meantime, the facility continued to operate under the second permit.

The Third Permit

The third NPDES Permit was issued in May 1989 and is still in effect today. Discharge limitations are significantly more strict. BETX has to meet a 1.3 ppm daily maximum limit year-round. As seen in Attachment 3, the Sullom Voe terminal, which is roughly the same size and latitude of the Valdez terminal, has no such requirements. The EPA gave Alyeska until October 1991 to meet the new BETX standards.

Additional limits were placed on naphthalene, a polynuclear aromatic hydrocarbon, to below detection limits. Polynuclear aromatic hydrocarbons (PAH) are considered more persistent than BETX and tend to accumulate in marine organisms. The biological treatment process already reduced PAH to below detection levels as required by the permit. Limits on flow were reduced, moreover, and new limits were also placed on the total amount of solids and organic material present in the water.

Stipulations of the present permit also include conducting effluent toxicity tests. The tests required are (1) chronic (sublethal) tests on sea urchin and mussels and (2) acute (survival) tests on shrimp and pink salmon. Biological, sediment and tissue monitoring is also mandated. The permit also establishes a Technical Advisory Group that has been meeting and making recommendations to ADEC and the EPA.

B. STANDARDS AND COMPLIANCE

Water Quality Standards

The EPA publishes criteria intended to provide technical guidance to State governments for the establishment of water quality standards. These State standards then become enforceable limits placed on concentrations of a pollutant in the receiving water. In early guidelines for developing water quality standards in the mid 1970s, EPA recommended that, where long term/chronic toxicity data were unavailable, short term/acute toxicity levels could be divided by a very conservative and arbitrary safety factor of 100 to establish standards intended to protect against chronic (i.e., long term) exposure.

As more data on the relationship between acute and chronic toxicity became available, EPA issued new guidelines which made clear that a ratio of 100-to-1 was reserved for compounds that demonstrated little or no degradation in aquatic ecosystems, e.g., persistent chemical compounds such as chlorinated pesticides. For nonpersistent, degradable compounds (such as BETX), a ratio of 20 to 1 or less was considered by EPA to be more in line with available data.

in 1979, ADEC revised its water quality standards for the State of Alaska. At that time, there were few data on the long-term effects of hydrocarbons on marine species. ADEC set a receiving water limit of 10 parts per billion (10 ppb) for total aromatic hydrocarbons.

The State decision was apparently based on (1) a study of reported short term/acute lethal threshold concentration levels for several species of larval crustaceans found in the literature of the time and (2) applying the then recommended EPA 'safety factor' for non-biodegradable toxins of 100-to-1.

Alyeska has voiced objections to ADEC's approach. EPA's guidelines for setting water quality standards were revised in 1985 in light of more recent scientific studies. EPA's recommended approach is to utilize actual test results, where available, and to use arbitrary safety factors only as a last resort. ADEC's standard for aromatic hydrocarbons conflicts with current scientific data and is far more stringent than what is now known to be necessary to protect aquatic life.

EPA Compliance

In 1985, responding to public concern about BWT operations, the EPA issued a Compliance Order listing 12 items to be investigated. Three years later, after EPA had completed a detailed investigation of allegations that the Alyeska facility had violated its NPDES permit, Alyeska received a letter from EPA's Regional Administrator which stated as follows:

"The investigation included interviews with Alyeska employees, ship's crews, and other people familiar with the ballast water treatment operation, a review of EPA and Alaska Department of Environmental Conservation files, review of Alaska Public Utilities files, and a review of ship deballasting records and Alyeska ballast water treatment records. . .

"The recommendation resulting from that review is that no additional formal enforcement action against Alyeska is appropriate at this time. We arrived at this conclusion because the allegations could not be substantiated or have already been addressed by EPA and resolved by Alyeska as a result of previous Section 308 and Section 309 actions."

III. BWTEFFECTS

A. ENVIRONMENTAL STUDIES

There is an extensive body of scientific literature on Port Valdez, compiled during numerous studies conducted since 1971. As would be expected, there have been detectable amounts of hydrocarbons in the environment, at various locations in the water column and sediments. Some are related to human activity: BWT operations; ash settling in the water from wood burning in fireplaces; combustion sources, such as boat engines, and minor oil spills. Greater concentrations of PAH (polynuclear aromatic hydrocarbons) were found in 1985 in mussels and sediments in the Valdez small boat harbor than near the ballast water outfall.

Hydrocarbon found in the water can also emanate from natural sources, not attributable to human activity. Some marine algae produce certain kinds of hydrocarbons. Terrestrial plants also produce hydrocarbons. Activities of nature also affect the marine environment, e.g., mud slides, high runoff from storms and water temperature changes. The 1964 earthquake had a profound effect on Port Valdez. Observers have found fluctuations in the diversity, abundance and total weight of benthic (bottom dwelling) organisms over time, but these are believed to be related to such activities of nature or to specific construction projects as opposed to routine BWT operations.

The key question is whether hydrocarbons from the BWT discharge have caused any significant harm to marine life. The University of Alaska's IMS has conducted a series of studies of Port Valdez beginning in 1971 and continuing to 1987. As a result of this work,

Dr. Howard Feder of IMS concluded that "... once construction activities were completed, terminal operations did not affect the organisms on the bottom either in the deep basin or within the mixing zone."

Further, a study conducted in 1987 found that levels of aromatic hydrocarbons in the sediments near the BWT outfall are actually decreasing. The study, "EPA-ADEC Proposal for Monitoring Sediment Chemistry and Infauna in Port Valdez for the Fall of 1987," conducted by the IMS, also found that the diversity, abundance and total weight of benthic (bottom dwelling) organisms increased between 1985 and 1987. Significantly, the biological treatment facilities, voluntarily put in place by Alyeska in 1986, have reduced BETX levels by between 80 and 90 percent on average, and PAH has been reduced to below detection levels.

Two scientists assembled a monograph on Port Valdez during the time the biological treatment facilities were being put into place. The monograph, Environmental Studies in Port Valdez, Alaska, contained papers by various scientists and regulatory officials with extensive knowledge of the Port. The scientists who assembled the monograph were David G. Shaw of the University of Alaska's Institute of Marine Science (IMS) and Mohammad J. Hameedi of NOAA (the National Oceanic and Atmospheric Administration of the U. S. Department of Commerce).

Regarding the quality of the environmental studies done to date, the following was written by Dr. Donald W. Hood, Professor Emeritus, University of Alaska in the Foreward to the monograph: "The studies (of Port Valdez). . . have been well planned, of the highest quality, and well documented in open literature. The overall study effort certainly ranks among the best ever done on a marine ecosystem." Hood affirms the findings of the monograph edited by Shaw and Hameedi: "... it appears that no ecologically or socially significant biological change has occurred that can be related to the ballast discharge."

In the monograph, Douglas R. Redburn, Section Chief, Water Quality Management, at the ADEC notes that accumulations of petroleum hydrocarbons above background levels in marine sediments near the ballast water outfall ". . . were, and remain, not a violation of state standards until they cause deleterious effects to aquatic life." Redburn further states that petroleum hydrocarbon accumulations near the BWT diffuser "have not been conclusively linked to any adverse changes in monitored biological populations or community structure."

In December 1988, the National Oceanic and Atmospheric Administration (NOAA) published the results of the first three years of the Pacific Coast phase of its National Benthic Surveillance Project which examined water quality effects in 31 sites in Alaska, Washington, Oregon and California. The focus of the studies was on whether chemicals could be found in the sediments and in liver tissue, biles and stomach contents of bottom fish at those sites.

Several months prior to the release of the report, in October 1988, however, the media published a story which made it appear that adverse effects were found in Port Valdez and that the BWT system was causing harm to the marine environment. A reading of the report reveals that NOAA had examined ten Alaska sites, including Port Valdez.

The sites which NOAA listed as meriting specific attention as a result of its studies were (1) Dutch Harbor (for aromatic compounds, chromium and PCBs in flathead sole); (2) Boca de Quadra near Skagway in Misty Fjords National Park (for sclerotic renal lesions in flathead sole and silver in sediments), and (3) Nakhu Bay near Skagway (for silver, cadmium and selenium in sediments). The studies revealed that Port Valdez was not an area of concern; it was neither included on the list nor even discussed in the text as a problem area.

Many of the contaminants NOAA tested for were not detected at all in fish from Valdez, and for those contaminants found at detectable levels, the levels were not significant at Port Valdez compared to

other sites. In fact, Alaska was cited for having higher levels of water quality on the whole than the other western states tested.

Also in October 1988, Port Valdez was placed on ADEC's "List of Contaminated Waterbodies." The reason Valdez was listed, as explained in the ADEC report, related to Alyeska incidents occurring three years previously:

"In the fall of 1985 and the spring of 1986, two additional mixing zone verification studies were conducted by Alyeska and EPA. These studies demonstrated conformance with the aromatic hydrocarbon standard at the boundary of the mixing zone in March, but found occasional violations of water quality criteria at certain depths and stations in September and October, when the water column is vertically stratified. These documented excursions are the basis for listing Port Valdez as impaired and including it on the 304(1) priority pollutant short list." ("List of Contaminated Waterbodies," p. 93.)

Most importantly, these mixing zone verification studies were conducted before the impound basins were converted into biological treatment units. The effluent from the treatment plant was much higher in September and October 1985 than in subsequent years when the biological process was working (see again Attachment 2). Alyeska has petitioned for removal of Port Valdez from the list.

B. CONCLUSIONS

In June 1990, University of Alaska IMS investigators Feder and Shaw issued their final report entitled "Environmental Studies in Port Valdez, Alaska: 1989." With regard to benthic organisms, they stated:

"In summary, as concluded in all previous reports, all techniques used in the analysis of infaunal data in 1989 and previous years indicate that marine terminal activities in Port Valdez are not negatively affecting the benthic organisms in the deep basin or the shallow nearshore waters."

Benthic organisms are considered to be excellent indicators of environmental stress caused by petroleum hydrocarbons. These are small animals that live in the mud and are relatively stationary. Unlike a fish, for example, they are not passing through but live continuously in the same area. Thus, Alyeska has been able to monitor them for the past 12 years both in the outfall area and elsewhere in the Port of Valdez. As indicated above, it appears that no harm has come to them from BWT operations.

Recently, there has been increasing interest in toxicity studies as a measure of the effect of the effluent. Alyeska has been conducting toxicity tests for several years. The scope of the tests required in the latest NPDES permits range from assessing the effluent effects on shrimp and salmon smolt to evaluating the level of impairment of fertilization when sea urchin sperm and eggs are placed in varying concentrations of effluent. Thus, these tests measure subtle effects on very sensitive organisms.

During 1990, Alyeska had several bioassay studies performed on the BWT effluent. The effluent toxicity was so low that the consultants performing the work (Battelle Northwest and ENSR) were unable to determine any acute toxicity level at all for coonstripe shrimp or pink salmon smolt. The only tests that showed any acute toxicity were for mysid shrimp and purple sea-urchins, neither of which are found in Prince William Sound. These tests indicated toxicity when the test water contained 25-30 percent BWT effluent. In reality, however, the effluent is diluted well below these concentrations in the zone of initial dilution, an area very near the outfall, used by EPA to determine compliance.

For further information, contact Corporate Affairs, Alyeska Pipeline Service Company, 1835 South Bragaw Street, Anchorage, Alaska 99512 or call (907) 265-8312.

Ship Name EXXON LONG BEACH		Berm #3	Date 5/5/90
In From San Francisco Calif.		Outbound To San Francisco Calif.	
Information Provided By Chief Mate		Form Completed By C/M R. Stalzer	
Amount of Dirty Ballast to Discharge: 200,000 Bbls (bbls.)		Location Dirty Ballast Taken Aboard: San Francisco Calif.	
Where Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No		Into Tanks: 1C, 3C, 5C, P & S Slop	
Method of Washing ☐ C.O.W. ☐ Hot Seawater ☐ Cold Seawater			
Were Cleaning Agents Used: ☐ Yes ☒ No		Amount of Cleaning Agent Used: None gal.	
Type and Name of Cleaning Agent: None			
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No		Cargo if Other than NSC None	
Estimated Amount of Other Residue to be Pumped Ashore: zero bbls.			
Will Slop Tank Contents be Pumped Ashore? ☒ Yes ☐ No		Is There Anything Other than North Slope Crude Residue in the Dirty Ballast to be Discharged Ashore? ☐ Yes ☒ No	
List Other Residues and Estimate Amounts: None			
Will Barge Water be Discharged? ☐ Yes ☒ No		Are there any unusual substances in the Barge Water? ☐ Yes ☒ No	
If Yes, identify:			
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ship's file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments: 15,000 bbls tank washing slops from Exxon Galveston (water only) in port slop tank			

3657 (2/88)

This will go off with dirty ballast and is counted in the total of 200,000 bbls.

(Alyeska Pipeline Service Co. ballast water treatment facility)

1. FORMS REVIEWED: All--June 1989 (permit effective date) thru Feb. 18, 1991
2. FORMS SELECTED: 71
3. SELECTION GROUNDS:
- | | |
|-----------------------|----------|
| Transferred ballast: | 11 |
| Cleaning agent: | 7 |
| Prior cargo not ANSC: | 40 |
| Other contaminant: | 9 |
| Other: | <u>5</u> |
| TOTAL: | 72* |
- (* Total exceeds 71 because one form indicates both transferred ballast and cleaning agent.)
4. TRANSFERRED BALLAST:
- 11 cases (10 Exxon, 1 Mobil)
 - 1 involved a cleaning agent
 - 3 involve transferred Exxon Valdez cleanup wastes approved for disposal in BWT facility by EPA and ADEC
5. CLEANING AGENTS:
- 7 cases total (4 BP, 3 Exxon)
 - 1 did not discharge at Valdez
 - Two agents: Clean Break (5x)
Cold Wash (2x)

6. PRIOR CARGO NOT ANS CRUDE:

-- 40 cases total

-- 16 voyages by SANSINENA II
(prior cargo = Alaska "Drift
River" crude in 14 cases)

-- Others (some with 2 prior):

1	Nikiski charge stock
2	Northwest charge stock
3	San Joaquin crude
1	Barrows Island crude
14	LSFO/BFO/resid.
1	tapis crude
1	Marib crude
1	Virgin Gas Oil (fuel)
1	Isthmus
1	Gasoline/diesel

7. OTHER CONTAMINANTS:

-- 9 cases total

-- Types:

4	degreaser
1	sodium nitrite
1	#6 fuel oil
1	bunker tank washings
1	Vacuume Gas Oil (cutter)
-- 1	Cutter Stock

8. OTHER CASES:

-- 5 "other" cases total

-- 2 involve barge UT-10 dis-
posing of Exxon Valdez wastes
with EPA and ADEC approval

-- 3 involve apparent "false
positives," i.e., checking a box
on the survey form in error when
ballast is actually normal

NOTICE TO TANK VESSELS IN THE TAPS TRADE

MARCH 4, 1991

RE: TANKER DISCHARGES TO THE VALDEZ MARINE TERMINAL BWT FACILITY

As a result of recent discussions between Alyeska Pipeline Service Company and Region 10 of the US EPA, the following types of tanker ballast discharges must be preapproved for the time being, by the EPA in consultation with the Alaska Department of Environmental Conservation before they are received by Alyeska's Valdez Marine Terminal Ballast Water Treatment Facility:

1. Transferred Substances: Any ballast water, bilges, slops or other substances that have been transferred from any other source to the vessel calling at Valdez.

2. Contaminated Ballast: Any ballast, bilges or slops that are contaminated, as a result of vessel operations, by any substance other than crude oil, petroleum products (including petroleum based cleaning agents) or by normal bilges and slops practices.

During the past two weeks the EPA has approved specific requests, but has required sampling, analysis and particular care to avoid the oil phase in offloading. Ballast contaminated with bunker tank washings must be noted on the Ballast Water Survey form and will require sampling, analysis and care taken to discharge only the water phase.

In addition to these requirements, all the provisions of the Ballast Water Survey Form remain in effect. To seek approval as described in this notice, contact Gene Dickason at (907) 265-8678 as far in advance as possible. Requests for approval can only be processed during normal business hours.

Alyeska Pipeline and Roger Gale, on behalf of the Prince William Sound Tanker Association, will meet with the EPA and the DEC in Seattle on March 8, 1991 to discuss tanker practices that affect the ballast water discharged to Alyeska in Valdez and accommodation of those practices under Alyeska's NPDES permit. We will continue to work with the EPA and DEC to attempt to resolve all issues that have been raised. Other issues for discussion will include ballast affected by non Alaska North Slope crude oil, by residual fuel oil, any by engine and pump room practices.

Yours truly,

John D. Baldridge

for
Capt. T. F. Plummer
Marine Manager

PORT VALDEZ MONITORING AND EFFLUENT TOXICITY STUDIES

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Drottar, K. R., Acute Toxicity of Alyeska Pipeline Service Company Ballast Water Treatment Plant Effluent to Pink Salmon (*Oncorhynchus gorbuscha*) Under Static Renewal Conditions, May 26, 1990. ENSR Consulting and Engineering, Fort Collins Environmental Toxicology Laboratory, Fort Collins CO. (File: B-9.09) To agencies 6/27/90

Drottar, K. R., Acute Toxicity of Alyeska Pipeline Service Company Ballast Water Treatment Plant Effluent to Pink Salmon (*Oncorhynchus gorbuscha*) Under Flow-Through Conditions, May 26, 1990. ENSR Consulting and Engineering, Fort Collins Environmental Toxicology Laboratory, Fort Collins CO. (File: B-9.09) To agencies 6/27/90

Drottar, K. R., Acute Toxicity of Alyeska Pipeline Service Company Ballast Water Treatment Plant Effluent to Coonstripe Shrimp (*Pandalus hypsinotus*) Under Static Renewal Conditions, May 26, 1990. ENSR Consulting and Engineering, Fort Collins Environmental Toxicology Laboratory, Fort Collins CO. (File: B-9.09) To agencies 6/27/90

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Feder, H. M. & D. G. Shaw, Final Report, Environmental Studies in Port Valdez, Alaska: 1989, June 1990. Institute of Marine Science, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks, Fairbanks, AK. (File: B-9.02) To agencies 6/27/90

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Feder, H. M. & D. G. Shaw Final Report, Environmental Studies in Port Valdez, Alaska, 1985, Reporting Period, 1 September, 1985 through 15 June, 1986. Institute of Marine Science, University of Alaska, Fairbanks. (File: B-9.02)

Feder, H. M. & D. G. Shaw Final Report, Environmental Studies in Port Valdez, Alaska, 1987, July 1988. Institute of Marine Science, University of Alaska, Fairbanks. (File: B-9.02)

Shaw, D. G. Supplemental Hydrocarbon Studies in Port Valdez, Alaska 1981-1987, June 1988. Institute of Marine Science, University of Alaska, Fairbanks. (File: B-9.02)

Feder, H. M. Annual Report, A long-Term Intertidal Monitoring Program for Port Valdez, Alaska 1988-1989, May 1989. Institute of Marine Science, University of Alaska, Fairbanks. (B-9.02)

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TESTIMONY

4/11/91

TESTIMONY OF A. ELMER
PRESIDENT, EXXON SHIPPING COMPANY
BEFORE THE
ALASKA SENATE TRANSPORTATION AND OIL & GAS COMMITTEES
THURSDAY, APRIL 11, 1991

GOOD AFTERNOON CHAIRMAN COTTEN AND CHAIRMAN MENARD, MEMBERS OF THE COMMITTEES, AND LADIES AND GENTLEMEN.

MY NAME IS GUS ELMER, AND I AM PRESIDENT OF THE EXXON SHIPPING COMPANY.

MY APOLOGIES FOR NOT BEING ABLE TO JOIN YOU THIS AFTERNOON IN JUNEAU. I DO SINCERELY APPRECIATE YOUR ALLOWING ME TO TESTIFY BY TELECONFERENCE.

EXXON SHIPPING COMPANY IS A SEPARATE CORPORATE ENTITY REGISTERED IN DELAWARE AND WHOLLY OWNED BY EXXON CORPORATION. WE OWN AND OPERATE 13 AMERICAN FLAGGED OCEANGOING TANKERS, TEN OF WHICH ARE CRUDE CARRIERS OPERATING ON THE WEST COAST. NINE OF THESE WEST COAST CRUDE VESSELS OPERATE IN NORTH SLOPE CRUDE SERVICE, AND ONE TRANSPORTS CRUDE OIL FOR EXXON COMPANY, U.S.A.'S OFFSHORE CALIFORNIA PRODUCTION OPERATIONS. THE REMAINING THREE VESSELS OPERATE IN EITHER FOREIGN SERVICE OR ALONG THE U.S. GULF AND EAST COASTS.

WE ARE PLEASED TO BE INVITED TO REVIEW WITH YOU THE OPERATIONS OF OUR VESSELS CALLING AT VALDEZ. ON FRIDAY, MARCH 15, 1991, I GAVE A THOROUGH REVIEW OF THESE OPERATIONS TO THE ALASKA HOUSE OIL & GAS COMMITTEE. THAT PRESENTATION CONCENTRATED ON OUR BALLAST OPERATIONS AND HOW WE INTERACT WITH THE ALYESKA BALLAST WATER TREATMENT FACILITY AT VALDEZ. I UNDERSTAND YOU HAVE RECEIVED A COPY OF THAT TESTIMONY ALONG WITH A COPY OF THE VISUAL AIDS USED IN THAT PRESENTATION FOR YOUR REVIEW. WITH YOUR AGREEMENT, I WOULD LIKE TO SUMMARIZE THE KEY POINTS OF THIS PREVIOUS REVIEW.

- FIRST, A NUMBER OF ALLEGATIONS HAVE BEEN MADE REGARDING OUR BALLAST OPERATIONS AND THEIR IMPACT ON THE ALYESKA BALLAST WATER TREATMENT FACILITY AT VALDEZ. THESE ALLEGATIONS IMPLY THAT THROUGH OUR OPERATIONS, WE VIOLATE FEDERAL, STATE, AND LOCAL LEGISLATION AND REGULATIONS. THESE CHARGES ARE CATEGORICALLY FALSE AND TOTALLY UNFOUNDED.

- SECOND, THE ONLY MATERIAL THAT EXXON SHIPPING COMPANY'S VESSELS DISCHARGE DIRECTLY INTO ALASKAN WATERS IS THE CLEAN SEA WATER CONTAINED IN THE SEGREGATED BALLAST TANKS. THESE ARE THE TANKS HIGHLIGHTED IN BLUE ON THE DIAGRAM MR. DAVE PARISH IS DISPLAYING AT THIS TIME IN YOUR MEETING ROOM. THESE BALLAST TANKS ARE, BY DESIGN, NOT CONNECTED TO THE CARGO SYSTEM AND, THUS, OIL IS NEVER CARRIED IN THESE TANKS. THEREFORE, THE CONTENTS FROM THESE TANKS, CONSISTENT WITH U.S. COAST GUARD REGULATIONS, CAN BE DISCHARGED DIRECTLY BACK INTO THE SEA WITHOUT FEAR OF POLLUTION.

- THIRD, THE BALLAST WATER WE DISCHARGE INTO THE ALYESKA BALLAST WATER TREATMENT FACILITY IS THE BALLAST WATER CARRIED IN THE TANKS HIGHLIGHTED WITH A RED STRIPED PATTERN. ON THE SOUTH BOUND VOYAGE, THESE TANKS ARE LOADED WITH CRUDE. ON THE NORTH BOUND VOYAGE, THEY MAY CARRY BALLAST WATER. SINCE THIS WATER WILL HAVE COME IN CONTACT WITH OIL, IT IS DISCHARGED INTO THE TREATING FACILITY AT VALDEZ TO ELIMINATE THE POSSIBILITY OF DISCHARGING OIL INTO THE SEA FROM THE VESSEL.

- FOURTH, THE BALLAST WATER WE DISCHARGE INTO THE ALYESKA BALLAST WATER TREATMENT FACILITY IS THAT DIRECTLY ASSOCIATED WITH OUR ALASKAN NORTH SLOPE TANKER OPERATIONS.

• FIFTH, WE CARRY OUT AN EXTENSIVE TANK STRUCTURAL INSPECTION PROGRAM ABOARD OUR VESSELS REQUIRING PERSONNEL TO ENTER THE TANKS TO SURVEY THE STRUCTURE OF THE VESSEL. TO ENSURE THE SAFETY OF THE TANK ATMOSPHERE FOR PERSONNEL, WE INFREQUENTLY USE SMALL VOLUMES (THAT IS 30-40 BARRELS) OF PETROLEUM BASED CLEANING AGENTS TO CLEAN CARGO TANKS BEFORE INSPECTIONS OR MAINTENANCE.

THE CLEANING AGENTS WE HAVE USED ARE PETROLEUM BASED PRODUCTS. OUR DEBALLASTING PROCEDURES ARE SPECIFICALLY DESIGNED SUCH THAT A SIGNIFICANT PORTION OF THE CLEANING AGENT IS RETAINED ON BOARD. THE CLEANING AGENTS ARE COMPATIBLE WITH THE OIL RECOVERY AND TREATMENT PROCEDURES AT THE VALDEZ BALLAST WATER FACILITY. DISCHARGE OF THE BALLAST WATER CONTAINING VERY LIMITED QUANTITIES OF THE CLEANING AGENT INTO THE BALLAST WATER TREATMENT FACILITY IS PREAPPROVED BY ALYESKA. THUS, TO OUR KNOWLEDGE, THEIR USE HAS NOT CREATED BALLAST WATER PERMIT PROBLEMS.

HOWEVER, THERE HAVE BEEN QUESTIONS RAISED ABOUT THE USE OF THESE CLEANING AGENTS AND WHETHER THEY ARE HARMFUL TO THE OPERATION OF THE BALLAST TREATMENT FACILITY. FURTHER WORK HAS RECENTLY BEEN DONE TO REAFFIRM THAT THERE ARE NO PROBLEMS WITH TREATING THE WASH WATER CONTAINING VERY SMALL QUANTITIES OF THESE CLEANING AGENTS. IN CONCERT WITH EPA, THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION (DEC) AND ALYESKA, THE DISCHARGE OF THE BALLAST FROM THE EXXON NORTH SLOPE ON FEBRUARY 18TH WAS CLOSELY MONITORED AND SAMPLED. WE HAD USED AN ALYESKA PREAPPROVED CLEANING AGENT ON THIS SHIP AND SAMPLES WERE TAKEN BOTH OF THE BALLAST WATER COMING FROM THE VESSEL AND THE EFFLUENT FROM THE BALLAST WATER TREATMENT FACILITY. WE HAVE BEEN ADVISED BY ALYESKA THAT ABSOLUTELY NO PROBLEM WAS DETECTED IN THE CHEMICAL ANALYSIS OR IN THE OBSERVED OPERATION OF THE BALLAST WATER TREATMENT FACILITY.

- SIXTH, WE CARRY OUT BALLAST TRANSFERS BETWEEN SHIPS ENGAGED IN NORTH SLOPE SERVICE PRIOR TO SHIPYARD MAINTENANCE AND, OCCASIONALLY, PRIOR TO VESSEL INSPECTIONS. THIS IS A SIMPLE EXTENSION OF THE ALASKAN NORTH SLOPE LOGISTICS OPERATION. THIS PROCEDURE IS DESCRIBED ON CHART 10 OF OUR MARCH 15 PRESENTATION, WHICH MR. PARISH IS NOW DISPLAYING. THE TANK WASHINGS FROM THE VALDEZ TRADER BEING PREPARED FOR MAINTENANCE ARE TRANSFERRED TO A VESSEL RETURNING DIRECTLY TO VALDEZ AND REPLACES AN EQUAL AMOUNT OF BALLAST THE RETURNING VESSEL WOULD HAVE CARRIED ON ITS TRIP NORTH. THUS, THERE IS NO OVERALL INCREASE IN BALLAST WATER RETURNED TO VALDEZ.

- SEVENTH, WE CAREFULLY FOLLOW ALYESKA PROCEDURES SO AS TO ASSIST THEM IN MEETING THEIR PERMIT REQUIREMENTS. THESE PROCEDURES INCLUDE THE COMPLETION OF THE BALLAST WATER SURVEY FORM REQUIRED BY ALYESKA AND THE AFFIDAVIT REQUIRED BY DEC.

MR. CHAIRMEN, IN PREPARATION FOR THIS HEARING, WE RECEIVED TWO LETTERS FROM YOUR COMMITTEES DATED MARCH 12 AND 18, RESPECTIVELY. IN THESE LETTERS, YOU REQUESTED ADDITIONAL INFORMATION REGARDING OUR OPERATIONS. WE HAVE INVESTED EXTENSIVE ADDITIONAL MANPOWER AND TIME IN SUMMARIZING OUR RESPONSES TO THESE QUESTIONS. THE RESULTS OF THIS DATA GATHERING HAVE AGAIN CONFIRMED THE INFORMATION CONTAINED IN MY TESTIMONY BEFORE THE HOUSE OIL & GAS COMMITTEE ON MARCH 15, 1991.

I WOULD LIKE TO NOW RESPOND TO EACH OF THE QUESTIONS CONTAINED IN THESE LETTERS. THE PACKAGE OF MATERIAL THAT MR. PARISH DELIVERED TO YOU YESTERDAY CONTAINS THE INFORMATION WE HAVE GATHERED, AND I WILL NOW SUMMARIZE IN THIS TESTIMONY.

TURNING TO THE QUESTIONS IN THE MARCH 12 LETTER, ATTACHMENT 1 ADDRESSES QUESTION 1 AND CONTAINS THE INFORMATION REQUESTED FOR OUR CURRENT OWNED FLEET FOR THE DATES JANUARY 1, 1988 THRU MARCH 15, 1991. THIS DATA COVERS 521 CALLS FOR CARGO AT VALDEZ. WE CONFIRMED THAT FOUR DIFFERENT TYPES OF MATERIALS HAVE BEEN INTRODUCED INTO NONSEGREGATED BALLAST WATER OTHER THAN THRU THE SEA CHEST. I WILL ADDRESS TWO OF THESE, TRANSFERS FROM OTHERS VESSELS AND THE USE OF CLEANING AGENTS, IN A MOMENT. REGARDING THE OTHER TWO, THE AVERAGE AMOUNT OF PUMPABLE MATERIAL (PRIMARILY WATER) THAT WAS TRANSFERRED FROM THE ENGINE ROOM BILGES AND RESIDUE HOLDING TANKS TO THE NONSEGREGATED BALLAST TANKS WAS APPROXIMATELY 80 BARRELS ON THE NORTHBOUND VOYAGES. THIS IS CONSISTENT WITH THE INFORMATION CONTAINED IN CHART 8 OF OUR MARCH 15 PRESENTATION.

IN RESPONSE TO QUESTION 2, LET ME FIRST ASSURE YOU THAT MATERIAL FROM NON-ALASKAN TRADING VESSELS HAS NOT BEEN TRANSPORTED TO VALDEZ. AS REGARDING THE TANK WASHINGS TRANSFERRED BETWEEN VALDEZ TRADERS AS PART OF THE PREPARATION FOR MAINTENANCE, THE DATA IS CONTAINED IN ATTACHMENT 2. OVER THE JANUARY 1988 TO MARCH 1991 TIME FRAME, 20 TRANSFERS TOOK PLACE. THE AVERAGE VOLUME OF TANK WASHINGS TRANSFERRED WAS APPROXIMATELY 38 THOUSAND BARRELS. I WOULD LIKE TO REEMPHASIZE THAT THESE TANK WASHINGS ACTED AS BALLAST WATER ON THE NORTHBOUND TANKER AND THUS THIS OPERATION DOES NOT INCREASE THE AMOUNT OF BALLAST WATER OFFLOADED AT VALDEZ INTO THE BALLAST WATER TREATMENT FACILITY.

BECAUSE OF THE UNIQUE NATURE OF THE EXXON VALDEZ SALVAGE IN 1989, I HAVE BROKEN OUT THE TEN TRANSFERS OF MATERIAL ASSOCIATED WITH THIS OPERATION. THE AVERAGE VOLUME TRANSFERRED WAS 58 THOUSAND BARRELS, AND THE ENTIRE OPERATION WAS CARRIED OUT IN FULL CONCERT AND AGREEMENT WITH ALYESKA, ALASKA STATE AGENCIES, THE U.S. EPA, AND THE U.S. COAST GUARD.

I HAVE ALSO LISTED SEPARATELY THE TANK WASHING TRANSFERS ASSOCIATED WITH THE SALVAGE OF THE EXXON HOUSTON IN HAWAII. THIS OPERATION REQUIRED TWO TRANSFERS AVERAGING APPROXIMATELY 31 THOUSAND BARRELS. THE EXXON HOUSTON WAS A VALDEZ TRADER THAT WAS REMOVED FROM SERVICE IN 1989 AND CARRIED A CARGO OF NORTH SLOPE CRUDE TO HAWAII ON HER LAST VOYAGE.

WITH REGARD TO QUESTION 3, OUR RECORDS SHOW THAT NO MATERIAL HAS BEEN TRANSFERRED FROM SHORE TANKS. AS REGARDING TRANSFER FROM BARGES, THE DATA SHOW THAT BARGES HAVE BEEN USED TO MOVE TANK WASHINGS FROM ONE SHIP TO ANOTHER. THIS RESPONSE IS SUMMARIZED IN ATTACHMENT 3. FOR EXAMPLE, IN THE CASE OF THE EXXON VALDEZ, MOST OF THE WATER (9 OF 10 TRANSFERS) WAS TRANSFERRED USING BARGES. ALSO, OCCASIONALLY WHEN THE EXXON GALVESTON AND THE EXXON BAYTOWN (OUR TWO SAN FRANCISCO BAY LIGHTERS) ARE NOT AVAILABLE IN SAN FRANCISCO HARBOR TO PERFORM THE TRANSFER, A PETROLEUM BARGE HAS BEEN USED.

WITH REGARD TO QUESTION 4, THE RESPONSE IS CONTAINED IN ATTACHMENT 4. IN SUMMARY, UNPUMPABLE MATERIAL IS DISCHARGED IN ONE OF THREE WAYS. THE PREFERRED MANNER IS AT THE SHIPYARD DURING THE VESSEL'S PERIODIC MAINTENANCE. THIS PROCEDURE IS PART OF OUR NORMAL SHIPYARD SPECIFICATION. ALTERNATELY, WE CAN DISPOSE OF THE MATERIAL THROUGH THE USE OF OUR ONBOARD INCINERATOR WHILE THE VESSEL IS AT SEA, CONSISTENT WITH U.S. COAST GUARD REGULATIONS. AND FINALLY, IF THE CIRCUMSTANCES ARE SUCH THAT THE FIRST TWO OPTIONS ARE NOT AVAILABLE, THEN THE MATERIAL IS PLACED IN DRUMS AND OFFLOADED AT EXXON USA'S CALIFORNIA REFINERY AND SUBSEQUENTLY DISPOSED OF BY AN APPROVED CONTRACTOR IN ACCORDANCE WITH APPLICABLE REGULATIONS.

TURNING NOW TO THE QUESTIONS CONTAINED IN THE MARCH 18 LETTER, OVER THE PAST THREE YEARS AND THREE MONTHS, WE HAVE USED PETROLEUM BASED CLEANING AGENTS SIX TIMES. THREE OF THE APPLICATIONS WERE IN PREPARATION FOR SHIPYARD WORK AND THREE WERE IN PREPARATION FOR STRUCTURAL INSPECTIONS. THE TABLE IN ATTACHMENT 5 SHOWS THE BRAND NAME, MANUFACTURER, VESSEL'S NAME, AND QUANTITY OF AGENT USED. THIS DATA RESPONDS TO BOTH QUESTIONS 1 AND 2 IN THE MARCH 18 LETTER. WE HAVE ALSO INCLUDED IN ATTACHMENT 5 THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH OF THE AGENTS. THESE DOCUMENTS ARE SUPPLIED TO US BY THE MANUFACTURERS.

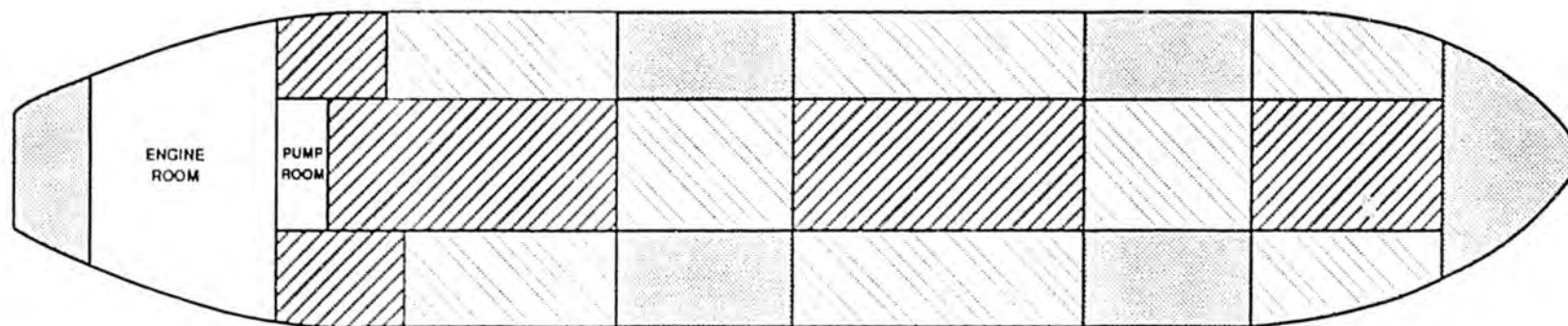
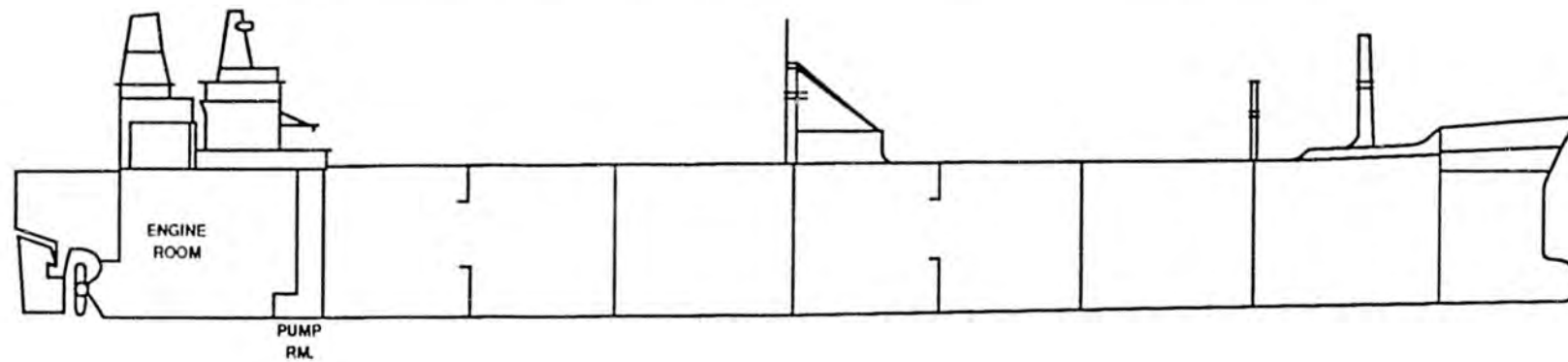
REGARDING QUESTION 3, WHICH ASKS FOR VESSEL TANK CAPACITIES, ATTACHMENT 6 IN OUR SUBMISSION CONTAINS THIS INFORMATION. FOR YOUR INFORMATION, THIS SAME DATA HAS ALSO BEEN SUBMITTED TO THE HOUSE OIL & GAS COMMITTEE AND IS REQUIRED IN OUR OIL SPILL CONTINGENCY PLAN SUBMISSION TO ALASKA DEC.

WITH REGARD TO QUESTION 4 CONCERNING THE DECANTING OF "CLARIFIED BOTTOM WATER FROM NONSEGREGATED TANKS TO SEGREGATED TANKS," THE ANSWER IS NO. THE PROCEDURES SUGGESTED IN THE QUESTION ARE CLEARLY ILLEGAL ACCORDING TO U.S. FEDERAL REGULATIONS AND ARE NOT ALLOWED ON OUR SHIPS.

I SINCERELY TRUST THAT THE EXTENSIVE RESEARCH AND DATA GATHERING WE HAVE CONDUCTED HAS FULLY AND SATISFACTORILY ANSWERED THE QUESTIONS OF THESE COMMITTEES. WE FIRMLY BELIEVE THAT ALL OF OUR VESSEL OPERATIONS ARE CONDUCTED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS AND, IN PARTICULAR, ARE CONSISTENT WITH ALYESKA GUIDELINES AND THE TERMS OF THEIR EPA PERMITS.

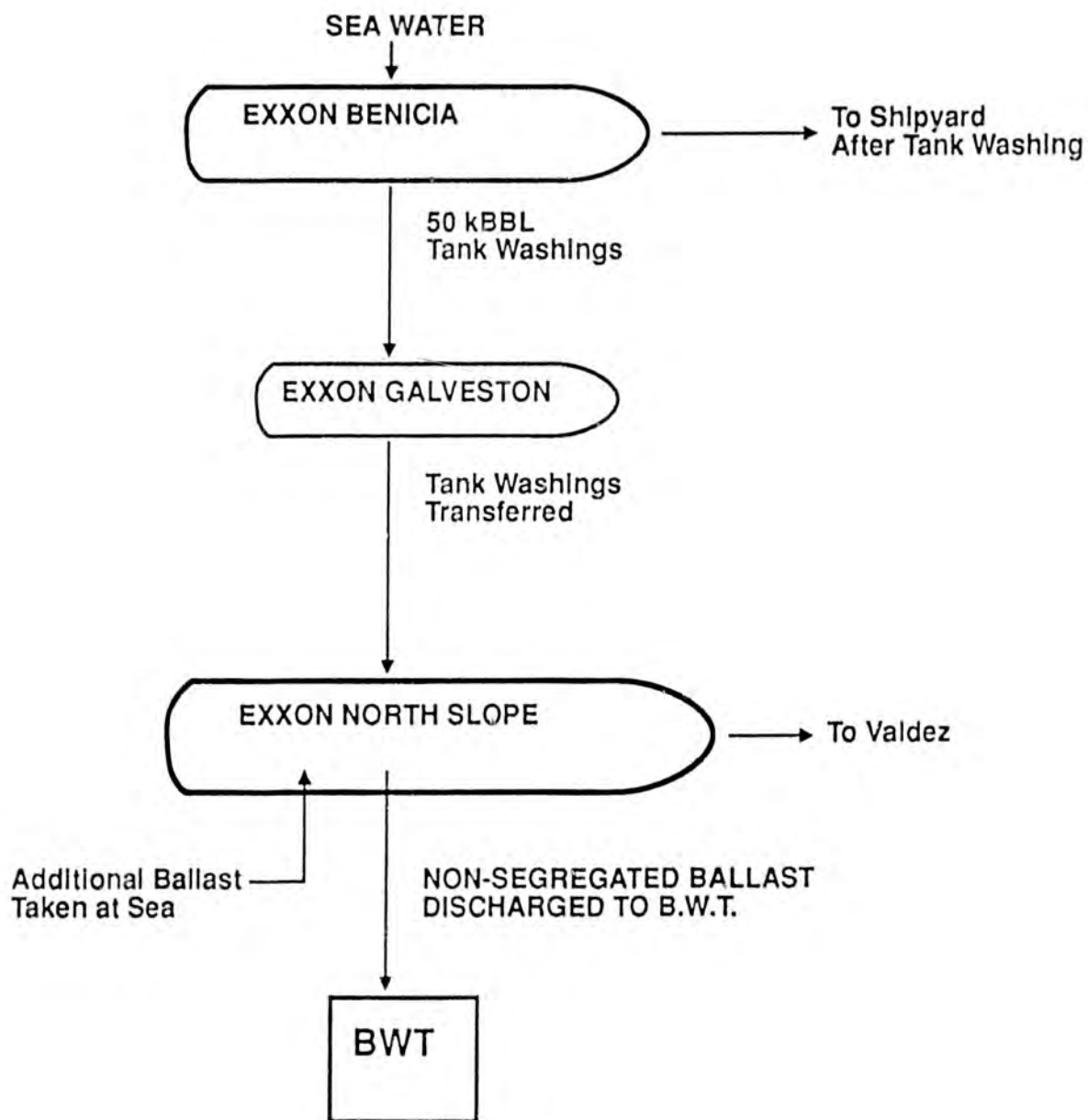
THANK YOU AGAIN FOR THE OPPORTUNITY TO SPEAK WITH YOU THIS AFTERNOON. IF THERE ARE POINTS I CAN CLARIFY OR ADDRESS, I WOULD BE HAPPY TO RESPOND TO YOUR QUESTIONS AT THIS TIME.

TANKER GENERAL ARRANGEMENT



SEGREGATED BALLAST
NON-SEGREGATED BALLAST/
CARGO OIL
CARGO OIL

EXAMPLE OF TANK WASHINGS TRANSFER



off

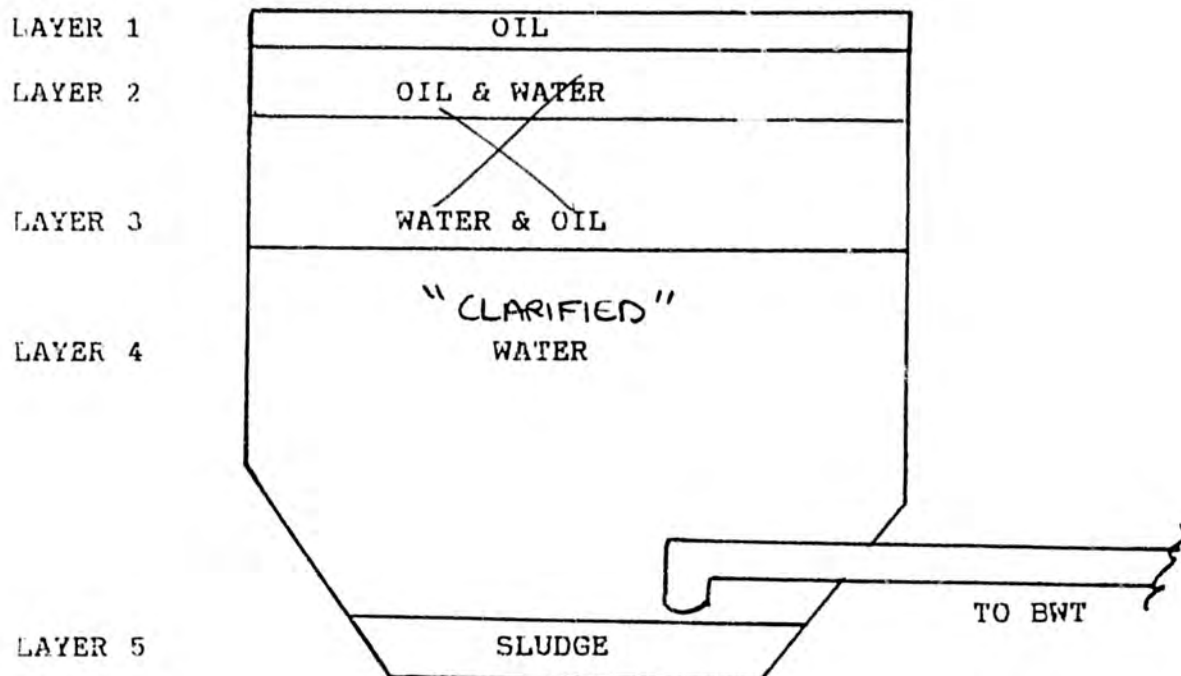
#1

"SLUDGE" CONTAINS PAH (POLYCYCLIC AROMATIC HYDROCARBONS)

MANY PAH ARE EPA PRIORITY POLLUTANTS

SLUDGE MAY BE A HAZARDOUS WASTE

TANKER DEBALLASTING TO ALYESKA BWT SYSTEM



Oil industry: When do you stop deballasting?
Layer 1, 2, 3, or 4?

Does Layer 5 go to the BWT plant?

EPA/DEC: What hydrocarbons are in Layers 1-3?
What hydrocarbons are in Layer 5?

Does the BWT plant remove these hydrocarbons?
If not, what happens to these hydrocarbons?

TANK PRE-DRYDOCK CLEANINGS CONTAIN

RESIDUAL NORTH SLOPE CRUDE,
METAL SCALE FROM TANK WALLS, AND
CORROSIVE CHEMICALS USED TO DESCALE TANK WALLS

Oil industry:

Are compounds used to descale tanks in preparation for drydock different than cleaning agents used to wash tanks (COW system)?

How do you dispose of tank pre-drydock cleanings?

How much does it cost per barrel to dispose of tank pre-drydock cleanings ashore?

Alyeska:

Sludge from the terminal is collected in barrels and shipped Outside for disposal?

Is the sludge collected from both the BWT system and standard operations at the terminal?

How much does it cost per barrel to dispose of sludge Outside, including shipping charges?

EPA/DEC:

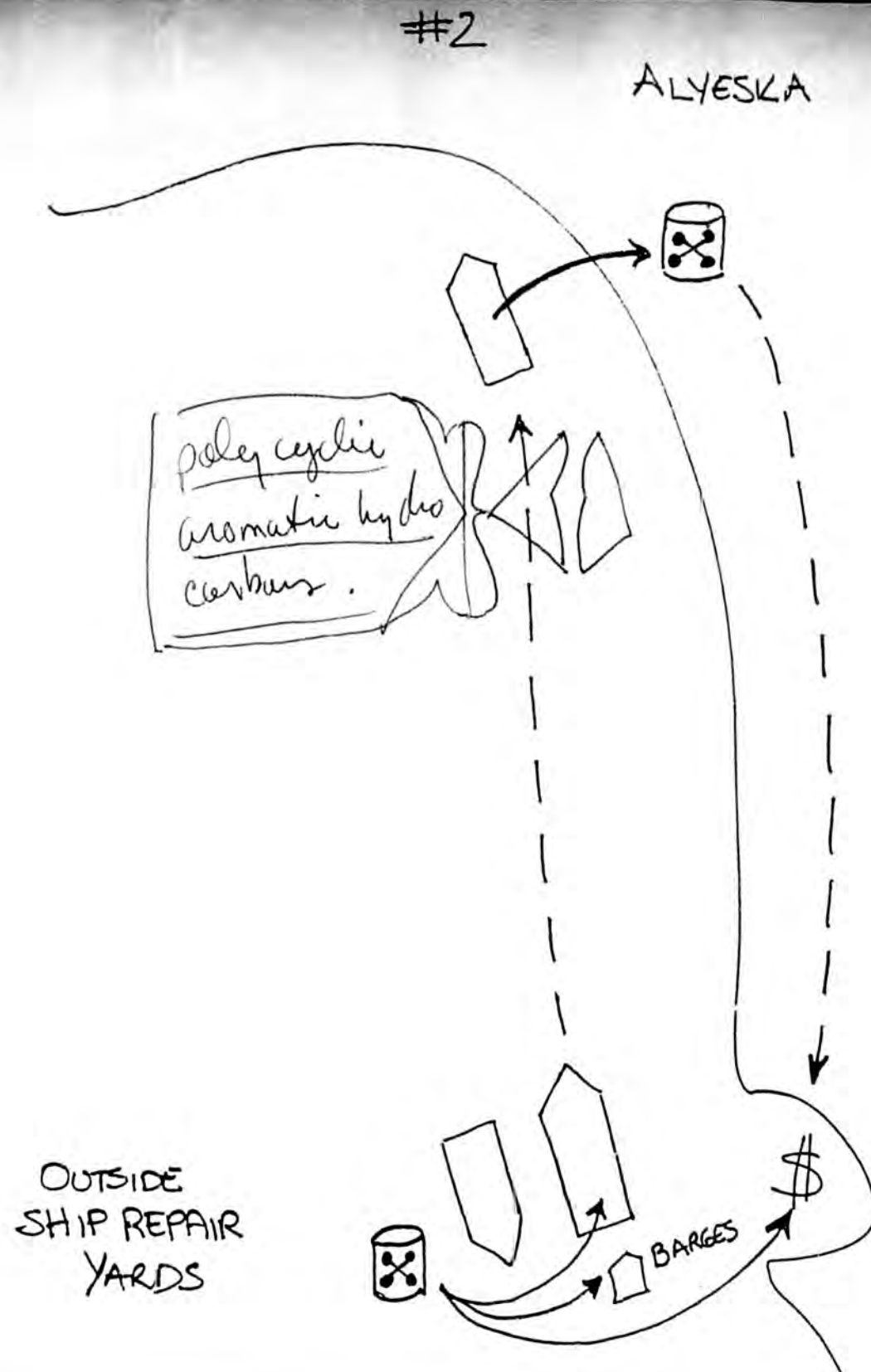
Have PAH been reported in the sediment of Port Valdez?

Is there a gradient of PAH from the BWT diffuser outfall with highest concentration at the point of discharge?

USCG:

Are you aware that lightering is occurring between tankers and barges at ship repair yards?

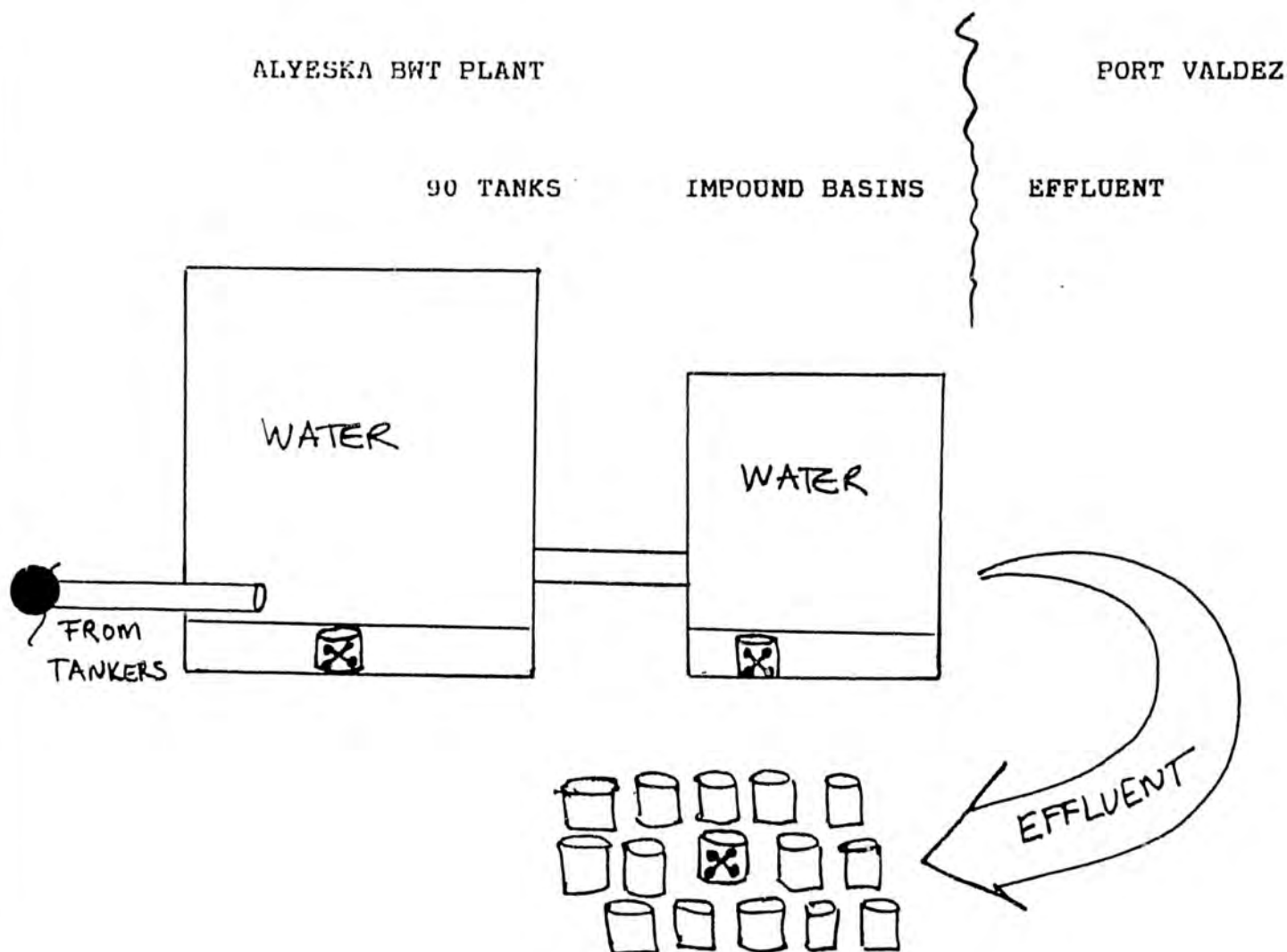
Is this transfer regulated as a lightering zone transfer? Is it regulated at all?



#3

SLUDGE IS REGULATED UNDER THE NPDES PERMIT AS "TSS"
(TOTAL SUSPENDED SOLIDS)

DAILY MAXIMUM LIMIT IS 45 PPM
MONTHLY AVERAGE IS 30 PPM



EPA investigation from 1985-1988 (package #1) documented that Alyeska dilutes "bad ballast water," then discharges it into Port Valdez.

The Alyeska BWT plant does not monitor for PAH other than as total suspended solids. The current flow rate is 11,000 gallons per minute through the BWT plant.

***** IT IS HIGHLY POSSIBLE THAT ALYESKA'S SOLUTION TO POLLUTION IS DILUTION *****

B. Ballast Water Treatment Facility (BWT) (Outfall 001)

During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated ballast and bilge water, storm water, and other wastewaters described in Part I.B.2., below, from Outfall 001 under the following conditions:

1. Such discharges shall be limited and monitored by the permittee as specified in the following table:

Effluent Characteristic	Discharge Limitation	Monitoring Requirements		
		Measurement Frequency	Sample Type	Reported Value(s)
<u>AROMATIC HYDROCARBONS (BETX)</u>		Daily	Grab ^{1/}	Maximum daily & monthly average concentration (mg/l)
<u>"summer" period</u>				
maximum daily	1.3 mg/l			
monthly average	0.7 mg/l			
<u>"winter" period</u>				
maximum daily	1.3 mg/l			
<u>NAPHTHALENE</u>	Below quantit. limit ^{2/}	Quarterly ^{3/} (See I.A.)	Grab	Maximum concentration (ug/l)
maximum value				
<u>TOTAL SUSPENDED SOLIDS (TSS)</u>		Daily	24-hour composite	Maximum daily & monthly average concentration (mg/l)
maximum daily	45 mg/l			
monthly average	30 mg/l			
<u>TOTAL ORGANIC CARBON (TOC)</u>		Daily	Grab	Maximum daily & monthly average concentration (mg/l)
maximum daily	25 mg/l			
monthly average	15 mg/l			
<u>DISCHARGE FLOW</u>		Continuous ^{4/}	Recording	Maximum mgd and average mgd
maximum	30 mgd			
monthly average	21 mgd			
<u>pH^{5/}</u>	6.0-8.5	Continuous	Recording	Maximum & minimum

Notes:

- ^{1/} Benzene, toluene, each xylene isomer, and ethylbenzene shall be separately quantified by Method 602, and the total reported on the DMR.
- ^{2/} EPA Method 610 shall be used with the high performance liquid chromatography (HPLC) option. For purpose of demonstrating compliance, the quantitation limit is assumed to be 2 ug/l unless Alyeska provides documentation that a quantitation limit of 2 ug/l was not achievable for a sample due to matrix interference effects. If interference effects are present, the sample may be diluted only the minimum number of times necessary to conduct the analysis.
- ^{3/} The same sample may also be used for monitoring required under Part I.B.10.
- ^{4/} Flow shall be measured by a continuous flow meter or other methods of similar accuracy (at least $\pm 5\%$), as determined in advance by EPA, in consultation with ADEC.
- ^{5/} Continuous monitoring of pH is also subject to the conditions in 40 CFR 401.17.



U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

JUL 12 1985

REPLY TO
ATTN OF M/S 513

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Bill Ross, Commissioner
Alaska Department of Environmental Conservation
Pouch 0
Juneau, Alaska 99811

Re: Compliance Order No. 1085-07-35-309A

Dear Mr. ^{Bill}Ross:

We wish to keep you informed of enforcement actions in the State of Alaska. We are issuing the enclosed Compliance Order to Alyeska Pipeline Service Company, as provided by Section 309 of the Clean Water Act, 33 USC §1319.

The Company is required, by this Order, to stop reintroducing sludges back into the ballast water treatment plant.

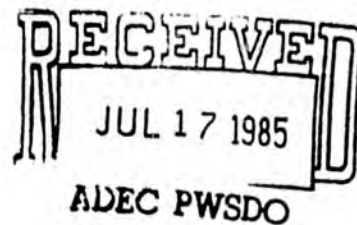
Questions concerning this Order may be directed to Don Dossett, Environmental Engineer, at (206) 442-1834, or John Hohn, Associate Regional Counsel, at (206) 442-1222.

Sincerely,

Ernesta B. Barnes
Regional Administrator

Enclosure

cc: EPA, Alaska Operations Office, Anchorage



8 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
9 Region 10
10 1200 Sixth Avenue
11 Seattle, Washington 98101

12 IN THE MATTER OF:

13 Alyeska Pipeline Service Company
14 1535 South Bragaw Street
15 Anchorage, Alaska 99512

16 NPDES Permit No. AK-002324-8

)
) No. 1085-07-35-309A

) COMPLIANCE ORDER
)
)
)

17 Pursuant to Section 309 of the Clean Water Act, 33 USC §1319, and the
18 authority vested in the Administrator of the U.S. Environmental Protection
19 Agency (EPA) which has been delegated to the EPA Regional Administrator,
20 Region 10, the following FINDINGS OF FACT are made and COMPLIANCE ORDER
21 issued.

22 FINDINGS OF FACT

23 1. Alyeska Pipeline Service Company (respondent) operates a ballast
24 water treatment facility located near Valdez, Alaska. That facility
25 discharges treated ballast water to Port Valdez.
26
27

1 2. Port Valdez is navigable waters of the United States as defined by
2 Section 502(7) of the Act, 33 USC §1362(7), and 40 CFR §122.2.

3 3. Respondent was issued a National Pollutant Discharge Elimination
4 System (NPDES) permit (the permit) with an effective date of September 10,
5 1980, and an expiration date of June 1, 1983, authorizing the discharge of
6 identified pollutants. Respondent submitted an application for reissuance of
7 its permit on August 20, 1982. Hence, the provisions of the permit remain in
8 effect under 40 CFR §122.6.

9 4. Part II.A.6. of the permit provides that "solids, sludges, filter
10 backwash, or other pollutants removed from or resulting from treatment or
11 control of wastewaters shall be disposed of in a manner to prevent any
12 pollutant from such materials from entering navigable waters, except as
13 limited in Part I.A."

14 5. Part II.A.6. of the permit means that once a pollutant (i.e., sludge,
15 solids, etc.) has been removed from the influent to, or wastewater within, the
16 Ballast Water Treatment Facility (BWT), that removed substance shall not be
17 reintroduced, reinjected, or returned in any way to the influent or wastewater
18 being treated by the BWT.

19 6. For the purposes of this ORDER and the permit, sludge is defined as
20 everything, regardless of its viscosity or solids content, that is above and
21 below the water phase except recoverable crude oil.

22 7. During the spring of 1983, approximately 500 gallons of sewage
23 treatment sludges were pumped into the oily water recovery system of
24 respondent's ballast water treatment plant, which is in violation of Part
25 II.A.6. of the permit.

8. On numerous occasions agents and employees of respondent removed sludges from one part of the BWT (i.e. retention ponds) and reintroduced those sludges into the wastewater (i.e. 90 tanks) being treated within the BWT, in violation of Part II.A.6. of the permit.

ORDER

Based on the foregoing Findings of Fact, and pursuant to Section 309 of the Clean Water Act, 33 USC 1319, it is hereby ORDERED as follows:

1. Immediately upon receipt of this ORDER, respondent shall cease and desist the reintroduction of sludges back into the BWT. Recoverable crude oil shall not be reintroduced into the BWT.

2. Within twenty (20) days after receipt of this ORDER, respondent shall submit in writing, a plan describing the procedures that will be followed in the removal and disposal of all sludges.

3. Submittals required by this ORDER shall be made to:

U.S. Environmental Protection Agency

1200 Sixth Avenue

Seattle, Washington 98101

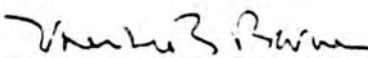
Attn: Mr. Don Dossett, M/S 513

SANCTIONS

Notice is hereby given that violation of, or failure to comply with, any of the provisions of the foregoing ORDER shall subject respondent to civil penalties pursuant to Section 309(d) of the Act, 33 USC §1319(d).

Nothing in this ORDER shall be construed to relieve respondent of any obligations under any applicable federal, state, or local law.

Dated this 12th day of July, 1985.



Ernesta B. Barnes
Regional Administrator

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TESTIMONY ON ALYESKA OPERATIONS

ALASKA SENATE TRANSPORTATION AND OIL & GAS COMMITTEES

APRIL 11, 1991

My name is Harold Geren. I am the Chief of the Water Permits and Compliance Branch of EPA Region 10. I have been in that position, and involved in permitting and compliance activities at the Valdez Ballast Water Treatment (BWT) facility most of the time since 1977. I have been asked to cover the historic permitting process, and to discuss the treatment processes that have been applied, the adequacy of monitoring for discharges into Port Valdez, and the past investigations that EPA has conducted. Some of this information was presented in EPA testimony to the House Special Committee on Oil and Gas on March 18. In the interest of time, I will not repeat that material, but will try to summarize it here.

The first permit authorizing wastewater discharges from the BWT plant was issued in December, 1974. That permit was technology-based, requiring installation of treatment facilities representing Best Practicable Control Technology - also known as BPT. The permit limited discharges of oil and grease to a daily maximum of 10 mg/l and a monthly average of 8 mg/l. Flow was also limited. Treatment was accomplished through gravity separation (the 90s tanks) and dissolved air floatation cells, in which air bubbles introduced into the bottom of the cells collect oil as they rise to the surface. The oily material on the surface was then removed by skimming devices.

The second permit was issued in August, 1980. That permit contained effluent limits for aromatic hydrocarbons - benzene, toluene and xylene. The permit limited discharges of these materials to a daily maximum of 9 mg/l and a monthly average of 6 mg/l, in order to comply with the Alaska water quality standard of 10 ug/l at the boundary of the mixing zone. Flow and oil and grease were also limited. The oil and grease limitations were unchanged from the 1974 permit.

The 1980 permit also required Alyeska to examine treatment technologies which could further reduce pollutants levels. As a result of these studies, in 1986 Alyeska modified the existing impound basins and the treatment process to enhance biological degradation of hydrocarbons in the wastewater. The addition of biological treatment significantly lowered aromatic hydrocarbon concentrations in the effluent. This improved treatment was reflected in the subsequently reissued permit.

The current permit was issued on May 8, 1989, and was modified on November 14, 1990. The permit authorizes the discharge of treated ballast water, bilge water, storm water, and sanitary wastes. Other wastewaters identified in the Alyeska "Best Management Practices" (BMP) Plan are also authorized for discharge. The permit contains effluent limitations for aromatic hydrocarbons, naphthalene, total suspended solids, total organic carbon, and total flow. Aromatic hydrocarbons (now BETX) are limited to a daily maximum of 1.3 mg/l and a monthly average of 0.7 mg/l during the summer, and a daily maximum of 1.3 mg/l

during the winter. The limits are based on EPA's determination of effluent quality that should result from the application of best available treatment technology (BAT) (biological treatment). The technology-based limits have also been evaluated by the Alaska Department of Environmental Conservation (DEC) in relation to state water quality standards. Both agencies have concluded that the limits will comply with those standards criteria.

Alyeska's NPDES permit also requires extensive effluent monitoring, biomonitoring of the whole effluent stream, mixing zone compliance studies, and environmental monitoring of Port Valdez.

One of the more significant provisions of the permit, from the standpoint of recent concerns, is a requirement that Alyeska take certain steps to determine whether incoming ballast water for each tanker is contaminated with pollutants other than crude oil. Specifically, Alyeska must examine the ship's oil record book and obtain a completed copy of a "Ballast Water Survey Form" which contains specific information on the amount and constituents of the ballast and bilge water to be offloaded. The purpose of this provision is to identify unauthorized pollutants before they leave the ship, and to prevent the discharge of such pollutants into the treatment facility.

Alyeska appealed many of the monitoring provisions and effluent limitations of the 1989 permit. They were especially concerned over the winter BETX daily maximum limit of 1.3 mg/l. While they believed their upgraded facilities could comply with

the limit over the long term, their concern was that biological treatment facilities are subject to upset which could result in short term violations of the limits. Alyeska, EPA, and the DEC negotiated that appeal over a several month period, and finally reached agreement on changes to the permit that were acceptable to all three parties. That agreement was formalized in the permit modification that was issued on November 14, 1990.

Although the language of the permit was extensively modified, the most important change related to the winter BETX limit. The 1989 permit established the limit as water quality-based, which means system upsets are not allowed. The modified permit established the winter limit as technology-based and recognized that system upsets do occur.

I mentioned earlier that the modified permit contains provisions requiring Alyeska to determine whether incoming ballast water contains pollutants other than crude oil on a ship by ship basis. Mr. Charles Hamel appealed that provision, and requested that it be strengthened. Specifically, he asks that the vessel captains and the tanker owner companies be required to certify, under penalty of perjury, that all pollutants in the ballast water other than crude oil have been reported to Alyeska. Mr. Hamel's appeal has been granted, and an EPA administrative law judge (ALJ) has been assigned to hold a hearing. Several other groups (Greenpeace USA, Prince William Sound Seiners Association, and Cordova District Fishermen United) asked that several other issues be added to the hearing. Those [REDACTED]

groups question whether EPA may change the basis of the winter BETX limit from water quality-based to technology-based, the adequacy of the monitoring program, and the presence of floating solids, visible foam or oily wastes upstream of the discharge weir. With respect to the monitoring program, the challenge focused on the mixing zone compliance studies, a proposed mass balance study, additional effluent monitoring, and sludge handling. EPA and Alyeska filed briefs in opposition to adding those issues. The Administrative Law Judge (ALJ) agreed with EPA and Alyeska, and recently issued an order denying the request to include the additional issues. Consequently, the only issue now before the ALJ is whether to include a certification requirement in the permit (Mr. Hamel's appeal). It will be several months before that issue will be decided. All other provisions of the modified permit are fully effective and will remain so unless there are further appeals of the ALJ's decision on adding other issues.

Regarding the adequacy of monitoring of the BWT plant discharges, I would first like to address that question from an EPA national perspective. Self monitoring of discharges under wastewater discharge permits has been the foundation of the national compliance assurance program since the permit system was created under the federal Water Quality Act of 1972. We recognize there is a danger that a discharger will not monitor properly or will not report permit violations, and that does happen on occasion. We are convinced, however, that the majority

of permittees diligently monitor their discharges , and honestly report the results of that monitoring. State and federal agencies periodically conduct compliance inspections during which independent samples are collected and analyzed, and the analytical records of the permittee are reviewed. The Clean Water Act contains criminal sanctions for falsification of reports submitted to EPA and the agency has prosecuted several individuals under those provisions. Simply stated, an employee just does not have much incentive to engage in that kind of criminal behavior. It is not worth it!

Alyeska's permit requires measurement of numerous effluent parameters, including daily measurements of BETX and flow discharges. In addition, it requires chronic toxicity testing of aquatic organisms four times per year. Acute biomonitoring is required three times annually. We believe this level of monitoring is adequate to assure permit compliance, which at the same time should assure that the Alaska water quality standards are met at the edge of the mixing zone.

Regarding past investigations of Alyeska, in the mid-1980s EPA completed a detailed investigation of allegations that the Alyeska facility violated several federal environmental laws including the Clean Water Act wastewater discharge permit. It was alleged that monitoring reports for flow and BETX were routinely falsified, that incoming ballast water was contaminated with materials other than crude oil, that toxic and hazardous substances were routinely discharged to the BWT facility, and

that sludges and solids were being reintroduced into the BWT plant.

In the spring of 1985 EPA initiated an investigation exploring each specific allegation. The investigation included interviews of past and present Alyeska employees, ship's crews and other people knowledgeable about the BWT operation, review of numerous subpoenaed documents, review of EPA and DEC files, review of Alaska Public Utilities files, review of ship records, and review of numerous Alyeska records. The investigation resulted in the issuance of a Compliance Order in July 1985 (amended in November 1985) which prohibited reintroduction of sludge (removed substances) into BWT plant, and established time lines for accomplishing other operational improvements that would increase the efficiency of the plant. No further formal enforcement action against Alyeska was pursued because allegations could not be substantiated or had already been addressed by EPA and resolved by Alyeska.

The March 18, 1991 EPA testimony before the House Special Committee on Oil and Gas discussed current activities of EPA related to the recent allegations of Mr. Charles Hamel that hazardous wastes were illegally discharged to the BWT facility. I do not have much to add to that testimony at this time, but I will summarize the material presented on March 18.

EPA and DEC investigations are continuing. One element of the investigation is to determine exactly what industry practices are common. To that end, we have asked the industry to catalog

those practices so that we may make some informed judgments as to whether they should be allowed to continue. We have already decided that pollutants which have been transferred from one vessel to another are not authorized for discharge, without express approval from EPA and DEC. In addition, we have advised Alyeska that the permit does not allow the introduction of any sludges into the BWT facility.

The permit contains specific language regarding types of wastes that may be discharged through the facility, such as ballast water, bilge water, and storm water. The permit also authorizes discharges of other wastes identified in the approved best management practices (BMP) plan that has been developed to guide facility operations. At the outset of the investigation, we discovered that the plan does not adequately describe or characterize the wastes normally treated at the BWT plant. We are now working with the industry to revise the BMP plan, so that it will be very specific about the materials that may be discharged, and the measures that must be implemented to minimize overall pollutant discharges. A meeting between Alyeska, representatives of the tanker fleet, ADEC, and EPA has been scheduled for April 18, 1991 to initiate the BMP plan revision process.

The second element of the investigation is to follow up on Mr. Hamel's specific allegations of wrong doing. We are requesting detailed documentation from EXXON and others on characteristics and quantities of materials discharged through

the BWT plant so that we can independently judge whether or not federal laws were violated. We are not relying on unsubstantiated Company statements only, which seems to be of concern to some individuals. It will be some time before those investigations are completed, and decisions are made regarding appropriate enforcement responses.

MINUTES

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JOINT SENATE TRANSPORTATION AND SENATE SPECIAL
COMMITTEE ON OIL AND GAS

April 9, 1991

1:11 P.M.

TRANSPORTATION MEMBERS PRESENT

Senator Curt Menard, Chairman
Senator Lloyd Jones, Vice Chairman
Senator Dick Shultz

TRANSPORTATION MEMBERS ABSENT

Senator Bettye Fahrenkamp
Senator Drue Pearce

OIL AND GAS MEMBERS PRESENT

Senator Sam Cotten, Chairman
Senator Dick Shultz

OIL AND GAS MEMBERS ABSENT

Senator Drue Pearce
Senator Bettye Fahrenkamp
Senator Lyman Hoffman

COMMITTEE CALENDAR

Ballast Water Treatment

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Senate Trans
Oil & Gas

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ACTION NARRATIVE

TAPE 1, SIDE 1
Number 001

SENATOR MENARD called the Joint Senate Transportation and Senate Special Committee on Oil and Gas meeting to order at 1:11 p.m. He announced that they would have oversight hearings on the Alyeska Ballast Water Treatment Facility and the TAPS tanker operations.

JOHANNA MUNSON, staff for Senator Menard, gave a brief overview of the Alyeska Marine Terminal in the Port of Valdez and how the issue had developed. She explained that tankers arrive at the TAPS Valdez terminal carrying ballast water in their cargo holds to keep the tankers stable during their voyage north. Unsegregated ballast water mixes with residual oil in the hold of the tankers and become contaminated. The ballast water is offloaded and treated by Alyeska's treatment system. Questions have been raised regarding the transfer of ballast water between tankers to be unloaded at the Alyeska facility. The tanker industry stated that the transfer of ballast water from other North Slope tankers to northbound tankers is a common practice.

The Ballast Water Treatment Plan (BWTP) is intended to reduce the contamination from ballast water particularly from benzene, toluene, and xylenes (BTX) which are the most

Senate Trans
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actively toxic compounds of crude oil. After treatment the water is discharged into Valdez Bay.

Ms. Munson continued to say that the BWTP is regulated under a National Pollution Discharge Elimination System Permit (NPDES). It sets effluent levels and other conditions for operating the ballast water treatment facility. The state's role is to impose necessary conditions, to certify reasonable assurance that Alaska's water quality standards are met.

Alyeska agreed to provide a state-of-the-art facility and as part of the TAPS right of way lease, Alyeska contracted with the state to prevent or abate any environmental damage including marine pollution. Alyeska has failed to install or to use several key components to the system over the years. In 1986 Alyeska modified the system to add a biological bug compound that would eat remaining toxins in the effluent water. This was the least expensive method of improving the system, not the most effective. This method has been criticized as suboptimal in the cold Alaska environment.

After the EPA issued a proposed new permit, Alaska certified it only with more stringent limits on the amount of BTX in the effluent and imposed additional conditions for compliance with state law. Alyeska challenged all the terms and conditions and unsuccessfully sued the State of Alaska. Ms. Munson said that Alyeska is still discharging 18,000,000 gallons of waste water containing 152 pounds of BTX per year. She added that due to the state's budget reductions in 1982, Alyeska is essentially self monitoring. There is considerable controversy as to scientific methods and acceptable levels of discharge at the facility. She said it is difficult to determine if the facility can handle extra tanker ballast water.

Ms. Munson said that many things have contributed to the deterioration of the Valdez Water Way.

Number 156

VIRGINIA FAY, Staff for Senator Cotten, joined the discussion.

She noted that the background for that report came from Balden Environmental Management, Incorporated dated August 1988. She said that the biological treatment Ms. Munson mentioned was rated 3 on a scale of 1 - 10 for optimal treatment.

Number 203

SENATOR MENARD announced that they would continue the meeting with a panel discussion including Daniel Lawn, Environmental

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Oil & Gas

Engineer, Department of Environmental Conservation, Bill Lamoreaux, District Manager for the Anchorage District Office of the Department of Environmental Conservation, Mike Williams and Gene Dickason, Alyeska Pipeline Service, and Riki Ott, Alaska Oil Reform Alliance. Senator Menard said that they were on a listen only teleconference going to Anchorage and Valdez.

DAN LAWN said he had prepared a written statement on his involvement with the DEC and the Alyeska Marine Terminal. He said the primary issue is how the Department investigated certain activities and worked on a new permit. He said during 1983-1984 they recognized problems at the Terminal and their oversight was very limited. Staff had advised management that there were problems that needed study. They and EPA looked for funding for the studies. In December 1984 Charles Hamel made serious allegations of improper activities and problems at the Valdez Marine Terminal. After some investigation they found practices that were questionable, like the importation of other than "standard ballast." The Department worked hard at writing a new permit that would change some of the practices and EPA required substantial changes. The investigation took several years of effort. By the first part of 1989 he personally was no longer involved in the ballast water issue.

Number 293

RIKI OTT, Oil Reform Alliance and member of the Technical Advisory Group authorized under Alyeska's NPDES, stated she has a Master's Degree in Oil Pollution and a Doctorate in Sediment Pollution. She said that the same cost cutting measures by industry and lack of oversight by regulatory agencies that led to the Exxon Valdez spill are also leading to chronic pollution of Port Valdez. Since 1988 Port Valdez has been designated a toxic impaired water way by the State, because of documented violations of the state's water quality standards and accumulation of hydrocarbons from the terminal in the sediment from Port Valdez. She explained that when hydrocarbons accumulate in the sediment, it is the first indication of chronic pollution - that the ballast water treatment system is failing to remove hydrocarbons from its effluent.

Independent investigations by Boston Globe reporter, William Coughlin, corroborated allegations made by Charles Hamel that TAPS tankers have been transporting tank washings and cleaning, slops, and lethal sludges in their ballast water to Alyeska for disposal. She said that although investigation by the EPA and DEC of this allegation had been dropped, the EPA had documented numerous cases of transfers of tank

washings, cleanings, slops, and other unknown materials from barges, shore terminals, and non-TAPS trade vessels to tankers for disposal at Alyeska.

Ms. Ott said these transfers bypass both the shipyard repair disposal fees and U.S. and international law which requires that large amounts of sludge and tank cleanings be disposed of at licensed sights where they are usually incinerated. According to Jim Dixon, Pollution Control Officer at Sullom Voe, Scotland "...it appeared to me that Alaska is being used as a dumping ground due to failures by the federal government, ship owners, and the U.S. Coast Guard to insure compliance with..."

Ms. Ott said that Congress did not intend Prince William Sound to become an industrial waste dump for the West Coast oil industry. Congress mandated in the TAPS right-of-way agreement that ballast water treatment operations be routinely reviewed and maintained with the best available technology at Alyeska. It has not been maintained as promised. The terminal was not scaled up in size to handle current pipeline throughput. A shortage of crude oil storage tanks forces Alyeska to use tankers for storage and move crude into tankers as fast as possible. She charged that the facility is overloaded. It has only three of the five ballast water holding tanks planned for current pipeline throughput. The volume of water processed has increased by almost 50% compared to the volume treated between July 84 and June 85. The biological treatment system is not operating efficiently and is not the best available technology.

For comparison, she said the Dow Chemical Upjohn Plant in New Haven Connecticut captures and destroys BTX gases emitted from the impound basin. Alyeska vents into the atmosphere. It has a flow rate through the plant of 400 gallons per minute. Alyeska averages 11,000 gallons per minute. The Dow Chemical Plant removes sludge daily from the system and encases it in concrete for burial.

Ms. Ott explained that the bulk of waste material generated by oil waste water treatment is in the form of oil sludges. The original Alyeska plant design included plans for a sludge incinerator, a rotary kiln capable of handling 3,000 pounds per hour. It was never built. She further charged that the Alyeska facility itself was doing the monitoring and there has been no field study to verify compliance of BWT effluent with the state's water quality standards.

In summary, she said Port Valdez was declared a toxic impaired waterway. Contributing factors include failure of TAPS tanker operators to follow the letter and spirit of U.S.

International law by transporting toxic and hazardous waste to Alaska, the failure of Alyeska to maintain a state-of-the-art ballast water treatment facility, the failure of the EPA to uphold the Clean Water Act and provide oversight of Alyeska, the failure of DEC to uphold the state's water quality standard by allowing a mixing zone of carcinogenic compounds, and failure of the U.S. Coast Guard to investigate and prosecute polluters as required under U.S. and international law.

Number 402

BILL LAMOREAUX, Department of Environmental Conservation, reviewed his personal background for the Committee in detail. Briefly he worked for the EPA for ten years and was involved in the permit writing for the first and second NPDES permits for Alyeska. He said the first permit dealt only with oil and grease limits, because the state at the time did not have a listing for aromatic hydrocarbons. In 1979 it was determined that there was a problem with the definition of the mixing zone and the state had added aromatic hydrocarbons (BTX or BETX). Therefore the second permits included levels for BETX. That permit expired in 1983. Extensive studies done by DEC since then suggested that the facility was not able to achieve state water quality standards for aromatic hydrocarbons outside the boundary of the mixing zone.

Mr. Lamoreaux said that other questions came up and listed them: was sludge being removed from the waste water or being discharged into the water instead, was sludge accumulating in the plant, were the effluent limits being consistently met, were hazardous substances or other harmful wastes being discharged in to the BWT plant and passed into the harbor with the effluent, had there been spills associated with the treatment facility that had not been recorded or underrecorded, were records monitoring results falsified or juggled in order to present satisfactory figures for regulatory agencies, did the sample procedure used bias the results, had violations of the NPDES permits occurred - specifically had modifications to the treatment plant gone unrecorded, was the plant being operated efficiently, or removed wastes being reintroduced into the treatment plant and being ultimately discharged into the harbor, had the plant operator or contractors maintained adequate safety precautions for protection of workers, and had the treatment plant undergone significant modifications without the required ADEC plan review and approval process.

He said these were some of the issues that were taken up after 1983 while the permit was in an expired state. Mr. Lamoreaux explained that federal regulations allow an expired permit to

be continued if it isn't reissued right away and that's the status Alyeska was in from 1983 - 1990.

Some of the conclusions they reached were that effluent sampling and handling procedures for BETX were incorrect and biasing the results downward and when they were corrected Alyeska had trouble meeting existing permit conditions. This lasted for many months until plant modifications were made to improve overall treatment of the ballast water. The newest permit has specific criteria on correct quality assurance and control procedures to be followed in the collection, handling, and analysis of samples.

He said that waste materials other than ballast waters, such as drums and various products were dumped in various areas that would find their way into the ballast treatment plant. Actions taken by DEC stops those practices. The new permit specifically says what is allowed to enter the ballast water treatment plant in far more detail and an in house document entitled "Best Management and Practices Plan for the Valdez Ballast Water Treatment Facility" has been developed by Alyeska which has addressed what can and can't be routed through the treatment plant.

