WASHINGTON STATE & OFFSHORE OIL AND GAS

SUBCOMMITTEE TRIPS & REPORTS

April - July 1988

Advisory Committee
Ocean Resources
Assessment Program

Washington Sea Grant Program
University of Washington • Seattle 98195

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Contents

Introduction

The Advisory Committee to the Ocean Resources Assessment Program (ORAP) was created in response to requirements in ESSB 5533, Laws of 1987. This 32-member committee included 10 members from the Washington State Legislature. It was charged with helping Washington Sea Grant (WSG) identify information gaps and research needs relevant to the federal lease sale #132 for offshore oil and gas exploration and development, scheduled by the Minerals Management Service (MMS) in April 1992.

To do its job, the committee had to learn a lot in a hurry. The activities of the committee during its 7-month lifetime (March-September 1988) amounted to a "crash course" about the federal leasing process and the offshore oil and gas industry. Functioning much like a task force, the committee met three times (in March, July and September). Its four subcommittees held additional meetings, gathered information, explored issues, and reported back to the full committee. All this was then documented in the book, Information Priorities: Final Report of the ORAP Advisory Committee, September 1988.

As part of this educational effort, twenty-three members of the committee made 9 out-of-state trips, almost always as groups of a subcommittee accompanied by ORAP staff, during the 9-week period from mid-April to mid-June. During one week in May, three groups were on separate trips to Cook Inlet, Alaska, Santa Barbara, California, and Houston, Texas.

In general, subject to University of Washington regulations, ORAP paid for committee members' transportation, lodging, and meals. ORAP gratefully acknowledges the generous contributions-in-kind made by the oil and gas industry, which furnished complimentary transportation between the shore and offshore rigs, platforms, and vessels at sea, including some meals. Also, several members' parent organizations paid their travel expenses. Of the $400,000 appropriated by the Legislature for ORAP, about $12,500 was expended for members' out-of-state travel costs.

Each member was required to file a written trip report. A format was suggested. Subcommittees used these to develop and present oral reports to the full committee at the July meeting. Three subcommittees also filed written reports.

Proud of their work, the members wanted to collect their original reports into a single document available to the Legislature and public. This is it. Although space and funding constraints do not permit inclusion of all enclosures and handouts, all main reports are reproduced here. Examination reveals the balance of representatives from industry, government, and academe who were called upon at the sites visited. These Alaskans, Californians, and Texans were exceptionally hospititable and willing to share their best insights and advice. It is obvious that the committee members eagerly undertook their responsibilities to Washington State with professionalism, goodwill, and open-mindedness.

Charge to
Advisory Committee to the Washington Sea Grant Ocean Resources Assessment Program

February 29, 1988

BACKGROUND

The legislation which established the Ocean Resources Assessment Program (ORAP) calls for an advisory committee, including state legislators, agency officials, and leaders of several interested public and private organizations.

COMMITTEE PURPOSE

The advisory committee exists to help WSG identify information gaps and research needs for Washington state.

APPROACH

The advisory committee, building from the breadth of experience and expertise of its members, can uniquely investigate the situations Washington state would face if the MMS sale proceeds.

The state's actual information gaps and research needs would depend greatly on what types of operations, equipment, and facilities would be used onshore and offshore by industry, during all phases of oil and gas extraction. Thus a successful study must tap diverse sources of data and information about industry operations, equipment, and facilities, while not presupposing state policy alternatives about whether and how to encourage, discourage, or control oil and gas leasing. To do this, the committee will conduct case studies of hypothetical exploration, development, production, and distribution scenarios for oil and gas off the Pacific coast of Washington.

The ORAP advisory committee will complete these following tasks:

- Define hypothetical scenarios for exploration, development, production, and distribution for oil and gas off the Pacific coast of Washington.
- Conduct tours of existing sites, vessels, and facilities in- and out-of-state where operations and plans are relevant to the cases under study.
- Conduct meetings and attend appropriate conferences and workshops to increase understanding of cases.
- Gather and present to the committee data, information, maps, and photographs, etc.
- Examine present laws, ordinances, and regulations to determine what information would be required to process necessary EIS(s) for the cases.
- Determine whether adequate information exists for such EISs, and, if information is inadequate, identify the types and levels of detailed information that might be required of permit applicants seeking to implement the cases.
- From the cases, identify key issues, policy questions, information gaps, and research needs facing Washington state due to potential OCS development.
- Report the findings to Washington Sea Grant.

COMMITTEE MEMBER RESPONSIBILITIES

- Attend full-committee meetings (about three).
- Attend about two in-state meetings of subcommittees and one out-of-state trip. (Total travel involved would include approximately five in-state and one out-of-state trips.)
- Submit a written trip report for each trip taken, summarizing for the committee the information gathered.
- Subcommittees will be responsible to develop written and oral reports to the full committee.
- The committee will contribute to and review its report to WSG.

Advisory Committee
Ocean Resources Assessment Program
Washington Sea Grant Program • University of Washington

Committee Chairman
G. Ross Heath
University of Washington
Seattle, Washington

Rep. Bob Basich
Wa. State House of Representatives
Aberdeen, Washington

Sandi Benbrook
Dept. Community Development
Olympia, Washington

Senator Alan Bluechel
Washington State Senate
Kirkland, Washington

Rep. Gary Bumgarner
Wa. State House of Representatives
Spokane, Washington

Robert A. Chase
Dept. of Trade & Economic Devel.
Olympia, Washington

Senator Arlie DeJarnatt
Washington State Senate
Longview, Washington

Christine Drivdahl
Department of Wildlife
Olympia, Washington

Coleman Ferguson
Texaco Refining & Marketing, Inc.
Anacortes, Washington

William L. Fitch
Energy Facility Site Eval. Council
Olympia, Washington

Jim Harp
Quinault Indian Nation
Taholah, Washington

Rep. Mary Margaret Haugen
WA St. House of Representatives
Camano Island, Washington

H.F. (Lin) Hazel
Chevron U.S.A., Inc.
San Ramon, California

Keith Herrell
Pac. Salmon Sportfishing Cncl.
Westport, Washington

Bill Lawrence
American Waterway Opers., Inc.
Seattle, Washington

David McCraney
Department of Ecology
Olympia, Washington

Judith Merchant
Department of Fisheries
Olympia, Washington

Senator Jack Metcalf
Washington State Senate
Langley, Washington

Craig Partridge
Department of Natural Resources
Olympia, Washington

Robert Paylor
Grays Harbor County Commission
Montesano, Washington

Robert C. Petersen
Port of Ilwaco
Ilwaco, Washington

Cleve Pinnix
State Parks & Recreation Comm.
Olympia, Washington

Christine Platt
Sierra Club
Tumwater, Washington

Frederick M. Piltz
Minerals Management Service
Los Angeles, California

Mike Schwisow
Department of Agriculture
Olympia, Washington

Senator Bill Smitherman
Washington State Senate
Tacoma, Washington

David Sones
Makah Indian Tribe
Neah Bay, Washington

Ernie Summers
Washington Dungeness Crab
Fishermen's Association
Grayland, Washington

Rep. Dean Sutherland
Wa. St. House of Representatives
Vancouver, Washington

Tim Trohimovich
Grays Harbor Reg. Planning Comsn.
Aberdeen, Washington

Rep. Sim Wilson
Wa. State House of Representatives
Marysville, Washington

Senator Hal Zimmerman
Washington State Senate
Camas, Washington

STAFF

B. Glenn Ledbetter, Manager
Ocean Resources Assessment Program

Carolyn R. Pendle, Research Analyst
Ocean Resources Assessment Program

Subcommittee Assignments

EXPLORATION	Senator Arlie DeJarnatt Jim Harp* H.F. (Lin) Hazel David McCraney Ernie Summers Representative Sim Wilson
OFFSHORE	Senator Alan Bluechel Coleman Ferguson Keith Herrell Bill Lawrence Judith Merchant** Senator Jack Metcalf Bob Petersen Chris Platt** Representative Dean Sutherland
ONSHORE	Representative Bob Basich Sandi Benbrook** Bob Chase Chris Drivdahl Bill Fitch Representative Mary Margaret Haugen Cleve Pinnix** Mike Schwisow Tim Trohimovich Senator Hal Zimmerman
TRANSSHIPMENT	Representative Gary Bumgarner Craig Partridge Commissioner Robert Paylor Fred Piltz Senator Bill Smitherman* Dave Sones

*Subcommittee Chair
**Co-chair

Sites Visited—1988

Destination	Facility/Vessel/Subject	Contact	Dates
SUBCOMMITTEE: EXPLORATION			
GROUP A:			
Houston	Blowout preventer manufacture	Cameron Iron Wks.	16 May
Houston	Oil well firefighting	Boots & Coots	16 May
Houston	Seismic surveying	Exxon USA	16 May
Galveston	*Rowan Midland* (semi-submersible)	Rowan Companies	17 May
Louisiana (offshore)	*Rowan Gorilla III* (jackup rig)	Rowan Companies	17 May
Sabine Pass	*BAR 323* (pipelay barge)	Brown & Root USA	17 May
Sabine Pass	*BAR 280* (bury barge)	Brown & Root USA	17 May
Houston	Seabed stabilization	Seabed Scour Control Systems	18 May
Houston	Seismic surveying	Western Geophysical	18 May
Santa Barbara*	Offshore pipelines	Texaco Trading & Transportation	19 May
Santa Barbara*	Oil & gas—fishing industries coexistence	Calif. Sea Grant Calif. Coastal Oper. Group, commerical & sport fishermen	19-20 May
GROUP B:			
Ventura	Drilling muds supplier	NL Baroid/N.L. Indust.	10 May
Oxnard (Offshore)	*SEDCO 712* (semisubmersible)	SEDCO	10 May
Santa Barbara	Discussion on drilling muds	2 UCSB faculty members	11 May
Santa Barbara	Mediation: fisheries—oil & gas industry conflict resolution;	Calif. Sea Grant, Calif. Coastal Operators Group & Mediation Inst.	11 May
Santa Barbara	Commercial fishing in S.B. Channel	Calif. Sea Grant, various commercial fishermen	11 May
Santa Barbara	County role & experience	Santa Barbara County Energy Division, Res. Mgmt. Dept.	11 May
Santa Barbara	Marine environment	Sea Cntr, Mus Nat. His.	11 May
Oxnard (offshore)	*Indian Seal* (seismic vessel)	Geophysical Service, Inc. International Association Geophysical Contractors	12 May

Destination	Facility/Vessel/Subject	Contact	Dates
SUBCOMMITTEE: OFFSHORE			
GROUP A:			
Santa Barbara	Citizens' groups	Get Oil Out (GOO)	13 April
Santa Barbara	Commercial fisheries—oil industry liaison	Calif. Coastal Operators Group	13 April
Santa Barbara	Commercial fishermen	Calif. Sea Grant	13 April
Santa Barbara	Marine mammals	Museum of Nat.Hist.	14 April
Carpinteria/ Port Hueneme	*Mr. Clean III*	Clean Seas	14 April
Ventura	Channel Is. Natl. Park	DOI	14 April
Santa Barbara	Channel Is. Natl. Marine Sanctuary	NOAA	14 April
Offshore Ventura/ Santa Barbara	Platform Gail	Chevron	5 April
Goleta	Natural oil seeps off Coal Oil Point	UCSB	15 April
GROUP B:			
Offshore Long Beach	BETA offshore production facilities	Shell E&P	17 May
Offshore Long Beach	THUMS (artificial islands)	Shell E&P	7 May
Offshre Pt. Arguello	Platform Irene	UNOCAL	18 May
Lompoc	HS&P processing facil.	UNOCAL	18 May
Santa Barbara	Citizen participation	Cit.'s Planning Assn.	18 May
Santa Barbara	Recreational fisheries	Calif. Sea Grant & various fishermen	18 May
Ventura	County role & experience	Plan. Div., Ventura Cnty	19 May
Ventura	Monitoring long-term impacts of platforms on biological communities	Battelle Ocean Sciences	19 May
Santa Barbara	State legislative role/experience	Staff to Calif State Sen. Gary Hart	19 May
GROUP C:			
Sacramento*	State agency roles/experience	Calif. Fish & Game Dept State Lands Cmsn., & Office of Offshore Devel.	17 May

Destination	Facility/Vessel/Subject	Contact	Dates
SUBCOMMITTEE: ONSHORE			
GROUP A:			
Anchorage	State agency roles/experience	AK Depts: Community & Regional Affairs; Fish & Game, & Nat Resources	18 May
Anchorage	Oil spills	U.S. Coast Guard	19 May
Cook Inlet	Platform Granite Point	UNOCAL	19 May
Nikiski	LNG plant	Phillips/Marathon	19 May
Nikiski	Ammonia/urea plant	UNOCAL	19 May
Kenai	Wildlife and oil development	Kenai Wildlife Refuge	19 May
Kenai	Commerical fisheries	Alaska Sea Grant, Cook Inlet Aquaculture Assn., Upper Cook Inlet Drifters Assn., Kenai Pen. Coop	20 May
Kenai	Local business interests	Kenai Chamber of Com.	20 May
Kenai	Borough role & experience; planning	Kenai Borough Mayor & Planning Dept.	20 May
Kenai	Native peoples' impacts	Salamatof Natives Assn. Kenai Natives Assn.	20 May
Kenai	Wildlife/birds	Ducks Unlimited	21 May
Kenai	State legislative role/experience	Former state rep. & current Kenai assemblyman Pat O'Connell	21 May
Group B:			
Goleta	Ellwood separation/treatment plant	ARCO	31 May
Goleta	Air quality impacts of oil barge operations	UCSB Coal Oil Point Reserve	31 May
Santa Barbara	County role & experience	Resource Mgmt. Dept. Santa Barbara County	31 May
Ventura	National park & marine sanctuary	Channel Islands Nat Park	1 June
Port Hueneme	Supply base & vessels/vessel operators	Oxnard Harbor District	1 June
Santa Barbara**	Local governance of offshore oil & gas	UCSB faculty, S.B. Cnty Res. Mgmt.Dept., Area Planning Council, & Ch. Is. Natl. Marine Sanctuary	1 June
Santa Barbara	UCSB perspective on proposed ARCo Coal Oil Point Project	UCSB environ. health & safety administrator	2 June

Destination	Facility/Vessel/Subject	Contact	Dates
Santa Barbara	Santa Ynez Unit: Platform Hondo OS&T, & future expansion	Exxon USA	2 June
Gaviota*	Gaviota Oil & Gas Processing Plant	Chevron USA	2 June
GROUP C:			
San Francisco	Studies for central Calif. counties	Chabot Associates	16 June
Sacramento	State agency roles & experience	Calif. Coastal Cmsn., State Lands Cmsn., & Off of Offshore Devel	16 June
SUBCOMMITTEE: TRANSSHIPMENT			
San Pedro	*The Oregon* (oil tanker)	Chevron Shipping	31 May
Long Beach	Marine safety/oil spills/dispersants	U.S. Coast Guard	31 May
Los Angeles	OCS leasing & environ. studies	Minerals Mgmt. Svc.	31 May
Gaviota	Marine terminal	Texaco Trading & Trans.	1 June
Carpinteria S.B. Harbor	Oil spill cleanup	Clean Seas	1 June
Goleta**	Local governance of offshore oil & gas	UCSB faculty, S.B. Cnty.Res.Mgmt. Div.& Area Planning Council, & Ch.Is.Natl. Marine Sanctuary	1 June
S.B. Harbor	Pipelines	Self-guided	2 June
Santa Barbara	Citizen participation	Cit.'s Planning Assn.	2 June
Santa Barbara	State legislative role & experience	Staff to Calif. State Sen. Gary Hart	2 June
Santa Barbara	Emergency management & response	S.B. Cnty. Off. of Disaster Preparedness	2 June

NOTES:

* This portion of the trip was made by one member of the subcommittee.
** Joint meeting of members of the Onshore and Transshipment subcommittees.

Trip Report Contents

for out-of state trips by ORAP Advisory Committee Members
3/30/88

Each committee member who makes an out-of-state trip shall file a trip report with Washington Sea Grant and the chairperson of the appropriate subcommittee for which the trip was made. The report should be submitted within one week after completion of the trip. Such a report is to be on the substance of the trip, not a travel claim for reimbursement of expenses. It should contain both listings and discussion, as follows:

A. Listings (include 1-7 in all, and 8-9 as applicable):

1. Submittal date
2. Traveler (trip report author)
3. Subcommittee
4. Travel date(s)
5. From / To
6. Purpose
7. Contacts made (names, titles, organizations, and locations, and, if available, mailing addresses and telephone numbers)
8. Publications received (titles, authors, and dates)
9. Other publications suggested for later acquisition

B. Narrative Discussion (suggestions, not format, follows):

1. **Overall lessons.** What did you learn from this trip?
2. **Organization Descriptions.** What did you learn about each organization contacted?
3. **Pre-Lease Information.** What did your contacts opine about the kind and amount of information that should be available during the prelease stage of OCS development?
4. **Post Lease Phase Information.** . . . . . during the particular phases(s) (exploration, development, or production) under consideration by your subcommittee?
5. **Relation to Cases.** How do the things you learned relate to the case study scenario(s) under consideration by your subcommittee?
6. **Key Issues Creating Information Demand.** What were the key issues, areas of uncertainty, and matters of controversy you encountered among your visits?
7. **Resolution of Key Issues.** Which of these appear resolved or close to resolution?
8. **Needed Information.** What information had to be or still needs to be developed through formal research or monitoring to foster good decision-making?
9. **Advice.** What did your contacts say they did correctly and wisely and what would they do differently next time?
10. **Further Investigations.** What does your trip imply about matters that your subcommittee, the full committee, or ORAP should investigate further?

Section 1

SubcommitteeTrip Reports

April-June 1988

Exploration Subcommittee Trip Reports

Group A—Texas Coast • May 1988

1.1 Sen Arlie DeJarnatt
1.3 Rep. Sim Wilson
1.5 Ernie Summers (also traveled to Santa Barbara, CA)

Group B—Santa Barbara Area • May 1988

1.17 David McCraney
1.20 H. F. (Lin) Hazel

TO: B. Glenn Ledbetter, ORAP Manager

FROM: Senator Arlie U. DeJarnatt

SUBJECT: Report on Texas Trip

DATE: 5/27/88

GENERAL IMPRESSIONS

Oil exploration and production flourishes in the Gulf of Mexico with little apparent adverse impact on the marine environment.

This presumption, however, comes exclusively from contact with the oil industry without conversation with any representatives of the Gulf Coast fishing industry.

The general quality of the water appeared good and we did observe fishing boats in action near Galveston.

I was pleased that one of my constituents, Ernie Summers, was along. He could ask the questions one would expect from a practitioner of the commercial fishing industry. His and his colleagues' concerns need special attention as we develop any conclusions or recommendations.

It is apparent that environment protecting technology has progressed significantly since the Santa Barbara spill days of some years back. Environmental laws and rules have forced much of this technological development.

One must keep in mind the significant differences between the coast and offshore conditions in the Texas-LA Gulf from those which exist in the WA-OR coastal environment.

SPECIFIC CONCERNS

Oil Spill Control

It was quite reassuring to see the equipment and training programs developed in the areas of blowout preventers and oil well fire fighting. The visits to Cameron Iron Works and Boots and Coots were very educational.

We probably need some recent year's data from any incidents in the North Sea, Alaskan North Slope, as well as the Gulf Coast and California.

Seismic Exploration Techniques

This continues to be a concern as it might impact the crab fishing industry and other bottom fishing. However, the advanced technology described by Ebert Baxter (Exxon) and the representatives of Western Geophysical could allay some concerns if these explorations were conducted at the right time of year.

Exploration Rigs

The highlights of the trip were the tours of the Rowan *Midland*, a semi-submersible in Galveston, and the monstrous Rowan *Gorilla III* in actual drilling some distance offshore. These are impressive structures with well trained and educated crews to operate them. There is a huge capital investment which would require substantial production to warrant the cost of transporting these rigs the long distance to the Northwest Coast.

There is considerable use of certain chemicals in creating the "mud" which is necessary in the drilling pipes. We could use some research on the experience of other exploration and development areas in this regard. The Rowan Co. may be more environmentally conscious than other companies.

Pipe Laying

The entire matter of laying pipe across the ocean floor poses significant problems for our fishing industry. The tour of the Brown & Root barges was the biggest disappointment of the trip. The craft and the crew appeared rather shabby after the shipshape Rowan operations. One could feel the impact of the "oil depression" while aboard this craft or viewing the many other rigs laid up at Sabine Pass.

Seabed Scouring

The delightful pair of Englishmen who explained their control system provided the most mind boggling aspect of the entire field trip. The concept of using these polypropylene "pads" to cover pipelines and to control scouring by oil rigs seems most inventive to this technological novice.

It would be well to get some feedback on the efficacy of these systems from some neutral or disinterested source. In particular, how these "pads" work in harmony with the fisheries would be most helpful. Contacts with the North Sea fishing interests should prove valuable to our purpose.

Caveats and Credits

This subcommittee is certainly indebted to Coach Jim Owens, v.p. of Rowan Co. for his superb planning of our tour and the generous hospitality of the Gulf based oil industry. He packed as much variety as we could absorb in the short time available. He put the best possible face on the oil industry in its impact on the environment.

That which succeeds in the Gulf of Mexico might not necessarily work as successful off the Washington-Oregon coast. There are significant differences in geology offshore as well in the WA-OR fishery, particularly crab and bottom fishing.

This trip provided a much clearer picture of the nature of offshore oil operations than I could possible have ever gained from committee hearings alone. It was well worth the time and effort.

To: B. Glenn Ledbetter, ORAP Manager
From: Rep. Sim Wilson
Subject: Report on Texas Trip
Date: June 30, 1988

General Impressions

Our exposure to oil exploration and production on the Gulf Coast was from the industry perspective only. We would have benefitted from another day meeting with other industries affected by this activity and government agencies that have been involved in regulating their activities.
From what we saw it would appear that the industry is operating to minimize their impact as best as possible.

Specific Impressions

The first day we visited Cameron Iron Works where equipment for blowout prevention was displayed and explained. Then a visit to Boots and Coots- oil firefighting specialists. All to show us the potential for disaster and how they are handled.
Seismic exploration appears to be of concern to the fishing and crabbing industry according to Ernie Summers. Although we received explanation of such techniques, I believe enough questions remain to be answered regarding the timing of such exploration to minimize impact on existing ocean uses.
The second day consisted of a helicopter flight out over the Gulf to the Rowan Gorilla, one of the world's largest oil and gas exploration rigs. Truly impressive. This active display of drilling in progress was in sharp contrast to the many idle drilling platforms tied up in Galveston and the Sabine River.
The second part of the day we visited Brown and Roote pipe-laying barges at Sabine Pass. Their maintenance was in sharp contrast to the shipshape Rowan Gorilla. However, we received a good explanation of pipelaying technology.
On our final day we received information from an English firm on the use of plastic mats to prevent current scouring around

underwater pipeline and the legs of ocean platforms. This technology appears to be very helpful in covering pipelines which otherwise would present a definite hazard to the crab fishermen. Finally, we visited Western Geophysical where we were shown how seismic data is processed and interpreted.

Aside from the lack of input from other elements- fishing industry and regulators, this was very well organized and hard-working three days. We owe thanks to Jim Owens, v.p. of Rowan Co. for his efforts in our behalf.

REPORT TO O.R.A.P COMMITTEE

on trip

May 15----May 20,1988

HOUSTON, TEXAS AND SANTA BARBARA,CALIFORNIA

BY Ernie Summers

MONDAY: May 16th 1988

9:00 A.M.- Met with RAY DENSON from Cameron Iron Works Inc., ROGGE MARSH from Exxon,and JIM OWENS of Rowan Co.,our prime host/ escort of the trip.

10:00 A.M.- Arrived at Cameron Iron Works Inc. where we were Hosted by RAY DENSON. This company is one of the main manufacturers of blow-out prevention valves , pipes,pipe couplers, and other equipment and tools used in drilling oil wells. We were shown video tapes of the main blow-out prevention vavles, How they are made, and how they are stacked to have more than one shut-off in case of a blow-out. These valves are all hydraulically operated and seemed to be sufficient in most cases.

ROGGE MARSH from EXXON was of great help in explaining how these work.

12:00 - We were taken to the Westlake Club, where we were hosted by CARL KING, ED FISHER,Cameron Iron Works' offshore Engineering Inc. and RAY DENSON-- At this time there was a further discussion about the prevention of blow-outs and how the valves work. This was a very impressive session on preventers and preventions

2:00 P.M.-Oil well firefighting and blow-outs;

Here we were met by BOOTS HANSEN of Boots &Coots Inc. The oil well fire fighter and blow-out specialists. We found out that even though they have all this blow-out prevention,there still seems to be a few fires every year generally man caused, but still there. We were shown tapes and equipment of how these fires are fought. Some of these fires were really spectactular put outs and quite interesting to watch.

We also met with CHARLES C. CLOUTIER SR. of Attains Anti-Pollution Inc.,on oil spills and the clean-up action that they take. It was quite inpressive, but I can still see quite a bit of damage. We were also told about a law,Senate Bill # 92 of california. This Bill puts a little more blame on oil transporting,rigs, and etc. The Attains Anti-pollution Inc. is also involved in anti-pollution machines for the oil drill wells,these are screens and shakers for the mud and etc.

7:30 P.M.- Dinner at Petroleum Club at EXXON,Hosted by OMER HUMBLE and EBERT BAXTER

At this dinner seismic survey tapes were shown and discussed. The value of the surveys to the oil companies,and their version of how it does no damage to the fish or environment.

There are considerable conflicts between fishermen and seismic vessels. Timing is a very important item; when the fishing gear is not in the ocean or the area where this work is being done.

TUESDAY may 17 th 1988

6:45A.M.- Departed for Heliport AND Qualitron Aero Services
Sponsored by: Chevron, Shell, Exxon, W.O.G.A, & Rowan

8:00 A.M.-Breakfast and tour of Rowan Midland Semi-Submersible rig in Galvaston. SHUG COGNEVITCH, rig manager,along with JIM OWENS,Vice-President Rowan Companies Inc.,showed us through the Midland Semi-Submersible a two pontoon,eight column,stabilizer offshore drilling platform that can drillto 1000 ft depth of water and 25,000 ft deep. This platform draws 50 ft of water when drilling and has a main deck of 220ft length by 170 ft wide and a lower hull of 279 ft length by 210 ft width. The condition of this rig was excellent and was kept very clean! It was equiped with shops to do just about anything, but I am afraid this may be the Rolls royce of the drilling platforms!! It seemed to be well managed!

10:00A.M.-Departed for the Rowan Gorilla Jack-up rig off Louisana. We were shown the rig by MIKE MOODY The gorilla is much bigger in size than the Midland. This is the world's largest jack-up rig, with the capability of drilling in 328' of water. This rig has a hull length of 297' and 292' width,spud can (feet) diameter of 66' and a deck area of 42,265 sq ft. It is designed to survive 90' waves and 82 knot winds. This is nearly a self-contained drilling platform with everything aboard. The crews will spend 2 months at a time on these rigs,and have a work shop for virtually everything, as well as a 6 man hospital room.

Again this is a well kept rig and is really kept clean. the crew aboard seemed to be very consciense of everything, but again there were other rigs around that did not seem to be in no where near the condition this one was in. Again I believe we might have been looking at the (top of the line)

4:00P.M.-Arrived to tour Brown and Root Pipelay Barges and Pipe Burying Barges: Tour Host, Capt. BILLY MEADER

Looking over these barges I beleive they may be more typical of the equipment they use. These barges look like they need substantial maintenance on them and I can see where it is likely they may dump pipe or other debris overbaord in rough weather,that could be hazardous to the fishing grounds.
I could also see where you could leave substantial anchor ruts and holes in the sea floor with the anchors they use. How long these ruts or holes would take to smooth out is unknown.
I have some doubts about the depth they say they can bury a pipe with the equipment I saw. With 290 people on this barge it looks like it would be quite crowded. There is no doubt in my mind that we would need to bury the pipelines off our coast and still may have to look at covering them with SSCS mats.
(explained in next paragraph)

WEDNESDAY_____ MAY 18 th 1988

7:30 A.M.-Breakfast at Airport Hilton Inn with Seabed Scour Control Systems L.T.D. Hosts:STEVEN OLDFIELD & STEWART BAIN

The Company makes a poly-propoline mat that is used to cover

pipes and holes from drilling jacks as well as the anchor grooves that are caused by the barges to lay and bury pipe and should be looked into as a prevention along with the burial of pipe if wells and pipelines were to go in this state!!

9:00 A.M.-Geophysics and Seismic Surveying,Western Geophysical Co.
Hosts: JOHN D.LAKER,J. ROYCE SHARP,&ROBERT C. FISHER

We were shown the procedure the seismic vessels go through to get their data and how it is put through the computers to come up with the ground lays, formations, and faults. How the finished product is put out. they say when they do a survey for an oil co., the tape is turned over to them and everything they have pertaining to that tape is destroyed. This bothers me to the extent that the same ground may be surveyed several times for different oil cos., causing even more conflicts with fishermen!

The timing is essential if seismic work is to be done. There are times when it is utterly impossible in the fishing areas.

12:00noon- Lunch at Airport Hilton
Wrap-up with JIM OWENS(ROWAN),ROGGE MARSH(EXXON),
O.J.SHIRLEY(SHELL),& CHUCK OLSOM(BROWN & ROOT)

This was a very informative luncheon and talk from these people. They seem very willing to try and talk and work with us and our problems. I beleive we have to have laws and protection programs set up <u>prior</u> to any seismic surveying,or drilling work. Again I believe all pipes should be buried and that timing would be a very important issue for seismic work as well as drilling.

There should also be some area in very heavy fished areas, as well as in front of the estuaries,that possibly should not come up for lease at all!!

We certainly don't want to be like Santa Barbara where they have lost 40% of their fishing area. I guess I would have to go along with BOOTS HANSEN of "Boots & Coots Inc. oil well fire-fighters &blow-out specialists" when he said" as long as there are people on these wells, there are going to be accidents. Even with all the new technology there is still the problem of human error."

There also should be a substantial fund set aside to cover accidents to fishing gear & etc.,caused by oil related rigs, pipelines, and etc., as well as seismic vessels and etc. This is done in Santa Barbara but not to the extent it should be. I am sure a laision between oil companies and fishermen could help like in Santa Barbara.

3:00 P.M.- Departed for Santa Barbara,Calif.

Prime Host /Escort: JOHN B. RICHARDS,with Calif.Sea Grant

7:00 P.M.----10:00 P.M.-Met with party to discuss oil pipe lines.

THURSDAY----MAY 18th 1988

8:30 A.M.-Texaco Trading and Transportation Inc.
(Gavota Project Office)
101 E Victoria Street
Santa Barbara,Ca. 93101

EDWIN E. MORTON ,project Coordinator.(805)966-3114

We discussed pipelines in and near Santa Barbara, Ca.

10:30 A.M.-meet with Dr. CRAIG FUSARO,of the Liasion Office,
South Central Coast, Fisheries and oil Operations
121 Gray Ave. Suite 3, Santa Barbara,Ca.93101
(805-963-8819)

To discuss conflicts between fishermen and oil companies, Geophysics,and seismic surveying, and pipelines.

11:30 A.M.-TOM DABNEY AND CRAIG FUSARO,Crab and lobster Fishermen,
1399 School House Road, Santa Barbara,Ca. 93108
(805) 967-8051

Discussed the entanglement of crab pots,on the pipelines, in the oil derriks, the movement of traps and if they sand in. The effects of seismetics on the crab in the soft shell stages, and the larva on crab and fish,and the effect of oil on crab.

1:00 P.M.-PHIL BEGHUL,-P.O.Box 6886-SantaBarbara,Ca.93111
(805) 967-8393
Gillnetters and Set and Drift Net
(original member of joint committee.now retired)

Discussed the problems with the hang ups on the pipeline, oil on the fish and boats. How much of the good parts of the lagoon is closed to the fishermen.How much the oil derricks and pipelines are in the road of these types of fisheries.

1:45 P.M.---ANDY RASMUSSEN--Gillnetters--Drift & Set Netter

Has many problems with hang ups on pipe lines, abandoned oil wells, and debris lost from barges and oil derricks.

2:15 P.M.--BRUCE BRAMEL--607 Aurora Ave.--Santa Barbara,Ca.93101
Gillnetter-Drift & Set Netter
(Also fishes Bristol Bay, Alaska)

Bruce discussed many of the differences he had in Alaska, and Santa Barbara. The hang ups on his nets from the pipelines and the oil that gets on his net, and how hard it is to get off.

2:30 P.M.-MIKE McCORKLE--P.O.Box 713-Summerland,Ca.93075-
(805)969-4217
Trawler,Gillnet, troll Comb.Fishing-Board Member,
S.B. Comm.,Fishermen's Assoc.,So.Calif.,
Representative,P.C.F.F.A., Calif. Gillnetter's Assoc.
Also
JOHN LARSON--504 West Walnut - Lompoc,Ca.
Trawl, Gillnet,Troll,Comb.Fishing

From Mike And John I learned how their gear hangs up on the pipeline from broken concrete,coral,cables on the pipe, bolts sticking out. They also complained of pieces of pipe and other debris falling off from supply boats,that they rip up their nets on. They also say they have many problems with oil getting on their

boats and gear as well as the fish!! They were also disgusted with the amount and the time it took to get a claim settled,when they had a conflict with an oil company.

4:00 P.M.- Return to Hotel

7:00 P.M.- Was picked up by JOHN RICHARDS

Viewed the oil wells and the way they are placed off Santa Barbara. Back to the dock area to talk to more fishermen and have dinner!

FRIDAY----MAY 20th 1988

6:30 A.M.-Depart Hotel with JOHN RICHARDS;

met with John, Mike and several other fishermen and discussed methods of oil spill clean-up. On one spill they put straw and chemicals on the oil to make the oil sink! At this time many crab were killed from suffocation, and the oil got in the gills of the crab making them unsalable, for a long period of time.The conflict with the seismic ships is that some times they (the oil cos.)would have as many as 4 ships going at one time. They also would go back over the same area 5or6 times depending on how many companies wanted them! It made it just about impossible to fish. They said that the air shots from the ship scatters the schools of fish and it takes several days for them to regroup as well as killing some of the smaller fish such as anchovies And etc..

9:00 A.M.- met with GILL CRABBE- crabber

Gill says he won't even deal with the oil companies anymore!! He says they are just impossible to do anything with on a claim.He just gets an attorney now!!

Gill also has a lot of concern on what the oil will do to the crab in the megalop stage as well as to the molting crab and the larva on them. He also has a problem with the seismic vessels.

POSSIBLE SOLUTIONS TO THE PROBLEMS CREATED BY OIL WELLS

If oil wells were to go in on the Washington Coast, timing (with fishermen) would be vital, pipelines should be buried, as few pipelines as possible, heavily fished areas should be exempted from leases, also areas in front of estuaries should possibly be exempted from leases, money should be set up for conflicts, try to prevent a situation like Santa Barbara where they have lost 40% of their fishing grounds, make several quick clean up rigs are available. Laws and rules governing the oil companies to perhaps minumize the detrimental effects.

THESE WERE SOME OF THE MAIN CONCERNS OF THE FISHERMEN IN SANTA BARBARA,CALIFORNIA

An oil spill that was on the water surface which they (the co) sank to the bottom with straw and chemicals which then suffocated some of the crab, and a lot of crab got this oil in their gills where it showed up when the fishermen cooked them and then couldn't sell them.

Oil from leaks around the oil wells that would accumulate on the boats and crab floats, They could not get the boats in the harbor clean because it would put oil in the harbor.

When they put log booms around the oil spill and if there was any wave action,the oil would go under the boom!

Had a leak in a pipeline which the oil co, put a tent over it, and has been leaking ever since!!

When fish are caught in certain areas, the fish have to be washed thoroughly to get the oil off before they can sell the fish!!

Damage to clams, oysters, and etc. in oil spills

The effects of an oil spill on crab in the megalop stage.

Cables and pieces of bouys from when they took the pipe line out from the shore still on the pipeline.

Coral growth and chips in concrete, chunks of cable on pipe line which nets hook up on.

Draggers and drift net fishermen hook up on the trenches from the anchors of the pipe laying barges as well as the holes and anchor trenches from the drilling platforms.

Pipe and other junk lost off the oil barges and supply boats that is just left in the fishing grounds to foul up the nets.

Dumping of the drilling mud that kills fish and crab.

Constant repeat surveying of the same areas by the seismic vessels. I suppose once for each co.!

There is much trouble with the seismic vessels tangling the gear, even when they move the gear the vessels don't leave even when they say they will.

They also feel that the seismic shots will disperse the schools of fish, some time taking several days to school back up where you can catch them.

The seismic Vessels did not come in when they tried to work it on timming.

Poor response on claims and they (the fishermen) have to prove each and every one.

Some fishermen have decided to take legal action instead of trying to make a claim as it takes so long to get a claim settled. If you are inside of 3 miles it is just about impossible.

When they have a dry hole and the pipe was sticking up above the sea bottom, they filled it with concrete and then blasted the well heads off with explosives,killing fish and only getting part of the pipe, sometimes leaving part to snag your nets.

They (the fishermen) say they see quite a few anchovies dead after a seismic operation and feel there is damage to the crab and fish larva as well as crab in the molting period.

The fishermen have to stay away from the platforms so far that when they are fishing if the fish did accumulate around the platforms they still couldn't get them, sports as well as Commercials.

The area lost to the fishermen is now over 40 % in the Santa Barbara area due to oil wells.

Crab pots that slide under toe oil platforms and pipelines and can't be retrieved.

One difference between Santa Barbara and ourselves is that their crab pots don't stick or move like ours do.

Attached is the following information gathered in the Sants Barbara, Calif. meeting that may be of as much help to you as it was to me.

ENCLOSED ARE: *

1. (2) articles from the Marine Advisory Program.
2. Humboldt County Offshore Energy Information Newsletter.
3. Draft Fisheries Policy Paper (used in California)
4. Fisheries- Offshore oil conflicts. Published by, Pacific Coast Federation of Fishermen's Assoc.
5. Suggestions for reducing conflicts by O.C.S. Fisheries, Coordinator : EUGENIA LAYCHAK
6. San Francisco Bay oil spill by O.C.S.
7. The Federal Fishermen's Contingency Fund.
8. Senate Bill # 92 ,on clean ups.
9. Also available from DR. CRAIG FUSARO, Joint oil/ Fisheries Liaison Office, 121 gray ave.,Suite 3, Santa Barbara, Ca. 93101:
   A MANUAL FOR GEOPHYSICAL OPERATIONS IN FISHING AREAS OF SOUTH/ CENTRAL CALIFORNIA.

* EDITOR'S NOTE: These materials have not been reproduced here because of space considerations.

July 13, 1988

TO: B. Glenn Ledbetter

FROM: David L. McCraney

SUBJECT: Ocean Resources Assessment Program Trip Report

As a member of the Exploration Subcommittee, I participated in the May 10-12 Trip to southern California. This trip consisted primarily of: (1) discussions with industry representatives and academics regarding drilling muds; (2) a visit to and tour of a semisubmersible drilling rig; (3) discussions with local representatives and fishing interests regarding attempts to mediate fisheries/oil and gas industry conflicts; (4) a meeting with Santa Barbara County energy officials; and (5) a visit to a seismic exploratory vessel. The results of these four trip elements are summarized below.

TRIP DESCRIPTION

1. Drilling Muds--The discussions of the potential impacts of drilling muds focused around meetings with representatives of the N.L. Bariod Co. and scientists from the University of California at Santa Barbara (UCSB).

   The meeting with the industrial representatives was frank and valuable. We were advised to be concerned about muds that contained phenols, barite, alcohol of potassium chloride. The latter, still used by at least one company, was identified as being particularly troublesome. We were also cautioned to be concerned about the mud volumes, attempts to minimize the costs of transporting muds, potential for carpeting the seabed, and adequate monitoring efforts in association with exploratory activities. The industry representatives were troubled by the vague nature of the EPA regulations relating to drilling muds. In talking with the UCSB scientists we were cautioned to investigate how much mud would be involved in an exploratory activity, the area of dispersal for any muds dumped into the ocean and the potential toxicity of the specific muds being used. Barium was again identified as a substance of concern. The UCSB people were critical of both EPA Region X, lack of knowledge on physical impacts of muds, and the Minerals Management Service for failing to conduct studies with broad applicability.

2. Semisubmersible Rig Visit--We visited a semisubmersible drilling rig that was being stored on Santa Barbara Channel. The rig was inactive, apparently due to depressed market conditions in the oil industry. Even when not in operation, the rig's technology was impressive. Among the more notable impressions of the visit were: (1) the crew's extreme confidence in the ability of technology to solve problems. This was particularly interesting because the discussions were interspersed with stories about oil rig accidents and disasters caused by human error; (2) the global nature of drill rig staffing. None of the men were from the local area and

conversations about how the rig was staffed during actual operations touched on bringing in company employees from, Texas, Indonesia, the Mid-East, and North Sea. There were no discussions about training or hiring people from local communities for the technical/high paying jobs on operating rigs; and (3) a rather thorough, though benign misunderstanding of the needs of other marine industries, particularly fishing.

3. Local Government/Fishing Oil/Industry Mediation Efforts--People in the Santa Barbara area have expended substantial efforts to attempt mediated settlements to a number of disputes associated with OCS activities. Our discussions with those involved in this activity focused mainly on attempts to avoid gear conflicts between fishermen and seismic vessel operators. It appears there has been progress in establishing communications systems among the involved parties. There are, however, two cautions those of us in the northwest should keep in mind before undertaking such activities. First, the Santa Barbara mediation program is an after-the-fact effort. It did not begin until conflicts had already become a problem. If such work is attempted here, it should begin well before seismic activity is scheduled to take place. Second, there remains extremely high levels of distrusts and dislike between the fishing and seismic industries. These feelings limit the potential effectiveness of the mediation efforts.

4. Meeting With County Energy Officials--This meeting consisted of an overview of the county's history and evolution in dealing with the issues associated with offshore oil and gas activities. It provided the opportunity for an extremely useful discussion of tactics and strategies Santa Barbara County has used to work with the energy industry and Minerals Management Service (MMS).

5. Seismic Vessel Visit--The final stop in our tour consisted of a visit to the seismic vessel Indian Seal. The trip was very revealing from a number of perspectives. The vessel operators emphasized the technology associated with the ship. This appears to be consistent with the energy industry's position that virtually all questions can be addressed by increasingly sophisticated technologies. Unfortunately, the seismic equipment on board was not functioning during our visit. In discussions with the crew, it was revealing to learn how very often the ship can not function due to sea conditions that are less adverse than those that would be expected off the Washington Coast. We also had the opportunity to discuss the efforts to mediate gear disputes between fishermen and seismic vessels. The crew indicated they attempted to use the communications/mediation service. If that was not successful, however, the ship simply did not conduct survey work in areas where fishing gear was located. This was done, not out of an interest in permitting fishing activity, but because the company chartering the vessel had a policy of not paying compensation for damage to fishing gear.

SUMMARY

I found the trip educational and useful. A number of impressions were gained from the visit. First, it is essential that we anticipate and deal with issues in a timely manner, so as to avoid placing the state in the situation of having to rely on extensive after-the-fact mitigation efforts. While our efforts do not need to be large and costly at this point in the leasing process, they should look forward. Second, there appear to be real risks associated with oil and gas exploration. These can not be minimized or simply explained away and should be addressed and resolved by the MMS and industry in advance of any exploratory activity in the Northwest. Finally, the energy industry and MMS rely too heavily on technology as the answer to all questions. It should be kept in mind that public policy must be based on whether an action or activity is in the long-term public interest, not simply the fact that something may appear technologically feasible.

DM:cls

1.20

Chevron U.S.A. Inc.
6001 Bollinger Canyon Road, San Ramon, California
Mail Address: P.O. Box 5042, San Ramon, CA 94583-0942

Exploration Department
Western Region

July 15, 1988

HG-30

B. Glenn Ledbetter
Manager, ORAP
Washington Sea Grant Program
University of Washington
3716 Brooklyn Avenue, N.E.
Seattle, WA 98105-6795

Dear Glenn:

Enclosed is my trip report for the Santa Barbara visit.

You will note that I have included pertinent material on seismic effects on marine life, because of the importance of that topic to ORAP and the conflicting actions by the California State Lands Commission in its decisions on seismic surveying permits.

Please let me know if there are specific ways of helping you.

Very truly yours,

H. F. Hazel

HFH:ph
Attachments

ORAP ADVISORY COMMITTEE

TRIP REPORT

Date:	15 July 1988
Reporter:	H. F. Hazel
Subcommittee:	Exploration
Travel dates:	10 & 11 May 1988
From/TO:	San Francisco to Santa Barbara, CA
Purpose:	Meet with oil industry groups, fishermen and UC Sta Barbara staff.

Contacted:

Robert A. Carson (and Pete Charter)
NL Baroid/NL Industries, Inc.
59 S. Olive Street
Ventura, California
(805) 643-3964

Willie Lick and
Dave Zimmer-Faust
UC Santa Barbara
Goleta, California

John Richards
Sea Grant
37 Storke Road
Goleta, CA 93117-2989

Craig Fusario
Joint Oil/Fisheries Liaison Office
121 Gray Avenue, Suite 3
Santa Barbara, CA 93101

Alana Knaster
Mediation Institute
4508 Park Cordero
Calabasas, CA 91302

Publications received:

MacDonald, J. M.,Shields, J. D., Zimmer-Faust, R.K. (1988). Acute toxicities of eleven metals to early life-history stages of the yellow crab Cancer anthonyi. Marine Biology.

County of Santa Barbara, North Country Gas Processing Facility - Siting Study (February 1988).

DAY 1 - Tour SEDCO 712
The trip to the semi-submersible SEDCO 712 was the high point of the trip. The vessel has been idle for over two years but is being maintained in spotless condition. A full-time cadre lives aboard to keep the systems protected. The crew were high quality individuals and dedicated to their work. They were very open and honest in their answers.

This is the type of vessel that would be used in the drilling of wildcat and confirmation wells. The personnel required to operate a vessel of this type are experienced and highly trained in their jobs and in safety systems. They would be drawn from current employees or from pools of experienced offshore workers.

The presence of the vessel in most of offshore Washington would not add to the economies of the nearby shore communities; all activities related to the drilling operations are focused at harbors suitable for the large supply boats and at airports that are convenient to national flights.

Supplies would be purchased in the harbor areas, under normal conditions of competitive supply; travel associated business - hotels, car rentals, restaurants, etc - benefit from the constant flow of personnel to and from the drillship.

The SEDCO 712 could operate offshore Washington on most of the exploratory locations. Shallow water locations would probably be drilled by the less costly jack-up rig, if one were available on the West Coast.

DAY 2 - UC SANTA BARBARA
Discussion with Dr. Willie Lick on drilling muds:

Dr. Lick investigates the transportation of small sized particles and seems to be most interested in the physical aspects of particle transportation. However, he expressed there was a need for studies of biological, physical and chemical types on the muds and cuttings discharges of oil drilling.

DR. Lick recommended discussions with Dan Morris (805) 961-3157 of UCSB to learn about barite effects in the marine environment. Lick noted the smothering effect of barite particles on the bottom dwellers in the vicinity of the drilling. Other than this the mercury free barite mud compounds were essentially harmless.

The MMS has a 5 year, $5-10 million study of mud and cutting effects on the environment. Currently the project is in the data collection phase. Two platforms are being observed. In response to the question "What should we ask the EPA?", Dr. Lick responded:

1. How many platforms.
2. How much drilling muds.
3. Where is it going, where will it end up?
4. How toxic is it?

Michel, W. C., Case, James F. (1986) The effects of a water-soluble petroleum fraction on the neuroid electrical activity of the hydroid colenterate Tubularia crocea, Marine Environ. Res.

