

ALASKA LEGISLATURE SPECIAL COMMITTEE/SUBJECT FILES 8672
2918 SCOMM 128: HOUSE SPEC. COMM. ON OIL AND GAS, 2001-02 682



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1/22/2004
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SCOMM 128: HOUSE SPECIAL COMMITTEE ON OIL AND GAS, 2001-2002

MEMBERS:

REPRESENTATIVE SCOTT OGAN, CHAIR
REPRESENTATIVE MIKE CHENAULT
REPRESENTATIVE FRED DYSON
REPRESENTATIVE HUGH FATE
REPRESENTATIVE GRETCHEN GUESS
REPRESENTATIVE REGGIE JOULE
REPRESENTATIVE VIC KOHRING

Established by House Resolve No. 4, 2001.

Contents: 1' of files. 61 tapes are also available of meetings held 1/18/01 - 5/03/02.

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MICROFICHE #

1. 1/18//01, OVERVIEW - DIVISION OF OIL & GAS
2. 1/23&25/01, OVERVIEW - AOGA 7 SNAPSHOTS OF OIL & GAS IN ALASKA
3. 2/06/01, OVERVIEW - FOOTHILLS PIPE LINES LTD.
4. 2/08/01, OVERVIEW - NORTH AMERICAN NATURAL GAS PIPELINE
5. 2/15/01, OVERVIEW - ALYESKA PIPELINE SERVICE COMPANY
6. 2/15/01, OVERVIEW - JOINT WITH SENATE AND HOUSE RESOURCES - SHIGERU MURAKI
7. 2/27/01, OVERVIEW - ALASKA NORTH SLOPE LNG PROJECT
8. 3/13/01, OVERVIEW - TRADING HUB FOR ANS GAS
9. 3/23/01, CONFIRMATION - AOGCC - JULIE HEUSSER
10. 3/23/01, OVERVIEW - AOGCC
11. 3/23/01, OIL AND GAS SUBCOMMITTEE REPORT; FEASIBILITY OF NATURAL GAS DISTRIBUTION TO THE YUKON RIVER VALLEY AND ITS APPLICABILITY TO OTHER RURAL AREAS

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12. 4/06/01, OVERVIEW - BACKBONE
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KONRAD; EXXON-MOBIL - JOE MARUSKACK
14. 1/17&24/02, OVERVIEW - DIVISION OF OIL & GAS
STATE OFFERING TO SELL ROYALTY GAS
15. 1/29/02, OVERVIEW - EVERGREEN RESOURCES, INC.
16. 2/21/02, OVERVIEW - ANDARKO PETROLEUM
CORPORATION
17. 2/26/02, OVERVIEW - ANDEX
18. 3/14/02, OVERVIEW - YUKON PACIFIC CORPORATION
19. 3/22/02, OVERVIEW - XTO ENERGY
20. 4/05/02, OVERVIEW - OIL AND GAS INCENTIVES
21. HB 9
22. HB 38
23. HB 83
24. HB 190
25. HB 220
26. HB 302
27. HB 307
28. HB 308
29. HB 410
30. HB 423
31. HB 439
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33. HB 527
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- 35. HJR 7
- 36. HJR 44
- 37. SB 76
- 38. SB 121
- 39. SB 143
- 40. SB 156
- 41. SB 158
- 42. SB 164
- 43. SB 308
- 44. SB 319
- 45. SB 343