The new permit has a reduced effluent limit for BETX (benzene, ethylbenzene, toluene, and xylenes) which should assure that water quality standards for the aromatic hydrocarbons are continuously maintained at the boundary of the mixing zone. This limit is 1.3 milligrams per liter which is recognized by the EPA as being the best available treatment required of all industry.

Mr. Lamoreaux said that studies contracted by Alyeska as required by the permit and other studies presented to the agencies concerning treatment issues did not stand up to peer review. DEC created a Technical Advisory Group (TAG) to review projects at various stages before completion and to offer technical opinions concerning the scope and purpose of the work, methods used and draft conclusions. The TAG is now officially recognized in the current permit.

It was concluded that on at least an infrequent basis, ballast water was received at the terminal that may have been contaminated with substances other than residues of Prudhoe Bay crude. As a result a condition was added to the new permit that provides for random sampling of incoming ballast water and a regular review of ship's records by Alyeska at the time of receiving ballast water. Limitation on what kind of ballast or bilge waste that can be received in Valdez have been defined.

Their investigation verified that a major dismantling of the ballast water treatment plant had occurred and that the facility was not operated as originally planned. These modifications were never reported to the agencies and approval of the changes never received. As a result the new permit clarifies the obligations for written plan approval from ADEC for any modification to the plant. Further the drastically reduced effluent limit in the new permit now make it absolutely mandatory for Alyeska to operate the facility as effectively as possible.

Number 500

MIKE WILLIAMS, Vice President, Environment, Alyeska Pipeline Service, said that some of the statements in a report on the BWT facility were based on rumor and innuendo. He said that the ballast water had been thoroughly monitored and found the accusations disconcerting. He introduced Gene Dickason, Alyeska Pipeline Service Company, who would give a report on how the BWT facility works.

OSCAR GENE DICKASON, said he has a bachelor's degree in Engineering, a masters in Water Resources Engineering, and a doctorate in water quality management and listed his many qualifications. With the aid of slides he explained that the ballast water is pumped into tanks to allow gravity separation of debris oil from the ballast. The detention time is at a minimum of four hours. The sludge is dewatered, packaged, and sent outside to a hazardous waste disposal site. Oil and water is separated and put into air flotation facilities.

TAPE 1, SIDE 2
Number 001

The water is biologically treated, breaking the BETXs into microorganisms and it is then discharged through a diffuser into Port Valdez. He said they achieve 99.9% plus removal of the oil and grease. They remove 98% - 99% of the BETXs which is very efficient.

Regarding the design limits of the facility, Mr. Dickason said they are operating within the permit limits that have been set by EPA and certified by the DEC. He commented that comparing the Dow Chemical facility to Alyeska was like comparing apples to oranges. He stated that falsifying information is criminal and they wouldn't be doing that. He said they have a Best Management Practices Plan which has been approved by EPA and DEC. It addresses bilges, paint cleaning agents, specifically petroleum. It is silent on the issue of transfers. They are not new or secret, though.

Mr. Dickason said that each tanker that comes in is met and fills out a ballast water survey form. Since June 1989, they have reviewed 1,484 of those forms to see if there was anything questionable. They isolated nine of those events as the most significant and none of them triggered any problems with the facility.

He said the recent permit requires toxicity studies. Under the Alaska Water Quality Standards they are to do two studies of commercially valuable species to Valdez, pink salmon smolt and coon striped shrimp. Using pure effluent they were able to survive for a six hour period. They established a 28 day survival for salmon at 40% effluent. He had talked to people at the hatchery in Valdez and they said that in 28 days most of the pink salmon are far out into the Sound.

Looking at the zone of initial dilution which is allowed near the outfall for acute toxicity, the dilution they get with their diffuser far exceeds anything you would need to take care of 50% effluent. Their toxicity is better than a lot of municipal systems.

Mr. Dickason said that they are distributing a report which says that they "looked at individual petroleum aromatic hydrocarbons and the total concentration of aromatic hydrocarbons in the sediments and they don't exceed NOAA's lower affects range. All techniques used in the analysis of informal data from 1989 and previous years indicate that marine terminal activities in Port Valdez are not negatively affecting the organisms in the deep basin or the shallow near shore waters."

Regarding the impaired waterway designation of 1988, he said that the new NPDES permit and the 1.3 milligram per liter limit for BETX will result in no violations of the Alaska water quality standards. DEC has certified the permit as being in compliance with Alaska water quality standards.

Number 452

REPRESENTATIVE HUDSON asked if there were any sludges going into the harbor. Mr. Dickason answered that they were not discharging any sludges into Valdez Harbor. He said there were some suspended solids as a result of the mixing and the biological treatment. Any sludge removed from the system is dewatered and backhauled.

MS. OTT responded that "...aromatic hydrocarbons, which are a component of sludge, have showed up in the sediment in Port Valdez and they are coming from somewhere." She said the highest concentration is at the diffuser outfall and the least

being farther afield in Port Valdez. She explained that they could be coming from burning, tanker air emissions, a recombination of single aromatic hydrocarbons, or a discharge of sludge in the bay.

Number 425

MR. LAWN commented that the term "sludge" is applied to material that is very easy to be suspended in the water column that tends to flow out of the plant with associated flow which is referred to as "systemic solids." It was of prime concern to some of the investigators to prevent that activity during tank cleaning operations and sludge removal. He said it is still an open issue.

MR. LAMOREAUX commented that it was a big issue that they looked at and some corrective measures have occurred since the investigation that would minimize the opportunity for sludge to be carried through the plant.

SENATOR JONES asked if the hydrocarbons are suspended in the water itself? Ms. Ott answered that they collect at the bottom of the bay and they take much longer to break down than BETX which is why they accumulate. She said that the Technical Advisory Group speculates that the discharge is so rapid that the current can transport the sludges. The point is that those materials have been documented in the sediment in Port Valdez. Some amount of risk is acceptable, but you don't go from a pristine environment to super fund site overnight. She thought the risk could be reduced without too much trauma to the oil industry. These sludge compounds cause sublethal affects which include reduced growth, reduced production, and carcinogenic changes.

SENATOR JONES asked if her tests showed that the sludge was coming from the BWT? Ms. Ott said the tests were Alyeska's that were reviewed by DEC. She said we must ask what we can do to prevent further build up of these compounds.

MR. DICKASON said there was nothing that shows an alarming trend. He explained more about the biological treatment basins. He said they are designed to be complete mix systems which are stirred.

Number 282

SENATOR COTTEN asked him to explain the effluent monitoring system. Mr. Dickason said they were required to collect daily samples for BETX, total suspended solids, total organic carbon, flow, ph, temperature, dissolved oxygen, and density.

Senator Cotten asked him to explain what he meant by 98% to 99% efficient. Mr. Dickason explained that if you look at the total oil and grease at the head of the facility and the effluent at the end, there is 99% plus removal. There is the same level of reduction for BETX, as well.

Senator Cotten asked if they promised to use the best available technology as part of the permit. MIKE WILLIAMS said that they had just completed the new ballast water treatment tanks (\$40,000,000 plus) which is what they think is the best available technology. Mr. Dickason said that the EPA tells you what limitations you should achieve if you apply best available technology. They don't tell you to use specific equipment.

Number 205

MR. LAMOREAUX said that issue can always be debated by technical experts. Senator Cotten noted that Ginny Fay said that ten systems had been considered. Six were thrown out and of the remaining four, their system was given a rating of three on a scale from one to ten.

MS. OTT said that under Resource Conservation and Recovery Act there were new standards for benzene that went into effect. Four facilities that had earthen basins, which is what Alyeska's impound basins were, for a biological treatment system had sludge which was at .5 ppm benzene and that is considered hazardous waste. If the sludge is held in a concrete base, it would not be considered hazardous. The reason Alyeska switched to concrete tanks is because of the new standard. She said they added an air stripper which takes out the BETX so less goes into the impound basins. However, air strippers without off gas capture merely transfers the water problem to an air problem.

MR. DICKASON responded that they do have air strippers and they are developing a standard operating procedure to be reviewed by DEC and EPA as when they will be used.

Number 156

REPRESENTATIVE HUDSON asked if anyone had tested what the purging of the bay is and if they had done sequential tests to determine what is happening to the suspended sludge or underwater particles. Mr. Dickason answered that if you look at just Port Valdez, the whole system flushes in a matter of a few weeks.

Representative Hudson asked if there would be less ballast water coming into the plant as oil production is decreased.

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Oil & Gas

Mr. Williams said in the future there will be more modern ships with a larger percentage of segregated ballast and that is not put through the tank and secondly, fewer ships will be required to transport the oil.

Representative Hudson asked if it was more efficient to operate at less than capacity? Mr. Dickason said that the graphic separation process would be a little bit better, perhaps.

Representative Hudson asked him what he thought about the progressive curve of accumulated hydrocarbons in the sediment. He said they have studied it and they will continue to study it and if a problem arises they will deal with it.

MS. Ott commented regarding the water flushing, that the NPDES permit is designed to prevent accumulation in the sediment and there is accumulation in the sediment so something is wrong. There has been no field study of the recent biological treatment system.

As to the reduction of oil flow, she commented that she has seen documents that say there won't be a reduction within the next decade of the pipeline throughput. She also explained that tankers have to ballast a lot heavier for the North Gulf Coast weather conditions.

TAPE 2, SIDE 1
Number 001

MR. LAWN reiterated that many of the studies that had been done in the past were done by the industry and they had editorial control. That is why there is a Technical Advisory Group to review the data before it becomes a final document. He explained that getting accurate data is difficult. One of the most significant studies they did in a long time found tar balls and raised the questions of where in the sludge.

He agreed that volume of oil is increasing and thinks that it will keep increasing as other fields are developed.

SENATOR COTTEN asked if they weren't concerned with the accumulation even though the volume may be on the decline. Representative Hudson noted that the tests don't show the pollution going up. Senator Cotten said that the tests are done on the water coming out of the spigot, not what's on the bottom.

MR. LAMOREAUX said the question is are there accumulations of pollution in the sediment that might be on the increase and if they are increasing, they might continue to do so. The

people who do the studies and analyses can get into a lively debate on whether or not they can say conclusively that there have been increases or decreases. He said that it is important to continue the studies into the future to monitor the trends.

Another point he made was there are water quality standards that are not tangible, like there shall be "no impacts." Only through continuous research and measurement will the long term question as to whether the objectives of the water standards have been met be answered.

Number 143

SENATOR COTTEN asked who does the monitoring? Mr. Lamoreaux answered that Alyeska does most of the monitoring. Two agencies, state and federal, have oversight of the service.

Number 161

SENATOR JONES commented that the permit must say who does the testing, how it's done, where the results are reported, and who monitors the results. He asked if DEC and EPA direct Alyeska on how to do things. Mr. Lamoreaux answered that Alyeska would fund studies through groups like the University of Alaska, it receives oversight from DEC and EPA, and there is now a Technical Advisory Group that provides a peer review process which is very critical to their objectives.

MS. OTT said none of the TAG's recommendations had been taken up by the regulatory agencies for Alyeska. She explained that the TAG believes because of the high flow through the BWT that the bacteria are not able to completely break down the BETX compound, so they are partially degraded and turned into something called metabolites. They are sometimes more toxic and more carcinogenic than the parent compound. The metabolites are not being monitored under the permit, but the LC5 chronic toxicity monitoring in laboratory had 0 BETX in them, so something is causing the toxicity which is not evident. TAG has recommended finding out what is being put into the environment.

Ms. Ott said that she believed that we are at one of the low points in oversight. The staff is all new and doesn't have training in this area.

MR. DICKASON responded that most people who have looked at the studies they have done commented on the low level of toxicity. He had discussed the concept of the metabolic byproduct with three qualified people who said that they didn't see any

problem.

In closing Ms. Ott said that for every one Phd. there is an equal and opposite Phd. The TAG does feel there is a problem and they want studies done to raise their level of confidence.

SENATOR MENARD asked Mr. Lawn what one thing he would change at the terminal that would move the public process. Mr. Lawn said they need enough qualified people to provide consistent oversight and to work on a peer level with the Alyeska personnel.

Ms. Ott said she would like to see a thorough review of the facility, of what's coming in, so they can address what's going out.

Representative Hudson agreed with Mr. Lawn that trained personnel is the most critical component.

Mr. Dickason said he agreed that more qualified people are needed for oversight. Mr. William: agreed and said that the more qualified people they had, the less they would have to deal with rumor and innuendo.

SENATOR MENARD said in closing that he thought they needed to reach a level where there is a better exchange of documents and checks and balances in the system. He adjourned the meeting at 3:12 p.m.

MINUTES

4/11/91

**JOINT SENATE TRANSPORTATION AND
SENATE SPECIAL COMMITTEE ON OIL AND GAS**
April 11, 1991
1:17 p.m.

TRANSPORTATION MEMBERS PRESENT

Senator Curt Menard, Chairman
Senator Drue Pearce

TRANSPORTATION MEMBERS ABSENT

Senator Lloyd Jones, Vice-Chairman
Senator Bettye Fahrenkamp
Senator Dick Shultz

OIL AND GAS MEMBERS PRESENT

Senator Sam Cotten, Chairman
Senator Drue Pearce, Vice-Chairman

OIL AND GAS MEMBERS ABSENT

Senator Bettye Fahrenkamp
Senator Lyman Hoffman
Senator Dick Shultz

COMMITTEE CALENDAR

BALLAST WATER TREATMENT

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Talkeetna, Alaska

Dick Myren
Juneau, Alaska

ACTION NARRATIVE
TAPE 1, SIDE 1

**JOINT SENATE TRANSPORTATION
& SENATE OIL AND GAS**

APRIL 11, 1991

Number 001

CHAIRMAN MENARD called the Senate Transportation Committee to order at 1:17 p.m. He announced that the committee would review the plant operation and the ballast water issues from the regulatory standpoint.

HAROLD GEREN, Chief of the Water Permits and Compliance Branch of EPA Region 10, read a statement into the record:

"My name is Harold Geren. I am the Chief of the Water Permits Compliance Branch of EPA Region 10. I have been in that position, and involved in permitting and compliance activities at the Valdez Ballast Water Treatment Facility (BWT), since 1977. My prepared remarks will cover the historic permitting process, discuss the treatment processes that have been applied, the adequacy of monitoring for discharges into Port Valdez, and the past investigations that EPA has conducted. Some of this information was presented in EPA testimony to the House Special Committee on Oil and Gas on March 18. In the interest of time, I will not repeat that material, but will try to summarize it here.

"The first permit authorizing wastewater discharges from the BWT plant was issued in December, 1974. That permit was technology-based, requiring installation of treatment facilities representing Best Practicable Control Technology - also known as BPT. The permit limited discharges of oil and grease to a daily maximum of 10 mg/l and a monthly average of 8 mg/l. Flow was also limited. Treatment was accomplished through gravity separation (use of the 90s tanks) and dissolved air floatation cells, in which air bubbles introduced into the bottom of the cells collect oil as they rise to the surface. The oil material on the surface was then removed by skimming devices.

"The second permit was issued in August, 1980. That permit contained effluent limits for aromatic hydrocarbons - at that time benzene, toluene, and xylene. The permit limited discharge of these materials to a daily maximum of 9 mg/l and a monthly average of 6 mg/l, in order to comply with the Alaska water quality standard of 10 ug/l at the boundary of the mixing zone. Flow and oil and grease were also limited. The oil and grease limitations were unchanged from the 1974 permit.

"The 1980 permit also required Alyeska to examine treatment technologies which could further reduce pollutants levels. As a result of these studies, in 1986, Alyeska modified the existing impound basins and the treatment process to enhance biological degradation of hydrocarbons in the wastewater. The addition of biological treatment significantly lowered aromatic hydrocarbon concentrations in the effluent. This improved treatment was reflected in the subsequently reissued permit.

"The current permit was issued on May 8, 1989, and was modified on November 14, 1990. The permit authorized the discharge of treated ballast water, bilge waters, storm water, and sanitary wastes. Other wastewaters identified in the Alyeska 'Best Management Practices' Plan are also authorized for discharge. The permit contains effluent limitations for aromatic hydrocarbons, naphthalene, total suspended solids, total organic carbon, and total flow. Aromatic hydrocarbons (now BETX) are limited to a daily maximum of 1.3 mg/l and a monthly average of 0.7 mg/l during the summer, and a daily maximum of 1.3 mg/l during the winter. The limits are based on EPA's determination of effluent quality that should result from the application of best available treatment technology (BAT) (biological treatment). The technology-based limits have also been evaluated by the Alaska Department of Environmental Conservation (DEC) in relation to state water quality standards. Both agencies have concluded that the limits will comply with those standards criteria.

"Alyeska's NPDES permit also requires extensive effluent monitoring, biomonitoring of the whole effluent stream, mixing zone compliance studies, and environmental monitoring of Port Valdez.

"One of the more significant provisions of the permit, from the standpoint of recent concerns, is a requirement that Alyeska take certain steps to determine whether incoming ballast water for each tanker is contaminated with pollutants other than crude oil. Specifically, Alyeska must examine the ship's oil record book and obtain a completed copy of a "Ballast Water Survey Form" which contains specific information on the amount and constituents of the ballast and bilge water to be off-loaded. The purpose of this provision is to identify unauthorized pollutants before they leave the ship, and to prevent the discharge of such pollutants into the treatment facility.

"Alyeska appealed many of the monitoring provisions and effluent limitations of the 1989 permit. They were especially concerned over the winter BETX daily maximum limit of 1.3 mg/l. While they believed their upgraded facilities could comply with the limit over the long term, there concerns was that biological treatment facilities are subject to upset which could result in short term violation of the limits. Alyeska, EPA, and the DEC negotiated that appeal over a several month period, and finally reached agreement on changes to the permit that were acceptable to all three parties. That agreement was formalized in the permit modification that was issued on November 14, 1990. Although the language of the permit was extensively modified, the most important change related to the winter BETX limit. The 1989 permit established the limit as water quality-based, which means system upsets are not allowed. The modified permit established the winter limit as technology-based and recognized that system upsets do occur.

"I mentioned earlier that the modified permit contains provisions

requiring Alyeska to determine whether incoming ballast water contains pollutants other than crude oil on a ship by ship basis. Mr. Charles Hamel appealed that provision, and requested that it be strengthened. Specifically, he asks that the vessel captains and the tanker owner companies be required to certify, under penalty of perjury, that all pollutants in the ballast water other than crude oil have been reported to Alyeska. Mr. Hamel's appeal has been granted, and an EPA administrative law judge (ALJ) has been assigned to hold a hearing. Several other groups (Greenpeace USA, Prince William Sound Seiners Association, and Cordova District Fishermen United) asked that several other issues be added to the hearing. Those groups question whether EPA may change the basis of the winter BETX limit from water quality-based to technology-based, the adequacy of the monitoring program, and the presence of floating solids, visible foam or oily wastes upstream of the discharge weir. With respect to the monitoring program, the challenge focused on the mixing zone compliance studies, a proposed mass balance study, additional effluent monitoring, and sludge handling. EPA and Alyeska filed briefs in opposition to adding those issues. The Administrative Law Judge (ALJ) agreed with EPA and Alyeska, and recently issued an order denying the request to include the additional issues. Consequently, the only issue now before the ALJ is whether to include a certification requirement in the permit (Mr. Hamel's appeal). It will be several months before that issue will be decided. All other provisions of the modified permit are fully effective and will remain so unless there are further appeals of the ALJ's decision on adding other issues.

"Regarding the adequacy of monitoring of the BWT plant discharges, I would first like to address that question from an EPA national perspective. Self monitoring of discharges under wastewater discharge permits has been the foundation of the national compliance assurance program since the permit systems was created under the Federal Water Quality Act of 1972. We recognize there is a danger that a discharger will not monitor properly or will not report violations, and that does happen on occasion. We are convinced, however, that the majority of permittees diligently monitor their discharges, and honestly report the results of that monitoring. State and federal agencies periodically conduct compliance inspections during which independent samples are collected and analyzed, and the analytical records of the permittee are reviewed. The Clean Water Act contains criminal sanctions for falsification of reports submitted to EPA and the agency has prosecuted several individuals under those provisions. Simply stated, an employee just does not have much incentive to engage in that kind of criminal behavior. It is not worth it!

"Alyeska's permit requires measurement of numerous effluent parameters, including daily measurements of BETX and flow discharges. In addition, it requires chronic toxicity testing of aquatic organisms four times per year. Acute biomonitoring is required three times annually. We believe this level of monitoring

is adequate to assure permit compliance, which at the same time should assure that the Alaska water quality standards are met at the edge of the mixing zone.

"Regarding past investigations of Alyeska, in the mid-1980s EPA completed a detailed investigation of allegations that the Alyeska facility violated several federal environmental laws including the Clean Water Act wastewater discharge permit. It was alleged that monitoring reports for flow and BETX were routinely falsified, that incoming ballast water was contaminated with materials other than crude oil, that toxic and hazardous substances were routinely discharged to the BWT facility, and that sludges and solids were being reintroduced into the BWT plant.

"In the spring of 1985, EPA initiated an investigation exploring each specific allegation. The investigation included interviews of past and present Alyeska employees, ship's crews and other people knowledgeable about the BWT operation, review of numerous subpoenaed documents, review of EPA and DEC files, review of Alaska Public Utilities files, review of ship records, and review of numerous Alyeska records. The investigation resulted in the issuance of a Compliance Order in July 1985, (amended in November, 1985) which prohibited reintroduction of sludge into BWT plant, and established time lines for accomplishing other operational improvements that would increase the efficiency of the plant. No further formal enforcement action against Alyeska was pursued because allegations could not be substantiated or had already been addressed by EPA and resolved by Alyeska.

"The March 18, 1981 EPA testimony before the House Special Committee on Oil and Gas discussed current activities of EPA related to the recent allegations of Mr. Charles Hamel that hazardous wastes were illegally discharged to the BWT facility. I do not have much to add to that testimony at this time, but I will summarize the material presented on March 18.

"EPA and DEC investigations are continuing. One element of the investigation is to determine exactly what industry practices are common. To that end, we have asked the industry to catalog those practices so that we may make some informed judgments as to whether they should be allowed to continue. We have already decided that pollutants which have been transferred from one vessel to another are not authorized for discharge, without express approval from EPA and DEC. In addition, we have advised Alyeska that the permit does not allow the introduction of any sludges into the BWT facility.

"The permit contains specific language regarding types of wastes that may be discharged through the facility, such as ballast water, bilge water, and storm water. The permit also authorizes discharges of other wastes identified in the approved Best Management Practices Plan (BMP) that has been developed to guide facility operations. At the outset of the investigation, we

discovered that the plan does not adequately describe or characterize the wastes normally treated at the BWT plant. We are now working with the industry to revise that plan, so that it will be very specific about the materials that may be discharged, and the measures that must be implemented to minimize overall pollutant discharges. A meeting between Alyeska, representatives of the tanker fleet, ADEC, and EPA has been scheduled for April 18, 1991 to initiate the BMP plan revision process.

"The second element of the investigation is to follow up on Mr. Hamel's specific allegations of wrong doing. We are requesting detailed documentation from Exxon and other on characteristics and quantities of materials discharged through the BWT plant so that we can independently judge whether or not federal laws were violated. We are not relying on unsubstantiated company statements only, which seems to be of concern to some individuals. It will be some time before those investigations are completed, and decisions are made regarding appropriate enforcement responses."

Number 275

SENATOR MENARD invited Lt. Commander John McQueenie, Chief of Port Safety and Security Division, 17th Coast Guard District, which includes the entire State of Alaska, and Dan Lawn, Environmental Engineer, Department of Environmental Conservation, to join the committee.

Senator Menard referred to Compliance Order 309 and asked what it is and did Alyeska comply with it. Mr. GEREN explained that Section 309 is enforcement authority of the Clean Water Act in which the EPA can order point source discharges or permit holders to come into compliance with their permit. He noted that the 309 Order that was issued in 1985, was a result of a finding that sludges that go from the facility were being recycled to the front end rather than taken away from the facility. The other concern was that the plant at that time was not being operated as efficiently as the EPA thought it should be. The 309 Order ordered the company to conduct certain studies about the overall efficiency of the plan and to make certain of construction and operational changes and to not reintroduce sludge to front of the facility. He said it was EPA's determination that several months after the 309 Order, the company did comply with the provisions of the order.

Number 309

SENATOR COTTEN referred to transferring ballast water from one tanker to another and bringing to Alaska and to put it into the facility and asked if it was legal or illegal. MR. GEREN explained that the problem that they are dealing with is the broad language of the permit which references substances identified in the Best Management Practices Plan as being authorized to be discharged to

the plant. The Best Management Practices Plan discusses ballast water which would contain crude oil, bilge water, cleaning agents, but the application was silent on the transfer of waste from one vessel to another. The position that the EPA has taken with the industry is that those transfer wastes are not authorized under the permit and that they would use another provision of the permit to authorize the discharge of such transferred wastes on a case-by-case basis. That authorization would depend on whether or not, in the view of EPA and DEC, the facility is capable of treating those discharges. Senator Cotten asked if the industry concedes that they have transferred waste and discharges. Mr. Geren indicated they have. Senator Cotten asked if they would then be in violation of the NPDES permit. Mr. Geren said that he is not prepared to say that it was an expressed violation of the permit, but in the future, the EPA doesn't expect those types of transfers to occur and be discharged without expressed authorization. Senator Cotten asked if that was part of the investigation. Mr. Geren said it is the overall part of the investigation. He said they aren't looking so much at the transfer of uncontaminated cleaning waste, but are looking at any transfers at other types of waste. When that is concluded, the EPA will make their determinations on what enforcement might be appropriate.

Number 353

SENATOR MENARD asked Lt. Commander John McQueenie to outline the Coast Guard's responsibility in the shipping process. LT. COMMANDER JOHN MCQUEENIE, Chief of Port Safety and Security Division, 17th Coast Guard District, explained that MARPOL 73-78 requires certain permitting conditions to exist both for the ship and for the reception facility. He noted that MARPOL 73-78, Annex 1, deals with the handling of oil products. Annex 1, which deals specifically with the handling of oils and the elimination of oil pollution in the oceans from ships, became enforced in the U.S. in October, 1983. As a result of that, vessels were required to comply with certain provisions of MARPOL regarding segregated ballast, dedicated clean ballast, and other arrangements as well as facilities that ship, transport oil, or received oil are obligated to be issued a certificate of adequacy permit. Lt. Commander McQueenie informed committee members that Alyeska was one of the first companies to obtain a certificate of adequacy. Part of the permit process is that the facility must maintain current and valid local, state, and federal permits to maintain their certification of adequacy. The certificate of adequacy has been in force since late 1986, early 1987. There has been no lapses in any permits. It is inspected annually by the Marine Safety Office. Lt. Commander McQueenie referred to the question of transferring products from vessels to tankers and said it would be under Coast Guard pollution regulations. There is no prohibition for a vessel or tanker to receive sludge as long as they meet the littering requirements. He explained that the MARPOL 1 permit is required by international and U.S. federal law when it

enacted the treaty and also further defining Coast Guard regulation.

SENATOR MENARD asked if the system is working as it should. LT. COMMANDER MCQUEENIE said the intent of the Coast Guard and the enforcement of the Federal Waterway Pollution Control Act, Clean Water Act, and MARPOL 73-78, Annex 1, is to prevent the introduction of pollutants into the oceans. He said the Coast Guard feels that is being accomplished. The vessels aren't discharging into the oceans as discharges are being transferred to another facility or barge and are being transported to a facility designed to accept and handle slops, waste oils, and spent oils. Commander McQueenie referred to the question of the Ballast Water Treatment Facility becoming the repository of all the waste on the West Coast, and said he doesn't know if the facility is the size to handle the volume of materials and he doesn't know what types of materials are being introduced. From the Coast Guard aspect, facilities are operating consistently with International Law MARPOL and the ships are operating consistent with that. He referred to the question of what is the effluent level on the outfall from the BWT and said it would be in the EPA/DEC arena.

Number 415

DAN LAWN, Environmental Engineer, Prince William Sound District, Department of Environmental Conservation, referred to the language in the permit and some of the documents and said it is fairly broad. The 309 Order referred to clarified water and said it is his recollection is that that portion of the water (oil, sludge, etc.) was material that had either settled to the bottom or risen to the top. At the specific time of the 309 Order, Alyeska amended some of their operational procedures and informed the EPA and DEC for concurrence. He referred to the procedure of water drawn from crude oil tanks and said that procedure was modified so that only clarified water came out of those tanks into the ballast treatment facility. The same can be said for the processing of water through the plant. The idea was to only process the clarified portion of the water.

MR. GEREN said the Best Management Practices Plan needs to be more specific than it presently is. He said the specifics are being developed so that the plan would identify those materials that are authorized for discharge, those materials that are not authorized for discharges, and how the clarified water would be discharged from the vessel. He said from a regulatory standpoint, he believes that the permit itself is adequate

Number 461

SENATOR MENARD asked Mr. Geren if there is a time line. MR. GEREN said there is a meeting scheduled for the following week to start the process of looking at specific conditions of the plan that need

to be modified. He said it should be within a matter of weeks.

MR. LAWN asked Mr. Geren if the 309 Order is still part of the permit. Mr. GEREN said the 309 Order has been closed and it is not part of the existing permit.

Number 495

CHARLES NORZ, Senior Vice President, AMERADA HESS Corporation, explained that AMERADA HESS Corporation tankers do not introduce substances other than cargo or sea water into the cargo tanks of the vessels. He explained that their tankers do not transfer any ballast between vessels and they do not receive any ballast from any barges or shore tanks. The tankers do not use any chemical or cleaning agents in the cargo or ballast tank and have not decanted any clarified bottom water into any segregated ballast tanks.

Number 508

ROGER GALE, Manager, Marine Transportation, British Petroleum (BP), explained that BP is not able to own and operate U.S. flagged tankers for moving its share of the North Slope Oil due to its non-citizen status and, therefore, oil is moved in chartered vessels. He explained they are chartering 17 vessels from seven different owners. They are routinely operating out of Valdez. During the course of operations, the company has transferred tank washings and dirty ballast from one vessel to another on at least 15 occasions in the last three years. Some of the vessels also transfer water and liquids from the engine room bilges into the slop tanks. The amount that gets transferred can be as low as 15 to 20 barrels and the largest amount was 76 barrels. Mr. Gale said there are some vessels that have used recognized tank cleaning agents and there is a potential that may increase in the future. He said he believes that BP has been operating in a manner that is consistent with the regulations.

Number 527

ROBERT LEVINE, Director, Alaskan Maritime Affairs, Arco Marine, Inc., explained that the only thing that they put into cargo tanks is crude oil, machinery space bilge water, and some slop waste oils from the engine room. He explained that twice every five years they generally clean one bumper tank. They would be washed and the wash water would be put into the cargo tank as slop oil. There are also tank washings that consist entirely of crude oil and sea water. On two occasions, Arco has transferred from one vessel to another tank washings to be sent north. He said the normal practice is to send the washings to one of their refineries where they are processed. He said they do not use any tank cleaning agents, but noted they are used on occasion in bumper tanks in small quantities (1 to 3 drums). Sometimes they are used locally for cleaning and slop cleaning and removal. He discussed a

situation where a ship yard worker was killed in China because of a fire in a tank. Mr. LeVine said they're containing their tank cleaning methods to crude oil washing - cold water rinsing and are going to add hot water rinsing. If that isn't successful, it may be necessary to use cleaning agents to enhance clean-up. Mr. LeVine informed committee members that they have not ever taken anything from a shore tank onto their vessels to transport back to Valdez.

Number 579

A. "GUS" ELMER, President, Exxon Shipping Company, read his statement into the record:

"On Friday, March 15, 1991, I gave a thorough review of these operations to the Alaska House Oil and Gas Committee. That presentation concentrated on our ballast operations and how we interact with the Alyeska Ballast Water Treatment at Valdez. I understand you have received a copy of that testimony along with a copy of the visual aids used in that presentation for your review. With your agreement, I would like to summarize the key points of this previous review.

"First, a number of allegations have been made regarding our ballast operations and their impact on the Alyeska Ballast Water Treatment Facility at Valdez. These allegations imply that through our operations, we violate federal, state, and local legislation and regulations. These charges are categorically false and totally unfounded.

"Second, the only material that Exxon Shipping Company's vessels discharge directly into Alaskan waters is the clean sea water contained in the segregated ballast tanks. These are the tanks highlighted in blue on the diagram Mr. Dave Parish is displaying at this time in your meeting room. These ballast tanks are, by design, not connected to the cargo system and, thus, oil is never carried in these tanks. Therefore, the contents from these tanks, consistent with U.S. Coast Guard regulations, can be discharged directly back into the sea without fear of pollution.

"Third, the ballast water we discharge into the Alyeska Ballast Water Treatment Facility is the ballast water carried in the tanks highlighted with a red striped pattern. On the south bound voyage, these tanks are loaded with crude. On the north bound voyage, they may carry ballast water. Since this water will have come in contact with oil, it is discharged into the treating facility at Valdez to eliminate the possibility of discharging oil into the sea from the vessel.

"Fourth, the ballast water we discharge into the Alyeska Ballast Water Treatment Facility is that directly associated with our Alaskan North Slope tanker operations."

TAPE 1, SIDE 2
Number 001

Mr. Elmer continued with his testimony:

"Fifth, we carry out an extensive tank structural inspection program aboard our vessels requiring personnel to enter the tanks to survey the structure of the vessel. To ensure the safety of the tank atmosphere for personnel, we infrequently use small volumes (that is 30-40 barrels) of petroleum based cleaning agents to clean cargo tanks before inspections or maintenance.

"The cleaning agents we have used are petroleum based products. Our deballasting procedures are specifically designed such that a significant portion of the cleaning agent is retained on board. The cleaning agents are compatible with the oil recovery and treatment procedures at the Valdez Ballast Water Facility. Discharge of the ballast water containing very limited quantities of the cleaning agent into the ballast water treatment facility is preapproved by Alyeska. Thus, to our knowledge, their use has not created ballast water permit problems.

"However, there have been questions raised about the use of these cleaning agents and whether they are harmful to the operation of the ballast treatment facility. Further, work has recently been done to reaffirm that there are no problems with treating the wash water containing very small quantities of these cleaning agents. In concert with EPA, the Alaska Department of Environmental Conservation (DEC), and Alyeska, the discharge of the ballast from the Exxon North Slope on February 18th was closely monitored and sampled. We had used an Alyeska preapproved cleaning agent on this ship and samples were taken both of the ballast water coming from the vessel and the effluent from the ballast water treatment facility. We have been advised by Alyeska that absolutely no problem was detected in the chemical analysis or in the observed operation of the ballast water treatment facility.

"Sixth, we carry out ballast transfers between ships engaged in North Slope service prior to shipyard maintenance and, occasionally, prior to vessel inspections. This is a simple extension of the Alaskan North Slope logistics operation. This procedure is described on chart 10 of our March 15 presentation, which Mr. Parish is now displaying. The tank washings from the Valdez Trader, being prepared for maintenance, are transferred to a vessel returning directly to Valdez and replaces an equal amount of ballast the returning vessel would have carried on its trip north. Thus, there is no overall increase in ballast water returned to Valdez.

"Seventh, we carefully follow Alyeska procedures so as to assist them in meeting their permit requirements. These procedures

include the completion of the ballast water survey form required by Alyeska and the affidavit required by DEC.

"Mr. Chairmen, in preparation for this hearing, we received two letters from your committees dated march 12 and 18, respectively. In these letters, you requested additional information regarding our operations. We have invested extensive additional manpower and time in summarizing our responses to these questions. The results of this data gathering have again confirmed the information contained in my testimony before the House Oil and Gas Committee on March 15, 1991.

"The package of material that Mr. Parish delivered to you yesterday contains information we have gathered, and I am prepared to respond to any questions you may have. In summary, we firmly believe that all our operations are conducted in full compliance with all applicable laws and regulations and, in particular, are consistent with Alyeska guidelines and the terms of their EPA permits."

Number 193

SENATOR COTTEN asked Mr. Norz if his company is shipping oil in and out of Valdez. MR. NORZ indicated that they are moving approximately 1 to 2 cargoes per month out of Valdez. Senator Cotten referred to a list he had received earlier in the day about who is and who isn't moving oil in and out of Valdez. He said the list included BP, Exxon, Arco, Shell, and Chevron. He asked if Amerada has their own oil. Mr. Norz said they have a small percentage of their own oil. The ships are transporting oil under charter, to BP which eventually goes to Amerada Hess' own refinery at St. Croix, Virgin Islands.

RIKI OTT, Oil Reform Alliance, discussed some drawings she had given committee members. Her picture showed a tank where layer 1 was oil, layer 2 was oil and water, layer 3 was water and oil, layer 4 was clarified water, and layer 5 was sludge. She asked which of the layers are going to the ballast water treatment facility.

ROGER GALE, British Petroleum, said Ms. Ott's drawing overplays the sludge portion. He said the vessels in the trade do a fair amount of crude oil washing and the results can be seen when vessels go to dry dock. There is very little if any sludge in the bottom of the vessels. Mr. Gale explained that there is a big incentive on the part of the oil companies only to discharge the water, because if they discharge the oil to the ballast treatment plant, oil that is cumulated in the ballast treatment plant is redistributed to the oil owners in a percentage in which they have an ownership in the line. He said it is not in their interest to put oil ashore, but everybody makes their best effort to stop discharging the slop tank before any oil goes ashore.

Number 108

SENATOR MENARD asked if the system is broke? Does something need to be done? Is the monitoring adequate? He asked Ms. Ott if she had any more questions.

MS. OTT pointed out that there has been testimony from shippers saying that their dry dock tank washings are brought up to Alyeska and pumped ashore at the BWT facility. She said that dry dock cleanings are different than regular tank washings. Some testimony that was given was when a tanker is prepared for dry dock, it uses different chemicals other than a crude oil washing system, it attempts to descale the walls of the cargo tanks which is for employee safety. She said the substances collect in the bottom and becomes sludge. There is a lot more sludge in tank cleanings versus tank washings which is what a tanker does on routine voyages between cargo trips. The tank washings are coming to Alyeska and are being pumped ashore to the BWT. The Alyeska representative said that they barrel the sludge and ship it south for disposal. The tanker has the option of disposing of its pre dry-dock cleanings at the ship repair yard and to do that it has to pay a disposal fee. The Port of Portland charges \$3.50 per barrel. There was testimony in which the tank cleanings are transferred to tankers northbound, they are transferred to Alyeska, Alyeska is barreling them and shipping them south for disposal. She asked if it makes sense to import sludge only to export it again when it can be disposed of while the vessel is south. Ms. Ott referred to the last page of information she had handed out and said she believes what is happening is the sludge is transferred ashore, there is not enough residence time in the impound basins and 90 tanks for the sludge to settle out as the current rate is 11,000 gallons per minute. The sludge is instead being diluted with over lying water in the 90 tanks and again in the impound basins. Ms. Ott said it is Alyeska's solution to pollution, and it is saving them a substantial amount of money. This is why we have a toxic impaired waterway in Port Valdez. The other evidence is that polycyclic aromatic hydrocarbons are evident in the sediment of Port Valdez with gradient with a defuser outfall and the highest concentration at the defuser outfall. The Alyeska NPDES permit is only set up to monitor BTEX not PAH.

Number 176

MIKE WILLIAMS, Alyeska Pipeline Company, referred to the implication by Ms. Ott that the company brings hazardous waste north to put through the plant in order to have a cheap solution and said it would be a unusual form of economics. The company must go through all the formal procedures of handling a hazardous waste. He explained the hazardous waste is put into forty gallon drums and is shipped in special containers to Anchorage and then shipped to the lower 48. Mr. Williams said the last thing they want to do is to have hazardous waste brought to Alaska for them to turnaround

and ship it back out. He referred to coated tanks and crude oil washings that blast the tanks with high pressured guns and said sludge buildup is basically a thing of the past.

Mr. Williams said he believes that Ms. Ott is confusing tank washings even on vessels that are going to dry dock. What happens when a tanker arrives at the dry dock, if painting or something similar is required, then the tanks would be completely swept and dug out. He noted that the \$3.50 that is paid at the Port of Portland is to dispose of ballast water. It is a very much more expensive proposition to dispose of sludge and is usually included in the bid for work, etc.

MR. LAWN, Department of Environmental Conservation, referred to his earlier comments of the investigation, how the plant operated, and writing the permit and said one of the concerns that was addressed by the 309 Order and trying to be addressed by the permit is that it is recognized that the Alyeska plant didn't move the sludge, oil, or solids (material contained in water that comes to shore) and that the plant had to be taken down to physically remove them. In that removal process, the material that seems to go south is the more heavier component. The material that floats in the water is more difficult to process and was a concern in the issuance of the permit.

OSCAR GENE DICKASON, Alyeska Pipeline Company, referred to the comment about diluting sludge and the system being overloaded, and said the ballast waters that come into the facility goes into the 90s tanks, the 90s tanks provide an absolute minimum of four hours of detention time before the water is processed on the dissolved air flotation unit. Any sludge and solids, are going to settle out in the 90s tank during that four hour time. He noted that most of the time more than four hours is involved. Sampling for the polycyclic aromatic hydrocarbons is required by the permit and must happen at least once a month. He explained that the data is reviewed and they look at the top ten peaks to see what is there beyond the EPA priority pollutants. Mr. Dickason referred to the sediments in Port Valdez, and said he testified the previous Tuesday that the data that they have seen is that the sludges are below the lower effects level as defined by NOAA. There is also data that there is no increasing trends in the hydrocarbons that exist in Port Valdez. They are at a stable level. He referred to the testimony he had given the previous Tuesday regarding the impaired water body, and said the new permit was certified by DEC and the company is in compliance with the Alaska Water Quality Standards.

Number 287

MR. ELMER explained that the coating that they use on their vessels is expected to last at least six and close to ten years before they have to be renewed. He explained the recoating process to the

committee members. (Parts of Mr. Elmer's testimony was indiscernible due to the teleconference connection.) Mr. Elmer explained that when a tank has to be recoated, all the blasting work is done at the shipyard after the ship has been taken out of service. All the materials that are gathered, including sand and any scales, are taken off at the ship yard and are not being taken to Valdez in any way or form.

MR. GALE said that not all the ships have coated tanks. He referred to the Coast Guard equipment regulations and MARPOL and said a certain amount of crude oil washings must be conducted for sludge control. The crude oil washing is done during the period in which the cargo is being discharged ashore. That sludge washing is putting the solids into suspension in the crude oil as it goes ashore and most of it goes to the refinery.

MR. LEVINE explained their process for cleaning tanks.

Number 364

MS. OTT asked if the amount of sludge differs between diesel engines and steamships. MR. ELMER said a diesel engine will generate additional materials from the fuel dock to the filters. Oil going into the diesel engine has fuel. (A large part of Mr. Elmer's response was indiscernible). Ms. Ott asked what the quantity of sludge generated on the filters of a diesel engine tanker was, per voyage. Mr. Elmer said the chief engineer of the Exxon Long Beach said he was seeing about 2 gallons per day. On a north bound voyage, the amount would be in the order of about 10 to 12 gallons per voyage or about 1/2 barrel. Ms. Ott noted her confusion regarding the 1/2 barrel for both diesel and non-diesel tankers and he had said earlier that the diesel tankers would generate more.

Number 427

SENATOR COTTEN referred to Mr. Geren's testimony and said it seems cumbersome if there is a questionable load that it would have to be determined on a case-by-case basis. He asked if they intend to review on a case-by-case basis indefinitely. Mr. Geren said he hopes not. He said as they learn about the types of materials that are being transferred, they hope they would be able to arrive at conditions of Best Management Practices Plan or other agreements on just what kinds of materials there are and what conditions are acceptable for discharge (BWT) and what ones are not. He said that would be the line and they wouldn't be looking at them on a case-by-case basis. Senator Cotten asked when that would be determined. Mr. Geren said they probably won't have a final answer until they have concluded their investigation. He said they are going to have a meeting on the 18th. Senator Cotten said part of the equation is to monitor and see if things are working as they're supposed to and the conditions are satisfactory. There is the question of who

should be doing the monitoring. Presently, Alyeska is in charge of the monitoring and they hire a contractor and the EPA relies on the information. He suggested that maybe the EPA or the state should do the monitoring and continue to have the industry pay for it.

Number 495

MR. GEREN said what they have been presently doing with the case-by-case authorization is that if there is any question as to what is in the material, it requires monitoring as part of the authorization. DEC has been independently monitoring the discharges of oil. Senator Cotten asked if the government should or shouldn't be in charge of monitoring as to whether the facilities can handle the materials and what the effect is of the material that goes back into the water. Mr. Geren said in his opinion, he believes that the industry should do it. He said they do compliance inspections and samplings at the federal and state levels, they do review laboratory records and documents submitted by the permittee. There was discussion regarding the monitoring process.

TAPE 2, SIDE 1
Number 001

MR. LAWN referred to the question of monitoring and said one of the concerns was the adequacy of monitoring and whether it was biased or wasn't biased. An attempted solution was to have a technical advisory group who are world experts on the subject and who were answerable to DEC and EPA. He said if there was some independent oversight, it would answer some of the questions as to whether they are biased or not.

JANICE ADAIR, Department of Environmental Conservation (DEC), said they have a list of fees that can be charged and DEC is presently developing regulations to do that. She said DEC is presently doing independent monitoring at the Alyeska facility. She indicated she would provide information of what that is entailing. SENATOR COTTEN asked that the department furnish a policy comment on DEC and Alyeska doing monitoring and DEC is checking Alyeska's monitoring. He said there is confusion.

Number 048

SENATOR PEARCE referred to the Shetland Island Terminal and said Zodiac is the advisory group who has done the monitoring. She said the council is comprised different because the Shetland Island Council is part owner/operator of the harbor facility. Zodiac is the group that does the environmental monitoring. She said she wasn't sure if they do the monitoring at the terminal, but they do do the monitoring of the environment and the Sullom Voe itself. All the competing groups seem to be comfortable with Zodiac.

Everyone pays for them, she added. Senator Pearce suggested that one group be responsible for contracting and overseeing the work. She said she suspects that the state and federal agencies would support the idea.

This area of the minutes was done verbatim.

MR. WILLIAMS: "What I wanted to say on that was that Drue has really covered a lot of what I was wanting to say. We believe we do a first class job in operating the plant, and doing the tests, doing the monitoring. That is why I agreed with Dan that what we need are some people from the state to see what we're doing. A lot of what we're being accused of is people who don't know what is going on. We do a first class job day after day throughout the year. We have peaks. We have... In fact we say when we've had peaks. Immediately notified... When one happened a couple of weeks ago, the letters were down to EPA within hours of the excursion being noted. We would be delighted to have the state doing what its job is in overseeing what we're doing. The state is responsible for seeing that we comply with the rules. They set the rules and EPA sets the rules. We do our best to comply with those rules. We have no problems at all with the state carrying out its function."

Number 105

SENATOR COTTEN: "I'm sure that you do the best you can and, you know, it's still a matter of who is actually in charge. You're still in charge and you're inviting the state to look over your shoulder on the monitoring. I suggest that it's probably a government function to monitor, and you ought to look over their shoulder, and you ought to pay for it."

MR. WILLIAMS: "I think we should look at what... There are two types of tests. The one sort of test is the daily that we do on effluent going out. That is done in our labs to standard procedures. All that is monitored by the EPA. They have seen our lab and seen that it is up to specs. The other sort of tests are the general tests that are done such as the test that we contract out to the University of Alaska. Those are tests where we've had... We're not doing those ourselves. We've gone and asked a renowned third party to come and do the tests and those results are then available for everybody."

SENATOR COTTEN: "I understand that. Maybe it results in the same thing but the contractors are still working for you. You're giving the direction to the contractors."

MR. WILLIAMS: "I think... with due respect, that statement to say that independent contractors can't be independent which is not really fair."

SENATOR COTTEN: "I think that we both know what were talking about."

MR. WILLIAMS: "Yeah. Let me just add one on that. I'd be delighted if we didn't have all this outside pressure on us. If you can find a way that could take a lot of this pressure off us and industry... when people are accusing us of doing things that we're not doing and putting false claims up against us, we'd be delighted to operate with that system."

SENATOR COTTEN: "Well, I think that I've offered a suggestion of how to get there from here."

GENE DICKASON: "To add one thing on the studies that we do do a toxicity studies, we submit a plan to EPA and to DEC to review and they're told who the contractors are, who will be doing the work, and I'm certain that if they didn't like whom we've chosen to do this, they would tell us so. So, we do have preapproval of the agencies and we are paying for it."

SENATOR COTTEN: "Well, it sounds like you'd resist the suggestion that the contracting responsibility be given to the government. You'd be against that?"

MR. WILLIAMS: "Not really prepared to comment on it at the present moment because I haven't seen what the rest of the deal is."

SENATOR COTTEN: "You're suggesting that the government wouldn't be objective? Is that what you're suggesting? What are you suggesting when... if you'd even hesitate to say that you wouldn't oppose that."

Number 152

MR. WILLIAMS: "What I'm saying is I can't really comment on whether we would fully support the government taking over all of the monitoring programs, because that is like handing over a blank check. You don't know what they're going to charge, what they perceive the efficiency of it or whether it covers all the aspects. We really need to know what the whole deal is on this. I'm not disagreeing with your suggestion, but on the other hand, I'm not actually endorsing it at the present moment either."

SENATOR COTTEN: "Yeah, I got that."

MR. DICKASON: "I think if you were looking at it from the department's standpoint, they would have to be looking at it as not just Alyeska. I mean if you're going to take that whole philosophical change, you're going to be looking at every seafood processor in the state, or every pulp mill ... the two pulp mills in the state and... If you go the rest of Region 10 for Harold, all the industrial dischargers and municipal dischargers would fit

into the same category."

SENATOR MENARD: "But I think one of the issues we're facing here is that we have one of the largest export oil facilities in the state... in the world. I think what we've been trying to do over these past couple of days is how can we not give the impression that the fox is guarding the chickens? That's what it comes down to and that's one of the things that Senator Cotten came up to. And maybe there is a way that we could negotiate something out to see that there is a check and balance, look at the costs of it and see if there is a way. Whether we would get the same result or not... we would get the same result, but the perception. Senator Pearce."

SENATOR PEARCE: "Thank you, I'll ask a specific question or two. The Zodiac Monitoring Committee has in it a member of Zodiac itself, Department of Agriculture and Fisheries for Scotland, two of the oil producing companies, the Shetland Islands Council, which is their state government, the Nature Conservancy Council, the terminal itself, Her Majesty's Industrial Pollution Inspectorate, whatever that is, (indiscernible-coughing) limited, whatever that is. At any rate, they are the people who do the monitoring for Zodiac and oversee the monitoring. Would Alyeska support that sort of model for oversight of their monitoring."

MR. WILLIAMS: "I would answer that saying really that is almost in place because we pay RCAC (Prince William Sound Regional Citizens Advisory Council) \$2 million a year and the idea is that they have a terminal of operation subcommittee and part of that \$2 million per year is to go and have some of their own studies done on the port. That is somewhat in that direction of what you are saying, isn't it?"

SENATOR PEARCE: "Don't ask me. O.K., well then let's take it that step further, if RCAC were set up to be on the mini model like Zodiac, which I think it was and which also the Citizen's Oversight Council was, if we took one or the other or something new, God forbid, to have another entity out there... if we took one of those and the state and the federal government and you all agreed that that entity would be (indiscernible - coughing) doing the monitoring and then giving that information back to everybody rather than you doing some, the state doing some, the feds doing some, and whomever else doing some. Would Alyeska be comfortable with that? If it were either RCAC or the Citizen's Oversight Council."

MR. WILLIAMS: "I think we'd be very willing to look at any of these suggestions, either what you put up or what Senator Cotten has put up, because anything is better than what we've got at the present moment."

SENATOR MENARD: "Then Riki, I guess I'll ask... We've been

kicking this around and if by a flash of wand you were in control, how would you operate it as keeping the question that we're talking about. What would you do? What would change differently in the way it is being monitored?"

MS. OTT: "I was prepared to comment on something else. I would like to share two documents with the committee before the end of the out time. Are we going to..."

SENATOR MENARD: "We're running out of time. Do you want to make a comment on that or not?"

MS. OTT: "Sure. I would endorse doing what the technical advisory group has already recommended. They've recommended a series of studies. The technical advisory group does not agree with Mr. Dickason's comment that there is no trend of PAH in the sediment. The Technical Advisor Group does feel that there is indeed a trend, and I would like to see this group, a scientist be the quality... at least the quality control, quality assurance, and all contracting done through this body of scientists or at the minimum somehow... None of our recommendations have been followed to at this time and I think that... You know we've heard this group referred to several times, but please realize that nothing we've said has been taken up."

SENATOR MENARD: "Dan, do you have a comment on how you think it could be or if it should be?"

MR. LAWN: "Well, the department did a lot of thinking about this process along with the EPA, in the permit process it was recognized that we certainly needed a technical advisory group. We at one time, had talked about having that group be the principle for the studies, contract the studies and so on, and as I recall one of the reasons we ended up in the permit the way we did is we didn't have a funding source for that group to carry on and conduct that activity. So, Senator Cotten's suggestion about a way to do that... fund a group like that would certainly be where the staff was several years ago in our thought processes. What I'd like to do in this whole process, however we do it, is get some of the questions out. Get some of these things resolved once and for all and an independent body that is in control of the contract and the contractor response for that independent body could certainly help to get some of the questions out."

SENATOR MENARD: "Is there anything else? Riki you said you had a couple of ones. If you could make it quick, I have two people who want to testify and then we're going to close it."

Number 260

MS. OTT: "Alright, I can make it quick. I have a... #1 a set of documents. I have the letter from EPA, Regional Administrator Roby

Russell from Alyeska President George Nelson, on 8/15/88, summarizing the 1985 to 88 investigation. As we heard Mr. Geren say, 'The recommendation resulting from that review is that no additional formal enforcement action against Alyeska is appropriate. We arrived at this conclusion because the allegations could not be substantiated, and the allegations I'm referring to here are the transfer of tankers bringing material to Valdez.' I also have three pages from the actual subpoena records and I counted from those... actually two pages I counted one, two, three, four, five, six, seven, eight instances where, indeed, EPA had substantiated claims that the tankers were bringing material to Valdez. Let me just read one of them. 9/10/81, 'Sohio Resolute arrived at Valdez after coming out of a ship yard where its ballast had been put ashore and returned to the ship after repairs were completed.' Another one, '7/8/82, 'A Tanker Thompson Pass had 3,400 barrels of slop on board from a bunker barge in Long Beach.' That's one set of documents, the second set that I believe points out something that has been denied at these hearings which is why I would like to go on record with these documents. They're from the DEC Ballast Water Discharge Certificate Affidavit for the Exxon Valdez, dated 2/28/89, the Alyeska ballast water survey for that same vessel on that same day. Both of these forms show that there was nothing abnormal in the unsegregated ballast. Alyeska's survey did mention 35 barrels of cleaner. However, in the engineer relief notes, which are also part of this package, you'll notice that the Exxon... I'm sorry, this is the wrong set of documents. Same documents DEC Ballast Water Discharge Certificate Affidavit and Alyeska Ballast Water Survey for the Exxon Baton Rouge. On 4/16/89, showing that there was no abnormal ballast... a dirty ballast... discharged ashore to Alyeska. However, I also have a summary of the deposition of First Mate Claud Wendell (indiscernible) from the Baton Rouge who stated that, 'We picked up some slop tank content left behind by the Exxon Houston, which had been cleaned out at Hawaii before dry docking.' To emphasize this, the significant points from this set of documents are that the DEC and Alyeska Ballast water survey forms appear to be inadequate because the reporting of substances other than North Slope crude seem to be inconsistent. In other words, both these forms did not mention liquid ballast coming from shore at Hawaii. Also these documents transfer... document transfers from shore, which have been denied by Mr. Elmer. The third thing that this points out is that this really opens a can of worms because 1) ballast is... liquid cargo is taken from shore. There is no custody, I mean it could be anything. It could be waste from the facilities at shore, it could be just, as indicated here, slops left over from the Exxon Houston. The point is there seems to be a very... This is not really documented very carefully and it is occurring. Significantly, from my first document package with a 1985 EPA investigation, it is important to realize that these tank operators all denied doing anything like this during the first investigations, and EPA dropped the case even after substantiating that the tankers did in fact do this. Here we are in 1991, with

these same claims again. This time we find that this is all common practice. I would be really curious to know at what point between 1985 and 1981, this became common practice."

Number 337

SENATOR MENARD announced that Krista Masiolak, Alaska Environmental Lobby, read her statement into the record: "Suspicion surrounding ballast water undermines Alyeska's credibility in both the settlement and in any development projects they may wish facilitate in the further. If Alyeska wants to be (indiscernible) member of Alaska's society, they must satisfy our suspicions beyond a shadow of a doubt. The lobby would like to see the following: Greater involvement by DEC in the monitoring process. We would like to see an independent study conducted verifying those studies conducted in editing by Alyeska. We would like to see a thorough review of the BWT facility to determine exactly what goes into the facility, how much goes in, and what should be coming out. We would like assurance that the technology used at the treatment facility is the best technology available. There is a lot at stake in Prince William Sound and it is the duty of the state legislature to preserve the integrity of the areas. Thank you."

DICK MYREN explained he has Ph.D., Cornell, 1964, said he was a researcher at Port Valdez from 1971 to 1981, and did the monitoring studies in the intertidal area. In 1978, the small clam population started to decline. The ballast plant went on line in the fall of 1977. He urged independent scientists be used, otherwise, Alyeska will hire people and have done so over the years. Mr. Myren said he has watched DEC deteriorate in the process.

Number 361

meeting at 3:15 p.m.

MINUTES

3/15/91

HOUSE SPECIAL COMMITTEE ON OIL AND GAS

March 15, 1991

3:00 p.m.

MEMBERS PRESENT

Representative Bill Hudson, Chairman
Representative Dave Choquette, Vice-Chairman
Representative Pat Carney
Representative Gail Phillips
Representative Jim Zawacki
Representative Mike Navarre

MEMBERS ABSENT

Representative Kay Brown

OTHER MEMBERS PRESENT

Senator Drue Pearce

COMMITTEE CALENDAR

Informational meeting discussing the ballast water treatment (BWT) facility in Valdez and Trans-Alaska Pipeline (TAPS) tanker operations.

WITNESS REGISTER

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ACTION NARRATIVE

TAPE 91-15, SIDE A
Number 001

Chairman Hudson called the committee to order at 3:08 p.m. on Friday, March 15, 1991, and reviewed the agenda.

Members present were Representatives Hudson, Choquette, G. Phillips, Zawacki, Navarre and Carney.

Representative Brown was absent.

Senator Drue Pearce was invited to join the committee.

Number 050

MR. GUS ELMER, President of the Exxon Shipping Company, testified that the Exxon Shipping Company is a separate corporate entity registered in Delaware and is fully owned by Exxon Corporation. Exxon Shipping owns and operates 13 ocean-going tankers, ten of which are crude carriers on the West Coast, and nine of the ten operate in North Slope crude service.

Mr. Elmer expressed his pleasure at being invited to review Exxon Shipping's operations involving vessels that call at Valdez. Mr. Elmer noted that statements alleging that Exxon Shipping, through its operations, violates federal, state and local legislation and regulations, are false and he does not take the allegations lightly.

Before he began to explain Exxon Shipping's tanker operations, Mr. Elmer assured the committee that Exxon Shipping was not transporting wastes from nontanker operations, tankers not in North Slope service, nor discharging wastes from those types of operations to the ballast water treatment (BWT) facility at Valdez.

Number 081

Representative Navarre commented that Exxon Shipping may not be doing the above actions now and asked Mr. Elmer if Exxon Shipping had ever done any of the above in the past.

Mr. Elmer asked if he could defer that question until later in his presentation as he felt it would be better answered at that time.

Mr. Elmer continued his testimony and explained Exxon Shippings operations. (Mr. Elmer referred to charts, which can be seen on Attachment 1. Mr. Elmer's written testimony can be seen as Attachment 2.)

Number 127

Mr. Elmer continued with his presentation and explained the functions and uses of the different tanks on board an Exxon Shipping tankers and the ballasting practices of each tank.

Number 211

Representative Navarre questioned Mr. Elmer's statement that cleaning agents are used to clean the tanks aboard a ship if it was determined to be necessary. Specifically, Representative Navarre wanted to know how often cleaning agents are used.

Mr. Elmer responded that Exxon Shipping had used cleaning agents six times over the last three years. Exxon Shipping feels it has an obligation to the men and women who go down into these tanks to provide a safe working environment. A tanker captain makes the decision as to when cleaning agents are necessary.

Representative Navarre indicated that it seemed as if safety would dictate a greater frequency in the use of cleaning agents.

Mr. Elmer remarked that Representative Navarre's statement was an excellent one and over time it was expected that the use of cleaning agents would become more frequent.

Number 228

Mr. Elmer continued to explain Exxon's tanker operations.

Mr. Elmer continued his testimony by noting what happens upon a tanker's arrival at the BWT in Valdez.

Number 374

Chairman Hudson asked if members had any questions.

Representative Navarre yielded to the Chairman who inquired if the gas-freeing of tanks that was done every 24 to 30 months in order to permit full inspection was a set time limit imposed by Coast Guard regulations.

Mr. Elmer responded that Coast Guard regulations that Exxon Shipping abides by require that a vessel go to dry dock twice within five years, with no one cycle being longer than 36 months.

Number 446

Representative Navarre wanted to know if he could get additional information on the capacity of the nonsegregated and segregated tanks for Exxon's vessels.

Mr. Elmer indicated that this information would be provided.

Representative Navarre wanted to know if Exxon Shipping ever had any trouble getting approval from Alyeska for various operations, as Exxon Shipping's parent company, Exxon, was a significant owner of Alyeska.

Mr. Elmer indicated that this was a situation that had arisen and Exxon Shipping has had requests refused.

Number 503

Representative Navarre questioned exactly what cleaning agent was being used on Exxon Shipping's tankers.

Mr. Elmer indicated that the product used was called CLEANBREAK and was 95 percent or more kerosene. A cleaning analysis of this product was expected soon. CLEANBREAK was not an Exxon product, which was why Mr. Elmer was unfamiliar with its exact composition.

TAPE 91-15, SIDE B
Number 005

Representative Navarre asked Mr. Elmer if Exxon Shipping had a BWT facility that could handle the level of ballast water that the BWT in Valdez could.

Mr. Elmer responded that for BWT facilities owned by Exxon, the answer was no. Mr. Elmer indicated in reference to other BWT facilities where ballast water could be handled, the answer was yes, in limited amounts. Additionally, he commented that this would not reduce the level of ballast which comes to Valdez.

Representative Navarre suggested that another BWT facility might be needed, perhaps even at Valdez, to better treat

the water. Representative Navarre questioned Mr. Elmer on whether or not he was satisfied with the level of treatment that currently exists.

Mr. Elmer stated that the level of treatment that was ongoing was in full compliance with the EPA (Environmental Protection Agency) and the requirements of Alaska's water quality standards.

Number 041

ROBERT LEVINE, Director of Alaska Maritime Affairs for ARCO Marine, testified that ARCO's procedures in general were very close to Exxon Shipping's procedures. He indicated that the largest thing ARCO does differently from Exxon Shipping was, whenever possible, ARCO transfers tank washings directly to one of ARCO's refineries.

Mr. Levine indicated that ARCO was in the process of reviewing the records, but as of now, ARCO could only identify one time when ARCO transferred the ballast back to Valdez because ARCO could not get it into one of the refineries.

Mr. Levine stated that ARCO does not use cleaning agents at present because ARCO is able to successfully water wash the tanks. However, ARCO was finding this to be more and more difficult due to an accumulation of wax inside the cargo tanks. ARCO was reevaluating the tank cleaning procedures as a result of an accident at one of ARCO's shipyards.

Number 080

Chairman Hudson questioned how the refineries that ARCO used compared in technology and equipment with the BWT facility in Valdez.

Mr. Levine responded that he assumed the refineries were equivalent. The processes may differ, but the technology and the method were very close to being the same.

Number 090

Chairman Hudson asked if ARCO had any tankers or transport vehicles which commingle oil from other parts of the world with Alaska oil. Specifically, was there any possibility that ARCO's nonsegregated or segregated tanks might have contained oil or ballast water from another part of the world.

Mr. Levine indicated that ARCO operates ten ships, which are all on the Alaska North Slope trade; thus, there is a very slim chance for the situation outlined by Representative Hudson to occur.

Number 112

Representative Navarre requested that Mr. Levine supply him with information on ARCO's segregated and nonsegregated tank capacities on each vessel ARCO operates.

Mr. Levine indicated that he would pull this information together for Representative Navarre.

Representative Navarre asked if ARCO had ever shipped substances from shoreside facilities into ballast water.

Mr. Levine responded in the negative and elaborated that ARCO does not backload anything onto the ships as a normal practice. On one occasion the treatment facility was inoperative in one of ARCO's refineries and ARCO did bring washings back to Valdez in lieu of ballast water.

Representative Navarre questioned whether or not ARCO chartered any ships.

Mr. Levine answered that ARCO has chartered ships, which were steamships, as were all of ARCO's other ships.

Number 139

Representative G. Phillips questioned if the rules and regulations governing ARCO's refineries in the Lower 48 were comparable to the regulations at governing operations at the Valdez BWT facility.

Mr. Levine responded that he had never actually sat down and compared the two; however, he assumed the regulations were comparable. The refineries at Alyeska were operating under the same laws.

Number 165

CAPTAIN ROGER GALE, Manager of Marine Transportation for British Petroleum Oil (BP), testified that BP has the largest fleet of tankers operating out of Valdez. He noted that BP is not a corporate citizen, therefore, BP does not actually own any of these tankers. He stated that BP charters 17 tankers which load out of Alaska, and BP is known as the marginal supplier to the West Coast market.

Captain Gale indicated that BP deals with seven different operating companies in Alaska. Therefore, as can be expected, BP has seven different methods of operation, which are all very similar to Exxon Shipping's operations.

Captain Gale explained that transferring tank washings from ships going to dry dock or performing the last voyage in

BP's service was a common practice with BP. Some of the operators use tank cleaning agents and some do not.

Captain Gale agreed with Mr. Elmer and Mr. Lavine that the use of cleaning agents was likely to increase, primarily because the Environmental Protection Agency (EPA) and the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) have reduced the level of benzene to which a worker can be exposed.

Number 232

Chairman Hudson questioned Captain Gale about where BP off-loads contaminated bilge water.

Captain Gale responded that it depended on what Chairman Hudson meant by contaminated bilge water. The bilge water in BP's chartered ships was of the same makeup as the bilge water in Exxon Shipping's vessels. Some of BP's vessels pump all of the bilge water into slop tanks and some vessels use bilge water separators while the ships are away from the coast until the ship comes into shore. Anything collected in the bilges between the time the bilge water separators were shut down and when docking occurs would then be taken ashore for treatment.

Number 253

Representative Navarre asked if BP transferred from onshore facilities to vessels.

Captain Gale replied that until January, 1990, BP did not have any facilities at all on the West Coast. In early 1990, BP acquired a refinery in Puget Sound. Captain Gale emphasized that BP does not load anything from the shore to BP's vessels.

Representative Navarre inquired if this was true for both the East Coast and the West Coast.

Captain Gale responded in the affirmative.

Representative Navarre requested additional information as to the capacity of segregated and nonsegregated tanks on the vessels that BP charters.

Captain Gale responded that he would put this information together and forward it to the committee.

Representative Navarre further requested a scientific analysis or description of the cleaning agent that was used in BP's ships.

Captain Gale replied that he would comply with this request.

Number 278

Representative Navarre asked Mr. Elmer if Exxon had large diesel ships in service.

Mr. Elmer responded in the affirmative and elaborated.

Representative Navarre inquired as to what was done with the diesel sludge from the ships in service in the Alaska North Slope trade.

Mr. Elmer responded that the operation that Exxon followed on the two ships that were in East Coast trade was to discharge the segregated ballast as described earlier, but these ships are not in the West Coast service and, therefore, do not have to go as deep due to less severe weather. Ships in the East Coast trade carry very little extra nonsegregated ballast. Secondly, according to Mr. Elmer, Exxon Shipping does have holding tanks where this material accumulates and only the liquid is pumped off into the slop tank.

Mr. Elmer asked Captain Mazza, tanker captain for Exxon Shipping, whether or not he was familiar with the slops from the ships in the East coast trade.

CAPTAIN ELMER indicated he believed that slops from the East Coast trade are off-loaded at Baton Rouge refinery and (indistinguishable) refinery. Because of the small quantities handled, these ballast water treatment facilities are able to handle the material.

Number 305

Representative Navarre questioned the practices of those ships in the West Coast trade.

Mr. Elmer responded that the material from the filters was sent into the tank Exxon Shipping had described at the lower corner of the engine room. The material sits there and then the liquid, which is predominately water, is pumped off and goes into the nonsegregated ballast and then is off-loaded into the ballast water treatment facility at Valdez. The solid material that accumulates in the tank is cleaned out every six months, is drummed, and shipped to the Lower 48 to be disposed of at an EPA approved site by an EPA approved contractor.

Representative Navarre inquired if Exxon kept records of the amount of sludge actually disposed of, or does the EPA

or the ADEC (Alaska Department of Environmental Conservation) keep the records.

Mr. Elmer responded that the record is kept in the (indistinguishable) book on board the ship. Every action taken on board the ship is recorded in this book.

Number 337

DR. GENE DICKASON, Manager of the Environment Department for Alyeska Pipeline Service Company, submitted written comments to the committee (please refer to Attachment 3) and gave oral testimony.

Dr. Dickason indicated that before coming to work for Alyeska he worked for the University of Alaska and the Environmental Protection Agency prior to that. From 1970 to 1978, as director of the Environmental Protection Agency's Alaska office, Dr. Dickason was involved with the drafting of the first permit for the Valdez Ballast Water Treatment Facility (BWT). Dr. Dickason indicated that at the time of its construction, the BWT at Valdez was a state of the art facility.

Number 378

Dr. Dickason outlined the procedures followed when a ship comes into the Valdez BWT. He explained that the ballast is pumped ashore from a vessel to the (indistinguishable) tanks, which are three large tanks where the ballast comes off the vessel. The ballast waters are allowed to stay there for a sufficient period of time to allow any free oil to rise to the surface and any settleable solvents to come ashore with the ballast to settle to the bottom of these tanks. The sludge on these tanks are collected when the tanks are drained and taken to a dewatering area and tested to determine whether or not a hazardous waste. If the sludge tests positive, the sludge is drummed and taken to a hazardous waste disposal site. Alyeska's permit requires them to notify the ADEC in advance any time one of these tanks was going to be drained.

Dr. Dickason continued and explained that after the gravity separation occurs, the oil that is collected from the surface is taken to the eighties tanks and sent back to the vessel. The water that is decanted below this is taken to the Dissolved Air Flotation (DAF) chambers. At this point, fine bubbles of air and a polymer is added to accelerate the process of separating the remaining oil from the water. A skimmer then removes the oil and returns it to the eighties tanks. The overflow from the dissolved air flotation chambers goes to the impound basins, which go through Alyeska's new biological treatment systems.

Dr. Dickason further explained that at the effluent end of the biological treatment system, Alyeska adds nutrients, phosphorous and nitrogen, for the microorganisms. This substance is then run through an aerator basin to lower the BETX (benzene, ethylbenzene, toluene, xylene) level. Next, this substance is sampled and discharged through a diffuser in the bottom and out into the port of Valdez.

Number 421

Dr. Dickason inquired whether anyone had any questions at this time. There being no questions, Dr. Dickason continued with his testimony and indicated that as part of Alyeska's treatment program, there was a best management practices plan. This was a plan submitted to the EPA for approval in conjunction with the ADEC.

Dr. Dickason indicated the plan addresses many of the items currently being discussed: what can and cannot come into the facility, bilges, tank cleaning, cleaning agents and so on. The best management plan was silent on transfers of ballast from one ship to another.

Dr. Dickason stated that the transfers which were occurring should not have been a surprise to anyone. This matter has been studied and investigated before.

Alyeska, according to Dr. Dickason, does a variety of routine tests at the BWT facility daily. For organics, Alyeska goes through the EPA's priority list quarterly and samples for napaethne quarterly.

In looking at the operating history of the BTW facility, Dr. Dickason observed that BETX concentrations in the effluent have been meeting standards with the old system and it was hoped that the new system, which went on-line a week ago, will do much better. (See Attachment 4 for detailed outline.)

Dr. Dickason indicated that Alyeska went back and reviewed all of the Ballast Water Survey forms submitted since the new permit was issued in June, 1989, which involved a total of 1,484 forms. Of those 1,484 forms, Alyeska was able to identify 72 that had either transferred ballasts on board when the vessel came into Valdez, had used cleaning agents, had a prior cargo that may not have been Alaska North Slope crude, or had some other contaminant in the tanks.

Number 500

Dr. Dickason explained that Alyeska then went back and looked at those actions which appeared to be the most severe, such as having the most cleaning agent. Alyeska was interested in learning if any of these activities

caused a problem in the ballast water treatment system. Alyeska determined through the records that there were none.

In addition to effluent monitoring, Dr. Dickason elaborated that Alyeska conducted many environmental studies over the years. These studies were provided to EPA and ADEC and are on file at the Arctic Environmental Information and Data Center and are public documents for anyone who would like to view them. Dr. Dickason noted that the Institute of Marine Science (IMS) at the University of Alaska, Fairbanks, did much of the work. To date, IMS studies have shown no adverse impact due to Alyeska's operations.

TAPE 91-16, SIDE A
Number 023

In conclusion, Dr. Dickason stated that the BWT facility was doing its job based on the evidence, and the Port of Valdez was a healthy environment. Dr. Dickason reiterated that Alyeska's new system started up ten days ago.

Representative Phillips questioned if Alyeska had regular inspections by ADEC of Alyeska's records as well as on-site inspections.

Dr. Dickason responded that the opportunity is there for on-site inspections any time ADEC wishes to; however, Dr. Dickason was not sure about the frequency of ADEC's visits. All records are open for review by ADEC.

Chairman Hudson asked if Alyeska had any outside, non-Alyeska inspectors/scientists who conducted studies.

Dr. Dickason indicated that Alyeska had used consultants in designing the facility, but to his knowledge Alyeska had not had anyone come in to run separate tests and samplings.

Number 061

Dr. Dickason elaborated that Alyeska had received inspections from the EPA and he thought the EPA had hired contractors to come in and provide third-party audits.

Number 094

Chairman Hudson indicated there had been statements in the press that exotic organisms had been coming to Alaska via the tanker trade and he wanted to know if Dr. Dickason had seen any evidence of this.

Dr. Dickason responded he believed that in all the work done by the Marine Institute in Fairbanks, if such a thing were occurring, Alyeska would have been informed.

Number 148

Senator Pearce questioned how long the effluent was in biological treatment before it was sent into the port through the diffusers, and was there any dependency to that time period and the number of ships docked.

Dr. Dickason responded that the detention time in the pond depended on the amount of flow that was put through the pond. The system was designed to take flow fluctuations and still meet the standards of the permit.

Senator Pearce inquired if Alyeska had ever had to stop a tanker from off-loading ballast water until Alyeska could catch up.

Dr. Dickason stated that it was his understanding that Alyeska had cued up tankers when the nineties tanks had been filled and there had not been sufficient detention time to get the separation desired.

Senator Pearce questioned if Alyeska dumped different things into the tanks depending on what Alyeska was trying to treat.

To his knowledge, Dr. Dickason responded that the only thing put into the tanks as far as the biological system was concerned was the nutrient described earlier.

Senator Pearce requested clarification on whether it was the microbes which ate the contaminated materials which were toxic, or do the microorganisms eat the toxic material.

Dr. Dickason clarified that the microorganisms eat the toxic substance. He explained that benzene is a natural, biodegradable substance, although it has been described as a hazardous substance.

Number 191

Senator Pearce asked if any crude oil treatment happens in Valdez or does it all happen on the North Slope.

Dr. Dickason responded that in the main terminal storage tanks, there is some water separation that has come down the pipeline, which are then drawn off and run through the ballast water treatment system.

Chairman Hudson questioned how Alyeska ships the sludge out once the tanks are cleaned.

Dr. Dickason indicated that it is drummed, as with any hazardous waste, which is similar to what the ships do.

Number 232

Representative Navarre inquired if the numbers allowed were set by the permit with regard to the effluent.

Dr. Dickason responded in the affirmative.

Representative Navarre questioned if this was the upper limit.

Dr. Dickason responded that it was and elaborated that the standards were continually being tightened.

Representative Navarre requested information on what the projects were for flow-through and ballast water treatment when the plant was designed and whether or not Alyeska was exceeding those projections in terms of whether or not more holding tanks were needed, and so on.

Dr. Dickason promised to provide this information to Representative Navarre.

Number 294

Representative Carney asked Dr. Dickason for his opinion on why he thinks the Valdez harbor has become an impaired waterway.

Dr. Dickason responded that the Valdez harbor was claimed to be an impaired waterway in a document that was issued in the Spring of 1990, and this document stated that, based on the dye studies done in relation to the mixing zone, the mixing may not have been as high as first calculated; and if Alyeska was operating the permit at its maximum levels, the potential was there for Alyeska to be in violation of the aromatic hydrocarbons in the boundaries of the mixing zone.

Dr. Dickason further noted that he had not seen any studies stating that this impairment had actually occurred. In any event, with the new permit, any doubt of the Valdez port being an impaired waterway should be removed.

Representative Carney clarified that he understood that the Valdez port had already been declared an impaired waterway.

Dr. Dickason responded that, to his knowledge, a number of things were discussed relating to the possibility of Valdez being an impaired waterway, but there had been no linkage between that and the BWT facility being the cause.

Chairman Hudson asked if there was a great deal of renewal ongoing in terms of water going in and out of the Valdez port.

Dr. Dickason felt the Coast Guard or the Institute of Marine Sciences would be better able to respond to that question.

Number 339

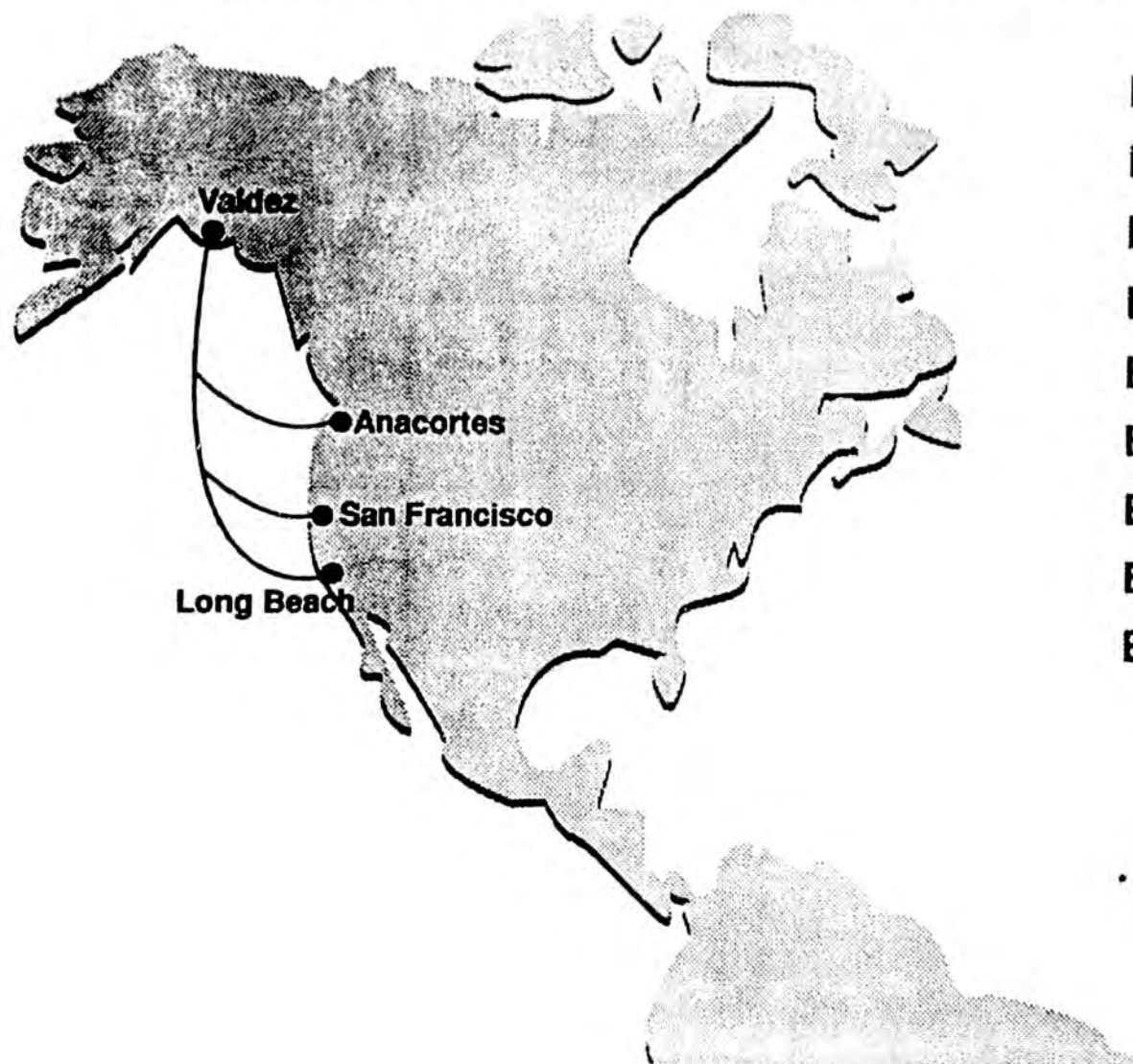
Representative Navarre inquired if testing was done regularly to determine if there was an accumulation of heavy metals in the Valdez port.

Dr. Dickason responded that such testing had been done and elaborated that there had been a slight increase in heavy metals in the sediments near the diffuser, according to the document alleging that the Valdez port was an impaired waterway.

Number 350

Chairman Hudson thanked everyone for attending and adjourned the meeting at 5:11 p.m.