Morse, Daniel E. (1984) Quantitation of impacts of oil production wastes on UCSB programs of research and teaching and on marine resources and fisheries, unpublished.

British National Committee on Ocean Research, Marine Pollution Subcommittee (1980), The effects of oil pollution: some research needs, The Royal Society.

Santa Barbara County Research Management Dept (1988), Marine Terminal Policies - Proposed Work Program.

Eggs and Larvae Committee, Various documents(1988).

This visit contacted several elements associated with the oil and gas operations in the Ventura/Santa Barbara area. I accompanied the Washington ORAP contingency the first one and a half days of the trip; was not present during discussions with most of the Santa Barbara fishermen on Day #2 and was absent from the trip to the seismic vessel on Day #3.

DAY 1 - N. L. Baroid,

Discussion with Bob Carson, District Engineer:

Drilling Muds

Required to cool and lubricate the drilling bit; carry the rock particles to surface; control the pressures of the rock formations and prevent blow-outs

Composition

There are nine basic mud types that have been "cleared" as being environmentally safe. The occasional additives can be compounds of considerable toxicity in full strength. Use of these compounds must be carefully controlled.

Muds are discharge into the ocean under an EPA permit

No conflict with fish because of dilution in sea

Oily muds and oily rock cuttings hauled ashore

Watch levels of potassium chloride

Monitor levels of toxic materials added to muds

Trend is to use of polymers as additives, some are toxic

1500 barrels of mud in the drilling system

Cuttings dumped on floor

Mud supplier would warehouse materials in the general vicinity of drilling operations. Materials would be brought in.

Discussions with Dick Zimmer-Faust:
These discussions were on chemical ecology as environmental factors in fish. Zimmer-Faust has researched effects of oil production and chemical production on marine animals. Three papers were distributed to the committee. (This type of a report must be used with great care. Very careful and detail reading of these papers is necessary if one wishes to know the results of the investigations. In such studies the elements of uncertainty are many and often stated; unfortunately, sometimes there is a tendency of authors forecasting negative results, when in fact, the findings of the experiments do not support such predictions. Also, the real levels of compound exposure are never duplicated in the laboratory tests because the naturally occurring levels would not produce symptoms in laboratory tests.)

Zimmer-Faust stated:
"Look at cumulative effect. How much is offshore oil contributing to total pollution? Pay attention to larval stages, histories and strategies. Large "casting" species may not be effected by pollution. Lab studies can be erroneous."

The paper "Effects of hydrocarbon on marine life" by Eric Crecelius and Walt Pearson, was mentioned.

DAY 2 - Meeting in CCOG (California Coastal Operators Group) office with John Richards of SeaGrant; Craig Fusario, Liaison, Fisheries and Oil Operations; Alana Knaster of the Mediation Institute.

The meeting was a round-table format with the hosts describing their role in the "oil sphere" and the committee asking questions.

Alana Knaster described the joint-studies committees: the problems of committee functioning, communication and inclusion of the effected groups. Amongst the problems worked out under the auspices of a mediator was the designation of traffic lanes for the rig supply and crew boats. Ms. Knaster stresses the need for communications and inclusion of all of those parties being effected at the very beginning of the program.

The Joint Committee oversees some of the government industry investigations, currently the series of seismic effects on marine life. The first of the studies was designed by the MMS (see letter by H. C. Sieck to W. Grant, Supervisor, Pacific OCS Region of November 19, 1987). Titled "Effects of sounds from a geophysical survey device on fishing success", and conducted by Battelle/Marine Research Laboratory, the project resulted in confusion and misunderstanding due to the use of illogical field parameters. It was just a poorly conceived experiment that had no relationship to actualities.

One of the ORAP members got less than a knowledgeable response from John Richards and from Craig Fusario to a question the results of the study:

"What was the impact of fishing?"

The results of the experiment was announced by the committee.

Answers:

"A 50 % drop in the catch," responded John Richards.

"Yes, uhhuh," assists Craig Fusario.

The press release on the conclusions of the study, that was produced by the Joint committee, is probably the principle reason for the above statements; the summary was less than straight forward.

To assist ORAP committee members, the Technical Summary by Battelle on the report is appended; the members of the committee can read this section and draw their own conclusions about the study findings.

The MMS has approved expenditures for a follow-up experiment that will try to duplicate real seismic/fishing conditions. Until this study is completed, there should be no utilization of the publicized conclusions of the original experiment.

Seismic effects have been studied for many years; there is a bibliography which summarizes the results of most of the experiments. Comments in this publication on the Battelle study are also attached and four copies of the entire bibliography are submitted for specific distribution.

Documents were distributed on the Eggs and Larvae Study, an investigation in the effects on crustaceans by seismic energy sources. A similar study was conducted on anchovy eggs and larvae, at an earlier date.

The last discussion was on how to deal with the MMS. Ms. Knaster recommended a non-aggressive series of plans and project proposals and to negotiate a program. "The people want to know facts and figures."

SEACO INC.

COPY

November 19, 1987

Mr. William Grant
Supervisor, Pacific OCS Region
Mineral Management Service
1340 W. Sixth Street
Los Angeles, CA 90017

Dear Mr. Grant:

Prior to our meeting with you and your staff next Tuesday, I would like to express some of my frustrations with the June 1987 MMS report "Effects of Sounds from a Geophysical Survey Device on Fishing Success".

During the summer of 1985 Mr. Eiji Imamura of Battelle contacted me about serving on the Quality Review Board for the RFP #3273 "Study of the Effects of Offshore Geophysical Acoustic Survey Operations on Important Commerce Fisheries in California". I was advised on November 14, 1985 that the MMS had approved my participation, but that there would not be any travel involved. At that time, I did not realize the significance of that statement, "no travel".

I now believe it means that the Quality Review Board had no geophysical expertise at the project planning sessions nor at the one day design workshop. The design workshop was to allow the QRB ..."to evaluate the results of the Preliminary Field Sampling and make recommendations about the design of the main field experiments", from page 4, paragraph 1, item 3 of the MMS June 1987 report. There are other specific references such as paragraph two, page (vi) as well as others that clearly give the report readers the impression that the Geophysical Industry was rightfully represented and had input to all aspects of the report. This is not a true nor accurate assumption.

I did review the Draft Technical Report prepared by Bolt Beranek and Newman. The review letter was sent to Mr. Marty Golden of your office on February 21, 1986. I also reviewed the Draft Final Report on February 16, 1987 and forwarded my cover letter and report to Mr. Imamura at Battelle, Ventura, California.

In my letter and review, I expressed my concern that there was not enough geophysical input to the study. For example, a nonprecise navigational system was used to verify and document results that were significant to the study and ultimate conclusions. The report seemed to be more concerned with mitigation than with further verifying the significant results that were obtained in one portion of the project.

By definition, mitigation assumes that there is something that is of great importance that needs to be "softened", when in fact the results of the project still need to be confirmed and verified by a more complete project. With regards to the mitigation proposed, the authors of the report really demonstrated a complete lack of geophysical experience, both technically and operationally.

The unfortunate part of all this is that some are now taking parts of the report to document positions they wish to take because the report seems to have technical validity. I hope that the weaknesses of the report can be resolved and that none of the industries involve have to suffer unfairly because of the report.

If you have any further questions or comments, please feel free to contact me at my office - 713-975-5175 or my answering machine - 713-782-4092.

Sincerely yours,

H.C. Sieck

Herman C. Sieck
Registered/Certified
Geologist/Geophysicist

cc: Mr. Chuck Darden
IAGC

hcs/sls

TECHNICAL SUMMARY

STUDY TITLE: Study of the Effects of Geophysical Survey Acoustic Array Sounds on Important Commercial Fisheries Offshore California

REPORT TITLE: Effects of Sounds from a Geophysical Survey Device on Fishing Success

CONTRACT NUMBER: 14-12-0001-30273

SPONSORING OCS REGION: Pacific

APPLICABLE PLANNING AREA(S): Southern California, Central California, Northern California

FISCAL YEAR OF PROJECT FUNDING: 1985

COMPLETION DATE OF REPORT: June 1987

COST: FY 1985: $475,584

PROJECT MANAGER: E. Imamura

AFFILIATION: Battelle Memorial Institute

ADDRESS: 1431 Spinnaker Drive, Ventura, CA 93001

PRINCIPAL INVESTIGATOR(S): W. Pearson, J. Skalski, C. Malme

KEY WORDS: Rockfish, Rockfish Effects, Sebastes, Acoustics, Acoustic Effects, Sound Effects, Commercial Fishing Effects, Geophysical Effects, Catch-Per-Unit-Effort, CPUE, Behavior, Startle Response

BACKGROUND: Concerns have been raised by commercial fishermen that sounds generated by geophysical acoustic operations affect commercial fishing in Central California. In particular, fishermen targeting rockfish (Sebastes spp.) and using hook-and-line techniques have reported reduced catches caused by fish dispersal in response to geophysical acoustic survey operations. A special steering committee was formed to investigate this problem. Based upon recommendations from the committee, a pilot study was conducted. Although the results were inconclusive, that pilot study did provide information useful in the development of this investigation.

OBJECTIVES: 1) To conduct literature searches on the effects of sound on fish behavior and on the characteristics of sounds emitted from offshore geophysical surveys and to synthesize the information concerning the characteristics of sounds emitted by nonexplosive devices used in offshore geophysical surveys; and 2) to determine the effects of sounds from an acoustic device used in offshore geophysical seismic surveys on the commercial hook-and-line fishery for rockfish on the California coast.

DESCRIPTION: The project was structured so that information forthcoming from a specific task provided the means to focus and design subsequent tasks and enhanced the ability to fulfill project objectives. A literature search was performed to synthesize the information concerning the characteristics of sounds emitted by various nonexplosive devices used in offshore geophysical

surveys. The synthesis (Malme et al. 1986) included the following components: 1) a survey of the characteristics of seismic survey sources; 2) an examination of the relationship between acoustic characteristics and source type and size; 3) modeling of acoustic propagation to predict sound levels at distance from the source; and 4) a bibliography of the pertinent literature. A second literature search was performed on the effects of sound on fish behavior. General categories addressed were the following: 1) the behavior, ecology, and fisheries biology of rockfish; 2) sound perception by fish; 3) startle behavior in fish; 4) effects of sound on fish; 5) effects of sound on fish eggs and larvae; 6) echosounding and fish finding; 7) conditioning techniques in fish; and 8) general references. The latter literature search provided valuable information for the design of the field experiments and is provided as a separate bibliography in the final report.

A Design Study was conducted to gather the information needed to design the subsequent field experiments. Participants in an initial workshop included project scientists, scientific advisors, commercial fishermen, a representative from the geophysical industry, and interested parties. A Preliminary Field Sampling effort was then conducted to gather data on fishing procedures, catch rates, variance components, and other factors needed to design the Main Field Experiment. Specific objectives of this sampling effort were 1) to select a standard unit of fishing effort, 2) to describe typical fishing operations, 3) to obtain a preliminary estimate of Catch-Per-Unit-Effort (CPUE) and its variance, 4) to explore the capabilities of the fishing vessel, and 5) to evaluate alternative hydroacoustic equipment. A second workshop was conducted to design the experiments using the data from the Preliminary Field Sampling effort. A Field Plan was then developed and implemented.

The field effort consisted of the Behavioral Experiment and the Main Field Experiment. The objective of the Behavioral Experiment was to determine the threshold at which sounds from an air gun elicit startle responses or other behavioral changes in captive rockfish. A secondary objective was to make preliminary observations of rockfish response to bait under exposure to air gun sounds. The objective of the Main Field Experiment was to determine the effects of sounds from an air gun on rockfish and its fishery. This experiment primarily investigated effects on Catch-Per-Unit-Effort (CPUE). Rockfish form aggregations over rock pinnacles, and a secondary effort examined effects on the spatial characteristics of the rockfish aggregations.

SIGNIFICANT CONCLUSIONS: In the Behavioral Experiment, several species of rockfish gave alarm and startle responses to sounds from a single air gun. Startle responses were not observed below 200 dB re 1 μPa (decibels relative to a reference level of 1 microPascal). Although the nature of the alarm responses and the level at onset varied with species, the threshold for the alarm responses was about 180 dB re 1 μPa. Some subtle changes in behavior may become evident at 161 dB re 1 μPa. Under the conditions of the Behavioral Experiment, there was some evidence that the fish may have habituated to the air gun sounds.

In the Main Field Experiment, the rockfish catch was substantially reduced under sound emissions from a single air gun. Under the specific conditions of this field experiment, Catch-Per-Unit-Effort (CPUE) declined by 52.4% and cash value by 49.8%. Although the numbers of fish and species composition in the catch were related to depth, the effect of the sound emission transcended the relationship. Because of its specific design, no conclusions can be drawn from this experiment concerning either the distance over which reduced

catch might occur or the duration of reduced catch. Similarly, whether or not survey operations with a large array of air guns would produce effects of the same nature and extent as those observed in this experiment is not clear. Other studies of different design are needed to determine whether survey operations with large arrays produce similar effects on CPUE and, if so, over what distance and for how long a time.

STUDY RESULTS: The Behavioral Experiment clearly showed that several species of rockfish give alarm and startle responses to sounds from a single air gun. For olive and black rockfish, the threshold for the startle responses lies between 200 and 205 dB re 1 μPa. No startle response by vermilion rockfish was observed up to the highest level presented, 207 dB re 1 μPa. The nature and threshold for the alarm responses varied with species. For water column species, the blue and black rockfish, changes in schooling behavior were observed during alarm. Under sound presentation, the blue rockfish milled more frequently and in increasingly tighter mills. Sound presentation caused the schools of black rockfish to collapse to the bottom. For the demersal species, alarm reactions were more individual. Vermilion and olive rockfish formed stationary schools near the bottom, and on sound presentation, either rose in the water column and eddied with increased swimming speed or moved to the bottom and became almost motionless. Although the nature of the alarm responses and the level at onset varied with species, the threshold for the alarm responses was about 180 dB re 1 μPa. Some subtle changes in behavior may become evident at 161 dB re 1 μPa.

For the behaviors examined in rockfish within the field enclosure, little residual effect by the sound presentation was observed. Startle responses were given at the beginning of the high-level sound presentations but were not maintained throughout the entire presentation. Alarm responses also were not always maintained throughout the sound presentations. Fish returned to their presound behavioral patterns within minutes after the end of the sound presentations eliciting responses. These observations provide evidence that the fish may habituate to the sound emissions.

In the Main Field Experiment, the catch statistics showed more evidence of an effect from air gun sound emissions than did various measures of spatial pattern of rockfish aggregations. There was no significant difference between control and sound emission trials in the areal response of rockfish aggregations as measured on the fathometer records. Height of the aggregation between preoperational and operational phases varied as a function of the species composition of the catch. Under control conditions, aggregations producing large catches of chilipepper showed increased height under the operational phase when the setlines were deployed. Aggregations producing catches of vermilion rockfish and other stout-bodied rockfish showed little or no change in height between phases under control conditions. During sound emissions, however, there was a significant decrease in aggregation height regardless of species composition. Different rockfish species showed species-specific patterns of occurrence along the setline, but these patterns did not show any difference between control and sound emission conditions. Chilipepper occurred with decreasing frequency from top to bottom of the setline, whereas the other species examined showed their highest occurrence toward or at the bottom of the setline.

In contrast to the results regarding spatial pattern of the aggregations, the rockfish catch was substantially reduced under sound emission. Under the conditions of this field experiment, total CPUE declined by 52.4% [α = .016; CI(-27.55% $\leq$ RC $\leq$ -77.6%) = .90] and the cash value by 49.8% [α = .028;

CI(-21.4% ≤ RC ≤ -79.0%) = .90]. Of the five most abundant rockfish (chilipepper, vermilion, bocaccio, yellowtail, and greenspot), there was significant decline in the catch of three species (chilipepper, α = .046; bocaccio, α = .007; greenspot, α = .021). Although the numbers of fish and species composition in the catch were related to depth, the effect of the sound emission transcended the relationship. Because experimental fishing was not conducted at various distances from the sound source, no conclusions can be drawn from this experiment concerning the distance over which reduced catch might extend. Similarly, because experimental fishing was not conducted after the sound emissions ended, no conclusions can be drawn from this experiment concerning the duration of the effects. Also, because of differences between single air guns and large arrays of air guns in source level, acoustic signature, and sound exposure regimes, whether or not survey operations with large arrays would produce effects on CPUE of the same nature and extent as those observed in this investigation is not clear. Other studies of different design are needed to determine the distance over which effects on catch from a large array might be evident and to determine the duration of any such effects.

STUDY PRODUCT(s): Malme, C. I., P. W. Smith, Jr., and P. R. Miles. 1986. Characterization of Geophysical Acoustic Survey Sounds. OCS Study MMS-86-0032. Prepared by BBN Laboratories Inc. for Battelle Memorial Institute under Contract No. 14-12-0001-30273 to the Department of Interior, Minerals Management Service, Pacific Outer Continental Shelf Region, Los Angeles, California.

Pearson, W. H., J. R. Skalski, and C. I. Malme. 1987. Effects of Sounds from a Geophysical Device on Fishing Success. OCS Study MMS-87-0020. Prepared under Contract No. 14-12-0001-30273 for the Department of Interior, Minerals Management Service, Pacific Outer Continental Shelf Regions, Los Angeles, California.

Fish Dispersal Steering Committee. 1985. Pilot study on the dispersal of rockfish by seismic exploration acoustic signals: a joint commercial fishing/petroleum exploration industries project in cooperation with State of California and federal agencies. Report distributed by the International Association of Geophysical Contractors, Denver, CO.

This pilot study, a joint commercial fishing industry and petroleum/geophysical exploration industries commissioned project, accessed the effects of seismic acoustic signals on commercially viable rockfish plumes (aggregates).

The position of the Steering Committee that oversaw this project as to the findings of this study were as follows:

"A premise on which the pilot study was based was that the reaction of rockfish to a compressed air chamber type seismic acoustic exploration energy source would be quite distinct. In this pilot study, this was not the case. There were less distinct changes observed in the spatial distribution of rockfish plumes. However, the lack of an adequate control study precludes the interpretation of a cause and effect relationship. This pilot study was not designed to quantify more subtle changes. Nevertheless, after review of the findings and extensive discussions with both the consultant and the field participants, the Steering Committee believes that those less distinct changes that were observed require further study."

This document contains one consultants report, materials relating to the proceedings of the Steering Committee and copies of field data compiled during the study with accompaning charts and graphs.

FROM: Linton, T.L, etal. 1985. Effects of seismic sounds on marine organisms: An annotated bibliography and Literature Review. Marine Fisheries, Texas A&M University - Galveston

Offshore Subcommittee Trip Reports

Group A—Santa Barbara Area • April 1988

1.33 Rep. Dean Sutherland
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Representative Dean Sutherland
Chairman, House Natural Resources Committee

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Chris Platt
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Shelton, WA 98584

ORAP Trip Report

I. April 21, 1988

II. By Dean Sutherland

III. ORAP subcommittee on Offshore

IV. Traveled on April 14 and 15, 1988

V. Departed from Vancouver, WA to Santa Barbara, California and returned to Vancouver, WA.

VI. Tour, review and investigate the offshore oil development production activities and attending issues in the Santa Barbara channel and surrounding area.

VII. I arrived the morning of April 14th
A. Upon arriving the other subcommittee members, who arrived on April 13th briefed me on:

1) their meeting with Terry Letruff, Executive Director of GOO (Get Oil Out). The discussion centered on how an active, educated public can and did influence offshore oil and gas development and environment and social impacts and accommodations.

2) Their meeting with John Richards, the Sea Grant Marine Advisor for three counties. I also met with John on April 15 and others interested in protecting the fisheries involved. The discussion included the hassles and need for a timely, accurate and adequate process to identify when the oil industry will be working the waters and how to resolve damage claims by the fishing industry results from the oil industry and its contractors activities. Notable level of

frustration from the fishing industry. Need for agreed to notification and compensation process. Special note that individual fisherman wanted others to stay out of their traditional grounds. Also that others who normally didn't fish the area often asked for compensation, because it "might" impact them "in case" they decided to fish the area.

3) Their meeting with Dr. Charles Woodhouse, a marine mammal expert at the Santa Barbara Museum of Natural History. Discussed issues surrounding marine mammals and received an historical perspective.

B. Met with Skip Onstad, manager of Clean Seas, an industry coop for the cleanup of oil spills, prevention of navigational accidents and fire fighting activities. We toured the office and equipment yard in Carpinteria, CA and one of their ships, Mr. Clean III, in Port Hueneme, CA. Skip reviewed and explained the capital and operations budgets, (about $10 million in capital expenditures to date and an annual operations budget of about $5 million), the inventory of equipment and how each piece was used, if effectiveness and the hierarchy of response for clean up, etc. Each coop member is responsible for initial cleanup efforts. If the spill or fire control efforts need assistance Clean Seas is contacted. If the emergency is major, other entities will be called in to assist. Clean Seas receives approximately 12 calls each year. The initiator of the call has to cover the cost of the Clean Seas cleanup efforts. We discussed the limitations of the equipment. Weather was the major limiting factor. However environmental damage is also a major issue with the use of dispersents. We discussed the authority of the US Coast Guard, Marine Sanctuary officials and others who have a direct say in how to contain, clean up or disperse oil spills. We also talked about air emission "stock brokering" and how offshore oil production activities air pollution was mitigated for by oil industry funded cleanup of "onshore" nonindustry and industry related activities.

C. We toured the Channel Islands National Park headquarters in Ventura. We learned about the history of the islands and the habitat and wildlife on them. We were able to view two of the islands and some of the oil platforms through telescopes.

D. We met with Glenn St. Amant, education project coordinator and Francesca Cava, manager, of the Channel Islands National Marine Sanctuary. They explained what the sanctuary is, what it tries to do and how it was established. We listened to the needs for increased funding, improved access for the public and the feared

effects of exposure to oil and gas spills. The potential of spills was two fold. First from a direct leak from the wells. Second, was leakage from tankers and support craft. The support craft also posed a harassment potential to wildlife. The need for increased marine life research and baseline information was evident. We discussed the influence, effect, consideration, and reference to the Sanctuary receives during the leasing of oil and tracts. Its presence increases the sensitivity and attention given to marine life and habitat. It also provides a focal point for groups to relate to on behalf of the need to protect the environment. Suggestions were discussed to establish other types of sanctuaries, scenic areas, marine life preserves, etc. on both a national and state level.

E) We met with Clair Ghylin, vice president of exploration, and other Chevron, USA employees. We reviewed slides of the national energy need, state, local and federal laws and permit processes and timelines, the cost of exploration, development and production, some of the marine use conflicts and we toured platform Gail by the Channel Islands National Marine Sanctuary. Platform Gail was built and installed at a cost of $127 million. The superstructure was built in Japan. The above water structure was built in Stockton, CA. The platform can house 62 employees. It is totally self contained, water, electricity, etc., with the exception of the need to restock food provisions. Much of the work such as repairs, cooking, etc. are done by contract with local Chevron companies. We were told that platform Gail generates 2,000 jobs in the local economy. We reviewed the construction, use, inspection, maintenance and safety of the platform to shore pipelines. We inspected the drilling decks and the on-site refining and separation capability. The platform will have between 18 and 30 some wells. We discussed the fail-safe automatic shut off, shut down system, the construction of the well casings and the footings of the platform. The facility is highly computerized and has 2,500 safety devices. The site has its own telecommunications systems. Microwave telephone system and a number of radio systems. We reviewed how the product volume is measured to detect any leaks in the pipelines. They can detect a 1/100th of a barrel leak. A tremendous amount of information was exchanged. Including how the crews are transported, working hours, employee benefits and salary levels, all very good. We saw marine mammals hauled out on marker buoys around the platform.

f) We met with John Richards of Sea Grant and reviewed who

could provide more information for us.

G) Carolyn Pendle of Washington Sea Grant has all the names, addresses and phone numbers of people contacted and suggested new contacts.

VIII. We received a number of publications from Clean Seas, the Marine Sanctuary, and Chevron. Chris Platt has a complete list of all publications received.

IX. The oil industry stressed the need for an up front decision on to lease or not to lease followed by appropriate review and permitting input and processes. The fishing industry stressed communication, coordination, and compensation. The environmental concerns stressed research, baseline information and possible ill effects of spills. I believe a very impressive and balanced view of the issue. I feel that basic policies need to be established as well as processes to deal with the specifics of individual lease sales. Accurate public education and clear understanding of the issue is very important. ORAP should spend time gathering and summarizing known research and historical data as well as the processes that have been established, their effectiveness and what is still missing in research, process, and state regulatory authority.

APR 27 1989 APR 28 1989

ORAP SUBCOMMITTEE ON OFFSHORE OIL AND GAS SANTA BARBARA TRIP
APRIL 13-15, 1989
Chris Platt

The Subcommittee on Offshore Oil and Gas Development met in Santa Barbara, California on Wednesday, April 13th. Our intensions were to interview and discuss with people how this area has dealt with historical oil and gas development and request information that might be helpful for Washington State's proposed lease sale. Overall our meetings were very informative and I believe our time was well spent.

I. Terry Letruff, Executive Director of GOO (Get Oil Out)

Founded in 1969, GOO was organized shortly after the oilwell blowout of Platform A and the spillage of an estimated 3 million gal. of oil. They have a current membership of about 800 members. Mr. Letruff stressed the importance of not allowing this type of development in areas which are incompatible with this type of activity. Preplanning is essential as is inventorying the resources both on and off shore.

He discussed how quick response for oil spill containment has it's limits, particularly in seas over 3 feet and spills over 1,000 gallons. As a direct result of the 1969 blowout, planning for oil spill containment is required. He showed us slides of the 1969 spill and especially disturbing to me was the oil oozing out of the landfill where oil soaked straw had been disposed of. This oozing in turn contaminated many acres and streams effecting wildlife habitates for years and spoiling priestess beaches. The tourism trade was directly impacted.

Air quality standards for offshore releases in Federal waters are weaker than onshore standards, even though offshore releases do impact onshore air quality. Air quality can be impacted by construction activities and on shore facilities, diesel fumes from ships, supply boats, platforms. One alternative would be to provide electricity for platforms by cable. Noxious fumes from empty tankers that are being filled also contribute to air quality impacts. Agreements have been made only after lawsuits were filed to provide for filters and capping devises for tankers. Other impacts offshore include the impacts to fisheries and the benthic communities from drilling muds, and dispersants used to breakup spilled oil.

Because of their early interest in public participation, GOO has become an effective organization that has influenced development to proceed in a more cautious manner with respect to the multiple resources and uses in their area.

II. Craig Fusaro, Liaison Office South Central Coast Fisheries and Oil Operations (C/COG) and John Richards, Sea Grant Marine Advisor.

Craig Fusaro welcomed us and explained his job and the purpose in having a central informational gathering place where the oil industry and fishing industry can meet to discuss space use problems and conflicts. They are funded by the oil industry in attempt to mediate as much as possible those conflicts. They have formed subcommittees to deal with resource protection issues such as geophysical effects of operations on eggs and larvae. They provide for negotiated agreed upon researchers, thus promoting good science, information of types of fisheries and boundaries of fishing, negotiations on shipping lanes, and litigation/mitigation for loss of gear. He provided us with some documentation of there efforts.

John Richards discussed his role through Sea Grant and how he interacts with C/COG. He has been working since 1976 on assessment of the

resources. John Richards explained some of the difficulties that trollers experienced with nets snagging on abandoned and unmarked well heads. BLM-OCS set up the first prototype program to assist fisheries. Trappers (crab and lobster) were effected by the exploration and geophysical testing by airguns as well as the trollers. Posting of notices didn't work and often times fisherman became displaced from this activity. C/COG developed a 10 day notification process for federal waters and a 5 day process for state waters. They have developed a newsletter to aid in the information distribution process. Ideally, a two month notification process would help, but oil interests don't want competitors to know of their plans.
Exploratory impacts: There is an increase of crew and supply boat traffic, conflict of running over gear. More competition for harbor space which may displace commercial fishing uses. The Eggs and Larvae subcommittee claim that seismic exploration may account for a 50% reduction of (hook and line) fishing. Trollers feel this effect most directly.

From our meetings with John and Craig we commenced on a walking tour of the fishing harbor where we were introduced to three commercial fishermen. Their experiences reflected the frustrations with the notification process and their attempts of trying to work through these. One fisherman stated that he takes his chances now and traps in areas set aside for exploration anyways. He claimed that even with the notification process, exploration activities exceed their boundaries and the risk is justified. Furthermore, the timelines are so broad that he wasn't sure just when they would be in his traditional fishing area. He complained that displacing fishing areas increased the competition on already overfished areas. There was also the complaint that compensation made for not fishing in areas wasn't fairly applied to all fisherman.

III. Thursday April 14
Dr. Charles Woodhouse, marine mammalogist

Dr. Woodhouse discussed with us impacts for oil and gas development on marine mammals. Overall the effects on marine mammals were from oil spills and primarily collision from ships and propellers. There were no base line studies on marine mammals in the Santa Barbara channel until he came there in the mid-70's. His suggestions include:
1. peer review of studies
2. develop a long term data base (10 years)
3. Establish what areas should be protected.
4. develop a monitoring program to determine effects.
5. recognize these areas are multiple use, and plan for this.
6. continue research on sublethal effects of chemicals to the longterm effect on the environment and mammals.

Contact Bruce Mate, OSU, for information on marine mammals and aerial surveys.

IV. Skip Onstad, Manager of Clean Seas

We met with Mr. Onstad at his office in Carpinteria where he offered us lunch and a slide-show of their operations. Clean Seas is an industry co-op designed to aid in the cleanup operations of spilled oil and fire fighting capabilities. Their annual operating budget runs about $5

million per year with about $10 million in capital expenditures. They also have operations in San Francisco and Seattle. They respond to about one spill per month and they claim that these spills are usually on the small scale (less than 1,000 gallons). If a major spill occurs then Clean Seas requests assistance from one of their other operations. Skip commented that their oil booms can contain oil in up to 10 feet of swells, although weather is a limiting factor.

We talked about how air quality was being mitigated by a "stock brokering" of air emissions. In some cases the oil industry funded onshore activities for the right to exceed air quality limits offshore.

In some cases when the spill is spreading too fast for the booms to contain, chemical dispersants are needed to break down the oil. The use of chemical dispersants can be applied with a D-C 3 plane, helicopter, or boat at a rate of about 5 gallons per acre. Dispersants may cause adverse environmental impacts but Skip claims these are minimal. We discussed the procedure of notification if dispersants will be used from the Coast Guard, the state, and other effected parties. Later we toured Mr. Clean II in Port Hueneme.

V. We traveled to Ventura to view the Channel Islands National Marine Sanctuary headquarters and see the Islands from a lookout tower. Luckily the weather had cleared and we could see a very long distance into the Channel. We saw over a dozen oil platforms with several within state waters. We also learned about the type of fisheries in the Sanctuary and some of the history of the Islands.

At their office in Santa Barbara, we met with Glenn St. Amant, education project coordinator and Francesca Cava, the manager of the Sanctuary. Mr. St. Amant showed us a slide presentation explaining the Marine Sanctuary Act. The primary purpose of the national marine sanctuary program is to conserve nationally significant marine areas through management, research and education. With oil platforms and vessel traffic so close to the sanctuary, we questioned what impacts this had on the sanctuary. They reflected on a recent spillage from the collision of two ships and how the oil had reached the sanctuary in very rough seas. Clean Seas had decided to apply dispersants on the spill to try to stop the oil from reaching the beaches of the Channel Islands. Because they have only recently inventoried the area for establishing a baseline, they haven't had a chance to follow-up again to determine impacts from this oil spill.

Ms. Cava expressed concern for decreased funding for research and management under the Reagan administration for the existing sanctuaries. Their annual operating budget is for $80,000.

We also discussed the Washington coast line and it's potential for being listed under the act. She commented that this designation could aid the state in research activities as well as educate the public to the significant resources of this coastal area.

VI. Chevron U.S.A., Clair Ghylin and associates

On April 15th, we met Mr. Ghylin and his associates for breakfast. During this time he presented a slide presentation of national energy needs, OCS lease timelines, permit procedures, federal and state laws effecting their leases, and economic benefits derived from this development. After a lenghty discussion over breakfast we met at the airport and took a helicopter ride out to platform Gail.

From maps we discovered that Gail was located within a major shipping lane and within the Channel Islands Marine Sanctuary. Apparently this lease sale had been "grandfathered in" after the establishment of the sanctuary. They expect to be in production by the end of the year with between 18-30 wells. This massive structure was built and installed at a cost of $127 million. The drilling phase will cost an additional $100 million. Most of the jobs were held by trained personnel from outside the Santa Barbara area or people that have relocated there to work on the platforms. One man commented that over 2,000 jobs were created from this platform (seems a little exaggerated). The platform can accommodate a crew of about 60. They work for seven days straight then take seven days off.

The platform was equipped with special gas masks in case of the release of poisonous hydrogen sulfide gas (sour gas). The crews go through drills regularly to train for a variety of accidents. Everything is computerized so that at any moment conditions can be traced to the finest detail. We toured the drilling decks and refinery sections of the platform. Overall it was very interesting.

In conclusion, I was impressed with the knowledge of all those we spoke with during our trip. I came to realize that our oceans are a multiple use resource that must be managed for in a most complex manner to truly achieve a balance for both nature and mankind. Our state must identify early on which areas of our coast, both on and off shore must be protected for their resource values for either marine life or fisheries; and studies need to be funded fully for this project. The oil industry needs the assurance that once an area is leased, that they can proceed to develop in a timely manner. The effect of industrialization of our ocean and coastal communities impacts existing traditional activities and values. Fisheries will be impacted as will the fisherman who harvest them. Marine and shore birds, perhaps the most vulnerable to oil spills, will also be displaced from feeding areas and nesting areas if a spill should take place. Overall the public must be aware of this lease program and become a part of this decision making process.

ROBERT C. PETERSEN
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PORT OF ILWACO

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5/16/88

B. GLENN LEDBETTER
WASHINGTON SEA GRANT
U of WASHINGTON
3716 BROOKLYN AVE, N.E.
SEATTLE, WA 98105-6795

DEAR GLENN,

AT LONG LAST I AM ENCLOSING MY TRIP REPORT. IN KEEPING WITH YOUR, "DIRTY PAPER" POLICY, I HAVE HAND CORRECTED A FEW TYPOS — AND, AS YOU CAN SEE, HAND WRITTEN THIS LETTER.

HOPE YOU FIND THE REPORT SATISFACTORY. I SUPPOSE THERE WILL BE AN OPPORTUNITY TO DISCUSS THE REC-COMENDATIONS IN GREATER DEPTH.

YOURS VERY TRULY,

Bob Peterson

May 6, 1988

Robert C. Petersen
Offshore Subcommittee

Travel dates - April 13-15, 1988
From Ilwaco to Santa Barbara and return

Purpose - To determine how the experience of offshore development in the Santa Barbara area can help the State of Washington prepare for the possibility of similar development.

Contacts made - As follows in narrative.

Publications received:

"Offshore Oil Development in California" - U of C, Berkeley, 1986
"Leasing Energy Resources on the OCS" - MMS, 1987
"Managing Oil and Gas Operations on the OCS" - MMS, 1986
"Pacific OCS Lease Sale" - MMS, 1985
"OCS Oil and Gas Activities" - MMS, 1986 - 1987
"Drilling Discharges in the Marine Environment" - National Academy Press, 1983
"Marine Advisory Program" - CA Sea Grant, April 1988
"Cetaceans of the Channel Islands" - NOAA, 1987
"Channel Islands Sanctuary Management Plan" - NOAA, 1983
"Clean Seas" Brochure, equipment list and newsletters
"Fish and Offshore Development" - API, undated
"The Nature Line" - Chevron, 1987

April 13, 1988

Met with Terry Letruff, Executive Director of Get Oil Out (GOO). Saw slides of the 1969 blow out and cleanup efforts. Most efforts were ineffective. Although there were great disruptions at the time, long term effects appear to be minimal.

We were advised that it is most important to prepare an inventory of current conditions, assets and sensitive areas so that impacts of any development activities can be measured, and special areas can get special protection.

The impact of offshore development on the onshore environment cannot be overstated. Air quality is a major problem. Facilities outside of the three mile state waters are not subject to EPA clean air standards, resulting in unregulated discharges. The emissions from increased vessel traffic and construction equipment are also very significant. Fumes displaced from tanks during the loading process add to the problem.

Suggested that the harbor authorities at Oxnard, where most of the offshore support vessels are berthed, may consider the additional business to be a mixed blessing.

John Richards - California Sea Grant
Craig Fusaro - California Operators Group C-COG

C-COG is a private organization formed by the offshore oil operators and local commercial fishermen. Its function is to perform liaison activities between the two groups. Issues addressed included the following:

C-COG sometimes holds proprietary information that neither the fishermen nor the oil companies want to see released to their competitors, but is necessary to resolve conflicts, i.e., location of snags, of "hangups", etc.

Assisted in converting Lambert grid mapping of well and pipeline locations to loran, or latitude and longitude coordinates, so fishing vessels could locate them.

There is a problem with geophysical survey vessels and fishing operations, particularly fixed gear such as crab pots. State law requires advance notice of proposed survey work. C-COG publishes notices which are posted at harbor master offices, etc.

There is an ongoing concern about the effects of seismic survey activities on fish behavior, and particularly on the survival of eggs and larvae. A Minerals Management Service study has indicated as much as a 50% reduction in some hook and line fisheries in the immediate vicinity of seismic activity. There is an ongoing test in Washington concerning seismic effects on Dungeness crab larvae.

Prior to exploratory drilling C-COG has provided liaison to identify prime fishing areas and to reduce area conflicts.

C-COG received a Coastal Energy Impact Program (CEIP) grant to publish a newsletter which is distributed to fishermen and other interested parties about proposed offshore activities.

In order to resolve problems with supply vessels running over fixed fishing gear, C-COG negotiated vessel traffic lanes which the supply vessels are supposed to stick to, and are to be kept free of fishing gear.

Gil Crabbe - Commercial Fisherman at Santa Barbara

California Proposition A would have required a joint and presumably orderly development of the offshore oil industry. Was defeated.

In order to close certain areas to fishing for several months during exploratory activities, oil companies bought out fishermen based on delivery records of fish caught in those areas in previous years. The problem is that some fishermen did not keep accurate enough records and were not eligible for buy out. Shifting additional fishing effort into smaller areas adversely affects boats that normally fish those areas, but they are not compensated.

On one occasion Mr. Crabbe was notified of the date and location of a forthcoming geophysical survey. He had some gear in the area to be surveyed, so he moved it to an adjacent area. On the day of the survey he was aboard his boat and observed the survey vessel make an unscheduled turn right through his gear. He contacted the vessel by radio and the acknowledged they had done it and said that unanticipated currents made it expedient to transverse areas other than intended. in spite of the acknowledgement it required three months of litigation and $1,500 in attorney's fees to be reimbursed for the lost gear.

Mr. Crabbe complained that liaison agreements are not law, and therefore are not enforceable.

He also stated that there is no question that the oil industry has had economic benefits for the area as a whole, but not for the fishing industry. In spite of the fact that total tonnage landed has increased in recent years, the individual fishermen feel they are being hassled and are losing productive time and area.

Gordon Cota - Maritime Expediter & Commercial Fisherman

Discussion included the relative benefits or adverse impacts of the oil industry to commercial, as opposed to recreational fishing. His feeling was that commercial fisheries certainly did not benefit from the presence of oil platforms. The platforms do act as an attraction for fish, but probably only attract them from open water and do nothing to increase the overall population. Commercial vessels cannot fish in the immediate vicinity of the platforms, therefore they lose fishing area, and fish on less dense populations. Recreational fishermen are allowed to fish in and around the platforms, and therefore may benefit from their existence.

The presence of submerged pipelines, the trenches left by dragging anchors caused by the pipe laying vessels, and unused wellheads, even if they are charted, cause a loss of fishing area and potential places to hang up and lose gear.

The vessel traffic lanes also cause a reduction of area in which to fish. Compliance is voluntary. New supply vessel operators and new commercial fishermen are many times unaware of the lanes so problems still exist.

Mr. Cota told us of a proposed program that would make grants available to upgrade fishing vessel navigation and safety equipment to make it possible for existing vessels to become engaged in more distant water fisheries, thus taking pressure off of the area in the vicinity of Santa Barbara. They are also working on assistance in marketing under utilized species and to remove unused wellheads.

Concern was also expressed that no one has ever researched the long term effects of the discharge of drilling mud into the water.

April 14, 1988

Charles D. Woodhouse, Ph.D. - Deputy Director and Curator of Vertebrate Zoology, Santa Barbara Museum of Natural History

Discussion concerned the impact of offshore development on marine mammals. Dr. Woodhouse stated that there is no clear cut impact of offshore oil development on marine mammals. Construction projects near seal haulout areas do not seem to cause a problem. The animals seem to accommodate human activity. Wildlife in the Santa Barbara area has had to contend with natural seeps at Coal Oil Point forever and seem to deal with it. "We have a lot to learn about what human activities may cause an impact on marine mammal populations."

Dr. Woodhouse did strongly advise that we should learn where sensitive areas on our coastline are located. He also suggested that a peer review of existing studies be carried out to establish their credibility and applicability.

Skip Onstad,Manager - Clean Seas - Carpenteria

Saw a slide presentation on oil cleanup procedures and a tour of an oil cleanup vessel at Ventura.

Clean Seas is a non-profit organization formed by the oil industry to provide cleanup capability for marine oil spills. They have three large oil spill response vessels as well as several smaller vessels and trucks and trailers with mobile equipment.

Mr. Onstad commented that an offshore oil spill response vessel for the Washington coast should be built on the more seakindly model of tuna clippers, rather than the supply vessel model they use at Santa Barbara, and should be about 180 feet long.

The techniques are far more sophisticated than they were during the Santa Barbara blowout of 1969. Small spills in calm seas can be cleaned up reasonably effectively. In the event of a large spill during adverse conditions, about all that can be done is to divert the oil from sensitive areas and let wave action naturally break up the slick. In some cases chemical dispersants are used. There is considerable controversy about the effectiveness and safety of the dispersants.

The oil industry is extremely conscious of the necessity of avoiding even the smallest spills and cleaning up rapidly in the event of an accident. Cleaning up a spill of five or ten barrels is considered significant. This is curious because natural seeps emit oil in the range of 60 to 600 barrels per day.

LCDR Francesea Cava, Sanctuary Manager
Glenn St. Amant, Education Project Coordinator
Channel Islands National Marine Sanctuary, NOAA

Saw a slide presentation on the Sanctuary, and discussed the operation and concerns about proximity to the offshore oil industry.

We were advised that it is vitally important that we establish a current base line of conditions as they exist along our coastline so that any impact of change as a result of offshore development can be measured. Developers are now demanding that they be allowed to carry out projects unless an adverse environmental impact can be proven. If we do not know precisely what current conditions are, we cannot prove if anything has changed.

If we should decide to establish a "Sanctuary" anyplace along our coast, we should be very thoughtful about what we mean by "Sanctuary". We should clearly define what activities would be allowed, what would be prohibited and how it would be policed.

The major concern of the Sanctuary is not necessarily a blowout. The more likely spills would result from a collision between two vessels, or between a vessel and a platform. There have been vessel collisions in the Santa Barbara area, but never a collision between a vessel and a platform. The platforms are well lighted, but the great number of them and the glare of the lights can be confusing to vessel operators. Near misses have been reported. A vessel traffic system, such as in place in Puget Sound, is recommended.

Another concern is the tracking of the trajectory of drill mud and cuttings into sensitive areas. Currents should be studied in advance of drilling to establish if there is a possibility of contaminating an area away from the drill site.

Local governments were urged to become aware of potential impacts on their communities and be prepared to protect their interests. It is astounding that Santa Barbara County has been able to achieve so much influence on events occurring outside of their County because they were able to demonstrate that impacts would be felt within the County.

LCDR Cava commented that, "There are some things that cannot be mitigated for".

April 15, 1988

Breakfast with Clair Ghylin, VP, Exploration, Chevron, and his entourage. Received a slide presentation and a discussion of the necessity for offshore oil exploration and production and the political and environmental problems involved. The political hurdles, environmental assessments, lead time necessary to build offshore platforms, pipelines and refineries, etc. result in a program that is inevitably spread over several changes in federal and state governmental administrations. Changes in policy that go along with changes in administration can result in extremely costly, and even prohibitive, requirements. A clear, long term policy is much needed.

Mr. Ghylin was very clear, and very convincing in his presentation, however I feel that he lost a certain amount of credibility when repeated twice that the real reason Chevron is pursuing such an aggressive offshore program is primarily to benefit the widows and orphans he indicated were the principal shareholders of the company.

We flew by helicopter by platform "GAIL" which was just installed at a cost of $200 million. Thirty six wells will be drilled from the platform at a cost of $2 million to $5 million each. Primary separation of the oil, gas and water will be made on the platform. The oil and gas will be moved ashore by pipeline to Carpenteria, thence by pipeline to a refinery at Long Beach. The water will be returned to the sea on site.

The design, operation and dedication of the crew to reducing the likelihood of spills or blowouts was impressive.

Conclusions and Recommendations:

1) The long term environmental impacts of even a major event such as the 1969 Santa Barbara blowout are not as great as might be imagined. There would be a great mortality of sea birds, and possible fur bearing marine mammals, as well as short term disruption of fishing and tourism.

2) Current technology has greatly reduced the likelihood of a blowout or other major spill in connection with drilling or production. Even though the likelihood is relatively low, sooner or later an accident will happen. Therefore, planning for the contingency of a major event must be carried out.

3) The greatest disruption to the fishing industry is as a result of loss of fishing area to platforms, pipelines and vessel traffic lanes, etc. and the loss of fixed gear and loss of fishing time and area due to operation of geophysical exploration vessels. Liaison, and enforceable agreements, between the fishing industry should receive early attention. (oil interests and)

4) Environmental Impact Statements should be as complete as possible. If an issue is not addressed in the EIS it is too late.

5) Base line data must be assembled immediately.

6) Sanctuaries, or protected areas must be established. For example, oil that enters an estuary and settles into the fine sediments can be detected for up to ten years. No mitigation or reimbursement program is likely to be funded to a level to cope with a ten year moratorium on shellfish harvest. Sources of likely spills must be located far enough away from shellfish populations so that any spills can dissipate before reaching the areas.

7) Oil spill cleanup capability in the open sea is minimal at best. It would be a waste of money to try to keep oil spill response vessels and equipment on hand at a level designed to cope with a major spill. It may be wiser to gear up only to a level to clean up the minor spills that are to be expected as a normal part of production, and set the other money aside into a fund to reimburse coastal residents and business people for losses incurred.

8) There would be only minimal economic benefits, if any, to coastal residents and business as a result of offshore exploration or production, but they would bear the brunt of the degradation of the environment as a result of ongoing activities and the loss of business as a result of a spill. A portion of the lease revenues should be designated for local governments and businesses to offset adverse impacts.

9) One of the major impacts of offshore activity is air pollution. The normal winds on the Washington coast flow in an onshore direction. Polluted air could bring acid rain to coastal timberlands affecting timber production and fish spawning areas. Instead of

clean ocean air blowing into the Puget Sound and Portland/Vancouver metropolitan areas, contaminated air from offshore activities could exacerbate existing problems. This concern should be carefully evaluated in the EIS stage.