SCOMM

128:1

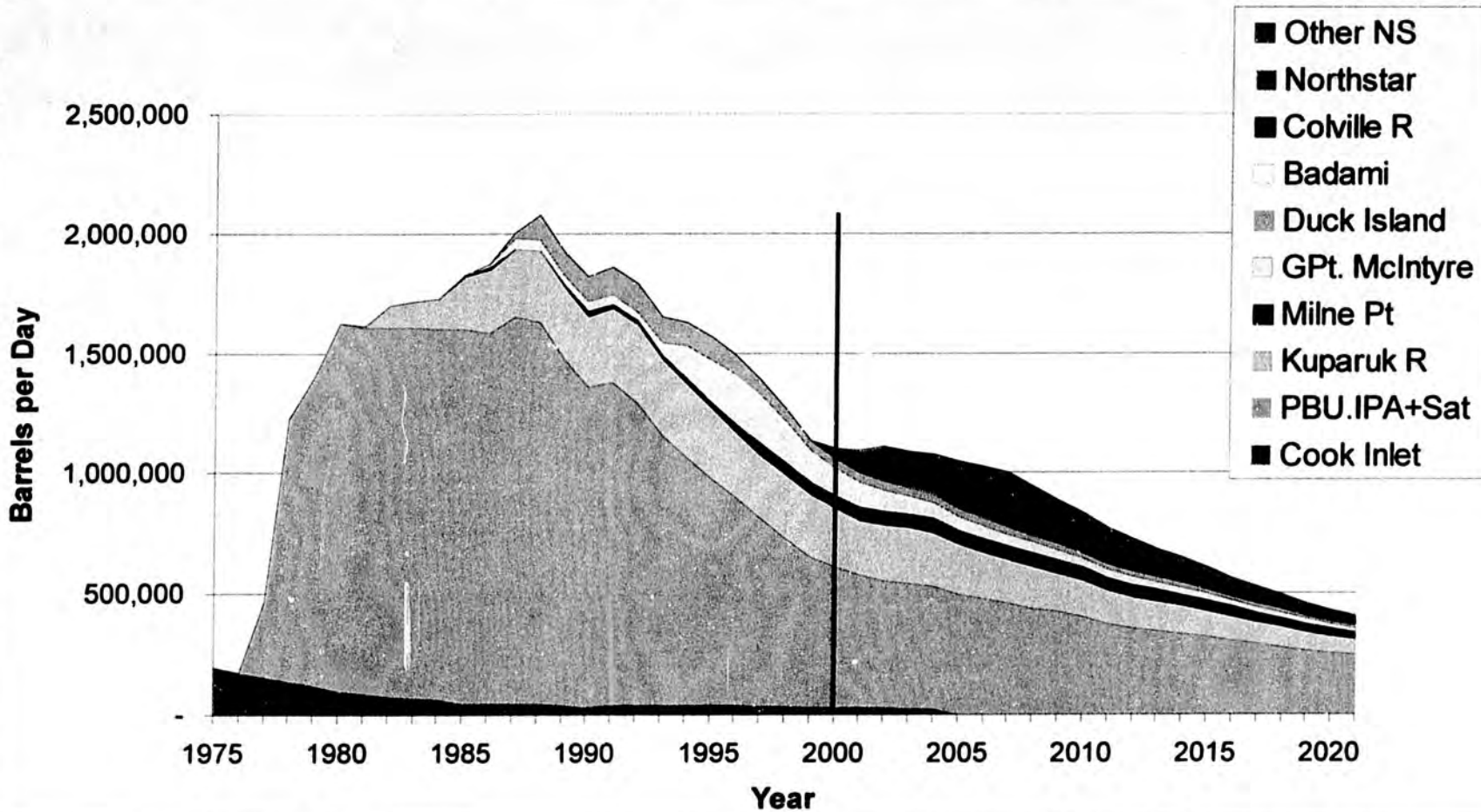
Division of Oil and Gas
January 2001



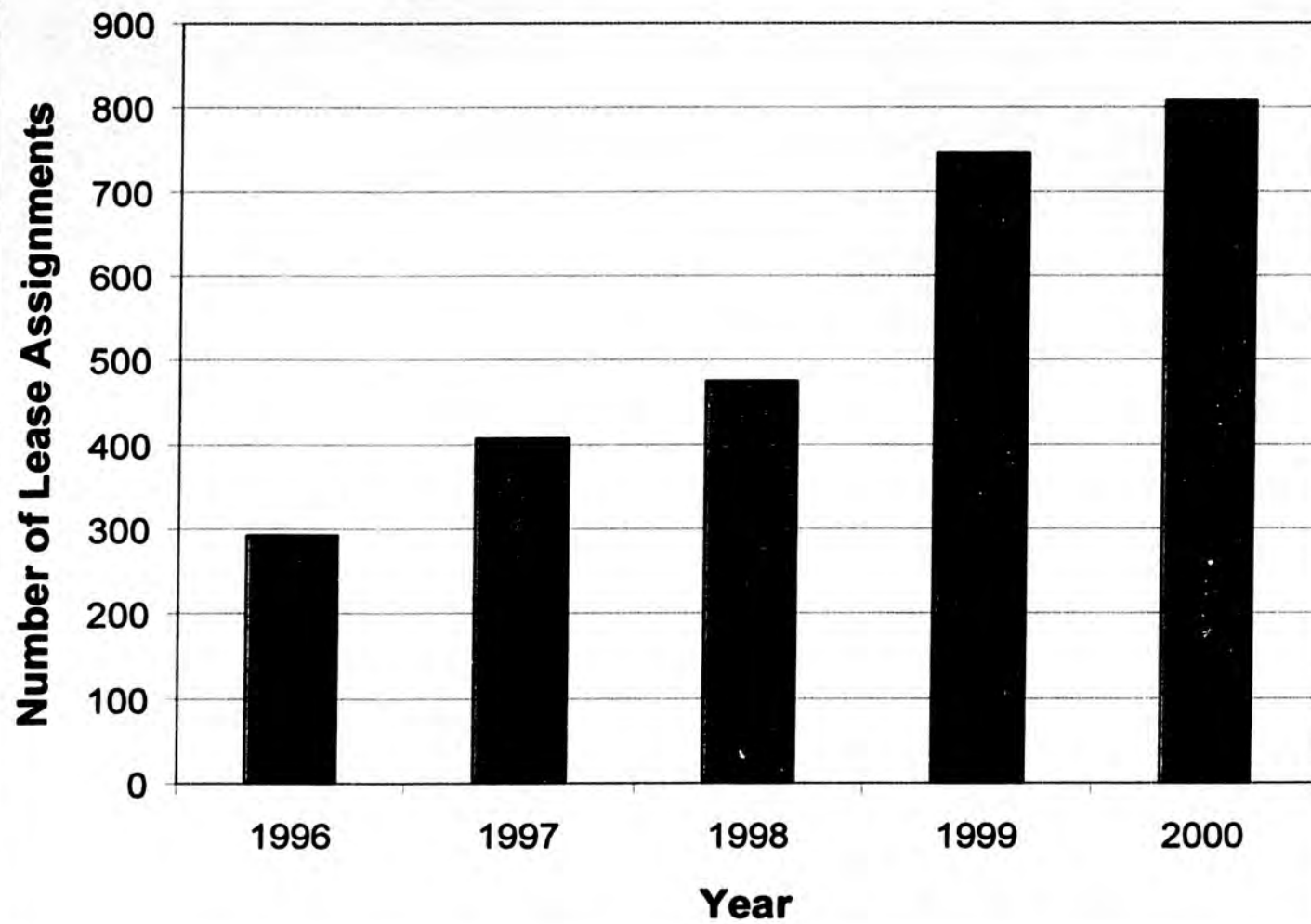
Alaska Department of
**Natural
Resources**