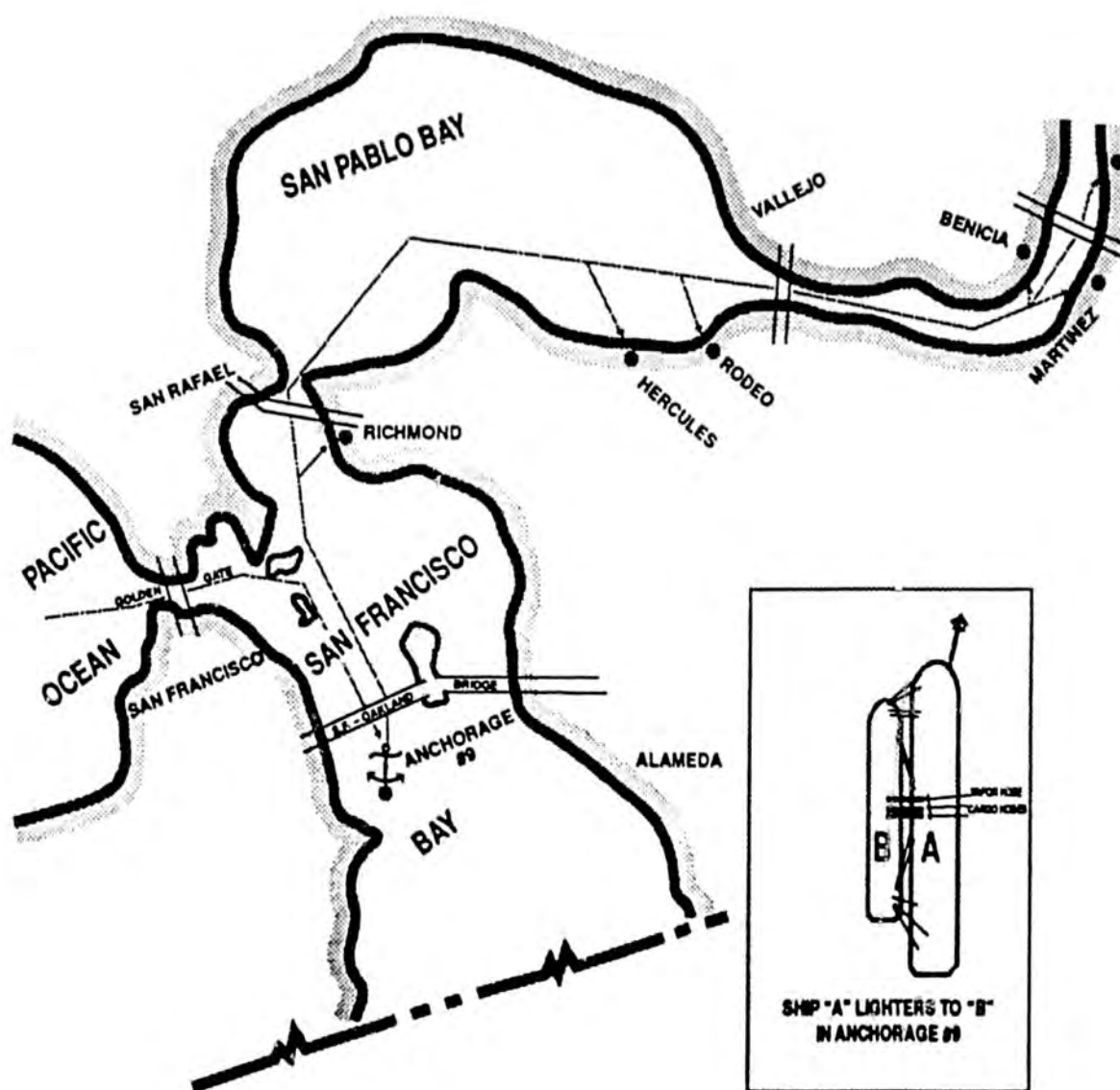
EXXON SHIPPING COMPANY TRANS WEST COAST CRUDE MOVEMENTS



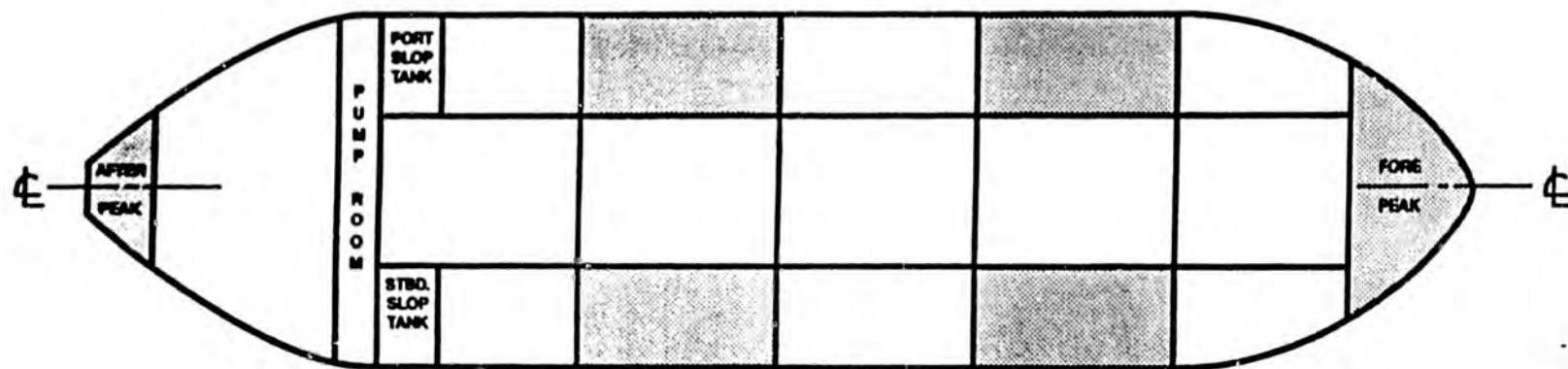
Exxon Long Beach
Exxon Benicia
Exxon North Slope
Exxon Philadelphia
Exxon Baton Rouge
Exxon San Francisco
Exxon New Orleans
Exxon Baytown*
Exxon Galveston*

* SF Bay Lighter

S.F. BAY LIGHTERING OPERATIONS



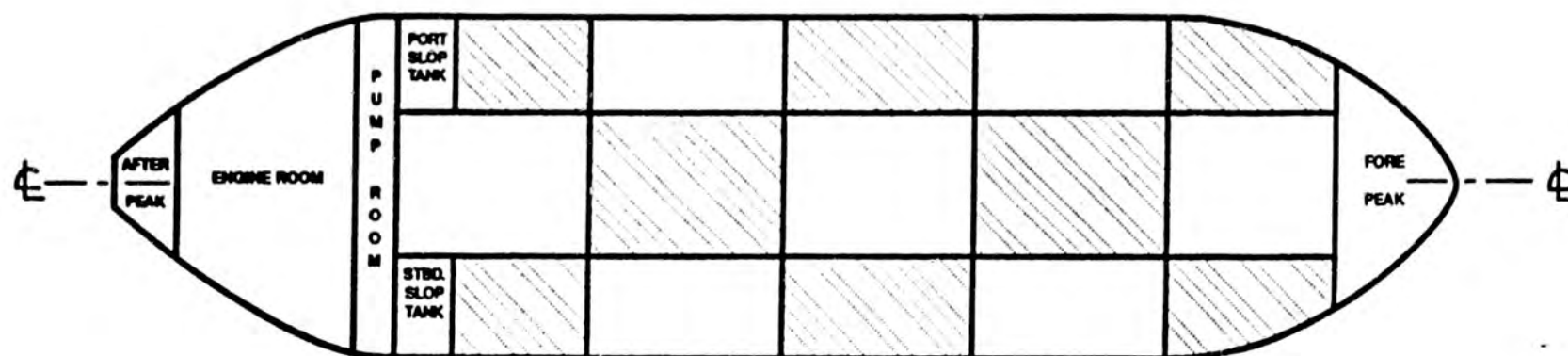
SEGREGATED BALLAST ARRANGEMENT



SEGREGATED BALLAST TANKS ARE NOT CONNECTED TO THE CARGO SYSTEM

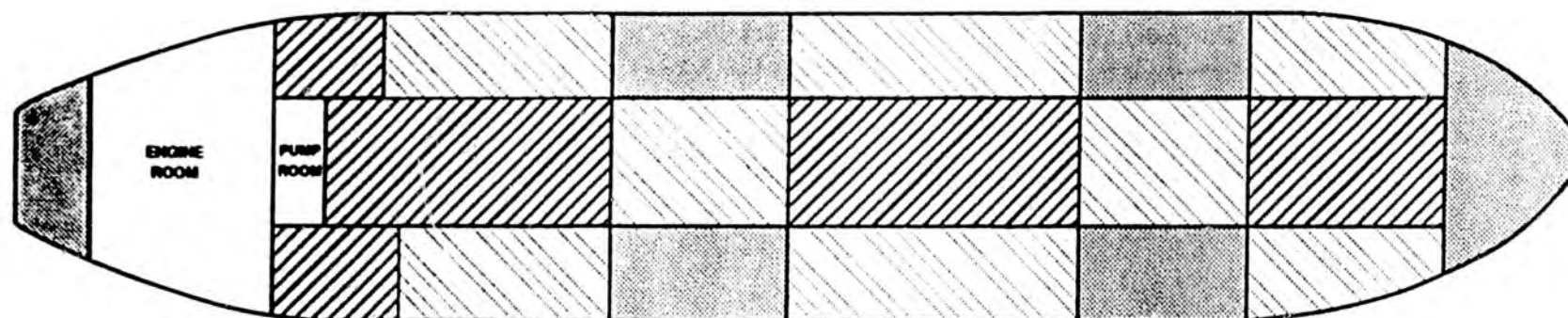
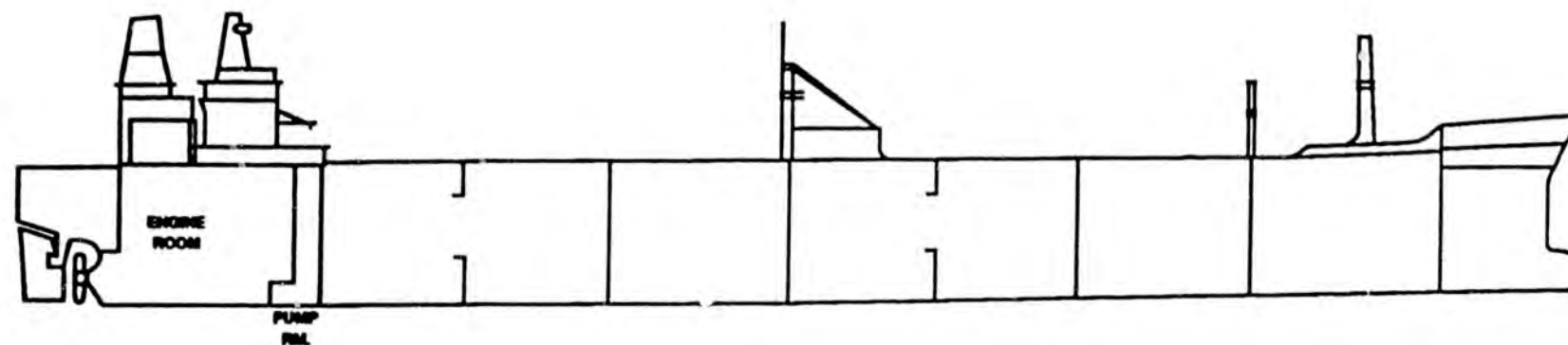
 SEGREGATED BALLAST TANK

CARGO ONLY TANK ARRANGEMENT



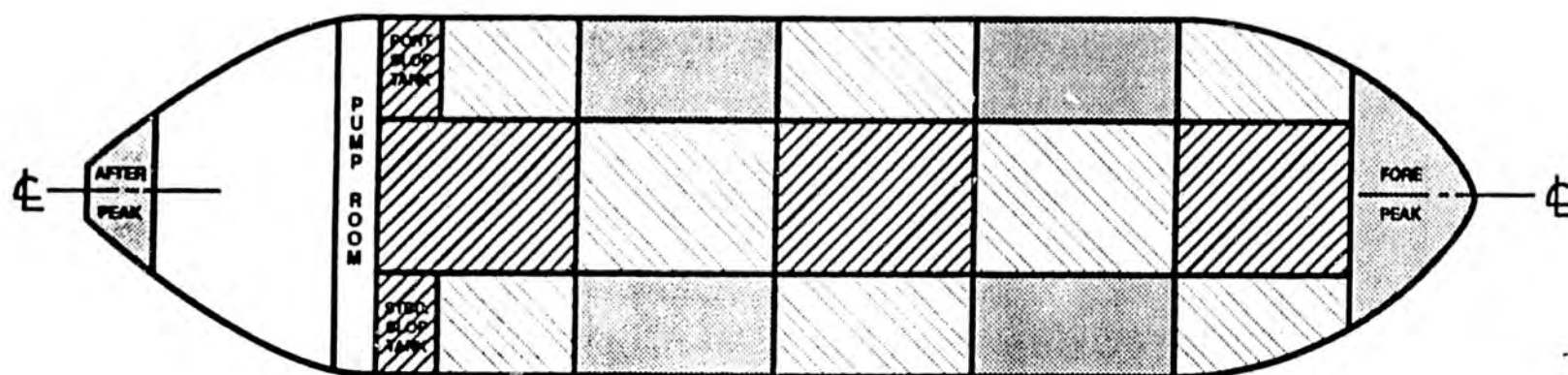
/// CARGO ONLY TANK

TANKER GENERAL ARRANGEMENT



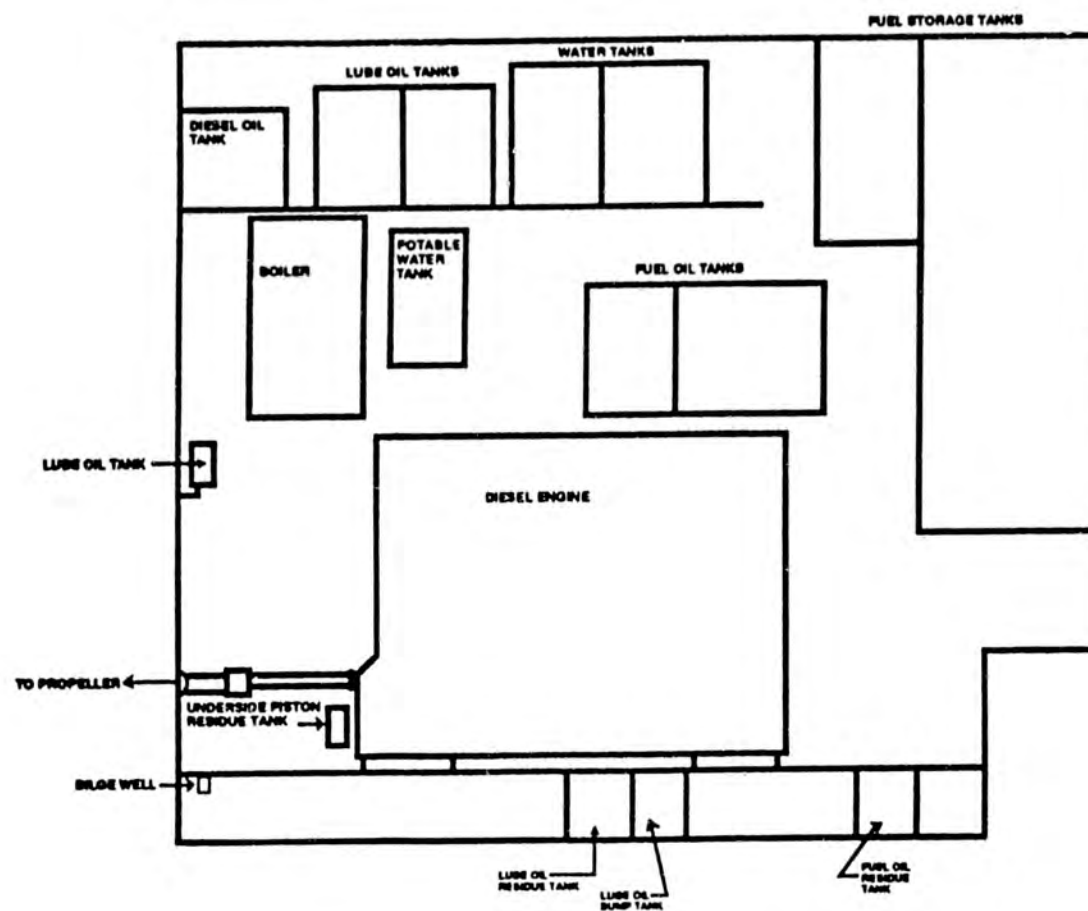
SEGREGATED BALLAST
NON-SEGREGATED BALLAST/
CARGO OIL
CARGO OIL

SEGREGATED AND NON-SEGREGATED BALLAST ARRANGEMENT

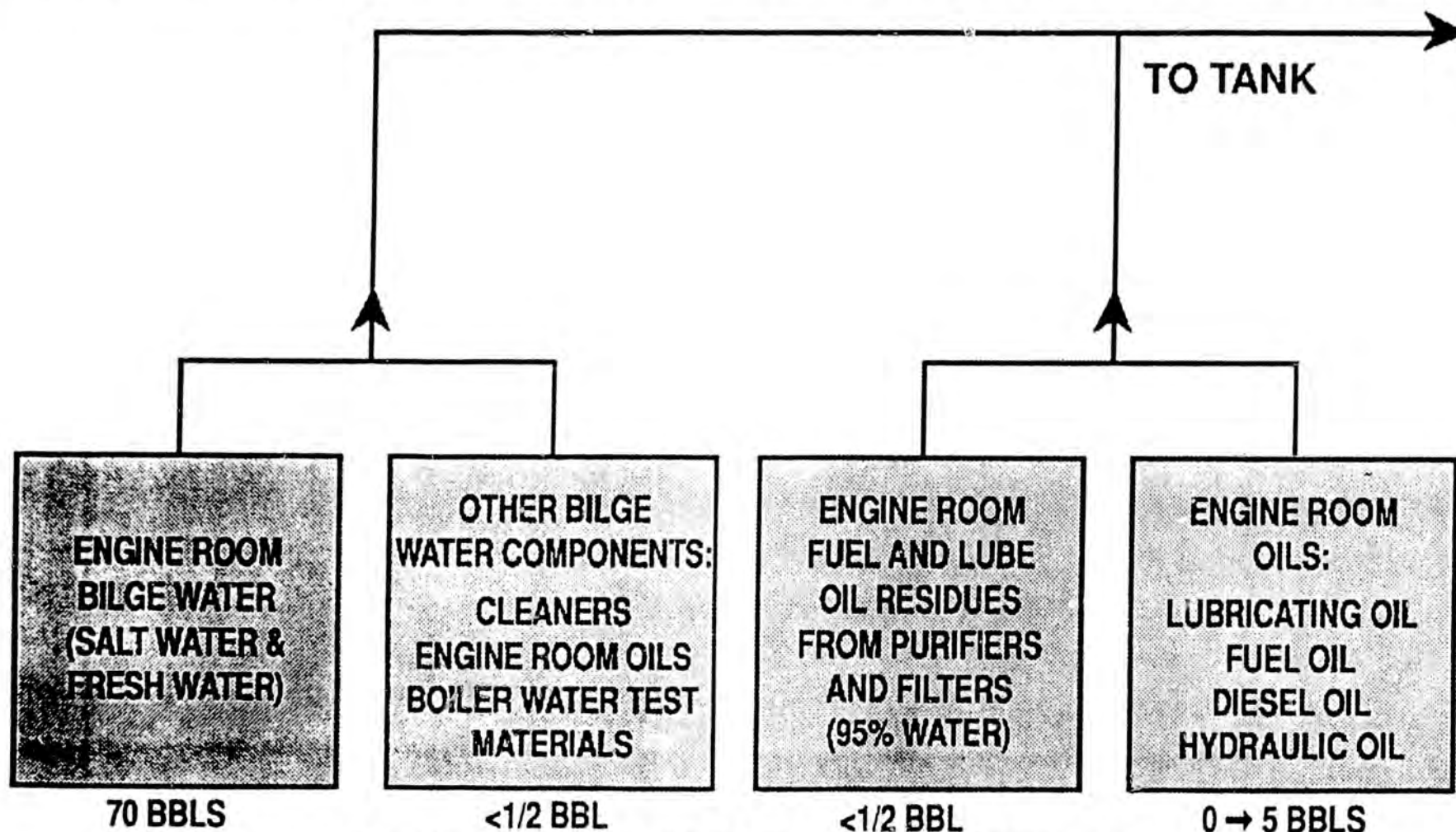


-  SEGREGATED BALLAST TANK
-  NON-SEGREGATED BALLAST TANK
-  EMPTY CARGO TANK

SIDE VIEW ENGINE ROOM

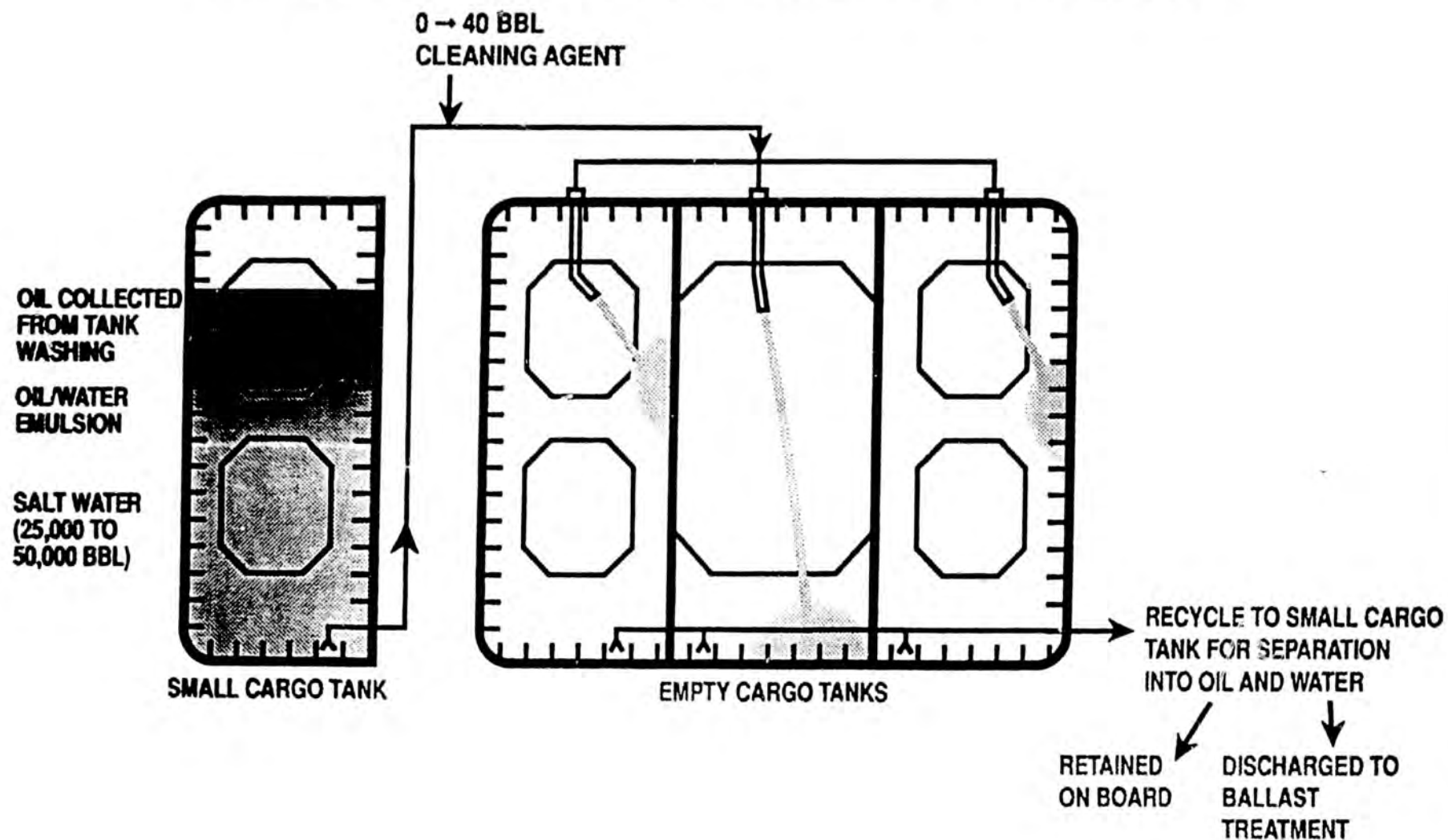


TYPICAL ENGINE ROOM BILGE AND RESIDUE SYSTEM

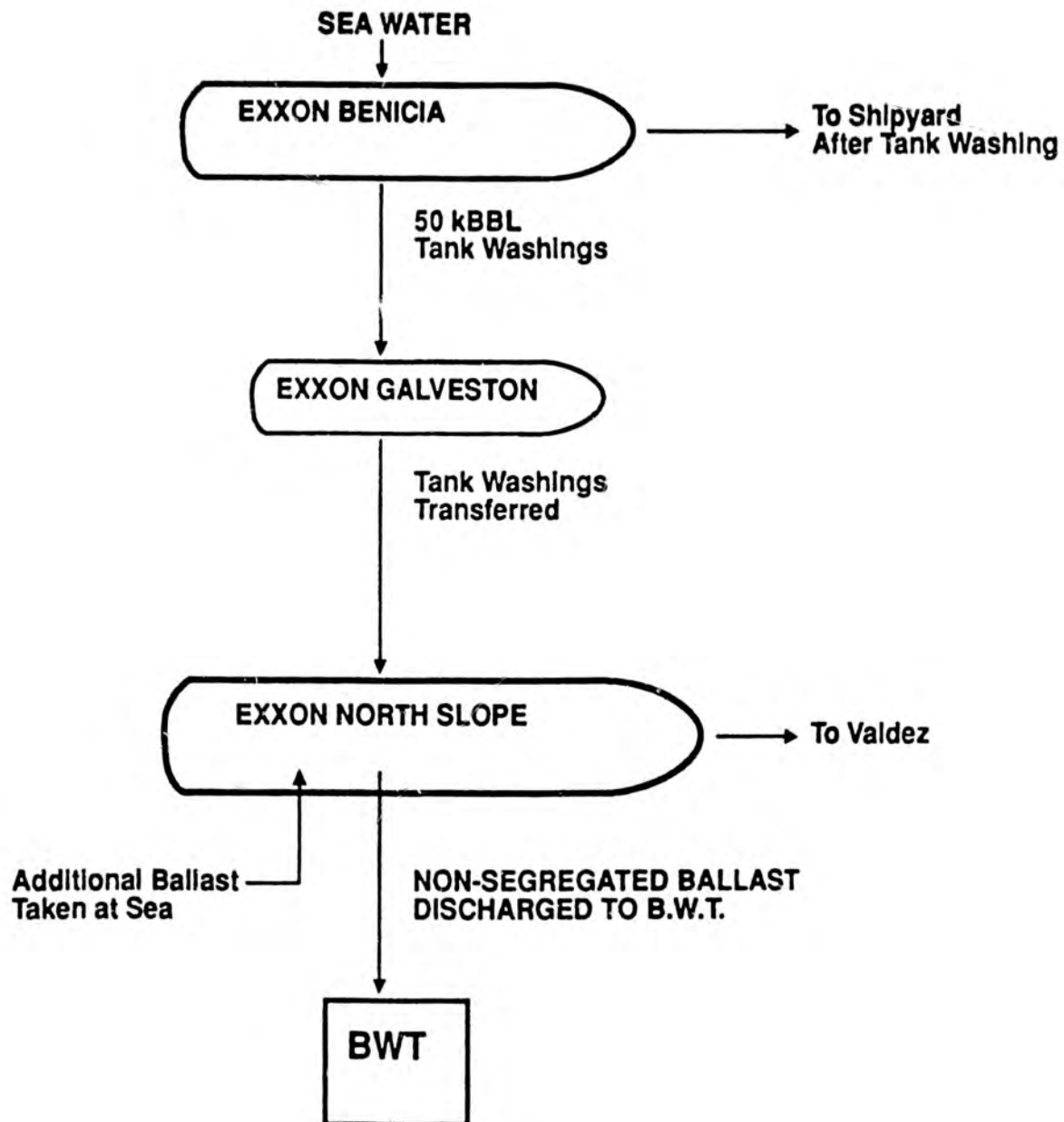


TYPICAL AMOUNTS GENERATED ON A BALLAST VOYAGE

TYPICAL TANK CLEANING OPERATIONS

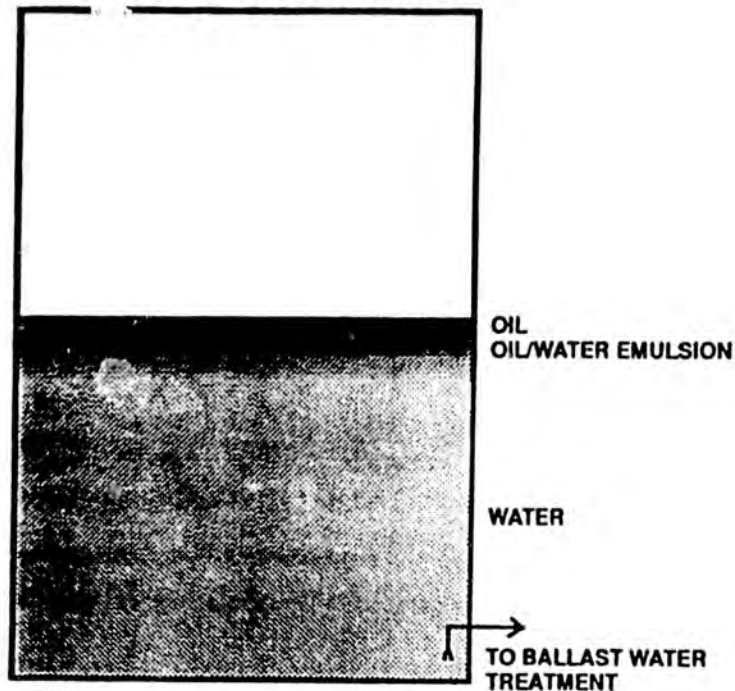


EXAMPLE OF TANK WASHINGS TRANSFER

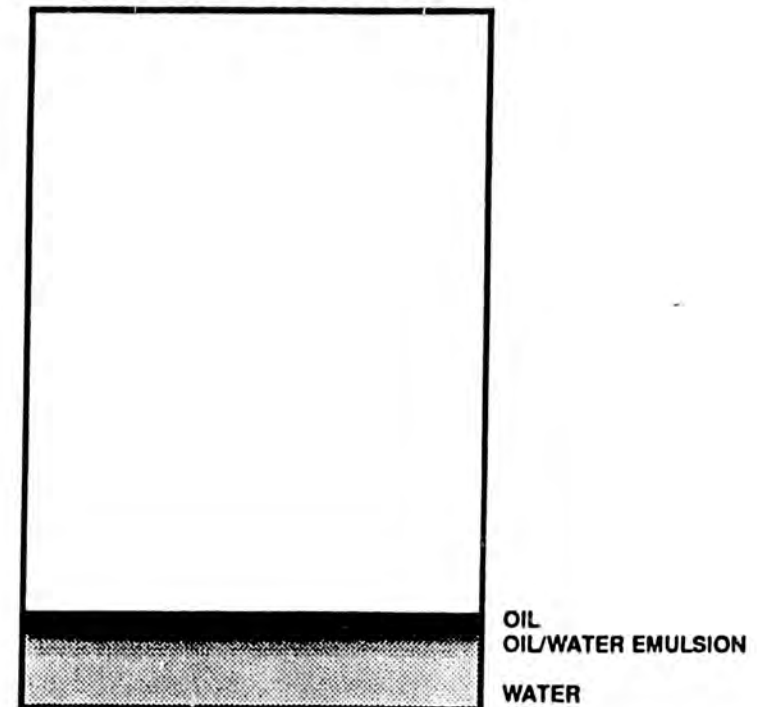


OIL/WATER SEPARATION In A Typical Non-Segregated Ballast Tank

PRIOR TO DECANTING



AFTER DECANTING



NOTE: WATER PHASE MAY CONTAIN SOME SUSPENDED OR DISSOLVED OIL

[illegible]

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Attachment 2

TESTIMONY OF A. ELMER
PRESIDENT, EXXON SHIPPING COMPANY
BEFORE THE
ALASKA HOUSE OIL & GAS COMMITTEE
FRIDAY, MARCH 15, 1991

GOOD AFTERNOON MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, AND LADIES AND GENTLEMEN. MY NAME IS GUS ELMER, AND I AM PRESIDENT OF THE EXXON SHIPPING COMPANY.

EXXON SHIPPING COMPANY (ESC) IS A SEPARATE CORPORATE ENTITY REGISTERED IN DELAWARE AND WHOLLY OWNED BY EXXON CORPORATION. WE OWN AND OPERATE 13 OCEANGOING TANKERS, TEN OF WHICH ARE CRUDE CARRIERS OPERATING ON THE WEST COAST. NINE OF THESE WEST COAST CRUDE VESSELS OPERATE IN NORTH SLOPE CRUDE SERVICE, AND ONE TRANSPORTS CRUDE OIL FOR EXXON COMPANY, U.S.A.'S OFFSHORE CALIFORNIA PRODUCTION OPERATIONS. WE ALSO HAVE ONE CRUDE CARRIER IN FOREIGN SERVICE AND TWO SPECIALTY CARRIERS THAT TRANSPORT PRODUCTS FROM THE U.S. GULF COAST TO THE U.S. EAST COAST.

WE ARE PLEASED TO BE INVITED TO REVIEW WITH YOU THE OPERATIONS OF OUR VESSELS CALLING AT VALDEZ. AS YOU ARE AWARE, A NUMBER OF ALLEGATIONS HAVE BEEN MADE REGARDING OUR BALLAST OPERATIONS AND THEIR IMPACT ON THE ALYESKA BALLAST WATER TREATMENT PLANT AT VALDEZ. THESE ALLEGATIONS IMPLY THAT THROUGH OUR OPERATIONS, WE VIOLATE FEDERAL, STATE, AND LOCAL LEGISLATION AND REGULATIONS. I AM HERE TODAY TO ASSURE YOU THAT THESE CHARGES ARE CATEGORICALLY FALSE AND TOTALLY UNFOUNDED.

THEREFORE, I AM PREPARED TO EXPLAIN HOW OUR VESSELS CARRY OUT THEIR BALLAST OPERATIONS IN THIS TRADE AND TO RESPOND TO YOUR QUESTIONS. WE WILL ALSO USE A NUMBER OF VISUAL AIDS TO FACILITATE OUR DISCUSSION.

LET ME START BY ASSURING YOU THAT WE ARE NOT TRANSPORTING WASTE FROM NON-TANKER OPERATIONS, WE ARE NOT TRANSPORTING WASTE FROM TANKERS NOT IN NORTH SLOPE SERVICE TO THE PORT OF VALDEZ, AND WE ARE NOT DISCHARGING WASTES FROM THESE TYPES OF OPERATIONS INTO THE ALYESKA BALLAST WATER TREATMENT PLANT OR INTO ALASKAN WATERS.

- 2 -

NORTH SLOPE TANKER OPERATIONSCHART 1 ON:

THIS FIRST CHART DESCRIBES THE TRADE ROUTES OF OUR VESSELS THAT ARE IN ALASKAN NORTH SLOPE CRUDE SERVICE. AS SHOWN ON THIS CHART, THESE TANKER OPERATIONS HAVE VALDEZ, ALASKA, AS THE LOAD PORT. THE CARGO DISCHARGE PORTS ARE IN THE STATES OF WASHINGTON AND CALIFORNIA.

ON AVERAGE, ABOUT 13 CARGOES ARE LOADED EACH MONTH AT VALDEZ ON EXXON SHIPPING COMPANY OWNED VESSELS. ONE CARGO PER MONTH IS DELIVERED TO EXXON COMPANY, U.S.A. CUSTOMERS IN THE PUGET SOUND AREA. THE BALANCE IS DELIVERED TO CALIFORNIA PORTS. AS SHOWN ON THE RIGHT SIDE OF THE CHART, SEVEN VESSELS NORMALLY MAKE THE JOURNEY TO VALDEZ. THEY RANGE IN SIZE FROM THE 72 KDWT EXXON NEW ORLEANS TO THE 211 KDWT EXXON LONG BEACH. TWO ADDITIONAL VESSELS, THE EXXON BAYTOWN AND THE EXXON GALVESTON, SERVE AS OUR LIGHTERS IN SAN FRANCISCO BAY. AS SUCH, THESE TWO VESSELS ARE IN FACT EXTENSIONS OF OUR VALDEZ TRADERS.

CHART 1 OFF

- 3 -

CHART 2 ON:

ON THE SECOND CHART WE HAVE A MAP OF THE BAY AREA, AND USING IT, I CAN GIVE YOU AN EXPLANATION OF THE PURPOSE OF THE TWO LIGHTER VESSELS. EXXON COMPANY, U.S.A.'S REFINERY AT BENICIA AND THE TERMINALS OF OTHER MAJOR REFINERS ARE SHOWN ON THIS MAP. WHEN LOADED, SEVERAL OF OUR LARGER TANKERS REQUIRE WATER DEPTHS WHICH EXCEED THAT AVAILABLE AT THE DISCHARGE DOCKS. THUS, WE BRING THE VALDEZ LOADED VESSEL TO ANCHOR IN AN AUTHORIZED ANCHORAGE ZONE IN THE LOWER BAY AREA. THEN, USING THE EXXON GALVESTON AND THE EXXON BAYTOWN AS SHUTTLE VESSELS, WE DELIVER CRUDE TO THE EXXON REFINERY AND TO EXXON U.S.A.'S CUSTOMERS IN THE BAY AREA. IN SOME CASES, THE LARGE VESSEL PROCEEDS TO A TERMINAL DOCK TO COMPLETE ITS CARGO DELIVERY AFTER ONE OR MORE LIFTINGS BY THE LIGHTER VESSELS. HOWEVER, ON ONE SHIP, WE LIGHTER THE ENTIRE CARGO WITH THE LARGE VESSEL NOT GOING TO A DOCK AT ALL. THUS, THE EXXON GALVESTON AND EXXON BAYTOWN ARE EVERY BIT AS MUCH A PART OF THIS TRADE AS A VESSEL THAT MAKES THE ROUND TRIP FROM CALIFORNIA TO VALDEZ AND THEN BACK TO CALIFORNIA.

CHART 2 OFF

THAT IS A BRIEF OVERVIEW OF OUR VALDEZ/U.S. WEST COAST TANKER TRAFFIC SYSTEM. I WILL NOW TURN TO THE NEXT CHART WHICH WILL HELP EXPLAIN OUR BALLAST OPERATIONS.

VESSEL CARGO AND BALLAST TANK LAYOUTS

CHART 3 ON:

THIS IS A PLAN VIEW OF ONE OF OUR VESSELS GIVING THE DETAIL OF THE TANK LAYOUT. FOR THIS PURPOSE, WE HAVE CHOSEN THE CONFIGURATION OF TWO OF OUR LARGER TANKERS: THE EXXON NORTH SLOPE AND THE EXXON BENICIA. THERE ARE 19 TANKS SHOWN IN THIS DIAGRAM. NOTE THAT I HAVE NOT SHOWN THE TANKS WHICH ARE ASSOCIATED WITH THE ENGINE ROOM AND PERSONNEL ACCOMMODATION SPACES. I WILL SHOW YOU A SEPARATE DIAGRAM OF THAT AREA LATER. SOME TANKS HAVE A SINGLE DUTY, WHILE OTHERS MAY SERVE MORE THAN ONE ROLE DURING THE COURSE OF A ROUND TRIP.

CHART 3 OFF

CHART 4 ON:

THIS CHART SHOWS THE VESSEL WITH THE SEGREGATED BALLAST TANKS HIGHLIGHTED IN BLUE (360 KB). THESE TANKS ARE USED EXCLUSIVELY FOR CARRYING CLEAN SEA WATER. THE PIPING SYSTEM THAT SERVES THESE TANKS IS TOTALLY SEGREGATED FROM THE CARGO SYSTEM AND, THUS, OIL IS NEVER CARRIED IN THESE TANKS. THEREFORE, THE CONTENTS FROM THESE TANKS, CONSISTENT WITH U.S. COAST GUARD REGULATIONS, CAN BE DISCHARGED DIRECTLY BACK INTO THE SEA WITHOUT FEAR OF POLLUTION.

CHART 4 OFF

CHART 5 ON:

THIS CHART AGAIN SHOWS A PLAN VIEW OF THE VESSEL BUT THIS TIME THE CARGO ONLY TANKS ARE HIGHLIGHTED IN YELLOW STRIPES. DURING NORMAL OPERATIONS, THESE TANKS ARE USED SOLELY FOR CARRYING CARGO SOUTHWARD.

CHART 5 OFF

CHART 6 ON:

THIS CHART HIGHLIGHTS THOSE TANKS THAT SERVE A DUAL PURPOSE. THEY ARE SHOWN WITH A RED STRIPED PATTERN. ON THE SOUTH BOUND LOADED VOYAGE, THEY ARE CARGO TANKS. ON THE NORTH BOUND VOYAGE, THEY MAY BE LOADED WITH WATER TO PROVIDE ADDITIONAL BALLAST. SINCE THESE TANKS HAVE HAD CRUDE OIL IN THEM, THEY ARE CALLED NON-SEGREGATED BALLAST TANKS. UPON RETURN TO VALDEZ, THE BALLAST WATER IN THESE TANKS IS DISCHARGED INTO THE VALDEZ BALLAST WATER TREATMENT PLANT. THIS IS DONE TO ELIMINATE THE POSSIBILITY OF DISCHARGING OIL INTO THE SEA FROM THE VESSEL.

CHART 6 OFF

ENGINE ROOM TANK LAYOUT

CHART 7 ON:

THIS NEXT CHART HIGHLIGHTS SOME OF THE TANKS CONTAINED IN THE STERN SECTION OF THE VESSEL. MOST OF THE TANKS SHOWN ARE THOSE USED IN THE ENGINE ROOM OPERATIONS. THESE TANKS ARE PRIMARILY ASSOCIATED WITH THE FUEL, LUBRICATING OIL, AND HYDRAULIC FLUIDS REQUIRED IN THE ENGINE ROOM. IN ADDITION, THERE ARE OTHER TANKS, NOT SHOWN, SUCH AS THE SEWAGE HOLDING TANKS WHICH, OF COURSE, ARE REQUIRED FOR THE CREW'S ACCOMMODATIONS. THESE LATTER TANKS ARE IN NO WAY CONNECTED TO THE BALLAST SYSTEM.

IN THE ENGINE ROOM, WE HAVE BILGE WATER WHICH IS SIMPLY THE LIQUID (PRIMARILY WATER) THAT ACCUMULATES IN THE BILGE AREA OF THE SHIP, THAT IS THE VERY LOWEST PART OF THE ENGINE ROOM. AS I SAID, IT IS PRINCIPALLY WATER AND SMALL QUANTITIES OF OTHER MATERIALS THAT FIND THEIR WAY TO THE BOTTOM OF THESE ENGINE SPACES.

CHART 7 OFF

CHART 8 ON:

THIS CHART IS A FLOW DIAGRAM OF THE BILGE SYSTEM. IT ALSO GIVES TYPICAL QUANTITIES AND COMPOSITIONS THAT ARE GENERATED ON A VOYAGE TO VALDEZ. EXAMPLES OF SOME OF THESE "OTHER" MATERIALS IN THE BILGE WATER ARE: ENGINE OIL DRIPPINGS, FUEL, AND DEGREASERS USED TO CLEAN EQUIPMENT. ALL OF THOSE NON-WATER MATERIALS AMOUNT TO LESS THAN ONE-HALF OF ONE BARREL ON A TYPICAL NORTH-BOUND VOYAGE AND ARE PUMPED WITH THE BILGE WATER INTO ONE OF THE SMALLER CARGO TANKS. ALSO, USED CYLINDER OIL AND RESIDUE FROM THE FUEL FILTER AND PURIFICATION SYSTEM (WHICH BY THE WAY IS 95% WATER) IS GATHERED IN THE ENGINE ROOM AND ALSO PLACED IN THIS SMALLER CARGO TANK. THE TOTAL AMOUNT OF MATERIAL WE ARE DISCUSSING IN THE BILGE AND RESIDUE SYSTEM TYPICALLY AMOUNTS TO ABOUT 75 BARRELS PER NORTH BOUND VOYAGE, AND IT IS MORE THAN 95 PERCENT WATER. THIS MATERIAL THEN BECOMES PART OF OUR NON-SEGREGATED BALLAST ON BOARD THE VESSEL. I WILL DISCUSS ON A LATER CHART HOW WE HANDLE THE NON-SEGREGATED BALLAST ONCE WE REACH VALDEZ.

CHART 8 OFF

USE OF CLEANING AGENTS FOR TANK CLEANING

TURNING BACK TO CARGO TANK OPERATIONS, WE CARRY OUT AN EXTENSIVE TANK STRUCTURAL INSPECTION PROGRAM ABOARD OUR VESSELS, AND PERIODICALLY EACH VESSEL MUST GO INTO A SHIPYARD FOR REPAIRS. THIS IS DONE TO ENSURE THAT OUR VESSELS ARE IN THE VERY BEST POSSIBLE CONDITION. THESE OPERATIONS REQUIRE THAT PERSONNEL ENTER THE TANKS TO SURVEY THE STRUCTURE OF THE VESSEL. PRIOR TO ENTRY, THE TANKS HAVE TO BE CLEANED TO ENSURE THAT THE ATMOSPHERE IS SAFE. TO ACHIEVE THIS, WE USE A WATER WASH TO REMOVE ANY OILY RESIDUE REMAINING AFTER CARGO DISCHARGE. IF CONSIDERED NECESSARY TO ENSURE PERSONNEL SAFETY, A CLEANING AGENT WOULD BE USED. FOLLOWING THE STRUCTURAL INSPECTIONS, THE WASHINGS, CONTAINING SMALL QUANTITIES OF OIL AND VERY SMALL QUANTITIES OF CLEANING AGENT, ARE RETAINED ON BOARD AND SERVE AS PART OF THE NON-SEGREGATED BALLAST ON THE NORTHBOUND TRIP.

CHART 9 ON:

THIS NEXT CHART GIVES YOU AN OVERVIEW OF THIS OPERATION. FOR PERSPECTIVE, ON A VESSEL WITH A CARRYING CAPACITY OF 1 MILLION BARRELS, WE WOULD USE 35-40 BARRELS OF THE CLEANING AGENT MIXED WITH 50,000 BARRELS OF WASH WATER, ALL OF WHICH BECOMES PART OF THE NON-SEGREGATED BALLAST. AS I HAVE STATED, THE CLEANING AGENT IS A PETROLEUM BASED PRODUCT AND HAS A GRAVITY MUCH LIGHTER THAN WATER AND, THUS, MOSTLY FLOATS ON TOP OF THE BALLAST WATER. THE PROCEDURES WE FOLLOW WHEN DISCHARGING THE NON-SEGREGATED BALLAST AT VALDEZ, WHICH I WILL DESCRIBE ON A LATER CHART, ENSURE THAT A SIGNIFICANT PORTION OF THE CLEANING AGENT SHOULD BE RETAINED ON BOARD THE VESSEL AND COMMINGLED WITH THE CRUDE CARGO ON THE SOUTH BOUND VOYAGE.

CHART 9 OFF

THERE HAVE BEEN QUESTIONS RAISED ABOUT THE USE OF THESE CLEANING AGENTS AND WHETHER THEY ARE HARMFUL TO THE OPERATION OF THE BALLAST TREATMENT PLANT. FIRST, THE CLEANING AGENTS WE USE FOR THE CARGO TANKS ARE PETROLEUM BASED PRODUCTS AND THUS ARE COMPATIBLE WITH THE OIL RECOVERY AND TREATMENT PROCEDURES AT THE VALDEZ BALLAST WATER SYSTEM. SECONDLY, LET ME ASSURE YOU THAT THE USE OF CLEANING AGENTS IS A VERY INFREQUENT OCCURRENCE. OVER THE PAST THREE YEARS, WE HAVE USED CLEANING AGENTS SIX TIMES. AND IN ALL CASES, DISCHARGE OF THE BALLAST WATER ASSOCIATED WITH THIS OPERATION WAS DISCUSSED AND PREAPPROVED BY ALYESKA. FURTHER, THERE IS NO EVIDENCE THAT THE VERY LIMITED QUANTITIES THAT END UP IN THE BALLAST WATER IN ANY WAY INTERFERES WITH THE OPERATION OF THE ALYESKA BALLAST TREATMENT PLANT.

FURTHER WORK HAS BEEN DONE TO REAFFIRM THAT THERE ARE NO PROBLEMS WITH TREATING THE WASH WATER. IN CONCERT WITH EPA, ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION AND ALYESKA, THE DISCHARGE OF THE BALLAST FROM THE EXXON NORTH SLOPE ON FEBRUARY 18TH WAS CLOSELY SAMPLED AND MONITORED. WE HAD USED THE CLEANING AGENT ON THIS SHIP AND SAMPLES WERE TAKEN BOTH OF THE BALLAST WATER COMING FROM THE VESSEL AND THE EFFLUENT FROM THE BALLAST WATER TREATMENT PLANT. WE HAVE BEEN ADVISED BY ALYESKA THAT ABSOLUTELY NO PROBLEM WAS DETECTED IN THE CHEMICAL ANALYSIS OR IN THE OBSERVED OPERATION OF THE BALLAST WATER TREATMENT PLANT.

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BALLAST TRANSFER PROCEDURES

CLAIMS HAVE BEEN MADE THAT WE HAVE USED THE EXXON GALVESTON TO TRANSFER WASTE GENERATED FROM NON-VESSEL RELATED CALIFORNIA OPERATIONS TO NORTH BOUND TANKERS SO AS TO DISPOSE OF THIS WASTE INTO THE ALYESKA BALLAST WATER TREATMENT PLANT. THESE ALLEGATIONS ARE TOTALLY FALSE. LET ME EXPLAIN OUR OPERATIONS, AND THIS NEXT CHART WILL ASSIST.

CHART 10 ON:

OUR VESSELS ARE SCHEDULED FOR PERIODIC SHIPYARD REPAIRS EVERY 24 TO 30 MONTHS. THUS, AFTER CARGO DISCHARGE, THE VESSEL DOES NOT RETURN IMMEDIATELY TO VALDEZ. FURTHER, ALL OF THE TANKS HAVE TO BE CLEANED AT THIS TIME TO ENSURE SAFE ENTRY BY CREW AND SHIPYARD PERSONNEL. WE CARRY OUT THIS CLEANING PROCEDURE AT THE OFFLOADING PORT, MOST FREQUENTLY SAN FRANCISCO BAY. IN THIS CASE, THE WASHINGS ARE TRANSFERRED FROM THE VESSEL BEING PREPARED FOR THE SHIPYARD TO THE EXXON GALVESTON. THESE WASHINGS, ALL COLLECTED FROM VESSELS ENGAGED IN NORTH SLOPE SERVICE, ARE RETAINED ON BOARD THE EXXON GALVESTON AND THEN TRANSFERRED TO THE NEXT NORTHBOUND VALDEZ TRADER. ON BOARD THIS NORTHBOUND VESSEL, THESE WASHINGS SERVE AS NON-SEGREGATED BALLAST AND ARE DISCHARGED INTO THE BALLAST WATER TREATMENT PLANT AT VALDEZ. THE WASHINGS REPLACE AN EQUAL AMOUNT OF BALLAST THE RETURNING VESSEL WOULD HAVE TO ADD ON IT'S TRIP NORTH, SO THERE IS NO OVERALL INCREASE IN BALLAST WATER RETURNED TO VALDEZ.

CHART 10 OFF

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ALYESKA PROCEDURES

CHART 12 ON:

THIS FINAL CHART DISPLAYS THE FORMS WHICH OUR SHIPS' OFFICERS COMPLETE UPON ARRIVAL AT VALDEZ. THE ONE AT THE TOP IS THE BALLAST WATER SURVEY FORM REQUIRED BY ALYESKA. IT ASKS FOR INFORMATION ON THE QUANTITY OF BALLAST WATER, WHETHER BILGE WATER OR ENGINE ROOM RESIDUE WILL BE DISCHARGED, THE USE OF CLEANING AGENTS, ETC. THIS FORM PROVIDES ALYESKA THE INFORMATION THEY NEED TO ENSURE COMPLIANCE WITH THEIR PERMIT.

THE SECOND FORM IS TWO PAGES, AND IT IS FILED BY OUR AGENT WITH THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION. THIS FORM ALSO REQUESTS INFORMATION ON THE VOYAGE, THE QUANTITY OF BALLAST, AND WHETHER THE SHIPBOARD PROCEDURES INCLUDED DISCHARGING BALLAST AT SEA.

CHART 12 OFF

PRIOR TO SUMMARIZING MY COMMENTS, I WOULD LIKE TO ADD THAT IN ADDITION TO THOROUGHLY REVIEWING THE CURRENT OPERATING PRACTICES WE HAVE BEEN FOLLOWING FOR A NUMBER OF YEARS, WE HAVE DONE A GREAT DEAL OF RESEARCH INTO THIS MATTER. WE HAVE REVIEWED OUR BALLAST OPERATIONS OVER THE LAST TEN YEARS; AND TO THE BEST OF OUR KNOWLEDGE, ONLY ON ONE OCCASION WAS WASH WATER FROM A TANKER NOT IN NORTH SLOPE TRADE DISCHARGED AT VALDEZ. THIS OCCURRED IN 1984 AND INVOLVED A SMALL TANKER ON THE WEST COAST. THE BALLAST OPERATION WAS DISCUSSED AND PREAPPROVED BY ALYESKA PRIOR TO DISCHARGE AT VALDEZ.

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SUMMARY

TO SUMMARIZE MY COMMENTS:

- (1) THE ONLY MATERIAL THAT EXXON SHIPPING COMPANY'S VESSELS DISCHARGE DIRECTLY INTO ALASKAN WATERS IS THE CLEAN SEA WATER CONTAINED IN THE SEGREGATED BALLAST TANKS.
- (2) THE BALLAST WATER WE DISCHARGE INTO THE ALYESKA BALLAST WATER TREATING PLANT IS THAT DIRECTLY ASSOCIATED WITH OUR ALASKAN NORTH SLOPE CRUDE TANKER OPERATIONS.
- (3) TO ENSURE THE SAFETY OF THE ATMOSPHERE IN OUR TANKS FOR PERSONNEL, WE INFREQUENTLY USE SMALL VOLUMES OF PETROLEUM BASED CLEANING AGENTS TO CLEAN CARGO TANKS BEFORE INSPECTIONS OR REPAIRS. A SIGNIFICANT PORTION OF THE CLEANING AGENT IS RETAINED ON BOARD. DISCHARGE OF THE BALLAST WATER CONTAINING VERY LIMITED QUANTITIES OF THE CLEANING AGENT IS ACCEPTED BY ALYESKA AND DOES NOT CREATE BALLAST WATER PERMIT PROBLEMS.
- (4) INFREQUENTLY, WE DO CARRY OUT BALLAST TRANSFERS BETWEEN SHIPS PRIOR TO SHIPYARD REPAIRS. THIS IS A SIMPLE EXTENSION OF THE ALASKAN NORTH SLOPE LOGISTICS OPERATION.
- (5) WE CAREFULLY FOLLOW ALYESKA PROCEDURES SO AS TO ASSIST THEM IN MEETING THEIR PERMIT REQUIREMENTS.

MR. CHAIRMAN, MEMBERS OF THE COMMITTEE, THIS CONCLUDES MY PREPARED TESTIMONY. I TRUST THAT THIS TESTIMONY HAS MADE IT VERY CLEAR THAT WE OPERATE IN A VERY REPUTABLE MANNER, AND WE TAKE ANY ALLEGATIONS ABOUT OUR OPERATIONS VERY SERIOUSLY.

I THANK YOU FOR YOUR ATTENTION AND WOULD BE PLEASED TO RESPOND TO ANY QUESTIONS YOU MAY HAVE AT THIS TIME.

Testimony of
Gene Dickason
Manager, Environment Department
Alyeska Pipeline Service Company

Before The
House Special Committee on Oil and Gas
Alaska Legislature
March 15, 1991

My name is Gene Dickason and I am the Manager of Alyeska Pipeline Service Company's Environment Department. Alyeska appreciates the opportunity to testify before the House Special Committee on Oil and Gas on the Ballast Water Treatment (BWT) facility in Valdez. My testimony today will address charges that Alyeska has received and processed unpermitted substances at the Valdez BWT facility. Exxon Shipping Company will discuss its vessel operations that affect discharges from Exxon vessels to the ballast water treatment facility.

To begin, I would like to state that Alyeska is in full compliance with the terms and conditions of the NPDES permit granted by EPA and concurred upon by ADEC for the operation of the BWT facility at Valdez. If, by discussing the exact operations of our facility and the operations of the tankers unloading ballast at Valdez, we can generate confidence among you that our facility is operating in an environmentally responsible manner, then we will happily do so. It is in that light that I make the following remarks.

First, let me describe ballast water treatment generally. The facility at Valdez is designed to clean oily water from incoming tankers and terminal operations. Two processes are used to treat the oily water: mechanical oil/water separation techniques are used to recover oil from the oily water and biological treatment is used to remove dissolved hydrocarbons. Water from this system is then discharged into Port Valdez, as allowed by an NPDES permit for the facility. The new permit limits the amount of aromatic hydrocarbons (BETX) in the effluent to 1.3 ppm. Except for occasional exceedances, Alyeska has been meeting this standard for several years.

Before I discuss tanker operations and the BWT facility, I will provide a brief regulatory history of the BWT facility at Valdez.

It has been a policy of the United States to encourage the onshore disposal and processing of oily water from tank vessels since it became apparent that marine disposal of unprocessed ballast was environmentally unsound. This policy was formalized with the passage of the Ports and Tanker Safety Act of 1978, the Prevention of Pollution from Ships Act of 1980 and the ratification of the International MARPOL Conventions in 1973 and 1978.

The United States and the State of Alaska implemented this policy by requiring in the original federal and state Right-of-Way Agreements that Alyeska build and operate a BWT facility at the Valdez Marine Terminal. Since that time Alyeska has received a series of three NPDES permits issued in 1975, 1980 and 1989 for the discharge of treated water into Port Valdez. The current permit was originally granted in June, 1989 and was slightly modified in November of last year.

The permit requires Alyeska to operate the BWT facility under a series of operating rules known as Best Management Practices Plan or BMPP. In concert with the permit, this series of procedures agreed to by Alyeska, EPA and DEC spells out the detailed processes Alyeska must undertake to correctly implement the NPDES permit. The BMPP associated with the current BWT NPDES permit for was approved in 1987 and has been amended from time to time since then.

The Issues

Recently charges have been made that tankers have collected toxic wastes from West Coast sources and "dumped" them into Alyeska's BWT facility. My response to these charges will take three parts. First I'll describe a bit of regulatory history of specific relevance to this case, then I'll discuss the four major areas of concern we have been working with EPA, ADEC and the tanker owners to resolve. Finally I'll summarize our BWT facility's excellent environmental record.

The issue of inappropriate discharge into the Valdez BWT facility is not new. In 1985 similar assertions were made regarding illegal use of Alyeska's terminal as an illicit dumping site for toxic substances. At that time the EPA investigated this allegation and in 1988 determined that "no additional enforcement action is appropriate at this time." The allegations "could not be substantiated or had already been addressed by EPA and resolved by Alyeska." The State of Alaska also conducted an investigation into these charges and found no reason to take action against Alyeska. With a few exceptions, industry practices have remained constant since the time of that investigation

Alyeska and the Prince William Sound Tanker Association have made a good faith effort since the current allegations were made to cooperate with the EPA or ADEC to review and evaluate tanker operations that might affect the performance of the BWT system. As recently as March 8, 1991, we met with ADEC and EPA officials, at Alyeska's request, to explain tanker operations, and to identify questions that must be resolved in order for Alyeska to accommodate all reasonable tanker practices. The tenor of the meeting was constructive; the regulators were genuinely interested in learning about the tanker practices and resolving open issues.

To identify and characterize tanker operations that might affect BWT performance, Alyeska reviewed all 1484 Ballast Water Survey forms submitted by tankers as part of their deballasting procedures since June 1989, when the current permit became effective.

Upon arrival at the Terminal tanker captains submit their forms, which detail the types and quantities of ballast to be off-loaded. This type of documentation is required before any ballast are off-loaded. A copy of a submitted Ballast Water Survey Form is attached.

Of the 1484 forms, 71 indicated that ballast water was affected by something in addition to ANS crude oil originating on board the deballasting vessel. You will note that the attached form is one of the forms indicating anomalous ballast. Alyeska's summary of the 71 forms provided to the EPA and DEC is attached. As you can see the 71 incidents noted fall into four categories: 1) Transferred Ballast, 2) Cleaning Agents, 3) Prior Cargo Not ANS Crude and 4) Other Contaminants. Alyeska shared this information with the EPA and DEC to provide a basis for review and discussion of normal operations of tankers in the TAPS trade. A representative of the Prince William Sound Tanker Association attended the meeting to provide first-hand knowledge.

Transferred Ballast

Transfers of ballast water and tank washings from one vessel in the TAPS trade to another vessel bound for Valdez are fairly common and occur when vessels are going into dry dock, need to have a tank inspected or are leaving the TAPS trade on behalf of a particular owner or charterer.

Vessels are required to enter dry dock at least once every two and one-half years. Recently, the Coast Guard has requested that the six vessels in the TAPS trade in the 165,000 dwt class undergo semi-annual structural inspections. These activities require tanks to be washed, before entering a shipyard or other facility. The available facilities on the West Coast have a limited capacity to receive and treat tank washings and ballast. As a result, either the ballast may be stored on shore and then returned to vessel for its subsequent trip to Valdez or they are transferred to another north bound TAPS trade vessel for discharge to the BWT facility in Valdez. The end result is the same. Ballast water from ANS trade vessels is treated at our BWT facility using procedures designed to recover and treat the oil in the water. While we are reviewing this issue with EPA and DEC, case by case prior approval will be required before Alyeska can receive

"transferred ballast". Alyeska will only seek approval if the transferred ballast comes from another vessel in the TAPS trade.

Cleaning Agents

In order to thoroughly clean a tank to make it safe under OSHA standards for human entry, cleaning agents are sometimes used. Our present permit allows Alyeska to accept crude tank washings from TAPS trade vessels containing petroleum-based cleaning agents, as ballast into our BWT system. We believe that petroleum based cleaning agents do not have a deleterious effect on our system and do not contain other harmful substances. We will be working with the EPA and DEC to develop a list of approved cleaning agents that are compatible with the BWT system.

Prior Cargo Not ANS Crude

As you can see from the attachment, during the last 20 months 40 vessels arrived in Valdez whose prior cargo was not ANS crude oil. We believe each of the prior petroleum cargoes was compatible with the BWT system and did not cause any problems for us in meeting our permit limits. A preliminary review of our BWT performance during that same period of time indicates that there was no correlation between these prior cargoes and system upsets.

The EPA and DEC agreed that our permit allows Alyeska to receive ballast contaminated with non-ANS crude prior cargoes and indicated that they knew of no reason that those cargoes should negatively affect our permit compliance.

Other Contaminants

It is inevitable that the operation of tankers will consume fuel and a variety of lubricants. Relatively small amounts of these petroleum

products are captured in vessel bilges, along with water. Under existing regulations and operations, these waters may be discharged to the BWT facility, for oil recovery and treatment. Most of these used petroleum products, that are not dissolved in water, are retained on board, mixed with the tankers crude oil cargo and are ultimately transferred to a refinery. Discussions with the agencies will continue, in order to identify engine room practices and to verify that these sources of oily water do not impair the performance of the BWT facility. We are cooperating with the agencies in an attempt to resolve any concerns they may have.

Alyeska is satisfied that these discussions will yield a better understanding of tanker practices by the regulatory agencies and allow Alyeska to fully accommodate the necessary operations of the tankers that carry ANS crude.

Environmental Studies of Port Valdez

I would also like to briefly comment on the general issue of the environment in Port Valdez after almost 14 years of operation of the BWT facility. Port Valdez is probably the most carefully scrutinized marine environment in all Alaska, if not the world. The level of study and examination of the physical environment as well as the plant and animal communities has been as comprehensive as any done anywhere in the world for a facility such as this. These studies conclude that the marine life in Port Valdez appears not to have been adversely affected at all by the operation of the BWT facility.

As an example of the impacts of this project let me summarize a recent series of experiments. An independent contractor attempted to find out what concentration of the actual BWT effluent would be necessary to kill two of the most sensitive marine creatures naturally occurring in the area, coon-striped shrimp and pink salmon smolts. The idea was to place a

group of each into water with increasing concentrations of effluent and judge their reactions. Remember that the effluent when released into Port Valdez is immediately diluted and significant concentrations never actually exist in the water column.

The results were that it was impossible to determine the acute toxicity as required by the Department of Environmental Conservation because of the high survival rates of the fish and shrimp in 100% BWT effluent. Given the tremendous dilution rate of the effluent when it is discharged this demonstration of the effluent's relative intoxicity should quell much of the controversy surrounding the BWT facility's impact on Port Valdez.

Another issue recently raised is "heavy metals." Critics imply that Port Valdez is being polluted with an unacceptable level of heavy metals discharged from the BWT facility. Heavy metals monitoring was required under previous BWT NPDES permits. Alyeska complied with the requirements, monitored the heavy metals levels in the effluent and notified EPA as required. However the level of heavy metals found in the effluent was so low that EPA eventually reduced the permit's metals monitoring requirement so that we only monitor for zinc, which is used for cathodic protection against corrosion in the vessels. Periodic testing since then has failed to show significant quantities of heavy metals either.

Procedural Changes

Alyeska has examined its BWT intake procedures in light of the recent concern with the issue of transferred ballast. While agency review is underway, Alyeska has agreed to take additional steps to assure EPA and DEC that unacceptable materials are not off-loaded to, or treated by, the BWT facility at Valdez. For the time being, Alyeska and the affected tanker owners have agreed to seek EPA approval on a case by case basis before discharging any ballast transferred from other vessels, or associated "washings", into the BWT

facility at Valdez. A memorandum was sent to all tankers in the Valdez trade making them aware of the new procedures. A copy of that memorandum is attached for your review. These interim procedures will evolve as discussions with the EPA and DEC continue.

Additionally, Alyeska is obtaining from the tanker owners information about the contents of the cleaning agents used during periodic crude tank cleanings. We have no knowledge of cleaning agents being used other than those we are permitted to handle at the BWT, but we will gather additional information on this issue.

In conclusion I would like to emphasis four points made in these comments:

1. Alyeska has not violated the terms of the current NPDES permit for the BWT facility at Valdez.
2. The BWT facility is treating substances the facility was designed to treat; and that state and federal law require us to treat.
3. An elaborate legal and administrative system has been established to insure that vessel operators fully disclose the contents of any discharges into the BWT facility at Valdez, and
4. We are fully cooperating with the EPA and ADEC to learn even more about on-vessel operations that might affect the BWT facility and Port Valdez.

Alyeska appreciates the opportunity to present this information to the Committee. I would be pleased to provide further information on any of these issues.

Dickason Testimony
March 15, 1991
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Attachments:

- 1) February 1991 Valdez Marine Terminal Ballast Water Treatment Operations, History and Effects
- 2) Ballast Water Survey Form, Exxon Long Beach, 5/5/90
- 3) Summary of Ballast Water Survey Forms
- 4) Memorandum, March 4, 1991, Captain T.F. Plummer to Tank Vessels

**VALDEZ MARINE TERMINAL
BALLAST WATER TREATMENT**

- Operations, History and Effects -

February 1991

Alyeska pipeline
SERVICE COMPANY

VALDEZ MARINE TERMINAL BALLAST WATER TREATMENT

- Operations, History and Effects -

I. BWT Operations

- A. Elements
- B. Facilities

II. BWT History

- A. The Law and Permits
- B. Standards and Compliance

III. BWT Effects

- A. Environmental Studies
- B. Conclusions

I. BWT OPERATIONS

A. ELEMENTS

Tankers arriving at Alyeska's marine terminal in Valdez almost invariably contain ballast water: seawater taken on for stability by tankers after they have delivered their cargo at the prior port of call. When carried in a ship's tanks which are otherwise used for oil, the ballast water becomes contaminated with the remnants of the oil previously contained there.

This "non-segregated" ballast must be discharged into the ballast water treatment (BWT) system for processing by Alyeska. The oil content of the ballast water as it is pumped from the vessels is usually less than 1 percent.

The Alyeska BWT system has a two-fold purpose: (1) to recover crude oil from the ballast water and (2) to separate and process the water in order to return it safely to the sea. The residue oil separated out during treatment is returned to the crude oil system. The remaining water, when processed sufficiently to remove contaminants, is discharged through a diffuser into the waters of Port Valdez.

During the past 13 years, more than 10,000 tankers have arrived at the Alyeska terminal in Valdez. The BWT facilities process about 16 million gallons of ballast water daily.

BWT/2

B. FACILITIES

The Alyeska BWT system has been an integral part of the Trans Alaska Pipeline System since its inception. Although the BWT plant was designed initially to remove oil and grease compounds, the process also removed some aromatic hydrocarbons. The regulations at the time required only oil and grease removal. The BWT system now involves a three-step process as illustrated in Attachment 1 and described below: two steps to remove insoluble oil and one step to treat the soluble fraction of the oil in the water.

Settling Tanks

After a vessel docks at the Valdez terminal, the ballast water is piped to one or more of three settling tanks for the initial stage of oil recovery. Each of the three tanks has a 430,000 barrel capacity. Oil naturally floats on water, and the oil separation process uses this principle.

As the oil floats to the surface of the water, floating skimmer pans siphon off the oil from the top of the tank. The oil is then piped to one of two oil storage tanks nearby where it remains until it is returned to an outgoing vessel. This initial oil recovery process is usually complete in less than four hours.

Dissolved Air Flotation

The water which has been clarified through the separation process in the settling tanks then flows through a pipe to the Dissolved Air Flotation (DAF) chambers, a special recovery plant containing six cells, for further oil recovery. This stage of the BWT process relies on microscopic bubbles of air and a polymer to accelerate the process of separating the remaining oil from the water.

The air bubbles and the polymer attract the oil molecules and cause them to float to the surface. The polymer forms a sticky microscopic lattice in the water. The air bubbles float the polymer to the surface, attracting and holding together the oil molecules which have risen to the tops of the DAF cells. The recovered oil is piped to one of two oil storage tanks, and the waters flow on to the impound basins for biological treatment.

Biological Treatment

In the early days of operation, Alyeska's impound basins were used for final collection prior to discharge. If upstream processes did not work properly, then the contents of the basins could be recycled for further treatment. The two parallel impound basins, each approximately 380' by 225' by 13' deep, have sloped sides, except for the discharge ends which are vertical concrete walls. Surface underflow and overflow weirs retain any surface pollutants. The working volume of each basin is approximately 135,000 barrels (5,500,000 gallons).

In 1986, Alyeska decided, on its own, to add a biological treatment process in the two impound basins. The process is based on the discovery that, if the proper conditions exist, certain microbes will 'eat' dissolved oil molecules converting this oil to carbon dioxide, water and more organisms. Specifically, the microbes reduce the concentration of water soluble chemicals (aromatic hydrocarbons) which are present in the crude oil and become dissolved in the ballast water, four of which are collectively known as BETX (benzene; ethylbenzene; toluene; xylene).

The number of microbes which are found in the ballast water from the ships varies depending on where the vessel picked up the ballast water, how long the ballast water has been in the oil tanker and the degree to which the tanker's voyage involved agitation or calm sailing. The BWT system operators work to ensure a proper environment to increase both the population and activity of these oil-eating microbes.

The microbes live in water and need oxygen and nutrients to metabolize the BETX. The ballast water acts as a seawater medium to which nitrogen and phosphorous are added as nutrients. Oxygen is added through the use of aerators which float on the surface of the impound basins. Like most living things, the microbes occasionally perform at less than optimal levels, causing an 'upset' or rise in BETX levels to occur. As seen in Attachment 2, such upsets have not exceeded the current permit limit. Since March of 1990, the monthly average has flattened out altogether.

Because of recent and pending Federal regulations, Alyeska is building new treatment facilities. A new concrete structure, separated into two large tanks, will replace the lined impound basins which have been in use since 1977. The two concrete tanks will facilitate further improvements in the biological treatment process, particularly in mixing, aeration and process controls.

Air strippers will be installed at the end of each of the new tanks and will be used only if necessary to handle the infrequent occasions when an 'upset' has occurred and the oil-eating activity of the microbes decreases. Without the air strippers, these occasional upsets could result in BETX effluent concentrations above regulated levels. The new facilities are due to be operational by February of 1991 and will cost approximately \$30,000,000.

After biological treatment, the ballast water then flows to an outfall line which terminates at the diffuser. The outfall diffuser system was designed to maximize the dilution of the treated ballast with the natural waters in Port Valdez. The treated water travels a distance of 1200 feet in the pipe before reaching the first diffusion port or outlet.

Effluent is discharged through 20 diffuser ports spaced at approximately ten-foot intervals. Water depths along the 200-foot long diffuser range from 200 to 270 feet. Diffusion takes place in the "mixing zone," the area of water near the terminal where mixing is permitted and where compliance with State water quality standards is measured.

II. BWT HISTORY

A. THE LAW AND PERMITS

The Clean Water Act

The objective of the Federal Water Pollution Control Act (U.S.C. 466 et seq.), now known as the Clean Water Act, is to restore and maintain the chemical, physical and biological integrity of the Nation's waters.

Under the Clean Water Act, Alyeska is required to obtain a National Pollutant Discharge Elimination System (NPDES) permit in order to discharge processed water from the BWT facility. The Environmental Protection Agency (EPA) has the authority for issuing the NPDES permit which can be in effect for any period up to five years. If EPA fails to issue a new permit in a timely manner, the provisions of the previous permit remain in effect until the new permit is issued.

Although the responsibility for developing and issuing the permit rests with the EPA, the Alaska Department of Environmental Conservation (ADEC) is authorized to add to NPDES permits such provisions as are necessary to meet State water quality standards or are otherwise related to water quality. Water quality standards are enforceable limits placed on concentrations of a pollutant in the receiving water. ADEC must certify that the water discharged under an NPDES permit meets State water quality standards before EPA can issue the permit.

The First Permit

The first NPDES permit for the BWT was issued in 1975, two years prior to start-up of the pipeline and three years after the passage of the Clean Water Act. It placed limits on oil and grease, acidity and flow volumes. These categories of limits are standard practice worldwide for such facilities, and, as seen in Attachment 3, these are still the only three categories of limits required at the Sullom Voe terminal in the Shetland Islands of Great Britain today.

Additionally the original permit required Alyeska to develop a monitoring program to determine the effects of the ballast water discharge on water quality and marine biota of Port Valdez. Prior to the beginning of terminal operations, the University of Alaska's Institute of Marine Science (IMS) conducted baseline studies to obtain data to use comparatively in subsequent monitoring studies.

The Second Permit

The second NPDES permit was issued to Alyeska in 1980. The limits on oil and grease (reported as total hydrocarbons) were unchanged,

BWT/6

but the EPA imposed reductions on discharge volumes. The permit also required Alyeska to conduct monitoring studies.

With this permit, the EPA additionally imposed limits, for the first time, on aromatic hydrocarbons, specifically BETX -- substances which had coincidentally been removed in the BWT facility without regulation. The limits imposed on BETX were based on performance studies of the treatment plant and were set at 6 parts per million (ppm) for a daily average and 9 ppm for a daily maximum. Besides imposing specific restrictions for BETX, the EPA also required a study of available technology to reduce BETX.

In response, Alyeska invested heavily in research to find the best way to gain control over and further reduce BETX. Among the methods investigated was biological treatment. Experts were unsure, however, whether the biological treatment method would work in the specific environment at Valdez.

More studies revealed that, despite the relative cold in Valdez and other adverse conditions, biological treatment might indeed be the answer. In 1986, after a series of bench tests, Alyeska decided to try full scale biological treatment. Soon it became apparent that the biological process was a resounding success: the average reduction of BETX varies between 80 and 90 percent.

This permit expired by its terms in June 1983. Alyeska had applied for renewal eleven months before, but EPA did not issue a new permit until 1989. In the meantime, the facility continued to operate under the second permit.

The Third Permit

The third NPDES Permit was issued in May 1989 and is still in effect today. Discharge limitations are significantly more strict. BETX has to meet a 1.3 ppm daily maximum limit year-round. As seen in Attachment 3, the Sullom Voe terminal, which is roughly the same size and latitude of the Valdez terminal, has no such requirements. The EPA gave Alyeska until October 1991 to meet the new BETX standards.

Additional limits were placed on naphthalene, a polynuclear aromatic hydrocarbon, to below detection limits. Polynuclear aromatic hydrocarbons (PAH) are considered more persistent than BETX and tend to accumulate in marine organisms. The biological treatment process already reduced PAH to below detection levels as required by the permit. Limits on flow were reduced, moreover, and new limits were also placed on the total amount of solids and organic material present in the water.

Stipulations of the present permit also include conducting effluent toxicity tests. The tests required are (1) chronic (sublethal) tests on sea urchin and mussels and (2) acute (survival) tests on shrimp and pink salmon. Biological, sediment and tissue monitoring is also mandated. The permit also establishes a Technical Advisory Group that has been meeting and making recommendations to ADEC and the EPA.

B. STANDARDS AND COMPLIANCE

Water Quality Standards

The EPA publishes criteria intended to provide technical guidance to State governments for the establishment of water quality standards. These State standards then become enforceable limits placed on concentrations of a pollutant in the receiving water. In early guidelines for developing water quality standards in the mid 1970s, EPA recommended that, where long term/chronic toxicity data were unavailable, short term/acute toxicity levels could be divided by a very conservative and arbitrary safety factor of 100 to establish standards intended to protect against chronic (i.e., long term) exposure.

As more data on the relationship between acute and chronic toxicity became available, EPA issued new guidelines which made clear that a ratio of 100-to-1 was reserved for compounds that demonstrated little or no degradation in aquatic ecosystems, e.g., persistent chemical compounds such as chlorinated pesticides. For nonpersistent, degradable compounds (such as BETX), a ratio of 20 to 1 or less was considered by EPA to be more in line with available data.

In 1979, ADEC revised its water quality standards for the State of Alaska. At that time, there were few data on the long-term effects of hydrocarbons on marine species. ADEC set a receiving water limit of 10 parts per billion (10 ppb) for total aromatic hydrocarbons.

The State decision was apparently based on (1) a study of reported short term/acute lethal threshold concentration levels for several species of larval crustaceans found in the literature of the time and (2) applying the then recommended EPA 'safety factor' for non-biodegradable toxins of 100-to-1.

Alyeska has voiced objections to ADEC's approach. EPA's guidelines for setting water quality standards were revised in 1985 in light of more recent scientific studies. EPA's recommended approach is to utilize actual test results, where available, and to use arbitrary safety factors only as a last resort. ADEC's standard for aromatic hydrocarbons conflicts with current scientific data and is far more stringent than what is now known to be necessary to protect aquatic life.

EPA Compliance

In 1985, responding to public concern about BWT operations, the EPA issued a Compliance Order listing 12 items to be investigated. Three years later, after EPA had completed a detailed investigation of allegations that the Alyeska facility had violated its NPDES permit, Alyeska received a letter from EPA's Regional Administrator which stated as follows:

"The investigation included interviews with Alyeska employees, ship's crews, and other people familiar with the ballast water treatment operation, a review of EPA and Alaska Department of Environmental Conservation files, review of Alaska Public Utilities files, and a review of ship deballasting records and Alyeska ballast water treatment records. . .

"The recommendation resulting from that review is that no additional formal enforcement action against Alyeska is appropriate at this time. We arrived at this conclusion because the allegations could not be substantiated or have already been addressed by EPA and resolved by Alyeska as a result of previous Section 308 and Section 309 actions."

III. BWT EFFECTS

A. ENVIRONMENTAL STUDIES

There is an extensive body of scientific literature on Port Valdez, compiled during numerous studies conducted since 1971. As would be expected, there have been detectable amounts of hydrocarbons in the environment, at various locations in the water column and sediments. Some are related to human activity: BWT operations; ash settling in the water from wood burning in fireplaces; combustion sources, such as boat engines, and minor oil spills. Greater concentrations of PAH (polynuclear aromatic hydrocarbons) were found in 1985 in mussels and sediments in the Valdez small boat harbor than near the ballast water outfall.

Hydrocarbon found in the water can also emanate from natural sources, not attributable to human activity. Some marine algae produce certain kinds of hydrocarbons. Terrestrial plants also produce hydrocarbons. Activities of nature also affect the marine environment, e.g., mud slides, high runoff from storms and water temperature changes. The 1964 earthquake had a profound effect on Port Valdez. Observers have found fluctuations in the diversity, abundance and total weight of benthic (bottom dwelling) organisms over time, but these are believed to be related to such activities of nature or to specific construction projects as opposed to routine BWT operations.

The key question is whether hydrocarbons from the BWT discharge have caused any significant harm to marine life. The University of Alaska's IMS has conducted a series of studies of Port Valdez beginning in 1971 and continuing to 1987. As a result of this work,

Dr. Howard Feder of IMS concluded that "... once construction activities were completed, terminal operations did not affect the organisms on the bottom either in the deep basin or within the mixing zone."

Further, a study conducted in 1987 found that levels of aromatic hydrocarbons in the sediments near the BWT outfall are actually decreasing. The study, "EPA-ADEC Proposal for Monitoring Sediment Chemistry and Infauna in Port Valdez for the Fall of 1987," conducted by the IMS, also found that the diversity, abundance and total weight of benthic (bottom dwelling) organisms increased between 1985 and 1987. Significantly, the biological treatment facilities, voluntarily put in place by Alyeska in 1986, have reduced BETX levels by between 80 and 90 percent on average, and PAH has been reduced to below detection levels.

Two scientists assembled a monograph on Port Valdez during the time the biological treatment facilities were being put into place. The monograph, Environmental Studies in Port Valdez, Alaska, contained papers by various scientists and regulatory officials with extensive knowledge of the Port. The scientists who assembled the monograph were David G. Shaw of the University of Alaska's Institute of Marine Science (IMS) and Mohammad J. Hameedi of NOAA (the National Oceanic and Atmospheric Administration of the U. S. Department of Commerce).

Regarding the quality of the environmental studies done to date, the following was written by Dr. Donald W. Hood, Professor Emeritus, University of Alaska in the Foreward to the monograph: "The studies (of Port Valdez)... have been well planned, of the highest quality, and well documented in open literature. The overall study effort certainly ranks among the best ever done on a marine ecosystem." Hood affirms the findings of the monograph edited by Shaw and Hameedi: "... it appears that no ecologically or socially significant biological change has occurred that can be related to the ballast discharge."

In the monograph, Douglas R. Redburn, Section Chief, Water Quality Management, at the ADEC notes that accumulations of petroleum hydrocarbons above background levels in marine sediments near the ballast water outfall "... were, and remain, not a violation of state standards until they cause deleterious effects to aquatic life." Redburn further states that petroleum hydrocarbon accumulations near the BWT diffuser "have not been conclusively linked to any adverse changes in monitored biological populations or community structure."

In December 1988, the National Oceanic and Atmospheric Administration (NOAA) published the results of the first three years of the Pacific Coast phase of its National Benthic Surveillance Project which examined water quality effects in 31 sites in Alaska, Washington, Oregon and California. The focus of the studies was on whether chemicals could be found in the sediments and in liver tissue, bile and stomach contents of bottom fish at those sites.

Several months prior to the release of the report, in October 1988, however, the media published a story which made it appear that adverse effects were found in Port Valdez and that the BWT system was causing harm to the marine environment. A reading of the report reveals that NOAA had examined ten Alaska sites, including Port Valdez.

The sites which NOAA listed as meriting specific attention as a result of its studies were (1) Dutch Harbor (for aromatic compounds, chromium and PCBs in flathead sole); (2) Boca de Quadra near Skagway in Misty Fjords National Park (for sclerotic renal lesions in flathead sole and silver in sediments), and (3) Nakhu Bay near Skagway (for silver, cadmium and selenium in sediments). The studies revealed that Port Valdez was not an area of concern; it was neither included on the list nor even discussed in the text as a problem area.

Many of the contaminants NOAA tested for were not detected at all in fish from Valdez, and for those contaminants found at detectable levels, the levels were not significant at Port Valdez compared to

other sites. In fact, Alaska was cited for having higher levels of water quality on the whole than the other western states tested.

Also in October 1988, Port Valdez was placed on ADEC's "List of Contaminated Waterbodies." The reason Valdez was listed, as explained in the ADEC report, related to Alyeska incidents occurring three years previously:

"In the fall of 1985 and the spring of 1986, two additional mixing zone verification studies were conducted by Alyeska and EPA. These studies demonstrated conformance with the aromatic hydrocarbon standard at the boundary of the mixing zone in March, but found occasional violations of water quality criteria at certain depths and stations in September and October, when the water column is vertically stratified. These documented excursions are the basis for listing Port Valdez as impaired and including it on the 304(1) priority pollutant short list." ("List of Contaminated Waterbodies," p. 93.)

Most importantly, these mixing zone verification studies were conducted before the impound basins were converted into biological treatment units. The effluent from the treatment plant was much higher in September and October 1985 than in subsequent years when the biological process was working (see again Attachment 2). Alyeska has petitioned for removal of Port Valdez from the list.

B. CONCLUSIONS

In June 1990, University of Alaska IMS investigators Feder and Shaw issued their final report entitled "Environmental Studies in Port Valdez, Alaska: 1989." With regard to benthic organisms, they stated:

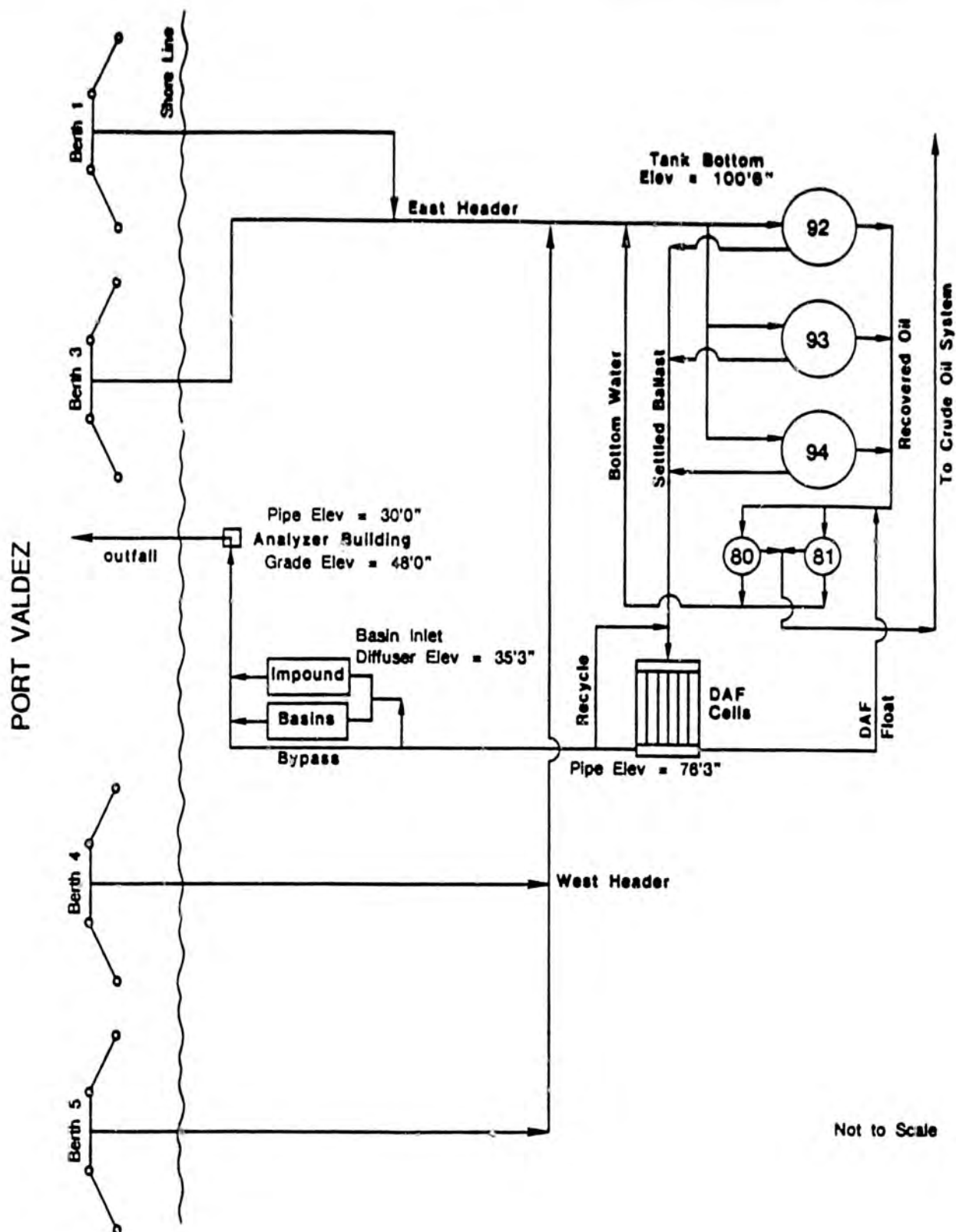
"In summary, as concluded in all previous reports, all techniques used in the analysis of infaunal data in 1989 and previous years indicate that marine terminal activities in Port Valdez are not negatively affecting the benthic organisms in the deep basin or the shallow nearshore waters."