DATE: May 17, 1988

TO: Mr. Glenn Ledbetter, ORAP Manager

FROM: Mr. Coleman Ferguson
Anacortes, WA

SUBJECT: Trip Report for April 13-15, 1988

On April 13, Subcommittee Members Chris Platt and Bob Peterson along with Texaco representative John L. Brown and Carolyn Pendle of the Washington Sea Grant Program visited and interviewed representatives of the Joint Oil/Fisheries Liaison Office in Santa Barbara, California. The group objective was to establish an understanding of how the oil, geophysical and commercial fishing industries in their area have interacted in attempts to resolve their respective problems and how such methods might apply in Washington State.

Mr. John B. Richards, an area marine advisor from the Cooperative Extension of the University of California, and Dr. Craig Fusaro, of the Joint Oil/Fisheries Liaison Office in Santa Barbara, narrated detailed histories of how the subject industries intially tried to operate in separate vacuums in which little or no understanding of each others concerns existed. However, the oil embargoes of the late 1970's brought on increased exploration in domestic waters including the Santa Barbara Channel and Santa Maria Basin. Accelerated exploration brought on an increased frequency of conflicts to such extent that interindustry representatives found it necessary to submit their many differences to discussions of mediation. From these initial discussions of early 1983 the involved representatives formed the Joint Oil/Fisheries Committee of South/Central California. According to Richards and Fusaro this "Joint Committee" has continued to function as an effective communication forum through which member industries have exchange concerns and set forth recommendations that have in many cases resolved conflicts or reduced them to manageable control. In this regard, it is herein recommended that ORAP Advisory Committee Members review the Joint Oil/Fisheries Committee of South/CentralCalifornia publication entitled "A Manual for Geophysical Operations in Fishing Areas of South/Central California," dated March 1, 1986 and consider this reference as a resource basis for recommended use in Washington State.

On April 15, I joined Subcommittee Members Chris Platt and Bob Peterson along with our Chevron host for transportation by helicopter to Chevron's Platform Gail. While there I observed a variety of fish and marine life including several very active sea lions near the structure base and from discussions with platform personnel concluded that the operation is very highly designed and geared to conform with sound ecological and environmental practices and considerations.

Very truly yours,

C. R. Figures

JLB:LRR

KEITH HERRELL

OPAP Trip Report
Submittal Date: 5/24/89
Offshore Subcommittee
Travel Dates: 5/15-19/89
From: Lompoc, Ca. To Santa Barbara, Ca
Purpose: Visit off-shore oil facilities, on-shore processing facilities, Government representatives, Private citizens, scientists, sport/commecrial fishermen and others to obtain information relative to the various impacts resulting from OCS leaseing and oil production activities.

Contacts: Attached

Publications received:

1. Executive Summary for First-Year Annual Report for the MMS California OCS Phase II Monitoring Program

2. Technical Summary For The Study of Acoustic Array Sound on Important Commercial Fisheries Offshore Calif.

3. Santa Barbara News Press story: Seismic Testing Cuts Fish Count, Study Reports.

Other Studies Suggested:

1. OCS Decision Making Process-MMS

2. Environmental Studies Plan- MMS

3. Battelle studies on Reduced Catch-ability resulting from Seismic Testing

4. Battelle study on damage to crab larve from Seismic Testing

5. Study Refferd to in the Santa Barbra News- Press article attached.

Overall Lessons:

A. Ecological threats have been minimized by good planning, engineering, monitoring and redundant safety devices. Economic and social impacts be more difficult to understand and anticipate
B. Long range impacts upon the ocean and its critters needs more study.
C. The oil industry is experienced and well prepaired to deal with government at all levels. Unless this

state understands and prepares for OCS leasing there is a good chance that government and the public will be overwhelmed. The seriousness of the social, economic and other impacts upon Washingtons small unsufficiestated understaffed and underfunded Coastal Counties and Community cannot deal with the impacts without assistance from the state. That assistance should in my opinion be in the form of a well developed plan, adequate experienced staffing and financial assistance. The state should assist the counties not take over the management process.

D. OCS oil development and production are not labor intensive. Few people are actually employed except construction phase and many of them must be imported due to special skills required.

Pre-Lease Information:

A. Negotiations with the Feds and Oil Companies that provide adequate revenues to pay for all expenses and mitigate all damage.
B. State/County permitting requiements and processes for state waters and shore side instalations

C. Long range monitoring requirements.

D. Obtain as much infromation from MMS as possible

E. A "Traffic Plan" to minimize conflicts with current users.

Post-Lease:

A. Drilling Sites - proposed platform locations

B. Polution containment plan.

C. See Pre-Lease above

Relation to Cases: Fair. Understates potential social and economic impacts.

Key Issues creating incormation demand:

A. Preperations for dealing with the social and economic impacts.

B. Space use Conflicts in the ocean, channels and harbors as well as shore side.

B. Effects of pollutants on food chain - bioaccumulation

C. Damaged reproductivity of fish resulting from seismic testing, drilling and O & G above

D. Need to know more about Kamo Reception and its effect on salmon, crabs and other migratory species

E. See attached article "Fishing Industry In Peril" from the Santa Barbara ANews-Press Many fishermen believe the oil development is part of the problem.

Resolution of Key Issues:

Although there is much information available and some of the issues may have been resolved in specific locations they have not been resolved for the Washington coasts

It was my impression that Santa Barbara County did a better job of preperation, and is doing a good job of managing the mamouth.

Needed Information:

Other than the specific items mentioned above most of the necessary information is available. It must be synthisized and presented in a condensed yet informative manner and a team headed by someone like Bob Butts should be tasked, staffed and funded to propose a detailed plan of action

Advice:

A. Need to be Pro-Active

B. Expect little assistance from the Feds or the State

C. Obtain sufficient revenues to offset costs.

D. Do a better job of planning for the social and economic impacts.

Further Investigations:

A. Will OCS leasing and development result in a net economic plus for the state, for coastal counties and communities or will it be subsidized by the citizens of the state?

B. How many jobs will be created - for how long?

C How do the tribes fit into the process?

D How does the state generate the income to cover the costs?

E Should Platforms be removed when production has been completed or left as artificial reefs?

F Need for new legislation specifically designed to deal with OCS oil development.

G Consider mitigation for recreational and commerical fishermen for lost opportunity (re-reduced catchability, space dedicateed to platforms, pipelines, traffic congestion, collision hazards, damage to gear, ect)

Keith Hewell 5/24/8.
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L.59

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Santa Barbara News-Press, Thursday, May 19, 1988

Fishing industry in peril, study says

By Heron Marquez Estrada
News-Press Staff Writer

Poor management and a dramatic decline in the fish population are seriously threatening California's $1 billion fishing industry, a study by a Santa Barbara-based firm has warned.

The report, commissioned by the National Coalition for Marine Conservation, was prepared by Knecht, Cicin-Sain and Associates of Santa Barbara, and IFC Technologies of San Diego.

It found that the number of fish caught off California declined by 58 percent between 1975 and 1985. Catches by commercial fishermen slipped 44 percent during the same period, the study found.

Spokesmen for the National Coalition for Marine Conservation, which represents the sports fishing industry and recreational fishermen, warned that if the state fisheries continues in decline, the fishing industry could be wiped out.

With it would go an estimated 16,000 jobs, $388 million in household income, and $975 million in business sales, the organization said.

"It's unlikely that the state's entire fishing system is at risk," Robert Knecht, who helped write the report, said Wednesday. But it shows "there are serious problems. Given the economic and social value of the state's fish stock more effort ... and more money needs to be put" into fisheries management, he said.

Knecht is an environmental studies professor at UCSB and a former director of the Department of Commerce's coastal management program in the Carter administration. He was joined in the research for the study by his wife and colleague, Biliana Cicin-Sain, a UCSB marine scientist.

Among the most dramatic findings in the report is data indicating that the number of fish caught between 1975 and 1985 off the California coast — including the Santa Barbara Channel — delined by 58 percent. Commercial catches in the same 10-year period also dropped 44 percent, the stu found.

Knecht said that no clear reas for the decline could be pinpoi ed. But he said it could be the r sult, in large part, to overfishi by both commercial fisherm and the state's estimated 2 milli sports fishermen.

The depletion, Knecht said, m also be caused by water pollutio impacts on the coastal habitat the fish, or as a result of natur changes in the oceans.

The lack of a definitive answe Knecht said, is an indication th the management of the states fis ing stocks, or fisheries, should c

See FISH, Page A 1

Fish

Continued from Page A 1

overhauled to better understand what may negatively impact fishing in the state.

Knecht said the decline that his study chronicles may not portend an end to the fishing industry in the state. But he said it could have severe economic consequences, if it becomes harder — and more expensive — to catch fish because there are fewer of them.

Similar concerns about the future of the fisheries were also voiced by Johnnie Crean, president of the National Coalition for Marine Conservation.

"Californians will find themselves with severe economic and environmental problems in the next 20 years if changes do not take place in the management of Pacific fisheries," Crean said.

He said his group hopes to use the study's findings to prod the state into creating new laws and allocating more fund to beef up fisheries management programs.

Although the study gives no estimate on the amount of money needed to properly manage the fisheries, Knecht said a figure will eventually be developed.

Another point of view came Wednesday from Santa Barbara commercial fishermen.

Dario Castagnola, who has fished the channel for 40 years, said that any call by sports fishermen for state agencies to limit the types of fish that could be caught would cripple commercial fishermen's efforts to make a living.

He said commercial fishermen view the study as part of a continuing battle between commerical and sports fishermen.

"It's not a question of good management or bad," Castagnola said. "It's not a question of right and wrong. There's so damn much politics involved. It's the pressure groups."

Castagnola also noted that, "The guy who always gets it in the neck is the commercial guy. No ifs, ands, or buts about it."

Larry Pender, a Santa Barbara fish market owner, agreed that the central issue is not management practices, but philosophical differences between sportsmen and commercial fishermen.

Further state regulation of the industry would harm commercial fishermen and consumers, he said.

Pender said that what the coalition wants is to "eliminate commercial fishermen."

"What they want is the whole ocean for sports fishermen," Pender said. "That totally disregards the consumer (because) it would deprive a lot of people in the state of fresh seafood."

Knecht said one of the problems is that three entities have a say in managing the fisheries and the result has been an "ad hoc, fragmented, unsystematic and underfunded" approach to identifying and correcting fisheries problems.

He said critical situations, like declines in fish populations, can worsen while the Legislature, California Department of Fish and Game, and the California Fish and Game Commission are debating the problem.

Bill Lawrence
June 1, 1988

Trip Report: Long Beach/Santa Barbara
ORAP Advisory Committee
Offshore Committee
May 17-19, 1988

SECTION A

1. Contacts Made: List of business cards on sheet attached plus John Roberts, V.P. Public Service Marine, Barry Baldwin, V.P., Foss Maritime, Jack Zidell, President, Phoenix Marine.

2. Publications Received:

"Fish and Offshore Development A.P.I. not dated

"Project Beta" Shell Oil Company

"Biology of Two Offshore Platforms" Institute of Marine Resources - University of California, 1977

"Seismic testing cuts fish count, study reports," Santa Barbara News Press, July 16, 1987.

"The Biology of Two Offshore Platforms," University of California, March 1977.

"Why Offshore California," WOGA, not dated.

SECTION B

1. Overall Lessons

A. Monitoring of oil industry on countries an extreme financial drain. Platforms in federal waters and State of California leave little funds for countries infra structure.

B. Safety precautions by the oil industry seem more than adequate with double and sometimes triple safety procedures. Very impressed with the training level of platform personnel and continual upgrading and ongoing training.

C. Lots of emotional debate by government entities and citizen groups but little factual data to back up especially in the hydrocarbon emission area and fishing.

Trip Report

D. Impact financially from employment in the communities is minimal due to the large size and diverse economies. In smaller populated areas such as the Washington coast this might not be the case. Local employment should be stressed more by the oil companies.

E. Oil platforms are a very complex operation.

- Power generation for the platform
- Oil/water separation unit 1
- Gas injection equipment
- Water injection equipment
- Pumping and pipeline operations
- Refining oil and gas
- Helicopter and offshore supply boat supply operations
- Chemical treatment facilities
- Constant monitoring of pipeline pressure, well pressure, water flow, etc.

The list goes on and on and many things could go wrong but this seemed to me, to all be proven and tested technology.

F. Air quality pervades almost all discussion in California. This problem is immense to their region and is not to the N.W. nor would it be off of our coasts.

2. Organization Descriptions

A. Western Oil and Gas Association - Main oil industry association. They seem to react more than lead. Have not done a good job of presenting the oil industry in a favorable good neighbor position. Could if allowed by their members oil companies work better with the communities.

B. Local Entities (Countries, Cities) - Depending on past history with the oil industry (Long Beach, Ventura versus Santa Barbara) problems can get out of hand. Santa Barbara seems overwhelmed by it all financially, emotionally and environmentally.

C. State of California - reaps good monies from oil development but the consistent rap by all was they pump no monies back to the communities that must cope with development.

Trip Report

D. Santa Barbara Citizens Advisory Committee - Formed because they wanted their traditional life style protected. Play very strongly as a watch dog over county planning and monitor all hearings. They want better studies done on air quality to find out if the oil industry is contributing to the air quality problem.

3. Information Needs

A. Counties need more data and monetary help.

B. More studies in the fisheries area and in general more study work should be done.

C. Economic impact studies should have been done before drilling starts.

4. Key Issues

A. Air quality

B. Social costs to communities

C. Visual effects of oil platforms

D. Long term effects of offshore oil development

E. Dispersment of royalty funds unequal to impacted communities

F. Lack of good data on resource impacts (fishing etc.)

G. Lack of good working relationships between the oil industry and communities

H. Emotionalism by industry and government agencies and community groups

5-6. Resolution of Key Issues and Needed Information

A. More facts less emotion.

B. Resolution of some issues could be attempted with third party interveners.

C. Lots of studies currently underway to mitigate some problems.

Trip Report

7. Advice

Royalty payments from both the Federal State governments should be channeled under some formula back to the affected communities. It's unfair for them to shoulder excessive impact costs. Far more advance planning was needed in California.

8. Further Investigations

A. Better studies on all aspects of impacts.

B. Analysis of royalty payments and the possibility of changing laws.

Robert Butts
June 1, 1988

Trip Report: Long Beach/Santa Barbara/Ventura
ORAP Advisory Committee
Offshore Subcommittee
May 17 - 19, 1988

SECTION A

1. **Contacts Made:** See attached list of business cards. In addition: Gene Kjellberg, Senior Planner, Ventura County; John Richards, CA Sea Grant; Naomi Schwartz, staff to Sen. Gary Hart.

2. **Publications Received:**

"Seismic testing cuts fish count, study reports," Santa Barbara News Press, July 16, 1987.

"Technical Summary for the study of the effects of geophysical survey acoustic array sound on important commercial fisheries offshore California," Battelle, June 1987.

"Executive Summary for First-year annual report for the MMS California OCS Phase II monitoring program," Battelle, January 1988.

"The Biology of Two Offshore Platforms," University of California, March 1977.

"Why Offshore California," WOGA, not dated.

3. **Other Publications suggested for later acquisition:**

The Long-term effects of offshore oil and gas development: an assessment and research strategy, D. F. Boesch, Elsevier Applied Sciences Publishing, Barking, Essing, England, 1987.

SECTION B

1. **Overall Lessons**

   A. The effect of oil and gas facilities on Southern California air quality was the major concern of local governments and others. Potential conflicts with fishing interests ranks as the number two concern. Aesthetics of onshore separation facilities appears to rank three.

B. County governments have become the major regulatory entity that the industry must contend with. The California Coastal Commission appears to be close behind. Other state agencies, the legislature, and MMS are relatively modest in their demands.

C. From a space-use conflict stand-point, the recreational fishermen do not appear to have been adversely impacted. In fact, the presence of platforms was seen as having a very positive effect on recreational fishing. Recreational fishermen, however, were not certain of the effects that oil spills and other discharges might be having on fish populations.

D. Employment, and subsequently, social impacts are minimal during the exploration stage. During the development stage, employment increases dramatically, especially if onshore facilities and pipelines are built. For a specific discovery, this phase lasts one to three years. Employment during production is minimal, as are the social impacts. Thus, the real challenge for local and state governments is to manage the high employment and high social costs of the development stage.

E. There are six very discrete types of oil and gas facilities that each have very different employment, location, and space needs:
   - marine support base
   - helicopter/air support base
   - oil/gas/water separation facilities
   - platforms
   - pipelines
   - refineries/gas processing facilities

   While economics plays a large role in the location of these facilities, more siting flexibility is available for the marine and air support bases, separation facilities, and refineries/gas processing facilities. The location of pipelines and platforms is determined in large part by were the petroleum is found.

F. Because platforms and pipelines on the OCS cannot be taxed by the adjacent local government, and because only a small portion of the "8(g)" revenue sharing money goes to the adjacent local governments, cities and counties have had to develop innovative methods to "tax" the oil companies for the social service demands that the industry has imposed on the local governments. These programs, which have been imposed at the permitting stage, have included the establishment of social impact assessments and fishery enhancement programs, to name a few.

2. **Organization Descriptions:**

A. Ventura County Planning Office — The oil industry has had an active presence in the county for many years, with subsequent employment and income benefits, and generally takes a moderate position regarding offshore oil activity, especially relative to Santa Barbara County.

B. Battelle — A great source of biological information on the effects of oil and gas on the marine environment. Very experienced and knowledgeable.

C. California Legislature — The legislature has not played an active role in the offshore oil controversy. It has passed a bill that distributes a portion of the federal revenue sharing funds (27% of all revenues derived from 3 to 6 miles 76 offshore) to coastal counties, but appears to have generally not taken other specific actions as a collective body.

D. Santa Barbara Citizens Advisory Committee — This group, which was formed years ago to deal with local planning decisions such as sub-division approvals, is now playing a role when Santa Barbara County makes decisions regarding the siting of onshore support facilities. The committee appears to be interested in maintaining the "livability" and beauty of the county, and has generally been anti-oil. According to Bob Klausner, Chairman, he has seen few benefits from OCS oil and gas, and plenty of costs.

3 - 5. **Information needs**

A. It was felt by several people that the sub-lethal effects and long-term, chronic effects of offshore oil and gas is not known.

B. The contribution of oil and gas activity to a recent decline in the fishery catch was not known.

C. The counties would have liked to have better projections of the employment and social service demands with specific projects so that they could plan public facilities and "tax" the applicants.

6. **Key Issues**

A. Impact of oil and gas facilities on air quality.

B. Displacement of fishermen from areas due to exploratory drilling, platform placement, supply boat transit routes, and bottom debris.

C. Placement of onshore facilities to avoid aesthetic impacts and to reduce the number of areas used for processing facilities. Consolidation of onshore separation facilities was a major issue.

D. The long-term, sub-lethal effects of offshore activity on marine life, especially commercially harvested species.

E. The social service costs of offshore oil, and the inability of traditional taxing schemes (e.g. property taxes) to pay these costs.

F. The dispersion of rock fish caused by seismic activity.

7 - 8. **Resolution of key issues and needed information**

Progress has been made to resolve all of these issues, however, not all parties are satisfied (nor perhaps will they ever be). Resolution of the long-term effects on the marine environment is currently underway, and the Santa Barbara County has a socio-economical monitoring program in place to assess impacts and charge applicants accordingly.

9. **Advice**

Most said that they should done more advance planning, although they recognized that planning for oil and gas activity is fraught with uncertainty because of the impossibility of assessing petroleum resources, and thus impacts, until late in the development process.

10. **Further Investigations**

A. Are there areas where onshore support facilities on the Washington Coast should not be located?

B. Do geophysical operations affect dungeness crab larvae? (This is a study in progress by a UW scientist.)

C. Should platforms be removed after they are no longer needed, or remain in place for fish habitat?

D. How can the state encourage the construction of offshore platforms within the state?

E. How can the state maximize economic, social, and environmental benefits and minimize costs?

RCB:bw

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TRIP REPORT
OCS Fact-finding, Sacramento, California
Judith Merchant
May 18,1988

On May 18, 1988 accompanied by Mary Lou Mills and Kahler Martinson of Washington Department of Fisheries (WDF), I visited the following California agencies: Department of Fish and Game (F and G), the Lands Commission (LC), and the Office of Off-shore Development (OOD) in Sacramento, California. The OOD is part of the office of the Secretary of Environmental Affairs (SEA). The SEA currently coordinates the state position of off-shore development and OCS leasing. This report presents the highlights of our discussions followed by detailed notes.

HIGHLIGHTS

INITIAL STATE NEEDS

- Get organized quickly and participate frequently.

- Identify focal point (agency) to bring agencies/groups together.

-State/tribal/federal study groups, policy and technical, are necessary for state involvement and keeping up on progress of DOI.

- Recognize DOI's power - California lost on OCS Land Act challenges and now is depending more on environmental (NEPA) orientation and negotiations based on elements of OCS Lands Act.

- Need NEPA, OCS Lands Act, CZMA expert to negotiate/deal effectively with MMS.

- California has used unitization - handled adjacent federal/state tracts as one tract for leasing. Could be royalty problems.

PROCESS/ACTIVITY OUTLINE

- 5-year leasing program and EIS

- 2-year planning process leading to identification of tracts to be offered for sale and EIS.

- Lease Sales - DOI permit.

- Exploration - Corps of Engineers (COE) Section 10/404 and CZMA permits.

5-YEAR LEASING PROGRAM AND EIS

EIS completed; Oregon and Washington lawsuit; California party to suit?

IDENTIFICATION OF TRACTS TO BE OFFERED FOR SALE

* Fully document position, concerns, etc. on record.

- Call for information/ notice of intent

  - Define areas that should not be leased; oil companies will identify those which they want in sale.

  - Request information necessary for delineation of tracts, etc.

    - Ask for baseline, follow-up studies.

    - Information needed now or later (studies):

      - Baseline population data
      - Habitat inventory
      - Substrate topography
      - Locations of fishing areas
      - Wind and wave conditions (for spill impact prediction)
      - Dispersants - California policy is that dispersants are last resort. Industry responsibility to clean-up rather than disperse.

- DEIS

  -Comment; continue to make record; document gaps, inaccuracies, concerns.

- Governor's 60-day comment period

  - One last opportunity for exclusions and identification of conditions; stipulations needed in EIS.

- Final EIS

LEASE SALES BASED ON EIS

- DOI permit - Conditions, stipulations. etc., should be included so purchaser knows what will ne required in exploration and development permits.

- Exploration - Get necessary conditions, stipulations into federal permits (COE Section 10/404, CZMA).

- Development and operation extraction - Get conditions, stipulations, mitigation into federal, state and local permits

  - Can vary from single-platform to large complexes, including several rigs, processing, etc.

  - Get applicant to present entire plan for tract or tracts to reveal cumulative impacts - expand EIS.

  - May want to ask for money to monitor, enforce conditions, mitigation (California experience suggests monitoring, enforcement necessary).

  - Performance bonding may be desirable.

  - California developed joint review panels to review development applications, work of environmental reports, and determine conditions, stipulations, mitigation for permits. Agencies with permits were included on panels.

DETAILED NOTES

Fish and Game

Met with: Donald Lollock, Chief of Environmental Services (916 445-1383) and Peter T. Phillips (916 322-4891)

- Fish and Game recommended "no sale" for Lease Sale # 91 (northern California area). The recommendation was based on the inaccessibility of the area for oil-spill response, the typical sea conditions which will preclude deployment of oil spill response equipment (or render it ineffective) over 50% of the time, and the trend of increasing resource value going northward along the California coast.

- They see three main types of impacts from off-shore oil and gas development: 1.Physical interference with the fisheries off-shore, 2. Impacts from oil spills, and 3. On-shore impacts from support facilities.

- Physical interference with fisheries is very possible because 10-12 production platforms are expected in each basin (each basin is a portion of the California coast). Productions platforms follow the exploration-drilling stage and are put in when oil or gas is found in commercial quantities.

- On-shore support facilities are necessary because the oil must be separated from the water and the sulfur must be separated from the oil.

- The areas or resources they listed of most concern in planning

for oil development and requesting area deletions are: birds, areas of high fishery value, sea otter reserves, marshes and rookeries.

- Fish and Game calculated the critical distance from important resources for oil drilling and production. In about 1973 or 1974, they calculated how fast an oil slick would travel in flat southern California sea conditions and how fast on-shore oil spill response equipment could be mobilized to the site of a spill. They determined that at least six miles should be left between an oil development and a critical resource to allow an opportunity for deployment of protective equipment (at least under ideal southern California conditions with equipment located on land near-by). This figure has been accepted by the oil companies and has been applied even in the northern areas at times although it has less meaning there.

- In their experience, the most critical time to transmit good information to the federal government is at the Call for Information and Notice of Preparation of EIS by the MMS.

- It is their understanding that the MMS must accept the Governor's recommendations if they represent a reasonable balance between resource protection and use.

- Almost all coastal communities have voted to ban on-shore facilities. This is a problem because the impacts of oil production can be reduced if oil treatment is allowed on-shore. If there is too much opposition to the on-shore facilities, oil companies will turn to treatment in off-shore ship-based facilities which will be anchored out beyond the three-mile limit and not subject to state control. In addition to not meeting state standards for things like air emissions, these ship-based facilities must then lighter the oil on to other vessels to get it to shore. The lightering process and transshipment by vessel entails a greater potential risk than placing the oil in a pipeline and pumping it to shore. This is true , in their opinion, even though on-shore support facilities must be constructed in the estuaries.

- They have felt that MMS has been "light" on assessing the impacts of on-shore facilities. These impacts should be covered at the pre-lease sale stage when the federal EIS for an area is prepared.

- MMS has not followed through and enforced some of the lease sale mitigative measures promised and included in the leases. For example, it has some times been stipulated that drilling muds must be hauled away to either deep water or to on-shore disposal. Piles of mud and cuttings can be found in some of the areas where drilling has occurred. In another case (Lease Sale #73), an on-shore facility was promised for cleaning sea otters should there

be an oil spill. The issue was complicated since there were several companies drilling and developing the off-shore oil field and the cost was to be shared among them. Development and production are underway but no facility has been built. F and G recommended imposition of some sort of "concrete commitment" such as a performance bond.

- In the case of Lease Sale #73, an attempt was made to stay over six miles from sea otters. However, the oil companies are developing inside the deletion area at the southern end. That is what lead to the stipulation of the cleaning facility.

- Don Lollock felt that it should be automatic to do some kind of inventory or baseline.

- Asked what type of information they considered the most valuable prior to development, they cited side-scan sonar of the bottom to give them information on the substrates present, locations of valuable resources (birds, habitat inventory, marshes, good fishing areas, rookeries, sea otters, etc.) and information about wind and wave conditions and near-shore currents to predict the direction of oil movement in the case of an oil spill.

- They have found PMFC helpful in planning for development and addressing problems.

- In California, the oil companies have funded a separate office to mediate physical conflicts between seismic vessel activities and fishermen.

- Asked about impacts for the oil and gas development they have had, they said there have been impacts on rocky bottom habitat (from the disposal of drilling muds and cuttings), in the bays and estuaries due to on-shore support facilities, and at the time of the Santa Barbara oil spill. In terms of impacts from the on-going oil and gas development, they did not feel that they would be able to demonstrate that the decline of any species has been the result of oil and gas development (too much natural variation).

- They have had reports from "whistle-blowers" about unauthorized releases of diesel at the drill sites. Diesel is currently banned for use by EPA as part of the drilling muds. It is desirable to the driller because it helps the action of the drill bit.

- California received $400 million which was distributed to local and state agencies to plan for oil development, assess and mitigate impacts. The money is spent throughout the coastal counties. As a result, California has not concentrated on the MMS pre-lease study program.

Lands Commission

Met with Mary Griggs 916 322-0334 and Dwight Sanders

- They feel the current law-suit with MMS has a better chance of success since it centers on NEPA rather than on the OCS Lands Act (1978) and MMS compliance. Recommended our AAG's contact John Saurenman (213 736-2046), principal deputy involved in the California portion of the suit.

- They characterized the Governor's position as generally supportive of off-shore development within certain bounds.

- The Lands Commission is run by two elected commissioners (the Lt. Governor and the Controller) and a gubernatorial appointment (currently the Director of Finance).

- $500 million per year is currently being generated from state-owned oil and gas production areas.

- The State Lands Commission used to serve as the coordinator for the state position on OCS. The current governor placed that responsibility with the SEA.

- MMS has dealt with the Chumash tribe in the Santa Barbara area.

- Oil companies are like individuals. Some are very environmentally aware and very responsive to concerns and the need for mitigation. Others are very difficult to deal with. Some buy their way in -- others ignore the opposition and charge ahead.

- Under Section 8G of the OCS Lands Act, some federal money from off-shore leases goes to the state to cover the oil and gas which is drawn up through the production platforms in federal waters but originated underground in state waters (where an oil field crosses the state three mile limit).

- Calif. has designated "oil and gas sanctuaries" where these resources will not be exploited unless they are threatened by "outside" impact. The only outside impact possible is federal leasing in the same oil field.

- PCFFA (Pacific Coast Federal Fisheries Association) was formed by fishermen to negotiate more effectively in relationship to oil and gas development. Mr. Sanders felt this elevated them "to a place at the table."

- The state of California has placed stipulations on leases that required developers to provide funds to the state for the Lands Commission to hire people to monitor compliance with other lease provisions.

- Most of the oil and gas leasing to date has been in the Santa Barbara- Ventura-San Luis Obispo area. There is currently a socio-economic study underway there. Pat Almy, Director of the Energy Division (805 568-2042), is the contact for the study.

- Many groups are challenging the risk assessment on the EIS for Lease Sale #91. They felt there were other serious faults in the EIS as well.

- Historically, leasing and development was done with less knowledge "than we could have had."

- What has happened as a result of oil and gas development has, over-all, been positive. Revenues have led to research with no long-term impacts in their opinions.

Secretary of Environmental Affairs (SEA)
Office of Off-shore Development

We met with John Hunter in the SEA, Michael Kahoe, Chief of Off-shore Development, Susan Wade, Coastal Project Coordinator (916 324-3706 for all three)

- The Secretary of Environmental Affairs, Jananne Sharpless, is designated by the current governor as the coordinator for the state's OCS position.

- The Governor's position favors oil and gas development where 1) oil and gas resources are substantial and 2) other resources can allow it.

- There were two issues facing the new office when it was created 1) Lease Sale #73 and 2) A proposed Exxon development (the first big one since the Santa Barbara oil spill).

- After the failure of the California vs. MMS law suit, the SEA and OOD studied the OCS Land Act and negotiated the next lease sale.

- They feel they were very successful in their negotiations. They got 1) some lease tracts eliminated to protect the California sea otter, and 2) the toughest lease stipulations which had ever been imposed.

- Prior to and during much of the negotiations, there was a law-suit pending over air quality standards. MMS standards were much more lenient than state standards. They used a process called negotiated rule making to reach agreement on the issues and end the litigation. This was an 18 month process, started by the judge presiding over the litigation. The stipulations established will set the standard for the rest of the state -

increasing the level of control for the entire state.

- California has begun imposing (negotiating?) the recent, more stringent standards into other surrounding older and more lenient leases.

- Risk is a major issue in Lease Sale #91. The Final EIS is due in August. The reviews to date have raised issues that may go to litigation under NEPA if the Final EIS is inadequate.

- Developing stipulations and area deletions which MMS will accept is more difficult in a frontier area. MMS is most swayed by data. Environmental data is easier to come by in developed areas because there is a long history of EIS's and associated data collection and collation.

- The SEA operates a grants program which distributed $35 million to coastal counties last year. The money comes from federal revenue-sharing. The money was distributed according to a complex formula that considers the miles of coast line in a county, the population, the amount of oil and gas production, and an estimate of the amount of interest there is in leasing and new development. All coastal counties received some money.

- Local governments used the money for various tasks including generation of base-line data, planning for oil and gas development, and construction of facilities such as boat moorages to help off-set the impacts from oil and gas development.

- The oil and gas development process includes the following steps (their advice about important state activities follows the colons).

> 1) The federal Call for Information and Notice of Preparation of an EIS: make the issues known and provide as much information on known resources as possible;
> 2) Lease Sale stage: build in as many mitigative measures as possible at this stage. The measures for exploration and drilling, the area deletions and some of the stipulations to reduce cumulative impacts can be taken care of at this stage;
> 3) When the Lease Sale is complete and exploration has occurred, development will be proposed. They use Joint Review Panels (JRPs) to get all the players at the same table and talking to each other at this stage. At this stage, they have a "project" to be considered.

- JRP issues in frontier areas: minimize the number of production platforms (each oil company does not necessarily need its own), size the on-shore facilities and the pipelines to shore large enough to accommodate all possible development that might occur. Joint analysis and joint funding among companies for mitigative

measures may be possible. In some cases the first oil company to develop might have to bear the cost of the entire processing plant or mitigative measure. However, the stipulations may included the provision that subsequent developers must pay the first company back (use the existing facility and be charged, etc.).

- JRPs are comprised of representatives for the agencies which have permits, interested citizens, the oil company involved and groups such as the fishing industry. They talked of "opening the process up" to a variety of people and interests at an early stage.

- The SEA monitors and encourages the process, seeking solutions which are acceptable to all. A professional facilitator is hired to conduct the negotiations.

- The SEA and OOD felt that the recent negotiations were very successful since there was not one major objection to the document produced. Each set of negotiations becomes easier because some of the same issues are being addressed.

- "Build-out" may be different than what was decided at the end of the JRP because the plans keep evolving as additional work is done by the applicant. However, the JRP process still has served to raise the major issues which need resolution and develop the range of solutions and considerations.

- California has undertaken joint federal state EISs on projects, paid for by the oil companies. Adequate coverage of the on-shore impacts is vital.

OTHER CONTACTS

- CZMA consistency suit - California lost to MMS of Lease Sale #73 - contacts are Peter Douglas, Jim Burns of the California Coastal Commission.

- Santa Barbara history - Naomi Schwarts of State Senator Gary Hart's staff.

- 5-year program litigation - John Saurenman, L.A. AG's Office, principal deputy AG in charge of litigation (213 736-2046).

- Socio-economic study being done in Ventura, Santa Barbara, and San Luis Obispo Counties - Tri-county Analysis. Contact is Rob Almy, Director of Energy Division, Santa Barbara County (805 568-2042).

- California Coastal Commission (415 543-8555). California Coastal Resource Guide.

Onshore Subcommittee Trip Reports

Group A—Cook Inlet, AK • May 1988

Group B—Santa Barbara Area • May/June 1988

Group C—San Francisco/Sacramento • June 1988

Trip Report
Ocean Resources Assessment Program
Onshore SubCommittee
Alaska
May 18 - 21, 1988

Rep. Mary Margaret Haugen

My overall impression is that the oil and gas industry has been a real asset economically to the state of Alaska. There are, however, valuable lessons to be learned by looking at the development of the industry there. I shall briefly comment on several areas of general concern.

EXPLORATION

There has been little or no direct impact on Local Government in this area. There are some environmental concerns -- especially with the use of explosives on marine life. The major problem is land speculation and other forms of "quick rich" investment schemes. This is something which is nearly impossible to regulate, and a good public education campaign might be the answer. People need to know just how lengthy the process is from exploration to actual production, and how nebulous and chancy such investments are.

DEVELOPMENT

It's extremely important that local governments have the ability to plan to meet the impacts of oil and gas offshore development since that is where the most dramatic effects are felt. The State should make sure that financial aid and technical assistance is made available from the very start. Alaska had Federal dollars to pass through to the local governments. On the other side, care must be taken to ensure that any monies such as this are used wisely, and that the local government do no build unnecessary support systems. Up front money from the oil and gas industries is vital, and certainly should be a primary concern in any lease arrangement. The backup systems/infrastructure that this kind of industry requires should not be the burden of local and state government alone. Community input is also a vital ingredient early in the planning stages

THE STATE'S ROLE

There seemed to be a real conflict between some of the Alaskan state agencies. The Governor's Office has played the major role along with the Office of Government Cooperation. I think it's important that any state establish a clear line of authority as it deals with this type of industry. There should be a state plan as to where and when this kind of development can take place. The economics of the plan should always stress that the people who want to establish these large scale projects should bear the costs. Along this same line, the state needs to establish strong and clear administrative policies on the terms and conditions of the leases. This can prove to be important down the road in case of litigation.

State agencies should keep good records, and establish definite base lines. There should be provisions for joint state and federal fines for any violations or accidents. The state needs to require some sort of training program in case of accidents such as spills. The Coast Guard should be a participant in this program. And there should be periodic tests given to see that clean-up programs are adequate. The state should establish a liability fund specifically for this industry. It could be fed partly through any fines imposed and used to help monitor the industry. One of the things we heard often in Alaska was that there was a lack of monitoring.

Essential is planning for the various kinds of infrastructure, but among these particularly important is transportation. Roads and highways will have be built or improved upon to handle not only the product, but the workers and new residents of the industry site areas and adjacent towns.

State universities, colleges, community colleges, and technical schools should have courses available to train people for this kind of industry. The industry needs skilled people, and will bring them in from other states if they aren't available locally.

INDUSTRY

One quote we heard --"You'll never meet an oil man you won't like" -- proved to be true. The industry works very hard on its image. We met with so many highly qualified people who projected the good neighbor image. Our visit to the gas production platform was very pleasant because of the people

who were highly skilled. The operation seemed to be very efficient and very clean. The majority of the people who work on the platforms are not locals. They are young -- we heard that the average age of workers in the Alaskan industry is 24 to 26. We heard lots of talk about the hiring practices of the industry. The response from the industry people is that in the initial stage of development they must have highly skilled personnel, and that the trained people just aren't available locally. There is much controversy over this in Alaska, and would be something other states should keep in mind.

Much of the work, the less technical, is done through contractors, and it is mostly non-union. The petroleum liquid natural gas plant was extremely clean and safe, but only employed 35. The ammonia and urea fertilizer plant has 325 workers, and also appeared to be clean, safe, and efficient. However, from what we learned there didn't seem to be regular inspections which again raises the issue of proper monitoring of the many processes of the oil and gas industries.

LOCAL COMMUNITY AND ITS PEOPLE

The most negative comments we heard on our trip were from the commercial fishing folks who had lots of concerns about the handling of any oil spills. They didn't seem to have conflicts over the use of fishing areas as regards to gear and line, etc. But we must consider the size of Alaskan waters. We can not suppose we would have a similar situation here in Puget Sound.

The residents also complained about the lack of monitoring and the impacts on the environment. They voiced concerns about possible contamination of groundwater from waste pits.

The Chamber of Commerce, while having lots of positive comments about the industry, stressed the need for planning especially in the areas of utilities (energy), and the problem of dealing with waste.

Again, we heard about the major problem of speculation. This is a feast or famine industry. Much public education is needed to encourage realistic management of growth needs.

The Alaskan natives complains about the lack of jobs available to them. It was their hope that the industry would provide opportunity for them, but it hasn't happened. The job training wasn't there.

WILDLIFE

The vastness of Alaska makes it hard to identify any tangible impacts on wildlife and its environment. But it is of course necessary to have experts to determine any long range damage, and to come up with ways to mitigate any harm. That's why the monitoring program is so essential.

SUMMATION

The highlight of the entire trip for me was the drive from Kenai to Anchorage through the most magnificent country I have ever seen.

I felt the trip was extremely informative -- the contacts were most valuable for those of us on the committee. Their comments and suggestions will be most helpful to us. Carolyn Pendle of Washington Sea Grant did an outstanding job with scheduling. It was truly amazing how much information we were able to gather in such a short time. I would have been interested in traveling to the North Slope, however, time and expense would have been a problem. Also that area would not have been comparable to any in our state.

One final comment -- I have never enjoyed traveling with others as much as I did on this trip. This state is indeed lucky to have in its employ people the quality of my three companions to Alaska: Carolyn Pendle (Washington Sea Grant); Chris Drivdahl (Dept. of Wildlife); and Sandi Benbrook (Dept. of Community Development).

TRIP REPORT

SANDI BENBROOK
ANCHORAGE-KENAI

This report summarizes both information and impressions received in Anchorage and Kenai Alaska, between May 18 and May 22, 1988. Three members of the combined Onshore Subcommittee traveled to these communities in Alaska to observe the effects of the oil and gas industry in those areas. A complete itinerary if this trip appears as Attachment A.

My particular interests during this trip focused on the impacts created by the oil and gas industry on local and state governments, as well as local communities. The analysis and management of socio-economic and fiscal impacts is of special interest to me. The question which I regularly asked those we met with was, "What you do differently if you had it to do over again and knew what you know now?"

THE MEETINGS

Alaska Department of Community Affairs

This meeting provided us with excellent insights regarding Alaska's early responses to the development of oil and gas resources both within the state's territorial boundaries and on the outercontinential shelf (OCS). Exploration and development was occurring both on Alaska state lands and the OCS simultaneously. The earliest exploration and development of Alaska's oil and gas resources began prior to Alaska's statehood. Decisions made during the territorial days were heavily federally influenced. Coincidentally, the bulk of Alaska's oil and gas exploration occurred at the time the federal government was sponsoring the development of Coastal Zone Management programs in the all the states. This coincidence provided an initial source of funding, from the federal government, to develop local and state plans which would comprehensively address oil and gas development in coastal waters, as well as the impacts on communities.

The state of Alaska is organized quite differently from the state of Washington, or most other states in the U.S. A borough system requires local citizens to actively organize themselves into a local government entity that is something like a county government. Not all of Alaska is organized into boroughs. In the absence of a borough government, local issues must be resolved through state legislative actions. Cities and towns can also

exist through citizen action to incorporate, and may occur in or outside of boroughs. Alaska natives are organized in yet a another way, now formalized as the Native Corporations.

During the 1960's, when the bulk of Alaska's early oil and gas development occurred, different areas of the state responded quite differently to the development process. For example, the citizens of Yakitat established and enforced strong controls over oil company operations. These controls were designed to limit the physical and social impacts that the presence of oil and gas operations would have on the community.

Yakitat's approach centered on restricting the amount of contact between the community and oil company personnel. The community controlled the location of facilities and the access of employees to the community. Conversely, the community of Seward, which was almost completely devastated by the 1964 earthquake and subsequent tidal waves, embraced the oil companies as a means of rebuilding their community.

During the 1960's, as Alaska developed its Coastal Zone Management program, most Alaska communities developed a variety of plans. These documents included comprehensive land use and community development plans, infrastructure plans, as well as the development of zoning and the accompanying ordinances. These plans were then available for implementation in areas where oil and gas development took place.

In the Kenai borough, for example, substantial planning efforts funded by the coastal zone planning monies, were subsequently implemented as oil and gas development proceeded. Much of Kenai's development was funded by state appropriations. In other parts of Alaska, state appropriations during the Alaska boom period financed the construction a major public improvements including roads, schools, government buildings, public/community facilities, docks and community infrastructure (sewer, solid waste, water and utilities).

During the 1960's the Governor's policy regarding development was that it must pay its own way. Furthermore, most Alaska governor's have supported local decision making. Therefore, differences in how local communities responded to oil and gas development were accommodated, so long as the development was paying its own way. As oil and gas development proceeded in Alaska, the state government became more sophisticated. Experts were brought in to deal with specific issues. A state bond bank was established to ensure that locally issued bonds could be defeased if impacts anticipated never actually occurred. Large amounts of planning funds were directed to the local governments. Plans were implemented when impacts occurred.

It was apparent from this meeting that the oil companies worked directly with both the public and private sector. Oil companies contacted private land owners to purchase land for facilities and they contacted local governments directly. Oil companies did not always provide timely information to communities or government, making the planning process more difficult. Since Alaska has no state environmental law, the Alaska Coastal Zone Management plan and the issuance of consistency determinations is the principle vehicle for conditioning the actions of oil and gas operations on the OCS. Where state lands are being developed, the lease documents also incorporate conditions deemed essential to preserve the environment.

It was apparent from this meeting that Alaska has initially placed little emphasis on socio-economic or fiscal impacts associated with oil and gas development. This is clearly due to the fact that the majority of this development occurred during the period in the state's history when the population was extremely small. Furthermore, local governments did not exist or were brand new. Impacts on natives were clearly not a priority consideration during early decision making.

Currently, potential development in Bristol Bay may represent the first oil and gas development which will be subjected to more traditional impact analysis. However, there is no borough government in Bristol Bay, and therefore potentially less local ability to influence the outcome of state or federal leasing decisions.

With this first meeting, it already became apparent that the situation in Alaska is radically different from the situation in Washington state, or any other developed state for that matter. The kinds of analysis and policy particle in Alaska may be of little use to Washington decision makers. However, some of the problems now being addressed in Alaska, as additional oil and gas development is being planned, may generate issues similar to those we can anticipate in our state.

Alaska Department of Fish and Wildlife

The Alaska Department of Fish and Wildlife encompasses the responsibilities of Washington's Departments of Fisheries and Wildlife. The fishing industry in Alaska represents the second largest industry in the state, generating more than $3 billion of business activity annually.

Most of the land in Alaska is owned by the federal or state governments, and the native corporations. The state owns the tidelands, except where local governments have applied for and received title to local tidelands. The state is divided into coastal resource planning areas which are established on a biophysical basis. Most upland boundaries of coastal zones extend

inland to the include the upper reaches of fish streams and ridge tops. These coastal zones may extend as much as 200 miles inland.

The state has permitting authority overall all salmon and steelhead streams, as well as the coastal resource planning areas. In Alaska, the Coastal Zone Management Plan is a powerful tool. And, in the absence of a state environmental protection statute, provides the basis for ensuring environmental protection, along with the National Environmental Protection Act.

In Alaska, permitting decisions and consistency determinations are now issued through the Division for Governmental Coordination. This organization, housed in the Governor's office, brings all state agency issues together and negotiates the final conditions rendered on leases, consistency determinations or comments on federal documents. The statute establishing the Division for Governmental Coordination appears in Appendix 1.

A principle reason for the creation of the Division for Governmental Coordination involves Alaska's belief that it is essential for the state to speak with one voice. The Division for Governmental Coordination creates a process whereby disputes among parts of the state government can be resolved and solidifies the full authorities of individual state agencies into a unified authority. The Alaska Department of Fish and Wildlife feels this type of clarity of voice and authority is essential to effectively deal with the federal government in general, and the Minerals Management Service in particular.

The Alaska Department of Fish and Wildlife personnel made several suggestions for our consideration based on their experiences with oil and gas development. These are summarized in Attachment B to this report.

Key points which they emphasized are also reviewed briefly below:

- Alaska developed a policy which prioritized where oil and gas development could occur first and where it should occur last. They included both state territorial lands and waters, and the OCS. They indicated the conditions under which development could occur in the each area. The state has never wavered from this policy since it was established.

- Alaska has a system of state wildlife refuges. The statutes establishing the system require that industry located on the refuges accommodate the needs of the refuge and the animals it shelters. The Department of Fish and Wildlife enforces these requirements through lease documents. The statute defines refuges uses and

requires other users to accommodate to those allowable uses.

- Alaska Department of Fish and Wildlife urged us to develop a seismic survey policy. Alaska prohibits the use of explosives in any marine or aquatic environment. They also control the time when seismic surveys can be conducted, prohibiting such surveys during critical salmon passages and during the commercial fishing seasons. The Alaska Department is particular concerned now with the effects of air guns used for seismic surveys. These air guns kill the fish within a limited radius, but they also appear to influence the behavior of fish. Furthermore, air guns may also affect larvae and eggs.

- The Alaska experience indicates that the federal Fish and Wildlife Coordination Act has not been as effective in influencing the Minerals Management Service as has been the state's Coastal Zone Management Plan. Furthermore, the Alaska Department of Fish and Wildlife suggested that protection efforts by the U. S. Fish and Wildlife Service and the Marine Mammals Service are largely suppressed by the Minerals Management Service. This appears to be due in large part to the fact that the OCS statute specifically requires consistency with the state's CZM program, but doesn't address other laws specifically.

- Efforts to get the Minerals Management Service to improve its oil spill technology have been largely unsuccessful. Alaska Fish and Wildlife personnel urge amendments to the OCS Act which will increase the powers of the states, particularly in the environmental arena.

- Alaska state law requires that the oil industry pay for environmental monitoring programs to ensure that all permit or lease conditions are being met. Washington is urged to consider this policy since the federal government has been unwilling to pay for any monitoring programs.

- The Department of Fish and Wildlife personnel recognize that most oil and gas development can occur without creating major ecological disasters. This even applies to oil spills. However, they are very concerned about the long range effects of noise, disturbance and habitat impacts on fish and wildlife resources.

- The Alaska Department of Fish and Wildlife has been successful in establishing strong conditions on oil and gas operations on state lands. However, they explain

that they are far less successful with the Minerals Management Service (MMS). They recommend that the state be prepared to make detailed comments on all MMS documents, recommend specific language modifications to MMS documents, and that all formal state communications to MMS come directly from the Governor. We are urged to specifically articulate all conditions we may want to place on development and operations in our comments on lease sale documents. Furthermore, they suggest that the state should not expect MMS to implement state recommendations and therefore, the state must be prepared to go to court to enforce its requirements.

- Alaska Fish and Wildlife Department also recommends that all underwater pipelines be buried underground. They point to the enormous oil spill which occurred when a submerged pipeline ruptured.

The importance of the Alaska's fish and wildlife resources is abundantly clear. Aside from the fishing industry, tourism is a major factor in the Alaska economy. The Alaska Department of Fish and Wildlife, like all Alaskans, accepts the oil and gas industry as a part of life. Their approach therefore is one of working around the industry and trying to minimize the negative effects. While they conceded that the industry has not improved the situation in the state for wildlife or fish, they also made us aware that the development of most of the states resources, including fish and wildlife, is dependent in large part on the oil and gas industry and the revenue it generates.

Alaska Department of Natural Resources (Division of Oil and Gas)

Alaska's Department of Natural Resources (DNR) is charged with managing multiple uses of Alaska state lands in order to develop income for the state. Eighty-five percent of Alaska state revenues are derived from the oil and gas industry.

The state's leasing program is modeled in part on the federal program. Each lease sale takes five years, with two full years of background studies. During the study phase, each state agency wishing to conduct studies does so out of their own budgets. The public is formally brought into the leasing process at its initiation. Borough local governments are treated as full partners in the process. Although some special areas of state land have been set aside and no leasing is permitted on them, most areas can be leased. The Alaska DNR generally feels it is able to adequately mitigate impacts and allow lease sales to made. The state charges application fees to all companies seeking leases.

The Alaska DNR has a good relationship with the MMS. They do caution us that we can expect to have boundary disputes with the

MMS, since Alaska has experienced boundary disputes on all OCS lease sales. Alaska's experience with OCS sales indicates that only conditions the state is willing to impose on itself, within its territorial waters, can be applied to OCS lease sale documents. The DNR personnel urge us to develop a unitization program across boundaries to ensure state oil resources are not drained through OCS neighboring leases.

As one might expect, the Alaska DNR's mission means this organization embraces the oil and gas industry as a major source of revenue for the state. It was clear during our discussions that the DNR does not see itself as responsible for considering the potential environmental, socio-economic or fiscal impacts associated with oil and gas operations. They pointed to the Division of Governmental Coordination and its mandate as the means for ensuring that those issues are resolved.

U.S. Coast Guard

This session focussed on oil spills. The Coast Guard is the designated on-scene coordinator for any oil spills in the marine environment. They comment on company oil spill contingency plans. The Coast Guard is also responsible for inspecting ships transporting oil or gas. Coast Guard policy during spills is to work with the responsible party in an effort to get that party to properly clean up the spill.

During the course of this discussion, several issues emerged. These are summarized below.

- During a spill, establishing ownership of vessels, pipelines or rigs is often difficult. Time is lost trying to establish liability. Therefore, the Coast Guard may not be able to force the responsible party to initiate the clean up in a timely manner. The decision for the Coast Guard to take over the spill is at the discretion of the on-scene coordinator. However, Coast Guard policy may slow down the ability of the on-scene coordinator to act efficiently.

- Even if the liable owner is identified, the Coast Guard indicates that once that owners insurance coverage is exhausted, the owner will back away from clean up activities. This means the Coast Guard must step in and assume responsibility, as well as the costs, for completing the clean up. Thus, the U.S. tax payers foot the bill for oil spill clean ups once insurance coverage is exhausted, or when a company succeeds in masking its liability effectively. It is also clear from the Coast Guard that the major companies are "never" the liable party, in their experience.

- During spill clean up operations, the disposal of recovered oil and debris is a major problem. There may be no approved disposal site available, essentially halting clean up efforts once recovery vessels are full of oil and debris.

- In reviewing the Cook Inlet spill of 1987, it was clearly stated by the Coast Guard that there is no equipment available in the world which could contend with the kind of oily debris or thickness of the oil that was released during the Cook Inlet spill. Furthermore, it seems apparent that the current and tidal conditions in the Cook Inlet are such that only minor amounts of oil can be recovered even under the best conditions.

- The Cook Inlet spill also pointed out the weakness in the oil spill contingency plan. Special problems were experienced getting equipment to the spill, executing contracts for services, coordinating activities, and establishing payment agreements. What is worse, even when the Coast Guard took over, locating the spilled oil was nearly impossible.

While it was not stated explicitly, it was clear from our meeting with the Coast Guard that the technology to ensure anything approaching a full clean up of oil spills simply does not exist. It also seems clear that the Coast Guard is only organization in a position to correctly manage a clean up activity. The question of liability for spill clean up seems to be a very murky area and should definitely be addressed in state policy and statute. Coast Guard efforts to protect beaches and marsh lands seems to be the highest priority during a spill. Oil and debris which goes out to sea seems to be the lowest priority for clean up efforts.

From my perspective, the issue of oil spills represents a major challenge for our state. The apparent inability to effectively contain and clean up spilled oil means, by definition that during a spill the majority of the oil will remain in the environment. While the ocean is large, and may be able to absorb such contamination, it would seem clear to me that we would want significantly more information about the effects of oil in the marine environment. Since it is undoubtedly argued that large oil spills are a relatively low risk phenomenon, we may experience resistance on the part of the federal government to fully analyze this issue. Indeed, state funded studies of oil spill effects may be necessary.

Platform _____, Union Oil Company
Cook Inlet

Oil platforms are impressive facilities. The staff and operations we observed were both interesting and educational. The overwhelming impression created by our visit is that these operations are efficient, competently managed, and safe. However, as we flew over a blown-out gas platform, one was viscerally reminded that in spite of all efforts, platforms are dangerous places.

Our conversations with platform staff centered on working conditions and their perceptions of the state's role in regulating the industry. Over the course of the visit, we determined that there was little or no third-party inspection or monitoring of platform operations. The company personnel are licenced by the state to do self-inspections. The companies themselves conduct inspections, drills and training aimed at prevent accidents. Company policies are designed to ensure the safest operations possible, and to the untrained observer, appear to be quite effective.

We asked about working conditions and the way of life the oil and gas industry generates. There was general satisfaction, praise for the company, and strong pride in performance.

When we asked about hiring practices, particularly for locals or natives, there was agreement that initially outsiders are brought in to set things up and manage the operations. Overtime, these people become locals. There were programs to hire and train locals and natives. However, we did not observe any women or minorities among the platform crew.

During our stay on the platform, our helicopter was delayed because of a worker injury requiring evacuation of the individual from another platform. The conversation became more open over the course of our stay, and the platform personnel indicated a strong preference toward minimizing the role of state government in controlling the industry. These individuals fiercely believed that the companies do a responsible and adequate job, since it is in the companies interest to operate safely and efficiently, extracting as much oil and gas as possible. Furthermore, most of the platform crew clearly see themselves as Alaskans, and as fully participating members of their communities.

Our escort during the visit to the platform and other industry facilities was also a source of valuable information. This young man had been in Alaska for seven years, considered a long stay by state standards. However, he forwarded the notion that Alaska is a place where young men can come and make their fortunes. He clearly saw himself as one of those young men. He reminded us that the average age of the population in Alaska is 29 years old and that men make up the majority of the population.

By the time we left the platform, I was becoming personally aware of how unique the Alaska environment is when compared to Washington or California. Issues which we will address as a state as a matter of course, have not yet occurred to people in Alaska as issues. This theme was predominate in most all of our meetings.

Phillips Liquid Natural Gas Facility

Again, as on the platform, the impressions created by this operation are of overwhelming safety, efficiency, and competency. The cleanliness, orderliness and power of this facility are evident at every corner of the operation.

One is struck with the complete confidence these individuals have in the organization, the machines, and procedures employed in the operations of the facility. However, I also noticed that there were no women or minorities employed in the plant itself (i.e., outside of clerical assistants). This plant is operated by young, caucasian males. All the individuals we spoke with were articulate, especially about their job duties.

Unocal Urea/Amonina Plant

This plant had just completed a major turn around, during which the entire facility is shut down for repairs and renovations. There was a less tidy environment in this plant, particularly in the older of the two urea plants. However, the same observations about confidence in the facility were expressed by the staff. We also observed a female operator at this facility and were told there were three more currently employed at this plant.

By the end of this tour, we had seen generators exceeding more than 100,000 of output. We had direct contact with liquid natural gas and urea products. The capital investment represented in the platform and the two plants probably exceeded $500,000,000 which had clearly be repaid 100 times over by the production generated by these facilities. One began to sense the amounts of money invested and generated by oil and gas operations. One also began to sense the polarization between the various interests.

Kenai National Moose Refuge
Silver River Oil Field

We toured the Silver River natural gas field in the Kenai refuge. This 20,000 acre oil field is located within the 2,000,000 Kenai National Moose Refuge. We were guided by Ranger Bob Richie, of the U.S. Fish and Wildlife Service.

Mr. Richie struck me as a highly competent public official with a very hard job to do. Accommodating an oil field within a refuge

seems, on the face of it, to be a contradiction. Mr. Richie believes that it is possible to accommodate such activities through the use of permitting and enforcement authorities. However, he also made it clear that one has to be exceedingly tough and persistent to effectively protect the environment in a refuge which also incorporates an industrial activity.

Richie stressed the importance of enforceable permits. Included within this concept is the issue of clear liability. Richie's practice is to name the principal company as liable, no matter what the circumstances or the contractual relationship.

During the course of this visit, clear information about the problem of disposing of drilling muds was provided. Richie has been overseeing a major clean up of PCBs and is beginning to clean up drilling muds disposal sites now. The practices which were acceptable in the 1950s and 1960s clearly damaged the environment. He strong urged us to carefully control the disposal of drilling muds.

It was clear from this meeting that Richie devotes considerable energy to the overseeing the operations of the oil field. He personally understands the operations in detail. He described several blow-outs and fires, as if these were a normal occurrence that one adapts to under the circumstances.

Richie discussed the fact that while studies can't directly pinpoint major adverse effects on the wildlife in this refuge, he is convinced that there are effects. He spoke about the fact that animals are individuals and react differently, individually to the presence of the oil activities. But, he said, "I know there are effects, I just can't pin them down."

Cook Inlet Aquaculture Association

One of the early remarks made during this meeting is extremely revealing. A representative of local drift fishermen said, "You'll never met an oil man that you don't like." An additional phase, repeated often during this meeting was, "Money talks." There is no doubt that the fishing industry is far more skeptical about the oil and gas industry than many others in Alaska. They are equally concerned about state policies and practices.

The following paragraphs summarize the basic points covered during this session:

- The oil industry is politically and social active. The companies make major contributions to political candidates, PACs, but also to community programs,

schools, etc. The companies offer jobs and training. The major companies manage their images very carefully.

- From the fishing industry point of view, 20 years of effort to strengthen the oil spill contingency plan have been largely unsuccessful. The fishing industry folks recommend that Washington consider a strict liability policy for shippers and pipelines. This policy should define the owner of the product and the shipper as automatically liable for spill clean up, no matter what contractual relationships exist. An effort to amend Alaska state law to this effect is underway now. They suggested that we refer to the Trans-Alaska Pipeline System statutes for ideas on liability laws.

- During the Cook Inlet spill in 1987, liability avoidance prevented early clean up efforts from beginning in a timely manner. The ability to clean up the oil is largely a function of the kind of oil spilled and the conditions. The use of dispersant should be very carefully evaluated, since the data on their affects on the marine environment are not yet fully documented.

- From the fishing industry perspective, the heart of the oil spill contingency plan is to allow the oil to go out to sea where it sinks. They indicate that the first priority is to keep the oil from hitting the beaches. The pressure to use dispersant increases when an oil spill is heading for a beach. This approach to oil spill clean up is not comforting to the fishing industry. They want to see the oil spill contingency plans strengthened, including a strict liability provision, immediate initiation of clean up activities, and greater restrictions on the timing and conditions under which shipments occur.

- In the course of the conversation about oil spills, members of the fishing industry indicated that the oil companies can endure a couple of weeks of bad publicity without a problem. The companies manage their encounters with the press carefully.

- During the Cook Inlet spill last year, when the Coast Guard took over the clean up operation, fishermen where hired to assist. Individuals present at this meeting indicated that skimmer equipment is only effective during the first 48 hours of a spill.

- The fishing industry is very concerned about the disposal of drilling muds. They point out that whether these are disposed of in the marine environment or on

land, they are very worried about the long-term contamination these muds may cause. They referred to the drilling muds disposed at Silver River and the current concerns about ground water contamination on the Kenai Peninsula. They urged us to develop a strong, enforceable state policy on disposal of drilling muds.

- Fishing industry representatives feel that states must develop strong policies controlling the tanker lanes and the conditions under which shipments can occur.

- It was pointed out that OCS allows the state to establish a state liability fund. The fishing industry representatives at this meeting urged Washington state to do this, and to dedicate part of the funding to monitoring programs.

- When we asked the fishing industry folks about hiring practices, there were some very interesting comments made about industry practices. They indicated that the companies have strong policies regarding employee behavior. Employees are expected to "keep their mouths shut" with regard to problems in the company. It was strong suggested that individuals who speak out against companies may be black-balled from employment with the company, supporting businesses, and other businesses in the community. Furthermore, it was indicated that individuals who spoke out might face retaliation from fellow employees. The participates in this discussion indicated that a major problem for the companies is drug and alcohol abuse, although this is not openly discussed. However, the companies fund community programs to treat abusers and send their employees to these programs.

The meeting with fishing industry representatives clearly points out the polarizations between the fishing and the oil/gas industry.

Kenai Chamber of Commerce
Board of the Directors Luncheon

The Kenai Chamber luncheon provided us with surprisingly candid remarks about the role of the industry in the community. The frank nature of the discussion was somewhat surprising given the presence of industry representatives at this meeting.

Members of the Chamber confirmed earlier reports that when the industry arrives in an area, they bring in their own personnel with them. However, they do begin local training and hiring efforts immediately. In Alaska, the industry funded a community college core curriculum to prepare individuals for operator

jobs. These entry level operators generally make approximately $50,000 annually. According to those present, it takes approximately four years to build adequate skills and experience to become a top operator in a plant.

The director of the local power utility pointed out the importance of understanding the industry's power needs early in the process. Local utility capacity can easily be overwhelmed by the demands of oil and gas facilities. Significant planning is required to prepare, and significant capital outlays may be required if major on-shore facilities are constructed.

With regard to permitting oil and gas activities, industry representatives at the Chamber lunch urged that the state's conditions and standards be clearly articulated from the beginning. The companies are prepared to respond, but find mid-course corrections intolerable, especially when capital improvements are require to meet new conditions.

Kenai Borough Government
Mayor _____

A major concern for local governments is staying ahead of the pace of the development which accompanies oil and gas operations.

The mayor indicated that Kenai began responding to the oil and gas industry before statehood and prior to the existence of the National Environmental Policy Act. Early policies in the new state actually worked against the local governments. He described a ten-year tax incentive program for oil and gas producers which prevented local taxation of the industry. This early policy caused Kenai to get behind on school construction and they remained behind until the last two years. However, when coastal zone planning monies became available, things began to improve for local governments. Then the state also began providing local planning funds in areas where new development was likely to occur.

The mayor urges the state to consider a policy which provides for early and comprehensive local planning efforts aimed directly at accommodating the impacts created by oil and gas development. He also strongly recommended that the state develop programs to prevent greed, speculation and inflation of land prices. He suggested that a strong public education and information program is essential to prevent these forces from operating, at will, locally.

The mayor's experience suggests that impacts associated with exploration are minimal and transitory. However, should a commercial discovery be made, it takes about five to eight years to get to production. During this period, significant local activities must take place. Planning during the exploration stage

is essential if the community is to implement the plans prior to the demand for services as the industry moves toward production.

We asked the mayor about boom-bust cycles. He related to this immediately because Kenai has experienced this phenomenon several times. He recommends that the state manage constructions booms very carefully by pinning the companies down on the employment levels anticipated at when fully operational. During the construction boom, interim solutions such as portable class rooms are preferable to over-building infrastructure.

The mayor made it abundantly clear that Kenai experienced major benefits as a result of the oil and gas industry. He said the industry becomes the "back bone of the community." He also suggested that local government must be a player in all the processes. He indicated local government must be informed and participate at all levels. He said it is important to know where you can push in each level of the process.

The mayor recommended that the state develop policies on shipment, and require that emergency management, hazardous materials management, and comprehensive planning be integrated. He suggested that local governments need to explore methods of capturing a portion of the federal leasing revenues.

An area of particular importance to local governments is the state's policy for allocating impact funds. He stated emphatically that state level allocation mechanisms are the only way to ensure that impacts funds are allocated where the impacts actually occur. He urged the development of baseline data prior to development, pointing out that this is the only means of determining where impacts are actually occurring and the extent of the impact on a community.

The mayor also suggested the state adopt a facility siting act designed to ensure necessary conditions can be placed on on-shore facilities.

In discussing the weaknesses in local governments responses to oil and gas development, the mayor indicated that communities fail to coordinate the major public plans. He reiterated the importance of tying solid waste management, hazardous waste management, water quality, air quality, emergency management, coastal zone management and comprehensive planning together.

Kenai Native Association

The Kenai natives present at this session indicated that most of the local native culture was already dissipated by the time oil and gas development began in the area. They indicated that they have heard from the Elders in Barrow that the industry is negatively effecting the native community. However, both native

representatives at this meeting feel that the industry has been good for the Kenai area.

The Kenai natives have strong feelings that more planning should be done. They were particularly concerned about the issue of waste management and mentioned the potential ground water contamination from drilling mud disposal. They urged wiser uses of the revenues associated with oil and gas, and greater attention to the needs of the future.

On the issue of native hiring practices, the Kenai native experience is mixed. They indicated that while many promises were made, there were not as many jobs available to natives as the companies forecast. They suggested that oil company people hire their own first, and that they are largely non-union.

Kenai Assemblymen
Pat O'Connell

In a chance encounter, we met with Pat O'Connell, a member of the Kenai Assembly and formerly a state legislator from the area. Our conversation with him was extremely animated and full of insights about needed policies.

O'Connell argued that the real impacts of oil and gas development are on local governments and communities. Their only recourse, he stated, is to turn to the state. He recommended Washington focus significant attention on the local governments. Planning, zoning, education and preparation are essential to minimize negative impacts. He urged us to find ways to control speculation.

If commercial finds are made, O'Connell recommends the state develop a community college curriculum in conjunction with the industry that will ensure that local people gets industry jobs.

From the state perspective, one of the major challenges is capturing revenue from the industry. He recommended we obtain the best legal assistance available to help us establish a taxing structure that maximizes state revenues. He said if he had it to do over again, he would create higher taxes on the industry. He said the industry in Alaska has made so much money that they have literally warehoused funds. He pointed out that the state adopted a corporate income tax, specifically to get at oil and gas revenue, but that the state has no other income tax.

O'Connell stated that the state has to prepare itself to be tough. The industry will "cry and moan" about costs, delays, inconvenience, etc. He said they will contribute to all candidates election campaigns. He said we must remember that what they are concerned about is the bottomline. We, also, should monitor that bottomline before we succumb to industry assurations that government regulation is hurting them.

Ir the aftermath of the Alaska oil boom, O'Connell points out that what is left behind the heat of development is the environmental impacts. He said that the environmental issues have to be dealt with upfront, for when all the oil and gas is gone, those impacts will remain and require attention. He pointed out that Kenai is faced with ground water contamination from inadequate disposal policies. However, he also worried about midnight dumping which he feels occurred in the rush to develop the area. He agreed that strict liability and a state liability fund are essential.

SUMMARY IMPRESSIONS

Alaska is a place unlike any other in the continental United States. The environment is awesome in its largeness and seeming endlessness. The overwhelming sense of eternal abundance is inescapable. Even the presence of the sun for nearly 24-hours a day seems to signal that there is a infinite availability of energy in Alaska. One experiences significant psychological shifts, even in the course of five days.

The temptation created by making this observation is to somehow dismiss the Alaska experience as not applicable to the state of Washington. However, I think this would be a serious mistake. The insights Alaska has gained are important for Washington. Equally, insights gained in other parts of the country must also be taken into account.

As Washington prepares for the potential lease of OCS lands, there are clear questions we must address for ourselves. Some of these are discussed briefly below:

- How will the state develop and implement a comprehensive oil and gas policy?
- How will the state ensure that local governments and communities are fully educated, fully participating members of the process.
- How will the state and local governments work together to ensure that they speak with one voice and consolidate their authorities in order to effectively influence the Minerals Management Service.
- How will the state and local governments ensure that speculation and imprudent public investments is prevented?
- How will the state address liability issues for shippers and pipeline operators?

- How will the state balance the preservation of its environment with the economic growth that would be associated with a commercial oil or gas find? Will the state seek to maximize revenues or maximize protection of the environment, or both?

- How will the state modify its tax structure to maximize revenues if oil and gas development occurs?

- How will the state ensure that comprehensive local planning, addressing all the major issues, is accomplished in advance of commercial development?

- How will the state ensure that the positive benefits associated with oil and gas development are maximized, while adverse impacts are minimized or eliminated?

- How will the state ensure that studies it deems necessary are carried out if the Minerals Management Service declines to fund these studies?

- How will the state address the inevitability of oil and gas exploration at some future time, even if the current lease sale is delayed indefinitely or cancelled?

- How will the state ensure that its Shoreline Management Act, Coastal Zone Management Plan, State Environmental Policy Act, and Energy Facility Site Evaluation Council statutes are strengthened to ensure that state laws provide the maximum environmental, social and economic protections available?

- How will the state organize itself to respond to oil and gas exploration, development and operations?

- How will the state work with other states, including Alaska, to obtain amendments to the OCS Act?

These questions represent but a few of the challenges we face. Since oil and gas development is subject to world economic forces, I believe we must systematically prepare ourselves for the serious possibility of future oil and gas exploration. Therefore, the ORAP process is an essential step in building our capacity to understand the implications of potential oil and gas development in our state. Furthermore, until the state has developed a comprehensive policy and contingency plans for dealing with the advent of oil and gas exploration, the lesson from Alaska is we can not afford to be unprepared. For if we are unprepared, it appears likely that we will never catch up.

JACK S. WAYLAND
Director

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June 2, 1988

TO: Carolyn Pendle,
Washington Sea Grant

FROM: Chris Drivdahl, Acting Assistant Director

SUBJECT: ALASKA SUBCOMMITTEE TRIP REPORT

Attached is my trip report, as required. The trip was particularly useful to me in focusing my thoughts for state policy considerations, and the company was great! I have sent copies to my subcommittee co-chairmen Sandi Benbrook and Cleve Pinnix, also as requested.

CD:dpn

Attachment

cc: Cleve Pinnix, State Parks
Sandi Benbrook, Dept. of Community Development

TRIP REPORT

A. Listings

1. Submittal Date: June 2, 1988

2. Traveler: Chris Drivdahl

3. Subcommittee: On Shore Development and Production

4. Travel Dates: May 18-21, 1988

5. From: Seattle
   To: Anchorage and Kenai, Alaska

6. Purpose: To explore Alaska's environmental and social reactions to oil and gas development and production

7. Contacts Made: See attached itinerary

8. Publications: Available from Carolyn Pendle, WSG

9. N.A.

B. Narrative Discussion

FACTS are information given by folks we talked with; OPINIONS are mine.

D A Y 1

* Ike Waltes, Alaska Department of Community and Regional Affairs

FACTS

- Many small Alaska towns were hungry for any kind of development to diversify economy.

- Kenai peninsula as a whole receiptive to federal oil and gas leasing due to state land leasing program already there.

- Yakutat didn't want development and took a hard line.

- Cities and Boroughs used CEIP money to fund studies and plans for infrastructure necessary to accommodate development that never materialized; plans were shelved until state legislature needed a place to put "boom" money.

Trip Report

- Developed a bond program (CEIP loan) to pay for local service upgrades in preparation for development; state bond bank forgave debts that didn't get paid back because impact didn't occur.

OPINIONS

- Big problem: Oil companies moving in and leasing before communities are ready - no chance to zone.

- Need to create some kind of program to allow adequate community preparation but not create over-kill (unused schools and civic centers, e.g.)

* Lance Trasky, Alaska Department of Fish and Game

FACTS

- Second largest income to state is from commercial fishing.

- Three main habitat protection laws:
  - Anadromous Fish Act permit rquired for all lakes and streams with anadromous fish
  - State Endangered Species Act
  - State Critical Refuges and Game Refuges

- State has zoning power outside of boroughs.

- State Coastal Management Program - effective where it exists, but only 28 approved district programs.

- Feds fought approval of coastal management programs.

- Division of Government Organization - works for Governor
  - Central clearing house for all state agencies
  - Tries to resolve differences
  - Does consistency determinations

- State has a prioritized list - where should oil and gas development occur first and last.

- Watch out for claims of ownership by MMS/Feds! They'll draw boundary lines and you have to go to court to argue.

- Feds have given us nothing!

- Even in areas where economic EIS shows negative benefits of leasing, they'll go ahead.

Trip Report

- Have ability to deny lease
- "This is Alaska: if you want to produce oil and gas, you accommodate fish and wildlife." Great sensitivity to resources is not widespread.
- If you monitor, oil company should pay.
- Need policy on seismic testing. Prohibit use of explosives in water! Primacord also lethal!!
- Don't let them schedule any seismic testing during commercial seasons.
- Air guns can't operate in shallow water - blows away water but in deeper water drives fish down and below nets. Changes fish behavior. Signficant effects on catch/unit effort.
- No permits in herring spawning areas while adults, eggs, and larvae are in.
- Don't count on help from NMFS because their recommendations are ignored by other feds.
- No capability to clean up off-shore oil species - not in oil company interest to develop skills because very expensive.
- CIRCLA too cumbersome to get dollars out of.
- Should have better oil spill response program: Coast Guard only takes over after owner doesn't, has to locate equipment, deploy it, etc. Twenty-four hour standby with equipment available.
- Oil company response programs chronically underfunded and staffed.
  - They wait too long.
- Chronic violations of environmental stipulations are common; a principal reason is no monitoring.
- Give precise language on what mitigation you want when commenting; don't just say environmental studies program stinks.
- U.S. Coastal Zone Management Act is much more powerful than U.S. Fish and Wildlife Coordination Act - tie all mitigation to CMA. "Your proposal is inconsistent with CMA and here's what you need to do to bring it in."

Trip Report

- If MMS fails to include your recommendation in its lease (as it probably will), ask that a fact sheet be included that says when you apply for a permit; here are conditions. This will help when they see you in court later.

- Need State Mitigation Policies, not agency.

- Impacts have occurred--not disastrous--but enough to cause legitimate concerns.
  - Have had to fight tooth and nail every step of mitigation.

- Bury pipelines on ocean floor.

- Recordkeeping in one place is crucial!

OPINIONS

- Have a good Shorelines Management Act and individual SMP's for each county; shouldd include a section specifically addressing oil and gas development and production.

- State should map coastal areas and delineate "areas of concern"--perhaps a 1-5 ranking, where 5 means no development and 1 is where development can occur with least impact.

- Prepare for battle on Fed ownership claims in Straits of Juan de Fuca.

- Alaskans have a luxury not enjoyed by Washingtonians: millions of miles of unoccupied land, bountiful fish and wildlife, and only 500,000 people in the state. The keen competition for limited resources, such as is found here, does not exist. Alaskans truly have the classic "frontier mentality:--resources are to be used, exploited if necessary, by man.

- State should have a policy which requires oil companies to pay for all environmental and permit monitoring programs.

- State should have a policy prohibiting use of explosives and primacord in water; no seismic testing during commercial or peak sport fishing seasons.

- State needs policy on use of air guns in water.

- State needs to prohibit permits in herring spawning areas.

Trip Report

- Need a state oil spill response program which permits state to take action before Coast Guard, if necessary. Currently, federal law requires USCG to wait until owner fails to respond; this is usually too late to be effective.

- Need to have state mitigation goals and policies, not just individual agency.

* Jim Eason, Alaska Department of Natural Resources

FACTS

- Have a 5-year state program similar to Feds (who pays for 2-year background studies? leading to preliminary findings - agencies! Ask for dollars from legislature.) Lease administration - how monitored? (They're not!)

- 85% of total state revenue from oil and gas (second is fishing).

- Rarely delete sales from program - prefer to "mitigate."

- MMS experience: mixed! Most successful way of dealing with them is through D.C.

- There must be consensus on permit conditions; Commissioner cannot overrule ADF&G; if not at staff, Commissioners; if not Commissioners, Intergovernmental Coordinating Committee.

- 1957 first discovery in Cook Inlet; still having "trouble" with locals 30 years later - NIMBY syndrome.

- No state income tax; no sales tax. Still lots of oil dollars issued. These folks are out to make money (sound familiar?).

- "Mitigation stipulations" included on leases were unacceptable (in my humble opinion). They looked like our old forest practices act rules: they all contained the language "...to the extent feasible and prudent..." We must not allow ourselves to be backed into this corner.

* Ted Thompson, USCG Commander

FACTS

- State contingenccy plans must be met by ships and facilities; CG requirements weren't monitored. Don't have dollars for monitoring.

Trip Report

Huge volume facilities are only ones inspected. State should take initiative here.

- Disposal of recovered oil and debris must be addressed by state in-state.

- State vessel inspection was struck down in court as pre-empting Fed. authority. Problem here is facilities not vessels.

- USGC not responsible for problems within state waters, only federal waters.

- 311k fund winds up paying for liability if cost of damages exceeds insurance coverage of private company; company then goes to court to battle every cost of CG (government usually loses, too).

OPINIONS

- State needs to evaluate Oil Spill Contingency Plan for ability to deal with:
  - State inspections of facilities within state waters
  - Taxing authority on vessels entering state waters to create a contingency fund
  - State monitoring of chronic pollution problems where USCG cannot meet demands

- State needs to create a loop-hole free contingency fund where paybacks by responsible parties are not disputable. This doesn't exist (witness the time spent negotiating with Mobil Oil on Columbia River spill where damage monies received were far below our estimates).

D A Y 2

* Platform - Granite Point

FACTS

- Cook Inlet used to freeze solid, with rigs it doesn't.

- 12 people currently on board; can support 54.

- Burn garbage; treat sewage and dump.

Trip Report

- Manufacture fresh water from sea.

- 1967 in place.

- Can have 36 drill holes but only 24 now operating; no drilling now, only production; 7 "producers;" is a slow well because has coal in formation under tremendous pressure (unanticipated, water reinjection is painfully slow).

- Commercial fishermen not allowed within a set boundary (didn't know how far). Don't use area anyway because water too deep. Whales (beluga) comes to within 50 feet.

- Tidal current so strong any heat generated is dissipated.

- Steelhead platform blowout caused by drilling foreman miscalculating proper weight of drill fluid then all stop gaps failed.

- Local hire is a big issue. Some companies bring their own workers, some will hire and train locals. Most employment is in support industries.

- Crew works 7 12-hour shifts.

- "Please, god, let there be just one more oil boom. We promise not to piss it away this time" bumper sticker.

- Legislative session 120-day annually. Felt not accessible because in Juneau state agencies over-staffed. Little dictatorships system is ridiculous; problems should be solved at lowest level but aren't. Everything becomes political.

- Best to let oil companies alone to do their own thing.

- DEC and ADF&G - biggest obstructionists - millions of dollars spent in studies that get dumped.

OPINIONS

- These workers clearly have the myopia they accuse their bureaucratic nemeses of having. They recognize their contribution to Alaska's economy and dismiss any costs. This is easy to do; Alaska's vastness overwhelms normal reasoning abilities. Much of the dispute centers on an issue not articulated in any state policy; that is, what are acceptable levels of impact? If defined, the

Trip Report

answer could be translated to appropriate governmental "intervention."

* LNG Plant Phillips 66; Urea and Ammonia Plants

FACTS

- Built 1969; expect another 20 years life.
- Gas is 99.3% pure methane as it comes out 99.7 after liquifaction. N & O are lost CO2.
- Heat released to atmosphere as gas is cooled in 3 stages.
- -258 degrees F. is final product - all product to Japan, the only market. (Government will only let them sell to Japan.)
- This is sweet gas - odorless, tasteless, colorless.
- FERC regulates.
- Ships arrive 1 every 9 days for 1 day.
- Employ 35 only 3 actual workers, all others support.
- Docks for ships 1/4 mile long.
- Ammonia and urea plants - 300 people employed 24 hours day, 350 days per year.

OPINIONS

- Location of any plants like these would depend on kind of gas found off-shore.
- My greatest concerns are:
  - Length and size of dock. This is a contributor to fish migration mortalities, as returning salmonids follow shore before heading upstream. Docks allow for predator "bases."
  - Public access restrictions. The size of these cuts off a goodly chunk of shore from public access.
  - Vessel traffic.

Trip Report

* Wildlife Refuge Tour - Bob Richey, Oil and Gas Manager

FACTS

- "You learn to live with it."
- There have been long-term subtle effects, such as behavior changes. Result is less wildlife.
- 20,000 acres of refuge under lease and disturbed, out of a 2 million-acre refuge.
- Had no roads for public access until oil exploration. Only rich could get in by private planes.

OPINIONS

- This is Alaska's smallest National Wildlife Refuge at 2 million acres; by comparison, WDW owns less than 1 million acres in Washington. The question (again) becomes what are acceptable levels of impact?
- Access is an undeniable problem for wildlife managers in Washington; too many people are using too many motorized vehicles to compete for too few resources. We are striving to find equitable ways of hunting access to these resources. Alaska has the opposite problem: too few roads and relatively few people demanding access to a bounty of natural resources. It is not possible to equate their activities with ours for these reasons; however, I am intrigued by aspect of our visit. The manager <u>at a gut level</u> (no data) believes wildlife is reacting to the activity (particularly through behavioral changes). Long-term impacts will be a reduction in numbers and diversity. If access continues to increase, and public use increases, these reductions will become more dramatic.
- Habitat sensitivity (or ecosystem balance) is an important factor in impact analysis and should provide the key in site rankings for development. It is axiomatic that habitats in "forgiving" climates (i.e., warm, sunny, and plenty of moisture year around) recover from disturbance more quickly than do those in harsh climates (i.e., cold or hot, uneven precipitation). It follows that sensitivity of arctic habitats is acute; consequently, long-term impacts may, in fact, be more appropriately classed as irretrievable losses. What compensation is appropriate, then, since in these areas environmental damage is permanent? Can it be adequately remedied by monetary damages? A question best addressed by our state's policy-makers up front.

Trip Report

D A Y 3

* Cook Inlet Aquaculture Association

FACTS

- 600 drift permit holders in Cook Inlet. Kenai Peninsula Fishermen's Coop set net organization - from beach.
- "You'll never meet an oilman you don't like." (Very good at PR.)
- "You will have a spill sometime." There's always a very vocal local advocacy because jobs.
- Monitoring is only for hydrocarbons; they don't monitor waste products. State has no clear policy on waste, e.g., and don't monitor. Exceptions are frequently granted.
- Oil companies infiltrate boards, Chamber of Commerce; have lots of money which they give to charities, scholarships, so become very popular.
- Oil companies don't have strong land ethics, and many of their problems were swept under rug by state inspectors.
- Need to clean up within 48 hours or it's too late. (Federal law, though, requires tanker owner to be given enough time to act.)
- Type of oil makes major difference - light oil will not be as bad as heavy, thick in a spill.
- Dispersants took oil down so it was "out of sight, out of mind."
- Main plan of oil companies: let oil go out to sea and sink.
- No requirements for long-term habitat monitoring.
- Should require limits on where tankers can go and when.
- "Oil-Fisherman" group paid for by oil companies (i.e., secretary only).
- Agencies are totally ineffective. Generally only can monitor big problems. * Need to have someone who can step in and charge back without fight from oil companies (but federal law conflict).

Trip Report

- Fish production in northern inlet has declined; development contributed by destroying home streams. No pre-industry baseline data to prove.

- There's not a lot of concern for individual oil workers. Keep your mouth shut and do your job; non-union but self-policed. Drugs common on platforms, as is alcohol. Work long hours so taking things to get by.

- Most problems are not with oil company, per se, but with contractors and service. Oil companies have such a good rapport with state inspectors that they hire themselves to inspect. Oil company hires few directly -- all contractors. Problems aren't with majors because they have pushed liabilities down to contractors.

OPINIONS

- Obviously: These folks all feel oil company is not dealing straight up - don't give them whole story, dump wastes illegally at night. If oil and gas development comes to Washington, we must take great pains to guarantee this polarization doesn't occur. Could really fester in small communities.

- Fishermen are the backbone of coast. They'll be there forever if the fish stay. Oil comes and goes and may not leave fish.

- State liability funds should be set up. Current use should be allowed for monitoring to prove damages years later if necessary. Don't rely on federal liability funds! * Strict liability laws on shippers and transporters should extend to owners of product without recourse to courts to argue every penny.

- State monitoring program should include all effluents from rigs and on-shore facilities. Need 24-hour mechanical monitoring in some cases; needs to be life of project plus x years.

- My previous observation on attitudes about impacts and values were (unfortunately) reinforced. These people are closely tied to resources and don't tolerate exploitation attitude.

* Chamber Commerce

FACTS

- Long-term energy demands? Private utility districts put in generation facilities - impact rates.

Trip Report

- Co-generation between PUD and oil company can keep costs down.
- 16 mw demand from refinery.
- Natural gas turbine generators for power.
- Power failures too common with public utilities so created special private company to produce.
- Providing housing was critical problem.
- Evanston, Wyoming situation:
  - Job market changed - bank tellers and teachers went to work in oil fields, leaving "low paying" jobs
  - Everything located outside city limits so no taxes for city to cope

OPINIONS

- Energy needs are enormous. What will be impact on local utilities? What will be impact on local rates? What will be impact on fish and wildlife as requests to build small hydros (Washington's answer to cheap power) come flooding in?
- Think about getting WEC NAS, etc. to come in with state agencies to define environmental stipulations on permits. Similar to TFW FPA regulations approach.

* Kenai Borough Planning

FACTS

- Borough government less than 25 years old.
- Alaska had 125,000 people at time of statehood.
- Planning dollars are necessary to local communities before leasing.
- Probably no way to avoid speculation.
- Public education may help mitigate boom; it's 8 years between a "find" and development.
- No appreciable impacts (negative or positive) from exploration on communities.

Trip Report

- Unocal and Phillips facilities had been given a 10-year tax exemption from state, so locals had to support <u>everything!</u> Never did get caught up.

- Borough has been in about 7-year cycles. Construction boom; high labor intensive management. You need to plan for this phase because long-term is here and fewer people. Use portables and temporary facilities for construction phase.

- From a long-term development strategy, it's important for city to have jurisdiction over location, pipelines (need to go to nearest on-shore point).

- Federal leasing dollars that come back to state - plan for how to spend by state policy (3-6 mi). Alaska: 50% went to Borough, other could be spent by state. Identify all authorities up front in state policy. How do you get revenues back to impacted locals? Need to even out impacts and benefits.

- Major question: How will oil be transported once on shore (or off rigs)?

- Emergency plans aren't integrated into compensation plans; should be.

- Set up interstate framework for prospect of WA impact, or benefit.

- Legislature hasn't given state agencies dollars to monitor and enforce.

- Pick your on-shore sites where you'll not allow any development. If feds decide to lease off shore, you can say "fine, you'll not get permit for on-shore facility."

<u>OPINIONS</u>

- Previous opinions reinforced. We need SMPs to map and designate where oil and gas development can go.

- Should have <u>state</u> (not DNR) policy within 3 miles for state lands. Then can point to it and say, "Feds, you'll meet same standards as we do."

- SEPA requires developers:
  - Identify impacts
  - List which will be mitigated and how
  - List which won't be mitigated

Trip Report

Should we require mitigation? If not, what compensation (if any) for unmitigated damages?

- Once coastal areas are designated "no development, "no oil and gas activity should be allowed. Leasing implies a right of access, hence, extraction. Exploration implies you might allow leasing if successful. Allow no cracks!

* Alaska Native Organization

FACTS

- Culture had already disappeared by the time oil comp. arrived.
- Don't want to go back to "good old days."
- Attitude depends on part of state - more urbanized tribes didn't feel impact; those areas more culturized (Barraw) felt impact greater.
- Used to fish summer and hunt winter subsistence only.
- Oil companies didn't hire enough natives.
- Need to have someone in charge!
- Cronyism is common in hiring - excuse: "Your folks aren't qualified."
- Need a strong state affirmative action plan.
- Almost no divisiveness between tribal members.
- Problems shouldn't be blamed solely on oil companies; state is at fault for no regulations, no monitoring.
- Dump sites - tremendous number of illegal sites in addition to legal sites.
- Industry provided scholarships as part of community commitments.
- Oil industry responsible for Alaska Native Lands Claim Act (to get North Slope opened).

Trip Report

- Don't pay state income tax because of oil companies.
- It is the way of Alaska: boom or bust.
- Cleaning up after oil industry is much too costly.

OPINIONS

- Washington has not seen the likes of these natives! They are docile, non-combative, accepting of the fate whites have thrust on them. It would be very difficult to base any conclusions about Washington on this interview. They suggested we visit with natives in Barrow who are much more similar to ours. I'll volunteer.

D A Y 4

* Larry Van Rey, Executive Director of Ducks Unlimited

FACTS

- Primary concerns are transportation of oil and handling waste at terminal (non-functional equipment and deliberate operator transgressions).
- Felt state and federal authorities were crippled by inability to react effectively to emergencies.
- Ground water contamination just now surfacing after 20 years.
- Any documentable impacts attributable to oil and gas haven't surfaced, but (gut level again) impacts exist which are subtle and will be long term.
- Lots of conflicts between feds and state in management.
- Oil and gas has had one beneficial impact from hunter standpoint: opened up access with roads. The Kenai is Anchorage's playground, so it gets pretty busy. More roads (more access) would disperse recreation.
- Hunting in Alaska is not a casual thing; it is a once-in-a-lifetime experience because of cost of access. Hunting is a better experience in Washington(!).

Trip Report

* Pat O'Connell, formerly state legislator, currently an educator

FACTS

- "Hire good attorneys and tax!" You can't tax oil companies out of existence.
- You need money to cope with all the problems small communities will have, and they'll come screaming to the state to bail them out.
- Source of revenue should be source of the problem.
- Oil companies have ability to set state policies at 98% effectiveness.
- Must write legislative programs to stay ahead of problems and the oil business.

OPINIONS

- This stuff is really out of my zone, but he sure made sense to this novice!

ORAP TRIP REPORT

ONSHORE SUBCOMMITTEE TRIP

TUESDAY, MAY 31 - JUNE 1 1988

FROM: Cleve Pinnix, State Parks and Recreation Commission

PURPOSE: Subcommittee trip was to meet with a variety of interested parties who could inform us as to onshore impacts of oil and gas developments in the Santa Barbara channel area off California.

BACKGROUND: Trip participants in this subcommittee were Tim Trohimovich, Bob Chase and I. The trip was staffed by Glenn Ledbetter of the Sea Grant Program. This narrative report is to capture the points made at each of our meetings and to record my own observations with regard to each of these contacts.

Meeting 1: Tuesday, May 31 - ARCO, Ellwood Oil and Gas Separation and Treatment Plant: met with Jim Johnstone, Area supervisor and Roger Davis, Ellwood facility supervisor.

This facility is located north of Santa Barbara and is located in the area of the Ellwood Oil and Gas field which was first developed in 1928. The Ellwood treatment plant itself was first developed in 1966 and processed sweet gas at that time. The facility in its current form began operations in May 1980 and processes sour gas and oil from the nearby Holly production platform. The 1969 discovery, which led to the construction of the Ellwood plant in its current form, was the first in the California coastal region with a high concentration of Hydrogen Sulfide (H2S) gas. Jim noted that some treatment of gas is always needed. There is no such thing as hooking directly to a pipeline. At a minimum gas needs to be dewatered. The Ellwood facility went through an extensive environmental impact review. Recall that the Union spill in the Santa Barbara channel was at this same time. However, Roger noted that the review would probably be even tougher today.

The Ellwood plant employs some 60 people, mostly California residents hired off the street, brought on and trained by ARCO. Most live in the Lompoc area, north of Santa Barbara. Roger stated that the cost of living was too high for most to live in Santa Barbara proper. Entry level positions pay $12 per hour, operators then make $14-15 per hour. Salaries generally average nearly $45,000 yearly, including overtime.

The Ellwood facility handles crude oil, water and gas, mostly from platform Holly which is located on state lands. Production is subject to a 50% royalty paid to the state. The state takes its 50% royalty in kind, actually takes the oil and sells it on the spot market. Oil and gas come to the facility from the Holly platform by two six inch diameter undersea pipelines. There is no outgoing pipeline facility tied to this operation for oil. All oil production through the Ellwood plant goes out by barge from a mooring location at Coal Oil Point. The barge has a high tech vapor recovery unit to reduce air emissions. This was stated to be a one of a kind unit costing a large rental fee.

Jim and Roger also reviewed the crude oil seep situation in the Santa Barbara channel. ARCO has installed "seep tents" to collect a portion of this. The natural seep in the Santa Barbara Channel was characterized as being the largest in the world. ARCO efforts here have not been for revenue production but to reduce air quality impacts. ARCO is able to receive some credits for its other operations air quality impacts as a result of this seep tent installation.

Roger noted that the producing platforms in this facility are all electric. Undersea cables have been run to the platforms to supply electric power, therefore there are no air pollution consequences from the platform operations which otherwise would occur from diesel generators.

Gas coming through the Ellwood facility is first treated to remove the hydrogen sulfide. The process reduces the hydrogen sulfide to elemental sulfur, which is then sold locally for agricultural purposes. Some 250 tons per month are produced from this plant. The gas is then liquified at the facility and is suitable for shipment directly from Ellwood.

Jim mentioned there had been some conflict with the use of crew boats to service the Holly platform in the past. Crew boat use to the area had disrupted operations of some local fisherman. ARCO now uses a designated lane for crew boat use as a way of minimizing this conflict. Jim also mentioned that there is little conflict with the pipelines from the production platform since they are mostly buried in the sea bed. The company has experienced some difficulty with the pipes through the intertidal area as winter storms tend to expose the crossing structure.

The ARCO representatives also conducted us on a short tour of the plant facility. The plant is generally a low rise operation which covers several acres. There has been some history of complaints by neighbors and the plant has shielded lighting device and audible intercom devises to minimize this conflict. The principle safety concern for the plant and its environs is the accidental release of Hydrogen Sulfide gas, which is highly poisonous. The plant has an extensive monitoring and alarm system and frequent drills are conducted to test the system and personnel response. The facility itself is located along the shoreline of the Pacific Ocean. Its location at a low point along the shoreline screens the facility from the surrounding region.