Benthic organisms are considered to be excellent indicators of environmental stress caused by petroleum hydrocarbons. These are small animals that live in the mud and are relatively stationary. Unlike a fish, for example, they are not passing through but live continuously in the same area. Thus, Alyeska has been able to monitor them for the past 12 years both in the outfall area and elsewhere in the Port of Valdez. As indicated above, it appears that no harm has come to them from BWT operations.

Recently, there has been increasing interest in toxicity studies as a measure of the effect of the effluent. Alyeska has been conducting toxicity tests for several years. The scope of the tests required in the latest NPDES permits range from assessing the effluent effects on shrimp and salmon smolt to evaluating the level of impairment of fertilization when sea urchin sperm and eggs are placed in varying concentrations of effluent. Thus, these tests measure subtle effects on very sensitive organisms.

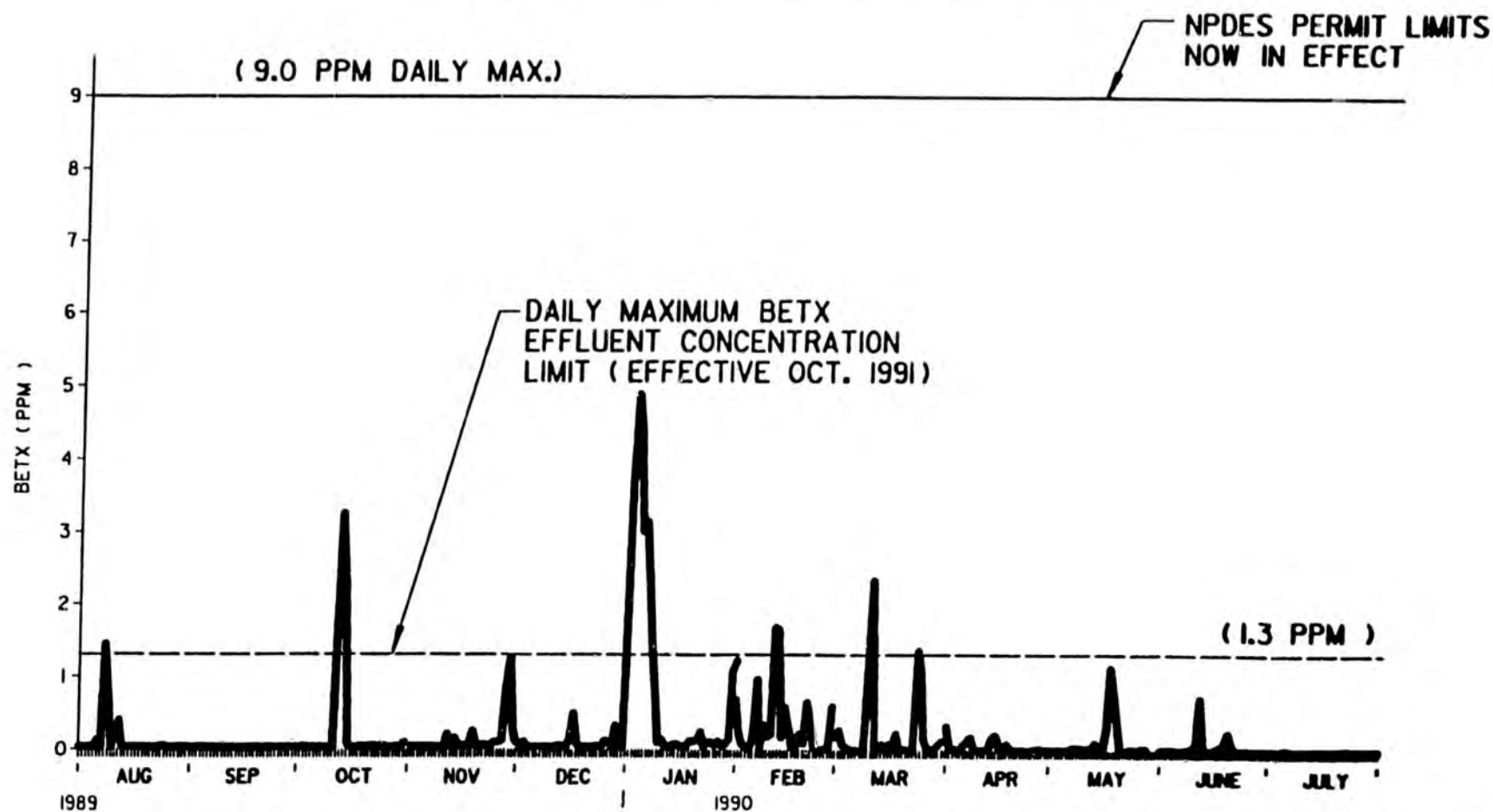
During 1990, Alyeska had several bioassay studies performed on the BWT effluent. The effluent toxicity was so low that the consultants performing the work (Battelle Northwest and ENSR) were unable to determine any acute toxicity level at all for coonstripe shrimp or pink salmon smolt. The only tests that showed any acute toxicity were for mysid shrimp and purple sea urchins, neither of which are found in Prince William Sound. These tests indicated toxicity when the test water contained 25-30 percent BWT effluent. In reality, however, the effluent is diluted well below these concentrations in the zone of initial dilution, an area very near the outfall, used by EPA to determine compliance.

For further information, contact Corporate Affairs, Alyeska Pipeline Service Company, 1835 South Bragaw Street, Anchorage, Alaska 99512 or call (907) 265-8312.



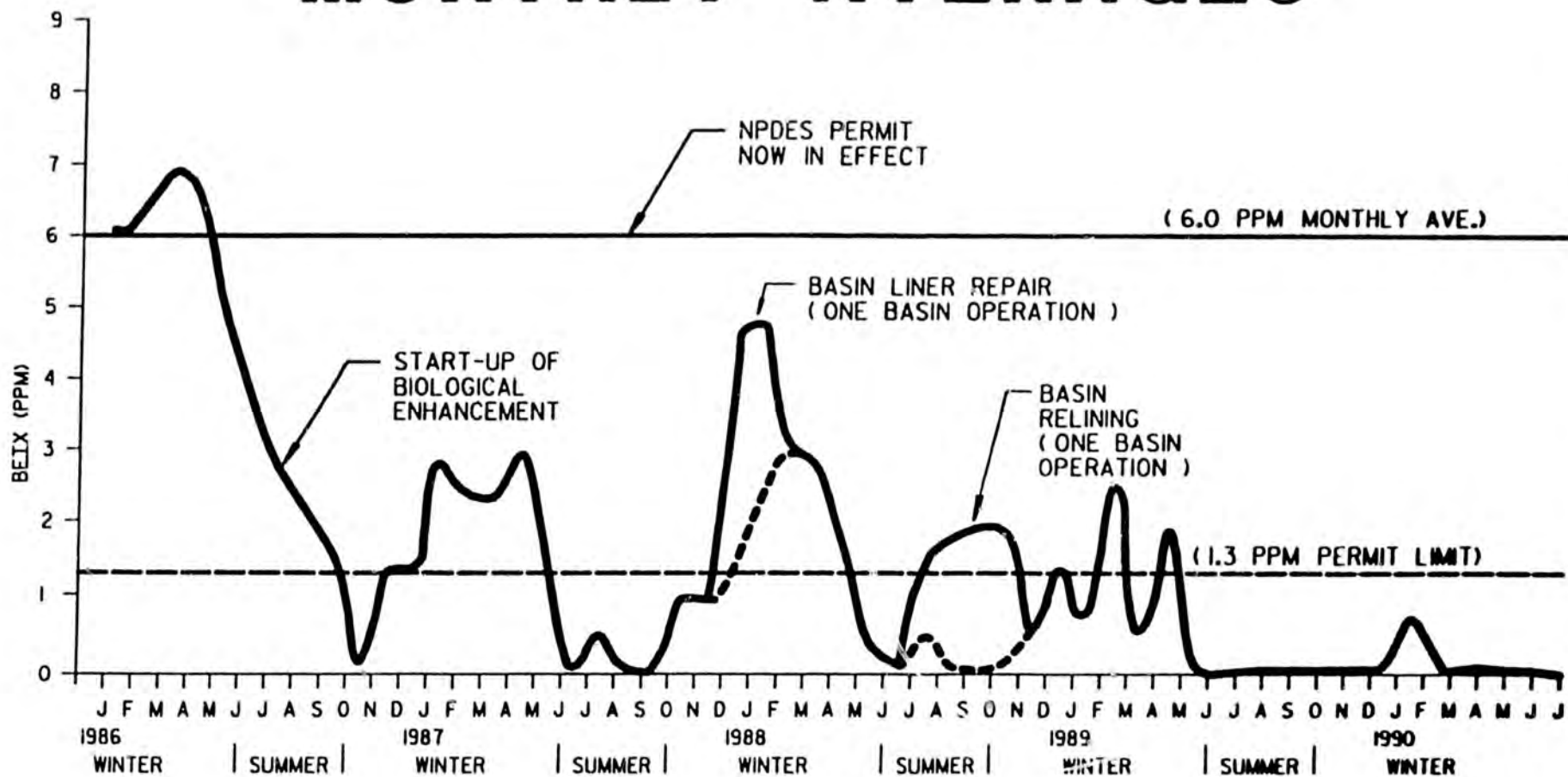
General Schematic - Ballast Water Treatment Facility

BETX FINAL EFFLUENT DAILY VALUES



Alyeska pipeline
SERVICE COMPANY

BETX FINAL EFFLUENT MONTHLY AVERAGES



-----PROJECTED LEVEL
(FOR TWO BASIN
OPERATION)

SEASONS AS DEFINED
BY 1991NPDES

Alyeska pipeline
SERVICE COMPANY

REVISÉD 8/31/90

Ship Name EXXON LONG BEACH		Born #3	Date 5/5/90
In From San Francisco Calif.		Outbound To San Francisco Calif.	
Information Provided By Chief Mate		Form Completed By C/M E. Stalzer	
Amount of Dirty Ballast to Discharge: 200,000 Bbls (bbls.)	Location Dirty Ballast Taken Aboard: San Francisco Calif.	Used Tanks: 1C, 3C, 5C, P & S Slop	
Were Dirty Ballast Tanks Washed Prior to Filling? ☐ Yes ☒ No	Method of Washing ☐ C.O.W. ☐ Hot Seawater ☐ Cold Seawater		
Were Cleaning Agents Used: ☐ Yes ☒ No	Amount of Cleaning Agent Used: None gal.	Type and Name of Cleaning Agent: None	
Was Last Cargo Other than North Slope Crude? ☐ Yes ☒ No	Cargo if Other than NSC _____	Estimated Amount of Other Residue to be Pumped Ashore: ZERO bbls.	
Will Slop Tank Contents be Pumped Ashore? ☒ Yes ☐ No	Is There Anything Other than North Slope Crude Residues in the Dirty Ballast to be Discharged Ashore? ☐ Yes ☒ No	List Other Residues and Estimate Amounts: None	
Will Bore Water be Discharged? ☐ Yes ☒ No	Are there any unusual substances in the Bore Water? ☐ Yes ☒ No	If Yes, identify:	
If dirty ballast tanks were washed and cleaned, or if residue other than North Slope Crude exist, notify the Marine Supervisor prior to commencing discharge ashore. A determination must be made as to potential process adjustments required to maintain process control. Retain this completed form in Ship's file. If BWT process is adjusted, then attach a copy of this form to the BWT Batch Data Sheet.			
Comments: 15,000 bbls tank washing slops from Exxon Galveston (water only) in port slop tank			

3657 (2/88)

This will go off with dirty ballast and is counted in the total of 200,000 bbls.

SUMMARY OF BALLAST WATER SURVEY FORMS
(Alyeska Pipeline Service Co. ballast water treatment facility)

1. **FORMS REVIEWED:** All--June 1989 (permit effective date) thru Feb. 18, 1991
2. **FORMS SELECTED:** 71
3. **SELECTION GROUNDS:**
- | | |
|-----------------------|------------|
| Transferred ballast: | 11 |
| Cleaning agent: | 7 |
| Prior cargo not ANSC: | 40 |
| Other contaminant: | 9 |
| Other: | <u>5</u> |
| TOTAL: | 72* |
- (* Total exceeds 71 because one form indicates both transferred ballast and cleaning agent.)
4. **TRANSFERRED BALLAST:**
- 11 cases (10 Exxon, 1 Mobil)
 - 1 involved a cleaning agent
 - 3 involve transferred Exxon Valdez cleanup wastes approved for disposal in BWT facility by EPA and ADEC
5. **CLEANING AGENTS:**
- 7 cases total (4 BP, 3 Exxon)
 - 1 did not discharge at Valdez
 - Two agents: Clean Break (5x)
Cold Wash (2x)

6. PRIOR CARGO NOT AMS CRUDE:

-- 40 cases total

-- 16 voyages by SANSINENA II
(prior cargo = Alaska "Drift
River" crude in 14 cases)

-- Others (some with 2 prior):

1	Nikiski charge stock
2	Northwest charge stock
3	San Joaquin crude
1	Barrows Island crude
14	LSFO/BFO/resid.
1	tapis crude
1	Marib crude
1	Virgin Gas Oil (fuel)
1	Isthmus
1	Gasoline/diesel

7. OTHER CONTAMINANTS:

-- 9 cases total

-- Types:

4	degreaser
1	sodium nitrite
1	#6 fuel oil
1	bunker tank washings
1	Vacuum Gas Oil (cutter)
1	Cutter Stock

8. OTHER CASES:

-- 5 "other" cases total

-- 2 involve barge UT-10 dis-
posing of Exxon Valdez wastes
with EPA and ADEC approval

-- 3 involve apparent "false
positives," i.e., checking a box
on the survey form in error when
ballast is actually normal



VALDEZ MARINE TERMINAL PO BOX 300 VALDEZ ALASKA 99686 TELEPHONE (907) 386-6620 TELEX 090-89864

NOTICE TO TANK VESSELS IN THE TAPS TRADE

MARCH 4, 1991

RE: TANKER DISCHARGES TO THE VALDEZ MARINE TERMINAL BWT FACILITY

As a result of recent discussions between Alyeska Pipeline Service Company and Region 10 of the US EPA, the following types of tanker ballast discharges must be preapproved for the time being, by the EPA in consultation with the Alaska Department of Environmental CONservation before they are received by Alyeska's Valdez Marine Terminal Ballast Water Treatment Facility:

1. Transferred Substances: Any ballast water, bilges, slops or other substances that have been transferred from any other source to the vessel calling at Valdez.

2. Contaminated Ballast: Any ballast, bilges or slops that are contaminated, as a result of vessel operations, by any substance other than crude oil, petroleum products (including petroleum based cleaning agents) or by normal bilges and slops practices.

During the past two weeks the EPA has approved specific requests, but has required sampling, analysis and particular care to avoid the oil phase in offloading. Ballast contaminated with bunker tank washings must be noted on the Ballast Water Survey form and will require sampling, analysis and care taken to discharge only the water phase.

In addition to these requirements, all the provisions of the Ballast Water Survey Form remain in effect. To seek approval as described in this notice, contact Gene Dickason at (907) 265-8678 as far in advance as possible. Requests for approval can only be processed during normal business hours.

Alyeska Pipeline and Roger Gale, on behalf of the Prince William Sound Tanker Association, will meet with the EPA and the DEC in Seattle on March 8, 1991 to discuss tanker practices that affect the ballast water discharged to Alyeska in Valdez and accommodation of those practices under Alyeska's NPDES permit. We will continue to work with the EPA and DEC to attempt to resolve all issues that have been raised. Other issues for discussion will include ballast affected by non Alaska North Slope crude oil, by residual fuel oil, any by engine and pump room practices.

Yours truly,

John D. Baldridge

for

Capt. T. F. Plummer
Marine Manager

MINUTES

3/18/91

HOUSE SPECIAL COMMITTEE ON OIL & GAS

March 18, 1991

3:00 p.m.

MEMBERS PRESENT

Representative Bill Hudson, Chairman
Representative Dave Choquette, Vice-Chairman, arrived later
Representative Pat Carney
Representative Gail Phillips
Representative Jim Zawacki
Representative Kay Brown, arrived later
Representative Navarro, arrived later

MEMBERS ABSENT

None

OTHER HOUSE MEMBERS PRESENT

Representative Mary Miller
Representative Pat Parnell
Representative Gene Kubina

COMMITTEE CALENDAR

Informational meeting discussing the ballast water treatment facility (BWT) in Valdez and the Trans-Alaska Pipeline (TAPs) tanker operations.

*HB 190: "An Act making a special appropriation to the Office of the Governor for a nationwide campaign promoting support for oil and gas leasing, exploration, and development in the Arctic National Wildlife Refuge; and providing for an effective date."

MOVED OUT OF COMMITTEE

WITNESS REGISTER

Lt. Commander John McQueeney
Chief, Marine Port Safety and Security
United States Coast Guard
c/o Commander (M)
17th Coast Guard District
P.O. Box 3-5000
Juneau, Alaska 99802
(907) 463-2208

Position Statement: Offered information on TAPs tanker operations.

Steven Torok
Chief, State Operations Section
U.S. Environmental Protection Agency
3200 Hospital Drive
Juneau, Alaska 99801
(907) 586-7619

Position Statement: Offered information on TAPs tanker operations and BWT facility in Valdez.

Art Ronimus
Environmental Engineer
Alaska Department of Environmental Conservation
3601 C Street, Suite 1334
Anchorage, Alaska 88503
(907) 563-6522

Position Statement: Offered information on TAPs tanker operations and BWT facility in Valdez.

Representative Jim Zawacki
Alaska State Legislature
P.O. Box V
Juneau, Alaska 99811
465-4853

Position Statement: Prime sponsor of HB 190.

Malcolm Roberts
Deputy Chief of Staff
Governor Walter Hickel
P.O. Box A
Juneau, Alaska 99811
465-3500

Position Statement: Commented on HB 190.

Earnest Polley
Alaska State Chamber of Commerce
634 West 12th Street
Juneau, Alaska 99801
(907) 586-2323

Position Statement: Supported HB 190.

Patricia Garoutte
President
Public Awareness Committee for the Environment
100 Trading Bay
Soldotna, Alaska 99669
(907) 283-7170

Position Statement: Testified against HB 190.

June Weinstock
Northern Alaska Environmental Center
1339 6th Avenue
Fairbanks, Alaska 99701
(907) 452-8610

Position Statement: Opposed HB 190.

Linda Brown
Northern Alaska Environmental Center
108 Corneilla Lane
Fairbanks, Alaska 99709
(907) 464-8461
Position Statement: Opposed HB 190.

Gregory Spry
Alaska Natural Energy Institute
P.O. Box 83876
Fairbanks, Alaska 99708
(907) 457-4334
Position Statement: Opposed HB 190.

Larry Landry
Northern Alaska Environmental Center
218 Driveway
Fairbanks, Alaska 99701
(907) 452-5021
Position Statement: Opposed HB 190.

Catherine Doss
7050 Crawford
Anchorage, Alaska 99503
(907) 243-6843
Position Statement: Opposed HB 190.

Pamela Brodie
Sierra Club
241 E. 5th Avenue, #205
Anchorage, Alaska 99503
(907) 276-4048
Position Statement: Opposed HB 190.

Karen Jettmar
430 West 7th Avenue, #210
Anchorage, Alaska 99510
(907) 272-7453
Position Statement: Opposed HB 190.

Mary Irvine
Alaska Environmental Lobby
P.O. Box 22151
Juneau, Alaska 99802
(907) 463-3366
Position Statement: Opposed HB 190.

PREVIOUS ACTION

BILL: HB 190

PRIME SPONSOR: ZAWACKI

CO-SPONSOR: M.A. MILLER, BAKER

JRN-DATE	JRN-PG		ACTION
03/06/91	00391	(H)	READ THE FIRST TIME - REFERRAL(S)
03/06/91	00391	(H)	O&G, RESOURCES, FINANCE
03/08/91	00427	(H)	CO-SPONSOR ADDED: BAKER
03/18/91	N/A	(H)	O&G AT 03:00 PM CAPITOL ROOM 124

ACTION NARRATIVE

TAPE 91-17, SIDE A
Number 003

Chairman Hudson called the House Special Committee on Oil and Gas to order at 3:05 p.m. on Monday, March 18, 1991, and reviewed the agenda.

Representatives Hudson, Carney, Zawacki, and G. Phillips were present.

Representatives Choquette, Brown, and Navarre were absent.

Number 033

LT. COMMANDER JOHN MCQUEENEY, Chief of Port Safety and security for the Seventeenth Coast Guard District, expressed his intention to review the requirements under international law and U.S. law for the carriage of crude oil in tankers, and specifically the practice as it occurs in the Trans-Alaska Pipeline (TAPs) trade.

Commander McQueeney explained that MARPOL 73-78 was an international convention for the prevention of pollution by ships 1973 and was amended by protocol in 1978 (MARPOL 73-78). An international treaty began in the early 70's under the auspices of the International Maritime Consultative Organization, a body under jurisdiction of the United Nations. The International Maritime Consultative Organization later changed its name to the International Maritime Organization (IMO).

Commander McQueeney further explained that MARPOL 73-78 had five annexes. Annex One concerned oil and oil's treatment as a pollutant. Annex Two dealt with noxious liquid substances or chemicals that were carried in bulk. Annex Three related to packaged hazardous materials. Annex Four

involved the treatment of sewage. Annex Five dealt with persistent garbages and plastics. The United States ratified Annexes One, Two and Five.

Commander McQueeney elaborated on the laws applicable prior to MARPOL 73-78 and the Ports and Tankers Safety Act of 1978 (PTSA). These two laws placed a new set of operating parameters on tanker operators. Prior to the early 1970's, tankers would load crude oil in all tanks of the ships to carry as much cargo as possible, in addition to intermixing the contents of tanks. Commander McQueeney indicated that tankers often pumped the remaining liquid after waterwashing the tanks over the side of the vessel.

Commander McQueeney also indicated that prior to MARPOL 73-78 there were very few ballast water treatment systems.

Number 092

With the enactment of MARPOL 73-78, Commander McQueeney explained that tanker operators were required to carry product only in certain tanks. Other tanks, segregated tanks, were reserved for water only.

Commander McQueeney stated that a new system of crude oil washing (COW) also occurred in which crude oil product was washed from the tanks and then discharged ashore at a refinery.

Commander McQueeney advised members that there was sometimes a need to carry ballast in nonsegregated tanks. In these cases, because the price of oil had risen dramatically, it was no longer cost-effective to dump overboard, so the oil was retained and discharged at the refinery.

MARPOL 73-78 also required the use of an oily water separator (OWS) on all tankers over 150 gross tons, according to Commander McQueeney. An oil record book was also required to be kept and was used to document every time an oil transfer procedure occurred.

Commander McQueeney observed that there was a difference in MARPOL 73-78 in what was considered clean water. By international agreement in MARPOL 73-78, clean ballast was described as having less than 15 parts per million oil in the water, that was allowed to be discharged in certain areas offshore.

Commander McQueeney further explained that federal law under the federal water and pollution control act (FWPCA) had a higher standard, which was that there could not be a discharge that would create a sheen, a sludge, or an emulsion in the water.

Number 132

Commander McQueeney clarified that if a tank operator discharged, in U.S. waters, ballast having less than 15 parts per million oil in the water, which created a sheen or emulsion in the water, the tank operator would be in violation of federal law. The higher standard prevailed.

Commander McQueeney stated that the processes described by industry at the last meeting were very accurate and were in agreement with the regulations set forth in MARPOL 73-78.

Number 139

Representative Kay Brown and Vice-Chairman Dave Choquette arrived.

Chairman Hudson asked Commander McQueeney if he would explain what actions the Coast Guard takes on the southern end of a tanker's trip.

Commander McQueeney explained that most all of the tankers were U.S. flag vessels, as the vessels were part of the domestic trade. Requirements exist for U.S. flag vessels to be under certification by the United States Coast Guard (USCG), and the vessels are also required to be examined by a classification society, such as the American Bureau of Shipping.

Commander McQueeney stated that federal law required the Coast Guard to inspect a ship every two years and complete a full examination. This usually occurs between the 24th and 36th month of the ship's life.

Number 175

Commander McQueeney indicated that the USCG frequently tries to arrange for an arrival examination prior to transfer of product, but sometimes this is not possible. The Coast Guard is definitely on scene during the transfer operation to insure that all the connections are made properly and that the containment is correct.

Number 187

Chairman Hudson questioned whether the Coast Guard also checked on log entries to determine if there had been any damages to the ship, and would the Coast Guard withhold the vessel if the damages were severe.

Commander McQueeney responded in the affirmative and elaborated that it was a requirement of federal law for the vessel captain to report any instances of damage.

Representative Choquette requested clarification if all the work performed was done by Coast Guard personnel or contracted out.

Commander McQueeney answered that Coast Guard personnel did all the work.

Number 206

Representative G. Phillips inquired whether or not the stricter law would apply in cases of emulsion or discharge in Alaska.

Commander McQueeney responded that the federal government was enacted by law MARPOL 73-78, but enforcement was based on the more stringent standard.

Number 219

Chairman Hudson wanted to know if the Coast Guard did any northbound, presail, inspections or tracking of the liquids the vessels carry.

Commander McQueeney responded that the Coast Guard did not track the liquids, but if there was any sheen or oil spilled as a result of the lightering operation, the Coast Guard would board both vessels and do a full examination.

Number 250

Chairman Hudson inquired whether or not the Coast Guard took any specific actions in Valdez in relation to observing the transfer of on-loading or off-loading of liquids.

Commander McQueeney answered that the major reason there was a marine safety office (MSO) in Valdez was to respond to the TAPs terminal. There were about 43 to 44 people assigned to the MSO in Valdez, who performed duties ranging from inspections, observing transfer procedures, examinations of ships and inspection for certification.

Number 275

STEVEN TOROK, Chief, State Operations Section for the Environmental Protection Agency (EPA) in Juneau, read and submitted written testimony on behalf of the EPA. (Please refer to Attachment 1).

Number 394

Mr. Torok indicated that although this was not his area of expertise, he would try and answer any questions the

committee had. For those questions he could not answer, Mr. Torok promised he would get an answer for the committee from the Seattle office.

Number 399

Representative Navarre joined the committee.

Chairman Hudson questioned if the EPA had a timeline for the work being done with the ADEC (Alaska Department of Environmental Conservation) to examine the entire process at the BWT facility in Valdez.

Mr. Torok responded that he did not have an estimate for a date that the EPA and the ADEC were shooting for on a resolution of some of the allegations that have been made in the press.

Representative Choquette followed up on Mr. Torok's statement during his testimony that no discharge of transferred waste from tanker to tanker without the express authorization of the ADEC and the EPA was not authorized by Alyeska's permit. He asked if Alyeska had permission to transfer waste.

Mr. Torok answered that he was not aware that Alyeska had requested permission to transfer waste from one tank to another, so he was not aware of any approval.

Number 422

Representative G. Phillips inquired about the allegations from Charles Hammel regarding the illegal dumping of hazardous wastes and asked if these allegations were the same as the ones investigated in 1985 which the EPA found to be untrue. Secondly, Representative Phillips found it hard to believe that the EPA did not know what cleaning agent was being used and what the cleaning agent's composition was when the committee asked for this information on March 15, 1991, from the industry and was promised this information. Lastly, the EPA has stated that it was their intention to minimize the discharge of cleaning agents and to ultimately limit both types of agents used and the amounts. Representative G. Phillips wanted to know why the EPA didn't wait for scientific proof that the cleaning agent being used was toxic before a decision like this was made.

Mr. Torok responded in the affirmative to Representative G. Phillip's first question. He noted that Mr. Charles Hammel raised similar allegations in 1985 which were never substantiated. Since that time, Mr. Hammel has submitted additional information which was what the EPA was following up on.

Regarding the use of cleaning agents, Mr. Torok indicated that the EPA was not in possession of the composition of those cleaning agents nor all of the various cleaning agents that may be used; however, the EPA has requested this information.

Mr. Torok stated that Alyeska's permit only allows for cleaning agents that are petroleum-based to be used and he believed what was meant by the statement about limiting the use of cleaning agents was if cleaning agents, other than petroleum-based, were being used, then the EPA would have to evaluate the use and toxicity of these cleaning agents.

Number 472

Chairman Hudson commented that the committee only heard from a few of the companies involved in the North Slope trade, so the committee didn't know what the other companies were up to.

Representative Carney indicated that it was his understanding that the Valdez harbor had been declared an impaired waterway due to possible pollution and it sounded as though someone hadn't been doing their job.

Representative Carney asked Mr. Torok to comment on whether or not he thought the laws which were needed to monitor the situation were in place, and if so, why hadn't the situation been monitored better.

Mr. Torok answered that the Clean Water Act and the Clean Water Act Amendments provided the mechanism by which the permitting processes were followed. The monitoring aspects were self-monitoring, as were most NPDES permits. The EPA did conduct annual inspections of the larger facilities, but they did not have the staff and resources to conduct more than that.

Mr. Torok indicated that the monitoring was probably not sufficient from independent sources other than the companies themselves and a once a year inspection from the regulatory agency. As indicated in the EPA's written testimony, the EPA felt that the agency had been somewhat remiss with regard to the drafting of the permit and in the review and approval of the best management plan, in that a number of these questions were not asked or felt to be of substance at the time the permit was revised, and this was what the EPA was now working to resolve.

Number 501

Representative Carney asked if, in Mr. Torok's opinion, was once a year monitoring satisfactory.

Mr. Torok stated that the monitoring was not once a year, the inspection was; the monitoring was required under the permit. The EPA felt that once a year inspections were not sufficient.

Number 504

Representative Brown asked if the results of the EPA's investigation on the recent allegations indicated whether or not toxic wastes were present in the ballast water at Valdez.

Mr. Torok responded that he was not at liberty to discuss that at this time; the matter was under investigation.

Representative Brown inquired under what authority was it not public.

Mr. Torok responded that he did not know the answer and, secondly, during an investigation the matter was considered enforcement sensitive until the investigation was completed.

Representative Brown continued with her questions and stated that while the EPA had acknowledged that they did not know whether toxic wastes unrelated to tanker operations were or had been discharged in ballast water, did the EPA know if toxic wastes related to tanker operations were being or had been discharged in ballast water in Valdez.

Mr. Torok indicated he would hand-carry this question back to the Seattle EPA office as he did not know the answer, but he understood the distinction that Representative Brown had made.

Number 011

Representative Navarre wanted to know what type of biological testing the EPA was doing near the outflow, mixing zone of the BWT facility in Valdez.

Mr. Torok indicated that he did not know the answer but he would one.

Representative Navarre followed his previous question by asking, if the EPA was not doing any biological testing, were procedures being drawn up so that testing could occur.

Number 018

Representative G. Phillips recollected that the subject of cleaning agents had been a public issue for several years

and questioned why the subject had never come up during the EPA's annual inspections on the Alyeska BWT facility.

Representative Navarre wanted to know if the EPA kept records of the toxic wastes that were generated, including where the waste was generated and where the waste went.

TAPE 91-17, SIDE B
Number 000

Mr. Torok indicated that generators, transporters, and disposal facilities of regulated hazardous wastes, as defined by the Resource Conservation and Recovery Act, were required to report biannually to the EPA on all waste generated and transported.

Chairman Hudson believed that the EPA's testimony indicated that no transfer of sludge was permitted by the permit. He asked if the permit would allow the backhaul of sludge from Valdez on the tankers back to a sludge disposal site in the Lower 48.

Mr. Torok replied that he did not know, but he would follow up on this question.

Number 017

Representative Brown remarked that she wanted to follow up on Chairman Hudson's earlier question about the time-frame of the investigation and asked if the EPA was talking months or years for completion.

Mr. Torok responded that he had no idea how long the investigation would last, but he suspected it would be in months and not years. The resources to conduct the study came out of the Seattle EPA office.

Representative Brown wanted to know who had the responsibility legally to conduct the investigation.

Mr. Torok indicated that the permit was a federal permit administered by the EPA, thus the EPA had the legal responsibility.

Representative Brown asked what level of resources were being devoted to the investigation.

Mr. Torok indicated that he could not answer Representative Brown's question, but he would research the answer for the committee.

Number 036

Representative Choquette requested clarification on whether

or not a petroleum-based cleaning agent was automatically acceptable.

Mr. Torok responded that he wouldn't necessarily say that because the permit did not address cleaning agents. The EPA was looking at clearly identifying what those cleaning agents were and what the technology was for the removal of any of the constituents prior to the discharge.

Number 056

Representative Zawacki requested a synopsis of the standards that have been in place over the last 13 years.

Mr. Torok apologized that he was not in a position to do what Representative Zawacki requested, but he would provide the requested synopsis to the committee.

Chairman Hudson indicated that the committee would like to have a statement from the EPA addressing the allegations and what actions the EPA was taking to assure the people of Alaska that there are no harmful discharges occurring in the Valdez port.

Number 098

Representative Carney inquired if Mr. Torok could explain the definition of an impaired waterway.

Mr. Torok responded that the ADEC would best be able to answer Representative Carney's question. Under the Clean Water Act, an impaired waterway was a waterway that was suspected or documented to be known to have been contaminated through discharges.

Representative Carney clarified that in Mr. Torok's view, the Valdez port was only suspected of being an impaired waterway.

Mr. Torok responded that he was not in a position to know.

Number 113

ART RONIMUS, Environmental Engineer with the Alaska Department of Environmental Conservation (ADEC), testified that he worked out of the Anchorage office and for the last two years he had been working with Alyeska on construction of the new ballast water treatment facility to meet new permit requirements.

Mr. Ronimus referred to the National Pollutant Discharge Elimination System (NPDES) permit and made a few comments. Mr. Ronimus indicated that effluent limitations and

monitoring were routine functions and the types of monitoring were fairly broad governing the chemical and physical characteristics.

Mr. Ronimus indicated that, in his opinion, the Alyeska facility was well monitored. The NPDES permit for Alyeska was effective December 14, 1990, and would expire in 1994.

Number 201

Mr. Ronimus remarked that recent allegations had prompted the ADEC to draw up a plan which will screen or detect or in some way provide an analytical or scientific basis for determining toxic chemicals.

Mr. Ronimus indicated that under this proposed plan, the ADEC, the EPA, and Alyeska would agree to sample every tanker which comes into port and declares it has contaminants other than crude oil aboard. He indicated that the ADEC would do random sampling of tankers and call upon the services of the technical advisory group and the regional citizen's advisory council. He noted that the ADEC also plans to continue monitoring tankers.

Mr. Ronimus indicated that one of the ADEC's concerns was that the BWT facility at Valdez was both a physical plant and a biological plant. The biological plant reduces the BETX prior to release and was sensitive to upset from biotoxin of some types. It was unknown as to the causes, but the upset occurs eight to ten times a year and there was an upset yesterday due to hydrogen sulfide coming in off a tanker. This was one of the things that the ADEC's investigation would bring to light.

Number 253

Representative Brown wanted to know if the ADEC had received any results yet from the new samplings Mr. Ronimus had mentioned.

Mr. Ronimus indicated in February the ADEC, in conjunction with Alyeska, did sampling of some of the vessels. The analysis was still preliminary, but based on what was available so far, there has been nothing detected that was not characteristic of a tanker washing.

Representative Brown inquired if the ADEC was conducting an investigation separate from the EPA's investigation.

Mr. Ronimus responded in the affirmative. He noted that the ADEC worked with the EPA, however, the ADEC was representing the state's interests in this investigation.

Representative Brown inquired whether or not Mr. Ronimus,

from the work he had done, had seen any toxic wastes being discharged into the ballast water at Valdes.

Mr. Ronimus responded that the question seemed like a loaded question because the ballast water was a waste water stream and it has hundreds of constituents in very small concentrations. Mr. Ronimus felt that the real emphasis was on the toxicity of the waste and how the waste reacted with the ecosystem, and in particular, the types of biotests that were being done.

Mr. Ronimus indicated that his consultations with the other staffs indicated that the waste was a low toxicity waste as the waste left the BWT facility. This waste should not be treated any differently than any other waste, such as the city of Anchorage's waste.

Number 296

Representative Brown asked if there were toxic wastes which were showing up that would be unexpected or of concern to the ADEC from a biological or health perspective.

Mr. Ronimus referred back to his consultation with other ADEC employees and stated that the overall reaction was that the treatment facility had been doing a fairly good job for what the facility's purpose was. The toxicity tests the ADEC received and reviewed indicated a low toxicity waste, which was what was expected.

Number 306

Representative Navarre asked if the ADEC did ongoing biological testing at the outflow of both the water and the sediment.

Mr. Ronimus clarified what Representative Navarre meant by ongoing to mean intermittent and referred to the Alyeska permit explaining the environmental monitoring that goes on.

Mr. Ronimus indicated that while the permit was an EPA permit, the EPA and the ADEC shared the information.

Representative Navarre questioned whether or not the EPA did any independent testing.

Mr. Ronimus clarified that Representative Navarre meant biotoxicity tests and replied that there were none that he was aware of.

Number 329

Chairman Hudson questioned if the ADEC had initiated any

additional tests since the recent allegations of Mr. Charles Hammel.

Mr. Ronimus responded that the ADEC had drafted a plan which had been partially put into effect relating to the ongoing sampling of every tanker declaring a waste other than crude oil.

Number 375

Representative Carney followed up on Mr. Ronimus' statement that the Alyeska permit allowed for self-monitoring and that the ADEC checks once a year.

Mr. Ronimus responded that the ADEC did do some occasional checks with Alyeska but did not have a formal follow-up with Alyeska. Alyeska's lab was checked frequently and the ADEC was confident that Alyeska's lab was doing a good job.

Number 395

Representative Carney questioned Mr. Ronimus on his work with Alyeska over the last two years putting together a biological treatment system and wanted to know why this project was initiated.

Mr. Ronimus indicated that there were several reasons for the new construction: first, to improve the operating efficiency of the plant; and second, the new tanks that were built were designed to better contain the wastes.

Number 421

REPRESENTATIVE GENE KUBINA indicated that during the closing months of the last administration the Valdez office was decimated and Representative Kubina wanted to know if the ADEC felt that this office was now staffed to a full level.

Mr. Ronimus responded that there was adequate staff there if some more training was done. Mr. Ronimus indicated that there were some new people and the ADEC was planning to focus on specialized training.

Representative Kubina brought the letter from Mr. Stan Stephens to the committee's attention.

Number 445

Representative Navarre questioned if Mr. Ronimus felt that any other testing was needed other than what was required under the permit.

Mr. Ronimus responded that he would like to prove or disprove the allegations and the testing would do that.

Chairman Hudson indicated that he wished to bring this subject to a close and promised those people who wished to testify the opportunity to do so when the committee scheduled the next meeting on this subject.

Representative Zawacki questioned how the ADEC told the difference between frivolous accusations and serious accusations.

Mr. Ronimus answered that it depended on physical plausibility

TAPE 91-18, SIDE A
Number 005

Chairman Hudson announced that the informational hearing was concluded and HB 190 was now before the committee.

Representative Zawacki, prime sponsor of HB 190, testified in support of the legislation. Representative Zawacki indicated that the state of Alaska should do everything possible to encourage the production of oil and gas and enhance existing fields.

Representative Zawacki stated that the revenue gained from the oil industry paid for the education, social programs, daycare and so on for Alaskans. Representative Zawacki believed that it was time to go to the people of this country and express to them the importance of easing our dependence on foreign oil.

In addition, Representative Zawacki testified that it was time to tell the people of the United States the truth about the Arctic National Wildlife Refuge (ANWR) instead of the "rhetoric and hypocritical lies that (were) being told by preservationists all over this country."

Number 048

Representative Brown apologized that she had to leave in a few moments and commented that she tended to be supportive of HB 190, depending on what the money would be spent on. Representative Brown wanted to know if there was a statement of what the money would go to if appropriated.

Representative Zawacki responded that a number of groups had expended considerable energy and conducted research and he was confident that, working through the Governor's Office, a plan could be put together meeting Alaska's needs.

Representative Brown expressed her concern about a broadcast effort and her apprehension about a media broadcasting campaign backfiring on the state.

Number 093

MALCOLM ROBERTS, Deputy Chief of Staff for Governor Hickel, testified that the Governor's Office had been wrestling with the issue and had come to a similar conclusion as many in the legislature had. He stated that now was the time to strike. Mr. Roberts indicated that the Governor had felt for several months that a focused effort with members of Congress might be sufficient; however, Governor Hickel has come to feel that the state must enlist America in the fight to open ANWR.

Mr. Roberts said that, due to the Gulf war, there was a sense in America that energy was a life and death issue of national interest. Due to President Bushes' strong stand there was a momentum building that was absent a few months ago, according to Mr. Roberts. President Bush and Senator Bennett Johnston had both made opening ANWR the capstone of the respective national energy policies.

Mr. Roberts indicated that the National Petroleum Institute for the first time had committed resources to telling the tale of ANWR across the nation.

Mr. Roberts indicated that the Governor's Office was currently working with the help of Bruce Posey, a public relations professional out of Anchorage, and hoped to get some more help to prepare a plan in the next 60 days that would lay out how to get the most bang for the buck.

Mr. Roberts envisioned a sophisticated lobbying effort coordinated by John Katz, Director of the Alaska Governor's Washington, D.C., office. Mr. Roberts compared the investment in ANWR as being similar to the money put forward to promote tourism and the seafood industry. The state has never done this with energy related goals and he felt it was time to do so. Mr. Roberts commented that the best way to proceed would be to target specific communities and regions of the nation.

Number 171

Chairman Hudson asked if anyone had any questions for Mr. Roberts.

Representative Navarre offered a couple of comments. He also shared the concerns of others that Alaska currently does not have the credibility nationwide to mount such a campaign. Representative Navarre felt that the campaign

could backfire if it looked like we were spending money to get more money.

With regard to the lobbying effort and whether Alaska had a good environmental record, Representative Navarre stated that everyone agreed that the state of Alaska did not have the personnel to support and maintain contingency plans. Representative Navarre cautioned the Governor's Office not to send mixed messages by reducing funding for environmental oversight.

Representative Navarre noted that Alaska's economy was not due to the oil industry. Granted, the oil industry has done a great deal for Alaska, but in turn, Alaska has done a great deal for the oil industry. Representative Navarre stressed that the oil resource was a common property resource.

Number 221

Representative G. Phillips emphasized that over the years a number of interested groups in Alaska have done considerable research in planning campaigns to open the ANWR and he hoped the administration looked at these other plans and took the best from each.

Mr. Roberts indicated that the administration would definitely work in conjunction with these groups, but the state's message should be the state's message, not the industry's message.

Representative Choquette indicated that he came with reservations on HB 190. He found it difficult to support \$5 million to lobby on behalf of ANWR when he was writing to his constituents explaining about cuts in daycare, schools, public broadcasting, and so on.

Representative Choquette asked if the Governor was going to submit a supplemental for the \$5 million funding.

Mr. Roberts replied that the administration had submitted similar legislation on the Senate side.

Representative Choquette indicated that he supported HB 190 because the Governor supported HB 190, despite his mixed feelings. Representative Choquette was interested in how much of the \$5 million would be going to administrative costs.

Mr. Roberts responded that although details of the plan were not yet available, but should funds be appropriated, the funds wouldn't be burned up in administrative costs.

Number 275

REPRESENTATIVE PAT PARNELL testified in support of HB 190. Representative Parnell felt the state should focus on a realistic assessment by the Alaska Congressional Delegation, including realistic direction and guidance. Representative Parnell also indicated that he would like to see the plan before he wrote the check.

Representative Parnell expressed a possible problem and questioned if the legislature can promote under the constitution or only educate.

Mr. Roberts promised to double-check the matter.

Representative Navarre indicated he would also like to see a plan before appropriating any money.

Number 325

ERNIE POLLEY, testified on behalf of the Alaska State Chamber of Commerce (ASCC) in support of HB 190. He indicated the ASCC supported HB 190 for the reasons stated by Representative Zawacki, the sponsor of the bill.

Number 348

PATRICIA GAROUTTE, President of the Public Awareness Committee for the Environment (PACE), testified from Soldotna against HB 190. Ms. Garoutte submitted written testimony for the record. (Please refer to Attachment 2.)

Number 403

JUNE WEINSTOCK, representing the Northern Alaska Environmental Center and Arctic Audubon, testified from Fairbanks in opposition to HB 190. Ms. Weinstock felt that HB 190 was not an educational campaign, but rather a proposal to spend state money in furtherance of a political agenda. Ms. Weinstock pointed out that a growing number of Alaskans opposed exploration in the ANWR and funding the campaign would cause considerable dissension. Ms. Weinstock felt it was not relevant that conservation groups had outspent the state.

Chairman Hudson commented that the night before he had watched a public television program of 30 to 45 minutes in length sponsored by the Audubon Society promoting the message that the coastal plain of ANWR should never be opened. Chairman Hudson asked Ms. Weinstock if she had any idea what that program must have cost to produce and air.

Mr. Weinstock indicated that she was aware of the campaign

but did not have any idea of the cost, but every penny spent on the campaign came from concerned citizens.

Number 463

LINDA BROWN, representing the Northern Alaska Environmental Center, testified from Fairbanks that she strongly objected to the suggestion that the people of Alaska should pay the oil companies' entrance fees into ANWR. According to Ms. Brown, it was not fair to ask the people who object to exploration in ANWR to pay for a campaign to ensure that ANWR would be opened. Ms. Brown suggested that, should the legislature pass HB 190, a parallel bill be passed requesting \$5 million for a public relations campaign to protect forever the ANWR.

Number 490

GREGORY SPRY, Executive Director for the Alaska Natural Energy Institute, testified from Fairbanks in opposition to HB 190. Mr. Spry said he would like to see more money spent on conservation, efficiency, and real energy development.

Number 507

LARRY LANDRY, representing the Northern Alaska Environmental Center, testified from Fairbanks that the oil industry was extremely wealthy and was the wealthiest industry in America. The oil industry has already generated considerable information and material in support of the opening of ANWR. The state would not have anything to add, nor should it be helping out a wealthy industry. Mr. Landry felt that this effort would backfire.

TAPE 91-18, SIDE B
Number 012

CATHERINE DOSS, testified from Anchorage that HB 190 was not a priority at this time. Ms. Doss felt that a majority of Americans were already in favor of this development, as well as the President and the Alaska Congressional Delegation. Ms. Doss questioned who needed convincing and felt that the proposed \$5 million would be better spent on needs in the state. She testified that more consideration should be given to conservation and the Native Americans who lived in the region which will be immediately impacted by development in the ANWR. Ms. Doss encouraged everyone to think about the future beyond oil development.

Number 032

PAMELA BRODIE, representing the Sierra Club, testified from Anchorage in opposition to HB 190 for the reasons that were

already stated. Ms. Brodie submitted written testimony. (Please refer to Attachment 3.)

KAREN JETTMAR, representing the Wilderness Society, testified from Anchorage in opposition to HB 190. Ms. Jettmar felt that the American people would see this legislation for what it was - acting for money to get more money. Most importantly, Ms. Jettmar felt that Alaska still does not know if there is any oil in the ANWR.

Number 077

MARY IRVINE, representing the Alaska Environmental Lobby, testified from Juneau against HB 190 because spending money on a public relation campaign to open ANWR was the industries responsibility. Secondly, until recently, Governor Hickel had opposed spending money on a public relations campaign because the Governor felt that opening the refuge was a fight the administration should win, if at all, on the merit. Additionally, the dollar figure was arbitrary and HB 190 failed to give any outline of expenditures and justification of need. Ms. Irvine noted, as did Representatives Parnell and Navarre, that HB 190 was premature until a plan was before the legislature on how to spend the money.

Ms. Irvine remarked that she was offended by Representative Zawacki's statements that HB 190 was needed to counter the lies by preservationists. Ms. Irvine indicated that she did not always consider herself a preservationist, but sometimes she did, and she did not appreciate being called a liar by her elected representatives.

Number 108

Chairman Hudson questioned Representative Zawacki if it would be better to specify "the coastal plain" of the ANWR in HB 190, specifically, on page 1, line 7 and page 1, line 3.

Representative Zawacki responded that he considered this a friendly amendment.

Chairman Hudson asked if there was any objection. There being no objection, Chairman Hudson instructed the committee staff to prepare a committee substitute.

Representative G. Phillips moved that CSHB 190 pass out of committee with individual recommendations. Hearing no objections, CSHB 190 was moved.

Chairman Hudson adjourned the meeting at 5:34 p.m.

U.S. Environmental Protection Agency's
Testimony Before the Alaska House Special Committee
On Oil and Gas
(March 18, 1991)

The Environmental Protection Agency, in coordination with the Alaska Department of Environmental Conservation, has been involved in the regulation of discharges from the Alyeska Ballast Water Treatment Plant since December 30, 1974, when the first Wastewater Discharge Permit was issued. The current permit was issued May 8, 1989, and was modified on November 14, 1990.

The permit authorizes the discharge of treated ballast water, bilge water, and storm water. Other wastewaters identified in the Alyeska "Best Management Practices," (BMP) plan, are also authorized for discharge. The BMP plan recognized that cleaning agents may be in the various waste streams, including ballast water. Unfortunately, both the permit and the BMP are silent on the types and amounts of cleaning agents that may be used, and there is little information on the pollutants that may be in bilge water.

The permit contains effluent limitations for aromatic hydrocarbons, naphthalene, total suspended solids, total organic carbon, and total flow. The limits are based on EPA determination of effluent quality that should result from the application of best available treatment technology. The technology-based limits have also been evaluated by ADEC and EPA in relation to the state water quality criteria. Both agencies have concluded that the limits will comply with those criteria.

Monitoring for compliance with all limits except naphthalene is required daily. Monitoring for naphthalene is required quarterly.

The permit also requires biomonitoring of the whole effluent stream to test for both acute and chronic toxicity. Initially, tests are to be conducted four times per year. Biomonitoring is performed by placing living organisms in water containing various concentrations of the effluent and determining the concentration at which the organisms are adversely affected. These tests provide direct toxicity data that indicate the extent, if any, of toxicity that may exist in the vicinity of the outfall.

A "Best Management Practices" plan, prepared by Alyeska and approved by EPA and the Alaska Department of Environmental Conservation, is appended to the permit and is an enforceable part of the permit. The purpose of the plan is to establish procedures to be followed in operating the facility to minimize discharges of pollutants. The goal is to minimize such discharges to the extent practicable, not just to comply with minimum requirements of the permit.

One of the more important provisions of the permit, from the standpoint of recent concerns, is a requirement that Alyeska take certain steps to determine whether incoming ballast water for each tanker is contaminated with pollutants other than crude oil. Specifically, Alyeska must examine the ship's oil record book and obtain a completed copy of a "Ballast Water Survey Form" which contains specific information on the amount and constituents of the ballast and bilge water to be offloaded. The purpose of this provision is to identify unauthorized pollutants before they leave the ship, and to prevent the discharge of such pollutants into the treatment facility.

I know the Committee is concerned over Mr. Charles Hamel's allegations that Exxon is illegally dumping toxic wastes through the ballast water treatment plant, so I will let you know where we are on that issue. We are, in cooperation with the Alaska

Department of Environmental Conservation, actively investigating those allegations. I can't go into much detail on the investigation at this time, but I can let you know what we have learned so far. Also, I want you to know what we are doing at this point to assure strict compliance with the wastewater discharge permit. We have met with Alyeska, Exxon, and representatives of the tanker fleet to better define on-board tanker practices. To date, we have learned the following:

- The tanks are cleaned with seawater and cleaning agents are sometimes used.
- When ships go to dry dock, usually in Portland, Oregon, cleaning wastes are transferred to northbound tankers.
- The oil and water components of the wastes stratify in the tank.
- The water portion is discharged to the ballast water treatment facility.
- The oily wastes are left on the tanker, mixed with crude oil, and sent south to a refinery.

Now to address what we don't know:

- We don't know what cleaning agents are being used to clean cargo tanks.
- We don't know the composition of those agents.
- We don't know what cleaning agents and other materials may be in bilge waters.
- The extent to which bilge waters is transferred to northbound vessels, if at all.
- We don't know whether toxic wastes unrelated to tanker operations are or have been discharged in ballast water at Valdez.

We will be following up with Alyeska and the tanker owners to get answers to these questions and to get detailed documentation of past and current practices. After that, we will decide what enforcement actions, if any, are appropriate. Also, we will decide whether any permit modifications or changes to Alyeska's Best Management Practices plan are necessary. I should mention that certain provisions of the current permit have been appealed, and that some modification of the permit may result from those appeals.

As mentioned earlier, there are still several unanswered questions regarding toxic wastes that may be reaching Valdez. We are not waiting for all the answers before acting, however. We have already advised Alyeska that in our opinion, the permit does not authorize the discharge of any wastes that have been transferred from one tanker to another. We have told Alyeska that the discharge of any such transferred wastes must be approved in advance by ADEC and EPA. Also, we have advised Alyeska that sludges of any kind are not to be accepted at the treatment facility, and that appropriate precautions should be taken to assure that sludges are not off-loaded. For operating purposes, Alyeska has accepted our interpretation of the permit, and have implemented measures to comply. They also understand that, as a condition of approval to discharge transferred wastes that contain anything but crude oil, the wastes must be monitored for priority (toxic) pollutants.

That pretty well summarizes EPA's involvement with this issue, and gives you some idea of where we are going from here. It is apparent to us that we were not as knowledgeable about tanker practices as we should have been, and we are somewhat embarrassed about that. However, we are quickly filling in the gaps in our knowledge. In our view, the most important task is to identify unauthorized toxic wastes that may have been discharged in the past and to stop such discharges in the future.

In addition, it is our intention to minimize the discharge of cleaning agents and to ultimately limit both the types of agents used and the amounts. While we will be imposing monitoring requirements on Alyeska to determine the quality of the effluent, our main focus at this time is to prevent and minimize the discharge of toxics into the Valdez facility.

Attachment 2

PACE (The Public Awareness Committee for the Environment)
Written testimony on Housebill #190
House Special Committee on Oil and Gas

PACE feels it is wrong for the sum of \$5,000,000 to be appropriated from the general fund to the Office of the Governor for a nationwide campaign to promote support for oil and gas leasing, exploration, and development in the Arctic National wildlife Refuge for the following reasons.

1. PACE feels no public funds should be spent for Lobbying purposes. There are more basic needs in the state of Alaska than lobbying for oil, such as: Clean water and sewage systems for native villages of Alaska, funds for day care centers to help single parents keep off welfare, our road system is a disaster area this time of year. Already the state of Alaska has more than it's share of toxic and hazardous waste sites dotting it's pristine beauty, lets not make more in the Arctic National Wildlife Refuge!

2. The Arctic National Wildlife Refuge' should remain just that, a refuge'. Refuge means: "a sanctuary, a place of quietness, a place to rest, a shelter from danger or distress."

3. The Oil and gas companies are publishing a book called "Alaska's Arctic Oil". Their last chapter is called "A WAR" AN WAR, ANWR". All 535 members of Congress will receive copies of this publication! They don't need public money to push their ideas, they do just fine on their own!

4. The oil companies are proposing oil development along the coastal plain where the porcupine caribou calve in the spring. The loss of calving area will reduce the number of caribou by approximately 40%. Loss of the caribou also threaten the subsistence and culture of the Gwitch-in Native peoples in Alaska and Canada who have relied upon the porcupine caribou for thousands of years. Lets not destroy another sustainable resource!!

5. The Arctic Wildlife Refuge is the only stretch of Alaska's Northern Coastline that is now off limits to oil development. It is the only refuge in North America that protects in an undisturbed condition, all of the various Arctic ecosystems.

6. In establishing the Arctic National Wildlife Refuge' Congress set forth four major purposes, for which the refuge' "shall be managed!"

A. "To conserve fish and wildlife populations and habitats in their natural diversity including but not limited to, the Porcupine caribou herd."

B. "To fulfill international treaty obligations with respect to fish and wildlife."

C. "To provide the opportunity for continued subsistence uses by local residents."

D. "To ensure water quality."

7. The mere presence of a massive oil development complex in the heart of this Arctic Eden spewing out toxic air and water pollution, blanketing the landscape with roads, tanks, buildings, and waste pits would be an ecological disaster!

8. PACE urges you to ask yourselves; would you oppose to oil development within Denali, Yellowstone, Grand Canyon, or Yosemite National Parks? If so, you should be opposed to oil exploration and development within the Arctic National Wildlife Refuge and vote NO on Housebill #190!

Sierra Club

Alaska Field Office

241 E. Fifth Avenue, Suite 205, Anchorage, Alaska 99501
(907) 276-4048 • FAX (907) 258-6807



Attachment 3

March 19, 1991

Hon. Bill Hudson, Chair
House Special Committee on Oil & Gas
House of Representatives
Juneau, Alaska

Dear Chairman Hudson,

Yesterday, I spoke by teleconference to the House Special Committee on Oil & Gas on House Bill 190, by Rep. Zawacki.

At your request, I limited my testimony to one sentence of opposition.

However, I am submitting my complete testimony in writing. It is a single page.

I would appreciate it if you would distribute it to the members of the committee.

Thank you.

Sincerely,

Pamela Brodie

Pamela Brodie
Assoc. Alaska Representative

Testimony Before the
House Special Committee on Oil and Gas
on House Bill 190, by Rep. Zawacki
by Pamela Brodie
Sierra Club, Associate Alaska Representative
March 18, 1991

Mr. Chairman, Members of the Committee, I am Pamela Brodie, Associate Alaska Representative of the Sierra Club. Thank you for the opportunity to testify.

The Sierra Club opposes HB 190 by Rep. Zawacki. We take this position for several reasons.

First, the question of whether to drill in the Arctic National Wildlife Refuge is a controversial political issue. Many thousands of Alaskans, including the 2000 members of the Alaska Chapter of the Sierra Club, oppose drilling in the Arctic National Wildlife Refuge. We believe that lobbying on one side of a controversial political issue is not an appropriate use of state general funds.

Secondly, this appropriation is unnecessary. The oil companies are already spending large sums for a long term lobbying campaign on this issue. This is an appropriate expenditure for these private companies, but there is no reason for the state to subsidize their campaign.

Thirdly, this appropriation would be a very risky gamble for \$5 million. This expenditure is not likely to make any difference in the fate of the Wildlife Refuge. Years ago, during the D-2 debates, the State of Alaska spent a great deal of money to support elegant Washington DC attorneys and lobbyists to represent its position -- yet this expenditure of state funds had no effect on the debate. Now again, whether or not the Wildlife Refuge is drilled is not likely to be determined by a state-made videotape and public relations campaign.

Finally, there are much better ways to spend five million dollars -- ways in which this money could make a clear, beneficial difference, rather than being a high stakes gamble. The governor is proposing to cut the budget, including cutting valuable public services. The state faces the expensive necessity to reimburse the Mental Health Trust Fund.

This is not the time for a new, highly controversial, and risky way to spend money to subsidize an oil industry public relations campaign.

Thank you.

HC/10000



MAR 22 1991

Reply To
Attn Of: WD-137

Bill Hudson, Chairman
House Special Committee on Oil and Gas
P.O. Box V
State Capital
Juneau, Alaska 99811

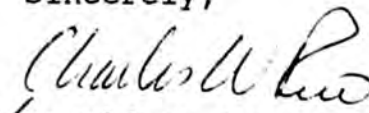
Dear Representative Hudson:

This is to follow-up our testimony presented during the March 18, 1991, Committee meeting regarding tanker ballasting operations and the Alyeska Terminal at Valdez.

There were a number of questions posed by the Committee which were not fully addressed at the time. Steve Torok, of our Juneau office, presented testimony for us and has forwarded these questions to me for response (enclosed).

If we can be of further assistance, please contact me or Steve Torok at (206) 553-8414 or (907) 586-7619, respectively.

Sincerely,

for 
Harold E. Geren, Chief
Water Permits & Compliance Branch

Enclosure

Questions by the Alaska House Special Committee On Oil And
Gas Regarding the March 18, 1991, EPA Testimony

Question: (a) Is there cause for the Legislature to be concerned regarding possible release of toxics from tanker operations? (b) Is there something the Legislature ought to be doing?

Answer: (a) Discharges of toxics through the ballast water treatment plant are properly addressed through establishment of permit conditions, and the enforcement of those conditions. The Alaska Department of Environmental Conservation (ADEC) and the Environmental Protection Agency (EPA) have adequate authority to control such discharges. However, resources of both agencies are limited, which directly affects our ability to track compliance and to enforce. (b) One area where the Alaska legislature could help is through assuring that ADEC is adequately funded for Alyeska oversight purposes.

Question: What is EPA's assessment of the operation of the terminal during the last thirteen years.

Answer: The first National Pollutant Discharge Elimination System (NPDES) permit was issued by EPA to Alyeska on December 30, 1974. The facility became operational in July 1977.

The initial indications of problems became apparent in 1984 when it was discovered that Alyeska had modified the treatment process without consulting EPA and ADEC. Modifications included removal of heat treatment units after the dissolved air floatation (DAF) cells and removal of units to collect sludge from the bottom of the DAF cells.

On November 6, 1985, EPA issued a compliance order to Alyeska concerning methods and timeframes for effectively handling sludges produced by the facility.

In 1986 Alyeska expanded their treatment system to include biological treatment. In order to insure compliance with the stringent BETX limits in their recently reissued NPDES permit, Alyeska has designed and constructed a new biological treatment system, followed by capability to air strip aromatic hydrocarbons when necessary to meet permit limits.

It is EPA's belief that after the compliance order was issued in 1985, Alyeska has been more attentive to permit requirements and cooperative with the regulatory agencies. We are confident the recently constructed biological and air stripping facilities are adequate to comply with the permit requirements.

Question: What is the timeframe for EPA's current investigation? Why isn't EPA releasing information from the investigation?

Answer: No timeframe has been established for completing the investigation. However, we do not expect to take longer than a few months. It is EPA policy to not release investigative data during the course of an investigation due to possible use in an enforcement action.

Question: Didn't Hamel raise the same questions in 1985?

Answer: Hamel raised similar questions in 1985, but at that time he did not cite specific instances of movement of toxic wastes.

Question: Why doesn't EPA know what cleaning wastes are being used?

Answer: We do not have a good answer to that question. The agency focus in writing the permit was on aromatic hydrocarbons. We knew cleaning agents were used on occasion, but did not have a good understanding of the agents used or of the practices employed.

Question: Is monitoring/inspection of the terminal operations adequate?

Answer: EPA conducts at least annual inspections of the Alyeska Ballast Water Treatment Facility; EPA generally inspects major facilities at least once per year. Inspections of the Alyeska facility are generally unannounced. If a significant and persistent problem arises at a facility then additional inspections or investigations may be initiated. Lack of resources inhibits EPA from inspecting more frequently.

The NPDES program is a self-monitoring permitting system. Accordingly, Alyeska is required to submit monthly Discharge Monitoring Reports which include results of effluent monitoring. These reports are carefully reviewed by EPA compliance personnel.

ADEC frequently monitors activities at the terminal which includes observing operation of the ballast water treatment system. ADEC also conducts air inspections to assess compliance with air contamination discharge permits.

Question: How many resources (FTE's) is EPA expending on this current investigation?

Answer: It is difficult to estimate the exact FTE's, because several individuals and offices are involved. Actual commitment is in the range of 1 to 3 FTE's.

Question: (a) Is there testing being done at the outfall/harbor (by EPA)? Has there been testing done? (b) What are the necessary procedures to put testing into place? (Testing referring to water quality/benthic and other biota to measure impact of the terminal on the harbor.)

Answer: (a) Alyeska's NPDES permit has extensive effluent monitoring, toxicity testing, environmental monitoring, and mixing zone compliance study requirements. Under the terms of the permit Alyeska is required to conduct these studies. EPA is not expending resources to conduct duplicate independent studies of Port Valdez.

Alyeska is required to monitor their effluent prior to discharge to Port Valdez for the following effluent characteristics: BETX, naphthalene, total suspended solids, total organic carbon, flow, pH, temperature, density, dissolved inorganic phosphorous, ammonia, total hydrocarbons, dissolved oxygen, zinc, and individual aromatic hydrocarbons. The results of the effluent monitoring are reported in monthly reports to EPA.

In addition Alyeska conducts an annual environmental monitoring program in the Port. The objectives of the environmental monitoring program include: identifying changes in sediment hydrocarbon concentrations and sediment toxicity, monitoring for discharge-related impacts to the infauna of Port Valdez, and providing information for reevaluation of the monitoring program and future permit reissuance. The environmental monitoring program encompasses biological monitoring, sediment monitoring, and tissue hydrocarbon monitoring programs. The testing has been done in previous years and is required annually by the permit.

In addition, acute and chronic toxicity testing of the effluent is required. The whole effluent toxicity testing is included to determine the combined toxicity of all pollutants present in the discharge. Alyeska is doing more extensive toxicity testing than required by their NPDES permit.

The NPDES permit also requires that a mixing zone compliance study be conducted during the fall of 1991 and spring of 1992, unless Alyeska justifies to the satisfaction of the ADEC that the study is not necessary. The purpose of the study will be to determine compliance with the water quality standards.

(b) EPA and ADEC have included the above requirements in the NPDES permit as part of the permit reissuance process. The permit contains provisions which allow EPA, in coordination with ADEC, to adjust the monitoring requirements.

Question: Is sludge permitted to be loaded onto tankers and shipped out of Valdez?

Answer: The NPDES permit does not address materials shipped from Valdez. Any sludges generated at Valdez likely would fall under the Resource Conservation and Recovery Act. Sludge removed during cleaning of the treatment units is required by the permit to be disposed of without reintroduction to the treatment system or discharge to Port Valdez. Alyeska is required to notify ADEC in advance of any sludge disposal, tank cleaning or sludge dewatering. Alyeska must obtain solid waste permits to dispose of solids within the state of Alaska. The above requirements should ensure that sludge is not illegally loaded onto tankers and shipped out of Valdez.

Question: Why is Port Valdez classified as an impaired water?

Answer: Port Valdez was listed by the state of Alaska as having exceedances of water quality criteria from a point source discharger pursuant to Section 304(1) of the Clean Water Act, as amended by the Clean Water Act of 1987. Mixing zone verification studies conducted in Port Valdez in 1985-1986 found occasional violations of the state water quality criteria for total aromatic hydrocarbons. These exceedances occurred when the water column was vertically stratified and vertical mixing was reduced. These documented excursions together with modeled predictions of violations during certain times of the year, formed the basis for the state to list Port Valdez as an impaired water body and for including it on the 304(1) list.

Question: Has Alyeska or any other company operating at Valdez requested approval from EPA to transfer cleaning wastes from one tanker to another? Has EPA granted any requests?

Answer: On February 21, 1991, Alyeska requested approval to receive cleaning wastes that had been transferred from the Exxon Benicia. No cleaning agents had been used. EPA, after consultation with ADEC, granted approval for the discharge of the water fraction of the wastes.

Question: Have toxic wastes related to tanker operations been discharged in ballast water at Valdez?

Answer: Virtually all wastes generated during tanker operations (e.g., crude oil in the ballast, agents used in cleaning tanks or engines, waste oils and grease from the engines, materials filtered by diesel engine filters) are toxic to some extent. As stated in our March 18 testimony, we do not know how much of these materials may have been discharged in ballast water but it has become evident that some discharges have taken place. The chemical distinction between these materials and simple ballast water is still being evaluated.

Question: Why is it EPA's intention to minimize the discharge of cleaning agents if we don't know they are toxic?

Answer: Cleaning agents are designed to put oily materials in solution. Even the most benign agents contain emulsifiers or surfactants to accomplish that purpose. We are concerned that addition of any of these materials will interfere with the treatment process of the Alyeska facility, because the initial treatment units are designed to separate and remove oily materials that are in solution with the ballast water.

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF ENVIRONMENTAL CONSERVATION

March 15, 1991

BALLAST WATER TREATMENT -- SUMMARY

In recent weeks, attention has been drawn to waste materials and treatment of ballast water from tankers at the Valdez Marine Terminal. Allegations have been made that waste materials not normally associated with the shipment of crude oil have been disposed of through the ballast water treatment facility [BWT]. The Environmental Protection Agency [EPA] is planning to hold an evidentiary hearing in June to consider any evidence which may exist in support of these allegations.

Based on current information, it does not appear that the permit for the BWT facility has been violated by the receipt of ballast water containing contaminants other than crude oil. However, the Alaska Department of Environmental Conservation [ADEC] is working with EPA and Alyeska to improve the information available about ballast water received at the BWT.

The facility is operated under a Clean Water Act NPDES permit issued by EPA in consultation with ADEC. Within the existing permit are a number of monitoring conditions, and Alyeska is required to initiate additional monitoring upon request from EPA and ADEC.

Specifically, section I.B.3 sets out criteria for sampling of ballast water which has contaminants other than crude oil. Currently, the determination of whether 'contaminants' are present is based upon Alyeska's "ballast water survey form", which is filled out by each tanker before offloading ballast water. The term 'contaminant' has been left undefined.

COLLECTING INFORMATION

Reporting by the tankers themselves is the most practical primary source of information about any contaminants in ballast water. This is due to the number of transactions which occur at the treatment facility. For example, approximately 1500 tankers have deballasted at the facility since July 1989. Of these, 40

declared that unusual substances were or might be present in the ballast. Records are available on these 40, and none list substances not usually found aboard tankers.

Sampling can only be a supplement to other information sources about ballast water due to the time delay and cost of thorough sampling. The possible substances which could be disposed of through the BWT number in the thousands. Analytical techniques are available to detect them, but are expensive and very time consuming when looking at a wide variety of compounds.

A sampling program functions best as a check on voluntary reporting by the tankers. Sampling has been conducted in the past by Alyeska with oversight from ADEC. A stepped up sampling program is an important part of the effort to improve the information available about ballast water treatment.

SAFEGUARDS AND ACTIONS UNDERWAY

Since allegations surfaced, several safeguards have been instituted by ADEC, EPA and Alyeska. Pending the EPA evidentiary hearing, Alyeska is obtaining approval from EPA, with concurrence from ADEC, before allowing any tanker to offload ballast containing contaminants other than crude.

Information about possible contaminants continues to be recorded on ballast water treatment forms. This information is collected from incoming tankers by Alyeska and is available to ADEC and EPA.

Samples are being taken from vessels obtaining approval to offload ballast containing other contaminants. Ballast samples have been taken from two vessels to date. The samples were split for evaluation by both ADEC's lab and a lab designated by Alyeska. Analysis of these samples is still not complete.

LONG TERM RESPONSE

Plans for a more thorough evaluation of contaminants other than crude oil in ballast water are nearly worked out. The basic elements of the plan are as follows:

Tankers will continue to be required to report any contaminants other than crude in their ballast water before deballasting. More detailed information will be required than has been in the past.

Alyeska will sample the ballast of every tanker which reports contaminants other than crude. A broad range of analyses will be conducted based on ADEC or EPA requests. They will cover all priority pollutants and specific pollutants listed on the Ballast Water Survey Form. Either ADEC or EPA may request split samples, duplicate samples, or special analyses as the samples are taken.

ADEC, with cooperation from Alyeska, will do random samples of ballast water. Analysis will be performed by the ADEC lab, Alyeska lab or Alyeska contract lab.

Existing monitoring data, archived by Alyeska, will be reviewed for baseline data foundations.

This sampling program will be used to evaluate the target contaminants to determine whether they can be handled by the treatment facility without causing a violation of its NPDES permit. They are not currently believed to result in violations.

An investigation of tanker practices has been initiated by ADEC and EPA to determine whether specific practices in handling ballast or in tanker operation may cause unacceptable contamination of ballast water. Because the tankers, and not Alyeska, are the source of any contamination other than crude in ballast water, some of the best information about possible contaminants is likely to come from examination of their practices.

Tanker practices in handling ballast are also regulated by the Coast Guard, and ADEC efforts are being coordinated with that agency and EPA. In addition, ADEC intends to work with other groups concerned about contaminants other than crude oil in ballast water. That effort is being initiated at this time.

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL QUALITY

PORT VALDEZ WATER QUALITY STUDIES

This case history provides background information on Port Valdez and updates the description of regulatory oversight of water quality monitoring associated with the Alyeska Ballast Water Treatment Facility through March 1991.

The ballast water treatment facility processes ballast water pumped from arriving tankers to remove oil from the water, and discharges the processed water into Port Valdez. The average volume processed varies seasonally and averages about 16 million gallons per day. Treatment involves the use of settling tanks, dissolved air flotation, flocculation and biological reduction. In addition, air strippers are used to remove volatile organic compounds when the biological treatment is subject to upset conditions. The treated effluent contains small quantities of oil and grease, aromatic hydrocarbons, phenols and other compounds.

The BWT discharge occurs through a diffuser. The discharge must meet the terms of an NPDES permit, which is issued by EPA and certified by the State of Alaska. The discharge occurs roughly 1,000 feet offshore, at depths greater than 200 feet, through a series of ports in a 200-foot-long pipe. The NPDES permit establishes a mixing zone around the diffuser to allow for dilution and dispersal of the effluent.

Background studies were initiated in 1971-72 by the University of Alaska's Institute of Marine Science in order to facilitate siting of the BWT facility within Port Valdez, and to provide a baseline for monitoring subsequent operation of the facility. The first NPDES permit for the facility was issued in 1975.

The plant began operation in July 1977. In 1980, the first NPDES permit expired, and was renewed for three years. No major changes had been detected in the marine biological community of Port Valdez through that period. However, hydrocarbon concentrations were found to be elevated locally in sediments in the vicinity of the diffuser.

The monitoring program under the second permit was completed in 1982. Highlights of the findings from these monitoring studies include the following:

1. An increase in zinc, and possibly lead, occurred in seawater and sediments near the diffuser.
2. Petroleum hydrocarbons were accumulating in sediments near the diffuser at concentrations near the low end of those reported for chronically polluted coastal environments of North America.
3. Total hydrocarbon and multiple ring aromatic concentrations in blue mussel tissues near the terminal were relatively high in comparison to other species.

4. There were significant differences in abundance and zonation of dominant intertidal invertebrate and algal species. This was attributed to a combination of natural environmental fluctuations, disturbance due to construction projects, and possibly chronic exposure to oil.
5. Reductions in numbers and smaller growth ring heights were found in barnacles at Sawmill Spit and at Berth 4 in 1981, indicating these barnacles were subjected to unfavorable environmental conditions.

Additional studies were conducted by Alyeska in 1985 and 1986 to provide information for developing the new NPDES permit and to evaluate any changes since 1982. Significant findings of the 1985-86 environmental studies include the following:

1. Port Valdez had not undergone environmental deterioration between 1982 and 1985, and water quality parameters were fluctuating within previously observed ranges.
2. Studies confirmed earlier findings that hydrocarbons were accumulating in sediments near the diffuser, and in mussels near the terminal. Major changes in concentration or extent were not noted.
3. Total hydrocarbon concentrations in sediment in 1985 were significantly higher at two of the 11 stations than levels found in 1980-82 in the vicinity of the diffuser.
4. Intertidal monitoring found few significant changes in abundance of dominant species types.
5. There was a marked decrease in 1985 in abundance, biomass, and number of species for bottom-dwelling organisms. Changes were most obvious at deeper water stations in the eastern fjord, and at a single station within the mixing zone. These changes were hypothesized to be attributed to natural environmental causes, and not terminal operation.
6. There was an increase in benthic biomass at one station near the diffuser, possibly due to supplemental carbon sources available there.

In the fall of 1985 and spring of 1986, two additional mixing zone verification studies were conducted by Alyeska and EPA. These studies demonstrated conformance with the aromatic hydrocarbon standard at the boundary of the mixing zone in March, but found occasional violations of water quality criteria at certain depths and stations in September and October, when the water column is vertically stratified and vertical

mixing is reduced. These documented excursions, coupled with modeled predications of violations during certain times of the year, formed the basis for the department's listing of Port Valdez as Impaired and for including it on the 304(l) priority pollutant Short List.

A revised NPDES permit was issued by EPA in 1989. Considerable changes were made to the permit as a result of monitoring studies summarized above. The permit contains new and more stringent effluent limitations for aromatic hydrocarbons (benzene, toluene, xylene and ethylbenzene), for naphthalene, and for total organic carbon. The permit requires adherence to a "Best Management Practices Plan" to prevent accidental release of pollutants during operation of the BWT facility, and to ensure optimal treatment efficiency. The permit also requires reestablishment of a comprehensive marine monitoring program with the following elements:

1. Biological monitoring at fixed stations both near and far from the diffuser.
2. Monitoring of hydrocarbon concentrations in sediments below the mixing zone and beyond and in selected flatfish species.
3. Bioassay studies to determine the toxicity of the effluent.
4. Monitoring of the effluent to determine chemical composition.
5. Verification of compliance with State standards at the boundary of the mixing zone.
6. Establishing a Technical Advisory Group to assist ADEC in recommending and reviewing monitoring plans and results.

In summary, the available evidence suggests that regulation of the BWT facility has been successful in mitigating large scale environmental degradation to date. Localized accumulations of hydrocarbons persist in sediments and blue mussel tissues in the vicinity of the diffuser. Recent studies conducted by the National Marine Fisheries Service also suggest the presence of aromatic hydrocarbons in the tissue (bile) of three species of bottom-dwelling fish in Port Valdez. These accumulations have not been conclusively linked to adverse changes in biological populations or community structure.

DEC 11 1989
DEC 11 1989 3/15/91

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL QUALITY**

PORT VALDEZ IMPAIRMENT LISTING

The House Oil and Gas Committee requested information on the inclusion of Port Valdez on the State of Alaska list of impaired waterbodies.

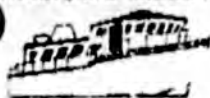
The Department of Environmental Conservation is required, under Section 305(b) of the Clean Water Act, to prepare a report on the quality of Alaska's surface waters and groundwater. The report is required to list water quality-impaired waterbodies. The definition of impairment is:

A waterbody or defined segment of a waterbody is documented to have had one or more criteria of the Water Quality Standards violated due to point or nonpoint pollution sources. Water quality violations must have occurred within the last five years.

The discharge from the ballast water treatment facility is authorized by a federal wastewater discharge permit issued by the Environmental Protection Agency and certified by the department. The permit includes a mixing zone around the discharge diffuser. Compliance with the state's water quality standards is required at the mixing zone boundary and beyond into Port Valdez. Periodic violations of state water quality standards for total aromatic hydrocarbons have been documented at the boundary of the mixing zone during certain times of the year. These violations led to the impaired listing. This information also was used by EPA and the state to require more stringent effluent limits in the renewal of the ballast water discharge permit in 1989.

Impairment due to violation of water quality criteria at the boundary of the permitted mixing zone does not necessarily mean that biological impairment is occurring in Port Valdez. Biological studies conducted in Port Valdez since the early 1970's support the conclusion that biological impairment either does not appear to be occurring or is not detectable using existing study designs.

**STAN
STEPHENS**
CHARTERS & CRUISES



Stanley Stephens
Owner

March 18, 1991

Cruises and Charters
in Prince William
Sound, Alaska

To the Senate and House Oil & Gas Committee Members:

Box 100
Valdez, Alaska 99686

This is a statement from Stan Stephens. It is my own, and does not represent the opinion of R.C.A.C. or of any other organization to which I belong.

Box 100
Valdez, Alaska 99686

Box 100
Valdez, Alaska 99686

In both 1989 and 1990, Port Valdez was declared a toxic, impaired waterway by the State, due to increases in the hydrocarbon pollution load at Alyeska.

Marketing
100 W. 11th
Valdez, Alaska 99686

For residents of the State who have spent most of their lives in Prince William Sound and Valdez, this statement hurt.

Box 100
Valdez, Alaska 99686

I could talk about air and water quality, contingency plans, tankers, tugs, navigation systems, and the terminal, but I am a layman, and I want to talk about the failure of the State of Alaska to regulate the oil companies, or to supply the expertise needed to protect it's citizens.

On Friday, I became concerned at the House Hearings on oil and gas, when Representative Hudson said that the oil companies were there to educate. I am sure the canned presentations that were heard were designed to help increase the knowledge of the committee members. It is sad when the only input given on the subject comes from the oil companies themselves. This has always been the case. The only real knowledge that DEC or EPA has on this subject is that which they get from Alyeska or the oil companies, who have all the experts. It is obvious that Alyeska isn't regulated. Self-regulation has never worked. We all know it, yet we choose to ignore it.

Valdez and Prince William Sound are no longer the pristine country I once knew. We have allowed it to become polluted through sheer lack of concern by a nonchalant attitude that still exists today, only two years after the worst oil disaster in our country. Isn't it odd that we talk about restoring PWS when we still continue to pollute it.

I am not an overboard environmentalist. I am a realist. What is real to me is what my eyes can see - yellow, and blue/black dirty air - what my nose can smell - tanker vapors and stack exhaust - and what my ears can hear - the stories from concerned experts. It doesn't take much of an

I.Q. to tell that we have a major pollution problem. I am not an expert who can give you a canned testimony. I expect the regulatory agencies to have their own team of experts to do this for me. We have no regulatory agencies overseeing Alyeska, not federal nor state.

We blame Exxon for the oil spill, but the State of Alaska is the real culprit, as well as the Federal Government, the Coast Guard, the City of Valdez, myself, and of course the oil companies. Private enterprize is expected to make a profit, and rightly so. Every CEO is supposed to do better than the past year. The highest profit possible cannot be realized if money is held back to fully protect the environment. It is the job of our government to install checks and balances to control business when it pertains to upholding the quality of our land, air and water. This is the responsibility of the Federal and the State governments, EPA and DEC.

DEC has never done it's job, when regarding the regulation of the largest industry in our state. We should know the system from Prudoe Bay to Valdez like the back of your hand.

The legislature should be able to ask DEC and EPA and the contracted experts to report on Alyeska, as well as Alyeska itself. This would not only benefit the State but would help Alyeska. Has the terminal facility been reviewed and upgraded every five years, as Congress promised us? Why hasn't it? And why is the State not in control? Alyeska can use every technical excuse in the world because we, the people, do not have the expertise to counteract them.

In the last 13 years of operation, we should have had experts working daily with Alyeska at the terminal to promote the best available technology. We haven't, and we have failed the citizens of Alaska and the USA. To me this is a worse crime than Capt. Hazelwood committed. The State is letting the people it represents down by not protecting our water and air, and land, and our livelihoods. The oil companies and the Federal Government are our biggest polluters, and yet we choose not to regulate them.

DEC's biggest effort should be the pipeline and the Alyeska terminal at Valdez. Valdez should have a district office with experts on hand, free to enter Alyeska to help solve problems. We were promised the best available technology, but we will not have it until the State and Federal governments choose to do their jobs.

We have put DEC's best people out to pasture, or they have left Dec because they tended to raise the hair on the back

of Alyeska's neck. We have had a gutless State bureaucracy which was afraid to ruffle the feathers of a company that supplies all of the dollars. I hope this is not the case now!

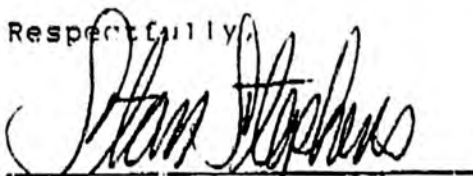
Why don't we have the best experts in the oil industry watching over the industry itself, in our behalf? Why do we listen to the oil companies and no one else? Why doesn't Valdez have a district office of DEC? Why have we put our experts out to pasture? Why are we repeating the mistakes made world-wide?

I tend to be an emotional individual. I also have a little man inside me that has to ask: "Was the beauty of the great State of Alaska created to be polluted by its natural resources? Or did the creator give us heart and soul and brains to use our resources for our good, with the ability to do so by protecting the most beautiful paradise on earth?"

We can have oil and the environment. To do so costs a lot of money. The oil companies are showing tremendous profits, which they need to grow, explore and stabilize their business, and to work for an alternate source of energy. They also need to put more of these profits back into the protection of the environment from their industry. They have to protect what is ours, the air, water and the land.