The ARCO representatives stated that the revenue generated by natural gas production through the Ellwood facility was not significant. The oil component of the production is the revenue generator. They were proud of ARCO's ability to meet environmental requirements and particularly stressed the company's efforts to improve conditions with the seep collection facility.

My Observations: The facility is located directly on the ocean front. this reflects the long-term history of oil and gas development in the area. However, for a newly developing region, there should be siting decisions which avoid such locations.

The plant is well run and maintained; nevertheless, there is the possibility of an accident releasing hazardous gas. What buffer area should surround a facility such as this?

Meeting 2: Visit to University of California at Santa Barbara - Coal Oil Point Natural Reserve

Meet with Dr. Rebecca Jensen, Research Assistant, Marine Science Institute

Dr. Jensen's experience at the coal oil point reserve is one of frustration with air pollution. She and her family lived in University quarters at the reserve during the early 1980's. Starting in 1982 she noticed incidents of very strong odors. They were generally associated with barge loading at the ARCO moorage near the reserve. She described several meetings with county and ARCO officials. The initial ARCO response was to suggest the problem was from natural seeps. She kept a log of when these incidents occurred. The log apparently correlated with tanker loadings.

Dr. Jensen moved out in 1985. Since that time air quality compliance has apparently improved. However, there is still no consistent monitoring data made available to UCSB. There is apparently no long term monitoring of biological baselines for the reserve and there is no known change in species composition at the reserve.

Dr. Jensen also stated her opposition to ARCO plans to expand operations in this vicinity. Her particular concern is for the impact such operations could have on sea water intakes for the University's marine science research efforts. She also stated her view that the oil companies have had "all the marbles" in dealing with these issues. Each skirmish between the companies and local residents could go either way, but the companies were eventually able to get their plans through in some way and continue exploration and production. She also mentioned further impacts in the local area, including the possibility that Refugio State Beach may be considered for closure to public recreation due to concern for hydrogen sulfide leaks in the area.

Her recommendations were that before considering this sort of development there needs to an insistence on strong base line monitoring. There also needs to be careful segregation of enforcement responsibility from the revenue benefits of such developments. She spent some time going through the details with us of the county permit requirements for ARCO in this vicinity and the lack of compliance with those requirements. She also provided copies of correspondence concerned with the ARCO operations in this vicinity.

My Observations: Dr. Jensen has been personally affected by industry operations, and therefore has an understandable reaction to the issue. The natural oil and gas seeps in this area make it most difficult to conclude that all the incidents mentioned were the result of company operations. Her points regarding the lack of compliance with permit requirements are telling, however. What steps can be taken to ensure that regulatory enforcement is adequately funded and carried out?

Meeting 3: Supper meeting with Diane Guzman, Director and John Patton, Deputy Director of the Santa Barbara County Natural Resources Department.

This is the unit of county government responsible for land use planning and land use regulatory decision making.

Diane and John reviewed for us the history of the county permitting process in offshore oil developments over the last decade. The counties principal involvement is with siting onshore facilities associated with offshore leasing and production. The relationship between the county agency and the industry has been a stormy one marked by legal action in the case of some siting decisions.

In summary, the county was frustrated in getting sufficient information early in the decision making process to make appropriate informed decisions with regard to onshore facilities. There was also dissatisfaction in that the federal decision making on leasing controlled much of any later opportunities for decisions on these developments. On the other hand, the county personnel noted that the oil companies were responsible in dealing with meeting the information and other requirements developed by the county if the companies could have reasonable certainty on what the requirements would entail.

Much of the emphasis in the counties permitting process has centered on protection of air quality in the Santa Barbara area. This continues to be a principal concern of the county natural resources agency as additional developments in the vicinity are pursued. Also mentioned was the impact of production facilities on Gaviotta State Beach, north of Santa Barbara. While we received no other details on these impacts, it may be useful to follow up with California State Parks.

My Observation: In sum, the county view of the operation is that federal decisions lead to significant local impacts which the county is not able to fully control. This natural frustration shows through in the relationship between county planning staff and the industry.

Meeting 4: June 1, Channel Islands National Park headquarters with Gary Davis - Marine Biologist on the Channel Islands staff

Gary spent some time discussing the relationship of the Channel Islands National Park and the National Marine Sanctuary surrounding the Channel Islands. The Sanctuary acts as buffer for the national park. The park boundary is one nautical mile offshore from the islands, while the marine sanctuary is six nautical miles offshore. The state of California, through the Fish and Wildlife Department has jurisdiction over the bedlands in the marine sanctuary. Gary mentioned that 32 agencies have some jurisdiction within the park boundaries. There is an interesting relationship between the U.S. Navy and the National Park Service. The Navy still retains ownership of a portion of the islands in the National Park and cooperates with the National Park Service in managing for natural values.

With regard to oil spills, Gary said he would probably be hard pressed to show any particular biological change as a result of oil spills. The National Park Service (NPS) is not currently monitoring chemical composition of the water in Channel Islands National Park, instead the research effort is focused on population dynamics (mortality, recruitment, growth rate, etc.) of organisms in the marine environment. The effort is to establish a normal range of variation in the system, including events such as 100 year storms and others. NPS is also monitoring bird and mammal populations in the area. Gary emphasized the need to understand that the relationships between various populations are quite complex. Gary emphasized the need for long term research efforts that would better understand the relationships between marine species in the Channel Islands area. This is particularly important because of the large commercial fishery in the vicinity.

Gary also pointed out that NPS exercises no regulatory control on the oil and gas industry. NPS comments on operations through the Minerals Management Service. NPS has had the opportunity to comment on the MMS study plans in the past. The park service relationship with the industry is primarily through their public relations offices, not through the operations divisions of the companies in this area. Gary identified this as one area which could use improvement, since the operations staff may not always have the same understanding of park service or other comments as the public relations offices.

NPS also participates in contingency planning for spills and other emergencies associated with oil and gas development. In the case of oil spills the technology has improved, but still cannot contain oil on the open sea. Gary identified a particular need for research to develop better and

less toxic dispersants. The Dispersants currently in use are said to be as toxic to fish as the petroleum products themselves.

Finally, the biggest personal concern Gary expressed with oil and gas development was for air quality. The major developments are upwind from both the park itself and the highly populated Santa Barbara-Ventura coastline. Gary's own review of MMS statistical data indicated some 37,000 tons of compounds would be emitted over the life of certain lease development operations.

My Observations: Gary gave us an excellent professional scientist's view of the impacts on coastal resources. Natural systems are complex; cause and effect are not easily understood. Oil and gas operations are one aspect of a larger pattern of human activity which affect these systems. Determining measurable and long-term effects is a costly, painfully slow process.

Meeting 5: Bob Harmuth, Operations Manager at Port of Hueneme

Bob reported that oil and gas operations are the second largest user of Port of Hueneme. These operations represent some 40% of the port's income. However, as a percentage of the port's business, oil and gas operations are declining. The principal oil industry operation at the port is the support terminal for the crew boats which serve the exploration and production platforms. The port has had the oil and gas industry as land tenants in the past but is no longer able to lease large areas of port property for pipe yards, etc. The port is phasing this activity out; the industry will be moving their operations to a nearby industrial park.

Bob characterizes the oil and gas industry as a tenant as a "pain in the butt". In his view they leave messes wherever they operate and require a high degree of supervision. Bob has worked at the nearby naval base in the past and stated that the industry previously had land leased on the base. During that time there were two serious spills on the base associated with their operations. At that time the industry tried to hide these spills. The Navy finally terminated their lease.

The port continues to provide berthing and support areas for the industry. Industry operations in 1984 peaked at about 75 boat trips per day to the platforms. Current level is about 35 trips per day. The lessons to be learned, according to Bob are: 1) be extremely cautious with rapid growth of industry operations without careful planning; 2) Don't put all your resources into one approach - stay diversified, and; 3) get solid commitments up front when dealing with the industry representatives.

My Observations: We toured the port facilities with Bob and looked at the areas being used by the industry. From Bob's point of view these areas leave much to be desired in their management. However, in fairness to the industry, it appeared to me that Bob was after a very high degree of

organization. The industry operations, while not measuring up to his standards, seem to me more cluttered than of any particular consequence outside the confines of the port facility.

Meeting 6: An extended full afternoon seminar with faculty members from the University of California at Santa Barbara and others.

First was a presentation from Russ Schmitt, Marine Science Department at UCSB. Russ discussed the reason abalone die off in the Santa Barbara Channel area. He cites figures of 80% mortality in some areas which appear to affect all age and size classes. The reasons for this, however, are not yet understood.

Russ also recounted the recent history of efforts to tap an oil field in close proximity to the UCSB campus. The proposal was for a production platform some one mile offshore. This proposal is currently on hold. Russ mentioned that a University faculty member, Dan Morse, has done biological work on the sub-lethal effects of toxicants on shellfish. This may be an opportunity for further information. Russ also discussed the lack of past utilization of University resources by the industry. His view is that the industry could benefit from closer work with the professional expertise represented on the University staff. He was also quite concerned about the effects on fresh sea water which is drawn in for University Marine Science Laboratories and the possibility of degradation if the nearby production platform is constructed. He stressed the lack of understanding we have of the natural systems which are affected by industrial developments. Initial studies associated with some of the existing developments indicated a specified range of impacts. Russ stated that followup studies found that impacts were radically different from those which were predicted.

Our next presentation was by Barry Schulyer, Environmental Studies program at UCSB. Barry's specialty is risk analysis in the Santa Barbara channel. He is looking in particular at the possibilities for catastrophic spills due to shipping accidents. The scale of production in the Santa Barbara area is now some 80,000 barrels per day. It Is expected to go to a level of 500-600,000 barrels per day. Currently there are some 20 producing platforms. By the mid-1990's another 10-20 platforms are expected.

What is the worst case effect that could happen in this situation? Barry's hypothesis is a loaded tanker hitting a producing platform. There have been some 28 ship/platform collisions worldwide. He also cites instances of tankers going aground and burning. A particular case on the Spanish coast caused widespread evacuations and severe air quality impacts. Some 300 ships per year sink on a worldwide basis.

Barry discussed the Pac Baroness and Atlantic Wing ship collision which occurred about 12 miles offshore in the Santa Barbara Channel. In his view this was a predictable accident and as the area becomes more developed and crowded the risk goes up.

What is needed to reduce this risk? Barry suggests the institution of a vessel traffic control system. This system would radar track ships in the Santa Barbara Channel and have a dedicated radio channel for direct communication with freighters transiting the area. Other possibilities would include having a mandatory pilot system for certain areas or relocating shipping traffic outside the Channel Islands. He also emphasized the need for improved weather stations which would enable more accurate and complete forecasts of local conditions for mariners. Barry cited HR 3772, legislation currently in the U.S. House of Representatives which would study a number of these possibilities.

My Observations: Barry's presentation (his worse case scenario) and the explanation he gave are extremely disturbing. The possibilities for accidents he describes in the Santa Barbara area translated to the relatively pristine environment in the Washington OCS area is an intimidating prospect. This appears to me a subject worth considerable additional effort at the earliest stages of proposing OCS leasing. Considering the consequences of a major spill of this magnitude, we cannot separate the impacts into offshore and onshore. The problem is large enough to require very strenuous efforts to absolutely minimize this possibility ever occurring.

Our next speaker was Rob Almy, Energy Division of Santa Barbara County. Rob reviewed the history of county efforts to emphasize pipeline development over tanker transport. He suggested that the industry is perfectly willing to spend the money to do what is requested if the requests are made early in the planning stage and a proposal is well thought through. In this mode the companies can become strongly oriented toward problem solving rather than being confrontational.

Rob points out that Santa Barbara County is responsible for air quality controls for the entire county plus land use planning for the unincorporated areas. He described the comprehensive review carried out on proposed projects, looking at both national environmental policy act, state and local requirements. In carrying out these reviews, the county operates on a 100% cost reimbursement from the applicant. He noted this is crucial, due to the constraints on county expenditures imposed by Proposition 13 in California.

Rob also mentioned the coastal resources enhancement fund. This comes directly from the oil companies and is used to build local parks and other amenities where there are unavoidable effects. We had no further information on this at the meeting but it appears to be worthy of followup. Rob also briefly described dealing with the Minerals Management Service and the need to understand the rather tightly defined mission of that federal agency. (Note: Barry Schulyer mentioned at this point that a useful reference in working on these issues is a publication, "Marine Salvage in the United States", published by the National Academy of Science in 1982.)

The next presentation was by Francesca Cava, Channel Islands National Marine Sanctuary. Francesca gave a brief description of the marine sanctuary. This extends six nautical miles offshore from the Channel Islands. Within the sanctuary no new oil and gas leasing is permitted, but there are existing leases which may be exercised. Among the goals for the marine sanctuary are 1) to protect the natural environment 2) to enhance visitor use of the area and 3) to enforce protective regulations for the marine life within the sanctuary.

National Oceanographic and Aeronautics Administration (NOAA) has sponsored recent research symposiums to better understand what is and what is not known about the marine resources in this area. What is the biggest threat to the marine sanctuary? People at the symposium suggest transportation related accidents pose the largest danger. Francesca noted that the sanctuary allows her to essentially act as lobbyist to protect that area. She also indicated that a strong emphasis is given to educational use of the sanctuary.

The next presentation was by Mike Powers, Area Planning Council. Mike had provided written information on the economic and population impacts attributed to the oil and gas industry in this area. In giving his background on oil and gas development in the region, he noted in particular that impacts may fall on jurisdictions other than those which benefit from the industry. He mentioned the efforts made locally to encourage standardized reporting of impacts throughout the various jurisdictions. Here are a few points from his presentation: 1988 expenditures were $227,000,000 by all companies in the entire region. The Expenditures that "stick" in local counties appear to aggregate about $170,000,000. He noted the effects on local employment. About 36% of workers on projects during 1986 were in-migrants to the area. Mike stressed the need to press companies to hire from the local work force whenever possible to achieve the maximum local economic benefits. He also used a chart showing the socio-economic impact mitigation process. It may be useful to get copies of this chart.

Mike also mentioned the problems with the Proposition 13 effects in California. This has lead to real difficulties for local jurisdictions being unable to provide services as a result of the spending limitations. Mike suggested that we may wish to look at the Washington State experience with the Trident Submarine Base construction. He suggested that this could be a useful example for gauging local economic impacts from a large specialized facility built in the region.

Our final presentation at this meeting was from Biliana Cicin-Sain, Political Science department of UCSB. She stated that a core problem with oil and gas developments is that the benefits from such developments occur nationally, but the costs and impacts are local. In her view such imbalance may possibly be addressed by Congressional action to get federal lease revenues for our coastal states. But in the short range there is a need to minimize local costs and impacts. She suggested that we keep

strongly in mind that oil and gas development is transitory. Such developments would probably occur over a 20-30 year period compared to fishing and tourism industries which are ongoing.

Air quality impacts have been a major motivating force for people in the Santa Barbara area in dealing with oil and gas developments. The solutions evolving from the local area are improving. Why is this the case? She suggests that, first, general purpose local governments are pushing hard for better planning and controls. Second, there has been an aggressive effort to assert local interests and address the local impacts of this regional development. A major constraint on the effectiveness of the locals in this planning is that the reviews are project by project and do not take into account the cumulative effects of the oil and gas industries activities in this region.

Biliana is not certain that the environmental impact statement review process works very well for these major projects. Citizen groups have an extremely difficult time even having the staff support to participate effectively in this process. There is not much opportunity for long range planning under the current system and no forum for this to occur. In her view, living marine resource concerns are not generally well represented. Since 1983, commercial fishing interests and the oil and gas industry have had third party mediation. Through this there has been some opportunity to negotiate differences. However, since the fishermen were in this mediation process, they did not participate in the public review process going on at the same time. In this sense the companies privatized this issue, but the oil and gas and other resource concerns are public issues and the public process suffered from not having the commercial fishing input.

In followup discussion from this presentations, Russ Schmitt noted that the State Lands Commission in California is proposing some overall baseline data gathering approach which could be refined over time. Out of this could come project by project reviews which in themselves are shorter and more focused on the particular project.

My Observations: This series of presentations with UCSB staff and others gave us a useful overview of the local and regional concerns with oil and gas developments in the Santa Barbara area. What comes through clearly is the frustration by a wide variety of parties at the lack of solid information, and therefore, the inability to get reliable answers on the effects of this large scale industrial development on the region. The difficulty in providing for local and regional needs in the context of a leasing program controlled at the federal level came through from numerous speakers. The importance of getting both good resource data and information into the process early on and in having that information organized and presented in a way that is accessible to local interested parties was heavily stressed. The ultimate impacts on a particular region, especially the possible impacts of an industrial accident such as tanker/platform collision, are sobering to contemplate for the Washington coastal region.

This completes my trip report for the Santa Barbara area. Other subcommittee members continued on to a third day of meetings. This report would not be complete without recognizing the excellent staff support and careful logistics worked out by Glenn Ledbetter of the Sea Grant Program. His efforts led to a well organized and productive visit. We made extremely effective (if exhausting) use of our time during the two days of my participation.

TRIP REPORT--ORAP ADVISORY ONSHORE SUBCOMMITTEE

Prepared by Robert A. Chase

Submittal Date: 17 June 1988

Traveller: Robert A. Chase, Senior Economist, Development Services, Washington State Department of Trade and Economic Development, Olympia, WA 98504

Subcommittee: Onshore, ORAP

Travel Dates: 30 May--2 June 1988

From/To: Tacoma/Sea-Tac--Santa Barbara, California

Purpose: To meet with key industry representatives, local county and port officials, and state university researchers to understand first-hand the onshore impacts of offshore oil and gas development. Tour separation and treatment facilities, supply bases in port operations, and associated infrastructure. Discover net impacts and key issues as pertaining to possible Washington State experience with onshore facilities associated with potential offshore oil and gas development.

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RANDOM AND DISPARATE NOTES ON MEETINGS

31 May 1988 (AM) ARCO Ellwood Oil and Gas Treatment Plant
Jim Johnstone, Area Production Superintendent
Roger Davis, Plant Superintendent

Comments on Industry Regulation
"If you can do business in California, you can do it anywhere". According to ARCO representatives, the industry has learned many lessons, but the requirements that have been placed on them by State and local governments are what should be expected.

[For background information on industry interactions with state and local officials regarding oil and gas development in Santa Barbara County, reference was made to a recently published book entitled Coastal Crude...in a Sea of Conflict. (Copy given to Glen Ledbetter).]

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The oil industry is highly regulated in Santa Barbara. For instance, it took ARCO nine years (1969-1978) to obtain permits to install sulfur treatment equipment at the Ellwood facility.

Comments on Ellwood Oil and Gas Separation and Treatment Plant
The direct employment at Ellwood facility varies around 60 people, with round-the-clock operation. Most of the employees are local hires, but live outside of the Santa Barbara city limits (due to city's cost of living). The average annual salary for an operator is $30,000 (based on $14/hour and an average work week of 45-50 hours). All of their operators are unionized.

The facility treats about 8000 barrels oil and 1 million cubic feet gas each day. The crude oil and water emulsion from ARCO's Platform Holly is piped in for subsequent treatment at the Ellwood facility. After treatment, the oil is barged out from two 80,000 onshore marine terminals located near Coal Oil Point Reserve. According to ARCO representatives, the barging of oil is probably the most hazardous operation on the offshore. Some of the sulfur byproducts from removing H2S from the natural gas (approximately 250 tons of sulfur/month) are sold to the area's farmers.

It is readily evident in looking at the facility that the industry is highly capital intensive. In addition, the labor requirements are highly specialized, especially for the offshore platforms which draw from established and experienced labor pools of roustabouts and trades (instruments and mechanics). These experienced labor pools are typically in established offshore development areas such as Lousiana and Texas. Opportunities for local hires on platforms are limited, unless for semi-skilled positions.

Environmental Issues/Concerns
In the Santa Barbara area the largest single emitter of hydrocarbons is the natural gas seep at Coal Oil Point. In 1982, ARCO installed seep tents (see brochure) in part to gain air pollution credits. Approximately 20 percent of the natural seep is collected by the facility. The revenues from this operation at Coal Oil Point hardly covers their variable costs.

ARCO representatives are proud of their environmental record at the Ellwood facility. There have been no major toxic releases at the facility and there are a number of back-up protective systems in place in the plant. Plant personnel stated that they have been responsive to neighbor's requests regarding noise and lighting.

Local Economic Growth Attributable to Oil
The Santa Barbara County government does not get any direct money from oil development other than property taxes from Platform Holly and the Ellwood facility.

The industry perception is that there is limited industrial growth and no population growth attributable to offshore oil in

the local area.

Impact on Commercial fisheries
Industry's relationship with the commercial fishing operators have been stormy. Numerous complaints have been filed about crewboats are running over gear. Mitigation requirements were instituted in 1985 that established traffic lanes for crew boats. The result is that such complaints from fishing industry have subsided.

Relationship with Local Government
Some frustration was expressed about the dealings with local county government that the rules change often and that prospects for growth in the future are limited.

31 May 1988(PM) Coal Oil Point Reserve, UCSB
Rebecca Jensen, Former Caretaker of facility, Marine Sciences Deparment Post-Doctoral Researcher

Air Quality at Coal Oil Point Reserve
Jensen provided us with a historical assessment of air quality at Coal Oil Point Reserve, especially with respect to the loading of oil on the barge at the nearby marine terminal. (The terminal is located contiguous to Reserve land.) Beginning in 1982, Jensen recounted she noticed very strong odors off the point. In keeping a log, these odors were associated with the loading of oil on the barge at the ARCO moorage near the reserve. The compounds in air associated with barge loadings were both noxious and toxic. The caretaker's family had to be evacuated a number of times and in 1985 moved off of reserve facility. The air quality monitoring program instituted by ARCO was seen as not being effective nor responsive.

Apparently the problem was finally solved and attributed to poorly maintained scrubber on the barge. These scrubbers remove the hydrocarbon toxins in the hull of the barge when air is displaced by the crude being loaded.

It was readily apparent that Jensen is bitter from her experience and has no respect for the industry as being responsive to human welfare. When asked if oil development had any redeeming elements in Santa Barbara, her response was, "Absolutely none--don't spoil your environment by allowing oil in Washington."

31 May 1988 (PM-evening) Santa Barbara County Resource Management Department
Diane Guzman, Director
John Patton, Assistant Director

County Permitting Process and Oil Development
The Resource Management Department is reponsible for land use planning and regulatory decision-making. This agency has major responsibilities with respect to the siting and permitting of onshore facilities associated with offshore leasing and production. Permit requirements include the Environmental Impact

Reports in which the industrial applicant provides front-end payments. Guzman and Patton recounted the history of the county permitting process of the offshore petroleum development in the Santa Barbara region. Frustrations were shared over federal decision-making (e.g., OCS leasing) that impact the local area, especially air quality, onshore facilities, and location of workforce residence. Given that the county is a border-line non-attainment air quality area, each industrial development whether inside or outside of state waters will impact air quality. Implied in their frustrations is that local governments have little (if any) control over federal actions. In general, the oil companies have been responsive to requests for information and other county requirements. But again, there was frustration expressed over the general realm of uncertainty surrounding development (e.g., timing, placement of platforms, and cumulative impacts). Mention was made of the innovative socioeconomic impact monitoring and mitigation program that the County has developed and jointly operate with Ventura and San Luis Obispo counties. This program is flexible in tracking the socioeconomic effects of multiple scenarios on the tri-county area.

1 June 1988 (AM) Channel Islands National Park, Ventura, CA
Gary Davis, Research Scientist

National Park Service and Marine Sanctuary
The relationship between the Channel Islands National Park Service and the Marine Sanctuary was discussed by Davis. The Marine Sanctuary surrounds the Channel Islands National Park with its boundaries six nautical miles offshore from the islands, compared with the national park of one nautical mile offshore. Within the park boundaries, there are over 30 agencies that have some jurisdiction in the islands. This provides a new concept in managing the natural resource--cooperation. This cooperation is across Federal agencies (e.g., U.S. Navy owns one of the Channel Islands and is jointly managing with the Park Service), Federal-State agencies (e.g., State Lands Commission, Dept. of Fish and Wildlife, Coastal Commission), and Federal-private organizations (e.g., Nature Conservancy has partial ownership and manages one of the Channel Islands).

Channel Islands National Park and Offshore Oil Development
Under Federal legislation, the federal leasing for oil and gas activity is prohibited within the boundaries of the marine sanctuary. The current controversy is related to those federal leasing bids that were awarded before the designation of the Channel Islands National Park and Marine Sanctuary. Davis mentioned that the MMS and the National Park Service have a good cooperative working relationship.

In response to the query of impacts of oil and gas development on the national park, Davis mentioned that in general all human activity (primarily commercial fishing) in the coastal zone area is destabilizing the marine ecosystem. The destabilization refers to discernible changes in the population dynamics of various organisms, such as the abalone. Biological stress in organisms is leading to significant drops in their reproduction.

[Davis mentioned that the impact of fishing industry needs further study. Current restrictions on seasons, gear, and size have not been successful in sustaining the fisheries.]

The impact of explortation activity and presence of platforms on marine life has not yet been determined. Obviously, there is a need for long-term ecological monitoring to determine the effects of oil and gas development. Davis made an apology for on-going baseline ecological monitoring. Such monitoring is not adequate if done only once...a veiled reference to such phenoms as El Nino.

Of great concern to the National Park Service is oil spill contingency planning. The NPS does participate in contingency planning and emergency management with the industry in their Clean Seas program. Althought the technology has improved, Davis is skeptical that the dispersants can contain oil on the open seas. The program has shown that dispersants are successful in bays, but even the dispersants are questionable (i.e., could be just as toxic as the material dispersed).

At the close of our meeting, Davis mentioned his greatest concern regarding the impact of oil and gas development on the marine ecosystem, i.e., air quality from the crew boats and platforms. Still lacking is adequate information on the impact of air quality on marine life (e.g.,sea mammels, birds, fish). The air quality in area is chronic. The ozone layer, for example, has experienced significant damage.

1 June 1988 (AM) Port of Heuenme, Oxnard
Bob Harmuth, Operations Manager

Offshore Oil Operations and the Port of Heuenme
Harmuth mentioned that offshore oil operations are the second largest user of the Port of Heuenme, representing approximately 40% of the Port's annual income. In the last half of 1987, offshore oil represented nearly 30 percent of the Port's total tonnage.

The types of offshore oil operations that use the Port are transportation, steel pipeline, marine supplies companies. These supply operations cover an extensive area from Los Angeles to the south to Point Conception to the north.

The peak year for offshore oil-related supplier operations was 1984 when the port handled about 75 different vessels/month. Currently, the Port handles an average of 33 different offshore supplier vessels/month. [Platforms are manufactured and barged in from Korea.]

Despite the large amount of tonnage and revenues obtained from offshore oil, Harmuth mentioned that the Port is no longer leasing space to offshore oil operations. The Port is encouraging that these companies lease space in the nearby Oxnard Industrial Park. When asked for reasons for suxh a policy chnage, Harmuth mentioned that primarily the Port lacks space,

that growth projections lies in other commodities (autos, food such as bananas, and lumber), and that (frankly) offshore oil service-related companies are "dirty" tenants ("a pain in the neck"). Their operations are cluttered and often they fail to clean up oil spills, drilling muds, cuttings, and other hazardous wastes.

1 June 1988 (PM) Local Goverance of Oil and Gas, University of California, Santa Barbara
Russ Schmitt, Marine Sciences, UCSB
Barry Schuyler, Environmental Studies, UCSB
Rob Almy, Energy Division, Santa Barbara County
Francesca Cava, Channel Islands National Marine Sanctuary
Mike Powers, Area Planning Council
Biliana Cicin-Sain, Political Science, UCSB

Russ Schmitt, University Resources and the Oil Industry
The recent history of industry's (ARCO) efforts to develop and produce from an oil field near the UCSB campus were recounted and an apology was made that the resources of the University could be better utilized by the oil industry.

Barry Schuyler, Risk Analysis of Major Accident/Oil Spill

Almost 20 years later after 1969 spill, the risks of a major accident (e.g., oil platform and tanker) still remain high. The Santa Barbara channel is an international shipping lane with 20 producing platforms. The area has been called the "graveyard of the Pacific", and the worst case scenario would be an ocean oil tanker/barge collide with an offshore platform. The hazards are clear where the risks have a "zero probabilty, infinite effect".

The September 21, 1987 collision between the Pac Baroness and the Atlantic Wing ships which occurred in the Santa Barbara was described with the assertion that such an accident is predictable with the increased amount of traffic in the Channel. [Example--crew and supply boats have had an enormous impact on Channel traffic with each platform requiring 1-4 daily trips.]

Schuyler made a plea that such mitigation measures as (1) vessel traffic control system, (2)ocean going tug capable of pulling out a ship in trouble located nearby, and (3) combination tug and fireboat should be in place.

Rob Almy, Recommendations for Washington based on the Santa Barbara Experience

By way of background, the Resource Management Department of Santa Barbara County is engaged in such activities as the processing of permits, the development of land use plans, and review and approval of environmental plans. With respect to environmental impact reports, RMD hires consultants/contractors to prepare EI reports. [Permit fees assessed on the industry applicant range $1-2.5 million/report.] These EI reports also serves as a NEPA

document. Consultants are also hire to monitor construction activity for compliance.

Almy made a number of suggestions for the State of Washington to consider in regards to offshore oil and gas development:

(1) Tell oil companies what you want and why you want it Be sure that your basis for infromation requests is sound and defensible. It is also best that requests are made as early as possible. "Late hits" are generally unacceptable to the industry.
(2) Establish a good working relationship with state. In Santa Barbara County's experience, the state and the county have often been at odds. Obviously, it is best to work cooperatively and on consistent basis with each other.
(3) Need to determine the best way development could happen from Washington's perspective. In Central California, a series of development scenarios have been created based on a game-theoretic approach.
(4) Maintain the position that the State of Washington and local areas impacted by leasing must be a co-equal with MMS. Co-equals between the state, locales and the federal government should be maintained for both leasing and development decisions. A related suggestion is the State needs to understand how the MMS functions related to the decisions that have been made and its obligations under NEPA.
(5) Need for both an emergency management system along with a socioeconomic monitoring system to be functional and in place. Relatedly, the state needs to consider the level of effort in both prevention and mitigation.

The overarching and critical question to be asked is "what is the degree to which natural resources are going to be protected and under what conditions?"

Francesco Cava, Channel Islands Marine Sanctuary
Cava gave a brief presentation on the Channel Islands Marine Sanctuary and discussed its relationship with oil and gas development. Mention was again made about no new oil and gas leasing is permitted but that existing leases may be exercised. (As of yet, this has not been tested.)

In regard to the Clean Seas program, Cava expressed extreme doubts about the utility of dispersants, not to mention that potential toxicity on marine life. The 1987 collision was again mentioned as a case in point, that dipersants were ineffectual in the open seas.

Finally, Cava made a plea for basic research and monitoring of the marine ecosystem. Succinctly, she stated that "you cannot protect what you do not know about".

Mike Powers, Tri-County Socioeconomic Monitoring and Mitigation Program in Santa Barbara
A formal presentation was made on the socioeconomic impact monitoring and mitigation program that tracks the population and

economic, fiscal and public service impacts that are attributable to oil and gas development in the area. Inter-temporal and inter-jurisdictional effects (i.e., impact-related costs fall on different jurisdictions than impact-related benefits) were discussed. Expenditures in the local region from oil and gas companies for 1988 are projected to be nearly $230 million. Issues of indirect economic impacts were discussed (labeled "stickiness" of dollars). Worker surveys indicated that 36% of the workers hired in 1986 were in-migrants to the area. Links to the mitigation program were discussed.

Discusssion of the effects of Proposition 13 on local spending limitations especially those that are experiencing population pressures attributable to such developments as offshore oil and its attendent onshore impacts. A suggestion was made by Powers that we look at the Trident Submarine Base construction in Bangor as a possible example. [Although the contact person, Chuck Ellington, from the Seattle DOD Office of Economic Adjustment was a good suggestion, I doubt that the Trident experience has much to offer as an example for our purposes.]

In conclusion, he reiterated that what was needed was an "insurance policy" for mitigating long-term impacts. In addition, the phasing and cumulative impacts are significant issues to consider.

Biliona Cicin-Sain, Conflicts Related to Offshore Oil Development

Cicin-Sain began her presentation with the statement that a basic policy dilemma exists in oil development, that is, a mismatch between associated benefits and costs. Largely, those benefits accrue to the nation whereas the local area is strapped with the costs. She stated that such an imbalance could be corrected by the Federal government to release more monies to oil producing coastal states for the purposes of dealing with impacts.

Cicin-Sain also discussed the OCS Land Act and mentioned that the Act ought to be strengthened by more directly incorporating provisions to minimize costs, provide anticipatory planning and specify mitigation measures. A number of major controversies and conflicts are still largely unresolved namely, (1) the impact on the marine environment, (2) impacts on other users, (3) air quality, and (4) industrialization (oil transportation and impact monitoring). Although the Environmental Impact Review currently drives the whole process in California, there still needs to be a forum for resolution of these outstanding issues.

In rhetorical fashion, the bottom line assessment in her opinion was that we have been largely successful in our dealings with onshore impacts because of our aggresiveness. This is not to suggest that all of our problems with onshore impacts have been solved. For the most part, the oil planning process is working, especially the project by project review. However, we still lack a good framework for dealing with cumulative impacts. In addition, we lack an overall, long-term planning mechanism, due

to the lack of monies.

2 June 1988 University of California, Santa Barbara
David Coon, Manager, Environmental Health and Safety

Environmental Health and Oil Development, Revisited
Our meeting with Coon was with regard to the air and water quality concerns on the Coal Oil Point Reserve, along with those associated with the oil and gas developments. Coon retold the university's perspective on ARCO's desire to drill in state waters near UCSB, particularly the EIR process and review. Concerns with air quality, water quality, aesthetics, and impacts on the nearby campus community were not adequately dealt with in the EIR documents. One lesson learned in the process that needs to be incorporated into the EIR documents is the notion of engineering controls vs. operational controls (Coon stated that it is "better to require that the system safety be engineered into the requirements than face the later control of upset conditions through a change in operations".)

On a sidelight related to earlier discusssions with Jenson at Coal Oil Point Reserve, Coon mentioned that the H2S emissions related to the barge loading was an example of ARCO's "unresponsiveness". To quote Coon, "ARCO could have dealt with the issue forthrightly. They failed to make the public relations link of emissions with seeking the permitting approval for the new platform".)

In closing comments, Coon mentioned that from his perspective as an environmental and safety manager, "given the potential public health hazards and risks, oil and gas production is incompatible with other uses". Also, communitication with the oil companies is critical.

2 June 1988 (AM) Exxon USA, Santa Barbara
Charlie Lyons, Divison Manager
Brian Dunphy, Public Affairs

Exxon's OS&T Vessel in OCS Waters
Our discussion focused on Exxon's OS&T vessel, which is located just beyond the 3 mile state water boundary off the coast of Santa Barbara County. The vessel represents Exxon's "solution" to the County's denial of permits for an onshore oil and gas separation and treatment facility.

The OS&T vessel is the first of its kind and has been in operation since 1981. The facility has capacity of 200,000 barrels of storage on board, along with 40MW power generation. The vessel can process 90,000 barrels of oil a day, compared with the projected onshore facility that will process over 140,000 barrels/day when it comes on-line.

The company is required to do inspections periodically and has an on-going company maintenance system. Exxon officials contend that their air monitoring results indicate that the OS&T makes no difference.

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In closing, they offered this suggestion: "there needs to be balance between two parties, and a committment to look for constructive solutions."

2 June 1988 (PM) Gaviota Oil and Gas Processing Plant, Gaviota, California
Sam Davis
Todd Robertson
Gaviota Oil and Gas Processing Plant

Davis and Robertson gave us a presentation and tour of this "state-of-the-art facility. The facility is currently ready for operation, but is being delayed because Santa Barbara County has requested a "supplemental" EIR due to revised estimates as to the level of H2S in the natural gas. Clearly, there was frustration expressed in their presentation that the plant is on-line and loosing millions of dollars a day in operating revenues, but also they expressed confidence that the plant will finally begin operaions around October.

The plant is operated by a consortium of oil companies with Chevron the principal investor. The consortium has made a number of in-kind mitigation payments in building a firehouse, high school, and water treatment facility.

My observation is the plant lacks visual aesthetics. This was very surprising given the County's stringent permitting process. The plant is located on a very prominant site in a visual shed right on US 101. If this isn't "visual blight", I don't know what is! Obviously, the consortium could have been much more sensitive to the plant's visual attractiveness.

CONCLUDING REMARKS

Although it is likely that the Washington experience with oil and gas development in the OCS will not compare with the magnitude of Southern California, nevertheless there are certainly a number of lessons that can be learned from the Santa Barbara experience with offshore oil development. The following issues present some of my findings from the Santa Barbara trip:

- **Critical Need for Baseline Information.** This ecological and socioeconomic data on the Washington coast is needed for subsequent use in monitoring and mitigation, as well as in negotiations with industry and MMS. On more than one occasion, "knowledgeables" told us that it is very difficult to protect your resources and communities if you don't have adequate information. Relatedly, attribution will be extremely difficult to prove if necessary data is not collected and analyzed. [This is irrespective of one's choice of modeling approaches.]

- **Local Government Authority in Onshore Development.** Local governments have a critical decision-making role in the where, when, how, and under what conditions the onshore

facilities are sited. Preparation is needed to ensure that local governments respond appropriately and prudently. Somewhat related is the need for both the affected local governments and the state to work cooperatively together.

o **Complexity of Onshore and Offshore Developments.** The oil and gas industry is extremely complex to understand and control. More than the majors are involved in associated onshore developments and then there is the diversity of suppliers--crew ships, supply boats, tanker opertions, etc. What is not yet known are the various thresholds that would trigger such developments.

o **Management of Expectations: Net Socioeconomic Impacts.** Opinions are mixed but many local officials that we visited with indicated that often the projected level of economic benefits are quite inflated. For instance, the industry is highly capitalized, the expenditure patterns with existing suppliers are established, the skilled labor pool required are largely from Louisiana and Texas, and world market plays an enormous role in industry decisions. All of this underscores that (1) there is a high degree of uncertainty and (2) that local areas will experience little <u>direct</u> economic benefits. In such a setting, economic expectations need to be managed.

o **Risks Associated with Offshore Oil.** A number of us have heard of informal risk assessments made on offshore oil--transportation-related accidents, blowouts, long-term effects of disruption, and their potential effects on existing industries and users. Experts gave their opinion that the preference is to place stipulations on industry, e.g., emphasize engineering controls to prevent "upset conditions" at the front end.

Ocean Resources Assessment Program Advisory Committee
TRIP REPORT

Trip Summary Data

1. **Submittal Date:** July 11, 1988.

2. **Traveler/Preparer:** Tim Trohimovich, Grays Harbor Regional Planning Commission.

3. **Fellow Travelers:** Robert Chase, State of Washington Department of Trade and Economic Development; Cleve Pinnix, State of Washington Parks and Recreation Commission; and Glenn Leadbetter, Washington Sea Grant Program.

4. **Subcommittee:** Onshore SubCommittee, Sub-subcommittee 1.

5. **Travel Dates:** May 31-June 1, 1988. (Flew to California on May 30, 1988, a legal holiday.)

6. **Trip Locations:** Santa Barbara California and vicinity, Ventura California, and Port Hueneme California.

7. **Purpose:** To identify the impacts of offshore oil and gas development in Southern California on onshore human and natural resources and what is known about those impacts.

8. **Contacts Made:**

a. James Johnstone, Senior Area Production Superintent Offshore, **ARCO Oil and Gas**, Route 1 Box 275, Goleta, California 93117. Telephone: 805-968-1697.

b. Roger L. Davis, Plant Superintendent Ellwood Facility, **ARCO Oil and Gas**, Post Office Box 2540, Goleta, California 93117. Telephone: 805-968-2990.

c. Dr. Rebecca Jensen, Research Assistant, Marine Science Institute, **University of California Santa Barbara**, Santa Barbara, California 93106.

d. Diane Guzman, Director, **County of Santa Barbara**, Resource Management Department, 123 East Anapamu Street, Santa Barbara, California 93101. Telephone: 805-968-2000.

e. John Patton, Deputy Director, **County of Santa Barbara**, Resource Management Department, 123 East Anapamu Street, Santa Barbara, California 93101. Telephone: 805-968-2000.

f. Jana Zimmer, Staff Attorney, **County of Santa Barbara**, Resource Management Department.

g. Gary Davis, Research Scientist, **National Park Service**, Channel Islands National Park, Ventura, California 93003. Telephone: 805-644-8157.

h. Robert Harmuth, Director of Marine Operations, **Port of Hueneme**, Oxnard Harbor District, Post Office Box 608, Port Hueneme, California 93041. Telephone: 805-488-3677.

i. Russ Schmitt, Coastal Resource Center, Marine Science Institute, **University of California Santa Barbara**, Santa Barbara, California 93106.

j. Arent (Barry) Schuyler, Environmental Studies, **University of California Santa Barbara**, Santa Barbara, California 93106.

k. Biliana Cicin-Sain, Political Science Department, **University of California Santa Barbara**, Santa Barbara, California 93106.

l. Robert Almy, Deputy Director, **County of Santa Barbara**, Resource Management Department, Energy Division, 1226 Anacapa Street, Santa Barbara, California 93101. Telephone: 805-568-2040.

m. Michael Powers, SEMP Program Manager, **County of Santa Barbara**, Department of Regional Programs, 222 East Anapamu Street, Santa Barbara, California 93101.

n. Francesca Cava, **U.S. Department of the Interior**, Channel Islands National Marine Sanctuary.

9. Publications and Materials Received:

a. Several pamphlets and handouts from the Washington Sea Grant Program, Washington State Ocean Resources Assessment Project.

b. Several pamphlets and handouts from the Atlantic Richfield Company on offshore oil and gas development, including the pamphlet "Understanding Regulatory Agencies and ARCO Policies in the Western District".

c. Several handouts and newspaper articles on oil industry emissions from the Dr. Rebecca Jensen.

d. Powers, M.G. and Bubriski, M. Tri-County Socioeconomic Monitoring and Mitigation Program. Mitigation of Socioeconomic Impacts in Santa Barbara County, Draft. Santa Barbara: Santa Barbara County, January 1988.

e. M. G. Powers, et al. Tri-County Socioeconomic Monitoring and Mitigation Program, Third Round Monitoring Report: 1986 Impact Estimates and Forecasts for Santa Barbara County. Santa Barbara: Santa Barbara County, October 1987.

f. Questionnaires used in the Tri-County Socioeconomic Monitoring and Mitigation Program to identify in-migrating workers.

g. Powers, M.G. and Stegall, S. Santa Barbara County 1980-2000 Population, Employment, Housing, and Land Use Forecast 85. Santa Barbara: Santa Barbara County-Cities Area Planning Council, October 1985.

h. Resource Management Department. Guide to the Environmental Review Process. Santa Barbara: Santa Barbara County, January 1987.

i. Resource Management Department. Permit Guide for Building in the Coastal Zone. Santa Barbara: Santa Barbara County, June 1987.

j. Davis, G.E. and Halvorson W.L. "Channel Islands National Park Assesses Ecosystem Health".

Trip Summary and Observations

Overall Lessons

The overall lessons are what I think I learned on this trip. Other travelers may disagree with these conclusions. The people interviewed may disagree as well. If I have mis-attributed or misquoted anyone I apologize. The conclusions are solely the author's and do not necessarily reflect the position of the Grays Harbor Regional Planning Commission.

The State of Knowledge on Impacts of Offshore Oil and Gas Development

Scientists differ on the affects of oil spills and small incidental, but more frequent oil discharges on the marine environment.

There also appears to be disagreement on the value of baseline data. Many experts and staff met on the trip decry the lack of baseline data. Others state that most baseline data is not very useful because it is just one or two points in time and does not take into account the natural variability of the ocean system.

Based on this disagreement, it appears that to be most useful for monitoring the potential impacts of offshore oil development, baseline data must observe water quality, marine plants and animals, marine users, and air quality. The baseline data must cover a long enough time period to be able to identify the natural variability in the natural systems.

Baseline environmental data which meets these criteria is generally not available for the Washington coast or most coastal areas. It is not clear it is scientifically or financially

possible to acquire this data. It is best to acquire baseline data before development occurs. Because of the cost of acquiring the data, it may be more feasible to get the data after leasing and discovery, but before development.

Data on the resources at risk and the potential consequences of allowing offshore oil and gas development must be developed before the decision to lease is made. This information does not need to have the depth of the baseline data. However, it should be gathered in a manner to allows it to supplement baseline data if baseline data is gathered in the future.

In addition to the disagreement between experts on the potential impacts of offshore oil and gas development, there is evidence that the current level of knowledge about offshore environments and systems does not allow us to accurately predict the impacts of oil and gas development. This means if offshore oil and gas development is allowed, a biological monitoring program is necessary. This program must be ongoing to overcome the deficiencies of baseline data described above.

Because of the many events occurring in the onshore and offshore environments, it will be difficult to conclusively attribute effects to offshore oil and gas development and production. Perhaps a different standard of proof will be needed if offshore oil and gas development is allowed.

The careful siting of onshore oil processing facilities can minimize visual impact on the coastal environment.

Because oil and gas production is in large part dependant on the world price of oil, it is difficult to predict the amount and timing of development. This makes socioeconomic impact analysis difficult and imprecise. Socioeconomic impact analysis is necessary at the prelease and predevelopment stages to help decision makers decide whether oil and gas development should be allowed and, if allowed, under what conditions. However this analysis should be regarded as a tentative estimate. These difficulties also argue for moderation on expenditures for socioeconomic impact modeling and analysis. Because of the high level of uncertainty, if it is decided to allow offshore oil development, a socioeconomic monitoring and mitigation program should be required to identify actual impacts during development and to provide the financial resources to mitigate and accommodate the impacts. Some advance mitigation may also be needed to provide the infrastructure needed to accommodate the development, particularly in rural areas. In making infrastructure investments it is necessary to understand that development may not occur because of changes in price, technology, or law.

Offshore oil and gas development and production will likely have a significant adverse affect on commercial fisheries because of space and use conflicts and other potential conflicts.

The Santa Barbara experience cannot show how offshore oil development and production will affect the tourism industry because oil and tourism developed as industries in Santa Barbara at the same time.

The impact of offshore oil development and production on the tourism industry is a major unanswered question.

The State of Knowledge on Regulation of Offshore Oil and Gas Development

In Southern California, local and state agencies are continuing to learn how to best regulate offshore oil and gas development and the resulting onshore facilities to lessen potential environmental impacts despite a history of oil and gas development since the turn of the century. The state of the art is changing and improving as the agencies gain experience.

It is not known what regulatory policies and regulations would best protect the resources of the Washington coast and the ocean areas.

All parties agree that requirements for oil and gas facilities should be identified in advance of any applications for project approval. Industry wants to know the requirements at the beginning. Local governments do not want to "blind side" the industry. However, all parties agree that requirements are changing as impacts are identified and experience is gained.

Santa Barbara County uses "reopeners" in the permits they approve. Reopeners allow the county to add, delete, or modify permit requirements as impacts and mitigating measures are identified during development and operation. Because of the uncertainty over potential impacts, if offshore oil development is allowed, reopeners appear to be a good idea. However, Santa Barbara has not yet used reopeners to add conditions. They may not work. The legal status of reopeners, especially given Washington State's vested rights rules, are unclear and will require careful evaluation. If reopeners prove to be problematic, other provisions such as requiring as a condition of permit approval that ongoing operations obtain a new permit every five years could accomplish the same result.

Local and state agencies which attempt to regulate offshore oil development are likely to be sued by the oil and gas companies. The costs of litigation would be significant to a small county.

Need For Broad Based Integrated Ocean Planning

A comprehensive plan for the ocean off Washington State is needed. The plan should identify important resources and existing uses. Future uses and potential use conflicts should be forecast. Issues should be identified and alternatives should

examined. The plan should establish goals and policies for the ocean. Offshore oil development should be addressed in the plan. To be most useful this plan should be made a part of the State's federally approved Coastal Zone Management Plan. Extensive local government and user group involvement is needed in the development of the plan. This should be done before leasing takes place.

Offshore Oil and Gas Revenues

It is not known whether local governments will generate significant revenues from offshore oil development, although because of the way California limits expenditures, Washington local governments would be better able to generate revenues from property taxes on onshore facilities than California local governments given generally comparable levels of development. However, because much less oil or gas is likely to exist, less development will occur. This is may mean little local government revenues, but major risks to local residents and local governments. In addition, most or all onshore facilities could be in one jurisdiction while many jurisdictions would face the risks of offshore oil and gas development.

If offshore oil and gas development and production is allowed, mechanisms are needed to share state revenues with affected local governments and federal revenues with the state and affected local governments.

MMS Planning Process Roles

State and local governments must monitor the Minerals Management Service oil and gas leasing process and participate in the process. The Washington coastal local governments currently lack the staff and resources necessary to monitor and participate.

Virtually everyone believed that Washington was wise to be planning for offshore oil and gas development in advance of leasing activity.

Meetings Attended

1. James Johnstone and Roger L. Davis ARCO Oil and Gas Ellwood Facility.

The Ellwood Facility removes hydrogen sulfide gas and water from natural gas and oil. The hydrogen sulfide gas is extremely dangerous. The gas is convert to elemental sulfur which can be safely stored and transported by truck. The oil is barged from the facility. The natural gas is both trucked and transported by pipeline. Ellwood Facility staff expressed the view that because of the danger presented by the hydrogen sulfide gas, it should be removed from the oil and gas as close to the water as possible.

The water removed from the gas and oil is reinjected into an old oil field under the plant.

James Johnstone said that all offshore gas requires some processing, at a minimum this includes removing water from the gas.

The plant also processes oil and gas captured from a natural seep in Santa Barbara Channel. This oil and gas is apparently captured to obtain an air pollution offset for an offshore facility.

Employment and Wages

The plant employees approximately 35 persons. Operators earn $12.00 to $15.00 an hour. Roustabouts (skilled labors) earn $12.00 an hour. Tradeworkers earn $14.00 an hour. Typical annual earnings are $30,000 to $60,000 a year depending on seniority and skill levels. The work force is unionized.

Most employees are California residents hired "off the street" and have little oil industry experience. Some were hired from vendors. According to Ellwood staff, this is done, at least in part, because of the high cost of moving employees to California.

Few of the employees live in the City of Santa Barbara. The Ellwood staff attribute this to the high price of housing. Santa Barbara County staff attribute this to the price of housing and a anti-oil attitude in the City of Santa Barbara.

Compatibility with Neighboring Uses

The staff appears to be trying to be compatible with neighboring properties. There have been some complaints about noise and glare from the plant, and air pollution from the barge loading operation.

Only the water tank is visible from a nearby public beach. The plant is somewhat visible from the beach in front of the plant. The plant is not visible from a nearby freeway.

Regulation and the Ellwood Plant

The ARCO staff stated that California was unique in the oil industry and that Southern California has the most stringent requirements for oil facilities in the world. They agreed that some requirements were warranted, but expressed frustration with changing regulations. Staff was also frustrated by the time needed to obtain development permits. It took ARCO from 1969 to 1978 to obtain the permits needed to expand the Ellwood facility. In fairness it should be noted that the California Coastal Act and the federal Coastal Zone Management Act were passed during that time, significantly altering the regulatory environment. To expand the plant an Environmental Report (equivalent to a

Washington State SEPA Environmental Impact Statement) was required.

Santa Barbara County has a policy of minimizing the industrialization of the county and the coastal areas by concentrating facilities in a few locations. The county would like to have the facility close and move to one of these areas. The plant staff indicated they would be willing to move if enough additional offshore oil and gas platforms were approved to make the new facility profitable.

Similarly, Santa Barbara County has a policy of lessening the potential for an oil spill by preferring oil movement by pipeline. The plant staff again said that if a new offshore platform was approved, they would connect to a new pipeline north of the facility, but that the pipeline was too far north to be economically extended at present production rates.

The air pollution authorities require the barge serving the plant to have special air emission recovery systems. The plant staff believe the system is effective. Air pollution is a major concern because the Santa Barbara area is a non-attainment area under the Clean Air Act.

Local Government Revenues

Ellwood staff acknowledged that local governments obtain little additional reviews from offshore oil development. Local governments do not share lease revenues. Property and sales taxes from facilities which are onshore or within three miles and sales taxes and income taxes from workers accrue to local governments. Because of the Jarvis-Garn government expenditure limits, local governments have to rebate back much of the increased revenues. They cannot use them to fund increases in services. In California, expenditures can increase by only a few percent a year. If revenues exceed the expenditures limits, the revenues are rebated back to all of the property taxpayers. So, when a major facility is constructed onshore or within three miles of the shore, the additional property tax revenues generated reduce overall tax rates but provide few increased services.

2. Dr. Rebecca Jensen, University of California Santa Barbara.

Dr. Jensen was formerly the resident caretaker of the University of California Santa Barbara Coal Oil Point Reserve. The reserve is just south of the Ellwood plant.

While she lived at Coal Oil Point there were numerous episodes of strong oil odor which she believes were from the barge loading operations at the Ellwood Plant. Dr. Jensen believes the barge air pollution control systems do not work properly and are not properly maintained. Dr. Jensen clearly believes that the oil

industry is interested in producing oil as cheaply as possible rather than maintain air quality standards.

Dr. Jensen is concerned about the potential cancer causing effect of oil vapor emissions and the potentially deadly effects of hydrogen sulfide gas.

Effectiveness of Local Government Enforcement Actions

Dr. Jensen also felt local government enforcement of local requirements was ineffective. She believes local air pollution control authorities have no effective air pollution monitoring system. What monitoring is done is done by the polluters. Because of this, it is difficult to attribute problems to the Ellwood plant and take effective action.

Dr. Jensen felt there needs to be a monitoring system with almost automatic enforcement mechanisms removed from political pressures.

Lack of Baseline Data

According to Dr. Jensen, little baseline air or water quality data exists. Because of the lack of baseline data, it is difficult to attribute emissions to the oil industry.

Dr. Jensen also expressed concerns about the effect of oil spills or frequent small discharges of oil on seawater purity and marine organisms. The scientific basis of these concerns was not clear.

3. Diane Guzman, Director; John Patton, Deputy Director; and Jana Zimmer, Staff Attorney; County of Santa Barbara, Resource Management Department.

Director Guzman described some of her experiences in dealing with the oil industry. The relationship has been somewhat stormy. Director Guzman stated that ironically, some oil industry representatives have portrayed Santa Barbara County as an example of how to work with the oil industry to the Northern California counties.

In developing policies on the oil and gas industry, the county formed the Petroleum Transportation Committee which included representatives from the oil and gas industry and other segments of the county. The oil and gas industry provided funding for studies on how to minimize the potential negative impacts of the industry.

The Santa Barbara staff noted that in their dealings with the oil and gas industry, the industry has used a wide variety of tactics. The tactics have included: working cooperatively with the county, funding necessary studies, lobbying staff, lobbying local elected officials, and litigation. Santa Barbara County

had just been sued by an oil company for allegedly encouraging the California State Lands Commission to deny permission to begin drilling for oil and gas on a State lease dating from 1947. Regrettably on at least one occasion, a member of the industry resorted to deceit.

Mr. Patton said the offshore oil and gas industry prefers private onshore facilities for their service boats.

The Ability to Project Oil Industry Activity Levels

Projections of oil industry activity in Santa Barbara have not been accurate. This is primarily because oil and gas exploration and development activity is determined by a generally unpredictable world oil market.

State and Local Relationships and Offshore Oil

From the perspective of the Santa Barbara County staff, during the Deukmejian Administration the state has played a minor role in offshore oil development issues. The locals have taken a lead role.

Local Revenues From Offshore Oil Development

The Santa Barbara staff reiterated the comments of the ARCO staff on local revenues from offshore oil.

Local governments obtain no revenues from facilities in federal waters, although the state receives a portion of the federal proceeds from oil fields between three and eight miles.

Local governments do receive property and sales tax from facilities which are onshore or within three miles and property, sales, and income taxes from workers. However because of the Jarvis-Garn government expenditure limits, local governments have to rebate back to all of the taxpayers much of the increased revenues.

The County of Santa Barbara has received only a $100,000 in State Tideland Revenue Sharing monies.

The County of Santa Barbara has received several million dollars in federal offshore oil production revenues passed through to local governments by the state. County staff believes this is too little given the revenues generated by wells in the county. Much of this money has been used for recreation improvements to mitigate for oil industry impacts.

As a result of the expenditure limits, Santa Barbara County requires that most of the mitigation for anticipated environmental and social impacts take the form of public improvements such as the construction by the industry of increased public beach facilities.

Santa Barbara Oil Development Policies

Santa Barbara County has a policy that oil should generally be transported by pipeline to lessen the risk of oil spills.

This policy was at the heart of the controversy over the Hondo Platform processing boat known as the Santa Ynez. The county wanted the oil to be transported by pipeline and made that a permit condition for the onshore facilities. Exxon objected that the pipeline was too costly and converted a vessel to process oil and to ship it off by tanker. A new pipeline was recently built and the Hondo Platform will be connected to it.

According the ARCO staff pipelines to shore are buried though the surf zone. Pipelines are sometimes laid on the surface of the ocean floor and are then naturally buried by sand transport.

Santa Barbara County also has a policy that oil and gas facilities should be concentrated in certain areas to lessen impacts on the coastal line and the industrialization of the county.

The county also has a number of very specific policies and requirements for offshore gas and oil development. Examples include a county required gear replacement fund for fishermen and a requirement that areas of abandoned materials on the bottom be mapped on charts to lessen interference with fishing. The affect of offshore oil development on commercial fishing remains a major unresolved issue.

The Santa Barbara Permitting System

The oil and gas industry is required to pay all processing costs for local government permits. The industry also paid a million dollars for initial oil and gas transportation studies.

Santa Barbara County also requires the offshore oil industry to pay for expert consultants to monitor the development of facilities to ensure that permit conditions are met. Santa Barbara County has also required conditions on offshore platforms based on onshore facility permits. Requiring conditions on offshore platforms because of onshore facilities requiring permits has not been tested in court.

The permits approved by Santa Barbara County now include "reopeners". Reopeners give the county the right to impose additional conditions as new information on the potential environmental impacts of oil and gas development are identified.

The Santa Barbara Air Quality District has increased its staff substantially to monitor the impacts of the oil and gas industry on air quality. Much of this increase has been funded by permit requirements placed on the oil and gas industry.

The Santa Barbara Monitoring Program

The Tri-County Socioeconomic Monitoring Program is also a requirement of approved onshore facility permits. Oil and gas companies receiving approved permits are required to pay the costs of gathering and analyzing data on the economic and social impacts of development caused by the oil and gas industry. The permit conditions require the industry to compensate general and special purpose local governments for the net financial burdens caused by oil and gas development and their workers.

No mitigation payments have been required to date The county is in the process of evaluating several mitigation claims from local governments.

Growth Resulting From Offshore Oil Development

Santa Barbara staff noted that Santa Barbara received little growth or development as a result of offshore oil development. This has been documented by the monitoring program surveys.

Staff attributed the lack of growth to several factors. The oil and gas industry is a highly capital intensive. Most of the investment is in capital facilities. Most of the jobs and incomes come from construction. The firms that do most of the exploration and construction are located on the Gulf of Mexico. Because of specialization and industry relationships, most of the exploration and construction workers come from out of the area and leave after exploration or the construction of a platform. Many of the platforms on the west coast are constructed in the far east.

Santa Barbara staff did say that local workers are hired for production jobs. While production jobs pay good wages, there are fewer production workers needed relative to exploration and construction workers.

Few oil and gas operations employees live in the City of Santa Barbara because of high costs and an anti-oil industry attitude. A significant number have settled in the northern portion of the county, in part because housing is available because Vandenberg Air Force Base did not expand as much as anticipated. This has resulted in a surplus of housing in the northern part of the county.

The Affect of Offshore Oil Development on Tourism

Mr. Patton stated that he did not believe the Santa Barbara experience could provide an answer to the question of what effect offshore oil and gas development has on tourism because the oil and gas industry and the tourism industry were developed at the same time in Santa Barbara.

4. Gary Davis, Research Scientist, Channel Islands National Park.

Gary Davis described the monitoring effort the National Park Service is undertaking to determine the health of the ecosystems in the park. The National Park Service will monitor the growth and development of organisms and organism populations in various test areas. Changes in growth or development will be used to determine the relative health of the plants and animals. Mr. Davis noted that it was difficult to determine the cause of changes because of the many events that occur in the sea and our limited understanding of marine organisms and processes.

Mr. Davis noted that baseline data that represents just one point in time is not useful because organisms and populations change over time. The these natural variations must be taken into account for the data to be useful.

Mr. Davis described how the 1969 Santa Barbara spill completely surrounded Anacapa Island. Mr. Davis said that it was not possible to point out any present day affect of the spill. It was noted that organisms in Santa Barbara have probably evolved to tolerate periodic oil contact. Mr. Davis did express concern about the effects on marine life if the frequency of oil contact was significantly increased.

Mr. Davis believes that the greatest potential adverse effect of oil and gas development is increased air pollution.

Mr. Davis noted that technically it was not possible to contain spilled oil on the open sea under most conditions.

5. Robert Harmuth, Director of Marine Operations, Port of Hueneme.

Offshore oil service firms generate forty percent of Port of Hueneme's revenues. The Port of Hueneme is a publicly owned special purpose local government.

In 1984 75 vessels operated out of the Port of Hueneme. Because of the downturn in the industry, 32 to 35 currently operate out of the port.

Two oil spills have occurred at the Port of Hueneme as a result of oil and gas operations. The Port is also concerned about the hazardous waste handing practices of the oil and gas industry. The Port is working with the industry to ensure that proper standards are met.

During our visit to the port we spoke briefly with John Selteright of Zapata Gulf, an oil service firm under contract to move material to and from the offshore platforms for the major oil and gas producers. Mr. Selteright said that most normal maintenance of the supply vessels is done by the crews at dock side. Twice in a five year period the vessels must be dry docked

for major servicing. The vessels operating out of the Port of Hueneme have the major servicing done in Los Angeles. The boats are constructed on the Gulf coast.

6. Panel Discussion on the Local Governance of Offshore Oil And Gas Operations.

A. Arent (Barry) Schuyler, Environmental Studies, University of California Santa Barbara.

In the Santa Barbara Channel there is a significant danger that a vessel could hit an offshore oil platform. This is related to the high level of vessel traffic, little regulation of flag of convenience vessels, and a lack of a mandatory shipping traffic control system.

Some of the improvements recommended by Mr. Schuyler are increased vessel safety requirements, better weather information, having ocean going salvage tugs on standby to assist distressed and drifting vessels, and a mandatory shipping traffic control system.

Mr. Schuyler noted that their is no effective way to contain oil on the high seas.

B. Russ Schmitt, Coastal Resource Center, Marine Science Institute, University of California Santa Barbara.

Mr. Schmitt stated before the panel discussion began that the scientific basis to accurately estimate the potential impacts of many activities on the marine environment does not presently exist. As evidence for this position he cited a study monitoring the effects of a nuclear power plant on the California coast. The study was required by the California Coastal Commission. The results of the study to date have shown the actual affects include some of the predicted effects. Other predicted effects did not occur while un-predicted effects also have occurred. Mr. Schmitt suggested that an independent scientific community should monitor offshore oil drilling to identify the actual effects.

Mr. Schmitt expressed support for the reopeners required as permit conditions by Santa Barbara County. He said they have the potential to reduce uncertainty and impacts because as negative impacts are identified in the future, the permit can be modified to incorporate new requirements to lessen the impacts.

Mr. Schmitt said that oil dispersents have been banned by Canada. Research indicates the dispersents may be harmful and are only effective in a minor way.

C. Robert Almy, Deputy Director, County of Santa Barbara, Resource Management Department, Energy Division.

Mr. Almy stated that based on his experience working with the oil companies, as long as agencies know what they want, have a good rationale for the requirements which can stand up to reasonable scrutiny, and tell the oil companies the requirements before they make significant investments; the oil companies will comply with the requirements. Mr. Almy considers the pipeline to be connected to the Hondo Platform making the processing ship the Santa Ynez and the tanker traffic unnecessary evidence for this observation.

Mr. Almy said it is best to establish a relationship with the staff of the Minerals Management Service and the oil companies. All of the panel members agreed. It is also important to understand how the Minerals Management Service and its procedures work, and to participate in the process.

One of the most useful tools they have identified is a jointly prepared state/federal Environmental Impact Statement (EIS) which involves all parties which must participate in the decision. The parties must all agree on the scope and content of the EIS. This lessens costs and duplication. It also results in common conditions on permits and leases at the local, state, and federal levels. If all parties are not involve the preparation of the EIS, the parties not involved do not trust it. The agencies involved must also feel that they are equal in the process. He cautioned the audience to be careful of risk figures because it is a new and imprecise discipline. He viewed general discussions of risk and impacts and then specific mitigation measures as more useful. These EIS's have been complex and cost from $250,000 to $2.5 million. These costs are paid by the oil industry.

When local and state governments have a consistent positions and requirements it is easier to work with the oil companies and the Federal government.

Mr. Almy described the reopeners used by Santa Barbara County. Mr. Almy noted that reopeners had not yet been used to add permit conditions.

Mr. Almy believes the coastal states need to work together on the issue of offshore oil and gas development.

D. Francesca Cava, U.S. Department of the Interior, Channel Islands National Marine Sanctuary.

Ms. Cava also stated that baseline data is not available for coastal areas including the Channel Islands.

She described the problems of having to make decisions with a great amount of scientific uncertainty.

Ms. Cava discussed the uncertainties associated with dispersents, including whether they work or whether you have even hit the oil spill with the dispersents during heavy seas.

E. Michael Powers, SEMP Program Manager, County of Santa Barbara, Department of Regional Programs.

The Tri-County Socioeconomic Monitoring Program was described. The oil and gas companies are required to fund the program as a requirement of approved onshore facility permits issued by Santa Barbara County.

The program uses data collected by the oil companies on employees to drive a model to determine socioeconomic impacts on local governments. The model generates company specific impact data so that mitigation can be assessed against specific companies. The company specific data is not published, but aggregated data is published.

The model was developed by a consultant and has been updated by the county. The model is admittedly somewhat simplified. While all parties originally intended to accept these limitations, there has been significant discussion among the local governments and oil companies about the limitations and how to fix them. The changes made reduce compatibility with prior model runs and will have to be stopped at some point.

The companies are involved in the monitoring process because it is believed employees will give their employers better data than they would give a government agency and, in part, to coop the companies so they accept the results. Mr. Powers noted that the organization monitoring the effects should not be perceived as an advocate for any position to be effective.

The Tri-County Socioeconomic Impact Monitoring Program is just now evaluating its first impact claims by local governments.

F. Biliana Cicin-Sain, Political Science Department, University of California Santa Barbara.

Key Issues in Offshore Oil and Gas Development

Ms. Cicin-Sain stated that the central problem of offshore oil and gas development is that there is a mismatch of benefits and costs. The entire country benefits with each locality in the country benefiting a little. The costs are borne almost exclusively by the coastal communities. She then briefly summarized her view of the state of knowledge on managing offshore oil and gas impacts.

- The impacts on the marine environment have not been well resolved. Broad disagreement exists on oil spill impacts.

- The impacts on other uses such as fishing can be substantial and have not been successfully lessened.
- In air quality there has been considerable progress with the use of innovative techniques.
- Much has been done to lessen the impacts of industrialization of the coastal zone.
- Oil transport issues are being resolved.
- Socioeconomic impacts are being resolved through innovative technics such as the Tri-County monitoring program.

The Role of Government Agencies in Addressing the Issues

In Ms. Cicin-Sain's view, to the extent that some oil and gas facilities have dealt successfully with some of these issues it is because Santa Barbara County has taken an aggressive and creative role to mitigate and monitor what is going on. In large part the onshore issues have been resolved. This is because the county is a general purpose local government responsible for the general welfare and it has good staff.

Problems with Offshore Oil and Gas Regulation

The offshore issues have not been as well resolved. This is because of the oil and gas planning process. The process includes only project by project review. Cumulative impacts are not adequately considered. Little money or time is available to look at the big picture. The reviews are managed by many special purpose agencies with very separate missions and responsibilities. The process is complicated, citizens and groups have a difficult time participating. There is an avoidance of the bottom line. In particular the system lacks (1) a process to solve conflicts on how to manage an area and (2) no forum for trade off discussions. In addition, the living marine resources are not well represented. Aquaculture, potentially a big industry has been ignored completely.

Private negotiations, such as the negotiations between the fishing industry and the oil and gas industry in Santa Barbara have not worked well. Communication has increased and vessel lanes have been established, but the issue of compensation has not been resolved in three years, even with the assistance of private mediators. During the three years the fishing industry stayed out of the public permit process, this lessened the effectiveness of the process in protecting living marine resources. Santa Barbara County has made some progress on compensation through the public permit process.

Ms. Cicin-Sain believes that private mediation and negotiation to resolve marine disputes privatizes decisions on public

resources such as fish. In her view these discussions should be in public.

Suggestions for Improving the Management of Oil and Gas Development and Marine Resources

Ms. Cicin-Sain believes the process needs more interagency consultation and more work looking at the area as a whole. There should be a master Environmental Assessment that looks at what is and is not in the area, what the resources are and the potential impacts in an understandable way.

There is no offshore master plan which would forecast future uses and resolve potential conflicts.

Enforcement can be a problem and the community almost needs an onsite inspector with the authority to stop the project.

Ms. Cicin-Sain stated that in the 1980s all of the groups in the Santa Barbara area moved toward the middle of the political continuum, even GOO (Get Oil Out). There is no longer a desire to eliminate all oil development, but to minimize the potential damages.

This concludes the part of the trip I was able to attend.

Thanks to ORAP Staff

The trip was very well organized and staff did an excellent job of identifying people with valuable expertise and making them available to the committee. I would like to thank staff for their hard work.

Ocean Resources Assessment Program Advisory Committee
TRIP REPORT

Trip Summary Data

1. **Submittal Date:** July 11, 1988.

2. **Traveler/Preparer:** Tim Trohimovich, Grays Harbor Regional Planning Commission.

3. **Fellow Traveler:** Robert Chase, State of Washington Department of Trade and Economic Development.

4. **Subcommittee:** Onshore SubCommittee, Sub-subcommittee 1.

5. **Travel Date:** June 16, 1988.

6. **Trip Locations:** San Francisco, California and Sacramento, California.

7. **Purpose:** To review the studies being conducted by the central California counties and identify the positions and information on offshore oil and gas development available from California state agencies.

8. **Contacts Made:**

a. Warner Chabot, Regional Coordinator, **Central Coast OCS Regional Studies Program.** The program is moving its offices. Mr. Chabot's home address and telephone number is 122 Murray Avenue, Kentfield, California 94904. Telephone: 415-461-7641.

b. Susan Hansch, Manager, Energy and Ocean Resources Unit, **California Coastal Commission,** 631 Howard Street, Fourth Floor, San Francisco, California 94105. Telephone: 415-543-8555.

c. Bill Allayaud, Legislative Liaison, **California Coastal Commission,** 921 Eleventh Street, Room 1200, Sacramento, California 95814. Telephone: 916-445-6067.

d. Dwight Sanders, Chief, Division of Research and Planning, **State of California Lands Commission,** 1807 Thirteenth Street, Sacramento, California 95814. Telephone: 916-445-6067.

e. John Lien, Research Analyst, Division of Research and Planning, **State of California Lands Commission,** 1807 Thirteenth Street, Sacramento, California 95814. Telephone: 916-445-6067.

f. Randall Moory, Engineer, Division of Research and Planning, **State of California Lands Commission,** 1807 Thirteenth Street, Sacramento, California 95814. Telephone: 916-445-6067.

g. Michael Kahoe, Chief, Offshore Development Section, State of California Office of the Secretary of Environmental Affairs, 1102 "Q" Street, Sacramento, California 95814. Telephone: 916-324-3706.

9. Publications and Materials Received:

a. "Status Report on the Central Coast Counties OCS Regional Studies Program". Central Coast OCS Regional Studies Program, April 1988.

b. Blanchard, B. Oil and Gas Activities Affecting California's Coastal Zone: A Summary Report. California Coastal Commission, June 1987.

c. "California Comprehensive Offshore Resource Study Statement of Purpose and Goals". State of California Lands Commission, undated.

d. Letter and other materials relating to the California Comprehensive Offshore Resource Study. State of California Lands Commission.

e. West Coast Offshore Exploration Environmental Assessment Panel. Offshore Hydrocarbon Exploration, Report and Recommendations of the Offshore Exploration Environmental Assessment Panel. Vancouver B.C.: Province of British Columbia: April 1986.

f. Various notices and requests for information from state agencies, local governments, and others on Proposed OCS Lease Sale 80 prepared by the State of California Office of the Secretary of Environmental Affairs.

g. Memorandum of Agreement Regarding Outer Continental Shelf, Central California Lease Sale 73 Between the State of California and the United State Department of the Interior, 1983. This memorandum of Agreement lists the lease stipulations negotiated by the State and MMS to protect various resources including commercial fisheries.

Trip Summary and Observations

Overall Lessons

The overall lessons are what I think I learned on this trip. Other travelers may disagree with these conclusions. The people interviewed may disagree as well. If I have mis-attributed or misquoted anyone I apologize. The conclusions are solely the author's and do not necessarily reflect the position of the Grays Harbor Regional Planning Commission.

The Uncertainty of Offshore Oil Development and the Impact of this Uncertainty on Planning for Development

Because oil development is dependant on the world price of oil, the timing and level of development of the offshore oil industry is very uncertain. Offshore oil development may never happen off the coast of Washington State. One thing that is certain is that the Minerals Management Service Leasing Program will slip. It is important that expectations be managed. It is also important that local and state governments not make major, single purpose investments to accommodate the oil industry without some assurance the industry will located in the area because the industry may never come. (This is really Bob Chase's observation but he is right and it is important so I stole it.)

Because of this uncertainty, research conducted by state and local governments on offshore oil development and offshore resources should be designed to achieve multiple objectives. For example, research on fish resources could help assess the potential impacts of offshore oil development and improve fisheries management if properly designed and carryed out.

Accomplishing multiple goals should also be the goal of any infrastructure investments to accommodate the offshore oil industry.

The Current State of Knowledge About Offshore Resources and Offshore Oil and Gas Development and Operations.

Staff and scientists differ on the affects of oil spills and small incidental, but more frequent oil discharges on the marine environment.

The staff interviewed on this trip seemed to feel that baseline data is needed and not available.

Several staff members agreed that the existing data on areas important to the fishing industry was not reliable because fisherpersons where reluctant to tell where they caught their fish.

The staff also felt that much of the existing resource data was hard to obtain and use.

Need for Better Information on What MMS has Done and is Doing

The Minerals Management Service (MMS) has done a significant amount of science. The service is getting better at getting the word out but more needs to be done.

There is a need for additional repositories of Minerals Management Service research and planning documents, including several in Washington State.

User friendly computer databases of abstracts of Minerals Management Service reports that allow unsophisticated users to do computer sorts is needed.

A better system of distributing MMS reports is needed.

Public Involvement in Decisions on Offshore Oil is Necessary

The public and all potentially affected local and state interest groups must be involved in decisions on whether to allow offshore oil development and production and under what conditions. If they are not involved it is likely that conflict, litigation, and major delay would occur if the decision is to allow offshore oil development and production. Public involvement is difficult because the issues are complex, information is not readily available, and the process is complex and is played out over several years. This involvement must occur through the public sphere if it is to work.

The Minerals Management Service and the oil and gas industry may try a strategy of divide and conquer.

The potential for delay gives local governments, state governments, the general public, and interest groups power over the industry and the Minerals Management Service.

Need For Broad Based Integrated Ocean Planning

A comprehensive plan for the ocean off Washington State is needed. The plan should identify important resources and existing uses. Future uses and potential use conflicts should be forecast. Issues should be identified and alternatives should examined. The plan should establish goals and policies for the ocean. Offshore oil development should be addressed in the plan. To be most useful, this plan should be made a part of the State's federally approved Coastal Zone Management Plan. Extensive local government and user group involvement is needed in the development of the plan. This should be done before leasing takes place.

Again, I was struck by the amount of litigation state and local governments involved in offshore oil and gas issues face. It is likely that local and state agencies that attempt to regulate offshore oil and gas in Washington State will also face litigation from the industry and even the federal government. Local governments do not have the resources for extensive litigation.

Meetings Attended

1. Warner Chabot, Central Coast OCS Regional Studies Program.

Mr. Chabot stated at the beginning of the interview he is opposed to offshore oil and gas development and production and his position should be kept in mind during our discussion.

The Central Coast OCS Regional Studies Program is being funded by two million dollars of Federal 8(g) funds. Federal 8(g) funds are generated by offshore oil and gas production which are distributed to oil producing states. The State of California distributed some of these funds to coastal counties. The money had accumulated in a Federal trust fund for several years and was distributed in a lump sum. Additional distributions are anticipated, but they are not likely to be as large. Sonoma, Marin, San Francisco, San Mateo, Santa Cruz, and Monterey counties were persuaded to contribute some of this money towards an offshore studies program. One million dollars is earmarked for air quality monitoring and modeling. Each county has a representative on the board of control which oversees the project. Mr. Chabot is the lead staffer and a consultant to the program.

A copy of a status report which describes the program is attached to this trip report. The status report was furnished by Mr. Chabot.

In Mr. Chabot's view the counties in his group are opposed to oil and gas leasing and development.

Mr. Chabot believes the likelyhood of oil and gas development in his area and in Washington and Oregon is somewhat remote. At minimum leasing will be delayed for a number of years. Consequently, studies done for oil and gas development should be useful for other purposes.

Advice on Tactics on Dealing with MMS

Mr. Chabot believes that local governments and state agencies must be involved in the MMS leasing process. He also believes that the public and local groups must also be involved. If these groups are not involved, the potential for litigation and delay is high. Federal funds are generally not available to local and state governments to help them participate in the process.

Mr. Chabot believes that opposition to oil and gas leasing is the best strategy for local governments. Even if areas are leased he believes opposition will result in the best conditions being placed on oil and gas development and operation.

Mr. Chabot also believes that all of the west coast states should cooperate with each other in dealing with the Minerals

Management Service. He views a united approach as the most powerful position for the states. The states could also better coordinate and share any studies they conduct.

It is useful to visit MMS offices in Los Angeles and to have MMS staff visit the local areas.

Obtaining MMS Studies

Obtaining MMS study results is difficult, but they are getting better. In Mr. Chabot's view additional repositories are needed. A computer database of reports would help researchers locate the study results. The MMS needs to develop a better distribution system for studies than the current system of charging a certain number of cents for each page of each report.

MMS should also conduct more technology sharing meetings tailored to the needs of specific geographical areas.

Socioeconomic Studies

In Mr. Chabot's view offshore oil and gas will generate few jobs and little economic benefit for the local areas. This view is not based on extensive economic analysis, but more intuition. In his view the studies by the Minerals Management Service and the Santa Barbara Tri-County monitoring project were inconclusive on the number of jobs generated and the amount of growth to would occur.

The Central Coast OCS Regional Studies Program was going to conduct a major socioeconomic study but has not yet been able to identify any studies that would be worthwhile. Mr. Chabot did not believe the socioeconomic studies conducted by MMS were very useful.

The program is going to hire a consultant to analyze the county economies, determine the contribution of coastal dependant industries to the county economies, and make recommendations for further socioeconomic studies.

Effect of Oil and Gas Development on Tourism

The counties are concerned about the impact of oil and gas development on tourism. No information which answers this question is known. If the program does anything along these lines, it is likely to be a beach user survey.

Oil and Gas Scenario Studies

In a rather interesting project, the program has hired a consultant, Dames and Moore, to use the existing offshore geotechnical data to identify the probable locations of oil and gas bearing geological structures and the quantities they may contain. Based on this data, a scenario describing the number of

platforms and production levels is being developed. Transportation methods and environmental impacts will also be studied.

The purpose of the scenario study is to bring elected officials up to speed on the potential for production and the likely impacts.

Natural Resource Studies

Readily usable maps showing the location of important natural resources, including living resources, in the coastal waters are not available. The program is developing a micro-computer based mapping system that will show the important resources and allow them to be printed out. This custom work is being done for $26,000 by a Portland, Oregon consulting firm.

It is difficult to document areas important to the fishing industry because the fisherpersons are unwilling to give accurate information. This is changing as the industry begins to perceive oil and gas development as a threat.

2. Susan Hansch, Energy and Ocean Resources Unit, and Bill Allayaud, Legislative Liaison, California Coastal Commission.

Coastal Commission Role in Offshore Oil and Gas Development

The Coastal Commission has two roles in offshore oil and gas development. First, any development from the high tide line on the ocean waterward for three miles must obtain a permit from the Coastal Commission. Drilling platforms and pipelines in the California territorial sea require a Coastal Commission permit. In Washington, counties would be the primary permitting agencies in the territorial sea. The Washington State Department of Ecology would also have to approve certain permits.

Second, the Coastal Commission decides whether federal actions that will directly affect the coastal zone (the territorial sea) are consistent with the approved coastal zone management program for California and any conditions necessary to make them consistent. The Coastal Zone Management Act requires that federal actions that directly affect the coastal zone must be consistent with a state's federally approved Coastal Zone Management Program. The Commission's review is on a case by case basis.

To make the consistency provisions work it is necessary to have evidence documenting that the resource you are trying to protect is (a) valuable and (b) be will be affected by the action. It is not always easy to document how the federal action and the impacts will directly affect the coastal zone, the area within three miles of the coast. In large part, the California Coastal Commission bases its ties on economic arguments on the potential

affects on the fishing industry. There is some dispute over whether this is proper and it is likely to be litigated.

The Need for Policies and Standards

Policies that address oil and gas development and production are the keys to effective use of the federal Coastal Zone Management Act consistency requirements. In Ms. Hansch's view these policies should be somewhat general. Overly specific policies and requirements, in her view, limit flexibility in deciding whether projects are consistent.

The U.S. Department of Commerce, the agency that approves state Coastal Zone Management Programs, recently tryed to decertify the California program because of controversies over offshore oil and gas. This effort has failed. The Department of Commerce also tryed to get the Coastal Commission to develop a specific performance standard type policies on offshore oil and gas development. The Commission sued the Department of Commerce. The federal district court ruled the grant condition was improper.

Ms. Hansch stated that Washington needed to establish standards and policies relating to offshore oil and gas development and production. She noted that many issues would affect most or all of the coast. If standards in similar areas are not consistent, then it would be easy to challenge the standards in court or in other forums. Regional cooperation will be necessary for effective enforceable standards.

A monitoring and mitigation program is necessary for oil and gas development and production to ensure that impacts are adequately addressed.

Susan Hansch offered to work with state and local agencies in Washington State to develop effective policies for offshore oil and gas development and production.

Measures to Make the Permit Process More Efficient

Make sure that the information needed to efficiently process a permit is listed and made available to applicants in advance of the application.

Written policy guidelines listing minimum requirements should be made available to applicants. In the case of the Coastal Commission, these take the form of a staff advisory policy so they can be changed without going through the detailed regulation adoption process.

It is important to remember that every project may present unique issues and that the technology is constantly changing.

Potential impacts should be identified as early in the process as possible and be broken down by major issue areas such as air quality.

California State Agency Positions on OCS Oil and Gas Production

The Coastal Commission believes oil and gas development should only be allowed in areas where it already exists. Oil and gas development should not occur north of San Luis Obispo County.

The Coastal Commission also opposes the existing Minerals Management Service Five Year Leasing Program.

In Bill Allayaud's view the California State Legislature does not have an adopted policy on offshore oil and gas exploration or production.

The Governor of California's position is believed to be that offshore oil and gas development is acceptable with mitigation of potential adverse impacts.

Key Issues on Offshore Oil and Gas Development

The staff perceived the key issues in offshore oil and gas development to be air pollution and impacts on fishing through area preclusion. The discharges of drilling muds may develop into a major issue.

In response to a question, Susan Hansch stated that the impacts of oil and gas exploration and production on biological marine resources are not fully known. She noted that it is difficult to establish cause and effect relationships in the ocean environment because it is so complex. There is also disagreement among experts on the issues.

In Ms. Hansch's view oil spills have a significant impact.

It is difficult to document areas important to the fishing industry because the fisherpersons are unwilling to give accurate information. This is changing as the industry begins to perceive oil and gas development as a threat.

Relationship Between Local Governments and the Coastal Commission

The Coastal Commission tries to work with local governments on the issue of offshore oil and gas development. The Commission routine includes local government conditions in Coastal Commission permits.

Coastal Commission staff believes Santa Barbara County is doing a good job of managing offshore oil and gas development.

Coastal Commission staff also pointed out that citizens must be involved in offshore oil and gas policy decisions. Where this

does not occur, major delays and uncertainties can result. In San Luis Obispo County, an initiative was passed because of concerns about offshore oil and gas development requiring voter approval of all onshore oil and gas facilities.

3. Dwight Sanders, Chief, John Lien, Research Analyst, Randall Moory, Engineer, Division of Research and Planning, State of California Lands Commission.

The State of California Lands Commission is the manager of the state owned lands and tidelands. The Department of Natural Resources has this function in Washington State.

The Commission has three members: The State Controller, an elected position; the Lieutenant Governor, also an elected position; and the State Finance Director who is appointed by the Governor. The State Controller and Lieutenant Governor are environmentally concerned Democrats who may aspire to higher office.

The State of California Lands Commission must approve all leases, all exploration activity on an approved lease, and all production activities associated with a lease. In Southern California the state has a number of leases dating from the turn of the century. The state has not conducted a lease sale for offshore oil and gas resources since 1968. The agency was going to conduct a lease sale in 1982 but it was cancelled. Staff does not believe a future state lease sale will be held given the current political makeup of the Commission.

The State of California Lands Commission role in federal offshore oil development is to approve leases for pipelines and other facilities on state owned tidelands, tidelands within three miles of shore. It has no control over lands more than three miles from shore -- the federal lands.

The ARCO Coal Oil Point Project

The ARCO Coal Oil Point Project would have produced oil and gas from a lease issued by the state in 1947.

As required by State Lands Commission regulations, ARCO applied to the Commission for permission to construct production facilities. Staff reviewed the application, an Environmental Report (equivalent of an SEPA EIS) was prepared and certified by the Commission as meeting the requirements of State Law. Extensive conditions were proposed in the Environmental Report. The State Lands Commission denied the project in May 1987 because it would have too many environmental impacts. The project would have generated a significant revenues for the state government.

ARCO is now suing the State Lands Commission and the Santa Barbara County for a regulatory taking of ARCO's right to develop its lease. The interest on the damages requested is one million

dollars a day. The Governor is trying to prevent the State Lands Commission from obtaining the funds necessary to defend the Commission in the lawsuit. It appears the Commission will get money for the defense. Santa Barbara County is party to the suit because the county allegedly tryed to persuade the Lands Commission to deny the project permission to operate.

The CCORS Study

In denying the Coal Oil Point Project permission to construct and operate the platforms, the Commission cited a need for more information and began the California Comprehensive Offshore Resource Study (CCORS).

According to staff, the study has received broad support from local government, the environmental community, and the oil and gas industry.

The study is intended to give decision makers and the public a context for making decisions on offshore oil and gas development. It will not be a plan or policy document. Essentially, the study will, based on existing data for the most part, describe important offshore resources, conflicts between users, important gaps in existing information, the potential effects of offshore development on important resources, and the current permitting system and ways of improving that system. The completed study report is intended to be concise and readable. The study will also begin a coordinated interagency program to develop a computerized information system of onshore and offshore coastal resources. A copy of the study purpose and goals is attached.

The study is estimated to cost one million dollars. Funding has been requested from the Legislature. It is not clear how much money will be appropriated. If no money is appropriated, the State of California Lands Commission will have its existing staff conduct a scaled back study.

Federal Data on Offshore Oil and Gas Development

Staff does not believe the federal government has done much to fill the information gaps. They believe the feds lack baseline data and tend to conduct after the fact impact analysis which is very technical.

Need to be Involved in the Process

Again we were advised that local and state agencies should become involved in MMS's process. We were advised to be careful not to be sold a bill of goods. The industry was described as capital intensive. We were also told that not many local jobs would be created.

Staff also feels that Santa Barbara County is doing a good job of regulating the industry with reopeners and other technics.

State Lands Commission Lease Stipulations

In preparation for the 1982 lease sale, the State Lands Commission prepared a new set of lease stipulations. The key stipulations include:

- Avoiding geohazards.
- Moving oil by pipeline where possible.
- Baseline biological and natural resources reviews prior to an activity on the lease.
- Minimizing interference with fishing activities.
- Using U.S. Labor to build platforms.
- Prohibiting the discharge of drilling muds and cuttings. This requirement contained a provision that if it was found that these discharges did not have an environmental effect, the Lands Commission could rescind this stipulation.
- An oil spill cleanup vessel must be permanently on station within four hours of the platform.
- A critical operations and curtailment plan for the platform operations was required.
- Mapping of sea floor obstacles resulting from the operations was required.
- The companies obtaining the leases would have to contribute to a study of oil spill discharge effects.
- Year round biomonitoring would be required.
- All season real time climatic monitoring would be required.
- Impact monitoring and mitigation would be required.

As previously noted the 1982 sale was called off. These stipulations have not be used in a sale.

Lands Commission staff believes its lease sale stipulations are superior to the MMS stipulations. In addition, the Lands Commission has regulations that specify how oil and gas operations are to take place on state lands. Again, staff believes these are superior to MMS requirements. MMS has adopted some of the California safety requirements. Lands Commission staff believe that if their requirements were in effect, the Union Platform blowout would not have occurred.

Lands Commission staff agreed that oil spill cleanup methods are not effective on the open seas.

The Lands Commission typically would require an overall EIS for the lease sales and an EIS for the specific developments proposed after leasing.

4. Michael Kahoe, Chief, Offshore Development Section, State of California Office of the Secretary of Environmental Affairs.

The Office of the Secretary of the Environment prepares the Governors comments to the Secretary of the Interior on OCS Outer Continental Shelf Oil and Gas exploration and development. MMS is required to solicit these comments under the Outer Continental Shelf Resources Act, which created the procedure for Federal OCS oil and gas leases.

The Office uses a joint review process with MMS, state agencies, local governments, citizens, and interest groups involved. A notice is sent to these groups, their comments analyzed, and then lease stipulations addressing the concerns identified are negotiated with MMS. A memorandum of agreement incorporating the lease stipulations is then signed.

In areas without previous activity, a joint EIS/ER is prepared with MMS and all of these agencies and groups. These studies are quite expensive.

An example of this "Area Study" approach is the Santa Maria Basin in Southern California. Maximum development scenarios were developed. The EIS will require one pipeline, consolidated onshore facilities, and consolidated production platforms. In Mr. Kahoe's view, the industry is willing to accepted consolidated facilities as long as the company building then can charge other companies for there use to recover costs. A long term monitoring program was also required.

Mr. Kahoe noted that the socioeconomic studies in these reports generated an incredible range of numbers and were not real useful. He believed the San Barbara Tri-County Socioeconomic Monitoring Program was a better approach.

Mr. Kahoe said that significant efforts should go into public education on offshore oil and gas development.

Mr. Kahoe also believes that a policy on the distribution of the federal 8(g) funds should be developed by each state. Mr. Kahoe believes that much of the money given to California to date has gone to pork barrel projects.

Thanks to ORAP Staff

Like my first trip, this trip was well organized and staff did an excellent job of identifying people with valuable expertise

and making them available to the committee. I would again like to thank staff for their hard work.

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TRIP REPORT--ORAP ADVISORY ONSHORE SUBCOMMITTEE
Prepared by Robert A. Chase

Submittal Date: 22 June 1988

Traveller: Robert A. Chase, Senior Economist, Development Services, Washington State Department of Trade and Economic Development, Olympia, WA 98504

Subcommittee: Onshore, ORAP

Travel Dates: 16 June 1988

From/To: Tacoma/Sea-Tac--San Francisco and Sacremento, California

Purpose: To meet with local and state officials that have been involved in agencies responsible for the regulation and review of offshore oil industry and management of state/local coastal resources that have been affected by the occurance of offshore oil development.

Contacts Made:

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Publications Received:

Status Report on the Central Coast Counties OCS Regional Studies Program. April 1988.

Central Coast OCS Regional Studies Program. "Coastal County Offshore Energy Assistance Program (SB 959 Funds): Regional Air Quality Monitoring and Modeling Program".

Central Coast OCS Regional Studies Program. "Central Coastal Counties OCS Studies Program Scenario Development/Transportation Analysis Scope of Work".

Central Coast OCS Regional Studies Program. "OCS Regional Coordination/Data Base Work Program".

Central Coast OCS Regional Studies Program. "Central Coast OCS Regional Studies Program Technical Review Panel Administration Scope of Work".

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Mike Connolly and Jane Kay. "Hodel Shelves Planning for North Coast Drilling", San Francisco Examiner. 7 June 1988.

Larry Liebert. "Bush Backs Off His Support of Offshore Drilling", San Francisco Chronicle. 6 June 1988.

Elliot Diringer. "Interior Department Dissent on Offshore Drilling", San Francisco Chronicle. 3 June 1988.

California Coastal Commission. California Coastal Act of 1976, As Amended January 1988: Public Resources Code, Division 20. January, 1988.

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California Coastal Commission. "Energy and Ocean Resources Unit Status Report, May-June 1988."

"The California Coastal Resource Guide". Prepared by the California Coastal Commission. University of California Press (flyer)>

Memoranda from State Lands Commission on the **California Comprehensive Offshore Resource Study**, including "Statement of Purpose and Goals", "Tentative Public Meeting Schedule" and "Projected Timeline for Comprehensive Study"

Memoranda from the State of California Secretary of Environmental Affairs Office of Offshore Development on "Proposed Notice of Sale for OCS Lease Sale 80", "Memorandum of Agreement Regarding OCS Central California Lease Sale 73" and "Information Requested on the Lease Sale 91 Proposed Notice of Sale".

RANDOM AND DISPARATE NOTES OF MEETINGS

16 June 1988 (AM) San Francisco Airport
Warner Chabot, Regional Coordinator for Central Coast Counties OCS Regional Studies Program

At the outset, Warner Chabot stated his biases...that he is opposed to oil development along the central California coast, based on his assertions that the potential risks outweigh the actual benefits. Prior economic studies contend that the economic benefits (e.g., employment, personal income, revenues) are largely minimal for the impacted local area. For one thing, the industry is capital intensive and the limited labor requirements are for highly specialized skills. The offshore oil industry conflicts with the commercial fishing industry, both in terms of existing competition for harbor facilities and the potential risks associated with a major oil spill.