Please, in the name of our children's future, take this subject seriously!

Respectfully,


Stan Stephens

copies: members Alaska State Legislature

STATUTES

/ REGS



Sella Ness, Graven, Mossbank
Shetland ZE2 9OR

Facsimile: 0800 242231
Telex: 75142

FACSIMILE MESSAGE

To: Ficky Off

FAO: _____

From: Jim Dickson

Our Ref: _____

Date: 4/4/90

No of Pages: 38

Subject: International Maritime Organisation
MARPOL 73/78 Convention

Dear _____

Suggest you lay hands on the IMO publication, "Regulations for the Prevention of Pollution by Oil" re-printed 1990, ISBN 92-801-1198-3.

In the meantime I have FAXED the most important pages. I must state that, in my opinion, EPA & DEC are very generous in their approval of additional dirty ballast washings slops @ Valdez. The MARPOL convention seems quite specific to me, I.E.

① Regulation 12 requires reception facilities at loading ports & ship repair ports.

② Regulation 15 requires suitable equipment to allow controlled discharge of ^{water} from slop tanks.

It appears to me that Alaska is being used as a dumping ground due to failures by Federal Government / Ship Owners & USCG to ensure compliance with MARPOL.

M A R P O L 7 3 / 7 8

is the

International Convention for the Prevention of Pollution by Ships, 1973, as amended by Protocol in 1978

(MARine POLLution)

This international treaty has five annexes each dealing with a different marine pollutant.

- Annex I - Oil
- Annex II - Noxious Liquid Substances (Chemicals) in Bulk
- Annex III - Packaged Hazardous Materials (OPTIONAL)
- Annex IV - Sewage (OPTIONAL)
- Annex V - Garbage (Plastics)

The U. S. has currently ratified Annexes I, II, and V.

COMDTINST M16450.26 of 18 Oct 1983, Entitled "MARPOL 73/78 Boarding and Enforcement Policies and Procedures" details the requirements of MARPOL 73/78 Annex I, how they relate to existing Federal Water Pollution Control Act (FWPCA) requirements and the Coast Guard enforcement policies & procedures.

MARPOL requirements institute significant change from the international practices engaged in by all tankers in the 1970's.

Tanker practices common prior to MARPOL 73/78:

- Load all tanks with crude oil product.
- After product has been discharged at a refinery, take water ballast in any tank to obtain adequate draft for return trip.
- Conduct tank cleaning operations (usually water wash with detergent) and discharge overboard beyond 50 NM of land.
- Few ballast water treatment facilities.

Post MARPOL practices:

- Load only certain tanks with product. (Some tanks are Segregated Ballast Tanks ONLY)
- The number of Segregated Ballast tanks are determined by formula to develop an adequate ballast draft.
- Use Crude Oil Washing (COW) with Inert Gas System (IGS) while discharging product to increase quantity discharged ashore.
- Product that is found in Non-Segregated Ballast is retained on board as it has high value and can be reclaimed.
- Oily Water Separators (OWS).
- Oil Record Books

MARPOL 73/78 allows "clean ballast" discharge beyond 50 NM of land (Clean Ballast is defined as less than 15 ppm oil).

FWPCA has a standard for "harmful quantity" as a quantity that creates a "sheen, sludge or an emulsion" whether or not the discharge is at or below 15 ppm.

ATTACHED:

Selected excerpts from COMDTINST M16450.26 of 18 October 1983
"MARPOL 73/78 Boarding and Enforcement Policies and Procedures"

Selected excerpts from Navigation and Vessel Inspection Circular
No. 1-81 (NVC 1-81) dtd 18 February 1981.

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DEFINITIONS

1. "Administration" means the Government of the state under whose authority the ship is operating. For fixed or floating platforms engaged in exploration and exploitation of the coastal seabed and subsoil, the Administration is the Government of the coastal state exercising sovereign rights for the purpose of exploration and exploitation of their natural resources.
2. "Discharge" means any release, however caused, from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying. It does not include:
 - a) dumping within the meaning of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, done at London on 13 November 1972 (activities under Environmental Protection Agency or Army Corps of Engineers permits); or,
 - b) release of oil or oily mixtures directly arising from the exploration, exploitation and associated with offshore processing of seabed mineral resources.
3. "Equivalent" means an alternative for a fitting, material, appliance or apparatus allowed by the Administration which at a minimum is as effective as the MARPOL 73/78 requirement. An equivalent shall not include the substitution of an operational method to effect the control of discharge of oil for design and construction features required by MARPOL 73/78.
4. "Existing Ship" means any ship which is not a "new ship."
5. "International Oil Pollution Prevention (IOPP) Certificate" means a Certificate issued to a ship by an Administration party to MARPOL 73/78 after successful completion of a survey to insure compliance with MARPOL 73/78 requirements. An IOPP Certificate is only issued to ships whose flag state is a Party to MARPOL 73/78.
6. "IOPP Certificate Equivalency" means valid documentation showing that a non-Party ship has been surveyed in accordance with and complies with the requirements of MARPOL 73/78. Evidence of compliance may be issued by either the government of a country or a recognized classification society. The evidence of compliance must contain all of the information in and have substantially the same format as the IOPP Certificate, form A or form B as appropriate.
7. "MARPOL 73/78" means the International Convention for Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto.

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8. "New Ship" means a ship:

- a) for which the building contract is placed after 31 December 1975; or,
- b) in the absence of a building contract, the keel of which is laid or which is at a similar stage of construction after 30 June 1976; or,
- c) the delivery of which is after 31 December 1979; or,
- d) which has undergone a major conversion:
 - (1) for which the contract is placed after 31 December 1975; or,
 - (2) in the absence of a contract, the construction work of which is begun after 30 June 1976; or,
 - (3) which is completed after 31 December 1979.

9. "Oceangoing Ship" means a ship that:

- a) is operated under the authority of the United States and engages in international voyages; or
- b) is operated under the authority of the United States and is certificated for ocean service; or,
- c) is operated under the authority of the United States and is certificated for coastwise service beyond three miles from land; or,
- d) is operated under the authority of the United States and operated at any time seaward of the outermost boundary of the territorial sea of the United States as defined in 33 CFR 2.05; or,
- e) is operated under the authority of a country other than the United States.

A Canadian or U.S. ship that operates exclusively on the Great Lakes of North America or their connecting and tributary waters, or exclusively on the internal waters of the U.S. and Canada is not an "oceangoing" ship.

10. "Oil" means petroleum in any form including crude oil, fuel oil, sludge, oil refuse, and refined products. "Oil" does not include animal or vegetable based oil nor does it include noxious liquid substances designated under Annex II of MARPOL 73/78. See appendix (1) to this enclosure.

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11. "Oily mixture" means an oily mixture with any oil content, including bilge slops, oily wastes, oil residues (sludge), oily ballast water, and washings from cargo oil tanks.
12. "Party" means a ratifying country to Annex I of MARPOL 73/78, and includes as of August 1983 the following countries: Bahamas, Colombia, Denmark, Federal Republic of Germany, France, Gabon, Greece, Italy, Japan, Lebanon, Liberia, Netherlands, Norway, Peoples Republic of China, Peru, Sweden, Tunisia, United Kingdom, United States, Uruguay, and Yugoslavia.
13. "Public vessel" means any warship, naval auxiliary or other ship owned or operated by a country and used, for the time being, only on government non-commercial service.
14. "Ship" means any vessel of any type whatsoever operating in the marine environment and includes hydrofoil boats, air-cushion vehicles, submersibles, floating craft (self propelled or not) and fixed or floating drilling rigs and other platforms.

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- (6) If the monitor is inoperative or indicates a discharge in excess of MARPOL 73/78 limits, check the Oil Record Book to determine whether there have been any problems with the monitor and what action the ship has taken to correct the problems.
 - (7) If an unauthorized discharge is indicated by the monitor continuous records, conduct a more thorough review as described in paragraph 4c. of this enclosure.
4. Alleged Discharge Violation Investigation: Discharge boardings conducted as a result of an oil sighting report by Coast Guard units or other individuals or countries require a thorough review of the ORB, monitor continuous recordings, pollution prevention equipment operation, and ship spaces together with interviewing the ship's personnel to determine whether the suspected ship discharged in violation of MARPOL 73/78.
- a. Discharge Requirements: ALL SHIPS on 2 October 1983 must comply with the discharge limitations as described in the following sections, even though different classes of ships have different schedules for complying with IOPP certification and pollution equipment installation. A summary table of the discharge requirements for MARPOL 73/78 is provided as attachment (A) to this enclosure. All unauthorized discharges shall be reported without delay as stated in 33 CFR 153.203 and 33 CFR 151.15.
- (1) U.S. Territorial Sea: The FWPCA prohibits the discharge of oil in a "quantity which may be harmful" into the navigable waters of the United States, which includes the territorial sea (0 to 3 nautical miles (nm) offshore). Under the FWPCA, the EPA has defined a "quantity which may be harmful" as one which forms a sheen, sludge, film or emulsion (40 CFR 110). Therefore any discharge in the territorial sea which creates a sheen, even if allowed by MARPOL 73/78 is a violation of the FWPCA, and if the discharge is greater than 15 parts per million (ppm), it is also a violation of MARPOL 73/78.
 - (2) U.S. Contiguous Zone: The U.S. contiguous zone is the area between 3 and 12 nautical miles offshore as measured from the baseline from which the territorial sea is measured. In the contiguous zone oil discharges are restricted by the FWPCA and MARPOL 73/78. The FWPCA prohibits any discharge of oil in a quantity which may be harmful as defined in 40 CFR 110 (one which forms a sheen, sludge, film or emulsion), but excludes discharges permitted by MARPOL 73/78. MARPOL 73/78 permits discharges from machinery space bilges and oil fuel tanks in concentrations of less than 15 ppm when the ship has in operation an approved oily-water separator (33 CFR 151.09), and monitor or alarm system (33 CFR 155). Thus, discharges in the contiguous zone in compliance with MARPOL 73/78 restrictions are not a violation of the FWPCA, even if a sheen results. Discharges of 15 ppm should not produce a sheen, under most conditions.

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- (3) Discharges Beyond the Contiguous Zone: Beyond the contiguous zone discharges of oil are presently limited only by MARPOL 73/78 except for discharges associated with Outer Continental Shelf drilling operations which are governed by National Pollution Discharge Elimination System (NPDES) permits issued by the EPA (40 CFR 435).
- (a) Discharges from Machinery Space Bilges and Fuel Tanks: MARPOL 73/78 permits discharges from machinery space bilges and oil fuel tanks in concentrations of less than 100 ppm when the ship is proceeding enroute, not within a special area (see attachment (A) to this enclosure), more than 12 nm from the nearest land, and when the ship has in operation an approved oily-water separator and for ships of 10,000 GT and above an approved bilge monitor or alarm system (33 CFR 151.09 and MARPOL 73/78 Annex I, Regulations 9 and 10).
- (b) Discharges from Tanker Cargo Tanks and Cargo Pump Room Bilges: 33 CFR 157.37 permits discharges of oil from cargo tanks and cargo pump room bilges only when all of the following conditions are met:
- i. the tanker is not within a special area;
 - ii. the tanker is more than 50 nm from the nearest land;
 - iii. the tanker is proceeding enroute;
 - iv. the instantaneous rate of discharge of oil content does not exceed 60 liters per nautical mile;
 - v. the total quantity of oil discharged into the sea does not exceed for existing tankers 1/15,000 of the total quantity of the particular cargo of which the residue formed a part, and for new tankers 1/30,000 of the total quantity of the particular cargo of which the residue formed a part; and
 - vi. the tanker has in operation, except as allowed in 33 CFR 157.08(i), an approved oil discharge monitoring and control system.
- (4) Existing Ship Discharges: Existing ships which are not yet required to have pollution prevention equipment may discharge oil in the concentrations and at the locations allowed by MARPOL 73/78. It is understood that existing ships will have no accurate method of determining the concentrations discharged. Therefore, unless it can be proven that the concentration is in excess of MARPOL 73/78 limitations or that the discharge occurred in an unauthorized location, a violation report should not be filed by the investigating unit.

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Cases where evidence is more easily obtained include:

- (a) in the territorial sea any ship discharge creating a "sheen" is a violation of the FWPCA.
- (b) in the contiguous zone any ship discharge creating a "sheen" is a violation of the FWPCA, unless it can be shown the discharge was through approved 15 ppm oily-water separating equipment and either a bilge alarm or monitor.
- (c) from 12 to 50 nm offshore a tanker discharge from cargo areas is in violation of 33 CFR 157.37, whether or not it has an oily-water separator or a cargo monitor system.

Other suspected unauthorized discharges by existing ships without MARPOL 73/78 equipment installed will be difficult to prove. However, even in these cases the following evidence is sufficient to commence civil penalty proceedings for a discharge violation: sightings of large quantities of oil obviously in excess of 100 ppm or 60 liters per nautical mile; oil samples; no ORB entry when a discharge is sighted; no ORB entry for a tanker having deballasted arriving in port after a ballast voyage; or an ORB entry for a tanker which indicates a discharge within 50 nautical miles of land.

The intent of MARPOL 73/78, when considered as a whole, is to allow existing ships to discharge oily wastes at sea in the concentrations stipulated even though existing ships are not required to have oily-water separating equipment, monitors and alarms installed until 1986. Existing ships do not have to retain all oily waste on board as might be interpreted by reading MARPOL 73/78 Regulation 9(6) concerning residue retention separately. This interpretation for discharges from existing ships represents an extension of the OILPOL 54/69 discharge scheme, which required ships to meet discharge limitations without requiring the installation of pollution discharge equipment.

- (5) Fixed and Floating Drilling Rigs and Other Platforms: There are no additional equipment requirements or discharge limitations on fixed and floating drilling rigs and other platforms which are operating under a valid NPDES permit in accordance with section 402 of the FWPCA, as amended and with 40 CFR Chapter I. When not operating under a permit, the MARPOL 73/78 oil discharge limitations in 33 CFR 151.09 are fully applicable. Compliance with an NPDES permit is a fully satisfactory alternative to compliance with the requirements of MARPOL 73/78.

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CONTROL OF DISCHARGE OF OIL UNDER MARPOL 73/78

TABLE 1
Control of Discharge of Oil from Cargo Tank Areas of Oil Tankers

Sea Areas		Discharge Criteria
Within a SPECIAL AREA*		NO DISCHARGE except clean** or segregated ballast
Outside a SPECIAL AREA	Within 50 nautical miles from land	NO DISCHARGE except clean or segregated ballast
	More than 50 nautical miles, from land	NO DISCHARGE except either (a) clean or segregated ballast; or (b) when: (1) the tanker is enroute; and (2) the instantaneous AREA rate of discharge of oil does not exceed 60 litres per nautical mile; and (3) the total quantity of oil discharged does not exceed 1/15,000 (for existing tankers) or 1/30,000 (for new tankers) of the total quantity of cargo which was carried on the previous voyage; and (4) the tanker has in operation an oil discharge monitoring and control system and slop tank arrangements as required by Regulation 15 of Annex I of MARPOL 73/78.

*Special area requirements take effect in the Mediterranean Sea, Black Sea and Baltic Sea areas October 2, 1983, and for the Red Sea and Gulf areas from the date established by IMO.

**"Clean ballast" is the ballast in a tank which has been so cleaned that the effluent therefrom does not create a visible sheen or the oil content exceed 15 ppm.

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TABLE 2

Control of Discharge of Oil and Oily Waste from all Ships
(Machinery Space/Fuel Oil Tank Ballast Water)

Sea Areas		Ship Type & Size	Discharge Criteria
Within a SPECIAL AREA*	Anywhere	Oil tankers of all sizes and other ships ≥ 400 grt	NO DISCHARGE except when: (1) the ship is proceeding enroute; and (2) the oil content of effluent without dilution does not exceed 15 ppm; and (3) the ship has in operation oil filtering equipment with automatic 15 ppm stopping device; and (4) for oil tankers the bilge water does not originate from cargo pump room bilges or is not mixed with oil cargo residue.
	Within 12 nautical miles from land	Ships < 400 grt other than oil tankers	NO DISCHARGE except when the oil content of effluent without dilution does not exceed 15 ppm
	More than 12 nautical miles from land		NO DISCHARGE except when either: (a) the oil content of effluent without dilution does not exceed 15 ppm; or (b) (1) the ship is proceeding enroute; and (2) the oil content of the effluent is less than 100 ppm.

* For application of Special Area requirements see footnote in Table 1.

TABLE 2 CONTINUED

Sea Areas		Ship Type & Size	Discharge Criteria
Outside a SPECIAL AREA*	Within 12 ** nautical miles from land	Oil Tankers of all sizes and other ships $\geq$ 400 grt	NO DISCHARGE except when the oil content of effluent without dilution does not exceed 15 ppm.
		Other ships < 400 grt	The condition for ships $\geq$ 400 grt apply as far as practicable and reasonable
	More than 12 nautical miles from land	Oil tankers of all sizes and other ships $\geq$ 400 grt	NO DISCHARGE except when either: (a) the oil content of effluent does not exceed 15 ppm; or (b)(1) the ship is proceeding enroute; and (b)(2) the oil content of the effluent is less than 100 ppm; and (b)(3) the ship has in operation an oil discharge monitor- ing and control system, oily-water separating or filtering equipment or other installation required by Regulation 16 of Annex I of MARPOL 73/78; and (b)(4) for oil tankers the bilge water does not originate from cargo pump room bilges or is not mixed with oil cargo residue.
		Other ships < 400 grt	The conditions for ships $\geq$ 400 grt apply as far as practicable and reasonable.

** Discharges of a quantity of oil that may be harmful are prohibited within the territorial seas of the U. S.

The following is a description of the standards:

A. **SEGREGATED BALLAST TANKS** - Segregated ballast tanks (SBT) are ballast tanks that are permanently allocated to the carriage of ballast water and are completely separated from cargo oil and fuel oil systems. The entire SBT system (tanks, piping, pumps, etc.) must be independent of the cargo oil and fuel oil systems. When SBT is required by 33 CFR Part 157 or chosen by the shipowner or operator as an option for compliance with 33 CFR Part 157, the segregated ballast capacity must be sufficient to fully immerse the vessel's propeller and also enable the tank vessel to meet specific minimum draft and trim requirements in any ballast condition at any stage of a ballast voyage. The intent of these requirements is to provide the tank vessel with enough segregated ballast capacity that the vessel may operate safely on ballast voyages without putting ballast water in oil tanks except during unusually severe weather or other specific operational conditions. In this manner, operational oil pollution that results from the ballasting and deballasting of cargo tanks is substantially reduced.

B. **PROTECTIVELY LOCATED SEGREGATED BALLAST TANKS** - Protectively located segregated ballast tanks (PL/SBT) are ballast tanks as described above that are located within the cargo tank length of a tank vessel, outboard of or below the cargo tanks. Protectively located segregated ballast tanks are usually wing tanks (side tanks) or double bottom tanks. Wing tanks reduce accidental oil pollution and the number of explosions that may result from collisions and rammings, while double bottoms provide similar protection from groundings. When PL/SBT is required, they must provide a specific minimum amount of protection for the cargo tanks. There are two separate minimum standards for PL/SBT in 33 CFR Part 157. Tank vessels in Categories B1, B2, or B3 of TABLES ONE, TWO, or THREE that are required to have PL/SBT must meet the PL/SBT standards in 33 CFR 157.09(d). The PL/SBT standard in 33 CFR 157.09(d) was developed by the Coast Guard in 1975 and is required on certain tank vessels of 70,000 DWT and above. Tank vessels in Categories A1, A2, or A3 of the TABLES that are required to have PL/SBT must meet the PL/SBT standards in Appendix C of 33 CFR Part 157. The PL/SBT standard in Appendix C of 33 CFR Part 157 was developed by IMCO at the TSPP Conference and is required on certain crude oil carriers of 20,000 DWT and above, and product carriers of 30,000 DWT and above. This new standard for PL/SBT in Appendix C of 33 CFR Part 157 was established after a more thorough examination of the subject, its effect on tank vessel design, and its anticipated effect on reducing accidental oil pollution.

C. **DEDICATED CLEAN BALLAST TANKS** - Dedicated clean ballast tanks (CBT) are cargo tanks that are dedicated solely to the carriage of clean ballast and which no longer carry cargo. The associated pumps and piping system for CBT are allowed to be common with the cargo piping system and therefore, require flushing each time prior to the handling of clean ballast. The CBT concept is an operational measure, rather than a design feature like SBT, which, if operated correctly, will achieve about the same effect as SBT in reducing operational oil pollution that results from ballasting and deballasting. On a product carrier, where tank cleaning operations often take place after each

Toxicity Data. No data submitted.
Exposure. Confidential.
Environmental Release/Disposal. Confidential.

PMN 84-466

Manufacturer. Spencer Kellogg
 Division of Textron, Inc.
Chemical. (G) Polyurethane resin.
Use/Production. (G) A component of
 an adhesive to be used in an open, non-
 dispersive manner. Prod. range:
 Confidential.

Toxicity Data. No data submitted.
Exposure. Confidential.
Environmental Release/Disposal. No
 data submitted.

PMN 84-467

Importer. Confidential.
Chemical. (G) Hydrogen 2-[alpha-(2-
 hydroxy-3-sulfo-5-
 ethenylsulfonylphenylazo)-
 benzilidenehydrazino]-5= substituted,
 cuprate, sodium salt.

Use/Import. (S) Textile dye. Import
 range: 600-1,200 kg/yr.

Toxicity Data. Acute oral: 5,000 mg/
 kg; Irritation: Skin—Slight, Eye—Non-
 irritant.

Exposure. Import and processing: a
 total of 8-10 workers, up to 30
 manhours/yr.

Environmental Release/Disposal. 120
 kg/yr released. Disposal by POTW.

PMN 84-468

Manufacturer. Confidential.
Chemical. (G) Functionalized
 polyacrylic acid derivative.
Use/Production. G Coatings additive
 in open non-dispersive uses (pertinent to
 both categories of us). Prod. range:
 Confidential.

Toxicity Data. No data on the PMN
 substance submitted.

Exposure. Manufacture: dermal a total
 of 8 workers.

Environmental Release/Disposal.
 Release to water and land. Disposal by
 POTW, biological treatment system and
 landfill.

Dated: March 2, 1984.

Linda A. Travers,
 Acting Director, Information Management
 Division.

[FR Doc. 84-6246 Filed 3-9-84; 8:45 am]
 BILLING CODE 6560-50-M

[SA-FRL 2542-3]

**Science Advisory Board,
 Environmental Effects, Transport and
 Fate Committee; Open Meeting**

Under Pub. L. 92-483, notice is hereby
 given of a two-day meeting of the
 Science Advisory Board's

Environmental Effects, Transport and
 Fate Committee. The meeting will be
 held on March 26-27, 1984 in the
 Holiday Inn, 165 Fort Pickens Road,
 Pensacola Beach, Florida in Conference
 Room "Langley" and "Antietam". The
 meeting will begin at 9:00 a.m. and will
 adjourn at approximately 5:00 p.m. on
 March 26, Monday, and from 10:00 a.m.
 to 5:00 p.m. on March 27, Tuesday.

This will be the second meeting of the
 Committee on the assessment of
 environmental impacts involved with
 the incineration of hazardous wastes at
 sea. Agency personnel from the Gulf
 Breeze, Florida, Office of Research and
 Development Laboratory will provide
 the Committee information on their
 extensive experience with the
 distribution and uptake of
 organochlorine compounds under the
 climatic and hydrologic conditions that
 exist in the Gulf of Mexico. These
 briefings will help to enable the
 Committee to determine an appropriate
 course of action to carry out its
 independent scientific review.

The meeting is open to the public. Any
 member of the public wishing to attend
 should contact Dr. Douglas B. Seba,
 Executive Secretary, Environmental
 Effects, Transport and Fate Committee
 or Joanna Foellmer (202) 382-2552 by
 close of business March 19, 1984. Those
 wishing to obtain information or submit
 comments to the Committee should
 contact Dr. Terry F. Yosie, Director,
 Science Advisory Board (202) 382-4126
 or Dr. Douglas B. Seba, by close of
 business March 19, 1984.

Dated: March 5, 1984.

Terry F. Yosie,
 Staff Director, Science Advisory Board.

[FR Doc. 84-6364 Filed 3-9-84; 8:45 am]
 BILLING CODE 6560-50-M

[ER-FRL-2541-1]

**Availability of Environmental Impact
 Statements Filed February 27 Through
 March 2, 1984**

Responsible Agency: Office of Federal
 Activities, General Information (202)
 382-5073 or (202) 382-5075.

EIS No. 840085, Draft, COE, AL, Bulk
 Coal and Grain Handling Facility
 Permit, Theodore Ship Channel,
 Mobile County, Due: April 23, 1984.

EIS No. 840086, Report, COE, MI, Pointe
 Mouillee Maintenance Dredging of
 Sediments, Monroe and Wayne
 Counties.

EIS No. 840087, Report, COE, MI,
 Michigan Maintenance Dredging of
 Unpolluted Sediments, Ludington,
 Muskegon, and St. Joseph Harbors.

EIS No. 840089, Draft, FHWA, GA,
 President/East Broad Streets to
 Islands Expressway/US 80,
 Improvements, Chatham Co. Due: Apr.
 23, 1984.

EIS No. 840090, DSuppl. UMT, FL,
 Jacksonville/River Crossing
 Automated Transit Extension
 Alternative, Duval County, (DS-1)
 Due: Apr. 23, 1984.

EIS No. 840091, Draft, COE, MS, Jackson
 Flood Control Plan, Pearl River,
 Rankin County, Due: Apr. 24, 1984.

EIS No. 840092, Draft, BLM, CO, Mobile/
 Pacific Oil Shale Project,
 Development, Garfield County, Due:
 May 4, 1984.

EIS No. 840093, Draft, FHW, KY, US 27/
 Nicholasville Bypass Construction,
 Jessamine County, Due: Apr. 23, 1984.
 Amended Notices:

EIS No. 840040, Draft, SFW, AK, Kenai
 National Wildlife Refuge,
 Conservation Management Plan,
 Kenai Peninsula Borough Due: Apr. 4,
 1984. Published FR 3-9-84 Review
 Extended.

EIS No. 830568, Draft, OSM, WY Red
 Rim Coal Development Leasing,
 Fremont, Sweetwater and Carbon
 Counties, Due: Apr. 20, 1984.
 Published FR 01-20-84—Notification
 of closing date for comments.

Dated: March 6, 1984.

Allan Hirsch,
 Director, Office of Federal Activities.

[FR Doc. 84-6429 Filed 3-9-84; 8:45 am]
 BILLING CODE 6560-50-M

[OW-FRL-2533-1]

**Development of Water Quality-Based
 Permit Limitations for Toxic Pollutants;
 National Policy**

AGENCY: Environmental Protection
 Agency (EPA).

ACTION: Notice.

SUMMARY: EPA has issued a national
 policy statement entitled "Policy for the
 Development of Water Quality-Based
 Permit Limitations for Toxic Pollutants."
 This policy addresses the technical
 approach for assessing and controlling
 the discharge of toxic substances to the
 Nation's waters through the National
 Pollutant Discharge Elimination System
 (NPDES) permit program.

FOR FURTHER INFORMATION CONTACT:
 Bruce Newton or Rick Brandes, Permits
 Division (EN-338), Office of Water
 Enforcement and Permits, U.S.
 Environmental Protection Agency,
 Washington, D.C. 20460, 426-7010.

SUPPLEMENTARY INFORMATION: As the water pollution control effort in the United States progresses and the "traditional" pollutants (oxygen demanding and eutrophying materials) become sufficiently treated to protect water quality, attention is shifting towards pollutants that impact water quality through toxic effects. Compared with the traditional pollutants, regulation of toxic pollutants is considerably more difficult. The difficulties include (1) the great number of toxic chemicals that may potentially be discharged to receiving waters and the difficulties in their analysis; (2) the changes in the toxic effects of a chemical resulting from reactions with the matrix of constituents in which it exists; and (3) the inability to predict the effects of exposure to combinations of chemicals.

To overcome some of these problems, EPA and the States have begun to use aquatic toxicity tests and various human health assessment techniques to complement chemical analyses of effluents and receiving water samples. Because these techniques or their application to effluent testing are new, EPA and the States have been cautious in their use. Based on EPA's evaluation of these techniques and the experiences of several States, EPA is now recommending the use of biological techniques as a complement to chemical-specific analyses to assess effluent discharges and express permit limitations. EPA has issued these recommendations through a statement of policy and is developing a technical guidance document to help implement the policy.

The complete text of the national policy statement follows:

Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants

Statement of policy

To control pollutants beyond Best Available Technology Economically Achievable (BAT), secondary treatment, and other Clean Water Act technology-based requirements in order to meet water quality standards, the Environmental Protection Agency (EPA) will use an integrated strategy consisting of both biological and chemical methods to address toxic and nonconventional pollutants from industrial and municipal sources. Where State standards contain numerical criteria for toxic pollutants, National Pollutant Discharge Elimination System (NPDES) permits will contain limits as necessary to assure compliance with these standards. In addition to enforcing

specific numerical criteria, EPA and the States will use biological techniques and available data on chemical effects to assess toxicity impacts and human health hazards based on the general standard of "no toxic materials in toxic amounts."

EPA, in its oversight role, will work with States to ensure that these techniques are used wherever appropriate. Under section 308 and section 402 of the Clean Water Act (the Act), EPA or the State may require NPDES permit applicants to provide chemical, toxicity, and instream biological data necessary to assure compliance with standards. Data requirements may be determined on a case-by-case basis in consultation with the State and the discharger.

Where violations of water quality standards are identified or projected, the State will be expected to develop water quality-based effluent limits for inclusion in any issued permit. Where necessary, EPA will develop these limits in consultation with the State. Where there is a significant likelihood of toxic effects to biota in the receiving water, EPA and the States may impose permit limits on effluent toxicity and may require an NPDES permittee to conduct a toxicity reduction evaluation. Where toxic effects are present but there is a significant likelihood that compliance with technology-based requirements will sufficiently mitigate the effects, EPA and the States may require chemical and toxicity testing after installation of treatment and may reopen the permit to incorporate additional limitations if needed to meet water quality standards. (Toxicity data, which are considered "new information" in accordance with 40 CFR 122.62(a)(2), could constitute cause for permit modification where necessary.)

To carry out this policy, EPA Regional Administrators will assure that each Region has the capability to conduct water quality assessments using both biological and chemical methods and provide technical assistance to the States.

Background

The Clean Water Act establishes two principal bases for effluent limitations. First, existing dischargers are required to meet technology-based effluent limitations that reflect the best controls available considering economic impacts. New source dischargers must meet the best demonstrated technology-based controls. Second, where necessary, additional requirements are imposed to assure attainment and maintenance of water quality standards established by the States and approved by EPA. In

establishing or reviewing NPDES permit limits, EPA must ensure that the limits will result in the attainment of water quality standards and protect designated water uses, including an adequate margin of safety.

For toxic and nonconventional pollutants it may be difficult in some situations to determine attainment or nonattainment of water quality standards and set appropriate limits because of complex chemical interactions which affect the fate and ultimate impact of toxic substances in the receiving water. In many cases, all potentially toxic pollutants cannot be identified by chemical methods. In such situations, it is more feasible to examine the whole effluent toxicity and instream impacts using biological methods rather than attempt to identify all toxic pollutants, determine the effects of each pollutant individually, and then attempt to assess their collective effect.

The scientific basis for using biological techniques has advanced significantly in recent years. There is now a general consensus that an evaluation of effluent toxicity, when adequately related to instream conditions, can provide a valid indication of receiving system impacts. This information can be useful in developing regulatory requirements to protect aquatic life, especially when data from toxicity testing are analyzed in conjunction with chemical and ecological data. Generic human health effects methods, such as the Ames mutagenicity test, and structure-activity relationship techniques are showing promise and should be used to identify potential hazards. However, pollutant-specific techniques are the best way to evaluate and control human health hazards at this time.

Biological testing of effluents is an important aspect of the water quality-based approach for controlling toxic pollutants. Effluent toxicity data in conjunction with other data can be used to establish control priorities, assess compliance with State water quality standards, and set permit limitations to achieve those standards. All States have water quality standards which include narrative statements prohibiting the discharge of toxic materials in toxic amounts. A few State standards have criteria more specific than narrative criteria (for example, numerical criteria for specific toxic pollutants or a toxicity criterion to achieve designated uses). In States where numerical criteria are not specified, a judgment by the regulatory authority is required to set quantitative water quality-based limits on chemicals and effluent toxicity to assure

compliance with water quality standards.

Note.—Section 308 of the Act and corresponding State statutes authorize EPA and the States to require of the owner/operator any information reasonably required to determine permit limits and to determine compliance with standards or permit limits. Biological methods are specifically mentioned. Toxicity permit limits are authorized under Section 301 and 402 and supported by Section 101.

Application

This policy applies to EPA and the States. The policy addresses the use of chemical and biological methods for assuring that effluent discharges are regulated in accordance with Federal and State requirements. This policy was prepared, in part, in response to concerns raised by litigants to the Consolidated Permit Regulations (see FR 52079, November 18, 1982). Use of these methods for developing water quality standards and trend monitoring are discussed elsewhere (see 48 FR 51400, November 8, 1983 and *Basic Water Monitoring Program* EPA-440/9-76-025). This policy is part of EPA's water quality-based control program and does not supersede other regulations, policy, and guidance regarding use attainability, site-specific criteria modification, wasteload allocation, and water quality management.

Implementation

State Role

The control of toxic substances to protect water quality must be done in the context of the Federal-State partnership. EPA will work cooperatively with the States in identifying potential water quality standards violations, assembling relevant data, developing appropriate testing requirements, determining whether standards are being violated, and defining appropriate permit limits.

Note.—Under sections 303 and 401 of the Act, States are given primary responsibility for developing water quality standards and limits to meet those standards. EPA's role is to review the State standards and limits and develop revised or additional standards or limits as needed to meet the requirements of the Act.

Integration of Approaches

The type of testing that is most appropriate for assessing water quality impacts depends on the type of effluent and discharge situation. EPA recommends that an integrated approach, including both biological and chemical techniques, be used to assess and control water quality. The principal advantages of chemical-specific

techniques are that (1) chemical analyses are usually less expensive than biological measurements in simple cases; (2) treatment systems are more easily designed to meet chemical requirements than toxicity requirements; and (3) human health hazards and bioaccumulative pollutants can best be addressed at this time by chemical-specific analysis. The principal advantages of biological techniques are that (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is best measured by toxicity testing; and (3) pollutants for which there are inadequate chemical analytical methods or criteria can be addressed.

Pollutant-specific chemical analysis techniques should be used where discharges contain few, well-quantified pollutants and the interactions and effects of the pollutants are known. In addition, pollutant-specific techniques should be used where health hazards are a concern or bioaccumulation is suspected. Biological techniques should be used where effluents are complex or where the combined effects of multiple discharges are of concern. EPA recognizes that in many cases both types of analysis must be used.

Testing Requirements

Requirements for dischargers to collect information to assess attainment or nonattainment of State water quality standards will be imposed only in selected cases where the potential for nonattainment of water quality standards exists. Where water quality problems are suspected but there is a strong indication that complying with BCT/BAT will sufficiently mitigate the impacts, EPA recommends that applicable permits include testing requirements effective after BCT/BAT compliance and reopener clauses allowing reevaluation of the discharge.

The chemical, physical, and biological testing to be conducted by individual dischargers should be determined on a case-by-case basis. In making this determination, many factors must be considered, including the degree of impact, the complexity and variability of the discharge, the water body type and hydrology, the potential for human health impact, the amount of existing data, the level of certainty desired in the water quality assessment, other sources of pollutants, and the ecology of the receiving water. The specific data needed to measure the effect that a discharger has on the receiving water will vary according to these and other factors.

An assessment of water quality should, to the extent practicable, include other point and nonpoint sources of pollutants if the sources may be contributing to the impacts. Special attention should be focused on Publicly Owned Treatment Works (POTW's) with a significant contribution of industrial waste-water. Recent studies have indicated that such POTW's are often significant sources of toxic materials. When developing monitoring requirements, interpreting data, and determining limitations, permit engineers should work closely with water quality staff at both the State and Federal levels.

A discharger may be required to provide data upon request under section 308 of the Act, or such a requirement may be included in its NPDES permit. The development of a final assessment may require several iterations of data collection. Where potential problems are identified, EPA or the State may require monitoring to determine whether more information is needed concerning water quality effects.

Use of Data

Chemical, physical, and biological data will be used to determine whether, after compliance with BCT/BAT requirements, there will be violations of State water quality standards resulting from the discharge(s). The narrative prohibition of toxic materials in toxic amounts contained in all State standards is the basis for this determination taking into account the designated use for the receiving water. For example, discharges to waters classified for propagation of cold water fish should be evaluated in relation to acute and chronic effects on cold water organisms, potential spawning areas, and effluent dispersion.

Setting Permit Limitations

Where violations of water quality standards exist or are projected, the State and EPA will determine pollution control requirements that will attain the receiving water designated use. Where effluent toxicity is an appropriate control parameter, permit limits on effluent toxicity should be developed. In such cases, EPA may also require a permittee to conduct a toxicity reduction evaluation. A toxicity reduction evaluation is an investigation conducted within a plant or municipal system to isolate the sources of effluent toxicity, specific causative pollutants if possible, and determine the effectiveness of pollution control options in reducing the effluent toxicity. If specific chemicals are identified as the cause of the water

quality standards violation, these individual pollutants should be limited. If a toxicity reduction evaluation demonstrates that limiting an indicator parameter will ensure attainment of the water quality-based effluent toxicity requirement, limits on the indicator parameter should be considered in lieu of limits on effluent toxicity. Such indicator limits are not limits on causative pollutants but limits demonstrated to result in a specific toxicity reduction.

Monitoring

Where pollution control requirements are expressed in terms of a chemical or toxicological parameter, compliance monitoring must include monitoring for that parameter. If an indicator parameter is used based on the results of a toxicity reduction evaluation, periodic toxicity testing may be required to confirm the adequacy of the indicator. Where biological data were used to develop a water quality assessment or where the potential for water quality standards violations exist, biological monitoring (including instream monitoring) may be required to ensure continuing compliance with water quality standards.

EPA believes that the intelligent application of an integrated strategy using both biological and chemical techniques for water quality assessment will facilitate the development of appropriate controls and the attainment of water quality standards. EPA looks forward to working with the States in a spirit of cooperation to further refine these techniques.

Policy signed February 3, 1984 by Jack E. Ravan, Assistant Administrator for Water.

Dated: February 16, 1984.

Jack E. Ravan,

Assistant Administrator for Water.

(FR Doc. 84-0443 Filed 3-7-84; 8:45 am)

BILLING CODE 6560-50-M

(SA-FRL 2542-7)

Science Advisory Board, Subcommittee on Risk Assessment for Radionuclides; Meeting

Under Pub. L. 92-463, notice is hereby given of a two-day meeting of the Science Advisory Board's Subcommittee on Risk Assessment for Radionuclides. The meeting will be held on March 22-23, 1984 in Room 1112, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, Virginia. The public phase of the meeting will begin at 1:00 p.m. March 22 and close at 4:30 p.m. of the same day.

The purpose of the meeting is two fold: to enable the Subcommittee to develop an outline of its report to the Agency and make writing assignments to individual Subcommittee members. To effectively carry out this part of the meeting, the Subcommittee plans to hold an executive session the morning of March 22 and 23. The second part of the meeting which will be open to the public during the afternoon of March 22, will consist of additional Office of Radiation Program (ORP) staff briefings and any further presentations from members of the public. The ORP briefings will consist of presentations that define the relationship between the elemental phosphorus industrial source category to the ORP's risk assessment to illustrate the intended use of the risk assessment in the Agency's decision making process.

Any member of the public wishing to obtain information or submit comments to the Subcommittee should write or call by close of business March 15, Dr. Terry F. Yosie, Director, Science Advisory Board (A-101), EPA, 401 M Street SW., Washington, D.C. 20460 (202) 382-4126.

Dated: February 28, 1984.

Terry F. Yosie,

Director, Science Advisory Board.

(FR Doc. 84-0616 Filed 3-8-84; 8:45 am)

BILLING CODE 6560-50-M

FEDERAL DEPOSIT INSURANCE CORPORATION

Penn Square Bank, N.A., Oklahoma City, Oklahoma; Issuance of Powers of Attorney

AGENCY: Federal Deposit Insurance Corporation.

ACTION: Public notice.

SUMMARY: On October 27, 1982, the Federal Deposit Insurance Corporation (hereinafter "FDIC") published notice of its appointment as Receiver of the Penn Square Bank, N.A., Oklahoma City, Oklahoma, and of the issuance by the FDIC of general powers of attorney in favor of Thomas R. Procopio, Liquidator, and six Assistant Liquidators (See 47 FR 47677, October 27, 1982). The notice was published in order to facilitate FDIC's discharge of its responsibilities as Receiver and specifically to comply with the provisions of Title 18, Section 20 of the Oklahoma Statutes (18 O.S. Section 20), which creates an exception, based upon such publication, to the otherwise applicable requirement that powers of attorney be recorded locally in order to effect conveyances of interests in property. Supplemental notices updating that notice were published on January

21, 1983 (see 48 FR 2829), March 23, 1983 (see 48 FR 12434), and June 23, 1983 (see 48 FR 28731). This notice supplements the prior notices.

Notice

On December 5, 1983, the Director of the FDIC's Division of Liquidation appointed Paul G. Heafy Bank Liquidation Specialist (Liquidator-In-Charge) and provided him with power of attorney to act on behalf of the FDIC in this capacity.

On the same date, a power of attorney that had previously been issued to Thomas R. Procopio, as Liquidator-In-Charge, had been revoked.

On December 13, 1983, the Associate Director of the FDIC's Division of Liquidation appointed Robert L. Carman Bank Liquidation Specialist and provided him with power of attorney to act on behalf of the FDIC. On the same date, powers of attorney were revoked that had previously been issued to John M. Schill and Edward L. McManaman, Jr.

Previously, on October 28, 1983, the power of attorney was revoked that had been issued to Donald J. Lubitz.

And on October 11, 1983, the Associate Director of the FDIC's Division of Liquidation appointed Neil C. Steimer Bank Liquidation Specialist and provided him with power of attorney to act on behalf of the FDIC. On the same date, powers of attorney were revoked that had previously been issued to Patrocínio T. Villarreal and Ronald W. Carris.

Accordingly, with respect to Messrs. Heafy, Carman, and Steimer, each have been authorized and empowered to:

(1) Sign, seal and deliver as the act and deed of the FDIC any instrument in writing, and to do every other thing necessary and proper for the collection and recovery of any and all monies and properties of every kind and nature whatsoever for and on behalf of the FDIC and to give proper receipts and acquittances therefore in the name and on behalf of the FDIC;

(2) Release, discharge or assign any and all judgments, mortgages on real estate or personal property (including the release and discharge of the same of record in the office of any Prothonotary or Register of Deeds wherever located where payments on account of the same in redemption or otherwise may have been made by the debtor(s)), and to endorse receipt of such payment upon the records in any appropriate public office;

(3) Receive, collect and give all proper acquittances for any other sums of money owing to the FDIC for any asset

**Agreement and Grant of
Right-of-Way for Trans-Alaska Pipeline
*between***

**The United States of America
*and***

**Amerada Hess Corporation,
ARCO Pipe Line Company,
Exxon Pipeline Company,
Mobil-Alaska Pipeline Company,
Phillips Petroleum Company,
Sohio Pipe Line Company, and
Union Alaska Pipeline Company**

curred any breach, by the Transferor or any predecessor of the Transferor, of this Agreement or of any other agreement, permit, or authorization relating to the Pipeline System that the United States may make with, issue to, or grant to the Transferor, and that was not cured to the satisfaction of the United States before the consummation of the Transfer, or

- (2) With respect to Transfers other than those referred to in subsection H of this Section, the Transferee, or the Transferee together with, if any, its guarantor or guarantors as approved by the Secretary: (a) is not, or are not, capable, in the judgment of the Secretary, of performing all of the liabilities and obligations of the Transferor relating to the right, title or interest to be transferred, or (b) shall refuse to allow an audit and/or inspection as provided for in subsection E of this Section; or
- (3) Applicable laws and regulations in effect at the time of a Transfer shall not have been complied with by the parties to the Transfer.

G. A Permittee seeking to be divested in whole or in part of its right, title, and interest in and to the Right-of-Way and this Agreement in connection with a Transfer shall be released from its liabilities and obligations (accrued, contingent, or otherwise) to the United States under this Agreement to the extent and limit that the Transferee assumes unconditionally the performance and observance of each such liability and obligation, *provided*:

- (1) All of the provisions of this Agreement with respect to the approval or disapproval of the Transfer have been fully complied with to the satisfaction of the Secretary;
- (2) The Secretary has consented in writing to the Transfer; and
- (3) Thereafter the Transfer and the attendant assumption agreement, if any, are in fact duly consummated on the basis of the documents previously presented to the Secretary for his review, and the Secretary is so notified in writing by the parties to the Transfer.

H. The Secretary shall consent to the Transfer of an interest in the Right-of-Way between:

- (1) Any of the Original Permittees, their Affiliates or any of them, or
- (2) One or more of the Original Permittees, their Affiliates or any of them, and a corporate Transferee, all of the outstanding capital stock of which Transferee at the time of the Transfer is owned by one or more of the Original Permittees or their Affiliates, or
- (3) One or more of the Original Permittees, their Affiliates or any of them, and a partnership consisting of two (2) or more of the Original Permittees or their Affiliates;

provided, that the Transferor or Transferee are not in breach of this Agreement; *provided further*, that all applicable laws and regulations in effect at the time of Transfer are complied with; *provided further*, that the application for any such Transfer be filed with the Secretary within eight (8) years of the Effective Date hereof or prior to completion of construction of the Pipeline at its maximum design capacity (i.e. approximately two million (2,000,000) barrels per day) whichever shall first occur; and *provided further*, that no substantial reduction in the financial worth of the Transferee (or its Parent), or of the Transferee (or its Parent) together with its guarantors, if any, has occurred since the date the Transferee (or its Parent) acquired its original interest in the Right-of-Way.

23. Port Valdez Terminal Facility

A. The provisions of this Section shall apply to the construction and operation of the terminal facility of the Pipeline System located at Port Valdez, Alaska.

B. Permittees shall maintain and operate a waste-water treatment facility in conjunction with the terminal facility at Port Valdez. All oily-water (including, but not limited to, discharge from fuel tanks, cargo tanks, ballast tanks, and bilges) discharged from any tanker or other seagoing, bulk Oil carrier (hereinafter referred to as a "Vessel") loading at or from the terminal facility shall be received and treated by said waste-water treatment facility. Water discharged from the waste-water treatment facility shall not con-

tain more than 10 parts of oil per million parts of water, on a weekly (seven (7) day) average.

C. At reasonable intervals, but at least once in every five (5) year period, the Authorized Officer and Permittees, at the request of either, shall meet to review and consider in depth: (1) the operation of the waste-water treatment facility; (2) such advances and improvements in water pollution control and waste-water treatment, technology and equipment, as they relate to the terminal facility, as have taken place; and (3) the feasibility of improving the performance of the facility through installation of new or additional equipment, or modification of existing equipment. Consideration of such feasibility shall include consideration of the degree of technological advances that have occurred, costs and economic feasibility, the types of equipment commercially available, and the benefits that would be derived from the installation of new or additional equipment or the modification of existing equipment.

D. Permittees, and their respective agents, employees, contractors and subcontractors (at any tier) shall not release, or suffer to be released, from the terminal facility any Oil to be loaded on any Vessel unless the provisions of subsections E and F of this Section have, in each case, been fully complied with.

E. Prior to loading Oil on any Vessel, Permittees shall require the master thereof to provide Permittees with a legible copy, certified under oath by the master as being true and correct, of:

- (1) in the case of Vessels of United States registry, that part of the oil record book of such Vessel that pertains to the voyage of the Vessel to the terminal facility from its last Oil discharge port;
- (2) in the case of Vessels of foreign registry that may now or hereafter be required to maintain an oil record book, or similar records, that part of the oil record book, or said records, that pertains to the voyage of the Vessel to the terminal facility from its last Oil discharge port; and
- (3) in the case of any Vessel of foreign registry that is not required to maintain an oil record book, or similar records, Permittees shall require the master thereof to provide Permittees with an affidavit, duly sworn to and signed by the master, stating any and all facts bearing upon

any discharge of Oil or oily water from the Vessel during its voyage to the terminal facility from its last Oil discharge port.

F. If the said record book entries or affidavit, as provided by the master, disclose:

- (1) that the Vessel has discharged any Oil or oily water from its fuel tanks, cargo tanks, bilge, or otherwise, and
- (2) that such discharge was not necessary for the safety of the Vessel or its crew,

Permittees shall promptly notify the Authorized Officer of the pertinent facts and shall not load the Vessel or suffer the Vessel to be loaded, unless at the time of such discharge:

- (a) The United States Coast Guard or other agency of the United States has promulgated and implemented regulations under one or more treaties, conventions, or statutes that are designed to deter Vessels subject to such treaties, conventions or statutes from discharging any Oil or oily water at sea and that apply to, and can be enforced by the United States Coast Guard or such other agency of the United States against, the offending Vessel; or
- (b) In the absence of the aforesaid regulations, or the inapplicability thereof to the offending Vessel, there shall be in effect port rules, approved in writing by the Authorized Officer for the purposes of this subsection F, for the port of Valdez or, as the case may be, the terminal facility, (which rules may provide for a demurrage charge against offending vessels) that are designed to deter any Vessel using the terminal facility from discharging Oil or oily water at sea and that apply to, and can be enforced against, the offending vessel; or
- (c) If neither subsection F(a) or F(b) above in this Section shall be applicable, Permittees may proceed subject to applicable laws and regulations, to load the Vessel at the terminal facility; *provided, however*, that during its next return voyage to the terminal facility, one of either of the following alternatives must be complied with before the Vessel can be loaded:
 - (i) (AA) The Vessel shall, prior to loading, remain for ten



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
U.S. Coast Guard (G-WPE-1)
Washington, DC 20593
(202) 755-7917

COMDTINST M16450.27

02 OCT 1989

* COMMANDANT INSTRUCTION M16450.27

Subj: Guidance and Procedures for Administering and Enforcing the Oily Waste Reception Facility Program

Ref : (a) COMDTINST M16455.6 (MARPOL 73/78)
(b) The Act to Prevent Pollution from Ships (33 USC 1901 et. seq.)
(c) 46 U.S.C. Chapter 37 (formally Section 5, The Port and Tanker Safety Act)
(d) 33 CFR Parts 126, 151, 154, 156, 157 and 158

1. PURPOSE. This instruction provides guidance and procedures for:

- a. administering and enforcing regulations for oily waste reception facilities;
- b. issuing and amending Certificates of Adequacy (COA);
- c. inspecting reception facilities for oily waste; and
- d. reporting reception facility information.

2. DIRECTIVES AFFECTED. None

3. BACKGROUND.

- a. On 2 October 1983 MARPOL 73/78 entered into force and the United States, as a Party, commenced implementation and enforcement of Annex I, Regulations for the Prevention of Pollution by Oil. As the U.S. enforcement agent for MARPOL 73/78, the Coast Guard has actively enforced the provisions of MARPOL. Initial requirements were designed to reduce the amount of oily waste generated from shipboard operations. These requirements call for segregated ballast tanks (SBT), dedicated clean ballast tanks (CBT), and crude oil washing systems (COW) under the Port and Tanker Safety Act of 1978, now recodified in 46 U.S.C. Chapter 37, and the associated regulations in 33 CFR 157.

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3. b. This action was followed by the Act to Prevent Pollution from Ships (hereafter referred to as the Act) and the regulations in 33 CFR 151, 155, and 157 which were enacted to limit the amounts of oily waste discharged into the sea. The regulations require cargo and bilge oily water separators and monitors, a new Oil Record Book to record oil and oily waste transfers, and an International Oil Pollution Prevention (IOPP) Certificate or equivalency to verify the required equipment is on board.
- c. To achieve the intent of Annex I of MARPOL 73/78, which is to reduce operational discharges of oil into the oceans, the Act requires adequate facilities to receive oily waste retained on board ships. Without regulations requiring adequate reception facilities the MARPOL 73/78 plan will not meet the stated goal of reducing oil discharges from normal shipboard operations.
- d. Enclosure (1) provides definitions for MARPOL 73/78 reception facility requirements to assist in better understanding and using this instruction.

4. DISCUSSION.

- a. To fulfill the MARPOL 73/78 scheme, reception facilities for oily waste must be certified in a timely manner with consistent nationwide procedures. These actions are necessary to achieve U.S. compliance with MARPOL 73/78 requirements for adequate oily waste reception facilities. Adequacy of a reception facility for oily waste depends upon its capacity, timeliness in transferring waste, and timeliness in providing reception facility service, so that ships will experience no undue delay.
- b. To facilitate COTP certification of reception facilities, a Certificate of Adequacy (COA), standard COA Application form, and Interim COA letter are provided, along with the guidance in enclosure (2). The purpose of the COA Application form (CG-5401A), attachment (A) to enclosure (2), is to provide the information required by 33 CFR 158.140 so that the COTP can determine whether the terminal's or port's oily waste reception facilities meet the criteria for adequacy. Submission of the COA Application form by industry is optional. COTPs should however, encourage industry to submit the COA Application form since the standardized format will facilitate COTP review and will assist terminals in complying with the regulatory requirements. The purpose of the COA, attachment (D) to enclosure (2), is to provide a permanent record indicating that the reception facilities fully meet the adequacy requirements. The purpose of the Interim COA letter, attachment (C) to enclosure (2), is to allow terminals or ports to continue operating pending inspection of their reception facilities for compliance with 33 CFR 126, 154, and 156.

4. c. Upon receipt of a COA Application, the COTP reviews the information submitted. If, in the COTP's judgment, the information is complete, accurate, and indicates that the adequacy criteria are met, the COTP then consults with the appropriate EPA Regional Office.
 - d. Consultation with EPA is required prior to the issuance of an Interim COA letter or the COA. If EPA's comments on the COA Application are not received within 20 days, COTPs should assume EPA has no objection and continue processing the COA Application. After consulting with EPA, the COTP may either:
 - (1) issue an interim COA letter; or
 - (2) inspect the reception facilities and issue the final COA.
 - e. A standard worksheet, attachment (E) to enclosure (2), is also provided. The purpose of the worksheet is to simplify, standardize and provide a sound analytical approach when calculating the information required by 33 CFR 158. The worksheet is an optional form. The COTP may distribute the worksheet to industry as an aid in determining reception facilities' requirements or may use the worksheet to verify information supplied on the COA Application. COTPs may use the worksheet in whole or in part, or may modify it to best suit local needs. Note: If any form of the supplied worksheet is used it must contain the assigned OMB number of the original worksheet.
 - f. The waiver authority in 33 CFR 158.150 allows COTPs flexibility in issuing COAs to account for situations where it is physically or economically impractical to comply with regulatory requirements. Waivers permit alternatives to equipment and operational requirements which in the judgment of the COTP provide an equivalent level of protection to the marine environment and do not cause undue delay to ships. Operational procedures are not an authorized alternative for equipment requirements.
 - g. The next implementation phase of MARPOL 73/78 is to certify reception facilities for Annex II chemical waste. Program implementation is scheduled for April 1987. The proposed regulations for Annex II waste are expected to parallel the regulations in 33 CFR 158 for oily waste. A separate but similar standard worksheet and application (Form B) will be developed for chemical waste.
5. ACTION. In accordance with the guidance and procedures contained in this instruction:
- a. District commanders shall:
 - (1) coordinate activities for the implementation and management of the oily waste reception facility program through the District (m) office;

5. a. (2) take action on appeals submitted to the district from terminals/ports as set forth in 33 CFR 158.190.
- b. Commanding officers of MSOs and COTPs shall:
- (1) process COA applications from terminals and ports for oily waste reception facilities including consulting with the Environmental Protection Agency, issuing Interim COA letters, issuing waivers, responding to appeals, and amending COAs and applications in accordance with enclosure (2);
 - (2) annually inspect reception facilities for compliance with the pollution prevention regulations in 33 CFR 154 and 156, the waterfront facility regulations in 33 CFR 126 and the reception facility regulations in 33 CFR 158;
 - (3) issue COAs with the COA application and waivers attached;
 - (4) deny entry of ships to terminals and ports not holding Certificates of Adequacy;
 - (5) submit program management information in the PES/MER Quarterly Activities Report (CG-4957) via District (m) in accordance with enclosure (4);
 - (6) review transfers of oily waste to reception facilities and associated records in ships' Oil Record Books in conjunction with vessel examinations and monitors;
 - (7) investigate allegations of terminals, ports, reception facilities, and ships not complying with MARPOL 73/78, the Act or associated regulations, and initiate enforcement actions in accordance with enclosure (3).
6. REPORTS/FORMS REQUIRED. Commanding officers of MSOs and COTPs shall submit information concerning certified oily waste reception facilities on the Reception Facility Information Sheet, per attachment (A) to enclosure (2) to District (m), and also program information concerning the issuance of Certificates of Adequacy on the PES/MER Quarterly Activities Report (QAR), CG-4957, RCS: G-WP-14013, per enclosure (4). Form CG-5401 is available from Commandant (G-WPE-1). Forms CG-4957 and 5401A may be locally reproduced.


J. H. PARENT

Acting Chief, Office of Marine
Environment and Systems

- Enclosures: (1) Definitions
(2) Guidance and Procedures for Issuing Certificates of Adequacy for Oily Waste Reception Facilities
(3) Oily Waste Reception Facility Enforcement Policy
(4) Oily Waste Reception Facility Reporting Requirements

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DEFINITIONS

The following definitions are provided to assist in understanding the terminology associated with the regulatory requirements for issuing Certificates of Adequacy. Where headings are enclosed by quotation marks ("..."), the definitions are quoted directly from applicable statutes, international conventions, or regulations and the appropriate citation is provided in brackets []. Headings without quotation marks do not have a legal citation. The abbreviation CFR stands for Code of Federal Regulations and USC stands for United States Code.

1. "Administration" refers to the Government of the state under whose authority the ship is operating. For fixed or floating platforms engaged in exploration and exploitation of the coastal seabed and subsoil, the Administration is the Government of the coastal state exercising sovereign rights for the purpose of exploration and exploitation of their natural resources. [Art. 2(5) MARPOL 73/78]
2. Black Product refers to crude oil, heavy refined products, and residuals such as Bunker C, Navy Special Fuel Oil, etc. which do not require tank cleaning prior to loading.
3. "Bunker oil" means oil loaded into bunker tanks for use as fuel.
[33 CFR 158.120]
4. "Clean ballast" means ballast which:
 - a. If discharged from a vessel that is stationary into clean, calm water on a clear day, would not:
 - (1) Produce visible traces of oil on the surface of the water or on adjoining shore lines; or
 - (2) Cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shore lines; or
 - b. If verified by an approved cargo monitor and control system, has an oil content that does not exceed 15 ppm. [33 CFR 157.03(e)]
5. "Daily average" means the total number of vessels, or quantity of oil or oily waste, handled over a typical continuous 12 month period, divided by 365. [33 CFR 158.120]
6. "Dedicated clean ballast tank" means a cargo tank that is allocated solely for the carriage of clean ballast. [33 CFR 157.03(dd)]
7. "Harmful substance" means any substance which, if introduced into the sea, is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea, and includes any substance subject to control by MARPOL 73/78. [33 CFR 158.120].

8. "MARPOL 73/78" means the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto. [33 CFR 151.05(g)]
9. "Oceangoing ship" means a ship that:
- a. is operated under the authority of the United States and engages in international voyages;
 - b. is operated under the authority of the United States and is certificated for ocean service;
 - c. is operated under the authority of the United States and is certificated for coastwise service beyond three miles from land;
 - d. is operated under the authority of the United States and operates at any time seaward of the outermost boundary of the territorial sea of the United States; or
 - e. is operated under the authority of a country other than the United States.
- Note: A Canadian or U.S. ship being operated exclusively on the Great Lakes of North America or their connecting and tributary waters, or exclusively on the internal waters of the United States and Canada; is not an "oceangoing" ship. [33 CFR 151.05(j)]
10. "Oil" means petroleum in any form including crude oil, fuel oil, sludge, oil refuse and refined products (other than petrochemicals that are subject to the provisions of Annex II of MARPOL 73/78) and, without limiting the generality of the foregoing, includes the substances listed in Appendix I of Annex I of MARPOL 73/78. Note: "Oil" does not include animal or vegetable based oil. [33 CFR 151.05(k)]
11. "Operator" means:
- a. in the case of a ship, a charterer by demise or any other person, except the owner, who is responsible for the operation, manning, victualing, and supplying of the vessel, or
 - b. in the case of a terminal, any person, except the owner, responsible for the operation of the terminal by agreement with the owner. [33 USC 1901]
12. "Owner" means any person holding title to, or in the absence of title, any other evidence of ownership of, a ship or terminal, but does not include a person who, without participating in the management or operation of a ship or terminal, holds evidence of ownership primarily to protect a security interest in the ship or terminal. [33 USC 1901]

13. "Person" means an individual, firm, public or private corporation, partnership, association, State, municipality, commission, political subdivision of a State, or any interstate body. [33 CFR 151.05(n)]
14. "Person in charge" means an owner of, an operator of, or a person authorized to act in behalf of a port or terminal. [33 CFR 158.120]

NOTE: The "person in charge" in this part is not necessarily the same person as the "person in charge" referred to in 33 CFR Parts 154, 155, and 156 (as defined in 33 CFR 154.105).

15. "Port" means:
- a. a group of terminals that elect to be considered a port for the purposes of this part; or
 - b. a port authority or other organization that elects to be considered a port for the purposes of this part; or
 - c. a place or facility that has been specifically designated as a port by the COTP. [33 CFR 158.120]
16. "Reception facility" means anything capable of receiving shipboard residues and mixtures containing oil, that includes, but is not limited to:
- a. fixed piping that conveys wastes from the ship to a storage or treatment system;
 - b. tank barges, railroad cars or tank trucks and other mobile facilities; and
 - c. any combination of fixed and mobile facilities. [33 CFR 158.120]
17. "Segregated ballast" means the ballast water introduced into a tank that is completely separated from the cargo oil and fuel oil system and that is permanently allocated to the carriage of ballast or to the carriage of ballast or cargoes other than oil or noxious substances as variously defined in the Annexes of MARPOL 73/78. [33 CFR 151.05(p)]
18. "Ship" means a vessel of any type whatsoever, operating in the marine environment. This includes hydrofoils, air-cushioned vehicles, submersibles, floating craft whether self-propelled or not, and fixed or floating drilling rigs and other platforms. [33 CFR 151.05(q)]
19. Sludge refers to oil residues such as those resulting from the purification of fuel and lubrication oils and oil leakages in the machinery spaces which are generally heavier than water and are in a semisolid state.

20. "Tank barge" means a tank vessel not equipped with a means of self-propulsion. [33 CFR 157.03(u)]
21. "Tanker" means a ship constructed or adapted primarily to carry oil in bulk in the cargo spaces. [33 CFR 158.120]
22. "Terminal" means an onshore facility or an offshore structure located in the navigable waters of the United States or subject to the jurisdiction of the United States and used, or intended to be used, as a port or facility for the transfer or other handling of a harmful substance. [33 USC 1901]

NOTE: A ship repair yard is a terminal by definition. A fixed or floating drilling rig or other platform is not a terminal because it is, by definition, a "ship" under 33 CFR 151.05(q).

23. "The Act" means the Act to Prevent Pollution from Ships (33 U.S.C. 1901 et seq.) [33 CFR 158.120]
24. White Product means those products with high product purity standards which would necessitate tank cleaning for a change in cargo and which can not be loaded on top of decanted slops.

GUIDANCE AND PROCEDURES FOR
ISSUING AND AMENDING CERTIFICATES OF ADEQUACY
FOR OILY WASTE RECEPTION FACILITIES

To fulfill the requirements of MARPOL 73/78 reception facilities for oily waste must be certified in a timely manner with consistent nationwide procedures that provide for a thorough review for adequacy. The Coast Guard's goal is to issue either Interim Letters or final Certificates of Adequacy (COAs) by 10 March 1986. To meet the above objectives this enclosure provides standardized forms together with guidance to minimize the COTP's efforts in issuing COAs. Additionally, policy is given for COTPs to respond to the multitude of unforeseen special circumstances so they can tailor the program to their geographic areas.

For the smooth initiation and operation of the program, a local industry education and assistance effort is necessary. Timely dissemination of reception facility requirements and COTP responsibilities and assistance available through industry meetings, port newsletters, journal articles, personal contacts, speaking engagements, and direct correspondence will allay industry's concerns and facilitate implementation. It is recommended that COTPs contact terminal operators and inform them of their responsibility to apply for a COA and that the COTP will assist them in completing the application and worksheets, as necessary. A spirit of cooperation will foster better working relationships and will considerably aid the issuance of the COAs.

1. Applicability: Terminals and ports under U.S. jurisdiction are required to provide oily waste reception facilities to oceangoing tankers and other oceangoing ships of 400 GT or more. Excluded are terminals which receive only non-oil carrying barges or which only receive oil barges that are oceangoing, non-self propelled and that cannot ballast or wash cargo tanks while proceeding enroute.

The requirements to provide reception facilities for oily waste apply to all types of facilities regardless of the commodities they handle, e.g., grain, coal, fish, containers, ship repair yards, etc. and to Federal facilities. There may be some confusion among terminals because the definition of "terminal" in 33 CFR 158 appears to exclude facilities handling non-harmful substances. However, the key phrase in the definition of terminal is "... used or INTENDED TO BE USED, as a ... facility for the transfer or other handling of a harmful substance." The clear intent of MARPOL 73/78 is that facilities receiving oceangoing ships retaining oily waste on board provide reception facilities. Since oily waste is a harmful substance, facilities engaged in transferring containers, fish, etc. are terminals for reception facility purposes because they are intended to receive oily waste and therefore must comply with 33 CFR 158.

2. COTP Authority: Through delegations in 33 CFR 151 and 158.130 the COTP:

- a. issues and denies Certificates of Adequacy;
- b. inspects reception facilities;
- c. grants and denies waivers from reception facility requirements in 33 CFR 158;
- d. denies entry of oceangoing tankers or any other oceangoing ship of 400 gross tons or more to terminals not having a valid COA;
- e. denies entry of oceangoing tankers or any other oceangoing ship of 400 gross tons or more not in substantial compliance with MARPOL 73/78, to terminals and ports;
- f. investigates alleged violations of reception facility requirements; and
- g. issues subpoenas for investigative purposes.

3. COA APPLICATION GUIDANCE AND PROCEDURES:

a. General Policy:

- (1) The purpose of the COA Application (CG-5401A), in Attachment (A) to this enclosure, is to provide the COTP with the information required in 33 CFR 158.140 in a standard format to assist him in determining whether the reception facilities are adequate. The COA Application form is optional; however, it is a means for industry to apply for a COA and be assured they have met the requirements in 33 CFR 158.140. COTPs should encourage the use of the Application form to reduce processing time for both industry and the COTP.
- (2) Because the application provides information helpful to Coast Guard enforcement personnel, masters and agents, the COA Application shall be attached and become part of the COA. If a terminal or port does not submit a standard COA Application COTPs shall complete the standard Application using the information provided and follow the guidance and procedures herein for review. The COTP shall attach the filled in standard Application to the COA when issued. The COA Application is designated as Form A, since it is only for oily waste reception facilities. COA Application Form B, to be developed, will pertain to MARPOL Annex II chemical wastes.

- 3.a.(3) 33 CFR 158.140 does not require applicants to provide the estimated daily average quantity of oily waste generated by ships visiting the terminal or port. Since this information is absolutely necessary for the COTP to determine whether the capacity requirements are adequate, COTPs shall, under the authority in 33 CFR 158.140(b)(5), require applicants to provide the estimated daily quantity of oily waste generated by vessels visiting their terminal or port, if this information is not voluntarily provided.
- (4) The COTP should request supporting information such as the optional worksheet or calculations for unclear or questionable data submitted on the COA Application.
- (5) Based on local experience and knowledge, the COTP will assess the validity of the information supplied on the COA Application, and if this information appears accurate and states the criteria in enclosure (2) are met, the COTP shall:
- (a) after consultation with EPA issue an Interim Letter COA or
 - (b) after consultation with EPA and inspection of the reception facilities issue a Final COA.
- (6) COTPs should process a COA Application within 30 days of receipt. Within that time the COTP should either approve the application or return it for correction and/or additional information. While an application is pending DO NOT DENY ENTRY to ships using the terminal or port, solely because the terminal or port does not have a COA.
- b. COA Application Form A Review Procedures:
- (1) Review for completeness and accuracy by checking that:
- (a) entries are made for every line item except 1.D., which will not be completed if the applicant is a terminal, or 3.F. through 3.I. which apply if the terminal is a ship repair yard;
 - (b) the number of terminals listed in 1.B. is equal to the number of terminal names and addresses entered in 1.D. or on separate pages;
 - (c) each terminal's person in charge signs 1.D. to indicate the terminal is a member of the port, if the Application is for a port;
 - (d) the person in charge of the terminal or port signs at the end of the Application; and

- 3.b.(1) (e) the entries in section 3 of the Application reflect the calculations from the worksheet or other supporting documentation, if requested.

(2) Review section 3 for reception facility adequacy:

- (a) For terminals, other than ship repair yards or tank cleaning facilities, the reception facilities are adequate if all of the following statements are true:

3.B. is less than 3.A.;
3.C. indicates oil;
3.D. reflects the terminal type for which reception facility capacity demands are calculated;
3.G. is YES;
3.H. is YES;
3.I. is YES; and
3.J. is N/A.

- (b) For ship repair yards the reception facilities are adequate if all of the following statements are true:

3.B. is less than 3.A.;
3.C. indicates oil;
3.D. indicates the terminal is a ship repair yard;
3.G. is N/A;
3.H. is N/A;
3.I. is N/A; and
3.J. is YES.

- (3) Determine reception facility location. Compare the location of the reception facility to the location of the terminal or port taking into account whether the reception facility is a mobile facility. If the location of the reception facility requires ships to travel an unreasonable distance or may endanger ships due to channel restrictions then the reception facilities are inadequate and a COA should not be issued unless there is justification for a waiver. Reasonable distance is a subjective term and relies upon the judgment of the COTP. Having a ship change berths at a terminal to discharge waste or having a ship stop at another terminal enroute to its next port is reasonable. Having the ship travel 100 miles out of its way is unreasonable. Factors which may affect the reasonable distance determination include: tides, vessel traffic, navigational route, pilot requirements, bridge schedules and local port restrictions.

- (4) Review for the concurrent use of the reception facility by other terminals to ensure capacity is sufficient to meet total demand. Total the COA Application waste capacity demands to determine whether they exceed the reception facility's daily average capacity.

- 3.c. COA Application Discrepancy Procedures: For minor discrepancies not affecting the adequacy of the facility phone the applicant and discuss the discrepancy. If agreeable to the applicant the COTP may correct the discrepancy in red, record the conversation in the applicant's files giving the name of the person contacted and the date, and continue processing of the COA Application. If significant errors, omissions, or discrepancies are noted with the COA Application which affect the adequacy determination, the COTP shall inform the applicant of the discrepancy in writing and require resubmission of the Application within 30 days. If the COA Application is not resubmitted within 30 days, then deny entry of ships to the terminal since it does not have a valid COA or a pending Application. DO NOT DENY ENTRY as long as in the judgment of the COTP the terminal is making a good faith effort to apply for a COA.

4. EPA CONSULTATION:

- a. COTPs should contact EPA regional offices to identify points of contact, to discuss the reception facility requirements and procedures, and to resolve discrepancies noted by EPA with individual COA Applications. Close coordination is essential to develop understanding and agreement.
- b. Upon receipt of a complete COA Application, the COTP shall forward a letter with a copy of the COA Application to the appropriate EPA Regional Administrator for review in accordance with 33 USC 1905(c). The letter shall request EPA to submit their comments on the COA Application within 20 working days of the date of the letter and state that negative responses are not required. If a response is not received either verbally or in writing within the 20 day period, assume EPA does not object or have substantive comments on issuance of the COA. While all due consideration should be given to EPA comments, ultimately the COTP decides whether or not to issue a COA. A sample letter to the EPA Regional Administrator is provided as attachment (B) to this enclosure.

5. RECEPTION FACILITY INSPECTIONS:

a. General Policy:

- (1) Inspection of reception facilities is required by 33 USC 158.160 and shall be conducted prior to issuance of the final COA to verify compliance with the requirements of 33 CFR 126, 154, 156 and 158. If multiple reception facilities are designated on the COA Application, all of them must be inspected prior to issuance of the final COA. Conduct inspections of reception facilities annually thereafter, and record the results on the inspection endorsement section of the COA. Additional pages may be attached to the COA to record inspections.

DEC

DOCS.

TESTIMONY OF MICHELE BROWN
BEFORE THE
HOUSE SUBCOMMITTEE ON WATER, POWER,
AND OFFSHORE ENERGY RESOURCES
March 29, 1990

Mr. Chairman and Members of the Committee:

My name is Michele Brown. I am the Regional Administrator for the Division of Environmental Quality for the Alaska Department of Environmental Conservation. Some of the most challenging environmental issues associated with the Trans-Alaska Pipeline are posed by the operation of Alyeska's Valdez Marine Terminal, which is located within my region.

I appreciate the opportunity to appear before this committee today and thank you for your continuing interest in the proper operation of TAPS to balance the nation's energy needs with the preservation of Alaska's environment and cultural lifestyles.

You have asked what environmental problems associated with the operation of the pipeline system are of concern to the State and whether the State's oversight and regulation of TAPS has been adequate. I will address each of these in turn. While the State is, of course, concerned about oil spills and environmental safety over the entire length of the pipeline, I will focus today on air and wastewater pollution issues from the Valdez Terminal.

The issues are significant for today's hearing both for their impact on the quality of the environment and as illustrative of the type of oversight that the State has undertaken of TAPS.

WATER QUALITY

Tankers arrive at the TAPS Valdez Marine Terminal carrying ballast water in their cargo holds to keep the tankers stable during the voyage north. More ballast water is used in the winter because seas are worse. Unsegregated ballast water mixes with residual oil in the holds of the tankers, and therefore becomes contaminated. The ballast water is off-loaded and treated in Alyeska's ballast water treatment system ("BWT").

The BWT is intended to reduce the contamination from the ballast water, particularly of BETX (benzene, ethylbenzene, toluene, and xylene), which are among the most actively toxic components of crude oil. Then the ballast water is discharged into Valdez Bay. The BWT is regulated under a National Pollution Discharge Elimination System ("NPDES") permit. The NPDES permit sets effluent limits and other conditions for operating the BWT. The State's role in NPDES permitting is to impose any conditions necessary to certify "reasonable assurance" that Alaska's water quality standards are met.

Alyeska said it would provide a state-of-the-art BWT when it first installed the system. Alyeska also contracted with the State in the Right-of-Way Lease for TAPS to prevent or abate any environmental damage, including any damage to water quality. But, Alyeska failed to install or use several of the key components to that state-of-the-art system over the years. Instead, Alyeska modified the system in 1986 to add a biological ("bug") treatment component.

These bugs are supposed to eat most of the last remaining vestiges of the toxics and other polyaromatic hydrocarbon compounds in the effluent water before discharge. Alyeska chose to add the bugs as the least expensive method of improving the BWT performance during permit review, not because bugs were necessarily the most effective technology.

After EPA issued a proposed new NPDES permit, Alaska certified the permit only with more stringent limits on the amount of BETX in the effluent. Alaska also imposed some additional conditions to assure compliance with State law. Alyeska aggressively challenged each term of the State's Certificate, as well as EPA's NPDES permit, in a series of administrative proceedings in both the state and federal arenas. Alyeska unsuccessfully sued the State of Alaska to challenge the permit terms, including the reduced BETX limits. Nonetheless, still pending is a petition Alyeska filed to reduce the State's water quality standards to allow for a higher discharge rate of BETX.

After six years, this permit is now finally in place. We are approaching resolution of remaining challenges to it. Alyeska is installing additional treatment to improve its BETX removal rate. Although regulated, the facility is still discharging approximately 18 million gallons of wastewater, containing 152 pounds of BETX, on a daily basis. That is a discharge of 27.7 tons of BETX a year. Accordingly, permit inspection and monitoring is an ongoing intensive task.

AIR QUALITY

The TAPS Lease covenants with Alaska impose a continuing obligation on Alyeska to construct and operate TAPS using state-of-the-art technology to prevent or abate activities that could harm air quality. Alyeska agreed to conduct all activities associated with TAPS in a manner that will avoid or minimize air pollution.

Nonetheless, there are two major sources of air pollution at the terminal and in the past there have been frequent occurrences of a smoky blue haze around the terminal. The first is hydrocarbon emissions from the crude oil storage tanks and other equipment. The second is hydrocarbon and combustion emissions from the tankers docked at the terminal.

When Alyeska first applied for air permits for the terminal in 1976, it promised installation of a vapor recovery system which eliminates all major hydrocarbon emissions from the crude oil storage tanks and incinerates excess displaced vapors. Alyeska planned construction of four incinerators with three to be operational at any time and a fourth to be reserved in a standby capacity.

The vapor recovery system was neither constructed nor operated as planned. The fourth incinerator was never built. The three incinerators constructed have not been on-line on a regular basis due to repeated maintenance problems. During shut-downs, excess hydrocarbons are vented directly to the atmosphere from the crude oil storage tanks. Approximately 400 tons of hydrocarbons are emitted yearly. Because of lengthy delays in these repair shut-downs, the State entered an order placing Alyeska on a binding schedule for repairs of the incinerators.

Additionally, Alyeska has made numerous modifications to the equipment at the terminal and pump stations which have caused an increase in emissions. The cumulative effect of these emissions on air quality is unknown because no actual measurements of air emissions have been made. Over a year ago, Alyeska announced that it would install a risk assessment type of air monitoring program. Alaska supported the proposal generally but did not concur that the sites chosen would produce valid regulatory data. Alyeska has yet to install monitoring devices. Alaska plans to order monitoring and measurement in the next air permit.

Tanker traffic to the Valdez Marine Terminal creates additional air pollution by venting hydrocarbons during loading, at an approximate average rate of 70 tons per load, and through fuel burning. At an average of 2.6 vessels loading per day, approximately 66,000 tons of hydrocarbons are emitted yearly which is equal to 5% to 10% of total hydrocarbon emissions in the Los Angeles basin. Moreover, tankers are run at a very high proportion of their boiler capacity during ballast off-loading, adding combustion products to the air pollution. Since the early 1980's, tanker traffic has increased, the sulphur content of tanker fuel has increased, and almost twice as much ballast water was off-loaded than was originally projected in 1976, all adding substantially to air pollution. Alyeska has in the past denied any responsibility for evaluating, controlling, or alleviating air pollution caused by the tanker traffic. Recently, Alyeska, in conjunction with several of its owner companies, launched a study of the tanker emissions problems.

For two years the State has attempted pre-enforcement review of the modification to the equipment at the terminal, dealt with the failure of the vapor recovery system, and tried to get an analysis of the tanker emission problems. The State currently is evaluating renewal of air quality permits for the Valdez marine

Terminal and the 12 pump stations along TAPS.

Alyeska promised in the lease covenants to stay abreast of technology developments and to continually upgrade equipment. In our view, however, the difference between what was promised and what was delivered is substantial. The technology gap has meant the absence of such basic measurement data that it has taken the State's full attention to evaluate whether Alyeska complies with minimum state and federal standards.

STATE OVERSIGHT

Alaska's oversight and regulation of TAPS has been steadily growing over the years. The State's relationships with its counterparts in the federal system have matured into solid working relationships where cooperation and respect for both federal and State standards can be accommodated.

However, the State's regulatory relationship with Alyeska has developed less smoothly. Until recently, Alyeska took an adversarial approach to State oversight. This diverted State resources from data acquisition and inspection programs into labor intensive battles just to defend basic State permits. Therefore, too frequently Alaska has had to rely on Alyeska's assurances and data to evaluate the operation of TAPS. Reliance upon Alyeska's data has created two problems for the State.

The first is that estimates and modeling of potential contaminant discharges have been used rather than actual measurements and the estimates have proved inaccurate. For example, in 1989, Alaska was informed by Alyeska that tank vessel owners had taken actual measurements of air emissions from the crude oil storage tanks aboard vessels and determined that they were five times as high as were originally estimated, which emission factors had formed the basis of the original air permit application. Only now, twelve years from the start of operation of TAPS, have actual measurements of emissions begun.

The second problem is that Alyeska frames its data in terms of showing that no demonstrable harm has occurred to the environment. For instance, Alyeska has done extensive analyses to justify its position that aquatic resources in Valdez Bay have not been harmed by the discharge of treated ballast water. Yet, that is not the standard by which the State must judge the proper operation of the facility. The standard of the Clean Water Act is to prevent the degradation of existing water quality. The State's test data indicate that there has been a change in the water quality of Valdez Bay, even if it does not yet amount to observable, adverse impacts on uses.

ADEC Review of Alyeska's *Data Report*, March 1986

Staff Report

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April 1988

Preface

The operation of the Alyeska Ballast Water Treatment Plant (BWT) has been the subject of frequent environmental studies and investigations since the first NPDES permit was issued in 1975. A major focus of these efforts has been on determining the effective level of treatment achieved relative to the effluent discharged. A mixing zone was established as a permit condition and was defined to provide a volume of dilution for the treated BWT effluent — oil, grease, and aromatic hydrocarbons (BTX) — to assure compliance with the Alaska Water Quality Standards at the boundary of the mixing zone.

Several studies have been conducted on the receiving waters of Port Valdez. In June and September 1979, the dispersion of treated ballast water in Port Valdez was studied by Ihor Lysyj (*Dispersion and Persistence of Benzene, Toluene, and Xylene (BTX) in Valdez Harbor*, Special Progress Report under EPA contract no. 68-03-2648.) As part of NPDES permit requirements, Alyeska has conducted additional receiving water studies including dye studies by Colonell (1980) and the Radian Corporation (April 1981, September 1981). The Radian Corporation study indicated three (3) violations in the April survey and none in the September survey.

The NPDES Permit no. 2 issued on August 11, 1980 established BTX limits of 9 ng/l daily maximum and 6 ng/l daily average for aromatic hydrocarbons. At this time, a larger mixing zone was delineated to enable Alyeska to achieve a dilution of 900:1. This was determined to be the dilution necessary for the permit effluent limit for concentrations of aromatic hydrocarbons to meet the 10 ppb Alaska Water Quality Criteria along the mixing zone boundary.

In 1985, after expiration of the 1980 NPDES permit, on investigating allegations concerning the operation of the Ballast Water Treatment Plant, the EPA issued a compliance order. The order addressed the need to correct deficiencies in the BWT physical plant and operating practices. In the course of these investigations, the EPA and the ADEC determined that the treatment process was inadequate.

Subsequently, Alyeska Pipeline Service Company retained Woodward Clyde to conduct receiving water studies and to investigate the dynamics of the effluent plume to determine compliance with the BTX criterion. The receiving water studies were conducted prior to the initiation of

a modified treatment process utilizing biological oxidation in reducing BTX (aromatic hydrocarbons) levels in the effluent. To document water column effluent concentrations, dye studies were conducted to indicate the level of BTX within and beyond the mixing zone. In addition, the consultants planned to address issues raised by ADEC concerning earlier dye studies (cf. below). The *Data Report* represents the field data collected and analyzed during the dye studies.

According to the "Woodward-Clyde/Colonell BWT Receiving Water Study Work Plan" (for the October 1985 and March 1986 studies), "ADEC questioned Radian's results on several points, including the vertical sampling interval (10 m, cf. I.B.2.C.), which was criticized as too large to ensure adequate sampling within the plume, and the BTX sampling methods and quality assurance (p. 7)."

The "Woodward-Clyde/Colonell BWT Receiving Water Study Work Plan" for the October 1985 and March 1986 Port Valdez Receiving Water Study indicated that the study would undertake the following:

- 1) "The field surveys will involve BTX/dye measurements in the effluent and in the receiving water especially on the mixing zone boundaries. Exact stations to be sampled will depend on the dye measurements (p. 12)."
- 2) "The program is designed to obtain five (5) BTXE samples per station in the trap zone, at a total of at least 42 stations. Selected stations also will be sampled throughout the water column (p. 13)." The Work Plan states that
". . . five samples separated by 1-2 m would appear sufficient to characterize the BTX concentrations in the trap zone at a given station (p.8)." (cf. I.B.2.c.)
- 3) "Data will be analyzed for water quality criteria violations on the mixing zone boundaries (p. 13)."
- 4) "The report will include all the data obtained and a description of methods and equipment in the Appendices. For ease of understanding, results in graphical form will be provided whenever feasible. The draft report will be reviewed internally for quality assurance and also reviewed by Dr. Joseph Colonell (p. 13)."
- 5) "Personnel: Key personnel assigned to the project will include Robert McCullam, Vice-President-Alaska for Woodward-Clyde's Anchorage office, who will act as

overall Project Manager. Dr. Joseph Colonell (Entrix, Inc.) will be retained as a sub-contractor to serve as Principal Investigator for field surveys and will have primary responsibility for supervision of field data collection. Dr. Peter Mangarulla (Woodward-Clyde) will serve as Principal Investigator for data analysis and will work closely with Dr. Colonell to maintain professional quality control/quality assurance for all aspects of the program. The laboratory testing program will be under the direct supervision of Michael Lloyd (handwritten addendum to Work Plan)."