Chabot provided us with background on the Central Coast Counties OCS Regional Studies Program: purpose and goals, adminstrative structure, level of funding, planned program of studies, and future of program. The program is divided into seven areas of interest:

(1) Air Quality. This program element has received the lion's share of the funds (approximately half of $2 million budget) largely due to expensive air quality monitoring equipment for the two air quality management/control districts in the central coastal region.

(2) Scenario Development/Transportation Alternatives. Work for this element is currently in draft stage, with the purpose being to identify resources, potential development, issues and impacts associated with proposed leasing in Central California. The various scenarios are based on the size and location of pools, where drilling is likely to occur, the number of platforms, the timing of resource development, the various

bidding schemes, and the location of onshore support facilities. The general areas where development is likely to occur is based on geophysical and seismographic data from the US Geological Survey. This program element also includes an assessment of the transportation alternatives and associated environmental issues. For instance, what are the risks and environmental concerns associated with offshore terminals, barging, and pipelines.

(3) Regional Studies Management. Refers essentially to project management by Chabot.

(4) Technical Review. A panel of experts has been assembled to respond to environmental review documents. In addition, a cooperative effort with the northern California counties of Mendocino, Humboldt, and Del Norte has been undertaken to map the geological structures.

(5) Oil Spill Contingency Planning. A contract has been awarded to conduct work on the evaluation of oil spill contingency plans, cleanup capabilities, and to conduct resource mapping for the central coast and Bay Area. Data on offshore resources have been collected and digitized for incorporation into a computerized geographical information system (GIS). The program, developed by Glen Ford of Ecological Consulting, Inc. (Portland, OR) is both simple and user-friendly, and yet quite flexible and dynamic. Current resources that have been mapped are geological structures, marine mammels, sea bird habitats, fisheries, and areas of sensitive significance. One of the purposes of this GIS is to show areas of space/use conflict. Output from the GIS can be readily incorporated into reports.

(6) Socioeconomics. The approach chosen is to inventory the basic socioeconomic information, identify and profile coastal dependent industries (e.g., recreation/tourism, agriculture, and fishing), develop a mailing list of coastal industy firms, and possible scoping of future issues. Prior MMS studies (Centaur Associates "Socioeconomic County Profiles" and Dornbush Tourism and Recreation Study) were deemed to be of little utility. A possible study of tourism would be based on an attitudinal survey of users.

(7) Public Participation. The goal of this element is to encourage informed public participation in the lease sale process.

In response to our query for recommendations, Chabot mentioned a number of items, listed not necessarily in the order of importance:

> o MMS documents and studies. Chabot was highly critical of the MMS work program, implying that MMS tends to miss the target of addressing adverse impacts. In addition, the criteria used in determining the significance of impacts appears to be flawed. (For instance, MMS dismisses an adverse impact if deemed "isolated" and not "regional".)

o Negotiation. Chabot questioned the wisdom of the Pacific Northwest governors in wishing to "work with the Department of Interior and the MMS" and suggested that the best negotiation strategy would be to begin at the pre-lease stage and to expect to play "hardball" with MMS.

o Mechanism for Involvement. The State of Washington may want to take a very serious look at amending their CZM Act to incorporate the possiblity of offshore oil development. Chabot suggested that the State's consistency legislation in the CZM Act may need review.

o Lobby for access to MMS documents. In order for the State to get better information, Chabot urged that the State lobby for access to current MMS documents--a computerized list of studies (with abstracts) and a number of state repositories for MMS documents. Relatedly, MMS should conduct annual information transfer meetings and the State should have input into these meetings' agenda to enhance usefulness to State and local policy officials and citizens.

o Computerized Mapping of Resources. Chabot underscored again the importance of mapping coastal resources and structures in Washington. If a GIS can be created, then this system provides a good informational foundation for future development of coastal resources along Washington, irrespective of the occurance of offshore oil development.

o Public participation. There is an obligation to de-mystify the complex process surrounding the leasing schedule and offshore oil development to assist the various publics to both understand and participate.

o Coordination between States. Each of the three states (California, Oregon, and Washington) should be kept informed and attempt to coordinate their efforts with regard to offshore oil development and MMS.

Recommended publications: (1) Understanding the Offshore Oil and Gas Development Process: A Citizen's Guide. City of Santa Cruz and Save Our Shore. (For further info: Planning Dept., Santa Cruz, 408/429-3550). (2) Santa Barbara County Resource Management Department Newsletter: Offshore Oil and Gas Status Report.

16 June 1988 (PM) Sacramento California Coastal Commission
Susan Hansch, Manager, Energy and Ocean Resouces
Bill Allayaud, Legislative Liaison

During lunch, Susan and Bill discussed at length the California Coastal Act and recent amendments. In addition, they discussed the current plight of the Coastal Commission. The Governor of

California, Deukmejian would like to ax the agency. Due to significant budget cuts, travel is extremely limited and consequently, assistance to local governments. Discussion about the CZMA consistency requirements applied to only the exploratory and development stages, not at the lease sale.

Hansch made several recommendations regarding Washington's current situation:

(1) Review adequacy of Coastal Act with respect to offshore oil development, especially local counties.

(2) Need for basic resource information in the coastal areas. In order to protect the resources in the coastal counties, need to know the extent, location, and value of these resources. Hansch also recommended a flexible, user-friendly computerized GIS of coastal resources.

(3) Need for clear precise definitions and policies regarding impacts and mitigition requirements. One statement based on their California experience is "when policies are in conflict, go with the one that is most protective". The Tri-County Socioeconomic Monitoring Program in Santa Barbara area was cited as an excellent approach to consider.

(4) Categorize impacts by major issues and sources. Impacts are extremely difficult to quantify and attribute but needed is a good baseline for comparison purposes.

(5) Set-up standards and make clear up-front requests for information from the applicants.

16 June 1988 (PM) Sacramento California State Lands Commission
Dwight Sanders, Chief, Division of Research and Planning
John B. Lien, Analyst, Division of Research and Planning
Randall L. Moory, Engineer, Planning and Environmental Coordination Unit

A number of issues were discussed by State Lands staff including:

(1) ARCO suit regrading State Lands denial of drilling off of the Coal Oil Point Reserve lands in Santa Barbara. One could look at the decision as largely political, but it was pointed out that these state leases were granted years before the passage of NEPA and the State Environmental Quality Act (SEQA).

(2) California Comprehensive Offshore Resource Study (CCORS). The purpose of CCORS is to develop a broader understanding of the State's coastal environment, energy needs and sources, and the relationship a particular, coastal project may have to the needs and resources of the State as a whole. CCORS is intended to provide supplemental broad-based information needed by the Commission to determine if a particular offshore project is in the best interests of the State. Although the study does not include

scenarios, it intends to develop and computerize a large database, highlighting the critical resources, the competing and conflicting demands for resources, and developing "early warning devises" (or tolerances for development) and trends. In addition to the report's focus on resources which could affect or be affected by development along the coast, the study will address the decision-making and regulatory processes as it affects federal, state and local governments, concerned citizens and organizations, and industry. The study is not a cumulative impact analysis, nor does it replace the state Environmental Impact Report. Currently, State Lands is holding public hearings throughout the state's coastal zone to obtain guidance for scoping the study. The report is due to be completed by January, 1990.

(3) Lease stipulations and permit conditions. All of the oil and gas lease sales in State lands were issued before 1968. The last lease sale was proposed in 1982 with a number of special lease conditions. Subsequent sales will have a number of stipulations including:

(a) pipeline transport given priority;
(b) avoidance of geohazards;
(c) survey of marine mammels and marine biology (baseline and ongoing monitoring);
(d) training required for personnel regarding existing commercial fishing industry;
(e) U.S. labor requirement (e.g., offshore platform fabrication);
(f) prohibit the offshore discharge of drilling muds and fluids;
(g) oil spill contingency planning (regulation);
(h) mapping of ocean structures;
(i) study of oil dispersants;
(j) on-going biological monitoring;
(k) special stipulation for sea otters;
(l) mitigation requirements; and
(m) oceanographic and climatological monitoring program.

Each of these stipulations are tied directly to the lease. If the lease sale were held today, the list of stipulations might be different. State Lands personnel made the assertion that the Union platform blowout would not have occurred if it were located within three miles of the coast. MMS regulations have improved in that they have adopted standard American Petroleum Institute requirements for platform operations.

Leasing in Federal waters versus state waters is clearly different. There are some joint regulations between the Federal government and the State of California. A number of Federal agencies have specific jurisdictions, e.g., air quality is under the purview of the Environmental Protection Agency.

(4) Poupourri. MMS was critized for not only leasing in

areas that lack an adequate level of baseline information, but their planning documents often have faulty conclusions. The principal criticism is that MMS often does not consider competing uses for resources.

The oil industry was compared to a carnival...alot of glammer and hype before they come into town (e.g., economic improvement--jobs, income, revenue), but like the carnival the industry's requirements are highly specialized. There is a sequence of development, with alot of construction activity that is limited in scope and duration. Here the local area experiences some benefits. But this very different during operation. Like the carnival, the industry does not expect that the locals will have required skills. As a result the workforce are typically composed of in-migrants. Unless the town places stipulations on the carnival, the local area will be stuck with the cleaning bill when the carnival leaves town.

16 June 1988 (PM) Sacramento Office of Offshore Development, Secretary of Environmental Affairs
Mike Kahoe, Chief of Offshore Development

The responsibility of the Office of Offshore Development is coordination of state policy including preparation of state comments, holding of public hearings, organization of joint review process, and negotiations with Federal Government. Kahoe has been involved with development scenarios and found that the variance in impact forecasts was enormous, partially due to mis-specification of models but also due to unrealistically inflated projections. Each development scenario included estimates of sizing, consolidation, cumulative future development, and mitigation requirements.

Kahoe emphasized that stipulations must be made at the lease sale stage and provided examples with regard to previous lease sales #80, #73, and #91.

Recommendations made by Kahoe emphasized (1) the need to know the decision processes of MMS and (2) the critical importance of public information and involvement.

CONCLUDING REMARKS

The purpose of this information-gathering trip was to gain from California's experience, specifically such questions that we sought answers from were: what are you doing differently compared with the past? what are your successes and failures? and what are your suggestions/recommendations for a "frontier-designated" state with limited potential in proven hydrocarbon resources? In our limited time, people were extremely helpful in providing us with information and suggestions that may be germane to our situation in Washington State. In summary, here are some principal issues and needs that ought to be addressed:

- **Critical Need for Baseline Information.** Very similar

to our set of meetings in Santa Barbara, with some differences, that is, that the information not only needs to be collected, but organized and accessed with flexibility for database management. One recommendation was to establish a computerized geographical information system (GIS) for the Washington coast. Such a system would be useful in knowing the extent and location of critical resources, provide the ability to highlight areas that are sensitive or experience conflict in uses, and provide various developmental scenarios. This data system would be a critical foundation block for any type of future development along the coast, irrespective of the prospects of oil development. More pointedly, it was recommended that the state take advantage of the opportunity to highlight the needs, resources, and opportunities of the coastal area. For instance, in socioeconomic profiling, why not look more closely at those industries that are especially coastal-dependent.

o **Relationship with Minerals Management Service.** Almost every person had some suggestions about MMS, whether that be duplicating MMS studies or having a greater stake in setting the research agenda for future studies; pressing for greater access and review of existing information (e.g., more repositories for MMS documents, more <u>useful</u> information-transfer meetings held on a regular basis); more resourcefulness in understanding the decision processes of MMS; and the timing and nature of negotiations with MMS.

o **Coordination and Participation.** Several entities have a stake in the Washington coast; the need is to coordinate activities, to share information, and assist various publics to understand the complex process surrounding offshore oil development so that they might better participate.

o **Comprehensive Coastal Policy Act.** Such a policy needs to explicitly incorporate the possibility of oil and gas development along the coast.

CENTRAL COAST OCS REGIONAL STUDIES PROGRAM

1725 Montgomery Street
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415 398-3355

Status Report On The Central Coast Counties OCS Regional Studies Program

April 1988

Background

The Central Coast Counties OCS Regional Studies Program is a cooperative effort of six counties (Sonoma, Marin, San Francisco, San Mateo, Santa Cruz and Monterey), to assess the potential impacts of Outer Continental Shelf (OCS), development on the central coast region.

An administrative structure has been established consisting of a Board of Control (BOC), comprised of one supervisor from each county, a Staff Working Group (SWG), consisting of one planning staff member from each county, and a Regional Coordinator. San Mateo County acts as the Administrative County on behalf of the six participating counties.

The BOC approves contracts with selected consultants and recommends their approval to the participating Boards of Supervisors. Contracts are prepared between consultants and San Mateo County. They may be implemented only when each of the participating counties has approved and signed an Acceptance of Consultant Services Agreement with San Mateo County.

The participating counties have divided the program into the following seven areas of interest:

1) Air Quality
2) Scenario Development/ Transportation Alternatives
3) Regional Studies Management
4) Technical Review
5) Oil Spill Contingency Planning
6) Socioeconomics
7) Public Participation

The following progress has been made on each of the program elements:

1) Air Quality Assessment

A cooperative work program has been developed with the Bay Area Air Quality Management District (BAAQMD), and the Monterey Bay Unified Air Pollution Control District (MBUAPCD). The work program involves an air quality monitoring and modeling program by each district. Both the BAAQMD and MBUAPCD have begun collecting data from monitoring stations on the coast. These programs are underway and scheduled to be completed in March of 1989

2) Scenario Development/Transportation Analysis

A contract has been approved with WESTEC Services and EDAW, Inc. to identify resources; potential development, issues and impacts associated with proposed leasing in Central California. The products from this contract will include several reports and a set of base maps for the central coast. Work on the contract began in March of 1988. This element will completed in September 1988.

3) Regional Studies Management

A Regional Coordinator was hired in June of 1987 to manage the regional studies program. This is a continuing position that includes preparation and management of consultant contracts for central coast regional studies, evaluation and comment on MMS Environmental Studies Plans and coordination of the Regional Studies program with other affected and involved regional, state and federal agencies.

4) Technical Review

A Technical Review Panel has been designated by the Board of Control to respond to environmental review documents. In the last six months this panel has reviewed and provided extensive comments on the Draft Environmental Impact Statement for Lease Sale #91.

A cooperative effort with Mendocino, Humboldt and Del Norte County was undertaken in January of 1988 to map geologic structures off of Central and Northern California and to evaluate the Lease Sale #91 DEIS. Detailed work program tasks have been developed for future Technical Review activities including an analysis of local government options for regulating onshore impacts from offshore oil development. This is an ongoing program.

5) Oil Spill Contingency Planning

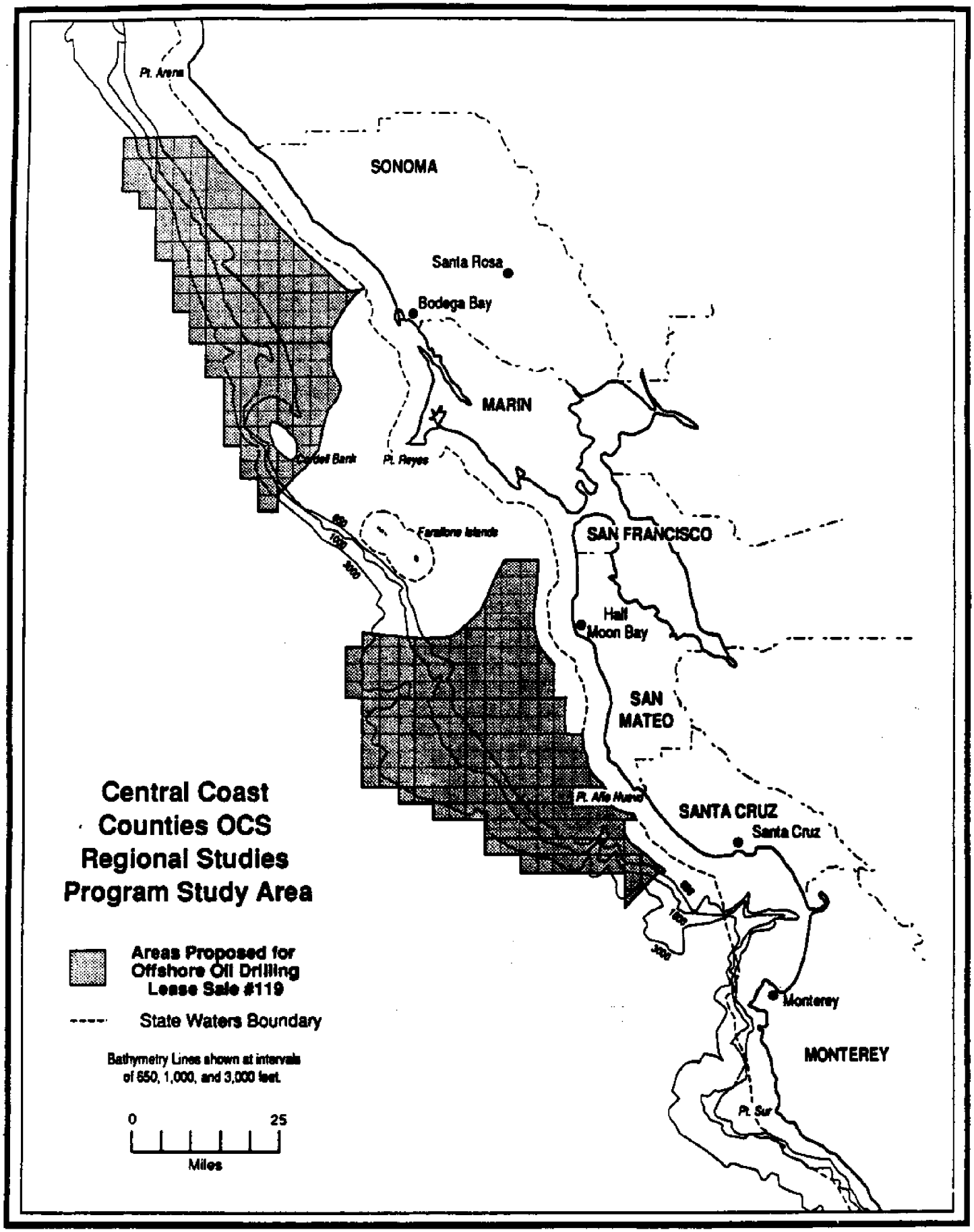
A contract has been approved by the board of Control, with Dames & Moore and EDAW, Inc. to evaluate oil spill contingency plans, cleanup capabilities, and to conduct resource mapping for the central coast and Bay Area. This contract will be ratified by the other participating counties in May of 1988. This element will produce several reports, a series of workshops for local government officials, and digitized resource maps. Work on this project should begin in the Summer of 1988 with the final product due in the early 1989.

6) Socioeconomics

This element will be approached in several phases. A work program for the first phase to gather basic information on costal dependant industry was approved by the Board of Control in April of 1988. An RFP for the first phase will be mailed in May of 1988.

7) Public Participation

The RFP for a public participation work program to encourage informed public participation in the lease sale process was mailed in mid April of 1988. Consultant proposals will be received and evaluated in May. Work on this project should begin in the early summer and continue for approximately one year.


Pt. Arena
SONOMA
Santa Rosa
Bodega Bay
MARIN
Cordell Bank
Pt. Reyes
Farallone Islands
SAN FRANCISCO
Half Moon Bay
SAN MATEO
Pt. Ano Nuevo
SANTA CRUZ
Santa Cruz
Monterey
MONTEREY
Pt. Sur
Central Coast Counties OCS Regional Studies Program Study Area
Areas Proposed for Offshore Oil Drilling Lease Sale #119
State Waters Boundary
Bathymetry Lines shown at intervals of 650, 1,000, and 3,000 feet.
0
25
Miles

CALIFORNIA COMPREHENSIVE OFFSHORE RESOURCE STUDY
STATEMENT OF PURPOSE AND GOALS

THE PURPOSE OF THE STUDY:

The purpose of the California Comprehensive Offshore Resource Study (CCORS) is to develop a broader understanding of the State's coastal environment, energy needs and sources, and the relationship a particular coastal project may have to the needs and resources of the State as a whole.

Provisions in law, the nature of the environmental review process, and the complexity of the issues placed before the Commission can put certain constraints on the Commission's ability to make informed decisions about specific projects. In light of these constraints, the Commission has expressed a desire to have the ability to supplement its regular review process.

CCORS is intended to provide the kind of broad-based information needed for the Commission to determine if a particular offshore project is in the best interests of the State.

WHO WILL USE THE STUDY:

The primary users for the study will be the members of the California State Lands Commission. The study may also be useful to members of the California Legislature, members of Congress, Federal, State and local agencies, environmental groups, industries, citizen groups and others interested in coastal resource management, especially those who are concerned about an item before the Commission.

STUDY GOALS:

In order to fulfill the purpose of the CCORS study, the following goals have been set:

1. The study will initiate the Commission's involvement in a coordinated interagency program to develop a computerized information system comprised of an inventory of the ecological, social and economic resources along the California coast, both onshore and offshore. However, the full implementation of this program is not expected to be completed within the study's timeframe;

2. The study will, however, report on resources (i.e., what, where, sensitivity, etc.) which could affect, or be affected by, development along the California coast, based on existing information. An emphasis will be placed on priority resources (e.g., air quality, sea birds, fisheries, etc.). This information will be presented in a concise and useful format, comparing the effects of existing, proposed and possible development activities in both State and Federal waters along the entire coastline;

3. The study will identify existing and potential conflicts among competing users of coastal resources;

4. The study will identify gaps in existing information and recommend specific studies and research projects which would fill those gaps;

5. The study will inventory existing environmental literature on the California/OCS region;

6. The study will provide an overview of the State's energy needs and supplies and their relationship to the national and world energy picture;

7. The study will discuss oil and gas production, transportation, refining, processing, and marketing as well as alternative energy resources;

8. The study will address the decision-making and regulatory processes and suggest ways to improve how the Commission works with local government, concerned citizens and organizations, industries, the Federal government and other agencies within State government in formulating its decisions;

9. The study will present the range of expert opinions on technical issues; and

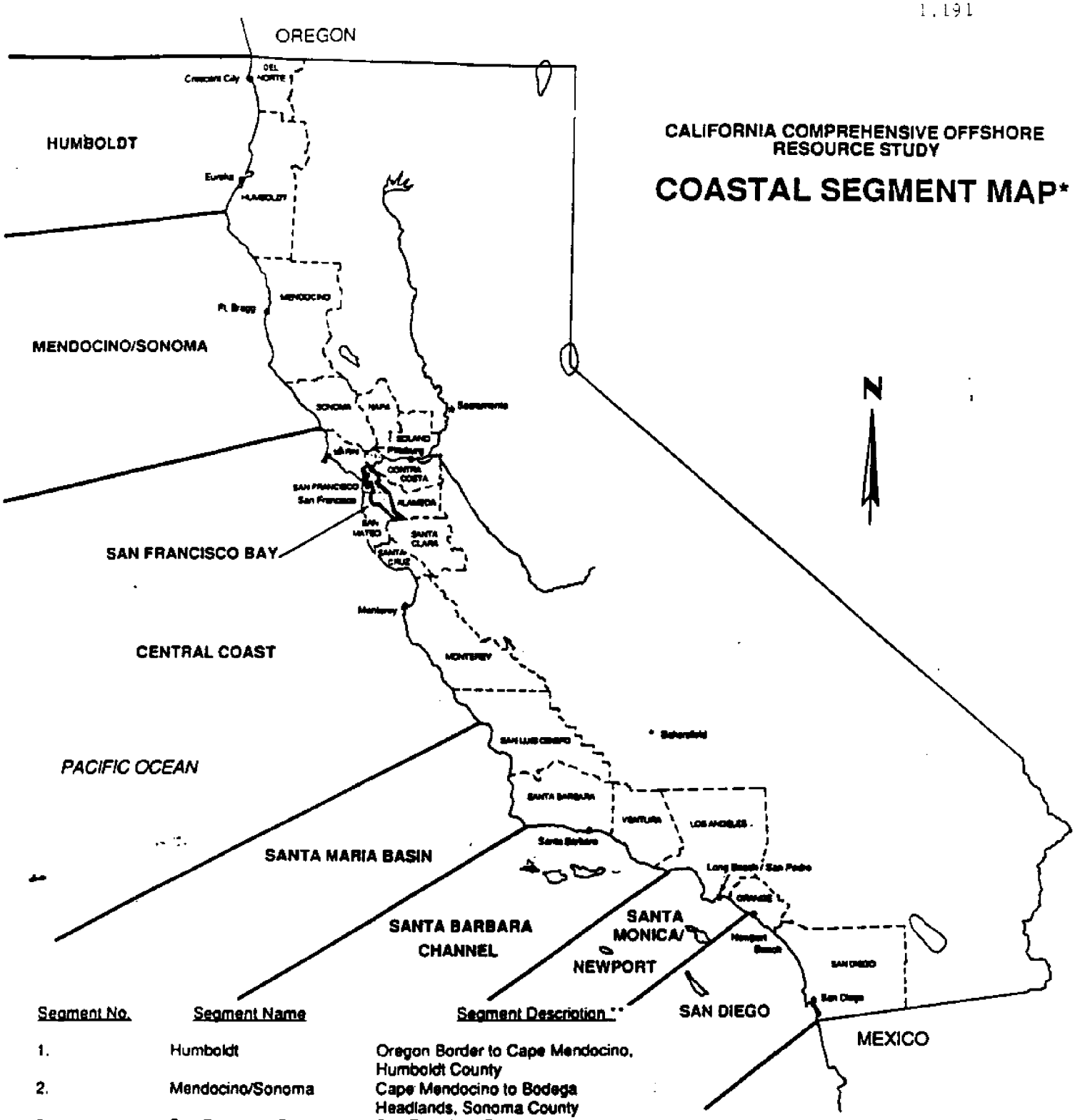
10. The study will examine the assumptions and techniques that are used in the major models and projections for impact analysis and identify their strengths and weaknesses.

The study will not cover information usually provided in a cumulative impact analysis as defined in Section 15355 of the State CEQA guidelines, nor will the study replace an Environmental Impact Report as required by the law.

In addition, based upon limits currently imposed on the CCORS study by time, finances, and legal constraints, the study will not make predictions about where development will or will not take place and will not include original research projects initiated as a part of the study.

CALIFORNIA COMPREHENSIVE OFFSHORE RESOURCE STUDY

COASTAL SEGMENT MAP*



Segment No.	Segment Name	Segment Description**
1.	Humboldt	Oregon Border to Cape Mendocino, Humboldt County
2.	Mendocino/Sonoma	Cape Mendocino to Bodega Headlands, Sonoma County
3.	San Francisco Bay	San Francisco Bay
4.	Central Coast	Bodega Headlands to Point Estero, San Luis Obispo County
5.	Santa Maria Basin	Pt. Estero to Pt. Conception, Santa Barbara County
6.	Santa Barbara Channel	Pt. Conception to Pt. Dume, Ventura County
7.	Santa Monica/Newport	Pt. Dume to Newport Bay, Orange County
8.	San Diego	Newport Bay to International Boundary

* Includes State Tidelands and the Federal OCS

** These indicate basic segments for analysis. Discussion of specific issues may extend beyond the borders of a particular segment where necessary.

Transhipment Subcommittee Trip Reports

1.193 Sen. Bill Smitherman
1.198 Rep. Gary Bumgarner
1.205 Commissioner Robert W. Paylor
1.215 Dave Sones

COMMITTEES
Economic Development & Labor
Higher Education
Financial Institutions & Insurance
Washington State Commission on Efficiency and Accountability in Government
Vice Chair, Joint Select Committee on Labor Management Relations
Joint Committee on Pension Policy
Housing Study Advisory Committee

BILL SMITHERMAN
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Washington State Senate

Olympia

June 13, 1988

Senator Bill Smitherman, Chair
Transshipment Subcommittee
Ocean Resources Assessment Program

Trip Report: May 31 - June 1
Los Angeles & Santa Barbara

Purpose

This trip served the purpose of acquainting committee members with operations aboard oil tankers; Coast Guard procedures in dealing with oil spills and inspecting oil tankers and offshore rigs; Minerals Management Service's assessments of Oregon's and Washington's advance planning process for determining appropriate or inappropriate areas for offshore drilling; the oil companies' procedures for dealing with oil spills--a la Clean Seas--oil and gas pipelines and storage facilities; and the views of community leaders, the academe, and local planning officials, regarding offshore operations, fisheries, and socio-economic impacts.

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Conclusions

Basically, we learned that much upfront planning is required for Washington State, if we are to avoid a situation of continual confrontations with oil companies, as well as with Minerals Management Service. In addition, we need to be site-specific in developing our environmental impact statements for offshore oil rigs, pipelines, etc. This, however, would be extremely difficult to do in terms of the existing pre-lease situation utilized by Minerals Management Service, which needs to be changed.

I also think it is important that we have information about the activities--specifically, shipping and traffic controls--which are available in offshore areas contemplating drilling, transshipment, and pipelines. Furthermore, we must ascertain precisely what data is available, regarding specific areas where offshore tests have been conducted for oil or gas in the State of Washington. We also need to be aware of what information is accessible on sensitive areas along the coastline. Additionally, we need to know if either the governor or the Department of Ecology has specific areas designated as sensitive and the rationale behind these designations. Without this important information, we would most certainly encounter serious problems, as is obvious from our conversations with various individuals and groups in Santa Barbara County.

Further Investigation

Carolyn Pendle will contact the Puget Sound Users Forum and the Coast Guard in order to determine what they are doing, regarding traffic separation.

I will request that Fred Piltz send us some EIR information so we can learn how it puts together reports, what is looked at in terms of sensitive areas, etc.

I will also contact Denny Samuels, who is with Texaco, to establish whether or not this company has any prioritized areas for drilling. Additionally, I will talk with George Ledbetter, Vice President of Thermal Efficiency, Inc., and Keith Anderson, Vice President of Thermal Exploration, to see if any information is available about offshore gas potentials.

These individuals will also be included in the upcoming Transshipment Subcommittee meeting on July 8th, which will be conducted in the House Office Building's Briefing Room; the meeting will commence at 2:00.

BCS:le

GARY BUMGARNER
TRANSSHIPMENT SUBCOMMITTEE TRIP

Dave Coon
Past Director Marine Environment Health
Director Environmental Health & Safety of Campus

Marine Environmental Health manages 2 marine reserves, part of the campus, presently coal/oil reserve, the earliest offshore reserve at Summerland. Coil Oil Point has seeps historically. At campus the Point is the demarcation between no-drilling reserve and exploration area within the 3 mile limit. 4-5 years ago ARCO notified University of California Santa Barbara that exploratory drilling would start in '84 or '85, ARCO made a presentation to the campus, community, and state land commission. It is a good field. Projected income of 50% to the state of $1 million dollars a day. Then began EIR (state environment report). Waiting until plan is ready for public comment is too late as the scene is already cast. The campus did have early involvement and participation. Two years later 10,000 pages of documents exist. Some parts are good, some less so. Many issues are addressed. Main concerns are about aesthetics, drilling mud, water quality, and air quality. ARCO sealed big natural seeps or captured escaping gas with a submarine system. It is hard to get volunteers to read and comment on large documents in short deadline circumstances. We should demand engineering solutions rather than inspection solutions. H2S 16 ppm here, 4 times fatal. Higher concentrations destroy the olfactory sense immediately. Domes over facilities capture offensive emissions. Companies were allowing gas forced out of empty holds as oil filled to come ashore in noxious puffs. Natural seeps smell tar like. Mercaptan and H2S have a distinctive smell. ARCO denied their responsibilities. Ill will was created before the leaking and improperly operated barge scrubbers were corrected. Students were getting sick. ARCO consultants tried to prove that no problem exists. The last 2 years hasn't been a problem. During "upset conditions" companies must release gases into the atmosphere when things aren't going well. In a state lands commission political decision 2 of 3 against denied the development. They turned down what is now $ 1/2 million per day at current petroleum prices. Denial required staff to develop a comprehensive region plan. ARCO has filed suit, claiming the commission doesn't have authority to deny, only to approve the plan. Resistance boils down to offensive odors.

Chevron Oregon
Captain Terence J. Stark (Master)
14416 N.E. Bonanza Rd.
Brush Prairie, WA 98606

Chevron Transport Ship: Oregon, American made, 10 years old, double hull, outer hull seawater ballasted 6 foot separation and

1 inch steel plate. Safety inspected.
Bolted pipe/hose connections - like radial tire structure with steel mesh, pressure tested each time. Inert gas carbon monoxide contact is eventually released to atmosphere after being released from tanks (used to prevent explosions). Local government performs port fire inspections.

Fire suppression is by manual operation - none remote.

Pressure and vacuum release valves perform so that normal air may be drawn into tanks in emergency. Oil is pumped in and inert gas pumped out during loading. Inert gas is produced on ship from combustion. In the paint lockers there are sensors for ions, heat, and smoke. A towing package can be deployed in 1 hour without any power. Federal regulations require fire stations. Original wiring of these ships was defective and shut down the engines! This problems is corrected now.

Ships dock bow out for escape and have side cables to tow away from wharves if fire breaks out. Gas recovery is something we should prepare for. There are manual overrides for hydraulic valve controls. Fire system water is drained below decks in freezing weather. CO2 piping system to and under pressure for all machinery spaces. There are main and auxiliary power turbines and multiple tank level gauges and controls. Loading computers show stresses on the ship from loads in each tank the ballast effects. Two steering controls, two radars and a weather predictor is in the cabin to avoid storms. Fire controls and fire detection systems are all on the bridge. The variable pitch prop turns at 100 RPM constant. There is a satellite navigator as well as standard LORAN, Gyro, and magnetic compass.

Pilots are not responsible - skippers are on the hook, it would be a good bill to make them responsible. they don't police themselves.

U. S. Coast Guard
Capt. Janecek, C.O.
LCDR William F. Walker, Asst. Chief
Port Operations Department
Marine Safety Office, 165 N. Pico Ave., Long Beach, CA 90802

The Coast Guard publishes Federal Regulations for all kinds of vessels including safety and operation. They perform tank vessel exams on piping, pressure, condition of vessels and remote and manual valve operation. Procedures are approved and required to prevent spills, stop sources, contain on the deck, and if a spill, the facility must have the capability to contain the spill. The Coast Guard collects operation manuals for review before approved of on shore facilities. It is not feasible to require all equipment required to handle spills. Facilities must co-op for that. We do not have state of art sophistication to truly contain spills at 1 1/2 knot current it sucks right under

the boom. Rivers and rough sea states are tough. Mechanical recovery capabilities are less effective proportionate to the state of the sea. The type of product varies the effectiveness of control. Heavy oils cleanup well, diesel is too thin and spreads. The skimming device recovers too much water. Janecek advocates despersants (controversial), because they provide less environmentally damaging effects than non-dispersants. In some areas mechanical clean up is not feasible like it is in enclosed harbors. In deep water dispersant is better. It takes 2-3 hours to work - but enters water column. It is detergent. Cleaning up beach sand is a horrible mess and cost. There may be some 2 meters of water column affect on food chain and biological considerations. The MMS and Coast Guard both inspect vessels and platforms as well. Coast Guard inspects annually, MMS sometimes inspects weekly, but they have more numerous interests. The Coast Guard is more concerned with environmental and life saving features. The EPA requires Spill, Containment, Control, and Cleanup plans. In a pipeline spill MMS is responsible for technical control, Coast Guard initiates the clean up. The Coast Guard can access the Federal Pollution Control Fund if the spiller doesn't take action by hiring commercial cleanup enterprises. The Coast Guard does have a special force to make emergency response. Coast Guard regulations title 40, par 300 covers all agency responses. Any visible sheen on the water must be reported or criminal sanctions apply. Crude oil is thick enough to recover usually, but there is some entrance of volatiles into the water column and the air. No way can you get it all. Dispersants will protect the mammals and fish. National EPA approved dispersants may require state standards. Approved communications can slow and diminish the effectiveness. Hit the spill with dispersant early for greater effectiveness. Pre-approved dispersant use agreement would encourage suppliers/shippers to be stockpiled and ready. Also the Coast Guard does navigation safety and pollution prevention inspections on all ships, including foreign. Vessels are required to report any improperly functioning equipment. The Coast Guard will board and inspect suspicious problem vessels on a logical possible need basis but with limitations on manpower. In some areas there is more oil coming out of natural seeps of crude oil than any spill in the area. Be careful of legislating controls that would only interfere with U.S. vessels and not the foreign vessels which are the greater concern. Require transiting vessels to check in for information on traffic lanes, etc. Establish good traffic routes. Slant drilling enables keeping lanes open. Within the 13th Coast Guard district, we can write up a scheme for proposal. Deep water regulations are established by the International Maritime Organization.

the California Coastal Commission is the real string puller on how much, how soon, and how fast. Brian Baird in San Francisco has long experience.

Mineral Management Services
Fred Piltz
Deputy Supervisor for Regional Development

Office of Field Operations - Tom Dunawan, Director Lyle Reed
Resource Evaluation - Dave Gregg
Technology Assessment & Research - John Gregory
A lot of emphasis is given to the recommendations of governors.
There is disagreement within MMS just as there is in states.
Weekly platform inspections are conducted.
Everybody is opposed to some drilling.

Ed Morten

Texaco has three Santa Barbara offshore platforms. The Biggest is the "Harvest", producing sour oil and gas H2S. State of the art system at present:
The vessel comes in with inerted vapors in its tanks. Hoses are on the floor of the ocean. As the oil enters the vapor goes to a vapor gathering system for treatments. Vapor then enters the on shore oil tank being drained. Pressure is balanced by a second recovery system connected to all tanks. Filtered hydrocarbon vapors are then burned off to 99% elimination, with assist gas to burn. The pipeline across pristine ranches is in litigation. The Oil Co. (Chevron) did not have accurate information on H2S content which was disliked by the local folks. Expensive safeguards had to be employed. The Gaviota oil and gas processing plant was visited and Texaco Trading and Transportation Inc. Marine Facility. There are two big tanks for water and foam fire protection features. A new plan will handle a vessel every 2 1/2 days. Natives are not friendly to the facility. We saw the computer touch screen with double series of commands, all hooked to facility controls and sensors. All tanks have floating ceilings that are prepared to receive foam. The facility is ready to take oil, but there are permitting hold ups. A landscaping plan exists. Basins are excavated around tanks for spill control.

Clean Seas
L. A. "Skip" Onstad

There are 12 co-ops on the west coast, 5 in California. These are formed by local concerned industries. Clean Seas is the Santa Barbara co-op. California has sufficient equipment and personnel to "handle any problem." Probably the most comprehensive program in the world with new lease sales and drilling activity the co-ops have blossomed. Four million dollars is their annual budget. There is one million of cleaning equipment on each ship. Mr. Clean has 6' boom with various recovery devices, capable of being deployed from on board.

Local Governance

The 1969 oil spill on platform A was referenced. A worst scenario was discussed: A loaded tanker could collide with a producing platform. There are language communication problems with foreign vessel bridge operators. Expect the Santa Maria field to contain billions of bbls/day and produce ten times the 50,000 bbls daily of the Santa Barbara field. Many tankers are in the S. B. channel. 20 producing platforms exist now and by the 1990's another 10-20 are probable. The state is concerned that federal wells beyond 3 mile limit could be draining state pools. There have been recorded 20 collisions of ships into platforms world wide and always there is the danger that negligent skippers will hit platforms.

Rotterdam has sea traffic controllers. Washington has good radar system. In California vessels are advised but do not have to follow advice. Another solution could be putting pilots aboard within the 200 mile economic zones. Another suggestion is to run the vessels outside, but there is military opposition to that. There is need for better weather stations. We should have ocean going tugs capable of pulling disabled ships out of trouble. Foam capable fire ships for major fires are needed. We also need stricter requirements of vessels including working radar and it should be mandatory for an English speaking person to be on the bridge in U. S. waters. Numerous environmental and other reasons for alternate traffic lanes for smaller vessels exist. Remember the PAC Baroness Liberian Tanker collision with a Panamanian Japanese auto transport - 3000 Hondas aboard. County was critical of Coast Guard dry docking requirements, and E.P.A. They look suspiciously at 30+ year old tankers. Older vessels are leased to fly-by-night Panamanian or Liberian registry.

We should try to link processing areas with refineries. Action beyond our control is in federal waters. National interests are not as sensitive to local concerns as they should be. We must tell companies what we want to happen so that everyone knows from the beginning what is expected.

There is controversy over use of dispersant. Once leases are conducted its hard to get conditions in place, especially to insert conditions into permits that were granted previously. Tell the companies why you want what you want and they will be more problem solving oriented, rather than challenging your jurisdiction in the courts.

County organization (Santa Barbara). Counties must cooperate due to overlapping interests. Air Pollution Control Board, doubles in other duties. There is need for resource input, public works. Flood control, water quality, and fire. Resource management develop policies and permits. Additional permits come after the initial top level permit. Decisions affecting other departments are reflected in secondary permitting. One hundred people are in resource management, zoning enforcement, policy group and permit processing. Contractors are hired for staff expertise and analysis, construction monitoring and regulation. They have a

$500,000 - $750,000 budget each year. State and local agencies can do environmental review with the same guidelines as MMS. Counties must coordinate standards with all federal environmental review policies. How do you deal with disagreements among experts? Continuous activity occurs in long term detailed planning among planners. People not involved in the planning don't trust the plans. People must feel equal or they don't feel their concerns will be addressed.

We should standardize environmental report reporting. Play strong advocacy role to see that local folks get hired. Receive materials in the state to get sales tax. Purchase from local manufacturers. There should be consistency in levels of all assessments of impacts.

We should get in place good mitigation factors as early as we can. The production peak may occur in 20-30 years and decline- keep that in mind. There is controversy on the marine environment impact. Oil companies will try to avoid the subject. Air quality impact mobilizes the public. Industrialization of the area: it is not desirable to proliferate facilities. Develop good transportation policies. On-shore impacts have been dealt with rather successfully.

Have a project by project review. Long term impact sometimes is missed. Counties have little money. EIR should be the engine that drives the project. It takes citizen groups 20 hours weekly to keep on top of its voluminous reports and nobody can get through it.

Beware that industry is not allowed to "Create a new industrial city 3.1 miles off shore."

The Seattle based McCormach Company is a recommended intermediary between the fishing industry and oil industry.

Applicants must pay for the permitting process to properly fund it. Bill direct to the company and get a $40,000 to $50,000 deposit up front. Stay current in staff expenses and interim deposits to keep oil companies from walking off and leaving local government holding the bag. Realize that locals don't trust the state 100%, as their charge is somewhat like the federal interest. Federal royalties back to the state, passed back to local government for parks, etc., help gain support.

All costal congressmen must work together to get more protection for beyond 12 mile limit.

It is essential that whoever is in the middle working the project understand the MMS completely. You have to know how they operate and what their timelines are. Los Angeles, California got smarter too late.

Do you want:

1. Leasing at all?
2. Their Program?
3. You structure it?

Once the lease is granted it will ultimately be consummated.

Marine Sanctuary (Francesca Cava, Manager)

It is the largest in the world. There is shared jurisdiction. Only one place where nothing can be done. Sanctuaries have different regulations. California fish and game regulations apply. Lease blocks overlap into boundaries of the sanctuary. Cold currents from north meet warm currents from south. Transportation accidents are the no. 1 threat, with unknown effects on the environment. The sanctuary really only became a reality in the last year. Use of dispersant and booms work best under conditions that don't cause spills.

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COUNTY COMMISSIONERS

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GRAYS HARBOR COUNTY
STATE OF WASHINGTON

July 7, 1988

Robert W. Paylor, Commissioner
Grays Harbor County
Transshipment Subcommittee
Ocean Resources Assessment Program

Trip Report: May 31 - June 2, 1988, Los Angeles and Santa Barbara

Purpose:

The purpose of the trip was to allow committee members to see first hand operations that involve the shipment of oil in both the crude and processed form. We also met with the Coast Guard, which has the responsibility of inspecting and monitoring oil tankers and offshore oil rigs and dealing with oil spills. We were able to meet with Clean Seas, Incorporated, which is a co-op formed by the oil companies and which has the purpose of cleaning up any oil spills. We were also able to meet with local community leaders and planning officials to discuss the impacts on the local community of oil and gas exploration and production. We also toured a refinery just north of Santa Barbara and were able to inspect offshore loading facilities, storage facilities, pipelines, and the refinery.

Contacts:

See attached.

Comments:

Following is a brief comment on each of the contacts we made while in California:

Chevron Oil Tanker "The Oregon"
Captain Terrence J. Stark

This vessel carried approximately 250,000 barrels of oil and was primarily used to transport crude oil from the Los Angeles area to the refinery south of San Francisco. I was most impressed with the double-hull feature of the vessel, which greatly reduces the potential of puncture. The ballast system of the ship was also unique in that it allowed for no possible mix of ballast water with the cargo. This eliminates the possibility of an oil spill as ballast is discharged. The ship appeared to be very well maintained and the captain explained in great

detail that each system on board had at least one backup. In talking with the captain, he felt that ships owned and operated by the major oil companies were very well maintained and equipped with very modern technology and all available safety features. He did point out that he felt that the ships owned and operated by independent operators appeared to be not as well equipped. I'm sure our state has regulations regarding tankers moving oil through the Straits of Juan de Fuca and the Sound, but if we ever get into a situation where oil is being transported directly off our coast. I think we will need to review the existing regulations and see if they are adequate for ships operating in the open ocean.

U. S. Coast Guard
Captain Robert Janecek
Captain of the Port
Long Beach, California

Lt. Commander William F. Walker
Assistant Chief, Port Operations Department

Captain Janecek related his experiences in several oil spills in the Los Angeles area. He felt that containment equipment for smaller spills in confined areas is able to do a good job, but went on to say that for spills in the open seas, the containment equipment is poor at best, and felt that the use of dispersants should be encouraged. He appeared to be very frustrated with the chain of command required to get approval to use dispersants. He felt that the sooner the dispersants were applied to the spill, the better the chance he had of causing the spill to break up.

Captain Janecek also talked about the problems the Coast Guard has had with collisions in the Santa Barbara channel, and the big fear of a large vessel running into an oil platform. I think careful consideration has to be given off the Washington coast for our established shipping lanes and the potential for a ship running into an oil platform. It seems to me that the placing of an oil platform directly in a shipping lane off the Washington coast would only increase the chances of a major disaster. Captain Janecek suggested working with the local Coast Guard to establish shipping lanes before drilling rigs come in.

Minerals Management Service
Lynnette Zesco, Deputy Regional Supervisor

Dr. Fred Piltz
Chief, Environmental Studies Section

MMS appears to be gearing up for the proposed lease off our coast in 1992. I noted that they had already begun a socio-economic study of counties along the Washington and Oregon coasts. Both Fred and Lynnette felt that MMS would be willing to listen to concerns of Washington and Oregon. They noted that if we request that certain areas be excluded from the lease sale, we should provide adequate information to substantiate our concerns.

Texaco - Gaviota Refinery and Storage Facility
Edwin E. Morton, Project Coordinator

Don King, Terminal Manager

This facility is brand new, and in fact had not started production because of what they felt to be small legal problems. The facility is designed to receive crude oil from tankers just off shore through a pipeline. The oil is stored and then shipped across the street to a refinery where it is processed. The plant is a fully computerized facility with a very sophisticated control room where all operations would be very closely monitored. Mr. Morton was obviously speaking from the industry viewpoint, but he did feel that the major oil companies were very amenable to making safety and environmental changes to their operations where possible. He indicated that the oil companies are very willing to meet certain project requirements as long as they are identified during the permitting and design process. He expressed much frustration at major changes required during the course of construction or even after operations begin. He generally felt that the oil companies would be willing to meet all reasonable requirements as long as they are identified in the planning process.

Clean Seas
Skip Onstad, Manager

Clean Seas is a non-profit operation formed as a co-op by the major oil companies in the Los Angeles area. The company is fully funded by the major oil companies and they stated they have a $4 million annual operating budget. The company maintains and operates at least three large vessels fully equipped

with equipment to contain an oil spill. We were able to tour one of their boats in the Santa Barbara harbor. The vessel was modern and fully equipped with very sophisticated recovery equipment. Mr. Onstad was quite proud of the entire operation, but when asked how effective their equipment would be in heavy seas, even he admitted that as seas get much above 2-1/2 feet, their effectiveness is greatly diminished. I feel that an operation similar to Clean Seas must be a requirement if exploration and production is allowed off our coast. However, I question their ability to be effective in the open ocean. I believe an operation like Clean Seas can be very effective in a contained area such as a harbor or in very calm seas.

University of California at Santa Barbara

The afternoon of June 1 was spent on campus in a joint meeting with the Onshore Subcommittee and several invited guests to discuss local government's relationship with the oil industry.

Rob Almy, Deputy Director
Santa Barbara County Resource Management Energy Division

Santa Barbara County has its own Energy Department in the Planning Division, that deals only with permitting oil and gas industry-related facilities. The three most affected counties in the area work very closely together on many projects. Rob stressed the importance of federal, state and local governments working together in the permitting process. Because of the number of permits required, county departments work together as a committee to review all projects. He mentioned that user fees are being used to pay for the majority of costs associated with the permitting process for local governments. He stated that the Santa Barbara Energy Planning Department is funded by permit application fees collected from various oil companies. A suggestion he made that I feel to be appropriate is that the coastal states - Washington, Oregon and California - should be working together through Congress toward legislation that will regulate shipping out past 12 miles. I think this is something the State of Washington should seriously consider.

Dr. Barry Schuyler
Lecturer, University of California at Santa Barbara

Doctor Schuyler spoke mainly on vessel traffic in the Santa Barbara channel. He stated that when in full production the channel has a potential of producing 500,000 barrels of oil a day. There are at least 20 to 30 ships per day moving through the Santa Barbara channel, and as the number of oil rigs increases, obviously the potential for collision increases. He stated that the State of California has a vessel traffic control system to better regulate shipping. He suggested that better controls and inspections of ships would be a good idea. He further suggested that the State of Washington, and more specifically local counties, develop and plan for regulations and rules that will protect us from shipping disasters before the oil companies build off our coast.

Beliana Cicin-Sain
Marine Policy Specialist
University of California at Santa Barbara

Beliana's first suggestion was that the states lobby to amend the OCSLA at the federal level to give back some of the royalties from offshore leases to state and local governments. She noted that state and local governments receive most of the impact, both positive and negative, and that a sharing of royalties would assist local governments in solving problems. She suggested that local governments develop a master plan for offshore development. She also stated that because of the volume of information generated during the permitting process, the average citizen must spend 20 hours per week just keeping up with new information on each project. Obviously this makes it very difficult for the average citizen to be informed on new projects. She would like to see much more local participation in the process, but didn't really have an idea how this could be accomplished.

Bob Klausner, Chair
Citizens Planning Association

Mr. Klausner is an individual who became very involved in the permitting process for several exploration and production facilities in the area. He was very knowledgeable on the subject after having spent five years as chairman of the Citizens Planning Association. The Association was a citizens activist group that worked at first toward keeping the oil companies out, and later at making sure that new developments

and facilities were built in an acceptable manner. In discussing our situation, he felt that local and state government should identify environmentally sensitive areas with low hydrocarbon potential. He indicated that MMS appeared to be willing to eliminate these areas from future lease sales.

General Comment:

Most of the people I spoke with were very impressed that the State of Washington had the foresight to begin planning now for potential lease sales off our coast in 1992. Relating back to their experiences in California, they only wish they had begun the process as early as we have. I think that by learning from the mistakes that have been made in California, and developing a sense of cooperation between local and state government, we can eliminate many of those problems here should lease sales become a reality in the 1990's.

Attachment A

Contacts:

Oil Tanker Captain/Chief Officer

Captain Terrence J. Stark
(Chevron USA, Inc.)
14416 NE Bonanza Road
Brush Prairie, WA 98606
(No telephone number)

Bob Baker, Chief Officer
Chevron Oil Tanker "Oregon"
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San Rafael, CA 94901
(No telephone number)

United States Coast Guard

Captain Robert Janecek
Captain of the Port
165 North Pico Avenue
Long Beach, CA 90802
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Lieutenant Commander William F. Walker
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Chevron Shipping Company

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Texaco Trading & Transportation/Gaviota Project

Edwin E. Morton, Project Coordinator
Texaco Trading & Transportation, Inc.
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University of California/Santa Barbara

Arent H. Schuyler, Jr., Lecturer
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Citizens Planning Association

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National Oceanic and Atmospheric Administration

Lieutenant Commander Francesca M. Cava, Sanctuary Manager
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Clean Seas

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Office of Disaster Preparedness, Santa Barbara County

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Resource Management Department, County of Santa Barbara

Diane Guzman, Director
Resource Management Department
County of Santa Barbara
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Santa Barbara, CA 93101
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John Patton, Assistant Director
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Robert B. Almy, Deputy Director
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California State Senate

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Naomi Schwartz, Administrative Assistant
Senator Gary Hart
(Same as above)

Michael D. DeLapa, Field Representative
Senator Gary Hart
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Minerals Management Service

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MAKAH TRIBAL COUNCIL
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Report

Transshipment Sub-Committee on trip to California

By

Dave Sones
Assistant Director

MAKAH FISHERIES MANAGEMENT

1.216

MAKAH TRIBAL COUNCIL
P.O. BOX 115 · NEAH BAY, WA. 98357 · 206-645-2205

Report to Transshipment Sub-Committee on trip to California

Chevron Oil Tanker, The Oregon: Tankers seem to be the preferance in trans-shipment in the industry. The tanker vessel Oregon, hull class impressed me the most. I would suggest if possible that Washington and Oregon request this class of vessel operate off their coasts. Due to the double hull with separate ballast tanks there is no chance of the ballast water mixing with the contents inside the cargo tanks, making the dumping of ballast water very efficient. This design also allows the hull to be percied without puncturing the oil tanks. The engines seemed to cause less pollution problems due to the fuel used to run the generators. Steering seemed also primary concern of tanker navigation. With the steering system in the Oregon it covered many of the steering concerns.

U.S. Coast Guard: We should look into our navigation operation of Seattle traffic, and see if an ocean application should be applied. Also look into any problems that may exist with the current system. I also felt Capt. Bob Janeceks comment about the chain of command required the use dispersants Washington and Oregon need a better system.

Minerals Management Service: From the meeting with Fred Piltz and Lynnette Vesco, it seems that they are willing to work with the states and address our concerns. It seems important that we make them aware of our concerns in detail and allow them enough time to evaluate their ligitmacy, with this in mind I believe we can maintain a good relationship with MMS.

Texaco: From my observation, the oil companies seem willing to make any safety or environment applications of their operations, that are feasible or within reason. It seems very important that they are fully aware of our intentions dealing with environmental issues and impacts on our communities. With these thoughts in mind, I feel negotiations with the industry can eliminate many of the court cases and maintain a good relationship with the oil people.

Clean seas: We will need an operation of this sort off the coast, however, their efficiency seems unproductive during many of the months in our waters, due to weather conditions in our area.

Local goverance of off shore: Barry Schuylet covered some good points on vessel traffic relating to navigation, traffic lanes, emergency rescue tug etc. These should all be looked into. Biliana Cicin-Sain made some very important points. Pre-planning and having a clear direction of state, tribal and local governmental concerns. These should be agreed upon before lease sales go into effect.

Francesca Cava: The Marine sanctuary in the Channel Islands did not seem to carry much weight in dealing with gas and oil development. We have much be be concerned about off out Washington coast, with wild beaches, parks and marine bird refuges. Tanker traffic passing through are a constant threat of collision or running aground somewhere it travels along our coast. It would seem crucial that we are very knowledgeable about these environments before tanker traffic increases in these areas.

Mike Powers, Tri-County Socio-economic Monitoring Program: This group seems as though they are not prepared for gas and oil development. Due to this fact, it seemed that they were not able to foresee potential problems they would face with the Minerals Management Service, oil companies and their state government. Long range planning seems to be a must to avoid problems that Santa Barbara County have had to deal with.

Bob Klausher, Chair, Citizens Planning Association: I like his referance to a situation in Alaska, where the local governments, state government and oil companies, put together a plan evaluating sensitive environmental areas with low hydrocarbon potential that could be left out of lease sales. Grey areas were oil and gas potential are marginal, environmental concerns exist, but with proper planning could be developed if environmental demands were met, and areas of high hydrocarbon potential and low economic value or environment concern could be pushed through with no opposition from state, local or tribal governments. However as he mentioned the Minerals Management Service should be involved every step of the way so that we may reach a consensus among groups involved in oil and gas development.

Diane Guzman, Director of the Santa Barbara County Resource Management Department: John Patton, Assistant Director: After getting Bill and Diane on the same level of understanding, I thought what she suggested as a proposal giving the state some ability to evaluate the environmental impact statement, data collection, biological studies and the bidding process. This seems like a lot to ask of the Minerals Management Service, but I believe if it is done in good faith and ligitimate concerns are being presented, we can achieve this level of management; and retain a good rapport with the federal government.

Overall, I sensed from what most all of the people we talked to on the trip, that getting an early start on identifying potential problems, organizing studies and developing solid agreements to address concerns from the local, state and tribal levels, will give us the potential to succeed in achieving the best possible scenerios for oil and gas development in our region.

We are off to a good start by involving representatives from all of these levels of government, so that Washington can avoid many of the problems faced in Santa Barbara County.

Section 2

Subcommittee Reports

June 1988

OCEAN RESOURCES ASSESSMENT PROGRAM
OFFSHORE DEVELOPMENT AND PRODUCTION SUBCOMMITTEE
Washington State Sea Grant

July 27, 1988

MEMORANDUM

TO: Ocean Resources Assessment Program Committee

FROM: Offshore Development and Production Subcommittee

SUBJECT: Subcommittee Report

The Offshore Development and Production Subcommittee (ODPS) Report is attached. In developing this report, the ODPS identified their task, in accordance with ESSB 5533, to investigate and prioritize issues affecting offshore resources by oil and gas development on the outer continental shelf and state waters. As designated be the Ocean Resources Assessment Program (ORAP), the ODPS concentrated on offshore activities and impacts relating to the development and production phase of the oil and natural gas industry. . The committee did not attempt to develop comprehensive information for the onshore impacts caused by offshore development (for example, they did not cover oil spill impacts on beaches or issues relating to construction of shore-based support facilities needed by offshore operations). While these may represent major potential impacts, the committee attempted to adhere to its original charge from ORAP.

Lease sale # 132 encompasses the area offshore Washington and Oregon out to the edge of the continental shelf. Prioritizing studies to cover areas of ecological importance is essential if our state is to adequately participate in negotiations for sub-area deferrals.

We conclude that establishing a comprehensive procedural process with a time-line for state agency, local government and public involvement is essential. Furthermore, development of environmental studies and timely review of studies must be coordinated and fully funded be federal and state appropriations. Identification of pre- and post-lease stipulations is important so that industry and state interests know what is expected and environmental protection can be achieved should oil and gas development take place in the waters off Washington state.

OCEAN RESOURCES ASSESSMENT PROGRAM
Offshore Development and Production Subcommittee Report
July 27, 1988

Introduction

The Offshore Development and Production Subcommittee (ODPS) of the Offshore Resources Assessment Program (ORAP) was given the task of examining the information available, the experience of other states and the research needed relating to the offshore portion of oil and gas development and production. Their primary responsibility was documentation of data gaps and development of a coherent set of recommended studies.

In addition to the ODPS, ORAP also had subcommittees looking at other aspects of oil and gas development such as transportation issues, exploration phase information needs and research relating to onshore work and impacts. The types of activities anticipated in the offshore area during the development and production stages include well-drilling, collection of seismic information, construction and operation of oil or gas production platforms, construction and operation of oil or gas processing facilities (to separate the water from the oil and the sulphur from the gas), operation of marine support facilities, and transportation of the petroleum product from the wellhead to processing facilities and then to refineries.

The ODPS concentrated primarily on the activities and impacts which could occur in the offshore area. They also sought to avoid extensive overlap with other ORAP subcommittees even though this meant they ignored certain important issues if the topics seemed more germane to an alternative subcommittee. For example, they did not develop information and data needs relating to the onshore impacts (intertidal and shallow subtidal) from offshore oil spills. Similarly, they did not work extensively on the transportation-related impacts although much transportation will occur in the offshore area. By the same token, they did not dwell on impacts and data needs associated with the development and operation of onshore support facilities (marinas, supply facilities, etc.) which offshore petroleum development and production will necessitate. Failure to treat such issues is not meant to imply they are unimportant. Indeed, this subcommittee recommends that if such overlap areas are not adequately addressed by the alternative committee, additional work will be needed to rectify the situation.

ORAP provided scenarios to the subcommittees involving discovery and production of various quantities of oil and gas. The ODPS chose to combine those scenarios and treat the issues together.

There are various differences between oil and gas development and production, however, in many cases they represent differences in degree rather than complete changes. For example, oil spills are obviously associated with production of oil. However, there is some "liquid product" produced at most gas wells and the oil spill related issues are still of some concern.

General Outline of Issues

The first task undertaken by the ODPS was development of a list of issues relating to the aspect of oil and gas development and production they were assigned by ORAP. In the process of developing their recommendations, the subcommittee discussed the general state of knowledge relating to these issues as well as the type of information needed.

I. Fish and Wildlife

Many of the fish and wildlife resources of the Washington coast are noted for their potential vulnerability to impact from oil spills. In addition, many could be affected by disposal of drilling muds and cuttings, production water discharges and by releases from various types of processing facilities during the production phase.

Most of our knowledge about the offshore fish and wildlife resources of Washington centers on the commercially harvested species. The current state of knowledge often consists of no more than pounds of fish landed. The seasonal distribution and abundance of many species are unknown as are the feeding and breeding areas. Often critical ecological relationships are not understood for common species.

There are a number of impact-related studies underway currently which may bear on Northwest fish resources. These include a study of the effects of seismic air-gun surveys of eggs and larvae. Similar work is planned on Dungeness crab. Minerals Management Services (MMS) has funded work on the effects of air-guns on the behavior of rock fish. Follow-up studies are contemplated on this topic.

The overall lack of critical information is even more true for off-shore birds where seasonal observations have not been made and life history information is minimal at best. A wide variety of birds use the Washington offshore area and more are dependant on the coastal estuaries. Some offshore species are known to concentrate in large numbers at specific locations such as the submarine canyons, oceanic fronts and convergence zones. The potential for impact in these areas of high concentrations is

obviously increased.

Sea otters are one of the few marine mammals currently subject to directed research. The information being collected on sea otter food habits is supplying some of the only intertidal and shallow subtidal invertebrate data on the north Washington coast.

Some of the topics of interest relative to fish and wildlife resources include:

Fish, marine mammals and birds
Offshore marine habitats and seasons for feeding, breeding and migration

II. Fishing Activities

There are a variety of recreational and commercial fishing operations dependant on the resources off the Washington coast. In addition to the mobile fishing activities (trolling, trawling, etc.) there are a number of fixed gear fisheries (pot fisheries for Dungeness crab and sablefish, tribal set net fishing, long-line gear for sablefish, etc.). The bays and estuaries are sites of major shellfish culture activities for the Pacific oyster as well as hardshell clams.

Studies currently underway include work funded by the MMS to summarize and, to the extent possible, standardize fisheries catch information. The intention is to computerize the information for use in environmental planning and assessment.

These fisheries support a major portion of the coastal economy. The potential for impact due to oil and gas development and production varies with the fishery. Impacts to fishing activities can relate to direct physical interference with the fishery due to the presence of seismic vessels, support vessels, drilling and production facilities on the fishing grounds. In addition, impacts on target species due to oil, toxic materials and drilling discharges can affect the fishery. MMS is funding a socio-economic study relating to coastal counties and the effect of oil and gas development.

Assessment of the current situation and analysis of probable impact as well as development of protective measures are all potential topics for study, including:

Fisheries
Commercial and recreational fishing
Fisheries conflict resolution, compensation
Socio-economics of fishing conflicts
Effects of seismic vessels and oil development on eggs and larvae

III. Water Quality

There is a great deal of information available concerning the effects of oil and gas development on water quality. This issue has been the subject of a multitude of studies at existing oil and gas facilities in a variety of settings. While there are some issues which have been better researched than others, the primary need is for information which will provide linkages between the large body of existing knowledge and Washington state resources and offshore conditions. The general list of issues/data needs developed by the committee is as follows:

Well drilling
- Drilling muds and production water discharges
- Short and long-term monitoring
- Applicant and subcontractor liability

Development and production
- Oil and diesel spills
- Blowouts
- Seepage and leakage
- State and federal laws affecting water quality and discharges

Microlayer

Oil cleanup response capabilities

Dispersants

Support activities impacts

IV. Air Quality

As in the case of water quality-related issues, there is a general fund of knowledge about air quality changes brought about by various aspects of oil and gas development and production. The primary need is for development of Washington coastal data to relate to the existing information. The presence of the Olympic National Park along much of the Washington coast may present some unique considerations in assessing impacts, planning for development, facility siting, and determination of appropriate mitigative measures. The National Park is designated a Class 1 area for air quality necessitating stringent controls to ensure non-degradation of the area. Issues such as potential acidification of coastal lakes may become important and require site specific information. Many of the air quality issues will center around onshore processing facilities and are not therefore covered in this subcommittee report.

The types of air quality related issues ODPS considered of importance are:

Development and production
Shipping
Burning gas discharges
Mitigation banking
State and federal air quality laws

V. Effects on Marine Systems

There are a variety of potential effects on marine systems relating to the offshore portion of oil and gas development and production. The state of knowledge about these resources is generally less than for the commercially and recreationally important fish and wildlife. However, these other types of resources often support the species commonly harvested as well as those subject to nonconsumptive use.

While these resources often lack a constituency favoring their protection, their ecological importance mandates their consideration. Types of resources which fall into this category are:

Plankton
Benthic communities
Sub- and inter-tidal communities

VI. Facility Siting

There are a great number of potential issues relating to siting facilities for processing oil and gas. Processing facilities handle functions such as the initial separations of oil, gas water and H_2S. If located onshore, most of these would fall under the purview of the onshore subcommittee. If located in coastal estuaries, they could entail major potential impact. They are mentioned in our report because some, if not all, processing could be handled through offshore ship-board facilities. If offshore facilities are utilized, the petroleum products must be "lightered" or transferred from one vessel to another for transportation away from the well site. If the offshore facilities are located beyond the three-mile limit of state waters, Washington state limits and controls on air and water quality may not apply. Only federal controls may be applicable.

The location of various types of support and processing facilities in the offshore/onshore area could be examined at the conceptual and policy level as well as at the site-specific level. Types of facilities of concern include:

Processing facilities
Separation, treatment and marine facilities

VII. Oceanography

Oceanographic information is of value in relationship to a number of other sub-sections in this report. Wind, wave, and current patterns will control the spread of spilled oil. Sea conditions will affect the stability of offshore oil rigs and production platforms. This, in turn, will affect the risk of fire, explosion, release of toxic gases, and, ultimately, both human safety and the safety of adjacent natural resources.

Offshore oceanographic features may be of considerable biological importance. Frontal and convergence zones (where two dissimilar oceanographic currents are brought together) may produce localized heavy concentrations of plankton, fishes and birds. These areas may be of considerable importance to individual species as well as of ecological importance.

The amount and quality of information available within the Washington/Oregon offshore lease area is variable. However, in general, there is a lack of information on the near-shore area, on cross-shelf transport mechanisms, on the near-surface layer and about oceanographic frontal/convergence zones.

Studies of value might relate to:

Winds, waves, currents and frontal/convergence zones

VII. Navigation

While there is a transportation subcommittee, there are variety of navigation-related issues in the offshore area which the ODPS felt might be over-looked by other committees. There will be a considerable amount of support vessel traffic to and from the existing ports during exploration, development and production. The offshore area in Washington is the site of some very intensive fishing. For example, the opening few weeks of Dungeness crab season sees the deployment of abundant quantities of fixed gear (crab pots). If the buoy lines on the crab pots become entangled in passing vessels, the buoys may be severed or the pots moved. The result will be loss of gear to the fisherman and potential impact on the resource. The lost gear will continue to "fish," entrapping crab which die, unharvested, in the lost pots.

Navigation related topics for consideration include:

Channel mapping/designation
Use conflict mitigation

VIII. Oil and gas transportation

Despite the potential for overlap with the transportation subcommittee, ODPS considered two types of information needs important enough to list. These topics should be covered thoroughly by the transportation subcommittee:

Pipeline siting
Alternative methods of transportation

IX. Recreation/Aesthetics

There are recreational and aesthetic values to the Washington coast as well as to the resources located there. In addition to the present recreational/aesthetic values in the area, the oil industry often projects benefits arising from the physical/biological effects of production platforms. The potential for such a beneficial effect could be examined in relationship to Northwest fish species.

Potential efforts include:

Identify consumptive/nonconsumptive uses offshore
    Photography, bird watching, small boat uses
Platform uses (recreational and commercial)
    Shellfish harvesting
    Artificial reef for sports fishing

X. Safety

The topic of safety is of major concern to residents living in the vicinity of oil and gas development and production. This is an area where there are extensive federal laws and standards in place.

Possible topics for consideration include:

Explosions, fire danger, toxic fumes, H_2S
Approved contingency plans
Federal/state standards currently in effect

XI. Geohazards

There are currently federal regulations in place relating to geological stability and potential environmental risk. This a topic where the interest of the state and that of the developer tend to overlap. Obviously the state is interested in a project that does not get swept away by wind, tide or geological hazards. The operator is interested in a functional production platform.

Items of interest include:

Geohazard surveys for seismic activity and faults
Water current/ weather extremes:
Effects on platform stability

XII. Jurisdictional Issues

The tribal fishing rights in Washington state differ from conditions in most, if not all, of the other outer continental shelf (OCS) oil and gas leasing areas. Northwest tribes have been granted the rights to half the harvestable salmon and steelhead through the treaties signed with the federal government. In addition, the tribes may have rights to other species historically harvested. The tribes take their catch in "usual and accustomed places," which makes the tribal harvest less flexible and movable than some non-tribal fisheries. Legal interpretations of the treaties give the tribes some influence over environmental matters which affect treaty resources. Tribal rights have a potential effect on more than just the development and production phase of the oil and gas industry. These issues pervade all aspects of oil and gas development. The unique status of Washington tribes has lead MMS (the federal OCS leasing agency) to fund a study examining this issue.

In addition, there are jurisdictional issues revolving around state's rights during OCS oil and gas leasing and development. Issues concerning the relationship between the state and the federal government are not unique to this OCS leasing area. In a recent court decision, states were told that they can not make a "consistency determination" for OCS activities under the Coastal Zone Management Act. Pending federal legislation (Senate Bill 1412, HR 3202) would reinstitute the federal consistency requirement of the Coastal Zone Management Act for oil and gas sales. In addition, this legislation would clarify the applicability of the consistency requirements to federal activities seaward and landward of the coastal zone if the activities affect the coastal area.

Jurisdictional issues are being examined within our state by the Joint Select Committee of the Washington state legislature.

In summary, the major jurisdictional issues are:

Tribal fisheries and rights
State's rights, consistency review

XIII. Monitoring and Enforcement

The ability of any regulatory agency to achieve environmental or public benefit is dependant, in part, on the adequacy of the restrictions applied to a project and on the agency's ability to

enforce the permit conditions and stipulations applied. Determining the appropriate regulations, permit conditions and stipulations for an industry in a new area requires preplanning. Once these conditions are developed, the enforcement depends on adequate staffing within the agency (numbers of personnel, training and budget constraints).

In non-frontier areas (i.e. places where oil and gas production is now underway), the revenues which accrue to the state from oil and gas lease sales and production are used to fund planning activities as well as enforcement. In frontier areas, funding the planning and permit enforcement needed at both the state and local levels is more problematic.

Potential areas for consideration include:

State/local stipulation monitoring capability
Bonding requirements
Company monitoring capability

XIV. Risk Assessment

Risk assessment can apply to a host of topics. Oil spill risk and matters involving human safety are two which come readily to mind. Issues relating to health and human safety may be of strong concern to local residents. The oil spill issue has implications relating to the adequacy of the federal Environmental Impact Statement (EIS). For example, the federal EIS calculated spill risk only for spills over 1,000 barrels even though smaller spills may have significant effects on some Washington resources.

Potential risk assessment topics include:

Oil spill risk analysis
- OR/WA sea conditions in risk analysis
- Spill sizes less than 1,000 barrels
- Calculate for oil development greater than federal EIS projections
- Include geohazards

Other types of risk
- Fire, explosion, toxic fumes, collisions at sea,etc.

Offshore Development and Production Subcommittee Recommendations

The Ocean Resources Assessment Program Offshore Subcommittee recommends the following specific studies as high priority.

These do not represent all the studies which are needed for any topic but they are the ones which should receive first priority for funding. These recommendations are based on a blend of several factors. The first factor is the importance of the resource or the issue to the state. The second consideration relates to the likelihood of an effect being seen on the resource or segment of the state in question should oil and gas development occur. In developing this list, the question the committee applied to the topics was: Do additional studies need to be conducted considering studies currently known to exist and known impacts? Based on these criteria, high priority studies were not selected for every issue or topic in the outline above.

The level of study being recommended is similar for many of the issues. The committee is not recommending in-depth research on any of these topics as a first step. By way of example, the type of information which should be collected at the first stage is distribution and abundance data rather than eco-system studies. While the ecological information would be very valuable at the pre-lease stage, the area involved in the potential lease sale is too large to contemplate in-depth study throughout the entire area. Instead, studies should be designed to determine locations and timing of resource use over an extended area with additional emphasis on known and suspected areas for concentrations of impactable species. More detailed studies will be needed as exploration and development is scheduled or projected in specific areas.

STIPULATION STUDY

During the creation of this recommended list, the committee found a number of topics which should be addressed by the state of Washington but which do not necessarily require research (data collection and analysis). These issues could be handled through stipulations at various points in the oil and gas exploration and development process. To prepare for generating a stipulation package, the state will need to draw together existing information about Washington resources and the probable effects of petroleum and petroleum development. The experience in other states should be examined, compiled and, where necessary, modified to fit Washington. It is imperative that adequate effort be directed toward developing a stipulation package for a variety of issues to ensure that state response times can be short and resource protection adequate.

Various topics were discussed as being amenable to the development of stipulations. While the topics discussed were not intended to be all-inclusive, they demonstrate the range of issues for which the state needs to be prepared. The following

issues are not in order of importance and, in some cases, entail some overlap with other topics in this outline.

Examples of potential issues for stipulation:

Conflict resolution and compensation for tribal and non-tribal commercial fishermen
The handling of drilling muds and produced waters
Long-term monitoring of impacts
Ensuring compliance with the stipulations and enforcement
Spills, blow-outs and leaks:
    Synthesis of existing information
    Stipulations for prevention
Liability and bonding.
Oil spill clean-up capability.
Separation plants (locations, mitigative measures,etc.)
Bottom structure at potential drill and platform sites
Appropriate siting/mitigative measures

I. Fish and Wildlife

- Seasonal distribution data on birds is needed for use in siting drilling and platforms and in oil spill contingency planning

- Critical areas need to be surveyed and mapped for a variety of species. These areas include spawning habitats, rearing habitats and convergence zones (areas where oceanographic currents typically bring different water bodies together or nutrients to the surface from depth). The uses for this information is similar to that for birds

Research initially should be designed to develop distribution and abundance data on resources rather than in-depth information. Work should concentrate on the species most vulnerable to impact. For example, in relationship to marine mammals, harbor seals are less affected by petroleum and related development than are fur seals. Areas of known or suspected concentrations of impactable resources should receive priority for study.

II. Fishing Activities

- Compilation of catch data. Fish landings and locations of the catch (current MMS funded study underway)

- Analysis of the potential off-shore oil and gas development socio-economic effects on Washington fisheries and ways to mitigate impacts

The topic, "Fisheries," denotes the utilization of the resources rather than the resources themselves. The resources are covered in the topic entitled "Wildlife."

III. Water Quality

- Dispersants:
    - * Impacts on unique Washington resources (such as juvenile salmonids including the effect of smoltification)
    - * Decision process development
    - * Criteria for use (possible area designations, etc.)

IV. Air Quality

- Potential air quality impacts of off-shore oil and gas development including the impacts of on-shore facilities
    - * Assessment of the current baseline data available and of the necessity for collecting more information

V. Effects on Marine Systems

- High priority for specific studies aimed at probable impacts

VI. Facility Siting

- Analysis of areas where on-shore facilities are compatible and incompatible with existing land-uses and designations
    - * Separation facilities
    - * Marine facilities

VII. Oceanography

- Wind, wave, currents and convergence zones
    - * For use in risk analysis and facility siting
    - * To be related to biological resource concentration areas

VIII. Oil and Gas Transportation

- Criteria for the use of pipelines and on-shore facilities versus off-shore processing, loading and transportation by vessel

XII. Jurisdictional Issues

- Tribal rights (current MMS study underway)

- State's rights (Joint Select Committee examining this issue)

XIII. Monitoring and Enforcement

- Review of state permits, capabilities, coordination of state agencies, financial needs of agencies at the state and local level (Joint Select Committee is examining this issue presently)

XIV. Risk Assessment

- There are a variety of topics which need to be investigated relative to the general topic of "Risk." These include but are not limited to:

  Health and human safety
  Fire and Explosions
  Oil spill risk

CHUCK CLARKE
Director

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DATE: 7/15/88

TO: Offshore Subcommittee

FROM: Linda

SUBJECT: Draft Report

Here's a draft based on our joint report last week. Please look it over. Feel free to make changes. You'll notice I reworked some of your input. Get your comments back to me during the meeting. Our report is due at the session or shortly thereafter. L.

WORKING DRAFT

ORAP ONSHORE SUBCOMMITTEE
Draft Report

The Onshore Subcommittee developed a three part worksheet format for developing the information in this report. The first section presents a listing of areas and subareas which the Subcommittee believes will require state attention or action as the lease sale proceeds. The second section lists a number of essential questions the Subcommittee believes the state must be prepared to answer as we continue through the process. The third section presents impressions, under three headings, which may be useful to the ORAP Advisory Committee as it continues its deliberations. The final section of the report presents policy issues which we believe the state must consider regardless of the fate of lease sale 192.

I. ISSUES FOR CONSIDERATION

The following list identifies broad issue areas and the subareas the Onshore Subcommittee has identified for future consideration by the state. The areas listed cover items on which the state will be expected to take action or processes which will be invoked as the lease sale proceeds. The two columns to the right of the list indicate the Subcommittee's assessment of the following:

-- Column 1 - Level of Knowledge

-- Column 2 - Priority for Study/Preparation

The Subcommittee reached a consensus on both the Level of Knowledge and the Priority for Study/Preparation. High, medium and low rankings are presented for each area and subarea.

Level of Knowledge indicates the Subcommittee's assessment of how much is known about this area and its applicability to Washington. That is, a high ranking indicates there is a solid knowledge base available in Washington or directly applicable to Washington. A low ranking indicates a minimal knowledge level exists or that existing knowledge is not applicable to Washington.

The Priority for Study/Preparation indicates the Subcommittee's position on those areas which are high, medium or low priorities for study or preparation during the next biennium. We recognized that some areas may not require study per se, but will require planning, analysis, or some other form of preparation.

WORKING DRAFT

AREA/SUBAREA	LEVEL OF KNOWLEDGE	PRIORITY STUDY
H = High M = Medium L = Low		
SITING		
Facility siting	H	M
Support services siting	H	M
Facilities sited solely on the OCS	L	M
Planning for industry growth in terms of future facility requirements	M	L
Coordination of siting requests, including considering generic studies for similar facilities	L	L
SOCIO-ECONOMIC IMPACTS		
Pre-Lease		
-- Baseline studies (note: if lease sale continues, commence two years before the sale)	L	H
-- Identifying impacts, mitigation techniques	H	M
-- Profile coastal dependent industries	L	M
-- Study use conflicts, especially fishing and tourism	M	H
Post-Lease		
-- Monitoring	M	M
-- Impact fund allocation	L	M
-- Revenue sharing (federal to state)	M	M
-- Conflict resolution	M	H
ENVIRONMENTAL PROTECTION ON SHORE		
Pre-Lease		
-- Baseline studies	L	H
-- Air, water quality	M	L
-- Surveys of habitat, land values, animals, plants	L	H
-- Develop geographic information system (low-cost, accessible)	H	H
Post-Lease		
-- Permitting issues	M	M
-- Monitoring	M	H
-- Enforcement	M	H

WORKING DRAFT

AREA/SUBAREA	LEVEL OF KNOWLEDGE	PRIORITY STUDY
LOCAL GOVERNMENT		
Pre-Lease planning/public education	L	H
Management of speculation	M	H
Zoning and ordinance planning	M	M
Infrastructure and capital improvement planning designed to limit speculative growth	M	H
School planning	H	L
Housing	H	L
Emergency management planning	H	L
DIVISION OF LABOR BETWEEN STATE AND LOCAL GOVERNMENT		
Who is responsible for:		
-- Siting decisions - joint effort is essential	H	H
-- Adequacy of existing siting and permitting processes at the state and local level	L	H
-- Permitting - joint effort is essential	H	H
-- Impact mitigation - joint effort is essential	M	H
STATE GOVERNMENT ORGANIZATION AND COORDINATION		
How will the state:		
-- Organize itself	L	H
-- Resolve conflicts between levels of government and/or industry	L	H
-- Ensure equity between state and local governments	L	H
-- Balance competing interests	L	H
RISK MANAGEMENT		
Risk identification	M	H
Risk reduction, management, mitigation	L	M
OTHER ISSUE AREAS		
Comprehensive Ocean Plan	L	H
Public health and safety impacts	H	M

WORKING DRAFT

II. QUESTIONS REQUIRING STUDY

In this section, the Subcommittee identifies key questions which the state must be prepared to address as the lease sale process continues. These questions are grouped under the same major area headings developed in Section I.

SITING

Who makes facility siting decisions and what process will they use?

How does EFSEC meet or not meet our needs to making facility siting decisions?

Will the process for facility siting need to be different if exploration identifies a major find? If so, will the state define that alternative siting process in advance of the OCS lease sale?

How can we ensure public involvement in the siting process?

Will affected local governments be treated as full partners in the siting process?

What is the range of all possible facilities we might see built in Washington as a result of oil and gas development? What is the range of size and scope of these facilities (i.e., how many platforms, how many pipelines of what size, how many refineries, etc.)?

Is it possible to estimate the maximum potential development of the oil and gas industry in Washington, identifying the highest level of facilities development which could reasonably be expected to occur? If so, could the state then proceed in an orderly manner through siting decisions with the maximum potential build out in mind?

How will the siting process ensure that the best engineering to prevent spills and blow-outs is used in any facility?

How will the siting process ensure that the oil spill contingency plans for any facility are adequate?

What is the range of onshore development scenarios predictable with special emphasis on the timing of each type of siting activity? Are there predictable criteria with regard to the timing of any phase of oil and gas activity?

Can we build safeguards into any OCS lease lease which will prevent facilities sited solely on the OCS (i.e., Platform Hondo)?

WORKING DRAFT

Should the state develop a policy requiring oil and gas facilities to be concentrated in one area, thereby limited impacts? Or, conversely, should the state have a policy dispersing facilities to maximize potential economic benefits through the widest area?

SOCIO-ECONOMIC IMPACTS "EQUITY QUESTION"

What coastal communities are prepared for oil and gas development to occur?

How will the state address the fact that adverse impacts are largely local, but revenue benefits accrue to the state and federal governments (i.e., equity issue)?

What strategies can be developed to minimize long-term socio-economic impacts on local communities?

What strategies can be developed to minimize the impacts associated with the close-out of production?

Will the mere act of exploration seriously damage existing coastal industries?

What numbers of jobs will be associated with exploration, development, and production? How many of these jobs will be filled by workers from out of state, how many by in-state workers?

How do we ensure that oil and gas development activities pay for themselves at each stage of the process (exploration, development, production, closeout)?

What is the best tax structure to ensure that Washington State maximizes the revenues it will receive from oil and gas activities?

ENVIRONMENTAL PROTECTIONS

What is the state of our understanding of the long-term impacts of oil and gas exploration, production and development on wildlife and the environment?

How do we design controls into the engineering of platforms, pipelines, transfer stations and other facilities to ensure that blow-outs and spills of any size will not occur?

How will the state develop statutes which establish strict responsibility for clean-up of spills or pollution? Will the state institute strict third-party liability requirements so that principles are responsible for the actions of all subcontractors?

Will the state develop policies on the following:

-- seismic survey activities, including when and how air guns may be used and prohibiting the use of explosives;

-- requiring the replacement of lost habitat and the restoration and rehabilitation of damaged habitat;

-- the use of dispersants;

-- drilling season or windows;

-- drilling muds disposal; and

-- clean up of "incidential spills."

What are the long-term or chronic effects associated with minor or incidential releases of hydrocarbons into the environment?

How will the state address the cumulative effects of oil and gas releases into the environment?

What are the accute, chronic, and sub-lethal effects of oil on each life cycle stage of salmon, steelhead, and dungeness crab?

Is the Shorelines Act permitting system sufficiently strong to achieve the environmental protections the state and local governments will want to place in oil and gas permits? Should the local Shorelines Plans be revised to ensure necessary environmental protections can be achieved? If so, what process will be used to ensure that each local plan balances state and local interests?

What mechanisms should be used to separate actual from perceived environmental issues?

How will the state finance litigation on environmental issues, if it occurs?

How will the state and local governments establish an strong monitoring system and provide adequate enforcement capabilities once oil and gas activitites commence, and who pays for monitoring and enforcement?

Will the state develop a mitigation, enhancement, and restoration policy for the coast prior to the initiation of any exploration? If so, what process will be used?

Should the methods currently used to determine the damage after an oil spill be changed? If so, how?

WORKING DRAFT

LOCAL GOVERNMENT

How will local governments manage and prevent land and business speculation?

How will local governments prepare themselves to manage growth which might occur if oil and gas development proceeds in the state?

How will local governments be treated in the decision making process? Will they make separate decisions which are passed up the line or be treated as partners at each stage of the decision making process?

Should local governments have veto power, permitting them to determine locally whether or not onshore oil and gas development will be allowed in their community or county? If yes, what are the implications for the siting and permitting processes?

Do all impacted County Comprehensive Land Use Plans address oil and gas development in the most desirable manner?

What mechanisms will be established to provide planning and impact funding to local governments which might be affected by the lease-sale?

What kind and number of professional staff will be required at the local level to ensure that all planning, environmental, permitting, monitoring, and enforcement activities required can be carried out?

DIVISION OF LABOR BETWEEN STATE AND LOCAL GOVERNMENT

What Washington state or local experience can serve as a model for managing and regulating oil and gas activities? What experience from other states is applicable?

Should the state provide funding for local agencies and entities which will be involved in planning, public education and decision making on oil and gas activities?

Should the state and local governments plan for oil and gas development on a regional basis, rather than a county by county basis? If so, should regional and/or statewide standards be developed to guide regional planning efforts?

Do the Shoreline Management Act, county Shoreline Management Plans, the state Coastal Zone Management Plan and the State Environmental Protection Act adequately address oil and gas development? Given the experience of other states, how should Washington's state and local governments modify and strengthen any or all of these laws or plans?

How will the state and local governments resolve conflicts which may arise between them regarding siting decisions, environmental protections, and socio-economic impact mitigation?

What is the best division of monitoring and enforcement responsibilities between state and local governments?

STATE GOVERNMENT ORGANIZATION AND COORDINATION

Given the experience of other states, how will the state organize itself to manage and regulate oil and gas activities? Will the state's organization need to change if there is a major oil/gas find discovered?

How will the state ensure that it speaks with one voice on oil and gas matters?

How will the state balance its needs to protect its environment and manage socio-economic impacts against the needs of the oil and gas industry to have an understandable, stable regulatory environment and a predictable process?

How will state agency expenditures for studies, planning and other activities prior to the lease sale be justified and funded? How will the state ensure that the oil and gas industry pays for state and local government costs, including but not limited to planning, mitigation, monitoring and enforcement, once the lease sale has occurred?

RISK MANAGEMENT

What is the full range of risks associated with each phase of oil and gas activity? What are the consequences associated with each risk? How will the state manage these risks?

In an oil spill situation, how will state deal with the equity issues generated by the fact that the effects of the spill are always local, while the benefits of the industry are statewide?

How will the state build capacity and assign responsibility for wildlife impacts and wildlife care during oil spills? Will the state rely primarily on volunteers?

Do the potential benefits of oil and gas activities in the state outweigh the risks associated with them?

Since a major risk area involves shipping activity in drilling areas, should the state and local governments begin working now to assess vessel traffic patterns and requirements?

III. QUESTIONS

Subcommittee members were asked to answer the following three questions. Their responses are summarized below.

i. What are the three things that jump out in your mind when you reflect on your field trip?

In Alaska, the absence of systematic monitoring and enforcement capabilities was very alarming. Things like local hiring agreements appear to go without being monitored and are totally unenforced. Safety inspection are often performed by the company's own employees through special licencing arrangements with the state government.

It will be critical to have baseline information along the Washington coast on wildlife, socio-economics and the environment.

The quality of the relationships between the federal government and Minerals Management Service with state and local governments is memorable.

The sheer magnitude of Alaska results in attitudes which are difficult to relate to in Washington. For example, a 20,000 acre gas field in the middle of a 2 million acre wildlife refuge was viewed as a minor inconvenience.

In Alaska, local hiring appears to be almost non-existent.

The state should not bear the burden of proving that oil and gas development will harm the environment. The oil and gas industry should be required to prove their activities will not damage the environment.

There is great uncertainty about the scope of development and the kinds of benefits it might generate in any area where oil and gas development may take place.

The costs of regulating the industry is high.

Oil and gas development will generate divisiveness for all levels of government and within all communities affected.

Cleaning up oil spills is minimally effective in any but the most calm water conditions.

The potential of vessel traffic colliding with oil platforms is frightening...we need to examine some form of vessel traffic control system.

Oil and gas development is a relatively short-term phenomenon compared to the life cycles of communities which

might be affected. There is a need to protect long-term community interests.

The effective, governmental management of the oil and gas industry requires expertise which is not currently available in Washington, but does exist elsewhere in the country.

ii. The one thing I would do differently from Alaska/California is...

Develop a state taxing structure which taxes the industry at a higher level than Alaska did.

Develop a comprehensive ocean use plan that identifies the important resource areas prior to the initiation of exploration and development.

Absolutely require a complete assessment of the region's interests prior to beginning oil and gas development. Force decisions from the beginning which include what conditions the industry must honor, where facilities will be located, and how changes to these upfront agreements will be made.

Form a political coalition with western coastal states including Hawaii, and force changes to the OCS Lands Act which strengthen the states' ability to condition the leases.

iii. What are your personal conclusions based on your reading and experience to date? (Think in terms of what you would tell your boss or your spouse).

The probability that oil and gas development will occur off the Washington coast before the year 2000 is extremely remote.

Risks of oil and gas development may not be worth the benefits.

The benefits of oil and gas development are national but the impacts are local. We need to recognize this, then work the system for all it is worth to mitigate local impacts. The federal government and the oil industry are big, and keep coming. The only hope for local, regional and state leaders is close cooperation to protect our interests. The oil and gas industry won't actually dominate the local landscape or economy, however, we need to keep their power in mind and plan accordingly.

The state and local governments must cooperate with each other to develop a comprehensive policy for the management of ocean resources.

WORKING DRAFT

To successfully respond to oil and gas development there is a need for prudent, intergovernmental collaboration. The absense of such cooperation will ensure that divide and conquer strategies can be effectively employeed.

The size, financial and political power of the oil and gas industry is overwhelming...they are bigger than most countries they deal with, let alone the state of Washington.

Money talks.

WORKING DRAFT

IV. POLICY CONSIDERATIONS

The following areas require state policy decisions. The Subcommittee believes these issues warrant state consideration regardless of the outcome of the current federal lease sale process.

-- A Washington state energy policy should be developed and Washington state should support the development of a reasonable national energy policy. The absence of such policies perpetuates the development of oil and gas when other alternatives may be feasible and more environmentally responsible.

-- Coastal states should explore the available means for influencing OCS leasing policy. Furthermore, coastal states should examine the differences in each individual state policy which might work against states when negotiating with the Minerals Management Service.

-- A policy and mechanism for evaluating ~~the~~ what studies are critical, when they will be done, and how they will be funded is needed.

-- A policy on regional planning for oil and gas activities should be considered.

-- A policy explicitly favoring the development of renewable resources over non-renewable resources should be considered.

-- A comprehensive policy on ocean uses should be developed.

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Conclusions

As a result of its work, the Transshipment Subcommittee has reached the following conclusions:

Transshipment facilities, such as tankers, pipelines, and marine terminals, are fairly well understood in a generic sense. However, locations, routes, and scale (e.g., pipeline diameter) of these facilities in a Washington State resource production scenario are difficult to predict and are highly dependent on the locations of production areas, the nature of products (oil, gas) and the locations of processing areas, and end markets.

The potential for environmental impacts from transshipment facilities is strongly dependent on the location and size of pipelines or the location of tanker routes, in relation to the locations of environmentally sensitive areas, and the degree of risk of accidents.

Given the locational unknowns, the prediction of impacts is very difficult. This points out the priority needs for further information on the locations of economically important geological resources, as well as the locations of environmentally sensitive areas and times and environmental pathways.

Despite uncertainties about impacts, state and local governments could attempt to place themselves in a position to require the best possible measures for risk reduction or prevention, emergency response, and fixing liability and mitigation responsibility, as a way of anticipating generic risks.

Some of these measures could include requirements for pipeline installation techniques; offshore vessel traffic control systems; and comprehensive spill response plans with clear objectives and areas of responsibility, and priorities for use of various spill response technologies (containment vs. dispersal, etc.).

Ratings of Issues
(Scale: High, Medium, or Low)

	Importance to Washington	Perceived Level of Knowledge	Importance for Study
Likely Pipeline Locations	H	L	M
Marine Terminal Locations	H	M	M
Tanker Routes	H	H	L
Environmental Hazards Affecting Facility Location	H	L	M
Operational Risks of Transshipment Activities	H	M	M
Routes and Destinations of Impacts of Transshipment Accidents	H	L	H
Locations/Times Sensitive for Marine Birds or Mammals	H	L	H
Locations/Times Sensitive for Natural Resource Uses	H	M	L

	Importance to Washington	Perceived Level of Knowledge	Importance for Study
Locations/Times of Estuarine Sensitivity	H	M	L
Risk Prevention/ Reduction Measures	M	H	L
Emergency Response Measures	M	M	M
Measures To Assign Liability for Impacts of Accidents	M	M	M
Competing Uses of Potential Facility Locations	M	M	L
Local Service Needs of Transshipment Operations	H	M	M
Local Service & Employment Needs for Transshipment Facility Installation	H	M	M
Economic Benefits of Transshipment Benefits	H	M	M
Governmental Responsibility for Pipeline Siting	M	M	L
Governmental Responsibility for Terminal Siting	M	H	L
Governmental Responsibility for Tanker Routing	M	L	L
Governmental Responsibility for Emergency Response	M	L	M

Additional Scenario Details

Marine terminals are most likely in the Grays Harbor or Long Beach areas.