Objectives of the ADEC Review

The first objective of the ADEC review was to analyze raw data ADEC expected to be presented in the *Data Report* according to the "Work Plan." The ADEC proposed to compare and evaluate the tabular data summary provided in Table 3-7, Vol. 1 to the source data from which it was synthesized and which is contained in Chapter 2 and Appendices A, E, and F of Vols. 1 & 2. The ADEC found that graphs in Appendix A were generated from computerized data obtained on the downcast; the data in Appendices E & F has been extrapolated from raw field data. Contrary to the above statement in the "Work Plan" (#4), none of the raw field data was available to the ADEC.

The second objective of the ADEC review of the March *Data Report* was to determine if it met ADEC's original objections to the Radian Corporation study. Specific questions asked included: a) were adequate BTX samples collected at 1-2 meters within the plume? b) were BTX samples collected from a sufficient number of stations? c) were the samples properly preserved? and d) were the BTX sampling methods and quality assurance programs sufficient?

The third objective of the ADEC review was to analyze the data collected for water quality criteria violations.

Executive Summary

Findings concerning the NPDES Permit

1. The EPA used the diluted BTX values in modelling predictions of dilution. The model should be rerun using adjusted March BTX values.

2. The October BTX values may also have been diluted. There is insufficient information available to adjust the BTX values.

Findings on the Woodward-Clyde Study and Data Report:

1. The Woodward-Clyde Study had difficulties with the selection and use of equipment that adversely affected their collection of field data.

2. The *Data Report* failed to present the results of the field study in a scientifically verifiable manner.

3. The *Data Report* failed to look at compliance to Alaska water quality standards.

4. The *Data Report's* value is questionable due to the cumulative effect of errors, inconsistencies, and ambiguities.

Findings on Compliance with Alaska water quality standards:

1. The ADEC adjusted BTX values showed that larger quantities of BTX (aromatic hydrocarbons) occur within and outside the mixing zone than indicated by the BTX values presented in the *Data Report*.

2. The ADEC adjusted BTX values indicated sixty-one (61) apparent and probable violations to Alaska water quality standards could be verified during the 5 day study period. Twenty-three (23) occurred above the top of the mixing zone, nineteen (19) on the horizontal boundary, and nineteen (19) outside the mixing zone. Additional violations possibly occurred, but insufficient information

was collected or reported to verify these.

3. The ADEC total apparent and probable violations are 508% greater than the 12 violations appearing in the *Data Report's* tabular data summary.

The Review:

The ADEC review of the *Woodward Clyde Data Report: Port Valdez Receiving Water Study, Ballast Water Treatment Facility, March 1986* is divided into three Parts. Part I reviews the presentation of material in the *Data Report*. Part II examines the problem of the diluted BTX and dye concentration samples caused by inadequate flushing of the Go-Flo bottles and determines that adjustments can be made to the BTX values resulting in a 508% increase in the number of apparent and probable violations. Part III presents the ADEC's conclusions concerning the Woodward Clyde Study and *Data Report*.

In Part I the ADEC review examines the *Data Report's* statements concerning Table 3-7 and Appendices A, E, and F as well as Table 3-7 and the Appendices themselves. Special attention was paid to the reporting of depths, BTX values, dye concentrations and apparent violations. Apparent violations occur when the BTX concentration is equal to or greater than 10 ppb on or outside the mixing zone boundary.

The ADEC found that datum (point of reference) for depths in Table 3-7 was not stated and that information explaining the method used to normalize depths to mean lower low water (MLLW) was not available in the Appendices (I.A.2.). The ADEC notes that 30 normalized MLLW depths could only be corrected to within approximately $2 \pm 1/10$ m to the depths reported in Table 3-7. An additional 7 corrected depth/BTX values did not correspond to Table 3-7 (I.A.2.). The ADEC noted that the consultants recognized a difficulty in obtaining accurate depths below the surface to within ± 1.5 meters (I.A.3.a-b). In addition, the consultants observed that the data "provided a useful index of average dye and/or BTX concen-

trations over a range of depths near the stated sample depth." Therefore, the ADEC review concluded that 10 BTX values reported at 15 meters within the horizontal boundary of the mixing zone were probable violations. Probable violations are BTX concentrations equal to or greater than 10 ppb that are reported at 15 meters (I.A.3.).

The ADEC found a number of difficulties in the presentation and documentation of BTX values. It was observed that the *Data Report's* statements about BTX values in Appendix E and Table 3-7 did not always accurately describe the BTX values reported in these places (I.B.1; I.B.1, c-f). For example, the *Data Report* states that the EPA percent recovery range of 39-170% was used in reporting BTX values in Appendix E, while the consultant's applied a more restrictive percent recovery range of 70-120% for their analysis (presumably Table 3-7). The ADEC review of the few examples given shows that the consultants inconsistently used both percent recovery ranges when reporting BTX values in both Appendix E and Table 3-7. The ADEC could not determine the extent to which this inconsistency occurred because the *Data Report* provides insufficient information for independent confirmations of its procedures and results (I.B.1., I.B.1, a-f).

In addition, the ADEC noted a number of discrepancies in the reporting of BTX values in Appendices E, F and Table 3-7: 1) Table 3-7's mean BTX values are sometimes incorrectly calculated (I.B.1.e); 2) BTX values reported in Table 3-7 sometimes do not correspond to BTX values in Appendix E or have been inexplicably changed (I.B.1.e; I.B.3); 3) some BTX values in Table 3-7 (including an apparent violation) are omitted from Appendix E (I.B.1.e); 4) some BTX values in Appendix E (including some apparent violations) are omitted from Table 3-7 (I.B.1.e); 5) some peak BTX values including several apparent and probable violations are not reported in Appendix F (I.B.2.a). As a result of these omissions, neither Table 3-7 nor the Appendices gives a complete listing of BTX values from which a determination of compliance could be made. In a few cases, differences in the way BTX values were reported in Table 3-7 and Appendix E made a difference in whether a violation occurred (I.D.2.b; II.B.6).

Samples and sample intervals did not meet the requirements of the "Work Plan." Thus, the methodology of the

Woodward-Clyde study did not meet the ADEC's previous critique of the Radian Corporation's study. The *Data Report* does not discuss this topic (I.B.2.c.). The ADEC noted, however, that in the *Data Report* it is concluded that "... the dye effectively tracks the BTX plume (p. 3-44)." Proof that dye tracks the BTX plume may mean that the consultant's did not need to collect BTX samples at the proposed 1-2 meters intervals (III, B.1.b.).

The ADEC review found difficulties in the methodology of the field study and in the presentation and documentation of dye concentrations in Table 3-7, Appendix A, and Appendix F. One area of concern is the failure of the field study to extend the downcasts to the bottom of the mixing zone, which is 1/2 meter above the sea floor. Apparently, the consultants did not have the equipment and methodology to take in-situ dye readings or grab dye and BTX samples from 1/2 meter from the bottom (sea floor) to determine compliance along the lower edge of the mixing zone (I.C.2.1.). It was noted that a number of downcasts which recorded in-situ dye concentrations stopped while the dye concentrations were still high or increasing (I.C.2.d).

The ADEC noted that casts and data were inconsistently and inadequately reported or labelled. Appendix A had 2 or more different graphs for the same cast (I.C.1.b.) and no information on other casts (I.C.2.b.). Peak dye concentrations were omitted from Appendix F (I.C.2.b.), while maximum dye concentrations reported in Table 3-7 were "smoothed to eliminate spikiness (I.C.3.c.)." In some cases the peak (Appendix F) dye concentration is 6 times higher than the smoothed maximum (II.C.3. a-b). The *Data Report* does not present an explanation for the method used to "smooth" the data. When the ADEC adjusted the BTX values using the formula in section (II.A.3), it was found that the difference between using the smoothed dye concentration value and the peak concentration reported at the same depth could make a difference between a non-violation and violation (II.B.6.).

The *Data Report* acknowledges some equipment difficulties in obtaining accurate dye concentrations in the top 5 meters during daylight hours and indicates that these concentrations were discarded. Review of Appendix F and Table 3-7 shows that dye concentration readings in the top 5 meters were inconsistently retained and discarded for both day and nighttime casts (I.C.3.e.). The ADEC notes

that although Appendix A's graphs show that dye/BTX plume rose to the surface repeatedly during the first 4 days of the study, only 12 BTX values are reported for depths of less than 5 meters (I.D.3.e). High dye concentrations probably indicate that more violations occurred during this period in the top 5 meters than were reported (I.C.3.c-f).

Study of the *Data Report* indicates that Alaska water quality criteria were probably not met when dye concentrations were high but BTX samples were either not taken or taken and not reported (I.D.2.c.).

In Part II the ADEC review examined the implications of a problem with the flushing of the Go-Flo bottles identified in the *Data Report* (II.A.1-2.). The Go-Flo bottle problem resulted in the dilution of BTX and grab dye samples (II.A.2.). The ADEC determined that sufficient information was available in the *Data Report* to make adjusted BTX values using the formula in section (II.A.3.). The ADEC adjusted BTX values indicated generally higher BTX values than those reported in the *Data Report*. Of the total number that could be adjusted 73% resulted in apparent or probable violations (II.D.2.b). The total number of adjusted and non-adjusted BTX violations is sixty-one (61) which is 508% greater than the original twelve (12) violations presented in Table 3-7 (the *Data Report's* tabular data summary) (II. D.2.a.).

The ADEC review considers the implications of these findings for the EPA's modelling predictions of dilution in the mixing zone. The EPA used the diluted BTX values and found that the results were best for March (II.C.1.). The ADEC raised a serious question about the accuracy of the model. Some additional problems in using adjusted BTX values to rerun the program were noted (II.C.1-2.). The ADEC observed that a similar problem appears to have existed during the October 85 study (II.C.2.). Inadequate information is available in the October 85 *Data Report* to adjust the BTX values. In addition, there is inadequate information for the EPA to obtain adjusted BTX values for rerunning their model for October (II.C.2.a.).

In Part III, the ADEC review presents a synopsis of the analysis of the strong and weak points of the *Data Report's* methodology (III.A.1.a. to III.A.2.d.), the "Work Plan" and collection of field data (III.B.1.a. to III.B.2.b.) and the *Data Report* (III.C.1.a. to III.C.2.g.).

Conclusions concerning the Woodward-Clyde Study and Data Report

The ADEC review reports four major areas of concern with the Woodward-Clyde Study: 1) the consultant's selection and use of equipment that resulted in diluted samples and unreliable light meter readings at the surface; 2) the *Data Report's* failure to present the data in a scientifically verifiable manner; 3) the *Data Report's* failure to look at compliance; and 4) the *Data Report's* numerous inaccuracies, mis-statements, and inconsistencies.

The ADEC review noted that difficulties with the equipment selected for the study or in the use of the equipment was the major weakness in the study's methodology. The CTD (conductivity, temperature, and depth) instrument used to measure depth within the water column gave repeatable results. However, the calibration to surface appears to have been weak and not independently verifiable. The Go-Flo bottles failed to flush properly which resulted in diluted dye and BTX grab samples. The SeaMarTec fluorometer used for vertical casts proved sensitive to ambient light. This resulted in the discarding of daytime dye concentrations from the top 5 meters. The Variosens fluorometer was not light sensitive, but it was only used for a 128 vertical casts (for which no corresponding BTX was reported). In future studies, a fluorometer which is not light sensitive should be used for all vertical casts. Thus, the reliability of the field study's results were undermined by three problems in the selection and use of equipment to collect field data: 1) the accuracy of the CTD instrument in relating depths to the surface, 2) the flushing of the Go-Flo bottles, and 3) the sensitivity of the SeaMarTec fluorometer to ambient light. Perhaps more time should be spent in future studies in field-testing equipment prior to the collection of data or different equipment and methods should be used in the future.

Although the "Work Plan" stated that raw data would be provided in the *Data Report*, very little was provided. The *Data Report* did not clearly distinguish between raw data and data that had been screened or changed. Some raw data was apparently eliminated. For example, no complete listing of BTX values along with those of the replicates and duplicates is given so that the selection and presentation of values in Table 3-7 and Appendix E could be independently verified. In addition, graphs which had been re-

worked for temperature and depth were presented for in-situ dye concentrations rather than the computerized information collected during the study period. Raw data needs to be provided in future data reports so that ADEC personnel can independently confirm the study's results.

Inadequate information was given on how data was changed. For example, Table 3-7 presents in-situ dye concentrations that have been "smoothed." Sometimes the peak concentrations were 6 times higher than the smoothed maximums. No information was given on the specific method used in obtaining the smoothed maximums. If smoothed readings are used instead of precise readings, then a mathematical procedure needs to be identified for obtaining smoothed readings.

The *Data Report* lacked consistency between its statements in the text and the tables or appendices to which they referred. In addition, some of the *Data Report's* statements in the text and symbols used on maps were ambiguous.

The *Data Report* did not discuss compliance. The "Work Plan" stated that the data would be "analyzed for water quality criteria violations on the mixing zone boundaries (p. 13)." The methodology did not adequately address compliance along the bottom of the mixing zone. This is a problem that needs to be addressed in future studies of compliance. In evaluating the BTX samples, the consultants elected to use their own percent recovery range rather than the approved EPA percent recovery range. The decision to use a more restrictive percent recovery range could have an effect on the number of violations reported. The advisability of using an alternative percent recovery range to the EPA's percent recovery range should be the topic of a separate paper and not a unilaterally made decision during the course of a what was supposed to be a study on compliance to the Alaska water quality standards.

Finally, as stated above the *Data Report* contained numerous errors and many inconsistencies in its presentation. The cumulative effect of these discrepancies made the *Data Report's* findings difficult to interpret and verify.

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MEMORANDUM

State of Alaska

3601 C STREET, SUITE 1350

ANCHORAGE, ALASKA 99503

TO: Bill H. Lamoreaux
Regional Supervisor

DATE: October 31, 1988

THRU: Bob Flint *flint*
Programs Manager

FILE NO:

TELEPHONE NO: 563-6529

FROM: Julie Howe *Julie*
Environmental Engineer

SUBJECT: Alyeska Pipeline
Service Co.
IMS Report

The following is a review of the report entitled "Environmental Studies in Port Valdez, Alaska, 1987" (IMS report), and includes a review of the data sheets for the benthic samples, and comments recently received from NOAA. Please note that this review incorporates the comments Mike Wheeler on the IMS report dated Aug. 8, 1988. This review has raised several questions which require further clarification in order to complete the evaluation of the study and its conclusions. The issues are as follows:

Environmental Studies in Port Valdez, Alaska 1987

1. Chapter 1, pg. 6. Sediment Extraction: It is noted that the sediment samples were kept frozen before use at which time they were allowed to thaw. Further, "Excess water was decanted from the sediment, and the sediment was stirred to homogeneity." Organic contaminants such as aromatic hydrocarbons would have a tendency to bind with the organic matrix of the sediment more so than the silt and sand fraction of the sediment sample. The decanting step of the procedure, while normally used by the National Marine Fisheries Service, may introduce a source of error for samples that have been frozen because the freeze/thaw process results in some destruction of the cellular integrity or the organic matrix of the sample. This in turn results in some mobilization of contaminants to the interstitial water within the sediment during the thawing process. A significant portion of the hydrocarbon contamination may be decanted off during the decanting process. Due to a loss of an unknown quantity of contaminants, the results may suffer from a negative bias.

Another issue may be the temperature at which the samples were held. It is stated that the samples were "kept frozen", yet the temperature was not provided. NOAA procedures require samples analyzed within a year to be held at -20 F.

October 31, 1988

2. Chapter 1, pg. 13. Quality Assurance/Quality Control: This portion of the study did not include a determination of the amount of chemical contamination present in the decanted aqueous phase of the sediment samples. Consequently, the negative bias in the chemical analysis data cannot be corrected.
3. Chapter 1, pg. 14. Results & Discussion: This section of the report includes no analysis of the data, but rather presents conclusions based on a visual examination of the data tables. A statistical comparison of data sets including the degree of confidence attendance should accompany the conclusion that "subtidal sediments had lower concentrations of aromatics than previously believed."

**Supplemental Hydrocarbon Studies in Port Valdez, Alaska
1981-1987**

1. Pg. 2. Methods: It is noted that, "Sediment samples collected during previous environmental studies of Port Valdez have been archived at 0 C. NOAA's procedure is to archive sediment samples held over a year at -62 C (-80 F). The reason for this is that preservation of archived samples at higher temperatures can result in some dehydration of the sample over time. Consequently, the amount of chemical contaminants in the sample may be concentrated and would result in a positive bias. Therefore, a positive bias in combination with a negative bias (introduced in the sediment extraction procedure for the 1987 sediment samples) results in the archived samples appearing to have a higher concentration of contaminants with the new analytical procedure, and recently collected, (1987) samples will appear to have a lower than actual concentration of hydrocarbons because of the extraction procedure.

A proper quality assured study design would have included a re-analysis of the archived samples using the previously used analytical methodology and comparison of the results to historic chemical contamination data and to the new NOAA methodology results. Since this comparison was not completed, the data generated utilizing the two methodologies cannot be validly compared.

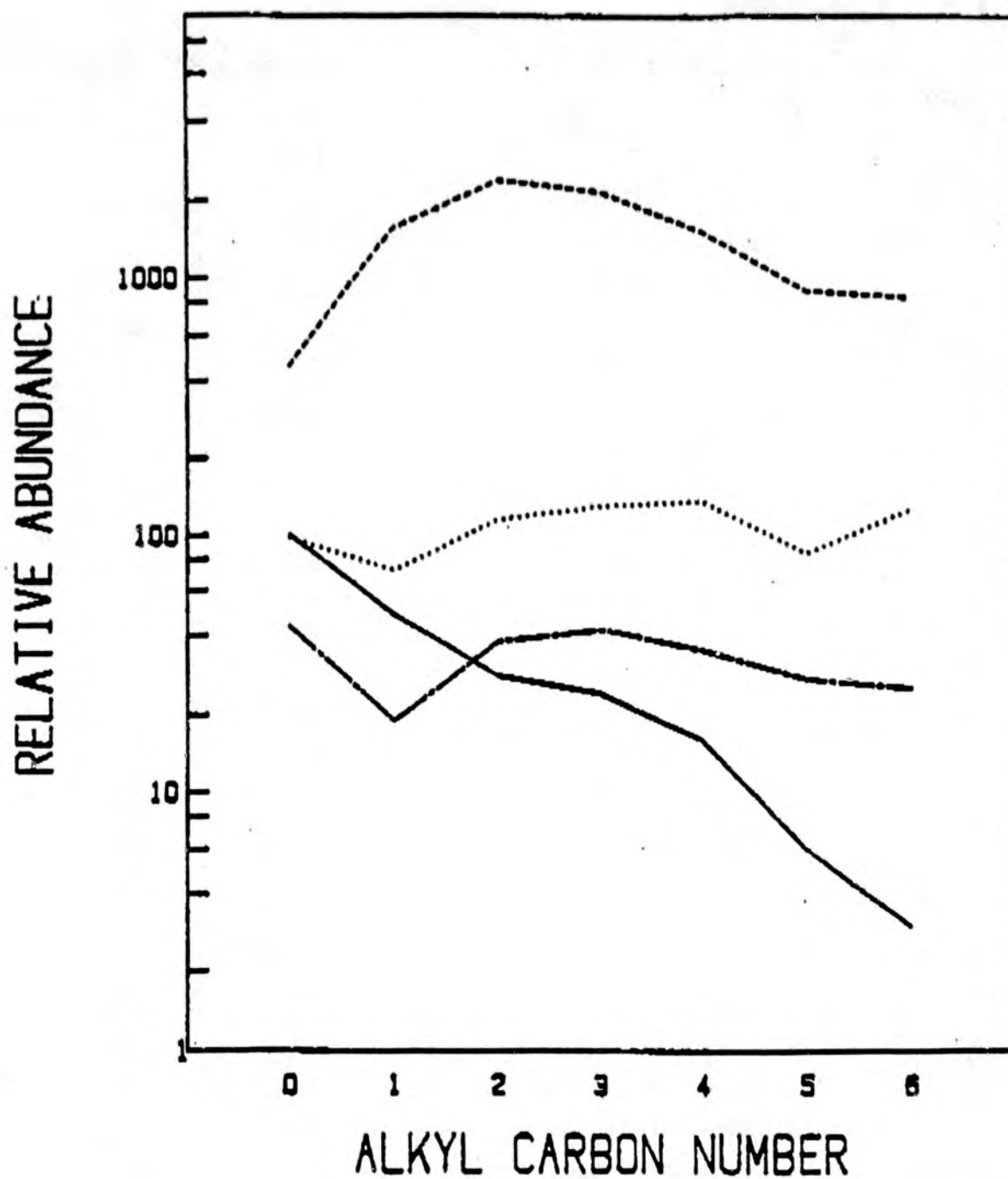


Figure 3. Relative abundance of phenanthrene plus anthracene and their alkyl homologs in Port Valdez sediments in 1987. Solid line corresponds to station 11; the dotted line, to 25; the dashed line, to D-33; and dashed and dotted, to D-69. All concentrations are relative to phenanthrene plus anthracene at 11.

TALK, D-69 is slightly greater than 25. Similar phenanthrene and anthracene alkyl homolog data for the same four stations has been presented in a similar graphic format for 1980, 1981, 1982 and 1985 (Shaw and McIntosh 1986). These results show trends similar to those in Figure 3.

Tables 15 and 16 show the results of the NOAA method of analysis for alkanes of archived 1981, 1982, and 1985 samples of sediment from stations 11 and D-33. Also shown are the means of the 1987 results from Tables 2 and 9. At both stations there is not a clear upward or downward trend in concentrations with time. In each year the concentrations at station 11 are lower than at D-33. Tables 17 and 18 are analogous to Tables 15 and 16 but the former show aromatic hydrocarbon concentrations. The results from both stations show lower aromatic hydrocarbon concentrations in 1987 than in 1981 - 1985.

DISCUSSION

The 1987 alkane results (Tables 2 to 14) are consistent with the presence of hydrocarbons of modern biogenic origin at all stations and additional hydrocarbons associated with the treated ballast water entering the system at station D-33. Dispersal of treated ballast water hydrocarbons appears to be a non-uniform process in which locations near and at depths similar to the discharge are more likely to receive treated ballast water hydrocarbons. This is consistent with the fact that the sediment depositional regime along the steeply sloping margins of Port Valdez is complex with episodic reworking caused by slumping (Naidu and Klein 1988). This view of sediment hydrocarbon distribution is supported by the TALK results presented above and by the distribution of phytane in these sediments. Phytane is not produced by aerobic biological systems but is produced in anaerobic biogeochemical systems and is abundant in petroleum. Thus, in the aerobic surficial benthic sediments of Port Valdez, phytane is an indicator of petroleum. In this study the highest phytane concentrations (266 and 242 ng/g) were found at stations D-33 and 80, both nearfield stations at the discharge depth which also had the highest TALK values. Other stations which had more than a trace of phytane (16, 81, D-45, and D-51) were, with the exception of 16, also nearfield stations at the discharge depth. These four stations all had average to high TALK values.

The CPI values are low at all thirteen stations (generally < 1.4). By itself, this result suggests the presence of petroleum at all stations.

Memo to Bill Lamoreaux
Page 3

October 31, 1988

2. Pg. 21. Discussion: While the magnitude of concentration of chemical contamination may be subject to interpretation of bias, the data do show some significant findings that are not brought forward in the conclusions section or the executive summary: "The CPI [carbon preference index] values...suggest the presence of petroleum at all stations" and "in the aerobic surficial benthic sediments of Port Valdez, phytane is an indicator of petroleum. In this study, the highest phytane concentrations were found at...nearfield stations at the discharge depth." The significance of these results is discounted in the report because "interpretation is not consistent with the other parts of the study" (pg 26). It is further stated that the significance of the CPI results "is unclear and they should be interpreted with considerable caution." In fact, the inconsistency is most likely due to the aforementioned problems with bias in the contamination concentrations. The significance of these findings is that they document that there is indeed petroleum hydrocarbon contamination in all sediments sampled from Port Valdez in 1987 and that this contamination is highest nearest the diffuser outfall. No valid arguments can be made regarding comparison to previous years' results and concentrations.

Data sheets for benthic sampling

1. It is noted that several of the data sheets indicate the presence of "tar balls, tar and oily sediment globules, oily sheen on water covering sediment" etc. The presence of the oily matter was noted for 4 of the five samples taken at station D-33, which is the station closest to the discharge point. The decanting of this liquid would further bias the results. This issue was not addressed in either report, which lends some doubt that the procedures followed actually identified and reported the real existence of visually free hydrocarbons.

The above issues cast serious doubt on several of the conclusions reached in the reports or reported to the media by Alyeska. Specifically, assertions such as, the levels of hydrocarbon contamination in the sediments are lower than previously believed, that hydrocarbon concentrations are not building up in bottom sediments, and that the water quality of Port Valdez has been virtually unaffected by the BWT plant.

cc: Mike Wheeler
Dan Lawn

(TYPICALLY + U)

BALDEN ENVIRONMENTAL MANAGEMENT, INC.

8-23-88
B.H.

RELEASED/8-24-88

=====

PRIVILEGED AND CONFIDENTIAL

=====

Michele D. Brown,
Assistant Attorney General
State of Alaska
Department of Law.
1031 W. 4th Ave., Suite 200
Anchorage, AK 99501.

July 25, 1988.

Dear Ms. Brown:

Enclosed with this letter is a review and analysis of ADEC departmental files dealing with: (a) Port Valdez mixing zone effectiveness; (b) departmental and public comments on the Alyeska NPDES draft permit; and (c) discussion on treatment methodology for BWTP. This report fulfills all the contractual requirements of Balden Environmental Management, Inc. agreement with State of Alaska, Department of Law.

Sincerely

Roxanna Balden

Roxanna Balden
President

INTRODUCTION

The discovery of a world class oil field in Prudhoe Bay, Alaska (1968), was followed by a series of investigations of the means to extract, transport, and distribute this mineral wealth throughout the market. This search lead to the selection of Port Valdez as the southern terminal of the Trans-Alaska Pipeline and a port for the oil tankers.

The impact of such a large-scale commercial activity on the quality of life and the environment in Alaska was of concern to many individuals and groups of common interest. Such concerns were described by D.W. Hood in 1973:

Ecological abuse through man's activities is no longer acceptable in a modern masterplan of quality survival. The dilemma of maintaining a satisfied society in a sound environment must look for rational solution in development of man's ability to accurately define and predictively monitor environmental tolerance levels in his management for optimum but compatible utilization of natural resources.

As a first step in assessing potential stress to the marine environment by the addition of petroleum hydrocarbons, it is necessary to investigate the underlying stability and vitality limits of the natural system, considering not only its fragile aspects but its offsetting self-regulatory mechanisms as well. (Hood, 1973).

The fact that "ecological abuse" was taking place at various locations nationally at that time as a result of "the addition of petroleum hydrocarbons to the marine environment" was not a secret. Such an abuse was described circa 1974 in the following manner:

It is a widely recognized fact that the problems associated with oil pollution of navigable waters have reached critical proportions. The marine waters are polluted as a result of catastrophic events on the sea, and as a result of more common continual pollution originating from operation of ships and off-shore drilling facilities. A significant contribution to pollution load of oil in the marine waters is made by discharge of cargo and ballast waters from ships and oil tankers." (Lysyj and Russell, 1974).

The magnitude of crude oil discharges into the sea from the operation of oil tankers was reported by W. O. Gray et al., (Exxon Corporation) as follows:

Current estimates of such discharges are in neighborhood of one million to 1.5 million tons each year. (Gray, 1977)

The impact of a large scale oil related activities on the ecological integrity of Alaskan environment becomes a matter of concern to many interested groups, including the public at large, fishermen, recreational and tourist industries, and others who have a deep interest in maintaining a healthy marine ecosystem.

In the epicenter of all this action was Port Valdez, a proposed marine terminal for the trans-shipment of oil from Alaska to the lower 48. Its receiving waters were expected to be exposed to maximum pollution impact from the prospective commercial activity, such as shipment of oil by sea.

Because of this prospect, systematic studies in the physical, chemical and biological environment of Port Valdez begun in early 1970 and have been carried out ever since.

TASK 1. DISPERSION PROCESSES IN PORT VALDEZ:
ACCUMULATED KNOWLEDGE.

The first major scientific investigation in Port Valdez was carried out by the Institute of Marine Science, University of Alaska (IMS) in 1971-1972. Three principal areas of investigation were: The Physical Baseline; The Living Baseline; and Hydrocarbon Involvement (Hood et al., 1973). IMS studies were continued through the start-up of construction, and commencement of the operation of the marine terminal. These environmental studies of Port Valdez, including investigations by IMS, were sponsored largely by Alyeska Pipeline and Service Company (Alyeska).

U.S. Environmental Protection Agency (EPA) initiated independent studies in 1978 on the ballast water treatment plant performance and effectiveness.

These studies were later extended to the investigation of the fate of discharged pollutants in the bay. EPA-sponsored studies were carried out by Rockwell International from 1978 through 1981 (Lysyj, 1982, Lysyj et al., 1981). Results of these independent investigations were reported in peer-reviewed literature (Lysyj, 1982), and government publications (Lysyj, 1982).

Latest major environmental study in Port Valdez (1985-87) dealt with various aspects of treatment plant operations and discharges into the bay. Results were reported in a number of publications, including WCC Final Report, (WCC 1987), and Data Reports Volume 1 and 2 (WCC 1986).

LITERATURE REVIEW

1/ Institute of Marine Science (IMS) Study (Hood et al., 1973)

The first systematic assessment of a potential for damage to the receiving waters of Port Valdez from an operation of the crude oil loading facility was performed by IMS, under the sponsorship of Alyeska. Studies were conducted for a number of years before construction and commencement in 1977 of the operation of the marine terminal near Jackson Point took place. It was recognized at that earlier date that:

The possible impact of this amount of oil discharged daily (design maximum of 8 barrels per day) into Port Valdez waters is of great concern to many segments of society: the Alyeska Pipeline Service Company; those who use the Port for recreational purposes; fisheries interests both in the Port and in the Prince William Sound;

the state and federal agencies responsible for environmental quality; and by other who have deep interest in maintaining healthy marine ecosystem. (Hood et al., 1973).

The nature of emerging problems was defined by Hood as:

Crude oil contains about 350 different chemical compounds and as such is the most complex of the earth's raw materials. Experiments conducted in the past have indicated that toxicity is proportional to volatility and aromaticity. The most hazardous products are those containing high concentrations of aromatics. (Hood et al., 1973).

A background study was carried out in Port Valdez by IMS in 1971/1972 in order to establish physical, chemical and biological background conditions in the bay prior to start-up of the marine terminal operations in August of 1977. This was done in an anticipation of pollutants discharged from the ballast treatment plant, holding tanks, loading facilities, and docks. Such pollution discharges could lead to permanent changes in the environment of the bay. The study addressed the following: Port Valdez circulation; dispersion processes at proposed outfall site; ports flushing rates; productivity regime; benthic biology; and sedimentology.

The first experimental study of dispersion processes in Port Valdez was carried out under the auspices of IMS as early as 1971/1972 (Nebert et al., 1973).

It was recognized at that time that:

Whatever the final disposition of the (effluent) plume, its form and dimensions are a useful indication of the magnitude and nature of the dispersive processes which affect contaminants in natural systems. Since it was necessary to predict how rapidly pollutants would be dispersed in the Jackson Point area of Valdez, an experiment was designed to simulate the introduction of contaminant (rhodamine-B dye) at a specified depth. When a tracer such as rhodamine-B dye is introduced continuously into a motionless homogenous fluid from a stationary point source, it forms a spherical pattern within which dye concentration decreases with distance from the source. When the fluid has a stable vertical density stratification, which is frequently observed in marine waters as was the case in Port Valdez during all month except December and March, the tracer will disperse more as horizontal flattened disk with concentration decreasing with distance from the source; the stratification impedes vertical mixing, hence vertical extent, of the tracer. (Nebert et al., 1973)

Dye studies were conducted six times in 1971/1972 under varying hydrographic conditions. It was determined that the average tenfold dilution distance in all cases for which it was calculable was 0.46 nautical miles.

This IMS study, conducted more than 5 years prior to commencement of marine terminal operations in Port Valdez, has properly identified two major environmental problems resulting from discharge of oily waste into marine environment of the bay as:

- 1/ Principal hazard to the environment derives primarily from the toxicity of aromatic hydrocarbons;
- 2/ Poor mixing of effluent under stratified conditions, can lead to horizontal dispersion of hydrocarbon pollution into a large part of Port Valdez.

These two properly identified problem areas have been the source of environmental concern in the Port ever since.

2/ The Mixing Zone (1975)

Discharge of treated effluent from the Ballast Water Treatment facility in Valdez is regulated under the National Pollution Discharge Elimination System (NPDES) permit.

The mixing zone concept is used in a framework of NPDES permits to accommodate mixing of discharged wastewater into a small and limited volume of receiving water. The size of the designated mixing zone is defined by the horizontal and vertical planes and is required by regulations to be as small as practical. The state water quality criteria for the receiving water are waived in the designated volume, but must be maintained outside the mixing zone.

The first NPDES permit was issued to Alyeska on 30 January 1975, and required that a diffuser system be provided for dispersal of the treated effluent in Port Valdez. The permit specified dimensions for the mixing zone. A dilution ratio was specified in this permit as 1:80 on the vertical, and 1:160 on the horizontal planes of the mixing zone.

Design of the outfall diffuser for Alyeska marine terminal was developed by computing the diffuser hydraulics and theoretically obtainable receiving water dilutions for the treated effluent. Computations were performed taking into account environmental conditions that would be posed by seasonal variations in the receiving water.

Environmental data used for these computations were based on the density profiles for receiving water in Port Valdez during the months of March, April, May, and October as observed in 1971-72, and reported by IMS (Hood et al., 1973.). The computer program which was utilized for the necessary calculations was developed by the Environmental Protection Agency (EPA) (Baumgartner et. al., 1971.)

Based on the data generated by IMS (Hood et al., 1973) and using the EPA developed computer program (Baumgartner et al., 1971) dimensions of the mixing zone, necessary to accommodate required dilutions for oil and grease, were specified as: the sides 150 meters from diffuser centerline; the ends 150 meters from each end of the diffuser; the top 5 meters below surface; and the bottom 0.5 meters above the bottom. The dilution of 1:80 was to be maintained on the vertical planes, and 1:160 on the horizontal planes of the mixing zone at all times in order to comply with allowable concentrations for oil and grease.

3/ Institute of Marine Science (IMS) Study (Colonell, 1979)

The first NPDES permit required that Alyeska implement a study of the outfall diffuser system to determine its actual rather than computer predicted effectiveness in dispersing the effluent plume. Such a study was carried out shortly after commencement of terminal operations in 1977 by IMS (Colonell, 1979). Field tests were performed using a dye dispersion procedure during strongly stratified conditions (31 October - 2 November, 1977), and under conditions that were weakly stratified (17-21 April, 1978).

Field data, which were generated by Colonell in 1979, indicated major discrepancies between the computer-predicted dilution ratio and the experimental values obtained by direct physical measurements of the receiving environment. The computed dilution ratio was described by Colonell as follows:

Detailed results of these computations were provided in a letter report (Layton, 1976), in which it was stated that the average dilution for nearly all receiving water conditions would exceed 100 with few exceptions occurring under August and October conditions; however, the report indicated that natural dispersion processes (i.e., those which are not accounted for by the computer program) should ensure that dilution would exceed 100 at the mixing zone boundaries under the latter exceptional conditions." (Colonell, 1979).

The real-life rather than a computer simulated situation in the mixing zone as reported by Colonell was found to be quite different:

During the first test, which occurred when the receiving waters had a pronounced vertical density stratification, dilutions of 40 to 50 were observed at "trap depth" (50 to 60 m) on the east and west boundaries of the mixing zone during the vertical profiling surveys. Further, dilutions as low as 32 to 50 were found at trap depth during horizontal profiling surveys along the mixing zone boundaries. (Colonell, 1979).

Consequently, the EPA computer predictions that "the average dilution for nearly all receiving water conditions would exceed 100 ..." were not supported by field data.

Instead, dilutions of only half of those predicted by a computer were taking place on broad fronts on the east and west boundaries of the mixing zone in violation of the NPDES stipulations.

A detailed look at the data reported by Colonell indicates that the dilutions required by NPDES permit were violated not only on a borderline of the mixing zone (stations 32, 34, and 42) but also outside of mixing zone at distances of 150 meters at Stations 35 and 51, and at 175 meters at Station 61.

4/ Rockwell International Studies (Lysyj et. al., 81, Lysyj 82)

Rockwell International studies were carried at the marine terminal facility and in the receiving waters of Port Valdez during 1978-1981 time period. These were sponsored by EPA under a research contract, and addressed the effectiveness of unit-processes in a large-scale ballast water treatment operation. They have also addressed such major environmental concerns as were expressed more than 5 years previously in the IMS report (Hood et al., 1973), i.e., discharge and the fate of toxic aromatic hydrocarbons in the aquatic environment. Rockwell International studies disclosed that:

Volatile aromatic hydrocarbons constitute almost half of all organic compounds present in the treated effluent. Principal compounds present were benzene, toluene, xylene, and ethylbenzene. (Lysyj 1982).

These compounds were the same as described in 1973 IMS report as:

The most hazardous products are those containing high concentrations of aromatics. (Hood et al., 1973).

Findings of the Rockwell International study were quality assured by EPA, and independently verified by Radian Corporation (Oldham et al., 1979), under a contract to Alyeska.

Consequently, it was established that the discharge of toxic aromatic hydrocarbons from the Ballast Water Treatment Plant occurs as a result of continuous effluent discharge into Port Valdez.

Rockwell International (under a contract to EPA) then initiated a field study to elucidate the nature of dispersion processes and the fate of such compounds in the receiving environment. A quality assured analytical procedure capable of detecting 0.1 ppb concentrations of specified aromatic hydrocarbons in natural waters (Lysyj et al., 1980) was used in a strictly quality controlled field study.

Distribution of aromatic hydrocarbons in the receiving waters of Port Valdez was studied by collecting and analyzing samples of sea water at the boundary of the mixing zone and throughout the fjord in the summer and fall of 1979. Findings of this Rockwell International field study were summarized as follows:

It was found that treated effluent does not mix uniformly with the receiving waters of Port Valdez during the summer period of density stratification, at which time the volume of the mixing zone is grossly underutilized and no significant amount of hydrocarbons diffuse into the upper reaches of the water column.

Discharged hydrocarbons are contained within a narrow trap zone of maximum concentration which spreads out horizontally 2 to 3 kilometers (km) from the mixing zone in a thin pancake-like shape. The vertical position of the effluent plume depends on prevailing water density conditions: during the early summer it is located at a depth of approximately 50 meters (m), while in late summer it is found at a depth of 65 meters, and is contained within 10 m off the bottom in the area of the mixing zone. The concentration of total volatile aromatic hydrocarbons found on the boundary of the mixing zone were as high as 120 ug/l.

The results of this study are in general conformity with predictions by Hood (1976), who postulated that little vertical mixing occurs in Port Valdez between April and December, when the water density is stratified, and with observations by Colonell (1979), who reported the existence of the trap zone at 50- to 60 -m depth for pollutants discharged from the treatment plant. (Lysyj et al., 1981).

According to results reported by Lysyj et al., (1981) there was little if any vertical mixing in the mixing zone during late summer and fall.

For example, at station 32, aromatic hydrocarbons concentration decayed from 88 ug/l to 1.3 ug/l within 10 meters vertically towards the surface. This represents 98.5% reduction in the concentration of aromatic hydrocarbons with a 10 meter vertical rise, suggesting a defined cap for the plume.

5/ Second NPDES Permit and a New Mixing Zone (1980).

Second NPDES permit for the waste water discharge from the Ballast Water Treatment Plant was issued to Alyeska on 10 September 1980. This new permit incorporated limitations on the discharge of aromatic hydrocarbons, and a requirement for evaluation of technical means for the reduction or elimination of this class of toxicants from the plant effluent.

It was clearly recognized that the dimensions of the old mixing zone, based on the computer simulation as specified in the first NPDES permit for oil and grease compounds, were not capable of containing discharged pollutants. Consequently, the size of the mixing zone was increased substantially in the new NPDES permit. In terms of volume, the new mixing zone was approximately 16 times larger than the old one and was based on the 900:1 dilution ratio intended to meet the newly-adopted 10ug/L state (ADEC) standard for aromatic hydrocarbons.

6/ Radian Corporation Studies (Hoban et al., 1981)

Under the provisions of the new NPDES permit Alyeska was required to verify compliance with the Alaska State water quality requirements and limits on aromatic hydrocarbons in waters designated for the classified uses. In order to do so, a study was contracted to Radian Corporation to determine concentrations of aromatic hydrocarbons along the newly-defined boundaries of mixing zone. Radian had carried out the sampling and analysis of water samples in April and September of 1981.

Aromatic hydrocarbons were found in April of 1981 (under non-stratified conditions) at most stations sampled. Concentrations of such substances were found in violation of Alaska State water quality standards at Station 77. September study (under stratified conditions) showed benzene at less than 0.1 ppb, and only small quantities of aromatics at other locations.

Questions about the findings of this study were raised, because the highest hydrocarbon present in the discharge (benzene) was not found at all in receiving waters during the April study; while ethyl benzene, which is present in much lower concentrations in the effluent, was found to be present in high concentrations in the receiving water. Also, concentrations reported did not correspond to locations of the trap zones.

7/ Woodward-Clyde Study (Data Reports Volumes 1 and 2 (WCC 1986) and Final Report, (WCC 1987)).

A major study dealing with dispersion processes in Port Valdez was carried out in October of 1985, under stratified conditions, and in March of 1986 under non-stratified conditions (WCC 1986 and WCC 1987).

In its design and operational scope this program was by far the most extensive of all dispersion studies conducted at Port Valdez. The experimental design involving location of trap zone by in-situ detection of dye maximum, was followed by sampling and measurements for BTX and dye concentration in grab samples.

The fluorometer and the Go-Flow bottles were mounted side-by-side on the rosette to minimize bias caused by instrument location. Samples from Go-Flow bottles were used for comparison with the in-situ fluorometric measurements. Consequently, simultaneous data become available on BTX and dye concentration in each grab sample as well as the in-situ dye concentration.

This experimental design permitted comparison between in-situ fluorometric measurements and subsequent determination of dye and BTX concentrations in Go-Flo sampling bottles. Such an experimental design was sound as well as fortunate, for it permitted salvage of a large volume of data (Lawn 1988) from diluted (due to incomplete flushing) BTX samples. Incomplete flushing of Go-Flow bottles was acknowledged in the report, but corrections for dilution were not made. Until such corrections were made by ADEC, all BTX data generated in this study is to be considered as understated because of the sampling equipment induced systemic errors.

Use of two vessels (RICKY and STEVEN DANIEL) during the March 1986 study enhanced the quality of real-time observations on the dye-dispersion processes. A very large volume of raw data was accumulated as a result of this study. A major computer simulation effort was also carried-out.

As reported in the Final Report (WCC 1987) results of the Dye Dispersion Study were similar to those reported by Colonell in 1977/1978:

The minimum observed dilution at stations near the diffuser (32, 33, 34, 42, 43, 44) was 30:1. The mean of the observed minimum dilutions was about 60:1. (WCC 1987).

These observations compare closely with Colonell's, made in 1979:

... dilutions as low as 32 to 50 were found at trap depth during horizontal profiling surveys along the mixing zone boundaries. (Colonell 1979).

In other words, reported dilutions were less than the original computer prediction of 100-fold dilutions.

Effects of stratification on the plume behavior were similar to the ones observed by Lysyj in September 1979.

In October 1985, the increase of effluent density reduced the plume rise from about 20 m at the start of the survey to a minimal value when the effluent was nearly neutrally buoyant. (WCC 1987).

This corroborated results of Lysyj's report:

The maximum concentration of 21 micrograms per liter was recorded at point 2 meters above bottom (77-meter depth). (Lysyj, 1981).

and

... in late summer it (effluent plume) is found at a depth of 65 meters, and is contained within 10 m off the bottom in the area of the mixing zone. (Lysyj, 1981).

In view of these facts, a statement that appears on page 3-20 of the Final Report (1987) and describes conditions prevailing in Port Valdez during the 1985/1986 studies as atypical is rather unusual (emphasis added):

These conditions which individually may be atypical and in combination may be extreme, suggest that overall mixing performance of the diffuser should not be judged by these two sets of observations alone.

This statement in the Final Report (WCC 1987) is in a direct contradiction with statements made in WCC Data Reports, Volume 1 and Volume 2 (WCC 1986) (emphasis added):

Volume 1:

Hydrographic conditions during the dye study were typical of the essentially homogeneous water column that prevails in Port Valdez from November to April.

Volume 2:

The density profile of the receiving water, as indicated by its temperature and salinity profiles, was typical of autumn conditions for Port Valdez.

Conditions cannot be TYPICAL and ATYPICAL at the same time.

In fact, it appears that conditions described and results reported in the Final Report (WCC 1987) are quite common within the seasonal variations prevailing in Port Valdez, and results reported by WCC are very similar to those described by earlier investigators (Colonell 1979, Lysyj et al. 1981). Consequently, it would be entirely proper, and in fact necessary, that the "overall mixing performance of the diffuser" should be judged by these WCC observations, which are supported so well by earlier studies.

A statement made on page ES-3 of the Final Report (WCC 1987) is also inconsistent:

The predicted overall annual performance of the diffuser based on the results of Monte Carlo simulations is much better than observed in the October 1985 when the minimum dilution of 30:1 was measured. The Monte Carlo results indicate that 95% of the time average near-field dilution will be higher than 75:1 for the lower bound of current speeds, and higher than 95:1 for the upper bound in current speeds.

In cases where a conflict exists between information based on the physical evidence and computer predictions, or simulations, physical evidence has greater validity than computer predictions.

Computer simulations reported in the Final Report (WCC 1987) have not proven to be historically accurate considering the fact that computer prediction methodology used in the past designation of mixing zone was proven to be far from accurate, and such statements in the Final Report as:

In conclusion, Wright found that dilution estimates at the trap zone were significantly less (by factor as large as 5) than observed for vertical discharges into stratified environment ... (WCC 1987).

Further a quote from Colonell (1979) states as follows:

... the comparison was not so good (between observed and predicted values) as to merit unbound confidence in the values that might be predicted for other effluent and receiving water conditions. (Colonell, 1979).

SYSTEMIC ERRORS

Systemic errors are errors resulting from procedural or equipment deficiencies of selected experimental methodologies. Such errors manifest themselves as positive or negative biases of results, and unless corrected, invalidate generated data.

Data Reports (WCC 1986) describe and accurately document systemic errors produced by two experimental procedures:

- 1/ Measurements of dye fluorescence in the top five meters of the water body, when SeaMarTec instrumentation was used;
- 2/ Sampling and determination of BTX using the Go-Flo water bottles.

Both instances of systemic errors were due to the deficiencies of equipment which was selected by the authors for the field studies. In the case of fluorometric measurements, equipment limitations resulted in positive biases, i.e., reported results were higher than the actual concentration of dye in the receiving water; while the use of BTX sampling procedure resulted in negative biases, i.e., reported results were lower than the actual concentration of BTX in Port Valdez. The nature of these systemic errors was recognized and reported by the authors in both cases.

Fluorometric Systemic Errors.

In the case of fluorometric measurements using SeaMarTec instrumentation, it was reported by the authors that the dye measurements in the upper five meters of water body were consistently higher during the day than during the night, and were found to be biased as follows:

This was first suspected in the field when measurements made during the day shifts consistently indicated higher dye concentration in the top five meters of the water column than detected during the night shifts. The anomalous data also appeared inordinately spiky. Laboratory tests following the cruise confirmed the sensitivity of the SeaMarTec fluorometer to light (EG&G 1986). (WCC 1986).

Erroneous data generated in this manner were identified by the authors, and invalidated:

Although presented, note that the top five meters of each dye concentration profile (day shift only) is considered invalid because of the sensitivity of the SeaMarTec fluorometer to ambient light. (WCC 1986).

The invalidated data were positively biased, i.e., invalidated results were higher than actual.

BTX Sampling Systemic Errors.

Second case of systemic errors involved use of Go-Flow bottles for the sampling of BTX. The authors have recognized correctly and documented properly the nature of such errors in the text of Data Reports:

A summary of selected dye and BTX measurements appears as Table 3-7. This table lists, by cast, the dye concentration of each grab sample, the peak in-situ dye concentration and grab sample BTX concentration. Note that differences in dye concentration occur depending on whether the measurement was made with an in-situ fluorimeter or from a grab sample. Of the two, the in-situ dye concentration are considered representative of the true plume dye concentration. (WCC 1986).

An explanation for this discrepancy is given as follows:

The grab sample data are not representative of in-situ conditions at a given depth because of incomplete flushing of the Go-Flo bottles. (WCC 1986).

As a result of this systemic sampling error, all data on concentration of BTX found in the Valdez bay were underreported:

It is important to note, however, that for a given vertical cast the peak dye or BTX concentration will be always as high or higher than concentration measured from a grab sample. (WCC 1986).

The authors accurately stated that the concentration of BTX, as measured in grab samples, will be always lower than the actual concentration of BTX in the receiving waters of Port Valdez, or in other words, that the reported results are negatively biased.

Consequently, uncorrected data understates the actual concentration of BTX in the receiving waters of Port Valdez, and leads to an erroneous conclusions regarding the degree of compliance with the State of Alaska Water Quality Standards.

8/ ADEC Review of Alyeska Data Report, March 1986.

The ADEC review (Lawn 1988) of Data Reports consists essentially of two principal elements:

- 1/ A critique of procedural deficiencies in the effluent dispersion study;
- 2/ Correction of systemic errors in the determination of concentration of BTX in the Valdez receiving waters.

Critique of Procedural Deficiencies.

The critique of procedural deficiencies is detailed and fully documented. It addresses primarily the quality of data generated and reported, including insufficiency of information, data gaps, unexplained data adjustments and deviations from the originally proposed work plan, as well as absence of data on compliance at the bottom of the mixing zone. Systemic errors due to use of inappropriate instrumentation and sampling equipment are also addressed in some detail. Constructive suggestions on correction of report deficiencies and salvage of information are made. This critique is valid and appropriate.

Correction of Systemic Errors in the BTX Data.

Perhaps the most positive contribution of ADEC review (Lawn 1988) is a proposed method for salvage of otherwise incorrect data on BTX concentrations in Port Valdez receiving waters.

The basis for such proposed corrections rests on the fact that the magnitudes of many individual dilution factors can be calculated on the basis of real data, reported in Data Reports:

This table lists, by cast, the dye concentration of each grab sample, the peak in-situ dye concentration and grab sample BTX concentration (WCC 1986).

Fluorometric measurements of dye concentration were made twice in many instances: once outside the sampling bottle, and the second time inside (together with the measurements for BTX).

Of the two, the in-situ dye concentration are considered representative of the true plume dye concentration. (WCC 1986).

This means that the measurement of dye in the sample bottle understates actual concentrations of such in the receiving environment.

The exact magnitude of such understatement can be expressed as a ratio of the in-situ dye measurement and the dye measurement inside the sampling bottle. For example during the cast Number 24, at Station 47, at 0252 hour, at depth of 35 meters --

The in-situ fluorimeter recorded 1.0 ppb of dye while

The grab sample recorded only 0.682 ppb of dye.

The ratio of dilution can be calculated then in a following manner:

$$\begin{array}{rcl} \text{In-situ measurement} & = & 1.0 \text{ ppb} \\ & & \text{-----} \\ \text{Grab sample measurement} & = & 0.682 \text{ ppb} \end{array} = 1.466$$

The corresponding sample of BTX was given (in Data Report) an understated value of 8.5 ppb. The understated value can be corrected by multiplying negatively biased reported value by the dilution factor:

$$8.5 \text{ ppb} \times 1.466 = 12.46 \text{ ppb}$$

As can be seen from this demonstration, the reported in Data Reports BTX value of 8.5 ppb is understated, and the corrected value which corresponds to BTX concentration in receiving waters is 12.46 ppb.

These types of corrections were made in the ADEC review (Lawn 1988) for borderline and outside data points that could be compensated for systemic errors. Out of 74 such corrected points, 54 were found to be out of compliance with the State of Alaska Water Quality Standards for aromatic hydrocarbons. This number translates into 73% of apparent and probable violations.

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TASK 2. ANALYSIS OF THE ADEC DEPARTMENTAL FILES

A number of documents developed by the ADEC personnel, as well as public comments on the draft NPDES permit were reviewed and analyzed.

ADEC COMMENTS

It was found that the documents developed by ADEC, including: Compliance Investigations - Special Staff Report (CONFIDENTIAL); NPDES Permit Analysis (Lamoreaux 1988); ADEC Initial Comments on Draft NPDES Permit (Lamoreaux 1987); and Site Specific Water Quality Criteria (Lamoreaux 1988); were thoroughly researched and properly documented. Positions presented by ADEC in regard to the Alyeska draft NPDES permit are fully supportable on technical grounds.

Specifically:

1/ Compliance Investigations

This confidential special staff report reviews the past history of dispersion studies in Port Valdez and the performance of the Alyeska BWTP in a framework of NPDES requirements.

One of the points addressed in this report is an improper effluent sampling for BTX. It appears that Alyeska has applied improperly the sampling procedure specified in the Rockwell International method (Lysyj 1982) for monitoring the discharge from BWTP for aromatic hydrocarbons content. Rockwell International procedure is designed for on-site analysis using unpreserved water samples to be analyzed as soon as possible, and no later than 2 hours after sample collection. The samples collected by Alyeska were analyzed off-site with delays of many days. The results for BTX in plant effluent obtained under such conditions are negatively biased and, as noted, should be considered invalid.

Not preserving BTX samples during the compliance studies carried out in the receiving waters of Port Valdez also resulted in understated and generally incorrect results, leading to erroneous conclusions in regard Alyeska compliance with State of Alaska Water Quality standards on the borders of mixing zone.

2/ NPDES Permit Analysis

This document (Lamoreaux 1988) questions the validity of two sets of effluent quality standards proposed by EPA for Alyeska BWTP - one for the summer and the other for the winter.

Two standards for Alyeska wastewater discharge are proposed by EPA because biological treatment, selected as a method of choice in the NPDES permit, is less effective during winter months in Valdez than during the summer months.

Ineffectiveness of biological treatment during the winter months in the Sub-Arctic environment of Valdez is due to seasonably low temperatures, and the fact that the ballast water is processed by the Alyeska BWTP at a higher rate in the winter than in the summer. The high process rates in winter are due to the fact that arriving oil tankers are loaded with more ballast water because of the high seas in the Gulf of Alaska during the winter season. Additionally, reduced rates of bacterial growth prevail in the winter season, due to the low temperatures in the treatment ponds. The combined effect of both factors translates into reduced treatment effectiveness by biological means.

ADEC (Lamoreaux 1988) proposes a number of measures to compensate for such a reduction in the biological treatment effectiveness during the winter months, including: installation of additional 90 tanks for better ballast water flow control, increasing the holding capacity of the existing impound basins, installation of a third impound basin and using oil tankers for the temporary storage of excess ballast water.

It is believed that such measures are essential to the flow control in the treatment plant. Even so, the measures proposed by ADEC may be insufficient for making the biological treatment work in the Sub-Arctic winters. Additional requirements (some of which were proposed in the ADEC Initial Comments on the Draft NPDES Permit) [see below] may include provisions for the elevated temperature in the treatment ponds to maintain required rates of bacterial growth during the Sub-Arctic winters; controls over the salt content in ballast water; as well as addition of nutrients. Means for disposal of large quantities of oily sludges produced by biological treatment must be considered, and may include sludge dewatering and incineration facilities.

A requirement for the density control in the effluent, as proposed by ADEC is reasonable, considering the possibility of violations of the bottom of the mixing zone during stratified summer conditions, when the effluent density is high.

3/ ADEC Initial Comments on Draft NPDES Permit

This report (Lamoreaux 1987) addresses main limitations and deficiencies of biological treatment in Sub-Arctic environment. It discusses a need for the temperature control during the winter months, and a need for a steady-state operations through process stream flow control. Without such controls biological treatment process will not function properly in the winter months in Valdez. A need for an Independent Advisory Board to advice on permit compliance is presented convincingly in the light of past Alyeska NPDES permit violations.

4/ Site Specific Water Quality Criteria

Regulatory and technical reviews, as well as comments made by ADEC are sound and technically supportable as far as Alyeska's request for the site-specific criteria approach to management of water quality in Port Valdez is concerned.

* [It must be clearly recognized that Alyeska is using receiving waters of Port Valdez as an extension of its ballast water treatment facility by utilizing dilution and assimilation capacity of the designated mixing zone. The size of this zone has been already enlarged for the Alyeska benefit 16 times its original volume in the second NPDES permit. Further denial of additional areas of public waterway to commercial (fishing) and recreational uses is self-evidently contrary to public interests. Alyeska should look for technological alternatives for containment of its pollution, rather than contamination of ever larger areas of public waterways.

PUBLIC COMMENT

Analysis of public comments on the draft NPDES permit included: Trustees for Alaska Comments Draft NPDES Permit; D. K. Button Comments Draft NPDES permit; Cordova Fisherman United Comments Draft NPDES Permit; Nancy Lethcoe Comments Draft NPDES Permit.

It was found that these public comments were exceptionally well informed and thoroughly researched.

It does appear that the public interest in the wise utilization of the natural resources did not diminish since Dr. Hood made following statement in 1973:

Ecological abuse through man's activities is no longer acceptable in a modern masterplan of quality survival. (Hood et al., 1973).

A cross-section of Alaskan society that have legitimate interest in the equitable utilization of the state natural resources were well represented in the responses to the Alyeska draft NPDES permit, and included the general public, academe, fishermen and environmental groups.

These are the same legitimate users of the bay that were properly identified by Dr. Hood as early as 1973:

The possible impact of this amount of oil discharged ... into Port Valdez waters is of great concern to many segments of society: the Alyeska Pipeline Service Company; those who use the Port for recreational purposes; fisheries interests both in the Port and in the Prince William Sound; the state and federal agencies responsible for environmental quality; and by other who have deep interest in maintaining healthy marine ecosystem. (Hood et al., 1973).

In short, Port Valdez receiving waters are for common benefit of many users.

5/ Trustees for Alaska Comments on Draft NPDES Permit

Extensively researched and fully documented, this report (Trustees 1987) addresses legal, economical and technical aspects of the draft NPDES permit.

An argument is developed and convincingly presented that EPA has incorrectly applied a legal standard for the permit, based on cost considerations alone. Errors made by EPA in the calculating the cost-effectiveness are well presented and documented, including an incorrect use of fresh water toxicity data, which ignores the fact that the Alyeska discharge is to the marine waters.

The fact that EPA has selected (inappropriately) the least reliable treatment method is demonstrated on the basis of the SAIC report and Dr. Buttons' comments. Additional comments address the nonwater pollution consequences of the proposed treatment, and the impact on air quality and worker safety.

The key comment by the Trustees deals with the violation of the mixing zone concept in a framework of state regulations. Questions are also raised whether a mixing zone of the current size is permissible under the Clean Water Act. A point is made that Alaska regulations allow mixing zones only if wastewaters "will be treated using the methods found by department to be most effective". This appears not to be the case here. Furthermore, Alaska regulations require the mixing zone to be "as small as practicable ...".

This provision appears to be violated by designating a mixing zone that exceeds the zone of initial dilution. A need for continuous monitoring of the effluent quality, as initially proposed in 1975 is strongly recommended.

Finally, a valid argument is developed for the need for an independent monitoring of compliance with the NPDES permit. The past record of Alyeska poor compliance with the NPDES requirements at this facility, as evidenced both by a substantial history of violating effluent limitations (GAO 1987) and operating requirements (Lysyj 1985) is used to support an argument for such an independent technical advisory board.

6/ D. K. Button Comments Draft NPDES Permit

The improbability of biological treatment under conditions proposed in the Draft NPDES permit is addressed in this document (Button 1987), as well as in other presentations by Dr. Button (Button undated). His comments are sound on technical grounds and supported by the prior knowledge. The bottom line of his comments is (emphasis added):

... well mixed digestors could probably effect relatively complete digestion in order of few days; certainly not in the order of a few hours. (Button, undated).

7/ Cordova Fishermen United Comments Draft NPDES Permit

Dr. Frediricka S. Ott presented testimony on behalf of Cordova District Fishermen United (Ott 1988). Her testimony addressed deficiencies of the current and proposed treatment processes, and the ecological consequences of the continuous discharges of toxic substances into Port Valdez.

An analysis of the ballast water treatment plant design, presented in her testimony indicates that the plant, in its present configuration, is not capable of dealing properly with the current pipeline throughput of 2.2 million barrels per day.

The record of Alyeska past violations of the NPDES permit is analyzed. Between August 1977 and December 1983 Alyeska has recorded 100 violations of its permit (GAO 1987), and in a short period of 10 years of terminal operation the environmental quality of the bay has declined from pristine condition to "... near the low end for chronically polluted coastal marine environments in North America" as demonstrated by IMS studies. One of the more important fact brought out in Dr. Ott's comment is that:

Damage to the marine biota has been documented in other areas with sediments contaminated with levels of aromatic hydrocarbons similar to the levels found in Port Valdez sediments. (Ott 1988).

This observation is rather ominous, since laws of nature are known to be universal, and it appears that it is only a matter of time before such damage will be found and documented in Port Valdez.

Other comments by Dr. Ott address the fact that the present plant design is insufficient for increased volumes of ballast water being processed at this time, and that the proposed biological treatment system is inappropriate.

8/ Nancy Lethcoe Comments Draft NPDES Permit

Nancy Lethcoe's comments (Lethcoe 1988) consist of two parts: one describes and documents her communications with officials of Alyeska, and the other is her public testimony. Documentation of her communications with Alyeska officials is restricted (not for publication) and it is not appropriate to comment on it in writing.

Her public testimony brings out a number of valid observations, two of which are considered as very important in the framework of NPDES permit renewal proceedings: documentation of biological degradation due to petroleum pollution in Port Valdez, and a largely overlooked fact that Alyeska ballast water treatment plant construction is not completed as yet, after 11 years of terminal operation.

There are currently no means (such as were proposed and promised by Alyeska in 1975) for oily sludge treatment and disposal, nor a continuous effluent quality monitoring system, also proposed and promised by Alyeska in 1975.

Ms. Lethcoe's public testimony brings out two major problem areas regarding draft NPDES permit review: the evidence of elevated levels of toxic substances in the fish caught in Port Valdez, and the fact that the fundamental question of bringing the Alyeska treatment plant to minimum standards of operation such as were promised in 1975 (treatment of toxic sludges and continuous monitoring of the effluent quality) are not addressed in the draft permit. Both facts are believed to be closely related.

Biological Degradation in Port Valdez.

Evidence of elevated levels of toxicants in fish caught in Valdez Bay was reported by the Ocean Assessment Division of NOAA in a memorandum dated 6/9/87:

status and trends data indicate that there is a clear difference in the concentration of petroleum hydrocarbons metabolites in the bile of bottom dwelling flatfish collected in Port Valdez from those collected in other Alaskan waters such as Kamishak Bay (Carol-Ann Manen 1987).

Specifically, the concentration of aromatic hydrocarbons in the bile of Valdez caught fish is on the average 2.7 times higher than those caught in Kamishak.

If occurrences of carcinogenic polynuclear aromatic hydrocarbons in fish caught in Port Valdez is verified, the problems of environmental quality will escalate from the theoretical discussions of fine scientific points to practical actions, such as protecting the public health.

The consequences of such environmental health hazards may result in posting of public warning by the Public Health Department against consumption of fish caught in the affected area, as it was done at one time in Santa Monica Bay of Los Angeles, or an outright prohibition on commercial fishing as it was done at one time in the Great Lakes due to elevated levels of mercury in the fish tissue, derived from industrial pollution.

Treatment of Oily Sludges.

In her testimony Ms. Lethcoe brought to light a key requirement for the operation of an oily waste water treatment facility which was incorporated in the original designs for Alyeska BWTP i.e., provisions for a capability for treatment and disposal of the oily sludges. Such a provision was addressed in Alyeska treatment plant design in 1975 by a proposal to design and operate oily sludge incinerator. We are now thirteen years hence and this requirement is still not implemented:

Examination of the original design documents and the existing plant facilities revealed that construction of the plant as originally proposed and designed is not complete. Notably absent are :

- * A facility for the ultimate disposal of generated waste (sludge), i.e., sludge incinerator;
- * Real-time and continuous monitoring instrumentation for control of effluent quality (Lysyj 1985).

A reference to separation and treatment of oily sludges made in the draft NPDES permit reads as follows (page 19):

- F. Removed Substances. Solids, sludges, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in such a manner as to prevent any pollutants from such materials from entering navigable waters. (draft NPDES permit 1987).

There is no indication in the draft NPDES permit on how such a prevention task is going to be accomplished, in view of the fact that Alyeska does not have provisions for treatment and disposal of oily sludges, and it appears that there are none planned for future.

Consequently, largely ignored in the draft NPDES permit is the prime function of the ballast water treatment i.e., elimination of the toxic substances from the effluent before it reaches the receiving environment. The significance of this issue was described in a following manner (emphasis added):

The bulk of waste matter generated by the oily wastewater treatment is in a form of oily sludges, which are known to be the principal repositories of hazardous and toxic compounds separated from the wastestream, including such priority pollutants as heavy metals and polynuclear aromatic hydrocarbons. THE OBJECT OF OILY WASTE TREATMENT IS TO SEPARATE SUCH TOXIC AND HAZARDOUS SUBSTANCES FROM THE PROCESS STREAM INTO DISPOSABLE WASTE. (Lysyj 1985).

Questions raised in the 1985 Alyeska treatment plant performance evaluation were never resolved:

... it was not possible to ascertain with any degree of certainty the rates of sludge production, mode of its transport, and the ultimate disposition at this plant. (Lysyj 1985).

Ms. Lethcoe correctly and properly testified to the fact that the original and minimal design requirements for the ballast water treatment in Valdez were never met and were subsequently ignored in the draft NPDES permit. Consequently, the proposed permit would allow Alyeska to use a untested biological treatment system without ever meeting the original, minimum requirements for ballast water treatment plant design.

A final comment of Ms. Lethoe testimony relates to the promised (in 1975 plant design) continuous monitoring for aromatic hydrocarbons in Alyeska effluent. Standard instrumentation, commercially available, and widely used by the industry has been available for such a monitoring task for over two decades.

At times it was used at the Alyeska plant. The capital and operational costs of such equipment are not high. The continual reluctance to use such standard methods for real-time and continuous monitoring of the effluent quality seems to be non responsive.

TASK 3. BIOLOGICAL AND PHYSICAL WASTEWATER TREATMENT

Plant design and operational modifications proposed in the draft NPDES permit are designed to remove highly toxic substances from the plant effluent. Such proposal represents first major modification of Alyeska treatment plant design, and a key modification of plant operation.

One of the toxicants to be removed from the treatment stream is benzene, a known human carcinogen. The proposed design and operational modification (described by EPA as a biological treatment) is based on a process that involves aeration in the open to the atmosphere holding ponds. Aeration done in such a manner leads to a non-contained and uncontrolled releases of volatile and easily transferable into the air carcinogenic substances, with possible harm to human life and the environment.

LIMITATIONS OF BIOLOGICAL TREATMENT

There are many technological options available for treatment of toxic and conventional pollutants in Sub-Arctic environment. Of those that were considered under NPDES renewal proceedings, biological treatment was found to be the least suitable to Valdez environmental conditions on technical grounds by both, EPA and Alyeska's expert consultants. (Sohio 1980; Sohio 1981; SAIC 1987).

Never-the-less EPA has selected such biological treatment as the procedure of choice. EPA choice was based principally on cost, rather than technical considerations.

Main reasons for technical unsuitability of biological treatment in the Sub-Arctic environment are:

1/ Temperature

Microbial activity depends directly on the temperature, and wastewaters approaching freezing temperature for several months of the year may not support a biological system. (Sohio 1980). It is well known that in Valdez, as well as elsewhere in Alaska, temperatures approaching freezing in winter are rather common. Biological systems do not function well under such conditions.

2/ Flow Rate Changes

It is also known that biological systems function best under a steady-state condition. It is no secret that Alyeska BWTP does not operate under such conditions. As matter of fact, wide swings in the flow rates are experienced on a daily, if not hourly basis. (Lysyj, 1982). Control over the rate of ballast water processing is limited by the undersized ballast water storage capacity and irregularity of oil tanker movements. Low growth rates under Sub-Arctic conditions will severely restrict the ability of a biological system to respond to such wastewater changes (Sohio 1980).

In its present configuration and without addition of new ballast water storage tanks and holding ponds, the Alyeska treatment plant can not provide necessary steady-state conditions for proper function of the biological treatment system.

3/ Ballast water salinity

Salinity in 1-3% range has been shown to retard bacteria, even those considered salt-tolerant (Sohio, 1980). Salinity of ballast water received at Valdez terminal varies over a wide range. Such variations in salinity further destabilize environmental conditions necessary for proper bacterial growth, making survival of organisms already stressed by the temperatures, lack of nutrients, low organic content of process water, and widely swinging flow rates, rather problematic.

4/ Sludge disposal

Perhaps the most significant and largely overlooked fact is that biological treatment produces large quantities of sludge.

A short visit to a local municipal wastewater treatment plant will disclose how much of the problem sludge disposal is. Sludges produced by the treatment of oily wastewaters are known to be toxic (Karr/Lysyj 1983) and in some instances are classified as hazardous substances under the RCRA regulation.

At this time there are no means for oily sludge disposal at the Alyeska facility in Valdez (Lysyj 1985), and a biological treatment plant can not be properly operated without such a capability.

TOXIC AND CONVENTIONAL WASTE TREATMENT AND DISPOSAL STUDIES

A number of studies dealing with evaluation and rating of toxic and conventional waste treatment and disposal processes were conducted by various consultants and experts for Port Valdez BWTP.

Under the Authorization to Discharge Under the National Pollutants Discharge Elimination System Permit No.: AK-002324-8 4463, Effective 10 September, 1980 Alyeska was required to conduct a "Toxic and Conventional Waste Treatment and Disposal Study." Under this NPDES requirement, two such studies were conducted:

- 1/ "Toxic and Conventional Waste Treatment and Disposal Study: Literature Search and Process Investigations." Sohio Research and Development Department. Cleveland, Ohio. December 20, 1980. (Sohio 1980).
- 2/ "Toxic and Conventional Waste Treatment and Disposal Study: Engineering Development Analysis", by R. B. Stalzer and D. R. Marrs. Sohio Research and Development Department. Cleveland, Ohio. December, 1981. (Sohio 1981).

In addition to these expert investigations, EPA contracted on its own a study of technical and economical feasible alternatives for the Alyeska treatment facility. Consequently, a third expert report was prepared on the suitability of various treatment techniques in Valdez environment:

- 3/ "Identification of Best Available Technology Economically Achievable (BATEA) for the Alyeska Terminal BWT facility", Science Application International Corporation (SAIC) June 8, 1987.

Findings of each of these three expert studies were generally negative in regard to the feasibility of biological treatment in Port Valdez.

1/ Sohio 1980

Results of this study were submitted officially to EPA by Alyeska on January 6, 1981. Results related to the feasibility of biological treatment in Port Valdez appear on page 11 of subject report:

Unfortunately, a biological system may not be applicable at Valdez as several environmental factors could retard the growth rate of the biomass. With an average TOC of 5-15 mg/l, the amount of organic substrate available for bacterial growth is low. Furthermore, microbial activity depends directly on temperature, and wastewater approaching 0 C for several months of the year may not support a biological system. Salinity in the 1-3% range has been shown to retard bacteria, even those considered salt-tolerant. Low growth rates will severely restrict the ability of a biological system to respond to wastewater changes. This would be a problem at Valdez, where flow, and consequently the organic load, is quite variable. (Sohio 1980)

In short, not very encouraging.

2/ Sohio 1981

This study entitled: "Toxic and Conventional Waste Treatment and Disposal Study: Engineering Development Analysis", was carried out by R.B Stalzer and D. R. Marrs of Sohio Research and Development.

Feasibility of BIOLOGICAL TREATMENT was examined and described in "Chapter II: Biological Oxidation", and reported in the Final Report to the EPA. In the Conclusion Section of Chapter II (page 3) of this report the following statements are made about the feasibility of biological treatment in Valdez:

Treatment efficiency may be hindered significantly due to varying salinity, low temperature, and the nature of the organics to be degraded in the water.

and on page 12 and 13 --

The limited biological growth obtained with ballast water will be susceptible to shocks from variations in flow and aromatic concentrations.

AROMATIC HYDROCARBONS HAVE VERY LOW BIODEGRADATION RATES, ESPECIALLY BENZENE, WHICH CAN APPROACH ZERO AT LOW TEMPERATURES.

3/ SAIC 1987

Under a contract to EPA, Science Applications International Corporation (SAIC) has conducted a study of technical and economically feasible alternatives for treatment of ballast water at the Alyeska facility in Valdez.

Ten processes were examined for removal of toxic hydrocarbons from the ballast water. Out of ten possible candidates six were rejected as unsuitable. The remaining four processes were ranked on scale of 1 to 10, one being minimum and ten being maximum relative to its suitability. Biological treatment received a ranking of 3.

In this report biological treatment was considered poorly suited to the Alaskan environment and its technology not proven in such an application. Space requirements were very high, a rather critical consideration in the framework of the physical plant of the marine terminal in Valdez, where availability of land is limited. The amount of hydrocarbons left in the effluent discharged in Port Valdez was rated as very high. The cumulative ranking of biological treatment was last.

EXPERT OPINION ON THE SUITABILITY OF BIOLOGICAL TREATMENT IN VALDEZ LEADS TO ONE INESCAPABLE CONCLUSION -- BIOLOGICAL TREATMENT IS THE LEAST EFFECTIVE AND SUITABLE OF ALL POSSIBLE OPTIONS.

SELECTION OF BIOLOGICAL TREATMENT AS A METHOD OF CHOICE IN THE NPDES PERMIT

Biological treatment process for Valdez was selected primarily on the basis of cost. On technical grounds the selected option represented the least appropriate procedure available (Sohio 1980, Sohio 1981, SIAC 1987).

Technical justification for such (contrary to prevailing expert opinion) selection, was based largely on a report by WCC (WCC 1986). Examination of this report reveals that the experiments described were performed in an incorrect manner, producing invalid data, leading to incorrect conclusions.

1/ Technical Considerations of Experimental Errors

Test procedure used by WCC (WCC 1986) was based on methodology developed by Lysyj and coworkers (Lysyj et al. 1980, 1981, Lysyj 1982). The method involves sparging BTX into an Activated Charcoal Tube, followed by desorption into carbon disulfide and gas chromatographic analysis.

As described (Lysyj 1982, page 165) the method requires water samples of 0.7 to 1.0 liter size and is capable of determining up to 10 mg/l of BTX in ballast water such as are processed at the Alyeska BWTP. When amounts of BTX in excess of 10 mg are present in the total sample processed, incorrect results are produced. This is because the small size of charcoal absorption tubes permits only limited amount of aromatic hydrocarbons to be adsorbed.

To assure that a loss of aromatic hydrocarbons does not occur, a test is performed on second chamber of the adsorption tube. Only when there are no hydrocarbons found in the second chamber the analysis is assumed to be correct. The absence of hydrocarbons in the second adsorption chamber means that all aromatic hydrocarbons were adsorbed in the first chamber and correctly analyzed without loss to the atmosphere.

As described in WCC report (WCC 1986) this test procedure was used incorrectly. As it is reported on a page 4-19 of subject report, a 10 liter sample size was used, rather than 0.7-1 liter size specified for this method. Consequently, the load on adsorption tube exceeded its adsorption capacity by approximately ten times (the load of reactor was reported as 102 mg BTX) and a large part of BTX mass was lost to the atmosphere during the sparging procedure.

Consequently, only a small part of the BTX was attributed to the air sparging, while the portion of BTX that was lost to the atmosphere was attributed to the biochemical removal.

2/ Cost Considerations in a Framework of Valdez Environment

The fact that biological treatment of wastewater can be accomplished in Valdez is not disputed here. A prominent expert on the microbiological processes in Arctic and Sub-Arctic environments Dr. Button writes (emphasis added):

In short there is very little in this report (WCC 1986) that adds to what is already known; that hydrocarbons are biodegraded by processes with somewhat unusual kinetics, and that well mixed digestors could probably effect relatively complete digestion in the order of few days; certainly not in the order of a few hours. (Button, undated).

Economical cost of such a biological treatment, that requires a few days rather than few hours, to "effect relatively complete digestion" will be rather different from what has been postulated in the EPA selected treatment process.

For biological wastewater treatment to function satisfactorily in a Sub-Arctic environment the following operation criteria must be met:

- 1/ Sufficient time interval must be provided for a relatively complete digestion. This translates into retention times of process stream in the order of a few days.

- 2/ For bacterial decomposition to function properly steady-state conditions must be maintained. This means that the process stream flow rates must be essentially constant.
- 3/ Sufficiently high and constant temperature must be maintained in treatment ponds. One can not expect for biological treatment to function properly at near freezing temperatures (Sohio 1980). In a Sub-Arctic environment where freezing temperatures are known to be common, this translates into major expenditures for the required energy cost.
- 4/ Media control in treatment ponds will be required. It is known that bacterial growth is best accomplished in buffered solutions. Fluctuating salt content of the received ballast water will require adjustments to permit acclimated bacteria to survive. Sudden changes in the process stream salinity could easily wipe-out indigenous bacterial population, leading to what is known as the treatment upset.
- 5/ Nutrient additions will be required. It is known that the ballast water treated in Valdez is deficient in organic matter (Sohio 1980) and nutrients. For bacterial population to function properly such substances must be added to the process stream.
- 6/ Sludge disposal will be required. It is also known that biological treatment processes produce large volumes of sludge. In the case of treatment of petroleum waste which are known to be toxic (Karr and Lysyj 1983) cost of disposal can be substantial. In the cases where oily sludges are designated as "hazardous waste", removal from Alaska and treatment in the lower 48 might be necessary.

Let us examine these design criteria and requirements for biological treatment in a framework of Alyeska ballast water treatment plant operations.

Retention Time

As indicated above a retention time in the order of a few days will be required for "relatively complete digestion of BTX" by bacterial metabolism.

Maximum retention times possible in the holding ponds currently available at the Alyeska facility are in order of ten hours. To achieve a required duration of treatment, the size of the treatment ponds would have to be enlarged 5 to 10 times.

Availability of land for such an extension is limited at the Alyeska plant, and required enlargement will pose major problems.

Constant Flow Rate

Flow rates at the plant are highly variable (Sohio 1980, Lysyj 1982). To maintain a required steady-state operation of biological treatment, construction of additional 90 tanks will be required to compensate for irregularities in the ballast water deliveries from the oil tankers. It might be also necessary to regulate and control oil tanker traffic in order to satisfy the needs of bacteria for "relative complete digestion of BTX".

Temperature

Maintenance of constant and elevated (relative to ambient) temperature in the treatment ponds will be required to sustain bacterial growth. Cost of energy required for such a maintenance will be rather high, especially during the Sub-Arctic winter months.

Media Control

Salt content of the received ballast water is highly variable. In order to prevent shocks to bacterial population, it might be necessary to buffer the process stream. Cost and magnitude of such an operational requirement can not be estimated at this time.

Nutrient Additions

The ballast water is deficient in both organic matter and nutrients. Additions and control of such substances will be required.

Sludge Disposal

There is no mechanism for sludge disposal at the plant at this time (Lysyj 1985). Cost of sludge disposal especially if such is designated as a hazardous waste will be very high.

Required capital and operational expenditures for the proper operation of biological system in Sub-Arctic environment are expected to be high, and implementation of such will be by no means less expensive than an operation of other proven treatment options for elimination of BTX from the ballast water.

Operational problems associated with biological treatment in a Sub-Arctic environment are rather demanding. For example, scheduling of oil tanker traffic during the stormy months of winter, when tankers carry maximum ballast load, to accommodate reduced rates (due to low temperatures) of bacterial growth in the treatment ponds of Alyeska terminal, will pose an operational challenge.

Problems associated with selection of BAT/BPJ process are well recognized by ADEC. In a letter addressed to Harold Geren (EPA), Bill H. Lamoreaux, ADEC Regional Supervisor writes (emphasis added):

Our greatest concern at this time is that all available options be considered in the evaluation of BAT/BPJ for the BWT plant. The department does not believe the current seasonal effluent limits represent BAT because the flow rates proposed under the draft permit exceed the optimum flow rate for the treatment system. Specifically, flow rate has a direct and inverse relationship to the ability of the treatment system to remove hydrocarbons. The draft permit limits maximum flow at 19,500 gallons per minute (gpm). However, it is recognized that "poorer performance" is associated with flow rates greater than 10,000 gpm (Fact sheet, pg. 10). This lower efficiency is thought to be attributable to low biological oxidation rates due to nominal residence time.

Lower flow rates will directly improve the facility capability to consistently and optimally remove hydrocarbons and better maintain compliance with Water Quality Standards. Other alternatives would provide more treatment capacity thus allowing lower effluent concentrations with existing flow rates. Alyeska has several options available to address this issue, including additional 90 tanks, a third impound basin, increasing the holding capacity of the existing impound basins, controlling storm water, and using tankers for temporary storage. We ask that EPA reconsider the proposed flow limits. (Lamoreaux 1988).

PHYSICAL METHODS FOR BTX TREATMENT

Removal of volatile hydrocarbons, including BTX, from the process stream by physical means of aeration is a relatively simple and efficient procedure. Such aeration processes, combined with a activated carbon containment of toxic volatiles, are used on a large scale both by the petroleum industry for treatment of wastewater streams, and by the public sector for restoration and detoxification of polluted aquifers.

1/ For example, a major aquifer contaminated by volatile organics in the east part of San Fernando Valley in Los Angeles County is being detoxicated by such means. Aeration provides the means for essentially complete (100%) removal of volatiles in a very short time, while activated carbon can contain removed toxic substances by adsorption with 100% efficiency. For example, the EPA procedure for the analysis of volatile priority pollutants (including benzene and toluene) requires only 11 minutes for 100% effective transfer of benzene and toluene from water and containment of such in an adsorption cartridge. /

Commercially available air stripping equipment is available for large and small scale operations. In the case of removal of toxic substances by air stripping/activated carbon filters are available in all sizes and forms for containment of volatile toxic substances. Unlike the use of granular carbon beds for treating the totality of a wastewater process stream, selective use of activated carbon for containment of only sparged and airborne volatiles is considerably simpler, less expensive, and more efficient.

Unlike the biological treatment proposed in the draft NPDES permit, aeration and activated carbon capture of volatile hydrocarbons from the ballast water treatment stream will be considerably simpler in the design and operational requirements for Alyeska BWTP. Such processes are known to work under all kinds of environmental conditions. Physical treatment does not require many steps of the procedure essential to biological treatment. For example:

- 1/ Long retention times in the treatment ponds will not be required. The aeration process removes volatiles in a matter of minutes rather than days necessary for biological treatment.

In terms of Alyeska operations it means that an addition of new or enlargement of existing treatment ponds will be not required providing for substantial savings in capital costs and land use.

- 2/ Maintenance of elevated temperatures, essential for the proper functioning of biological systems, will not be required in the aeration/carbon adsorption treatment process. Physical processes of aeration and carbon adsorption function effectively both at high and low temperatures.

In terms of Alyeska operations in a Sub-Arctic environment it means substantial saving in energy costs.

- 4/ There will be no need for buffering of process stream. Unlike bacterial population that is dependant on the salt content of the received ballast water, physical process of aeration/carbon adsorption will function effectively with the process stream of changing salinity.

In terms of Alyeska operations it means significant simplification of operating procedures and controls, as well as cost.

- 5/ Nutrients additions, essential in biological systems, will not be required. Physical processes do not require nutrients.

In terms of Alyeska operations it means elimination of sensitive operational controls and maintenance requirements.

- 6/ Unlike biological treatment systems, aeration/carbon adsorption process does not produce sludge.

In terms of Alyeska operations it will mean a relief from already very difficult and expensive sludge disposal problem.

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(Attached #8)

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Department of Law

AUG 24 1988

→ AUNT OF WOODWARD CLYDE CONSULTANTS
FOR ATTORNEY GENERAL

Office of the Attorney General
Anchorage, Alaska
March 24, 1988

April 17, 1988

Mr. Raymond Spiess
Division of Occupational Licensing
3601 C St., Suite 722
Anchorage, AK 99503

Dear Mr. Spiess,

Enclosed is my response to the questions posed by Ms. Pinkel. I believe I have responded to everything she asked, although not exactly in the same format.

I hope my responses are helpful to you. I would be glad to clarify anything I wrote, or to amplify on my answers if that is necessary. Just for your information, one of the questions asked if I needed more information to evaluate Dr. Button's criticisms of the Woodward-Clyde report. I was able to evaluate his critique after a fashion, and I hope my response was adequate. However, I also stated that a review of some of his papers and others cited by Woodward-Clyde in their response to his critique would be necessary before I could give a firm evaluation of his criticisms. Should this be necessary, I estimate that it would take about 4 hours to read the articles and write a response. However, if my current response is adequate for your needs, that is certainly fine with me.

I have retained the documents until I you let me know whether you will be wanting me to do additional work. I will be glad to send them as soon as I hear from you. Thank you.

Sincerely,

Mark M. Benjamin

Mark M. Benjamin

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APR 19 1988

Rec'd 12:00

Division of Occupational Licensing

RESPONSES OF MARK BENJAMIN TO QUESTIONS POSED BY MARY PINKEL,
ASSISTANT ATTORNEY GENERAL OF THE STATE OF ALASKA

A. Questions relating to the "branch" of engineering represented by the bench tests.

The distinctions among certain branches of engineering have become less clear-cut as more and more universities and consulting firms place "interdisciplinary" activities under the administrative purview of a single department or division. In my opinion, the bench tests which were conducted by Woodward-Clyde fall most directly in the environmental/civil engineering field. Environmental engineering as it is currently taught and practiced consists in large part of the application to environmental systems of principles first developed by chemical engineers. Therefore, it might be reasonable for a chemical engineer or a chemical engineering firm to undertake such a study. However, this is not conventionally done, especially when the study focuses on biological waste treatment, an area where most chemical engineers have neither training nor experience. The chemical engineering principles which are relevant to the bench study and which are conventionally taught and used by civil/environmental engineers include those needed for reaction kinetics analysis, reactor design and analysis, and prediction and interpretation of mass transfer data. I conclude that while it would be reasonable for chemical engineers to work with civil/environmental engineers on such a project, it is not unrealistic for civil/environmental engineers to undertake it on their own.

With respect to the qualifications of the investigators participating in the study:

Mr. David Marrs has significant experience in management of wastewater treatment studies and projects. It appears that he also has some experience in conducting experimental investigations such as the bench scale tests, but the extent of this experience is not obvious from his resume.

Dr. Habib Amin appears to have extensive training and experience in physical-chemical processes to accomplish chemical conversions. His experience in biological treatment, other than the subject study, is not obvious from his resume.

Dr. R. Sage Murphy appears extremely well qualified to direct the bench studies undertaken on this project.

Dr. Joseph Colonell's experience, based on his resume, includes very little related to water quality or wastewater

treatment studies. His expertise is clearly more in areas related to hydrodynamics and coastal engineering, where he has apparently focused on environmental impacts.

B. Questions relating to the technical quality of the bench tests and the validity of the conclusions drawn by the investigators.

I would like to provide a summary of my overall opinion of the study before responding to specific questions. My feeling is that the study was marginally adequate. It was not conducted with the care, forethought, or quality control which, to provide a benchmark, would be required of a student conducting the investigation as part of a Master's degree program. Some experiments and analyses which should have been conducted were not, or they were done with insufficient attention to detail to allow unambiguous interpretation. On the other hand, there is sufficient evidence in the literature and from the experimental results to suggest that the conclusion which was drawn, i.e. that the aromatic hydrocarbons were susceptible to and significantly affected by aerobic biodegradation, is plausible, and that pilot scale testing is justified.

Some of my specific criticisms follow. First of all, the "sludge age" (also called "mean cell residence time") in the bioreactors was not controlled nor were measurements made of the parameters necessary to compute this value. For several years, sludge age has been recognized as the single most important variable in biological treatability tests. It is the one which can be used most reliably to characterize the biological kinetics and to make rough estimates necessary for scaling up the results. The investigators failure to evaluate sludge age is indicative of a significant gap in their study and must make one question whether the people responsible for the design of the study were keeping current with the field.

Secondly, the firm goes to some length at times in the record to emphasize that the study was intended to generate information indicating whether the hydrocarbons (BETX) could be degraded biologically under the given environmental conditions, and not to develop design data for scale-up. Given that objective, several tests could certainly have been run using closed bottles containing inocula from the reactors plus various concentrations of the substrates of interest. The concentrations of organisms, oxygen, TOC and BETX could have been measured as a function of time, and a reasonable mass balance could have been developed. While I am sensitive to the value of on-site testing, a significant part of this study should have been conducted in a real laboratory, where conditions could be controlled, careful measurements could be

made, samples could be properly preserved, etc. I think it was a significant error in judgment to conduct the study entirely in such an uncontrolled setting.

The consequences of this lack of control are illustrated by a fortuitous and ironic result: One of the stronger arguments for biodegradation in the study was not the loss of BETX in the bioreactors (which were supposed to be the centerpieces of the study), but rather the loss between the feed container and the bioreactor, apparently due to organisms growing in the feed lines.

The experimental results indicating that BETX was not significantly volatilized are also subject to question. During a total of 5 sampling periods, the computed recoveries were 36, 67, 52, 80, and 367%. In the report the recoveries are averaged over the entire test, giving a mean recovery of 60%. However, given the unacceptable variation in and inaccuracy of the results, it is not appropriate to average the values at all. The proper conclusion to draw is that the method was not working, and the results cannot be trusted. The time to check out this method and perfect the analytical technique should have been before or at the very beginning of the study, not toward the end.

It is clear both from literature data and the subject study that BETX can be significantly volatilized in the absence of bioactivity in a fairly short time. This was shown by the sparging tests in the feed container and in the reactor with bioactivity inhibited by copper sulfate. However, there is also a good deal of evidence that BETX can be biodegraded. Indeed there is apparently evidence for significant biodegradation of these compounds in the tankers prior to discharge of the ballast water. Therefore, it would have been surprising if the compounds had not been degradable in the experimental studies.

Given this background, the appropriate experimental tests should have focused first on the feasibility of establishing a bacterial population under the temperature and salinity conditions of interest and secondly on quantifying the relative importance of biological vs. non-biological mechanisms for removing BETX from the water. Once the population was established, it would have made sense to concentrate the organisms and conduct well-planned experiments to evaluate their kinetic parameters. All of these tasks would have been reasonable expectations from the study. Instead, what was accomplished was strictly qualitative, and even the qualitative conclusions were less well-supported than they might have been. I have some other criticisms of the work which are addressed below. However to be fair, I must point out that these criticisms focus on how

the study might have been better. They do not contradict the qualitative conclusions which were drawn, and they do not indicate that moving the testing to the next stage was inappropriate.

In sum, it is my opinion that the study was not conceived or conducted very carefully and that as a result the conclusions are neither as strong nor as useful as they could have been. However, I cannot conclude that they are wrong, and the bulk of the evidence suggests that they are indeed right. Thus the investigators are certainly not guilty of misconduct or gross negligence. The question of whether the study was conducted "competently" is open to debate, and the conclusion would probably depend on the exact definition of the term. I do not feel that it was done well, but the experiments at least provided some information about the questions being posed. I would like to withhold judgment on this issue until I receive a more precise legal definition of the term.

COMMENTS ON THE CRITIQUE BY DON BUTTON

Many of Dr. Button's comments reflect on the same issues which I addressed above. He was distressed by the apparently low level of forethought and the poor quality control in the study as described in the report. I have not read Dr. Button's research papers and I therefore am unable to comment on the validity of the quantitative calculations he presents and the conclusions he draws. Several of his points are well-taken.

For instance, his statement that it would be impossible to maintain a steady-state biological population which efficiently degraded BETX in a well-mixed lagoon with hydraulic throughput rates less than the maximal growth rates of the organisms is certainly true. The issue on which I do not have independent information or expertise is whether the values he presents for the growth parameters are accurate or appropriate for this study. I wish to emphasize that this is not Dr. Button's responsibility. If the study had been conducted in the way I suggested above, the appropriate information for comparison with Dr. Button's values would have been generated.

Dr. Button also points out that the report states that the wastewater is deficient in nitrogen and phosphorus, and that phosphorus was added in the treatability tests. If indeed nitrogen was not added separately, then Dr. Button's conclusion that it must have been added with the seed population is probably correct. However, this is another place where I would say the study was done carelessly, rather

than that the conclusions are wrong.

As I see it, the main point of concern raised by Dr. Button's critique is that the concentration of bacteria which would develop in an aerated lagoon treating ballast waste would be insufficient to biodegrade the pollutants of concern in the time frames suggested. If his estimates of the kinetic parameters for such organisms are correct and if the lagoon is well-mixed with negligible recycling of organisms, then his conclusions are valid. On the other hand, if the kinetic parameters are more favorable than those he presents, and if organisms can be retained in the lagoon reasonably efficiently, then biodegradation in the lagoons might be very substantial. For me to make a more definitive statement about these issues, I would need, at the least, to read several technical papers, including some written by Dr. Button and others which describe the fate of aromatic hydrocarbons under conventional waste treatment conditions, and which were cited by Woodward-Clyde in their response to Dr. Button.

ISSUES RELATING TO ALASKA'S DEFINITIONS OF THE BRANCHES OF ENGINEERING

I do not feel qualified to evaluate the definitions of the branches of engineering other than that for civil engineering, and less confidently that for chemical engineering.

The main issue brought to light by the current investigation is that "environmental engineering" is a combination of chemical and civil engineering. Research and design of facilities for treating water and wastewater has always been primarily the function of civil engineers. Historically, this has been the case because the focus of such efforts was primarily hydraulics, i.e. flow in sewers, water distribution networks, and treatment plants. In relatively recent times (10-20 years), a great deal more emphasis has been placed on understanding and improving processes for altering the physical and chemical properties of natural or polluted water. As a result, research and design in environmental engineering has relied more heavily and more directly on chemical engineering principles.

There are two obvious ways in which this change could be accommodated by the profession: either chemical engineering could become the branch of engineering which is responsible for purifying water, or those aspects of a chemical engineering education which are central to water purification could be added to the civil engineering curriculum. Although

both approaches have been tried, in the vast majority of U.S. universities, the latter has been adopted. The change has also been reflected in the civil engineering literature on water and waste treatment. Thus those who were already practicing when these changes occurred have become educated in the new techniques by reading professional journals, attending conferences, etc.

Nevertheless, chemical engineering training continues to cover many of the same topics, so a shift by a traditional chemical engineer into the water and wastewater treatment field is relatively easy. Indeed, a chemical engineer working on a water or wastewater treatment project may not feel that he or she has "shifted" at all, depending on the specific process or pollutant of interest. As noted above, the one area where environmental engineers generally receive training regarding treatment processes which chemical engineers lack is with respect to biological treatment.

Alaska's definition of civil engineering encompasses "research, design, and construction of fixed works for...water supply and treatment." It can therefore be argued that the type of study undertaken by Woodward-Clyde falls within the above definition. However, there is a real problem with context. The words "water supply and treatment" are placed in the middle of a list of activities which are clearly construction-related, rather than process-related. Specifically, are the words "research and design" in the definition meant to apply literally to the "construction of fixed works," or to the process of deciding what those fixed works should be?

There is no question in my mind that civil/environmental engineers appropriately focus on what takes place "inside" the fixed works, if the fixed works are tanks for treating water and wastewater. I would strongly recommend that wording be included in the definition stating explicitly that civil engineers participate in the research, design, and operation of processes for water treatment and waste abatement, as well as in activities related to the structure of such processes.

A change such as this would lead to very direct overlap between the defined activities of civil and chemical engineers. However, since that is in fact the way the fields operate, I see no problem. To impose a distinction where one does not in fact exist serves no purpose.

With respect to identifying new fields of engineering, I once again feel qualified only to respond as the question relates to environmental engineering. Personally, I would like to see the field of environmental engineering formally

recognized. I see the possibility that someone with an undergraduate degree in either chemical or civil engineering would qualify to apply for professional registration, and that the expected areas of expertise would include all aspects of water and wastewater treatment, an understanding of the impacts of pollutants on the natural environment, air pollution and its control, solid waste abatement, etc.

Such a definition might avoid some of the mismatches or absurd situations which could arise under the current system. For instance, it is currently possible for a civil engineer whose entire career has focused on bridge-building to be placed in charge of a sewage treatment plant design. Equally, a chemical engineer who has worked in nuclear fuels production would legally be considered qualified to design a water treatment plant. Requiring certification based on knowledge of the core of environmental problems and processes seems to me to be a good way to correct this situation.

Company absolved

State finds no misconduct by environmental interest

By PATTI EPLER
Daily News reporter

An international environmental consulting firm that had been accused of performing work in Alaska without a proper license has been cleared of misconduct by the state attorney general's office and state commerce officials.

Woodward-Clyde Consultants had conducted tests of an oily wastewater treatment system now in use at Alyeska Pipeline Service Co.'s shipping terminal in Valdez. The tests and the treatment system have been key elements in a controversial pollution-control permit being written by the U.S. Environmental Protection Agency.

Charles Hamel, a Virginia businessman who for three years has been fueling an investigation of Alyeska by state and federal environmental agencies, had complained to the state Department of Commerce and Economic Development that Woodward-Clyde did not have a license to practice chemical engineering in Alaska.

Hamel and the Cordova District Fishermen United contend studies done for Alyeska by Woodward-Clyde are scientifically unsound and, they said, probably illegal because of the licensing question.

The state Department of Environmental Conservation also has said some Woodward-Clyde reports were unreliable because they contained errors, inconsistencies and ambiguities. DEC wants to establish a technical advisory group that would include impartial scientists to help the agency review complex

CONSULTANTS: Officials find no misconduct

Continued from Page B-1

scientific studies necessary to tell whether environmental damage is occurring in Prince William Sound due to oil operations.

But Raymond L. Speiss, an investigator for the Board of Registration for Architects, Engineers and Land Surveyors, said in a letter to Hamel that a University of Washington civil engineering professor who reviewed the company's work at the board's request found the reports to be basically sound.

Mark Benjamin, the university professor, concluded Woodward-Clyde's tests for Alyeska "did not indicate incompetence, misconduct or gross negligence," Speiss said.

Benjamin also determined that Woodward-Clyde's work fell "most directly in the environmental/civil engineering field, and not in

the chemical engineering field," Speiss said.

The attorney general's office recommended that no action be taken against the company in light of Benjamin's report, Speiss said.

The attorney general's office also recommended that the board add an environmental engineering category to the disciplines now recognized by the board, he said.

Hamel on Saturday had little comment on the board's findings. He did note that the DEC also has found Woodward-Clyde's work to be questionable.

Ivan Henman, Alyeska's vice president for engineering and environment, said in an interview a few weeks ago that Woodward-Clyde's work for the company had been reviewed by numerous other scientists in formal peer-review process and was deemed scientifically sound.

Attached # 7

Anchorage Daily News 6-27-88

See Page B-2, CONSULTANTS

APPENDIX - PAGE 1

DEPARTMENT OF ENVIRONMENTAL CONSERVATION BUDGET HISTORY

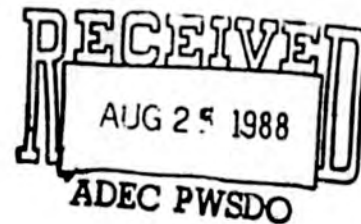
(Totals include state and federal funds and program receipts and reflect authorized budgets as approved by the legislature and do not include supplemental fundings.)

FISCAL YEAR	PWS OFFICE	SOUTHCENTRAL OFFICE	WATER POLLUTION	TANKER & OIL TERMINAL SAFETY	TOTAL DEC BUDGET
1975	\$0	\$83,900	\$177,600	\$0	\$1,541,000
1976	\$0	\$158,800	\$367,600	\$0	\$3,616,500
1977	\$143,100	\$416,800	\$220,000	\$0	\$4,454,100
1978	\$152,200	\$453,000	\$180,100	\$366,300	\$4,745,100
1979	\$159,600	\$560,500	\$279,200	\$991,000	\$6,240,800
1980	\$150,600	\$601,200	\$423,900	\$250,000	\$5,953,900
1981	\$0	\$1,084,000	\$1,133,000	\$0	\$7,827,100
1982	\$0	\$1,555,000	\$1,367,000	\$0	\$13,395,900
1983	\$0	\$1,663,000	\$1,007,000	\$0	\$15,359,300
1984	\$0	\$1,738,000	\$975,400	\$0	\$13,647,000
1985	\$0	\$2,115,000	\$978,500	\$0	\$15,719,400
1986	\$0	\$2,025,000	\$1,175,000	\$0	\$16,150,100
1987	\$0	\$2,351,000	\$1,232,000	\$0	\$16,542,100
1988	\$0	\$2,097,000	\$1,066,000	\$0	\$15,864,800
1989	\$0	\$2,504,000	\$2,502,000	\$0	\$21,005,300

From SPILL THE Wreck of the Exxon Valdez Appendix A-I
Volume 1. Alaska Oil Spill Commission. State of Alaska.
February 1990. Appendix E. Dept. of Environmental
Conservation Budget History. Appendix page 1.

BALDEN ENVIRONMENTAL MANAGEMENT, INC.

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Assistant Attorney General
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Department of Law.
1031 W. 4th Ave., Suite 200
Anchorage, AK 99501.

July 25, 1988.

00050-1

Dear Ms. Brown:

Enclosed with this letter is a review and analysis of ADEC departmental files dealing with: (a) Port Valdez mixing zone effectiveness; (b) departmental and public comments on the Alyeska NPDES draft permit; and (c) discussion on treatment methodology for BWTP. This report fulfills all the contractual requirements of Balden Environmental Management, Inc. agreement with State of Alaska, Department of Law.

Sincerely

Roxanna Balden

Roxanna Balden
President

PRIVILEGED AND CONFIDENTIAL

STATE OF ALASKA
ADEC DEPARTMENTAL FILES REVIEW AND ANALYSIS REPORT

Prepared for the
State of Alaska, Law Department,
Michele D. Brown, Assistant Attorney General

by
BALDEN ENVIRONMENTAL MANAGEMENT, INC.

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FOREWORD

This report was prepared by Balden Environmental Management, Inc. under contract issued by the State of Alaska, Department of Law, and presents review and analysis of ADEC departmental files dealing with Alyeska draft NPDES permit.

SCOPE

This report is organized into three parts.

Part 1 of the report addresses studies of dilution processes in Port Valdez which were carried out since early 1970. Special attention was accorded to the most recent field studies (1985/1986) and Alaska Department of Environmental Conservation (ADEC) review and analysis of reported information and data. The procedure which was proposed by ADEC (Lawn 1988) for correcting reported benzene, toluene, ethylbenzene and xylene (BTX) values in Data Reports (WCC 1986) was examined in some detail, and an evaluation of its validity was made.

Part 2 evaluates materials and documents developed by ADEC staff as a part of Alyeska draft permit evaluation and presents a review and analysis of departmental and public comments on the draft NPDES permit issued by EPA.

Part 3 addresses the efficiency of biological treatment in Sub-Arctic environment and discusses an alternative treatment method based on the physical treatment principle.

RECOMMENDATIONS

Based on the evaluation of ADEC departmental files dealing with NPDES draft permit, the following recommendations are made:

- 1 Specify in NPDES permit that discharge from Alyeska Ballast Water Treatment Plant (BWTP) be free of toxic substances in toxic quantities, as is required under the National Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants [49 FR 9016], adopted by EPA in 1984.
- 2 Determine if toxic substances are present in toxic quantities in discharges from the Alyeska treatment plant into receiving waters of Port Valdez. The fact that such toxic substances are discharged from the Alyeska treatment plant in large quantities (60-75 gallons of BTX daily) was established in 1978/1979 (Lysyj, 1982). It would be appropriate to determine, as part of re-issuing of NPDES permit, if such toxic substances are discharged in toxic quantities at this time. Establish new permit requirements for the ballast water treatment at Alyeska BWTP based on the elimination of discharges of toxic substances in toxic quantities.
- 3 Consider other available options for treatment of aromatic hydrocarbons besides proposed biological procedure. Selection of the treatment method for aromatic hydrocarbons should be based on the technology that can provide assurance that the State of Alaska Water Quality Standards for such substances will not be violated on borders of current mixing zone. Wastewater treatment processes capable of essentially complete elimination of BTX (the principal toxic component in the Alyeska effluent) are commercially available, well suited for Alaska environment, and widely used elsewhere. These are based on the physical process of air sparging and capture of air-borne toxicants on carbon filter beds and can be used effectively at Alyeska BWTP.
- 4/ Specify technical requirements for treatment and disposal of oily sludges at Alyeska facility.
- 5/ Reestablish a requirement for continuous monitoring of aromatic hydrocarbons discharges in the plant effluent.
- 6/ Establish an independent technical review board to advise ADEC and EPA on design, implementation and conduct of the study programs and monitoring efforts dealing with NPDES permit.

Alyeska Pipeline Service Company
Valdez, Alaska

Report Re: Review of Subpoenaed Records

By: Robert J. Athmann

File Reference: TSCA Subpoena No. 1086-07-21-2610
Region 10 Water Division NPDES Permit Files
Region 10 Water Division Compliance Section Files
State of Alaska Public Utilities Commission
Alaska Dept. of Environmental Conservation - Valdez
Report of Investigation dated 4/14/87 by Robert J. Athmann
An evaluation of ship deballasting and shore facility
ballast water treatment records at the Alyeska Pipeline
Service Co.

Scope:

This report sets forth the results of reviewing the copies of documents obtained from Alyeska Pipeline Service Company pursuant to TSCA subpoena during the period 2/18/87 through 4/24/87 at Valdez and Anchorage. Substantive material located in the files referenced above is summarized in this report and is used throughout to augment specific information extracted from Alyeska records. Statements made to EPA personnel during previous investigation of Alyeska's ballast water treatment plant and allegations about the company's operational and reporting practices have been incorporated as the basis for this review of Alyeska's records to determine if substantiation of those allegations exist in documentary form.

Table of Contents:

- I. Background
- II. Synopsis
- III. Details
 - III-1 Flow Monitoring Meters
 - III-2 Volume of Discharge
 - III-3 Settling Time
 - III-4 Toxic or Hazardous Material in Ballast
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V. List of Records Reviewed

Investigator: Robert L. Atkinson Date: 11/23/87
Supervisor: Paul H. Soyars Date: 11/24/87

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III-4 Allegations were made by Blake, Woodle, and [REDACTED] that incoming tankers were bringing material to Valdez other than ANS crude oil and water and discharging it to the BHT, and according to Erlene Blake, dilution of suspect or bad ballast water had occurred frequently.

BHT Operator's Daily log entry dated 6/6/82, P. 199, at 0100 hours bears a BHT technicians note that water from the Stuyvesant "... appears to have had some foam in it at sometime or another... might cause the G80 to be ... higher than normal." No entries were found indicating the source of the foam or its effect was even determined. The Stuyvesant had completed deballasting into tank 93 at 0925 hours on 6/5/82. Tank 93 charging to the DAF system was begun at 1930 hours, 6/5/82 and was completed at 1730 hours on 6/6/82. According to the Grease and Oil log, the G80 test results for 6/6/82 was 8.7 mg/l.

BHT Operator's Daily log dated 7/4/82, P. 275, bore a technician's note that, "... the Stuyvesant has approximately 14,000 barrels of an unknown substance that they will discharge ashore with there (sic) ballast. (Might be some sort of chemical - i.e. caustic) (pH in sample taken was 6.30 - OK)." The note indicates an order was given that samples were to be obtained and stored indefinitely. No record could be found regarding test results on those samples. The grease and oil test results for that day as recorded in the Grease and Oil log was 2.8 mg/l. The Daily Lab Work Sheets, Daily Lab Test Results, and Monthly Summaries for 1982 were not provided by Alyeska for review pursuant to the TSCA subpoena. According to Tonne Ponto, legal aid at Alyeska, those records could not be located. During the interview on 2/23/87, Larry Shier stated that he conducted an investigation of the incident in 1985 and was not able to determine whether samples had been taken or that any tests had been conducted on the Stuyvestant's ballast water. Entries in the Marine log dated 7/3/82, P. 256, and 10/5/82, P. 60, indicate samples of the Stuyvestant's ballast were taken with instructions to test for anything unusual. A BHT Task Force list of action items dated 2/28/86 indicates an assignment to Larry Shier and Ivan Henman to investigate Stuyvestant allegations.

On 2/18/87 Daniel Lawn, Alaska Dept. of Environmental Conservation, Valdez, Alaska, provided copies of Oil Record Book for Ship's regarding the tanker Kenal for the period 6/26/85 through 7/5/85 and 9/23/85 through 9/26/85 which bear entries that the T/V Kenal received on 7/01/85 "... contaminated ballast/slop from barge "Anax 25" and on 9/26/85, "... loaded 6600 bbls of slop from tanker Atigan Pass via barge Phoenix 120 into port slop tanks." The loading and deballasting log shows the Kenal arrived at Valdez on 7/7/1985 with 68,249 barrels of ballast. During the review of records at Alyeska's offices in Anchorage during the period, 2/3/87 - 3/13/87 the Berth Operator's logs for the time span 1/16/85 - 9/7/85 for Berth #4 were reviewed. No entry could be found regarding the contents of the ballast tanks of the tanker, Kenal.

The Daily Pass-on log - Laboratory, dated 7/1/85, p. 43, bears an entry to the effect that the lab had received some samples from some ship, not identified, which was so bad it almost made them all ill. No indication was made as to any identification of the ship or the contents of the ballast. The BHT Operator's Daily log dated 6/30/85, p. 242, bears an entry at 0740 hours about a very strong unusual chemical smell especially in the flotation building and that samples were taken. Water from tank 94 was being charged to the DAF system at the time. Ships deballasting

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to tank 94, were the Arco Juneau, Overseas Juneau, and Texaco Florida. The Loading and Deballasting logs indicate the source of ballast for those vessels respectively were Cherry Point, San Francisco, and Tacoma. According to the Daily Lab Work Sheets and Monthly Summaries, test results for 6/30/85 and 7/1/85 were not unusual with pH at 6.4 on 6/30 and at 6.4 on 7/1. Oil and grease was recorded as 4.0 on 6/30 and 3.0 on 7/1. No other test results are indicated.

BWT Operator's Daily log dated 5/28/85, p. 172 bears the entry indicating that ballast water being charged out of tank 94 looked "ugly" so ballast from tankers Mobil Meridian and Admiralty Bay were being added to tank 94 in hopes of diluting it. According to the log, the ballast water in tank 94 came from the tankers Arco Juneau and Arco Alaska. The Daily Lab Work Sheet from 5/28/85 shows grease and oil composite test results at 7.6 mg/l.

Marine log dated 3/8/82, p. 54 bears an entry to the effect that the ballast from B.T. San Diego had high hydrogen sulfide content and treatment consisted of the use of hydrogen peroxide and diluting with ballast from the Mobil Arctic. According to the BWT Operator's Daily Log dated 3/8/82, p. 226, an entry at 0645 hours indicates that the BWT stopped charging out of tank 92 due to high sulfides, 10 ppm, and switched deballasting from two other vessels, the Arco Saginaw River, and American Sun to tank 92 as well as adding peroxide. The Bay Tanker San Diego had been the source of the ballast.

Marine log dated 9/10/81, p. 202, bears an entry indicating that the tanker Sohio Resolute arrived at Valdez after coming out of a shipyard where its ballast had been put ashore and returned to the ship after repairs were completed. According to the BWT Operator's Daily log entries for the period 9/10/81 through 9/12/81, the Sohio Resolute had discharged its ballast into tank 94 and personnel from Sohio were at Valdez conducting tests.

Marine log dated 7/8/82, p. 274, bears an entry indicating that Marine operators found, during an inspection prior to deballasting, that the tanker Thompson Pass had 3,400 barrels of slop on board from a bunker barge in Long Beach. The entry states the slops were not unloaded per instructions from BWT.

Marine log dated 10/18/84, p. 103 bears an entry indicating the tanker Keystone Canyon had approximately 12,000 barrels of slop from a barge in California, contents unknown. Instructions were to keep a 90 tank empty to receive this ballast. According to the BWT Operator's Daily log dated 10/19/84 an entry at 1530 hours indicates a technician took pre-deballasting samples from the tanker, which deballasted into tank 93. No record could be found regarding the samples of ballast from the Keystone Canyon. The Loading and Deballasting log shows that the ballast source for this vessel was Los Angeles.

BWT Operator's Daily log dated 5/17/84, p. 259 bears an entry at 0955 hours that ballast from the tanker Manhattan caused foamy water in the DAF system and that the tanker had just come from dry dock where it was painted. A high grease and oil was expected and on p. 262 an entry

TAG

DOCS

MEMORANDUM

State of Alaska

DEPARTMENT OF ENVIRONMENTAL CONSERVATION Division of Environmental Quality

TO

Larry Dietrick
Director

FILE NO:

August 10, 1989

TELEPHONE NO:

FROM

Dan Wilkerson
Resource Planner

SUBJECT:

Alyeska Compliance
Monitoring - History
APSC Compliance re:
BWT NPDES Permit

Although quite recently I had indicated that I thought perhaps my time commitments concerning the APSC BWT NPDES Permit were lessening, I have recently been asked to serve on a "Monitoring Group", to set up with Alyeska the NPDES Permit Monitoring program. While I am willing and intend to serve in whatever capacity I can be of assistance, this does raise a concern with me. I along with other colleagues got involved with the APSC BWT NPDES Permit beginning in the summer of 1973. This six year interval has been a frustrating experience for both myself, my colleagues and the department as a whole. My concern is that this record of frustration not be repeated now that the department is in the implementation mode with the recently certified NPDES Permit. The department should be insisting on a clean slate with Alyeska, with a professional, straightforward effort being directed to implementing the requirements of the 401 Certification.

The permit history would suggest that the department could expect otherwise. My first major encounter concerning administration of the BWT NPDES Permit came in a workshop with Alyeska, the University, EPA and the department during September, 1983. The Institute of Marine Sciences from the UAF, as consultants on retainer to Alyeska, were utilizing the workshop forum to take the department to task concerning the mixing zone and the Alaska Water Quality Standards, 10 ppb. limit for aromatics. Basically, the Institute held that the mixing zone served no purpose, the Water Quality Standards were too restrictive and were not based on evidence of biological harm (memo, Bob Martin, 2-24-84). In the ensuing years since that workshop, APSC has demonstrated a corporate philosophy of being less than straightforward with the department, with a willingness to avoid the rules (NPDES Permit Compliance), and mis-represent data to their financial benefit in delaying compliance with the NPDES Permit and the Alaska Water Quality Standards.

The self monitoring provisions of the BWT, NPDES Permit have provided an avenue for APSC to avoid compliance with provisions of the NPDES Permit and the Alaska Water Quality Standards. A variety of consultants, including the Institute of Marine Sciences, have been on retainer with Alyeska over the intervening years to assist them with self monitoring, compliance investigation and reporting

requirements. Also, Alyeska has demonstrated an ability to direct the outcome of the consultants reports concerning permit compliance. Further, even when data collected as a result of such reports was damaging to Alyeska's credibility and demonstrated permit non-compliance, APSC managed to interpret the monitoring reports in Alyeska's favor, frequently with the consultants' assistance. As noted in a letter from Dr. Ihor Lysyj, dated Feb. 11, 1982, then with Rockwell International, in reviewing both the Radian Report and the SOHIO Report, both documents pointed out either problems or potential solutions to meeting the aromatic hydrocarbon limits. However, Alyeska managed to selectively interpret the respective reports in a manner which ignored any damaging information and asserted that they were in compliance with permit limits and that no major changes were needed.

During this same time period, there was a continuing dispute between the department and Alyeska, which later included EPA, over the methodology in analyzing the BWT effluent compliance samples. Basically, APSC was utilizing a method developed by Dr. Lysyj which did not involve sample preservation and was intended for immediate on-site analysis, (rather than the EPA method); however, the samples were being shipped out for analysis. Of course the volatile aromatics were gone before the samples were analyzed, so no violation could be found by the analysis. Once Alyeska, who was then still contracting with an out-of-state lab for sample analysis, changed to the EPA methodology and started sample preservation, the BWT daily monitoring reports indicated continuing water quality violations for six months. This they of course attributed to staffing problems, change in methodology, etc.. Perhaps the most apparent example of Alyeska's practice of misconstruing monitoring data came with the completion of the Data Reports prepared by Woodward Clyde in 1986-87. The department staff, including myself and several colleagues collaborated in an analysis of the Data Reports (primarily authored by Dan Lawn), and found that while these reports were based on generally sound data, the findings were misrepresented. The reports indicated substantial non-compliance with the Mixing Zone, although Alyeska and the consultants had interpreted the reports in a manner favorable to Alyeska.

As an investigator on behalf of the AG's Office, I prepared a transcript analysis of Alyeska's record of continuing violations of the 1980 NPDES Permit (Memo from Dan W./Dan L. 3-4-88). And under a contract via the AG's office, Dr. Ihor Lysyj/Balden Environmental Mgmt. verified the accuracy of the analysis of violations as well as the analysis of the Data Report authored by Dan Lawn. These steps were taken preparatory to possible litigation with Alyeska. However, despite Alyeska's continuing record of limited or non-cooperation, no enforcement action has been taken by the department/AG's office, even though Alyeska currently continues to pursue litigative maneuvers to avoid compliance with the revised NPDES Permit.

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It would seem that the corporate philosophy concerning compliance with the BWT NPDES Permit has been well established by this record. Therefore, my concern and reason for reiterating this record is that the department not repeat the same mistakes which were made concerning compliance with the prior NPDES Permit. As regards the revised NPDES Permit and 401 Certification, Alyeska should not be given the opportunity to manipulate the permit monitoring measures to their favor. It seems likely from the previous record, that Alyeska could attempt to utilize and mis-construe the self monitoring process to avoid compliance or mask non-compliance with the NPDES Permit. I believe that the department should strictly adhere to the the 401 Certification stipulations, including establishment of the Technical Advisory Group and to the agenda for the Monitoring Group, as set out by Mike Wheeler. If Alyeska does not prove to be forthcoming in this process, the department should simply cease any joint effort and internally establish the permit oversight and monitoring protocol and deliver it to Alyeska for implementation. Finally, the department needs to assign the ongoing permit oversight and compliance monitoring of the Alyeska BWT NPDES Permit to a knowledgeable staff person(s) and allocate sufficient time and commitment of resources to effectively monitor and enforce permit compliance.

DW/dw

Attached:

cc: Bill Lamoreaux
Doug Redburn
Julie Howe
Mike Wheeler
Dan Lawn

SUMMARY OF TECHNICAL ADVISORY GROUP (TAG)
TELECONFERENCED MEETING
DECEMBER 12, 1990

A teleconferenced meeting of the Technical Advisory Group (TAG) established by the Alyeska Ballast Water Treatment Facility NPDES permit was held at 2:30 p.m. on December 12, 1990 to discuss the TAG's concern with the EPA position taken in "Response to Comments Received on The Alyeska Pipeline Service Company Permit Modification (NPDES Individual Permit No. AK-002324-8)". Specifically Riki Ott requested the meeting to discuss the response to the earlier motion requesting that Alyeska conduct a materials balance study of hydrocarbon degradation in the treatment system.

In a partial response to the TAG recommendation, EPA stated:

Regarding the materials balance conditional approval of the technology-based limitation, EPA understands that Alyeska has engaged a consultant to pursue an initial consideration of a materials balance. A requirement has not been incorporated into this modification requiring Alyeska to perform a materials balance analysis. (Response to Comments).

Anne Daily of EPA Region 10 stated that EPA intends to include consideration of the materials balance requirement during its Toxicity Reduction Analysis. In the Toxicity Reduction Analysis, the final outcome of the toxicity testing currently underway will determine if an evaluation of toxicity reduction techniques will be required.

In attendance on the conference call were:

Bill Lamoreaux, Chairman, ADEC
Michael Wheeler, ADEC
George Wilson, ADEC
Dr. C. E. (Gene) Dickason, Alyeska
Dr. Fredericka (Riki) Ott, TAG
~~Dr. Donald Weston, TAG~~
Dr. Donald Button, TAG
Dr. Ihor Lysyj, TAG
Dr. John Karinen, TAG
Kerrie Schurr, EPA Region 10
Chuck Rice, EPA
Ann Daily, EPA Region 10

TAG member Dr. Stan (Jeep) Rice was absent from the conference call.

Riki Ott lead the discussion expressing concern that EPA had failed to incorporate entirely the TAG's four conditions for acceptance of technology based permit effluent limits. These four conditions were conveyed to EPA in the September 26, 1990 TAG motion regarding the amended NPDES Permit for Alyeska. Specifically, she referred to the first condition of that motion which dealt with a

recommendation to conduct a materials balance of the biological treatment system. As a result of this discussion, she introduced the following motion:

MOTION NO. 1

The TAG withdraws its support for the change from a Water Quality-based permit to a Technology-based permit for two reasons: 1) The TAG conditions and recommendations for a technology-based permit have not been prioritized by EPA; and 2) EPA has prioritized legal challenges over technical considerations.

Upon a second by ~~Thor Lysy~~, the follow vote was taken:

Riki Ott-----YES
Thor Lysy-----YES
Don Button-----YES
Don Weston-----NO
John Karinen-----NO

(The vote was inconclusive do to the absence of Jeep Rice. It was agreed that I would talk with him, read the motion and attempt to get his vote).

A second motion was then introduced by Riki Ott which reads:

MOTION NO. 2

The TAG strongly reiterates its recommendation that a materials balance study be done independently of the Toxicity Reduction Evaluation.

Upon a second by ~~Thor Lysy~~, the five TAG members present voted and passed the motion unanimously.

A third motion was then introduced by Riki Ott which reads:

MOTION NO. 3

The TAG recommends a Working Group be formed with representation consisting of Alyaska, EPA, DEC, representatives of TAG, and outside experts as appropriate to define the scope and goals of the material balance study. The group will retain responsibility for oversight of technical soundness for the duration of the study.

Upon a second by ~~Thor Lysy~~, the five TAG members present voted and passed the motion unanimously.

It was concluded that John Karinen would brief Jeep Rice and would have Jeep call me to indicate his vote on the three motions. The call was terminated at about 3:30 p.m.

DEPT. OF ENVIRONMENTAL CONSERVATION

July 12, 1990

Division of Environmental Quality
3601 "C" St., Suite 1334
Anchorage, AK., 99503

Mr. Harold Geren, Chief
Water Permits & Compliance Branch
U.S. Environmental Protection Agency
Region X
1200 Sixth Ave.
Seattle, WA., 98101

Subject: Public Comments
AK-002324-8
Alyeska Pipeline Service Co.

Dear Harold:

As you are aware, as a condition of the present NPDES permit, concerning operation and monitoring of the Alyeska BWT, the Department and the EPA are advised by the BWT Technical Advisory Group. With respect to revisions to the present NPDES permit proposed by Alyeska, the Technical Advisory Group was asked to review the amended permit and comment concerning the advisability of the amendments. Most of the members have individually provided written comments regarding the permit conditions (see enclosures, Don Button, John Karinen, Ihor Lysyj, and Fredericka Ott). Additionally, the Technical Advisory Group held a teleconference on Wed., July 11, 1990 to discuss the proposed NPDES permit amendments.

The Technical Advisory Group identified a number of issues relative to the proposed amendments to the NPDES permit. In particular, per part I.B.1., the Group is opposed to the change from a Water Quality based winter permit limit to a Technology based winter permit limit. There is concern that the 1.3 ppm limit may not achieve compliance with the new RCRA, Toxic Characteristic Leaching Procedure limit of .5 mg/l Benzene. Additionally, as the Technology based winter permit limit of 1.3 ppm only addresses BETX, there is concern that toxic metabolic products and other toxic substances may be discharged without detection and treatment. Further, there is concern that under the proposed technology based permit limits of 1.3 ppm BETX, the permit may be in violation of the EPA national policy promulgated in 49 CFR 9016, entitled "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", eg. toxic substances may not be discharged in toxic quantities. They also commented, per part I.B.3., that Alyeska should continue to be responsible for analyzing incoming ballast water, and per part I.B.8., that the requirement for the mixing zone compliance study should not be removed from the permit. Additionally, they expressed concern that

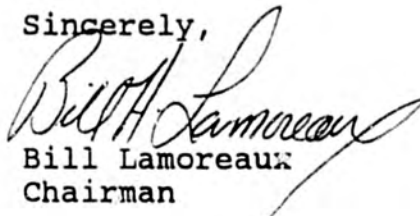
- page 2 -

TAG Comments, AK-002324-8

the EPA and the DEC may need to re-examine the permit conditions to address analysis of toxic metabolic products and other toxic substances, as well as the effects of the new RCRA, benzene limit of .5 mg/l.

These concerns as expressed by the Technical Advisory Group, along with the attached correspondence, need to be addressed at the conclusion of the public notice period. Please contact either myself, Dan Robison or Dan Wilkerson if you have questions or need clarification.

Sincerely,



Bill Lamoreaux
Chairman

BL/DW/dw

Enclosures:

cc: Michele Brown
TAG Members

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Environmental Quality

To: Alyeska BWT
Technical Advisory Group

July 12, 1990

From: Bill Lamoreaux *BL*
Chairman

Subject: Teleconference
Summary, 7-11-90

On Wed., July 11, 1990, the Alyeska BWT Technical Advisory Group held a teleconference to discuss and make recommendations concerning proposed revisions to the Alyeska NPDES Permit, AK-002324-8. Those present were Don Button, John Karinen, Ihor Lysyj, and Riki Ott; Jeep Rice and Don Weston were unavailable.

Riki Ott was asked to lead off with comments concerning the permit. She expressed opposition to changing the winter permit limit from a Water Quality based limit to a Technology based limit. She indicated concern that the Technology based permit would be limited to BETX, whereas the Water Quality based permit would address toxic responses from all sources. And she commented that the 1.3 ppm limit would probably exceed the .5 ppm benzene limit, per new RCRA regulations. She also commented on concerns over sludge production and the potential for violating EPA national policy regarding the discharge of toxic substances in toxic quantities. In discussing these concerns, it was pointed out that the proposed Technology based limit only addresses BETX, whereas the Water Quality based limit can address toxic metabolic products. It was also pointed out that Battelle discovered toxicity levels despite low levels of BETX in samples, and that the operation of the biological treatment process, because of short retention time, favors intermediate products of biooxidation, (vs. complete biodegradation to non-toxic, carbon/oxygen compounds). Additionally, Riki noted that there is a continuing need for water quality monitoring of the mixing zone (mixing zone compliance study) and a need for Alyeska to continue to monitor the incoming ballast water.

Ihor Lysyj commented that it appeared that both the EPA and DEC would be violating EPA national policy concerning the discharge of toxic substances in toxic quantities, ref. 49 CFR 9016, "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants". He also expressed concern that the permit would violate the new RCRA, Toxic Characteristic Leaching Procedure, concerning the benzene limit of .5 mg/l.

Don Button commented concerning the treatment process that the system needs to provide for longer residence time and recycling of some sludge to properly promote biodegradation of BETX. He stated that concerning sludge production, there is approximately 35 mg/l of sludge being produced by the BWT biological treatment process and that much of that could be taken care of by recycling.

Ihor Lysyj proposed a motion that the TAG oppose changing the NPDES winter permit limit from a Water Quality based limit to a Technology based limit. The motion passed unanimously. He also affirmed that the mixing zone compliance study not be subject to removal from the permit and that Alyeska be required to continue to be responsible for analyzing incoming ballast water.

Riki Ott proposed a motion that the EPA reopen the permit with regard to the 1.3 ppm limit, concerning compliance with the new RCRA regulations. The motion was tabled until it could be discussed further at the fall meeting. Dan Robison commented that EPA can reopen the permit for cause, and that the TAG should state that it appears that the 1.3 ppm may not be appropriate re: the new RCRA benzene limit and concerning analysis of toxic metabolic products.

Ihor Lysyj proposed a motion that the TAG convey to EPA concern that permit conditions may need to be re-examined by EPA and the DEC, to address analysis of coxic metabolic products and other toxic substances, as well as the effects of the new RCRA, benzene limit of .5 mg/l. The motion passed unanimously.

Don Button further commented that the TAG needs to express concern over the technical quality of the Alyeska monitoring reports, which should be written at a level appropriate for scientific literature and be able to withstand scientific peer review.

The procedure for transmitting these concerns and consensus agreement to the EPA was discussed and general agreement was expressed to forward a letter to EPA Region X, from Bill Lamoreaux, Chairman, summarizing the concerns with the proposed NPDES permit amendments.

The meeting was adjourned at 10:40 AM, AK. Daylight Savings Time.

DW/dw

Comments & Recommendations - Don Button/ 5-2-90

Synopsis of Port Valdez monitoring program
review to the Alyeska BWT Technical Advisory Group

Description of System:

Ballast water is generated from the tankers and passes through a holding tank for discharge into the port. The system is under redesign to include two 6 million gallon holding tanks with aeration and air-driven mixing, sparging, and injection of nitrogen and phosphate upstream from the holding ponds with residence times of 7 to 17 h at 10 degrees centigrade. It is reported that oxygen is consumed and volatile hydrocarbons are reduced from 5 mg/L to approximately 1 mg/L. A number of studies of ballast water effects have been conducted and are continuing.

Impressions

1. Much of the aromatic and light hydrocarbons are stripped from the ballast water and added to the air.
2. Most particulate hydrocarbons are skimmed from the supply; the influent of moderate-sized particles of hydrocarbons is negligible.
3. No data exist which give a basic carbon balance on the disposition of the hydrocarbons following injection into the treatment ponds.
4. Many of the studies focus on the sediments; changes in species distributions, measurements of heavy hydrocarbons, what few there are, and toxicological studies of the studies themselves.
5. Studies of changes in benthos distributions tend to be inconclusive due to the low rate of deposition of organic carbons of all types to the bottom of the fjord, and influences of natural perturbations in the fjord that cause large fluctuations in the fauna.
6. Dissolved aromatic hydrocarbons are easily detected in Port Valdez, however there is no systematic effort to follow concentrations, trends and influences.
7. No significant linkage has been demonstrated between ballast water components and hydrocarbons in the sediments; these components tend to remain in the water column, they are too light to settle, and therefore are flushed into Prince William Sound.
8. The most dramatic change in the benthos is a loading of barnacles on the diffuser pipe, most likely in response to bacteria injected from the treatment facility.

9. Some increase in components absorbing at particular wavelengths by spectrophotometer in the bile of bottom fish have been noted.

10. No attempt has been made to identify these metabolites or to examine accumulation by the more sensitive assays for mixed function oxidases, sometimes called P-450 enzymes.

11. Many of the environmental measurements have large standard errors and there is no clear way to separate normal variation with ballast-water component influences.

Summary. While most of the bioactive ingredients of ballast water remain in the water column, the focus seems to be on the benthos. There is little quantitative data emerging on chemical changes that the facility imparts on the environment, or the influence that those changes might impart.

Proposed Recommendations:

1. Establish a material balance on the effluent.

Physiological considerations predict and experiments confirm that the rapid biological treatment process proposed for depuration of oily wastes is basically a bio-transformation reaction. Products may be, as they were in the case of DDT, more toxic than the parent hydrocarbons. This view on the effects of such components is supported by toxicologists who have considered probable structures and find them effective alkylating agents and mutagens. Moreover it is supported by the report that purple sea urchin studies show sensitivity to ballast water following evaporation of the volatile components. The expected carbonyls are nonvolatile.

2. Establish concentrations and concentration gradients of aromatic hydrocarbons in Port Valdez water column.

These are now easily measured, and indicate the trajectory of all the components liberated. Values should be backed with independent quality assurance.

3. Examine the P-450 levels in fin fishes that inhabit the estuary.

There is ample evidence that these fishes are sensitive to hydrocarbons, and that this sensitivity is reflected by elevated levels of P-450 enzymes. A convenient system could include products of the fish hatchery adjacent to the effluent, and these should be compared to a control hatchery in an unimpacted location.

4. Demonstrate the probable fate of hydrocarbons in the ballast water treatment ponds before implementing large-scale modifications. Current documentation is incomplete, the process may do more harm than good, and if it does work appears prone to failure.

5. If the treatment facility is modified and is to be mixed, do it mechanically.

The extra air used for mixing does nothing for bio-oxidation and generates a source of pollution to the atmosphere. We are part of a global community and dealing with components, both in the air, and certainly in the water, of long residence times that integrate with all the other point sources of pollution.

6. Permittee should set aside 10 - 20% of contract funds for QA/QC, not under control of principle investigator. Group should review permit required QA Plan.

ORA

• COMMENT

Testimony by Dr. Riki Ott before the House Interior Committee

May 7, 1989 Field Hearing on
Prince William Sound Oil Spill
& Alyeska Operations on behalf
of Cordova District Fishermen
United & United Fishermen of
Alaska

Status Quo

Terminal Operations

To fully understand the scope of the pollution problems at Alyeska, one must understand how the terminal was designed to operate (Figure 1).

Oil comes down the pipeline under pressure and, before it is loaded onto tankers, the oil is sent crude oil storage tanks where the oil is allowed to "off-gas." (When the

pressure on the oil is released, the oil "fizzes" like opening a can of Coke.) The poisonous crude oil gases or vapors collect in the tops of the cone-shaped crude oil storage tanks. These vapors (similar to what you smell when you fill your car up with gasoline) are drawn by a centralized compressor system to incinerators where the hydrocarbons in the vapors are destroyed by burning them at high temperatures (1400 degrees F). This process is called the vapor recovery system.

After off-gassing, the oil is ready to be loaded onto tankers but before the tankers can load oil, they must deballast (Figure 1). Tankers pump their contaminated seawater ballast into ballast water holding tanks (or 90 tanks) which store ballast water until it can be properly treated. This system allows tankers to deballast quickly so they can onload oil.

Ballast water then flows into impound basins (Figure 1) where, in theory, bacteria physically eat or degrade the hydrocarbons, removing these compounds from the water. The treated ballast water is discharged as effluent directly into the receiving waters of Port Valdez. Again in theory, the effluent now meets the state's water quality standards.

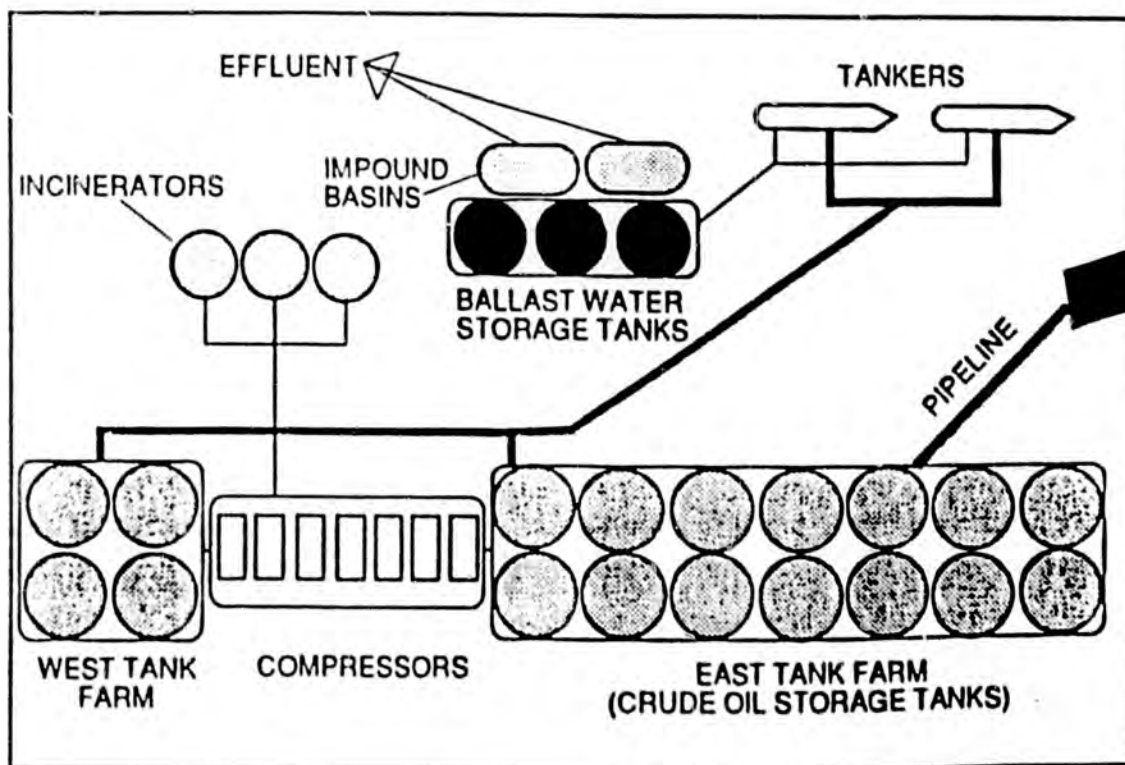


Figure 1. Alyeska Ballast Water Treatment Facility

The Alyeska ballast water treatment facility was designed as a model plant but problems arose when actual plant construction and operation veered away from the original design approved by Congress. Today, the plant is the exact same size as when it was built in 1977 despite nearly a four fold increase in pipeline throughput.

Vapor Recovery System

The vapor recovery system is both overloaded and badly in need of major repairs. The mild steel pipeline is corroding badly throughout its length; consequently, the compressor system is unable to function properly. Because of improper maintenance, the incinerators have trouble maintaining the high temperatures necessary to properly combust the crude oil vapors: between 1980 and 1987, inclusive, all three incinerators were fully operational 6% of the time (Anchorage Times: Ortega 4/7/88).

To compound the problems with the vapor recovery system, since early 1987 large volumes of natural gas liquids (NGLs) have been routinely injected into the pipeline when it was discovered that addition of NGLs substantially increase oil flow by reducing friction. NGLs contain a high proportion of "light ends" (highly volatile hydrocarbons) and therefore cause a much greater degree of off-gasing than crude oil alone. Additional incinerators are necessary to handle the additional vapors from the NGLs; yet Alyeska officials have made no plans to increase the size of the vapor recovery system to compensate for the additional vapors from NGLs.

To avoid stressing the rapidly weakening vapor recovery system, crude oil is loaded directly onto the tankers from the pipeline. The oil off-gases in the tanker holds releasing tons of noxious hydrocarbon vapors untreated into the air daily.

Ballast Water Treatment System

The ballast water treatment system simply does not work well. The biological treatment system, which is the heart of the ballast water treatment system, and has been severely critiqued by many scientists, including Drs. Ihor Lysyj and Don Button, a microbiologist at the Institute of Marine Science, Fairbanks, Alaska (see attachments).

Bacteria need both time and warm temperatures to properly degrade hydrocarbons: with the present system,

they have neither. Because of the shortage of ballast water holding tanks, the ballast water must be rushed through the impound basins to prevent slow-downs in tanker traffic and oil flow. The bacteria are not very active in cold water. Because of the cold temperatures and rapid flow, the bacteria do not have time to eat the hydrocarbons. The resulting effluent contains high levels of hydrocarbons.

The DEC has granted Alyeska a mixing zone which is a volume of water in which toxic compounds in effluent mix with surrounding seawater and are diluted so that the state's water quality standards will be met at the mixing zone boundaries. However, the DEC criteria specifically state that there shall be **NO MIXING ZONE ALLOWED** for compounds which accumulate in the sediment or are carcinogenic. The effluent from Alyeska contains compounds which are both known carcinogens (BETX) and powerful mutagens (compounds which change DNA in ways which can be passed on to offspring) (see attachments). The heavier weight hydrocarbons found in sludge are also known to accumulate readily in sediment.

Terminal Reviews

The terminal has never been reviewed or upgraded by the Secretary of Interior, as mandated by Congress in the TAPS legislation, in its twelve years of operation. Not only is the terminal not operating with the best available technology (more later), the technology that it originally utilized has not even been properly maintained. When parts of the environmental pollution control system broke down, like the sulfur scrubbers and the dissolved aeration flotation cell skimmers, the pieces were dismantled with no written approval by DEC, as required in the 401 Certification (see attachments).

Alyeska is still operating under the 1980 NPDES permit and is currently resisting, through elevation hearings and threats of adjudicatory hearings, the new NPDES permit and 401 certification. Alyeska also requested site specific reductions in the state's water quality standards for hydrocarbons in eastern Port Valdez on March 20, 1989. Because of budget cuts, operations and permit compliance for both air and water quality standards at the entire terminal facility — the largest of its kind in the United States — are being monitored by one half-time DEC position.

NOTE: NPDES permit reissued in June, 1989. Some provisions are still held up in court.



CORDOVA DISTRICT FISHERMEN UNITED

P.O. Box 939

Cordova, Alaska 99574

(907) 424-3447

UNDERSTANDING THE ALYESKA CONTROVERSY

Historic Overview

- 1971 Fishermen, represented by Cordova District Fishermen United (CDFU), filed a suit to prevent the Trans-Alaska Pipeline (TAPS) terminus from being built in Port Valdez.
- 1973 Supreme Court upheld consolidated lawsuit of fishermen and environmentalists: development of pipeline blocked. Congress passed special legislation authorizing Dept. of Interior to grant right-of-way to pipeline owner companies. Congress stipulated in TAPS legislation that the ballast water treatment system would be reviewed & upgraded every 5 yrs to ensure that Best Available Technology (BAT) was always being utilized. Dept. of Interior was mandated by Congress to carry out oversight.
- 1977 Alyeska terminal with largest ballast water treatment facility in U.S. operational under EPA NPDES (National Pollution Discharge Elimination System) permit with monitoring & oversight by Alaska Dept. Environmental Conservation (ADEC).
- 1979 Dr. Lysyj, under contract to EPA, determined that ballast water treatment system was NOT removing toxic aromatic hydrocarbons (BETX) from effluent. ADEC's water quality standards were being exceeded.
- 1980 EPA reissued NPDES permit with intention of rewriting it in 2.5 yrs to include methodology to reduce levels of BETX in effluent. To enable Alyeska to meet state and federal water quality standards, mixing zone was expanded and standard for BETX was set to highest levels discharged by Alyeska.
- 1982 Alyeska became largely self-monitoring due to budget cuts within DEC which left one half time position to monitor Alyeska and enforce compliance.
- 1985 CDFU joined Charles Hamel in filing notice of intent to sue Alyeska & 7 owner companies over alleged mismanagement of and pollution from ballast water plant. After a probe, EPA and DEC issued joint compliance order requesting Alyeska to build system to monitor, remove and dispose of sludge. Later this year, EPA approved a biological treatment system, based on lab & field studies contracted by Alyeska, as the long-awaited technology to reduce BETX in effluent. Sludge removal & disposal was NOT addressed.

1988 Independent audits contracted by Alaska's Attorney General Office & DEC found that key studies contracted by Alyeska, including studies upon which the biological treatment system was approved, were unreliable. Audits suggested toxic substances in toxic quantities may be entering Port Valdez and recommended specific actions including complete audit of terminal.

EPA drafted new NPDES permit calling for as much as 85% reduction in BETX discharges in effluent. Alyeska requested elevation hearings to challenge stiffer permit standards.

1989 Alyeska requested site specific reduction in ADEC's water quality standards for hydrocarbons in eastern Port Valdez. Unsuccessful at the elevation hearings on the NPDES permit, Alyeska started adjudicatory hearings. Losing on 34 of 36 points, Alyeska recently appealed to Administrative Law judge. Despite appeal, EPA issued NPDES permit in June; Alyeska has been in noncompliance.

Status Quo

The original Alyeska design drawing, approved by Congress, included plans to increase the physical size of the terminal and the two pollution control systems (ballast water & vapor recovery) as the amount of oil coming down the pipeline increased. Today, the plant is the exact same size as when it was built in 1977 despite nearly a four fold increase in pipeline throughput.

The vapor recovery system is both overloaded and badly in need of major repairs. Between 1980 & 1987, inclusive, the 3 incinerators were fully operational 6% of the time. The ballast water system simply does not work well. The controversial biological treatment system is NOT BAT: of the many technological options available for treatment of toxic pollutants in sub-arctic environment, it was found to be the least suitable by EPA.

When operations at Alyeska are compared to other similar facilities, including facilities partly owned by Alyeska owner companies, it is apparent that the oil industry as a whole is operating under a global set of double standards. Furthermore, Alyeska is in many ways substandard.



Oil Reform Alliance



DEBRIEFING NOTES BY RIKI OTT

House Special Committee on Oil & Gas Hearing
on Alyeska Ballast Water Treatment & TAPS Tanker Operations
March 15, 1991

TAPS TANKER OPERATIONS

- 1) Denial of transfers of tanker washings, including dry dock washings, from shore terminals to tankers for transportation and disposal at Alyeska.

Following denials made by TAPS tanker operators, Gene Dickason of Alyeska testified that: "The available facilities on the West Coast have a limited capacity to receive and treat tank washings and ballast. As a result, either the ballast may be stored on shore and then returned to vessel for its subsequent trip to Valdez or they are transferred to another north bound TAPS trade vessel for discharge to [Alyeska]" (pg. 4).

The EXXON BATON ROUGE loaded cargo from the shore terminal at Honolulu, Hawaii, on April 9, 1989, and discharged it at Alyeska on April 16, 1989, as "ballast water" (DEC Ballast Water Discharge Certificate Affidavit for the SS EXXON BATON ROUGE on April 16, 1989).

The cargo was "slop tank content left behind from the EXXON HOUSTON which had been cleaned out at Hawaii before drydocking" in Ulsan, Korea (summary of deposition of First Mate Claude Wendell Dees to the State of Alaska). The Korean shipyard charges for disposal of tank cleanings and waste.

- 2) Denial by EXXON and BP that diesel sludge is discharged to ballast water.

EXXON and BP stated that diesel sludge from diesel powered tankers is collected, contained in barrels, shipped south, analyzed by EPA to determine if it is a RCRA hazardous waste, then disposed of accordingly.

Request from EXXON and BP the following records for the diesel tankers LONG BEACH, BAYTOWN, and VALDEZ (EXXON) and OMI COLUMBIA and OVERSEAS BOSTON (BP) for the period from January 1, 1986, to the present:

- *** Engineer's log book
- *** Engineer's oil record log book
- *** Mate's oil record log book
- *** Voyage folder
- *** Records and receipts from engine sludge disposal
- *** Records of tests performed on sludge by EPA

3) Denial of transfers between segregated and unsegregated ballast water.

Request a written response from TAPS tanker operators to the following question:

For the period from January 1, 1986, to the present has "clarified bottom water" from the dirty ballast tanks ever been decanted into the segregated ballast tanks? If so, please indicate dates and approximate quantities by vessel.

4) Comments on worker safety and OSHA standards for benzene exposure.

TAPS tanker operators acknowledged that use of cleaning agents in vessels is likely to increase because OSHA has reduced the level of benzene to which workers can be exposed. More benzene removed from tanker holds will result in more benzene in tanker washings now being shipped to Alyeska for disposal.

DEC estimates that 450 TONS OF BENZENE per year are emitted by tankers loading crude at Alyeska. DEC also estimates another 90 TONS of benzene per year are emitted by the Alyeska BWT facility, primarily from the DAF cells and the impound basins.

ALYESKA BALLAST WATER TREATMENT

5) The statement that "benzene is biodegradable" and the implied implication that it will "disappear" from the environment are extremely misleading.

Crude oil contains many different types of hydrocarbons ranging from simple "aliphatic" compounds to complex "aromatic" compounds. The bacteria in a biological treatment system, such as operated at Alyeska, breakdown or degrade less complex hydrocarbons

(aliphatics) much faster than the complex aromatic hydrocarbons such as benzene, ethylbenzene, toluene, and xylene (BETX).

Bacteria need TIME to degrade benzene and other aromatic hydrocarbons. Gene Dickason of Alyeska stated during testimony that tankers occasionally queue to deballast because the biological treatment system is operating at maximum capacity. When this occurs, residence time in the impound basins may be as low as is seventeen hours. By comparison, the ballast water treatment facility in Portland, OR, has a minimum residence time of 30 days - and the water is warmer than in Alaska, a factor which enhances biodegradation of hydrocarbons.

Scientists who have studied the Alyeska BWT facility speculate that the system is releasing partially degraded hydrocarbons or metabolites into Port Valdez. Alyeska is required to monitor for BETX, not BETX metabolites.

However, the bulk of scientific data suggests that benzene toxicity is produced by one or more metabolites of benzene rather than by benzene itself. Covalent binding of benzene metabolites to cellular macromolecules is related to benzene toxicity and/or carcinogenicity. Recent laboratory tests have shown effluent is toxic to test organisms, yet devoid of BETX compounds (Battelle Northwest 1990).

- 6) There is no evidence to suggest that the new standards for BETX discharge in Alyeska's NPDES permit will improve the water quality in Port Valdez.

Gene Dickason of Alyeska stated during testimony that the Alyeska facility will have no difficulty meeting the new permit requirement for 1.3 ppm BETX as the plant has been operating at or near this level for several years.

While this may be true, Port Valdez was declared a toxic impaired waterway in 1988: 1989 and 1990 show the lowest BETX discharge according to Alyeska handouts.

Dickason also stated that the toxic impaired status resulted when environmental monitoring (dye tracer) studies found BETX concentrations in Port Valdez exceeded state water quality standards. (In 1988 DEC documented 508% more "apparent and probable" violations of the permit than reported by Alyeska.) THE DYE TRACER STUDY HAS NOT BEEN REPEATED and provisions for such studies in the new permit are not required (instead they are discretionary by DEC).

- 7) The analysis comparing "spikes" (upset conditions) in the ballast water treatment system with 71 known additions of tank washings is misleading.

Evidence shows that the practice of including tank washings, tank cleanings, chemicals, and detergents in ballast water has not always (rarely?) been reported in ballast water discharge certificate affidavits as in the case of the EXXON BATON ROUGE - EXXON HOUSTON (see #1 above).

Further, the EXXON PHILADELPHIA transferred slops on February 20, 1989, to the EXXON VALDEZ as noted by Second Engineer Ray M. Jones in the Engineer's Relief Note files. Yet the EXXON VALDEZ discharge certificate affidavit indicates only ballast water was discharged to Alyeska (attached).

- 8) The statement that environmental monitoring studies in Port Valdez show there is no adverse effect of the terminal on the environment is incorrect.

Scientists at Institute of Marine Science who have conducted these studies have stated that they can no longer determine if the terminal has any effect on the environment because sampling stations have been moved. Alyeska has interpreted inconclusive studies to mean there is no known adverse effect on the environment.

Independent audits contracted by DEC and the Attorney General suggest that toxic substances in toxic quantities may be entering Port Valdez. Auditors recommended specific action to evaluate the extent of the problem. There has been no followup to my knowledge.

CONCLUSIONS

PAST AND PRESENT OPERATIONS OF TAPS TANKERS AND ALYESKA'S BALLAST WATER TREATMENT ARE CONTRIBUTING TO THE DETERIORATION OF WATER QUALITY FACILITY IN PORT VALDEZ. IMMEDIATE STEPS SHOULD BE TAKEN TO CHANGE THESE OPERATIONS TO HALT FURTHER DEGRADATION. AS REQUIRED BY FEDERAL LAW, FURTHER STEPS MUST BE TAKEN TO IMPROVE WATER QUALITY OF TOXIC IMPAIRED WATERWAYS -- THE STATUS OF PORT VALDEZ SINCE 1988.

IT IS TIME FOR ALL PARTIES INVOLVED -- ALYESKA, TANKER OPERATORS, REGULATORY AGENCIES, AND PUBLIC LEADERS -- TO RECOGNIZE THE PROBLEM IN PORT VALDEZ AND WORK TOGETHER CONSTRUCTIVELY TO RESTORE PORT VALDEZ WATER QUALITY.

MAR 20 1989

MAR 20 1989

100

GUY KLEESS, CHIEF I

A. MASTER OF THE ABOVE VESSEL,

(NAME)

HEREBY CERTIFY THAT ALL INFORMATION I HAVE PROVIDED ON THIS AFFIDAVIT IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT ANY MISREPRESENTATION OR CONCEALMENT MAY BE GROUNDS FOR CRIMINAL PROSECUTION UNDER AS 46.03.790. I FURTHER CERTIFY THAT THERE HAS BEEN NO DISCHARGE OF BALLAST FROM THE AFOREMENTIONED VESSEL AT SEA DURING THE PERIOD OF TIME FROM DEPARTURE OF THE VESSEL ENROUTE TO THE STATE FROM A PORT OUTSIDE THE STATE TO ARRIVAL AT A PORT IN THE STATE, OF WHILE IN TRANSIT BETWEEN PORTS WITHIN THE STATE, EXCEPT FOR BALLAST WATER OR TANK CLEANING WASTE WHICH CONTAINED LESS THAN THE QUANTITY OF PETROLEUM PERMITTED BY THE WATER QUALITY STANDARDS OF THE STATE AND WHICH IN NO CASE CONTAINED IN EXCESS OF 50 PPM OIL RESIDUE.

SIGNED

AT VALDEZ, ALASKA

(PORT)

DATE FEB. 28, 1989

WITNESS

ALASKA MARITIME AGENCIES
P.O. BOX 1170

ADDRESS VALDEZ, ALASKA 99686

ABOVE IN LIEU OF OWNER

MASTER

EXXON SHIPPING CO.

ADDRESS

HOUSTON, TX

COPIES OF ALASKA STATUTES AND ALASKA WATER QUALITY STANDARDS ARE AVAILABLE UPON REQUEST FROM THE DEPARTMENT.

DELIVER TO ANY DEPARTMENT REPRESENTATIVE AT PORT OR MAIL IMMEDIATELY TO:

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FOR PORTS IN COOK INLET, SEWARD & WHITTER

SOUTHCENTRAL REG. OFFICE
338 DEHALI STREET
ANCHORAGE, ALASKA 99501

FOR PORTS IN CORDOVA & VALDEZ

PRINCE WILLIAM SOUND REG. OFFICE
POUCH E
VALDEZ, ALASKA 99686

FOR PORTS IN SOUTHEASTERN ALASKA TO YAKUTAT

SOUTHEASTERN REG. OFFICE
POUCH OA
JUNEAU, ALASKA 99811

note:

Signed by
Ch. Mate Kleess
for Joe Hazelwood

PLEASE SUBMIT THIS AFFIDAVIT AS SOON AS POSSIBLE AFTER LOADING

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATIONBALLAST WATER DISCHARGE CERTIFICATE
AFFIDAVIT

(26)

Port, City, Facility, or Dock Name VALDEZ, ALASKA Date 4-6, 1989
(Where cargo is to be taken on)Vessel SS EXXON PHILADELPHIA O.N. 526792 of USA
(Name and Official Number) (Nation of Registry)Vessel Operator EXXON SHIPPING CO. Last Port Visited PORTLAND, OR.Address: 3400 EAST SECOND ST. Date of Departure _____
BENICIA, CA 94510Voyage # 005 Time to Load Cargo (hrs.) 8Arrival date & time this port 4-1-89 1830 Planned departure date & time this
CAPE HINCHINBROOK port _____Nature of cargo to be loaded at this port (types and quantity) _____
520,000 NET BARRELS ALASKAN NORTH SLOPE CRUDE OIL

Quantity of segregated (clean) ballast this trip _____ Long _____ tons

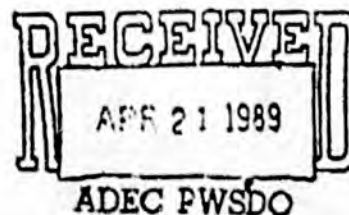
Location (point) of discharge(s) ALYESKA BERTH, VALDEZ, ALASKAQuantity of ballast in cargo tanks this trip 19,754 Long _____ tonsLocation, point or treatment facility where discharged ALYESKA BERTH, VALDEZ, AKTanks washed this trip ALLTank washing system _____ water wash ☒ crude oil wash ☒

Time deballasting started _____ Stopped _____

Percent Sulfur in Bunker (if known) _____

Or if the Vessel did discharge ballast at sea or in the waters of the State since leaving the last port, briefly describe the method used to avoid exceeding the allowable maximum concentration of oil residue in the discharged ballast (such as discharging from "dedicated" ballast tanks, segregated ballast tanks, treating the ballast, using a LOT procedure, etc.); including the amounts of ballast discharged and when:

SEGREGATED BALLAST SYSTEM

_____

EDWARD T. STEBLE III

(Name)

master of the above vessel.

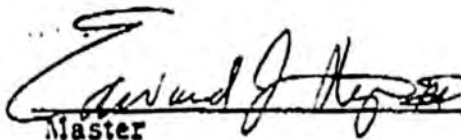
I hereby certify that all information I have provided on this affidavit is true and complete to the best of my knowledge and belief. I understand that any misrepresentation or concealment may be grounds for criminal prosecution under AS 46.03.790. I further certify that there has been no discharge of ballast from the aforementioned vessel at sea during the period of time from departure of the vessel en route to the State from a port outside the State to arrival at a port in the State, or while in transit between ports within the State, except for ballast water or tank cleaning waste which contained less than the quantity of petroleum permitted by the Water Quality Standards* of the State and which in no case contained in excess of 50 parts per million oil residue.

Signed _____ at VALDEZ, ALASKA
(Port)

Date _____

Witness _____

Address _____


Master

P.O. BOX 1512

Address

HOUSTON, TEXAS 77001

Copies of Alaska Statutes and Alaska Water Quality Standards are available upon request from the Department.

Deliver to Department representative at port or mail immediately to:

Alaska Department of Environmental Conservation

For Ports in Cook Inlet, Seward & Whittier

For Ports in Cordova & Valdez

Southcentral Regional Office
338 Denali Street
Anchorage, Alaska 99501

Prince William Sound Field Office
P.O. Drawer 1708
Valdez, Alaska 99686

For Ports in Southeastern Alaska to Yakutat

Southeastern Regional Office
Pouch OA
Juneau, Alaska 99811

Please submit this affidavit as soon as possible after loading)

DEC 12-79

2/20/89

- Time work on SPW service pumps re-packing
etc. found bottom and cover needed Tanyuan
repairs for now - new ones on order. (Turbo pump)
- Work on Turbo (M/R) stopped awaiting
spare part from ABB formerly BBC
- Still lightening to Brighton.
- Excess Philly discharging Slopes to
us.
- Pumping ballast.

note
2nd stage
Ray M. Jones
notes

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

BALLAST WATER DISCHARGE CERTIFICATE RECEIPT

PORT, CITY, FACILITY, OR DOCK NAME VALDEZ, ALASKA DATE 4-16-89
(WHERE CARGO IS TO BE TAKEN ON)

VESSEL SS EXXON BATON ROUGE #524619 OF U.S.A.
(NAME AND OFFICIAL NUMBER) (NATION OF REGISTRY)

VESSEL OPERATOR EXXON SHIPPING COMPANY LAST PORT VISITED Honolulu, Hawaii

ADDRESS 3400 East Second St., Benicia, Ca. 94510 DATE OF DEPARTURE 4-5-89

VOYAGE NUMBER 009 TIME TO LOAD CARGO (HRS) _____

ARRIVAL DATE & TIME THIS PORT 4-16-89 0200 EST DEPARTURE DATE & TIME _____

NATURE OF CARGO TO BE LOADED AT THIS PORT (TYPES & QUANTITY) _____

ALASKA NORTH SLOPE CRUDE OIL

QUANTITY OF SEGREGATED BALLAST THIS TRIP 7500 TON

LOCATION (POINT) OF DISCHARGE(S) Alaska

QUANTITY OF BALLAST IN CARGO TANKS THIS TRIP 31,200 TON

LOCATION, POINT, OR TREATMENT FACILITY WHERE DISCHARGED Alaska

TANKS WASHED THIS TRIP None

TANK WASHING SYSTEM _____ WATER WASH _____ CRUDE OIL WASH _____

TIME DEBALLASTING STARTED 4-16-89 2310 STOPPED _____

PERCENT SULFUR IN BUNKER (IF KNOWN) _____

IF THE VESSEL DID DISCHARGE BALLAST AT SEA OR IN THE WATERS OF THE STATE SINCE LEAVING THE LAST PORT, BRIEFLY DESCRIBE THE METHOD USED TO AVOID EXCEEDING THE ALLOWABLE MAXIMUM CONCENTRATION OF OIL RESIDUE IN THE DISCHARGED BALLAST (SUCH AS DISCHARGING FROM "DEDICATED" BALLAST TANKS, SEGREGATED BALLAST TANKS, TREATING THE BALLAST, USING THE LOT PROCEDURE, ETC.); INCLUDING THE AMOUNTS OF BALLAST DISCHARGED AND WHEN:

DAVID M. WHITTY

MASTER OF THE ABOVE VESSEL,

(NAME)

I HEREBY CERTIFY THAT ALL INFORMATION I HAVE PROVIDED ON THIS AFFIDAVIT IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF. I UNDERSTAND THAT MISREPRESENTATION OR CONCEALMENT MAY BE GROUNDS FOR CRIMINAL PROSECUTION UNDER AS 46.03.790. I FURTHER CERTIFY THAT THERE HAS BEEN NO DISCHARGE OF OIL OR OILY MATERIAL FROM THE AFOREMENTIONED VESSEL AT SEA DURING THE PERIOD OF TIME FROM DEPARTURE OF THE VESSEL ENROUTE TO THE STATE FROM A PORT OUTSIDE THE STATE TO ARRIVAL AT A PORT IN THE STATE, OF WHILE IN TRANSIT BETWEEN PORTS WITHIN THE STATE, EXCEPT FOR BALLAST WATER OR TANK CLEANING WASTE WHICH EQUALLED LESS THAN THE QUANTITY OF PETROLEUM PERMITTED BY THE WATER QUALITY STANDARDS OF THE STATE AND WHICH IN NO CASE CONTAINED IN EXCESS OF 50 PPM RESIDUE.

SIGNED David Whitty

AT

VALDEZ, ALASKA

(PORT)

DAVID M. WHITTY

VESS

MASTER

3400 East Second St., Benicia, Ca 94510

RESS

ADDRESS

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ANCHORAGE, ALASKA 99501

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PLEASE SUBMIT THIS AFFIDAVIT AS SOON AS POSSIBLE AFTER LOADING

SUMMARY OF THE DEPOSITION OF
CLAUDE WENDELL DEES

2/20/91

Page

Examination by Mr. Gerry

- 4 Brought no documents with me.
- 5 5705 Fairway Drive, Zachary, Louisiana. Telephone 504-654-9635. Serving as transportation allocator with Exxon Shipping in Baton Rouge for 15 months.
- 6 Previously served as chief mate and second mate with Exxon Shipping. 49 years old, business administration degree from LSU. After first year of college, went to sea in the mid-60's, obtaining seaman's document as an ordinary seaman. In the late 60's AB endorsement; third mate's license in the 70's, second mate's license in the mid-80's and chief mate 1987 or 88. Brief sailing experience with Seafarer's International Union and then went with Exxon in 66 or 67.
- 8 Quit 3 times and hired back 3 times. Sailed on EXXON BATON ROUGE, EXXON SAN FRANCISCO, EXXON PHILADELPHIA and EXXON VENICIA.
- 9 BATON ROUGE and VENICIA are automated steam vessels. Never sailed on a diesel. Into Valdez 20 or 30 times. No pilotage for Valdez.
- 10 Primarily on the BATON ROUGE and we discharged in San Francisco, Washington, Hawaii and Long Beach. BATON ROUGE is 75,000 tons.
- 11 Primary responsibility is as a scheduler at the Baton Rouge Exxon Refinery of all vessels that call there.
- 12 When we leave for Valdez, we use seawater for ballast and nothing else. We never have taken sludge from other vessels produced by diesel and discharge it where the ballast would be discharged in Valdez.
- 13 Never taken ballast from a refinery and discharged it up north.
- 14 The BATON ROUGE has segregated ballast tanks but it also takes sea water and put it in tanks that had crude in it and it's known as dirty ballast. The dirty ballast is discharged at Alyeska. The segregated ballast tanks could hold a total of about 50,000 to 60,000 barrels.

- 219 I don't recall going to Hiri Marine Terminal in Honolulu. We picked up some slop tank content left behind by the EXXON HOUSTON which had been cleaned out at Hawaii before drydocking. I think that was on the previous trip and not this trip and we took it back to Valdez for discharge as dirty ballast.
- 220 I don't recall how much slop we picked up.
- 220-221 It's possible that sometimes during the trips I've made someone flushed their shoreline back to the ship;
- 221 They would ask permission before doing it. I don't recall it happening but it's possible.
- 222 On the trip to Hawaii, we gauged our tanks to determine water content. We gravitated some of it out into one tank.
- 223 That would be in the oil record transfer book which is different from the voyage file. It might also be in the bridge log or the voyage file.
- 224 When we arrive at a terminal we give them a notice of readiness. Before arriving at Alyeska we advised them by radio how much cargo we're going to load and at what rate and how much dirty ballast we have to discharge. This is later confirmed before we get there.
- 225 I don't recall ever seeing a form called Ballast Water Discharge Certificate Affidavit, Department of Environmental Conservation, State of Alaska.

EXAMINATION BY MR. GRIFFIN

- 225 We carried only dirty ballast back to Valdez and clean ballast.
- 226 I may have had 150,000 barrels in 3 center tank. No oil water mixture off loaded at Hawaii was later loaded back on to the BATON ROUGE for the trip to Valdez, nor was any oil that was off loaded at Hawaii loaded back on the BATON ROUGE for that trip.

EXAMINATION BY MR. BLANK

- 227 Alyeska has questioned on their pre-transfer conference where the dirty ballast was generated and also they



Oil Reform Alliance

MARCH 18, 1991 COMMENTS BY RIKI OTT ON

"Valdez Marine Terminal Ballast Water Treatment:
Operations, History, and Effects"
Alyeska Pipeline Service Company February 1991;
distributed at the House Special Committee on Oil & Gas
on March 15, 1991

Pg. 3, para. 2

Alyeska added a biological treatment system in 1986 directly as a result of a joint compliance order issued in 1985 by EPA and DEC requesting that Alyeska install a system to reduce hydrocarbons (BETX and suspended solids) in the effluent. The biological treatment system was the cheapest of the technological alternatives.

Pg. 3, para. 4

Alyeska does not tell you the addition of oxygen to the biological treatment system also results in "air sparging" of BETX or transfer of BETX from water to air. DEC estimates that 20 TONS of benzene per year are emitted from the impound basins. TAG members (see attachment #2) calculate that over 99% of the BETX removal from the impound basins occurs via air sparging - not biological degradation.

Pg. 4, para. 2

The air strippers Alyeska boasts of lack gas capture. Operation of these air strippers will transfer more BETX from the water into the air. Air strippers with gas capture are also standard technology - but more expensive.

Pg. 5, para. 3

Alyeska does not tell you that Sullom Voe also voluntarily measures the level of total hydrocarbons in the segregated ballast. If the levels exceed 5 ppm, the segregated ballast is run through the treatment plant which achieves about 5 ppm total hydrocarbon in its effluent.

Pgs. 5-6, "The Second Permit"

Prior to the second NPDES permit being reissued, TAG member Dr. Ihor Lysyj, under contract to EPA, found that the effluent contained significant amounts of BETX resulting in violations of the state's standards.

The second permit addressed these findings by establishing limits on discharge of BETX, requiring industry

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to produce methods to reduce BETX in effluent, and increasing the size of the mixing zone so Alyeska would be in compliance with state and federal standards.

TAG member Dr. Don Button, under contract to Alyeska, confirmed Dr. Lysyj's findings in the early 1980's. In addition, Dr. Button found that metabolites of the BETX compounds from Alyeska were also present in large concentrations in Port Valdez. Alyeska did not to renew Dr. Button's contract. Studies on metabolites were discontinued, but have been recommended by the TAG (1990).

According to an audit performed for DEC, Alyeska misapplied scientific protocols to arrive at the conclusion that the biological treatment system was a "resounding success." Following the ONLY environmental monitoring study conducted to test compliance of the system with permits, DEC found 508% more "apparent and probable" violations of state water quality standards than reported by Alyeska (1988).

Pg. 6, last para.

While it is true that Sullom Voe does not have as stringent standards as the new requirements for Alyeska, the old standards were similar despite much greater flushing at Sullom Voe due to strong currents. Off-the-shelf technology exists now in the United States to meet the state's standards at the point of discharge which would eliminate the need for a mixing zone.

Pg. 7, para. 1 & 2

As stated by Alyeska, the PAH are indeed more persistent and harder to degrade than BETX. TAG members find it curious that a biological treatment system that can remove PAH still has so much difficulty with BETX, compounds which should be relatively easier to degrade. This does not make sense.

TAG members have, therefore, recommended studies to clarify the degradation pathways in the biological treatment system with respect to metabolite production and PAH "disappearance." To date, no TAG recommendations have been followed by DEC or EPA.

Pgs. 7 & 8, "Water Quality Standards"

For an excellent summary of development of state's water quality standards for hydrocarbons, see Deming Cowles (attachment #2).

Pgs. 8 & 9 "EPA Compliance"

The entire statement by Alyeska is extremely misleading. Section in quotes refer primarily to the allegations that TAPS tankers were transporting and disposing of substances other than ballast water at the Alyeska facility (nearly identical to 1991 allegations). I

find it interesting that Alyeska and TAPS tanker operators now refer to this as "common practice" and are surprised that EPA and DEC didn't know about it.

Alyeska does not mention that the 1985 investigation also resulted in a Cease and Desist Order by EPA to Alyeska to stop recycling and discharging sludge through the ballast water treatment plant. Documents from Alyeska's files revealed that the plant was producing so much sludge (one estimate was 70 tons per day) that Alyeska asked for Exxon's expert help to deal with the problem which was solved by reinjection, dilution, and ultimate disposal in Port Valdez.

Alyeska does not mention that the Compliance Order, among other things, requested that Alyeska install a system to monitor, remove, and dispose of sludge. Whether this Order has been adequately fulfilled is still unresolved.

Pg. 10, para. 1

Alyeska misrepresents Dr. Howard Feder of IMS who concluded in the latest study (1988) that "it will never be possible to assess changes that occurred in (one area near the outfall) since the oil terminal became operational" because the sampling points for the study were changed.

Pg. 10, para. 2

Alyeska does not tell you that when DEC reviewed the data presented in the 1987 report, DEC found that petroleum hydrocarbon contamination was more widespread than in previous years as it was present in ALL sediments sampled in Port Valdez and that the contamination was highest near the diffuser outfall. DEC concluded that "(these problems) cast serious doubt on several of the conclusions reached in the reports or reported to the media by Alyeska" (Howe 1988).

Pg. 10, last para.

Alyeska fails to tell you that problems with methodology, statistical analyses and quality control have been identified by professional contractors in monitoring studies paid for by Alyeska (Balden Inc. 1988, Howe 1988). Also, Dr. Benjamin (Univ. WA), under contract to the State Attorney General, found similar problems to those identified by DEC (1988).

Pg. 11, para. 1

It is extremely difficult to conclusively link adverse changes in biota to specific compounds as noted by Redburn. Scientists look for trends which is why NOAA was sampling in Port Valdez for their National Status and Trends Study.

Pg. 11, para. 2-5

The NOAA study found a range of low levels of hydrocarbons in the bottom sediments of Port Valdez. A NOAA

scientist stated that the concentrations at the high end of this range could cause possible sublethal effects (reduced reproduction and growth) in benthic organisms. This same conclusion had already been reached by EPA a year earlier, based on IMS data, and had been stated in the EPA 1987 Fact Sheet for the NPDES permit. While more highly contaminated areas were reported in Alaska, the point is the TREND in Port Valdez, as interpreted by the scientist from the data, points towards potential chronic pollution problems.

Pg. 12, para. 2 & 3

Alyeska asserts all is well, but when DEC reviewed Alyeska's data, staff found 508% more "apparent and probable" permit violations than reported by Alyeska. Alyeska now maintains it conducted the studies before the impound basins were converted into biological treatment basins. However, Alyeska has not conducted any verification studies since these - WE HAVE NO FIELD DATA SHOWING ALYESKA IS IN COMPLIANCE WITH THE LAW - yet Alyeska has petitioned for removal of Port Valdez' toxic impairment status.

Pg. 13, last para.

The bioassays showed there was biological toxicity, but chemical analysis of test water showed no BETX compounds were present. According to federal law, if effluent shows biological toxicity, it is grounds to reopen the permit to investigate the cause of the toxicity. EPA HAS NOT REOPENED THE PERMIT FOR THIS INVESTIGATION.

There are no reliable field monitoring data to substantiate Alyeska's claim that "the effluent is diluted well below these concentrations" (see pg. 12 above).

CONCLUSION

IT IS ENTIRELY POSSIBLE THAT MISMANAGEMENT OF THE BALLAST WATER TREATMENT FACILITY HAS RESULTED IN PORT VALDEZ BEING DECLARED A TOXIC IMPAIRED WATERWAY BY THE STATE SINCE 1988. STEPS SHOULD BE TAKEN IMMEDIATELY TO REOPEN THE PERMIT AND INVESTIGATE THE CAUSE OF BIOLOGICAL TOXICITY DEMONSTRATED IN THE EFFLUENT. AGENCIES SHOULD START BY INVESTIGATING CHEMICAL COMPOSITION OF INCOMING BALLAST AND OUTGOING EFFLUENT FOR PRESENCE OF SUBSTANCES OTHER THAN BETX AND NAPHTHALENE AS RECOMMENDED BY THE TAG.

ATTACHMENT #1

TECHNICAL ADVISORY GROUP (TAG) MEMBERS
(TAG is authorized under the NPDES permit)

NAME	EXPERTISE	CONTACT
Dr. Don Button	Microbiology	IMS, Fairbanks 474-7708
Dr. John Karinen	Biology (Effects of oil on organisms)	NMFS, Auke Bay 789-6000
Dr. Ihor Lysyj	Chemical Engineer	Consultant, CAL (805) 644-5535
Dr. Riki Ott	Toxicology Commercial fisher	Cordova: 424-3915 Juneau: 586-2820
Dr. Stan Rice	Biology (Effects of oil on organisms)	NMFS, Auke Bay 789-6000
Dr. Don Weston	Benthic Ecologist	Maryland
Priscilla Lowe		DEC 563-6529
Carrie Schurr		EPA (206) 442-1774
Gene Dickason		Alyeska

ALYESKA BALLAST WATER PRACTICES

IN BOTH 1989 AND 1990, PORT VALDEZ WAS DECLARED A TOXIC IMPAIRED WATERWAY BY THE STATE DUE TO INCREASED HYDROCARBON POLLUTION LOAD. UNDER FEDERAL LAW, EPA MUST INITIATE A THREE YEAR PLAN TO RESTORE THE WATER QUALITY. FOR RESTORATION TO BE SUCCESSFUL, STEPS MUST BE TAKEN TO CHANGE THE PRACTICES THAT RESULTED IN THE IMPAIRMENT.

HOW DID PORT VALDEZ GO FROM A PRISTINE TO A TOXIC IMPAIRED WATERWAY? WHAT SHOULD BE DONE BY ALYESKA, TANKER OPERATORS, REGULATORY AGENCIES, AND OVERSIGHT BODIES TO HALT FURTHER DEGRADATION OF WATER QUALITY IN PORT VALDEZ?

Historic background on the Alyeska terminal operations is in part I. below. Questions for the hearing are in part II. pg. 5, #15 below.

I. BACKGROUND ON ALYESKA TERMINAL

- A. The Alyeska terminal was not built the way Congress approved it to be built; it was not maintained the way state and federal permits say it is to be maintained; and it has not been reviewed and upgraded every five years as Congress intended it to be.

In 1973 Congress authorized the Dept. of Interior to grant the right-of-way to the pipeline owner companies allowing construction of the TAPS and the tanker terminal, Alyeska, thus effectively sidestepping fishermen's lawsuits.

However, Congress acknowledged fishermen's concerns about water quality by 1) approving the Alyeska design drawing which included three pollution control systems (vapor recovery, ballast water, and sludge incinerator) and plans to increase the physical size of the terminal as the amount of oil coming down the pipeline increased; and 2) stipulating in the right-of-way agreement that the ballast water treatment system would be reviewed and upgraded every five years to ensure that Best Available Technology was always being utilized.

The Dept. of Interior was specifically mandated by Congress to carry out oversight of the ballast water treatment operations. The terminal was to be built on federal lands, however, when the state selected these lands, the Dept. of Interior made a unilateral decision that it was no longer responsible for oversight.

1. HOW DO THE PRESENT ALYESKA POLLUTION CONTROL SYSTEMS COMPARE TO THE ORIGINAL DESIGN DRAWING APPROVED BY CONGRESS?

(ballast water holding or "90" tanks: 3 vs. 5
sludge incinerators: 0 vs. 1
vapor incinerators: 3 vs. 5)

2. WHY HAS ALYESKA INCREASED PIPELINE THROUGHPUT WITHOUT INCREASING THE SIZE OF THE FACILITY, INCLUDING THE POLLUTION CONTROL SYSTEMS (ballast water holding tanks, vapor incinerators, sludge incinerator)?

(There are no financial incentives to increase terminal size; i.e., minimal oversight and no fines from regulatory agencies.)

3. HOW MUCH PROFIT HAS ALYESKA MADE FOR THE OWNER COMPANIES SINCE STARTUP?

(Over 14 billion dollars or one billion per year.)

4. HAS ANY FEDERAL (OR STATE) AGENCY EVER CONDUCTED THE FIVE YEAR REVIEW AND UPGRADE OF THE TERMINAL AS PROMISED IN THE RIGHT-OF-WAY AGREEMENT?

(No. The provision for a five year review was to guarantee that Alyeska would always be operating with Best Available Technology.)

5. IS IT POSSIBLE THAT THE PRESENT POLLUTION CONTROL SYSTEMS (such as the ballast water holding tanks and the lack of a sludge incinerator) MAY BE INSUFFICIENT TO HANDLE BYPRODUCTS ASSOCIATED WITH PRESENT PIPELINE THROUGHPUT?

(Yes, as evidenced by the designation of Port Valdez as a toxic impaired waterway thirteen years after startup of Alyeska.)

6. IS THERE ANY EVIDENCE FROM THE ENVIRONMENTAL MONITORING PROGRAMS THAT HYDROCARBONS FROM ALYESKA MAY BE ENTERING PORT VALDEZ IN GREATER THAN ANTICIPATED AMOUNTS?

(Yes, in 1988 DEC reviewed an environmental monitoring study contracted by Alyeska and found 508% more "apparent and probable" permit violations than reported by Alyeska. Also in 1988, in a separate review of Institute of Marine Science work (paid by Alyeska), DEC found petroleum hydrocarbon contamination was more widespread than in previous years as it was present in all sediments sampled in Port Valdez in 1987.)

7. DID DEC OR THE ATTORNEY GENERAL EVER AUDIT ALYESKA'S (or Alyeska's contractors') SCIENTIFIC MONITORING STUDIES? IF SO, WHAT DID THE AUDITS SHOW?

(Yes, in 1958. Audits found problems with scientific approach and techniques. Audits suggested toxic substances in toxic quantities may be entering Port Valdez. Auditors recommended specific actions to evaluate the extent of the problem.)

- B. The ballast water treatment system is overloaded resulting in incomplete removal of hydrocarbons from the effluent. The industry is largely self-monitoring. Limited agency oversight shows that toxic substances in toxic quantities are entering the port.

In 1985 Charles Hamel and the Cordova fishermen filed notice of intent to sue Alyeska and the owner companies over alleged mismanagement of the ballast water plant, resulting in discharges of hydrocarbons (specifically, sludge) into Port Valdez in violation of permits.

After investigating, EPA issued a cease and desist order to Alyeska to stop recycling and discharging sludge through the ballast water treatment plant. Documents from Alyeska's files revealed that the plant was producing so much sludge (one estimate was 70 tons per day) that Alyeska asked for Exxon's expert help to deal with the problem which was solved by reinjection, dilution, and ultimate disposal in Port Valdez.

After completing their investigation, EPA and DEC issued a joint compliance order requesting that, among other changes, Alyeska:

- 1) install a system that samples and monitors discharged effluent for suspended solids (sludge);
- 2) reinstall sludge removal equipment that had been dismantled or build a system that was equal to or better in sludge removal; and
- 3) build facilities for sludge treatment and disposal.

Alyeska responded by designing and building the biological treatment system, but no facilities were built for sludge treatment and disposal.

8. I UNDERSTAND THAT OIL IS COMPOSED OF MANY DIFFERENT TYPES OF HYDROCARBONS. DO THE BACTERIA IN A BIOLOGICAL TREATMENT SYSTEM DEGRADE ALL THESE DIFFERENT HYDROCARBONS EQUALLY FAST?

(No. Aliphatic hydrocarbons or alkanes are degraded most readily. Single or double benzene ring aromatic hydrocarbons are much harder for bacteria to degrade however, these compounds, known as BETX and naphthalene, tend to evaporate readily from water. Multiple benzene ring compounds or polycyclic aromatic hydrocarbons (PAH) are extremely difficult for bacteria to degrade.)

9. WHAT HAPPENS TO HYDROCARBONS THAT ARE ONLY PARTIALLY DEGRADED BY THE BACTERIA?

(Partially degraded hydrocarbons or metabolites are released in the effluent into Port Valdez. Alyeska is NOT required to monitor for these compounds some of which are highly toxic and carcinogenic.)

10. WHAT IS SLUDGE AND WHAT HAPPENS TO IT?

(Sludge is composed of PAHs, heavy metals, and other compounds that settle out during biological treatment to collect in the bottom of impound basins. Compounds in sludge are potent toxins, carcinogens, and mutagens to organisms including humans. When the impound basins are cleaned, sludge is removed and disposed of according to strict regulations. When concentrations of specific priority pollutants exceed EPA criteria, sludge is regulated as a RCRA hazardous waste.

Where IS the sludge at Alyeska? Critics speculate that it is going out into Port Valdez - unmonitored and unchecked.)

11. DOES THE PRESENT BALLAST WATER TREATMENT SYSTEM AT ALYESKA HAVE ANY FACILITIES FOR SLUDGE TREATMENT AND DISPOSAL? IF NO, WHY NOT?

(No, because of lack of oversight.)

- C. BACKGROUND: EPA and DEC reduced the amount of hydrocarbons Alyeska can legally discharge when the NPDES (discharge) permit was reissued in June 1989. However, key provisions proposed by DEC technical staff were omitted or weakened in the final permit.

12. WHY WAS THE PROVISION FOR SLUDGE MANAGEMENT AND DISPOSAL DELETED IN THE 1989 DISCHARGE PERMIT FOR ALYESKA?

(Industry lobbying and EPA/DEC compromise.)

13. IN LIGHT OF THE TOXIC IMPAIRMENT STATUS OF PORT VALDEZ WATERWAY, WHY WAS ALYESKA GRANTED A TECHNOLOGY-BASED PERMIT?

(Alyeska maintained that the biological treatment system is prone to upset conditions (bacteria die-off) and a technology-based permit allows them to exceed water quality standards during upset conditions.

However, under federal law, EPA is required to issue the more stringent water quality-based NPDES permit for industries operating in waterways with toxic impaired status.)

14. WHAT COULD CAUSE UPSET CONDITIONS IN THE BIOLOGICAL TREATMENT SYSTEM?

(Introduction of substances other than North Slope crude into the ballast water tanks; i.e., tank cleanings, tank washings, chemicals and detergents.)

II. QUESTIONS ON TANKER OPERATIONS REGARDING BALLAST WATER

THE BALLAST WATER TREATMENT FACILITY, INCLUDING THE BIOLOGICAL TREATMENT SYSTEM, IS NOT DESIGNED TO REMOVE ALL THE BETX COMPOUNDS, SLUDGE, HEAVY METALS, AND OTHER HYDROCARBONS. PORT VALDEZ' STATUS AS AN IMPAIRED WATERWAY INDICATES THAT THE PRESENT FACILITY IS NOT REMOVING POLLUTANTS EFFICIENTLY. IF MORE POLLUTANTS ARE LOADED INTO THE BALLAST WATER TREATMENT SYSTEM VIA TANKER BALLAST, IT CAN ONLY RESULT IN MORE POLLUTANTS FLOWING OUT TO PORT VALDEZ VIA THE ALYESKA FACILITY.

- A. BACKGROUND: Tankers have been reported to be transporting illegal, toxic, and even hazardous substances in their ballast water for disposal at Alyeska. Such "common practices" could well have contributed to mismanagement of the ballast water treatment facility, the chronic pollution of Port Valdez, and the designation of this waterway as toxic impaired.

15. WHAT IS YOUR LEGAL INTERPRETATION OF "BALLAST WATER" IN REGARDS TO TANKERS CALLING AT THE ALYESKA MARINE TERMINAL?

(Ballast water means harbor, river, and seawater drawn in through the sea chest below the waterline and added to tankers' cargo tanks to maintain proper ship stability when not loaded with cargo.

what
allowed
DPV

Bilge water means water which collects in the lower internal parts of a tanker's machinery spaces and which may be contaminated with oil, grease, and/or cleaning agents.

Ballast water may also contain decanted oil contaminated slop tank WATER and rainwater/deck drainage from the tanker's deck which is routed to the slop tanks only while in port.)

16. TO YOUR KNOWLEDGE, HAVE SUBSTANCES BEEN INTRODUCED THROUGH THE CARGO LINES OR OVER THE DECK OF TANKERS IN YOUR FLEET AND TRANSPORTED TO ALYESKA FROM JANUARY 1, 1986, TO THE PRESENT? IF SO, WHAT TYPES OF SUBSTANCES?

(EXXON PHILADELPHIA transferred slops on February 20, 1989, to EXXON VALDEZ as noted by Second Engineer Ray M. Jones in the Engineer's Relief Note files. The EXXON VALDEZ discharge certificate affidavit indicates only tanker EXXON VALDEZ ballast water drawn in through the sea chest were discharged at Alyeska for treatment on February 28, 1989.)

17. TO YOUR KNOWLEDGE, HAVE SUBSTANCES BEEN TRANSFERRED FROM OTHER VESSELS IN YOUR SERVICE, INCLUDING THOSE IN THE ALASKAN TRADE DESTINED FOR DRY DOCK AND THOSE VESSELS NOT IN THE ALASKAN TRADE, TO TANKERS IN YOUR FLEET AND TRANSPORTED TO ALYESKA FROM JANUARY 1, 1986, TO THE PRESENT? IF SO, WHAT TYPES OF SUBSTANCES?

(On August 4, 1989, EXXON ordered the transfer of 8,000 tons of tank washings and other substances from the self-propelled barge EXXON GALVESTON to the tanker EXXON VALDEZ to be diluted as part of her 21,203 tons of sea water ballast. Discharge at Alyeska occurred on August 14, 1989. The EXXON GALVESTON is a lightering barge, not a tanker in the North Slope trade; it has never been to Alaska.

Prior to dry-docking in 1987 and again after the EXXON VALDEZ spill, the EXXON GALVESTON was cleaned and vapor-freed by use of many tons of corrosive chemicals to compensate for her lack of the normal hot water-Butterworth cleaning system. The resultant tons of scale, chemicals, and sludge were transferred to Alaska-bound EXXON tankers for ultimate disposal at Alyeska to save disposal charges by the Portland ship yard.)

18. TO YOUR KNOWLEDGE, HAVE SUBSTANCES BEEN TRANSFERRED FROM SHORE TANKS OR BARGES TO TANKERS IN YOUR FLEET NORTHBOUND TO ALYESKA FROM JANUARY 1, 1986, TO THE PRESENT? IF SO, WHAT TYPES OF SUBSTANCES?

(Is this common practice for ARCO?

Also, the EXXON BATON ROUGE loaded cargo from the shore terminal at Honolulu, Hawaii, on April 9, 1989, and discharged it at Alyeska on April 16, 1989, as "ballast water". The cargo was tank cleanings and waste from the EXXON HOUSTON prior to her drydocking in Ulsan, Korea, to save disposal charges by the Korean ship yard.)

19. TO YOUR KNOWLEDGE, HAVE DIESEL POWERED TANKERS IN YOUR FLEET TRANSFERRED OR DISCHARGED DIESEL SLUDGE TO BALLAST WATER FOR DISPOSAL AT ALYESKA FROM JANUARY 1, 1986, TO THE PRESENT?

(EXXON'S three diesel tankers the LONG BEACH, BAYTOWN, AND VALDEZ had their piping reconfigured to allow pumping of sludge from their diesel fuel filters into the ballast water, thus evading costly Federal and California toxic waste disposal statutes.

This practice of adding diesel sludge to ballast water for disposal at Alyeska also occurs with the BP charters OMI COLUMBIA AND OVERSEAS BOSTON.)

20. WHAT IS BEING DONE TO CORRECT THIS SITUATION?

(EPA notified Alyeska on February 22, 1991, that it will no longer accept, without special permission from EPA, any ballast water that originates from a vessel other than the vessel from which it would be discharged at Alyeska.

Because of the toxic impaired status of Port Valdez waterway and the legal definitions of ballast water defined in the NPDES permit and compliance order, it is questionable whether EPA should be allowing this practice at all.)

REQUEST FROM ALYESKA OWNER COMPANIES AND SHIPPERS the following information concerning the content of ballast water shipped into Port Valdez or other Alaskan waters from January 1, 1986, to the present:

1. records of substances introduced through the cargo lines or over the deck; i.e., substances introduced other than through the sea chest (sea water, river water, or harbor water);
2. records of transfers from other vessels including those in the Alaskan trade destined for dry dock and those vessels not in the Alaskan trade;
3. records of transfers from shore tanks or barges;
4. for diesel powered tankers, records of diesel sludge transfers into ballast water and transported to Alyeska; and
5. records of segregated ballast tank capacity of each ship in your fleet or charter that sails to Alyeska.

MEDIA

outward signs of illness.

Through assisted employment, they learn their assigned tasks at their own pace, aided by a job coach, and without much of the stress normally associated with taking a new job.

"This is a safer way to introduce them (to work) in an integrated set-

for more willing employers, although she would rather avoid the stereotypical fast-food and dishwashing positions, often the only kinds of work offered to the mentally ill.

Instead, she is looking for a wider gamut of entry-level jobs, ranging from data entry to veterinary

to ease workers into good work habits, at the same time mastering basic skills. Both offer minimum-wage positions.

While the rag shop is a storefront operation, Dustbusters is a five-person janitorial crew that holds contracts for four buildings in

(See JOBS, Page B-6)

Oil and gas committee to revisit tanker waste issue

Are the North Slope oil companies using Valdez as a toxic waste dump?

In early February a former oil tanker broker, Charles Hamel of Alexandria, Va., told the U.S. attorney general and Environmental Protection Agency that Exxon was flushing out its oil tankers and putting the waste water into north-bound tankers headed for Valdez.

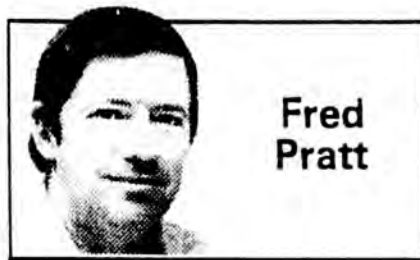
Certain cleaning agents are sometimes used that contain hazardous chemicals the Valdez ballast water treatment plant isn't designed to remove. The concern is that these wastes go right through the ballast water treatment plant and into Valdez Arm, providing Exxon with an easy and cheap way to dispose of wastes it would otherwise have to pay someone to take.

Hamel, an oil industry gadfly involved in several lawsuits with Exxon, suggested that the settlement of criminal and civil claims against Exxon from the Exxon Valdez oil spill should include a direction stopping this practice.

Hamel's allegation was based entirely on hearsay evidence he received from talking with Exxon employees. However, the state of Alaska found a small piece of corroborating evidence from the mountains of material it gathered in the Exxon Valdez case.

The state holds a hand-written set of instructions from one second mate to another relieving him on the Exxon Valdez saying specifi-

cally that the Exxon Valdez will "take 50,000 barrels of tank washing" from the Exxon Galveston, a small lightering tanker that takes North Slope oil from Exxon



Fred Pratt

tankers through San Francisco Bay.

The State House's Special Committee on Oil and Gas held a hearing on the matter March 15, but unfortunately it was nothing more than a forum for the oil companies to deny they were doing anything wrong.

Exxon's denials seem aimed at pleading innocent to doing something nobody accused them of doing in the first place.

The committee has scheduled a second hearing for 1 p.m. Tuesday, available to listeners on the Legislature's teleconference network.

Even after all the denials, Alyeska Pipeline Service Co. environmental manager Gene Dickason made some interesting admissions at the March 15 session.

He did confirm that cleaning agents are used to wash out tankers

before they go into drydock, so that they're clean enough for workers to enter them.

"The available facilities on the West Coast have a limited capacity to receive and treat tank washings and ballast," Dickason told the committee. "As a result, either the ballast may be stored on shore and then returned to vessel for its subsequent trip to Valdez or they are transferred to another north bound TAPS trade vessel for discharge to the ballast water treatment facility in Valdez."

Exxon's spokesman maintained that this isn't happening, or if it is, it's not illegal.

According to later information given the committee by the EPA, however, the practice of discharging waste from other tankers violates the permit under which the Valdez terminal operates and EPA has advised Alyeska it must get prior approval from both EPA and the State of Alaska before it does it again.

According to some materials I've received from the committee, more evidence is coming out about the practice.

For instance, a state affidavit shows the Exxon Baton Rouge loaded cargo from a shore terminal in Honolulu April 9, 1989, and discharged it in Valdez April 16 of that same year. The cargo was "slop tank content" from cleaning the Exxon Houston before drydocking.

(See PRATT, Page B-6)

From the Daily News-Miner

7 April 1991

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houses that center staff manage.

generating some interest," ack-
nowledged J. Nicholas Hahn, chief
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20,000 cotton growers. But he con-
tended it poses no real threat to cot-
ton's dominance.

"Over the years, they've tried
various tactics to fan a little life

Pont's campaign: "Begins."

Mary McFadden dresses of microfibre fall collection, selling apiece. Sabato Rus-
signer, offers microfibre cost as much as \$900 is making women's microfibre with price than \$1,300. And designers and retailers, from the Limited, are microfibre fabrics and

PRATT: Muddying waters

(Continued from Page B-1)
since the Korean shipyard the Ex-
xon Houston was bound for charged
for disposal of such waste.

Is this doing any harm in Valdez?

Port Valdez has been declared a
"toxic, impaired waterway" by the
EPA, a status that means steps
must be taken to improve water
quality.

Hydrocarbons are accumulating
in sediments near the ballast water
treatment plant outflow, and in
mussels near the terminal. Inter-
estingly, the problems have only been
detected since 1985, about when
tankers were barred from flushing
tanks at sea and industrial waste

disposal became a more expensive
and publically advertised issue.

It's important to note that nobody
has revealed exactly what these
cleaning agents are yet, or even if
they are petroleum-based. Also,
changes in location of the Universi-
ty of Alaska's sampling sites near
the Valdez terminal mean these
data can't prove long-term effects.

One state summary notes a
"marked decrease" in bottom-
dwelling sea life near the terminal
outflow since 1985, but attributed
this most likely to natural environ-
mental changes.

■ Free-lance journalist Fred Pratt has
been covering Alaska business and politics
for the past 18 years.

Some have put
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Group disputes permit

Fishermen ask EPA to halt work

By PATTI EPLER

Daily News reporter

A Cordova commercial fishermen's group has asked the U.S. Environmental Protection Agency to suspend work on a new permit for the Valdez oil-shipping terminal.

The Cordova District Fishermen United is concerned that studies done for Alyeska Pipeline Service Co. by a private consulting firm — studies on which EPA is basing the new permit — are scientifically unsound and possibly were prepared illegally.

At the same time, the fishermen have asked the state Department of Environmental Conservation to hire Ihor Lysyj, a highly regarded California chemist, to review numerous pollution-control studies prepared for Alyeska by Woodward-Clyde Consultants, a worldwide environmental consulting firm.

The fishermen said it was Lysyj's methodology Woodward-Clyde used in conducting tests of a new treatment technology, that Lysyj is a recognized expert in wastewater treatment methods and that he has conducted several previous studies of the Alyeska plant for both DEC and EPA.

Additionally, the CDFU noted that Woodward-Clyde is being investigated by the state for practicing chemical engineering in Alaska without a license.

"If Woodward-Clyde 'overlooked' the appropriate legal channels to conduct business within the state, we are concerned they may have 'overlooked' the appropriate scientific protocol as well," said Fredericka Ott, a CDFU board member, in a Jan. 6 letter to EPA.

DEC officials said they had

EPA: Fishermen want permit work to be suspended

Continued from Page C-6

not reviewed the letter and EPA officials could not be reached Tuesday.

State commerce officials, who conducted the Woodward-Clyde investigation, have turned their findings over to the attorney general's office for review and would not comment on the case, saying it is "an ongoing investigation."

Bill Pyle, Woodward-Clyde's Alaska manager, was hesitant to talk about the allegations until the state has finished its investigation.

But, he said, the company doesn't believe it violated licensing regulations because the work it did for Alyeska is considered environmental engineering, which the company is licensed for, and not chemical engineering.

"The people on the project were extremely well-qualified to do the work," Pyle said.

EPA has been investigating environmental pollution at Alyeska's ballast water treatment facility in Valdez for nearly three years. The agency is working on a final version of an environmental permit that governs the discharge of oily wastewater into Port Valdez — water that has been carried on tankers as ballast and must be cleaned before it can be emptied into the port.

Last year, Alyeska began using what the company says is an improved treatment method, a biological oxidation process in which bacteria essentially eat the hydrocarbons out of the wastewater, according to environmental officials.

The treatment method was started after laboratory tests by Woodward-Clyde showed the method would remove substantially more hydrocarbons.

But the fishermen, citing comments from a University of Alaska scientist and a DEC chemist, say the Woodward-Clyde study is being "con-

Attached #5

The long-overdue environmental permit is too important to the safety of the marine ecosystem for EPA to fashion the permit without a sound scientific review of the study, the fishermen said.

Ott, a scientist who specializes in oil pollution, said Don Button, a microbiologist with the University of Alaska Fairbanks and David Knuth of DEC challenge the scientific soundness of the tests.

"To me, it is a gross oversight on the part of the regulatory agencies to base a permit upon data which is hotly contested within the scientific community," Ott wrote to DEC Commissioner Dennis Kelso.

In October, Knuth criticized Woodward-Clyde's report on the effectiveness of biological treatment, saying the company reached incorrect conclusions through the use of poor scientific practices. He suggested the toxic hydrocarbons might simply be going into the atmosphere or absorbed by rubber stoppers used in the laboratory studies.

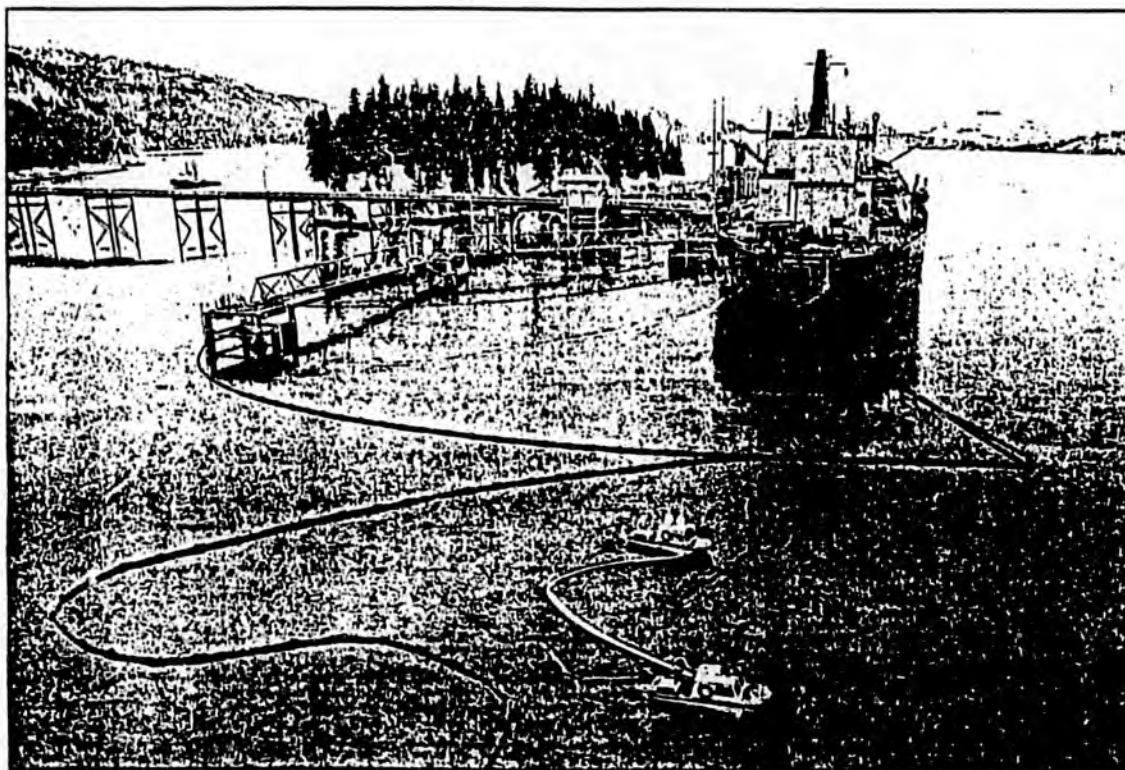
Button has written several letters to EPA about the biological treatment process touted by Alyeska and Woodward-Clyde. Generally, he challenges the effectiveness of the treatment method because bacteria doesn't grow well in cold water. Button also has suggested the toxic compounds might be simply going into the air or being turned into more lethal substances by the treatment method.

Am Daily News

1-13-88

Despite years of warnings from its field staffers about Alyeska's poor oil-spill preparedness, the DEC did next to nothing.

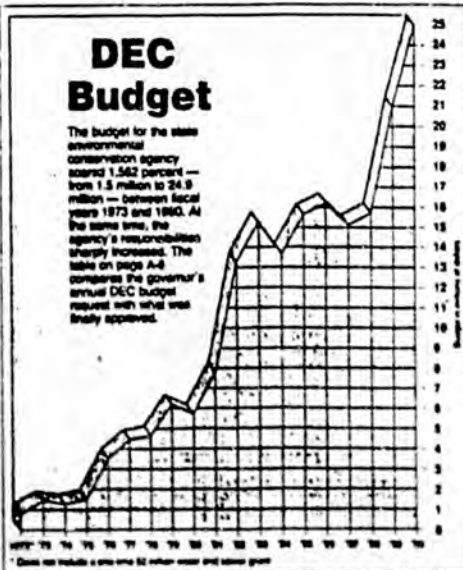
PAPER TIGER



Crews on two small boats clean up oil spilled into Valdez Harbor this February while the tanker Mobil Arctic loads oil. Critics of the Department of Environmental Conservation have questioned the agency's resolve in demanding that oil companies have enough gear and well-trained people to respond swiftly and effectively to any oil spills.

DEC Budget

The budget for the state environmental conservation agency soared 1,562 percent — from 1.5 million to 24.9 million — between fiscal years 1973 and 1980. At the same time, the agency's responsibilities sharply increased. The table on page A-6 compares the governor's annual DEC budget request with what was finally approved.



Department leaders put no real heat on Alyeska

By PATTIEPLER

Daily News reporter
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For more than a decade before the Exxon Valdez oil spill, top officials of the Alaska Department of Environmental Conservation ignored warnings from their own staff and failed to make oil companies prepare for a major spill in Prince William Sound.

Year after year, DEC staffers, some Alyeska Pipeline Service Co. employees and others warned that catastrophe was likely if Alyeska wasn't ordered to upgrade its equipment and teach cleanup workers to do their jobs, a Daily News investigation shows.

Yet beyond noting the critical field reports, DEC administrators did little to force Alyeska to do better. Every DEC administration since oil began to flow in 1977 has been ineffectual against a stubborn and miserly Alyeska, which behaved as

though a big spill would never happen, according to public records and interviews with former and current state, federal and industry representatives.

Alyeska, the consortium of seven oil companies that own the pipeline and Valdez terminal, cannot legally operate its shipping facility without state approval of a plan to deal with oil spills in Port Valdez and Prince William Sound.

Yet DEC never moved to withhold its approval as a way of forcing Alyeska to improve oil-spill response. The agency never cited or took any other enforcement action against the pipeline company, a fact that Alyeska now says shows DEC was satisfied with its plan and performance.

As a result, the agency effectively ignored the danger posed by the giant oil tankers and, critics say, shares the

Please see Page A-6, DEC

blame for the devastation from the March 24 spill. The tanker Exxon Valdez, maneuvering to avoid ice, smashed into Bligh Reef about 25 miles from Alyeska's shipping terminal, spilling 11 million gallons of North Slope crude in what has become the nation's worst tanker spill.

"The adjective that most comes to mind when I think of DEC is spineless," says Pat Saunders, a veteran environmental lawyer. "There is this perception about how powerful (the oil companies) are and DEC is not willing to tackle them."

NOT A HIGH PRIORITY

The tanker fleet has spilled small amounts of oil in Prince William Sound more than 400 times during the past dozen years, so DEC officials have had ample opportunity to assess Alyeska's spill preparations. In addition, Alyeska conducts periodic drills for its crews and equipment.

In simulated spills and real ones, DEC has watched Alyeska in action and repeatedly found the company's efforts barely adequate, or worse. Containment booms sank, skimmers clogged and cleanup crews bumbled while oil escaped into open water or washed up on beaches.

Time and again, DEC staffers complained that much of Alyeska's equipment wasn't suitable for the harsh Valdez environment and wouldn't stand a chance against a big spill.

After Alyeska disbanded its full-time spill response team in 1981 and cut back on equipment, DEC staffers wrote impassioned reports warning of disaster and calling for action. They got little support from their superiors.

Alyeska's oil spill plan "just never seemed to be a priority," says Randy Bayliss, former head of the DEC's Valdez office. For years Bayliss tried to get his bosses to order stronger oil spill precautions. "There was always something bigger and more important."

In recent years, prodded by citizen complaints and news coverage, DEC has toughened its stance on water and air pollution at the Valdez terminal. But it continued to largely ignore the tankers that carry billions of gallons of crude oil out of Alaska.

Dennis Kelso, the head of DEC since January 1987, had never been to Valdez as commissioner before the Exxon tanker smashed into Bligh Reef on March 24. When he arrived at the ship that afternoon, his own staff didn't know who he was.

That was the day the staff was vindicated. Alyeska crews took at least 14 hours to find equipment — some of it buried in deep snow — and load it on a barge. Once at the site of the spill, booms and skimmers the state had found acceptable on paper proved inadequate on the water.

Much of the oil that killed animals and birds and blackened a thousand miles of shoreline could have been scooped up by better equipment and trained crews, a study by the General Accounting Office, the investigative arm of Congress, concluded. GAO said more than 4 million of the 11 million gallons released could have been collected before control of the spill was lost to bad weather on March 27.

"It is not surprising that major problems were encountered because no one had realistically prepared to deal with a spill of this magnitude in Prince William Sound," GAO associate director Victor Rexendes told a congressional committee five months after the spill.

Cowper, Kelso and other state leaders were quick to point angry fingers at Alyeska and Exxon. Kelso and Cowper have continually rejected any suggestion that DEC shares the blame.

Kelso says weak laws didn't allow DEC to force Alyeska to acquire the equipment and train the personnel to handle a big spill.

He also says the legislature was at fault because it wouldn't give DEC money to review contingency plans and police



Dennis Kelso: The commissioner says DEC shares no blame for the effects of the spill.

But Kelso didn't need a new review of the Alyeska plan. His own staff was already telling him that Alyeska, with its aging equipment and untrained workers, could not handle a major spill. In June, six months after becoming commissioner, Kelso approved Alyeska's spill plan without ever reading it or asking much about it.

MISMATCHED TUG-OF-WAR

DEC and Alyeska are like fraternal twins, born of the same circumstances but opposite in nature.

Alyeska was formed in 1970 by the major Alaska oil producers to build and operate the trans-Alaska pipeline and Valdez shipping terminal. DEC was created by the legislature in 1971 to oversee construction of the pipeline and oil development in general.

DEC has always been starved for resources. For nearly 20 years, since its birth, the agency's workload has mushroomed as complex environmental and public health programs evolved. The Cowper administration pushed for two years to increase DEC's budget and succeeded in getting more money from the legislature.

Alyeska, on the other hand, has always had plenty of money to run the pipeline and terminal. Its owners give it whatever it needs, according to Alyeska and owner company officials. Alyeska has made more than \$12 billion for its owners in the past dozen years, a state report says.

In the field, DEC and Alyeska have never gotten along. Last summer, Alyeska refused to allow DEC inspectors access to the terminal, saying Dan Lawn, the agency's chief Valdez investigator, was a "jerk" and a "troublemaker."

Since 1977, there have been three oil-spill contingency plans covering Port Valdez and Prince William Sound. State law requires every terminal and tanker operating in Alaska to submit a document detailing how a spill would be handled. Regulations govern how much equipment facilities must have and allow the state to hold drills to check a company's readiness.

The plans must be reviewed and re-approved every three years, although for Alyeska as well as some 400 others who come under the law that schedule has slipped badly. DEC administrators say they don't have the resources to keep up with the reviews, let alone inspect equipment and personnel.

DEC staffers who reviewed Alyeska's first plan in 1977 asked for major changes.

"Alyeska's Valdez Terminal Oil-Spill Contingency Plan, in almost every major facet, contains mistakes and inadequacies

demonstrates microscopic thinking and, worse, omits major functions that are necessary," the DEC's Randy Bayliss wrote to his bosses in 1976.

"The initial plan is so bad, the department should consider prosecution for violation of solid-waste regulations."

Bayliss believed Alyeska needed more containment boom — floating fences designed to keep oil from spreading. He wanted more boats and people and more thought given to cleanup techniques.

At least 50,000 feet of boom was needed to combat a spill in Prince William Sound, the state said in 1977.

Alyeska complained that to deploy that much boom "would be like the Normandy invasion," according to a state summary of a

DEC BUDGET Fiscal Years 1973-90

Year	Governor's Request	Final Budget
1990	\$25.3 million	\$24.9 million
1989	\$22.0 million	\$21.0 million
1988	\$15.3 million	\$15.8 million
1987	\$17.1 million	\$15.1 million
1986	\$17.0 million	\$16.1 million
1985	\$15.7 million	\$15.7 million
1984	\$13.9 million	\$13.6 million
1983	\$16.4 million	\$15.4 million
1982	\$13.7 million	\$13.4 million
1981	\$9.1 million	\$7.8 million
1980	\$7.6 million	\$8.0 million
1979	\$8.3 million	\$6.2 million
1978	\$4.7 million	\$4.7 million
1977	\$4.4 million	\$4.5 million
1976	\$3.2 million	\$3.6 million
1975	\$1.6 million	\$1.5 million
1974	\$1.6 million	\$1.5 million
1973	\$1.8 million	\$1.5 million

Source: Alaska Department of Environmental Conservation

March 1977 meeting between regulators and industry.

When the plan was finally approved a few weeks later, Alyeska was allowed to keep only 19,000 feet at the Valdez terminal.

Twelve years later, when the Exxon Valdez ran aground, the company had about 29,000 feet of boom on hand. But even that wasn't enough to stop the spread of oil in the Sound, even with three calm days after the accident. Cleanup experts doubt that the state's proposed 50,000 feet would have stopped much oil either, although they say it might have contained some of what eventually splattered beaches.

Alyeska "has maneuvered the government into accepting a shoddy piece of work," Al Carson, a state Department of Fish and Game official, wrote to the state pipeline office in June 1977, referring to Alyeska's contingency plan in general.

It was a month before pipeline operations were to begin, but no one was listening.

"The people with the authority were lame-duck administrators by the time they got to that end of it," says Bayliss. "They got the pipeline constructed and the last thing they wanted was to be annoyed with these details about the contingency plan."

WATCHDOG THAT DIDN'T BARK

On Aug. 1, 1977, the Arco Juneau cast off from the Alyeska terminal with the first tanker-load of North Slope crude. Since then, tankers have made more than 8,000 trips across the Sound. Occasional engine failures threatened catastrophe, but until the Exxon Valdez no tanker had run aground in Prince William Sound.

Even so, before March 24, millions of gallons of North Slope crude oil had spilled from tankers, but always elsewhere — in Puget Sound, the Gulf of Alaska, Cook Inlet or off the coast of Hawaii.

Small spills in Port Valdez were frequent and cleanup efforts largely ineffectual, according to the DEC. Early on, DEC staffers in Valdez named a group of tankers "The Dirty Dozen" for repeated small spills caused by sloppy loading or poor maintenance.

In September 1977, barely a month after tankers began calling at Valdez, the tanker Glacier Bay leaked 500 gallons through an 18-inch crack in its hull. Cleanup efforts failed to contain the oil, which washed up on beaches as far as seven miles away.

Coincidentally, scientists and government officials met in Anchorage that same day to debate oil spill responses in the aftermath of another tanker spill, the Argo Merchant, which a year before had sunk off the coast of Massachusetts, spilling its entire cargo of 7.6 million gallons of heavy industrial fuel.

On a couple of snowy days in December 1977, Bayliss and other DEC staffers spent long, dusty hours in Alyeska warehouses and its small-boat harbor checking on the oil-spill gear Alyeska had promised to have in Valdez.

"The examination revealed that a large amount of the equipment . . . is missing or not in condition for immediate operation," tanker specialist Bill Publicover wrote to Alyeska later. He noted that Alyeska had violated regulations by failing to notify the state that essential equipment was broken or missing.

But that was as far as the state went. No fines were levied or charges filed. No effort whatsoever was made to force the pipeline company to do what it had promised.

The state got another chance to review Alyeska's contingency plan in 1981. DEC staffers found numerous deficiencies. But when the agency signed off on the new plan in 1983, it had done little to improve protection of Prince William Sound against a major oil spill.

DEC's Valdez staff called the plan "superficial at best." Dan Lawn, by then the DEC's chief oil spill specialist in Valdez, pointed out that Alyeska's equipment couldn't clean up oil as fast as the company said it could, nor could it reach some parts of the Sound as quickly as it claimed.

One of Alyeska's most significant cutbacks in spill response came in 1981 when it disbanded its full-time oil spill team. The employees were absorbed into regular terminal operations or laid off. Workers in other jobs were trained to respond to spills, according to Alyeska.

DEC objected to the team's dismantling, but did nothing to force Alyeska to keep the oil-spill team.

In fact, the one substantive improvement in Alyeska's response ability came about only because a loaded tanker narrowly avoided a disastrous grounding and frightened regulators into action.

On Jan. 17, 1980, 90 mph winds buffeted the Gulf of Alaska near Hinchinbrook Entrance. The tanker Prince William Sound, filled with 35 million gallons of crude oil, was about to leave the relative safety of the Entrance when a small electrical component malfunctioned. The ship went dead and its crew was unable to re-start the engine.

The captain used his last bit of steam to make a U-turn in the middle of the Entrance, an act that officials later credited with saving the ship and its cargo. The tanker drifted back into the Sound.

For 17 hours it floated powerless while tugs tried to get lines on it. One tug swamped in the heavy seas, and the tanker was minutes from smashing into Fairmount Reef when it finally re-started its engine.

The close call scared both DEC and the Coast Guard. DEC added a section to the contingency plan that required tankers to be fitted with a system of lines, cables and shackles — a towing package — so tugs could more easily hook up in foul weather.

Though the accident made clear the potential for a catastrophic spill, the towing requirement was the only improvement in the Alyeska contingency plan for which DEC could take credit. The agency approved the plan in January 1983, with DEC administrators promising a tougher look at the plan when it came up for review again in 1986.

For the next few years, DEC staffers continued to document serious shortcomings in Alyeska's spill plan, as well as other problems at the terminal.

Lawn, the most persistent critic, told his superiors in May 1984: "Over the past several months, there has taken place a general disemboweling of the Alyeska . . . operational plan," including the oil spill response program.

Response capabilities were hurt by the loss of the dedicated spill team, Lawn said, because there weren't enough workers trained both to handle oil loading and respond to spills.

Spill equipment was outdated and training programs had been cut, he said, yet the number of tankers calling at the terminal — and thus the chances for a major spill — were increasing.

When the terminal opened, 34 tankers a month docked at the terminal. When Lawn was writing the memos, about 50 tankers called each month. Now about 75 a month make the stop.

On Oct. 17, 1984, Alyeska invited state and federal officials to observe a drill in which Alyeska pretended a tanker spilled oil at the dock, and surrounded the "spill" with boats, booms and skimmers.

An hour later, according to a federal account, the main boom drifted under a tanker and sank. A workboat wasn't powerful enough to pull it out of the water. Another boom was too short to reach shore, leaving a 30-foot gap through which "oil" escaped.

The drill was canceled when high seas "jeopardized the safety" of Alyeska's main deep-water containment gear, which was what the company apparently planned to use in rougher water outside the port area in the event of a real spill.

"Equipment and manpower may not be appropriate for the environmental conditions of Port Valdez," the Environmental Protection Agency wrote in a critique of the drill. Keeping contingency equipment stored at various places throughout the facility slowed the response and training was inadequate, the report said.

"At this time, EPA is not confident Alyeska is prepared to efficiently respond to

a major spill event," the EPA's Alaska chief, Ron Kreizenbeck, wrote in a November 1984 letter to the Coast Guard. He asked that "appropriate actions" be taken to make sure Alyeska could protect Port Valdez from a spill.

The Coast Guard dismissed Kreizenbeck's concerns as unwarranted. The Coast Guard said Alyeska had hired a new terminal superintendent and new oil spill coordinator a few weeks after the drill and was trying to do better.

But the concerns of the EPA and DEC were echoed by Alyeska's own employees, including its manager of oil-spill cleanup operations, who warned that Alyeska should not attempt to clean up a spill in Prince William Sound.

James Woodie, a former Valdez Coast Guard commander who went to work for Alyeska as its marine superintendent in 1982, was worried about the age of the equipment as well as reductions in trained response personnel. "Response to any spill (beyond the general port area) should not be attempted with present equipment and personnel," he wrote to Alyeska officials in 1984. Woodie had recently been fired from Alyeska for insubordination and later lost a lawsuit challenging his termination.

"We can no longer ignore the routine monitoring of Alyeska," Lawn warned his own superiors at DEC on May 1, 1984, "unless we do not care if a major catastrophic event occurs."

TANKERS ON THE BACK BURNER

A week after Bill Ross took over as DEC commissioner in 1985, Dan Lawn's memos landed on his desk. The DEC staffers responsible for Valdez and Alyeska wanted to know what he wanted them to do. Ross recalled recently.

But Alyeska also had other serious environmental problems, including its ballast water treatment plant, which was suspected of dumping too much oily waste into Port Valdez.

"Was ballast water being discharged into the bay a worse problem than a potential oil spill?" Ross asks now. "At the time I decided I had to go with ballast water."

The contingency plan — which was about to expire — was considered the second most important Alyeska problem, but still scored low on Ross' list of pressing environmental issues. It fell behind placer mining, widespread oil pollution in Kenai, water quality problems in Anchorage, and subdivision development in the Matanuska-Susitna Valley.

In his 22 months as commissioner, Ross visited Valdez twice. He toured the Alyeska facility and listened to his staff's concerns about potential oil spills.

Meanwhile, Alyeska continued to spill oil and its cleanup efforts continued to fall short. A 700-gallon spill from the tanker BT San Diego in April 1986 proved tough for Alyeska to pick up, even in the port.

"Clean-up equipment did not function, clean-up personnel were not available, supervision was lacking," DEC Valdez field officer Tom McCarty wrote to his superiors on April 17, 1986.

Help from contract laborers and an outside spill expert "came too late," he said, noting that much of the oil from the BT San Diego had already escaped containment.

DEC staff were already painfully aware that Alyeska's ideas of how to handle a spill looked better on paper than in reality.

"It appears to me that the major problems may not be with the technical contents of the plan but instead with the execution of the plan in the field," Paul O'Brien, the DEC's oil program manager, wrote in an October 1985 memo to Ross. He described problems with training, communications and equipment.

"It is important and necessary to address the allegations," O'Brien told Ross, "so that the public clearly sees that the department is doing something about Alyeska's (contingency) plan and response capability."

They almost never do surprise inspections. If somebody tells them to go away, they just do.

— Patti Saunders

O'Brien and Ross decided Alyeska should prove it could cope with a spill. They decided to hold an "unannounced" drill — the first ever required by DEC.

But the drill, when it happened in November 1986, was very much announced. Alyeska officials, saying they were worried about disrupting tanker traffic, persuaded DEC to hold the drill on a day they picked. Alyeska had all its equipment and people ready — something that wouldn't be likely with a real spill.

Even with plenty of warning, Alyeska barely passed the test. The "spill response was acceptable, I feel, but not by a wide margin," concluded the DEC's Pat Cyr in an evaluation of the drill.

Cyr urged another "unannounced" drill. None ever occurred.

In June 1987, O'Brien notified Alyeska that DEC would reapprove the contingency plan, based in part on "the results" of the 1986 drill. For the first time, however, DEC told Alyeska it might withdraw approval of the plan if the company didn't do better on future spills.

"We have the option of yanking our approval if they can't show they're doing a better job in the future," said O'Brien, who left DEC in February 1989. "We made every spill that occurred from that point ... open for scrutiny by the department in a formal sense."

Since then, DEC staffers have often complained about Alyeska's efforts to clean up even the smallest spills. But no move has ever been made to withdraw the permit.

As recently as last January, when two tankers in two weeks spewed oil through cracked hulls, DEC again bemoaned what it considered Alyeska's inept cleanup attempts.

One tanker, the Thompson Pass, was surrounded by booms when oil leaked. Alyeska, aided by calm weather, scooped up much of the 70,000 gallons that spilled. The company was lucky rather than efficient, DEC said.

The second spill, from the Cove Leader, though much smaller, eluded Alyeska cleanup crews because they couldn't get the oil corralled in time to keep most of it from running out of Port Valdez.

DEC also sought better spill preparation by requiring Alyeska to document the training of its cleanup workers, and by making the company submit spill "scenarios," which were supposed to show how Alyeska would clean up a spill as large as 200,000 barrels. Ross and O'Brien said they wanted Alyeska to show it had thought through what to do in case of a huge spill.

DEC staffers also brought up problems with aging equipment, but their supervisors decided to leave that for the next plan review — in 1990.

Ross says he never considered rejecting Alyeska's contingency plan, which would have shut down the pipeline.

"It never got to the point of drawing a line in the sand," he says. "Should I have assessed the factual situation here and said, 'Are we headed for deep doo-doo?'"

"There was no one who was really keeping track of the big picture, which is how well was this transportation system holding together. No one thought about whether a captain was drunk or the Coast Guard didn't have an adequate surveillance system."

"The question is," Ross adds, "Was the state responsible at the moment that tanker went up on the rocks? That's a question that has caused me some sleepless nights."

OUT OF SIGHT; OUT OF MIND

Although he'd run the DEC for more than

two years, the first time Commissioner Dennis Kelso ever went to Valdez was March 24, the day he flew out to the stranded tanker to view the nation's worst tanker spill.

Kelso had never met Lawn, the head of his Valdez office. Nor had he ever seen the Alyeska terminal, for years the most environmentally controversial facility in Alaska and the largest of its kind in the world.

Nor had he read Alyeska's oil-spill contingency plan, although he had approved it in June 1987, six months after becoming commissioner.

In fact, Kelso seemed content to let subordinates deal with air and water pollution, tankers and the relatively small oil spills at the Alyeska terminal — until the Exxon Valdez turned the glare of network television cameras on the tiny community.

Since then he's been a frequent visitor, often working long stretches without a day off to get to Valdez, Cordova, Kodiak, Homer and other places affected by the spill. He has become the most visible and outspoken critic of Exxon and Alyeska.

Kelso says he purposely stayed away from Valdez before the spill.

"When I came on board, we were already engaged in some conflict with Alyeska over these other matters," Kelso said in a recent interview. "I did not want to go to the Alyeska facility under circumstances that could be misinterpreted."

A commissioner-level visit to Valdez might be taken by Alyeska as a sign that DEC was softening its position on air and water pollution, he said, or that he didn't trust his staff's judgment.

DEC approval of Alyeska's third contingency plan had been in the final stages when Kelso became commissioner in January 1987. He concedes he didn't take as much interest in the plan as had Ross, his predecessor.

O'Brien, the state oil program manager, doesn't remember meeting with Kelso or talking to him about the plan before sending the commissioner a copy of a June 11, 1987, approval letter. The letter went out under O'Brien's signature after Kelso OK'd it.

"He was just a different commissioner than Bill Ross," O'Brien says. "Bill rolled up his sleeves and got into it. He didn't hesitate to come bashing into our offices at any time with questions."

"Denny's just a different manager. He's more removed, he lets other people take care of it."

Kelso won't discuss DEC's failure to get an adequate oil-spill response plan in place before he became commissioner. He blames the failings during his time on the legislature for not paying for a contingency plan review team, and on state laws he says did not give DEC the clout to make Alyeska and other oil terminals prepare for spills.

Seven months after Kelso took office, the tanker Glacier Bay ran into a submerged rock near Nikiski in Cook Inlet, spilling 150,000 thousand gallons of crude oil just as salmon were bunching for their summer run up the inlet.

The tanker's owner, a small independent shipper called Trinidad Corp., abandoned the cleanup, forcing the Coast Guard to take over. Kelso says the state found out then it didn't have the power to make sure Trinidad could or would clean up a spill.

In 1988, DEC asked the legislature to clarify the state's contingency plan law, which it did. Until then, Kelso says, tankers and terminals may have been required to file cleanup plans, but there was no law under which DEC could make them carry out the plans.

Although the law was "fixed" nearly a year before the Exxon Valdez accident, Kelso's agency didn't use it to get tougher with Alyeska. Instead DEC chose to wait until the Alyeska plan came up for review in 1990.

Kelso says DEC didn't have money to do more. In 1988, DEC asked the legislature for

more than \$500,000 for contingency-plan review and enforcement. The legislature approved \$150,000 to review plans.

In 1988, the legislature gave DEC money to hold five spill drills, but DEC didn't choose to hold an Alyeska drill. In fact, DEC didn't conduct most of the drills until after the Exxon Valdez spill. Then, the money was used to watch a spill drill in Kotzebue Sound and a couple of North Slope drills.

This year, just weeks after the biggest spill in U.S. history, several hundred thousand dollars for contingency plan reviews "fell out of the budget" in the last days of the legislative session, Kelso said. He didn't know why, or how hard the DEC officials responsible for the budget tried to keep it in.

But critics say Kelso is just making excuses, that DEC already had the power to make Alyeska get the equipment and personnel it needed.

"DEC has no idea what their authority is or isn't because they've never tested it," says Patti Saunders, the Anchorage environmental lawyer. "If they won't ever exercise it, it's as good as not having it. That's clearly the biggest problem DEC has."

"They almost never do surprise inspections," said Saunders, who spent several years as an environmental prosecutor for Pennsylvania's environmental protection agency. "If somebody tells them to go away, they just do."

She says DEC is afraid of the oil companies and afraid to go to court. "What they don't realize is the more you do the easier it gets."

"Plus you send a message to everybody in that industry that they're going to get nailed."

Ross concedes he never liked to go to court because of the time and expense. "But I certainly felt I stood up to the oil industry," he said. "We were pushing environmental issues as much as the body politic in Alaska could tolerate."

Even now, critics say, the DEC continues to bow to pressure from Alyeska. The company has frequently complained about Dan Lawn, the DEC's principal Alyeska watchdog.

In August, Larry Dietrick, one of Kelso's chief deputies, removed Lawn as supervisor of the Valdez office. Lawn was taken off investigations of air and water pollution at the terminal and assigned to review oil spill contingency plans.

Kelso and Dietrick vehemently deny they were pressured to move Lawn. But a June 23 memo from Lawn's Anchorage supervisor, Bill Lamoreaux, indicates DEC administrators were uncomfortable with Lawn's aggressive attitude toward Alyeska.

In the memo, Lamoreaux discussed Alyeska's objections to Lawn. He said he believed Lawn had always acted appropriately toward Alyeska, yet Lamoreaux directed Lawn to send other Valdez staffers to deal with the company and to "reduce your overall involvement in routine inspection activities."

Prince William Sound today is protected by an oil-spill response system unmatched in the world. Sophisticated equipment and safety measures that critics have demanded for a dozen years are now in place. Instead of booms and skimmers and cleanup crews trying to cover the Sound from a base in Valdez, escort vessels follow each loaded tanker through the Sound, carrying high-tech equipment ready for immediate deployment.

It happened because of a catastrophic oil spill — the one so many had predicted.

In April, when an angry Gov. Steve Cowper threatened to shut down the pipeline terminal if the industry didn't come up with a better spill response program, oil companies dispatched top executives to Alaska to put together a new plan in six weeks.

□ MONDAY: A look at DEC Commissioner Dennis Kelso.

Despite warnings, top officials didn't get tough with Alyeska

State's test wasn't hard; Alyeska didn't pass by much

By PATTI EPLER
Daily News reporter

In a dozen years of tanker operations, the state has tested Alyeska Pipeline Service Co.'s cleanup capabilities in a realistic drill only once.

Every other time, Alyeska itself created and controlled the exercises on which the state judged the company's ability to carry out its plan for cleaning up oil. State acceptance of the plan was necessary for Alyeska to operate the terminal.

But for the state's one "unannounced" drill, the Department of Environmental Conservation gave Alyeska several weeks' warning, and chose a day recommended by the pipeline company so tanker traffic wouldn't be impeded.

Even so, Alyeska barely passed the exam.

"I made a decision not to disrupt the pipeline," said Bill Ross, then-commissioner of the DEC. "If the presence of the cop on the corner causes you to go 55 in a 55 zone, then most people consider that adequate enforcement. So they cleaned house when they knew we were coming."

The test commenced just after 8 a.m. on Nov. 22, 1986. Snow drifted down lightly from an overcast sky, and visibility was often poor.

Day-shift workers had been on the job for two hours, and Alyeska — expecting a drill that day — had lined up extra help.

Equipment was ready and loaded on boats for deployment.

The state's scenario assumed that a tanker suffered a mechanical failure at the dock, causing a tank to overflow during loading. About 60 barrels — 2,200 gallons — spilled into the port area. Oranges dumped into the water were used to simulate oil.

When the genuine spill came last March 24, conditions couldn't have been more different. The tanker Exxon Valdez ran aground just after midnight, on a dark and drizzly night, about 25 miles from port. Nearly 11 million gallons of crude oil poured into Prince William Sound. Alyeska staffing was minimal because it was night and Good Friday. Extra clean-up workers took six hours to report.

Alyeska's equipment was far from ready: booms, skimmers, pumps and other gear had to be found — some in warehouses, others buried in snow — and loaded on a barge. Some booms had to be repaired before they could be loaded. Crews took 14 hours to pack the barge and reach the spill at Bligh Reef.

Ross and others concede they might have learned more about Alyeska's real state of readiness if they'd conducted a surprise drill, or even if the state had conducted more than one drill at Alyeska.

"One could argue we could have gotten a heads up and addressed those things," said Paul O'Brien, former oil program manager for the DEC who oversaw the 1986 drill.

"If the presence of the cop on the corner causes you to go 55 in a 55 zone, then most people consider that adequate enforcement. So they cleaned house when they knew we were coming."

— Bill Ross

O'Brien said the DEC rarely conducts drills for oil terminals or tankers, even though state law allows two such drills a year for each facility or ship.

Alyeska invites regulators to observe at least one marine spill exercise a year in which the company itself devises the scenario and picks the time — usually summer — and conditions for the drill. Bill Howitt, engineering manager for Alyeska, prefers to call the maneuvers "exercises." He said the state, Coast Guard and other agencies are always invited to watch and offer criticism.

DEC Commissioner Dennis Kelso has said it costs too much for the state to conduct drills. But Ross said he considered it important to test Alyeska's capabilities through an "unannounced" drill before signing off on the contingency plan.

That drill, however, was hardly a sur-

prise. A Nov. 4, 1986, letter in the DEC files — "Subject: Unannounced Spill Drill" — came from Alyeska's Howitt, then terminal superintendent. Howitt suggested four dates during that month when Alyeska expected minimal tanker traffic. The DEC chose one of the four.

Howitt said Alyeska didn't know the time of day the DEC intended to hold the drill, nor did the company know what the scenario would be.

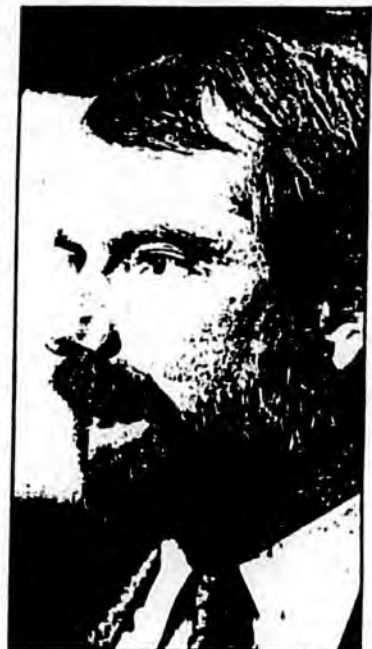
But Alyeska was able to have equipment ready to go and enough people on hand at the terminal to make the response smooth, he said.

"Alyeska's spill response was acceptable," DEC field officer Pat Cyr wrote in his evaluation, "but not by a wide margin."

Cyr recommended that another "unannounced" drill be held in 1987, using a chemical that behaves like oil, rather than oranges. But it never took place.

Kelso said in a recent interview that it is too expensive for the state to devise a spill scenario and then scrutinize Alyeska's performance, although he didn't know what the actual cost would be. Other DEC officials estimated it might cost as much as \$10,000, including staff salaries just for a drill, travel and per diem pay while in Valdez.

O'Brien agreed that it takes a "tremendous amount of time" to design a spill drill, "but one could say, 'Can we afford not to do that?'"



Daily News photo by Bob Halpern

Bill Ross: He's had sleepless nights.

As DEC stiffens, it needs our help

Exxon deserves the roar of criticism it has received since the Exxon Valdez oil spill, but government regulators merit a scolding as well.

Alaska's main environmental watchdog had the chance to help avert the disaster — and blew it. Department of Environmental Conservation field people in Valdez repeatedly reported that the Alyeska terminal's preparations for an oil spill were deficient and its contingency plans inadequate. But the agency's Juneau leadership refused to act on these reports. Nobody in DEC's top ranks took the threat of a catastrophic oil spill seriously enough to get tough on Alyeska.

DEC officials explain their failings by arguing they never had adequate funding to meet the agency's myriad responsibilities. And it's true that until the Exxon Valdez oil spill, the legislature, ever fearful that a strong DEC would impede rapid resource development, kept the agency underfunded and understaffed.

Nonetheless, DEC's failings with Alyeska do not stem from a lack of money. They stem from a lack of determination and will. Even with its shoestring budget, DEC discovered Alyeska's woeful state of preparedness. DEC's leaders simply failed to back up their field people and demand that Alyeska change its ways.

Since the Exxon spill, DEC has shown encouraging signs of change. It rode herd on Exxon and the Coast Guard to deliver as promised on the spill cleanup. Its budget grew as the spill made environmental protection a more respectable cause among legislators. With about 60 percent more money than two years ago, DEC is better financed than ever.

But bigger budgets won't guarantee safe operations at the Valdez terminal and in Prince William Sound. DEC must develop a more aggressive attitude — scrupulously fair, yes; but more aggressive — toward Alyeska. Gov. Steve Cowper should tell DEC that he expects the agency not to back down if Alyeska complains about the rigors of living up to its obligations.

Ordinary Alaskans have a role to play, too. They should make it clear to the governor and the legislature that they expect vigorous enforcement of environmental rules, that they want an ever-vigilant DEC protecting their environment, health and welfare.

Alaskans have told each other for years that they are "real environmentalists." It's a sentiment full of good intentions, but it must be converted into sound environmental policy, with strict enforcement by a powerful and fearless Department of Environmental Conservation. Nothing less will do.

Anchorage Daily News editorial
October 29, 1989

Exxon Confirms Waste Water Charges; Move May Impede a Valdez Settlement

By ALLANNA SULLIVAN

Staff Reporter of THE WALL STREET JOURNAL
Exxon Corp. acknowledged that it has shipped tanker waste water to Alaska.

While the company said the shipments and subsequent tanker-to-tanker transfers of so-called tank washings were within federal guidelines, such a disclosure could further entangle attempts to settle litigation stemming from the Exxon Valdez oil spill two years ago. Exxon, Alaska and the federal government have been engaged in talks for several weeks in efforts that could settle the state's civil case and possibly the federal government's criminal case. The allegations, which have drawn Environmental Protection Agency scrutiny, raise "the possibility of further complicating the settlement," said Jay Kertula, chairman of Alaska's Senate Finance Committee.

The parties were on the verge of settle-

ment late last week, but pressure from some state officials and environmentalists unhappy with the terms of the possible settlement may be slowing the process. Indeed, some Alaskan lawmakers are considering legislation that would preclude a settlement until state legislators scrutinize the agreement. Gov. Walter J. Hickel had proposed that Exxon pay \$1.2 billion to settle; it appears the company has asked to provide payments over a period of years that would devalue the amount.

Allegations regarding waste water specifically focus on the transfer of so-called tank washings from the Exxon Galveston, a lightering tanker, to the supertanker Exxon Valdez on Aug. 4, 1988. The washings were then transported up to Valdez, Alaska, where they were treated in the ballast water-treatment plant owned by Alyeska Pipeline Services Co.

The charges were contained in a letter

sent last week by former oil-tanker broker Charles Hamel to EPA head William Reilly and U.S. Attorney General Richard Thornburgh. In the letter, Mr. Hamel says that before any settlement is concluded, Exxon should be asked to stop such shipping practices. Mr. Hamel, who is engaged in a dispute over mutual business arrangements he has with Exxon and other oil companies, claims that Exxon insiders told him of the wrongdoing.

Beyond hearsay, however, a document turned up by Alaskan attorneys in preparation for the state's civil case against Exxon makes reference to the transfer. The handwritten document is a set of instructions from the second mate to another second mate who was boarding the vessel to relieve him. It says specifically that the Exxon Valdez will unload its crude oil to the Exxon Galveston but not until "after we take 50,000 barrels of tank washings from [the Exxon Galveston]."

Pressed for a response to the charges, Jim Pitts, a spokesman for Exxon, said that "yes, there was a transfer . . . all wash water returned to the Exxon Valdez as ballast and returned for treatment to the ballast water treatment plant in Alaska were in compliance with permits from EPA."

Exxon declined to identify what type of cleaning agent was being used to clean the oil storage tanks of the vessels other than to say that the tanks were cleaned with hot water and a very small amount of detergent. The oil company also declined to say what materials were contained in the tank washings following the cleaning.

But the company did say that the practice of transferring tank washings to tankers en route to Alaska "wasn't uncommon" and that all such transfers involved washings of ships handling Alaskan crude oil. Indeed, individuals familiar with the transport of crude oil said that other oil companies engage in the same practice and that it's still continuing.

But EPA officials said such moves are violations of federal law.

The EPA permit that authorizes operation of Alyeska's ballast water treatment plant in Valdez allows small amounts of cleaning agents to be present in the ballast

water injected into the plant by arriving supertankers. But EPA officials presumed that such tank washings would be the result of cleanings of the supertankers themselves, which en route to Alaska aren't permitted to eject the waste water.

"But deliberately stopping a supertanker and putting the washings into its ballast; there's no way the permit authorizes that kind of discharge," says Harold Geren, chief of water permits for EPA in Seattle, which has jurisdiction over the Alyeska plant.

Mr. Geren says that EPA has already started to look into what is contained in those cleaning wastes. Mr. Geren says that Alyeska has volunteered to scan the ballast water at the treatment plant for toxic pollutants. "We need to know what is in the waste water," he said, adding that tank washings can contain toxic wastes, such as heavy metals.

Experts say that any damage to the port of Valdez depends on the amount and constituency of the chemicals going into the water. The ballast water treatment plant was designed to separate oil from water and then eject the treated water back into Valdez Harbor. Individuals familiar with the design of the plant say that any unanticipated substances, such as certain heavy metals, could travel through the plant and into Valdez Harbor undetected.

Riki Ott, a sediment toxicologist who is also heading up a coalition of Alaskans seeking reform of oil industry practices, said that the Port of Valdez was recently declared environmentally "impaired." Its degeneration is from long-term abuse unrelated to the Exxon Valdez spill that never fouled the harbor's waters, she says. To be sure, Valdez is in better shape than many commercial harbors in the U.S., but "we've had the first warning sign that something has gone wrong," she says.



HEALTH/SCIENCE

THE BOSTON GLOBE • MONDAY, FEBRUARY 25, 1991

The other oil pollution menace

CHRONIC DISCHARGES ARE POISONING OCEANS, SCIENTISTS SAY

By William P. Coughlin
CLANIR STAFF



From Norway to Alaska, tankers and other ships are illegally pouring uncounted millions of gallons of poisonous oily sludge and toxin-contaminated water into the sea, according to researchers, shipping industry sources and a well-known critic of oil industry practices.

Some of the toxic discharges are dumped directly by ships at sea, the accusers say, and others go back into the ocean as effluent from onshore plants that were built to treat oil contaminated ballast water from tankers but are incapable of removing all the poisons.

The issue erupted last week when the Exxon Shipping Co. was accused of illegally mixing shipboard hazardous wastes with the ballast water its empty tankers take on for safety as they make the run to Alaska to pick up fresh cargo at Valdez. There, ballast water is pumped into a treatment plant to remove the oil before the

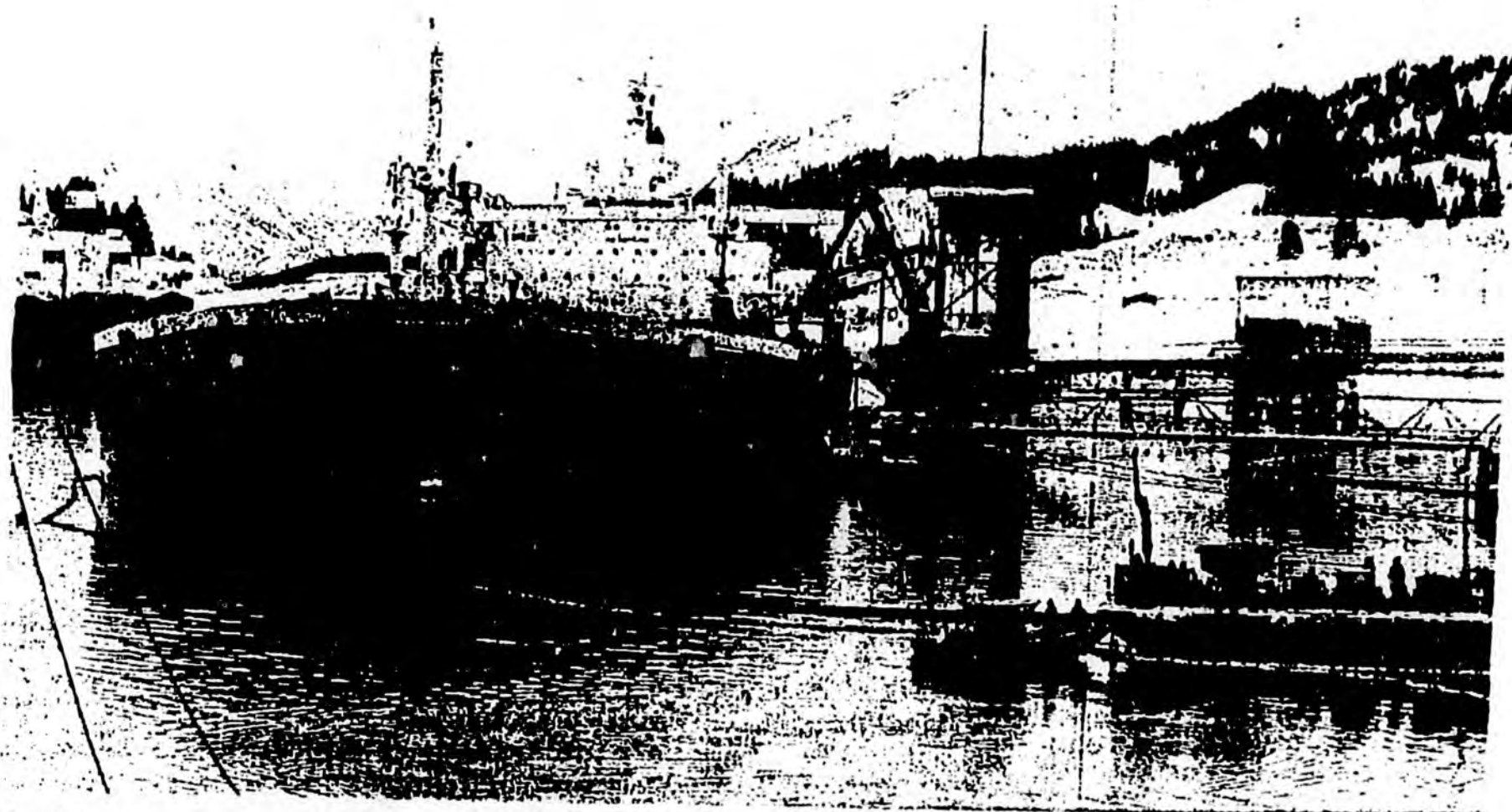
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Oil industry gadfly Charles Hamel of Alexandria, Va.

AP 198110

The other oil pollution menace in our seas



An oil tanker docked at the Alyeska terminal in Alaska, where critics charge a treatment plan is dumping hazardous waste.

PHOTO BY FRANK O'NEILL FOR THE BOSTON GLOBE

SHIPS

Continued from Page 31
water is returned to the sea.

Scientists and shipping industry sources interviewed by the Globe, however, charge that illegal disposal of shipboard toxics is not limited to Alaska but is a worldwide practice.

The waste accumulates from several sources: the oily gunk and wastes in the bilges and cargo tank bottoms, the grease and oils used to maintain engines and shipboard machinery, engine drippings, and corrosive detergents used to clean oil-carrying cargo tanks. Another major source is sludge produced by devices that purify the fuel that powers a diesel ship's own engines. On a supertanker, these purifiers can produce up to 17,000 gallons of heavy, thick residue a month, say Exxon management sources who asked not to be identified.

The heavy oil and toxins contained in these wastes has been blamed by scientists for the deaths of tens of thousands of sea birds off Newfoundland and Alaska, for retarding growth and reproduction of salmon and other fish and for disrupting the ocean food chain.

In the long run, say scientists and wildlife officials, the impact of the chronic dumping will be far worse than that caused by celebrated big spills like the Exxon Valdez disaster in March 1989.

Scientists and industry sources say the discharges contain deadly hydrocarbons, including the so-called BTEX compounds—benzene, toluene and xylene—and toxic metals such as zinc, chromium, copper and cadmium.

"Animals killed in big spills get the attention because they look so awful," said Riki Ott, a marine toxicologist at Cordova, Alaska, who has studied ballast water treatment plants worldwide. "But it's these invisible compounds, when dissolved in seawater, that have truly long-term and insidious effects on our marine food chain the world over."

Don Button, a University of Alaska biologist who says the hydrocarbons are invisible and can last for a century in cold water, agreed: "BTEX matter is a chronic source... [that] gets integrated with all spills and discharges around the world... It ought to be seen from a global view."

The chemicals break down into other compounds that are even more toxic and affect the reproduction and growth of marine life, said Button.

Last week, oil industry gaffly Charles Hamel of Alexandria, Va., a former ship broker, wrote to federal officials charging, on the basis of documents and industry contacts, that Exxon ships have illegally mixed hazardous waste with ballast water and transported it to Alaska for disposal in the ballast water treatment facility at Port Valdez.

Hamel claimed he can document his charges with computerized records of 11 Exxon ships' ballast discharges for three years. The US Environmental Protection Agency granted him a hearing to air his charges but has not set a date.

Rep. George Miller (D-Calif.), acting chairman of the House Interior Committee and key figure in writing the landmark 1990 Oil Pollution Act, said he will call hearings to determine "the extent of damage."

Responding to Hamel's allegations, he said "it appears to be a con-

scious decision to violate the law." Hamel is a long-time critic of Exxon and has been involved in a series of legal battles with the company over its past business dealings.

In interviews, more than a dozen sources in the shipping industry—including former ships' officers, management officials and ballast treatment plant officials—agreed that such discharges are common practice at Exxon and other companies.

Harold Geren of Seattle, the EPA official who issues the permits under which the Valdez treatment plants operate, was surprised when informed of practices described by Hamel and other sources.

"I'm finding out about practices I did not know about," said Geren, adding that the permit does not allow the inclusion of engine and cargo tank sludge or cargo-tank cleaning agents in ballast water being pumped into the treatment plant.

The facility is run by a consortium of firms, led by Exxon, British Petroleum and Arco. Spokesmen for all three denied any wrongdoing.



Marine toxicologist Riki Ott says the effects will be "insidious."

Exxon spokesman Jim Pitts was quoted in the Wall Street Journal Monday as admitting his firm had tankers carry washings from its other ships to Alaska, as Hamel claimed, but insisted the actions complied with EPA permits. Later, Les Rogers, a Pitts subordinate, told the Globe "Hamel's allegations are unsubstantiated."

"The record will support... that we have not violated requirements... That's all we have to say," Rogers said.

At BP, spokesman John Andes said it is "common practice" for his firm's US flag ships to transfer tank washings into Alaska-bound ships when they are cleaned before dry-docking. The practice is legal, he said, because BP ships are cleaned with a crude oil wash and water; no toxic solvents are used. Andes said he had "not heard of engine sludge" being put ashore in ballast water.

At Arco, President Jerry Axland said each of his firm's 10 US flag, steam-driven ships pumps as much as 29.4 million gallons of oily ballast water into the Alaska plant on each trip, but only once, in 1990, did an Arco ship transfer ballast to another vessel and put it out at Alaska. "There's nothing wrong with that," he said, adding that solvents are not used to clean Arco ships ex-

cept in tiny amounts in drydock.

Government investigators, former ships' officers and sources in Exxon management, however, said toxic wastes are routinely pumped ashore at Alaska with ballast water that is supposed to contain only oil, or are mixed with crude oil cargoes and pumped into sensitive petroleum processing equipment at refineries on the delivery end of a tanker's trip.

Or, as Canadian, Scottish and Norwegian officials have reported, the wastes are dumped into the sea.

US and international law require that large amounts of sludge and tank cleanings be disposed of at licensed sites and, usually, incinerated.

But several officers and crew said in interviews that crews regularly must violate the law because of pressure from profit-conscious ship owners who demand that their ships unload and put back to sea rapidly and who have cut crews sharply to reduce costs. The result is too little time to get rid of sludge and other toxins properly, they said.



The toxic residue will last 100 years, says biologist Dr. Hutton.

Said one man familiar with operations of the ill-fated Exxon Valdez:

"All engine room slops, bilge sludge and hydrocarbons, but also drippings from the engine, leaks and everything... is pumped into the starboard slop tank" that measures 80 by 50 by 100 feet. Then, he said, it is mixed with oil cargo being unloaded at a refinery or shipped "with dirty ballast to Valdez."

'Chances of their being caught are small; of being caught and prosecuted even smaller; and if prosecuted, chances of being found guilty are minuscule; if found guilty, fines are paltry.'

CANADIAN REPORT

Spurred by the 11 million gallon Exxon Valdez spill, Canada underscored the worldwide problems in a report issued last year:

"While Canada can expect over 100 small spills, 10 moderate spills and at least one major spill every year, a much greater volume of oil enters the marine environment [from] routine tanker operations — loading, offloading, tank washings and waste water discharges — than [from] accidents," the Brander-Smith Report found.

Echoing complaints from many other nations, the Canadian report found little enforcement of the law.

"Coast Guard investigative and prosecution efforts are seriously inadequate and do little to deter polluters.... Chances of their being caught are small; of being caught and prosecuted even smaller; and if

prosecuted, chances of being found guilty are minuscule; if found guilty, fines are paltry."

In Boston, Cmdr. Peter Blair, port safety chief for the US Coast Guard, said things have improved since the 1970s and '80s, when "they went to sea, cleaned tanks, dumped it, and no one could say anything." He said he knows of no criminal convictions under US law, but said civil statutes that call for fines up to \$5,000 have been effective deterrents.

Neither Boston nor any other East Coast port have large ballast water treatment facilities. Toxic waste from ships must be trucked away at great expense to licensed disposal sites.

But Alaskan scientists Ott and Bulton said disposal of the waste has become an overwhelming problem even for facilities equipped to cope with them, and many places, including Valdez, lack adequate facilities altogether.

Alaska, said toxicologist Ott, has no licensed hazardous waste sites to dispose of sludge and toxins. An incinerator planned for that purpose in 1979 has not been built.

Instead, she and Bulton claimed, these wastes, illegally mixed with up to 84 million gallons of oily ballast water, are being pumped daily through the treatment plant and into the 700-foot-deep Valdez harbor, along with hydrocarbons and other toxins that weren't filtered out. Bulton, who once worked at the plant, said the "treatment time" is too short to allow bacteria to detoxify residue hydrocarbons.

In Scotland, said Ott, the Sullom Voe terminal's treatment plant produces "putty like" sludge that is incinerated. Norway's treatment plants produce "mountains" of sludge, for which researchers are seeking a commercial use.

But at Norway's Statoil terminal, Ott said, treatment facilities, unable to keep up with the flow of waste, are considering requiring ships to dump ballast at sea and take in clean water. She said officials there told her: "What else to do? We can't clean everybody's dirty water."

Environmentalists and wildlife workers say fuel oil and toxic discharges from ships are the chief suspects in major recent bird kills in northern waters.

"It's almost an annual event," said Ian Goudie of Canada's Wildlife Service, of the death this winter and last of more than 25,000 doves, murrelets and eider ducks. "It's fuel oils from passing ships, bunker oils like No. 6 and 8, heavy shipping oils."

Last September, 1,000 white-winged scoter ducks died mysteriously at Yakutat, Alaska, on a migratory bird corridor that crosses the tanker route, and biologists estimate that for each one that was found, another 10 died. No oil was on the ducks, which eat shellfish and crustacea, but their tissues showed concentrations of heavy metals 3-to-12 times above normal, said Ott.

Ott, who suspects the deaths are tied to ballast dumping, noted that seabird deaths near Sullom Voe, Scotland, fell off after a terminal there — one of the best-policed in the world — ordered ships to arrive with 35 percent ballast in their tanks, a move that apparently halted their dumping the ballast at sea.