<http://www.dnr.state.ak.us/oil/products/data/data.htm>

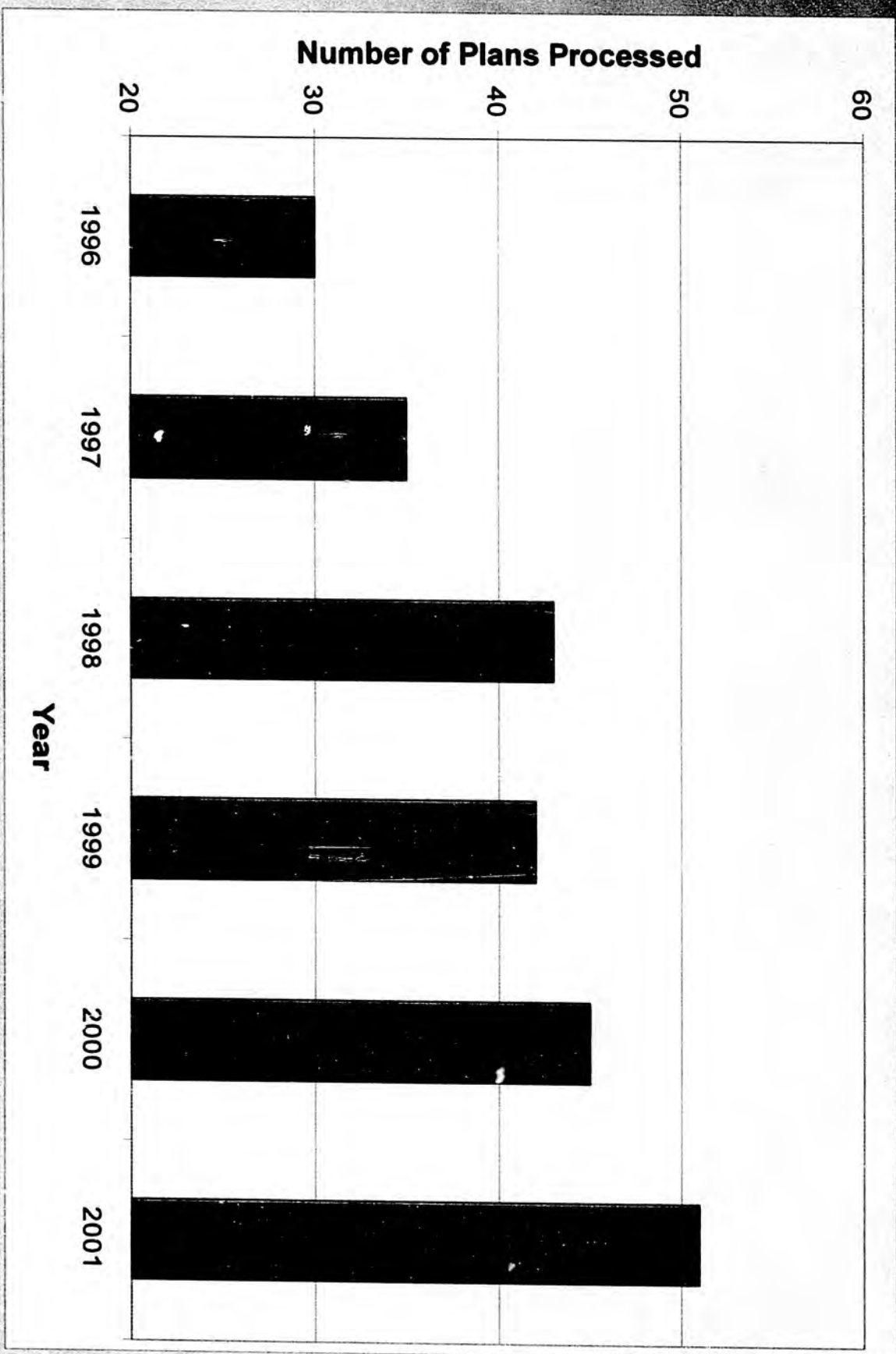
1973-2021



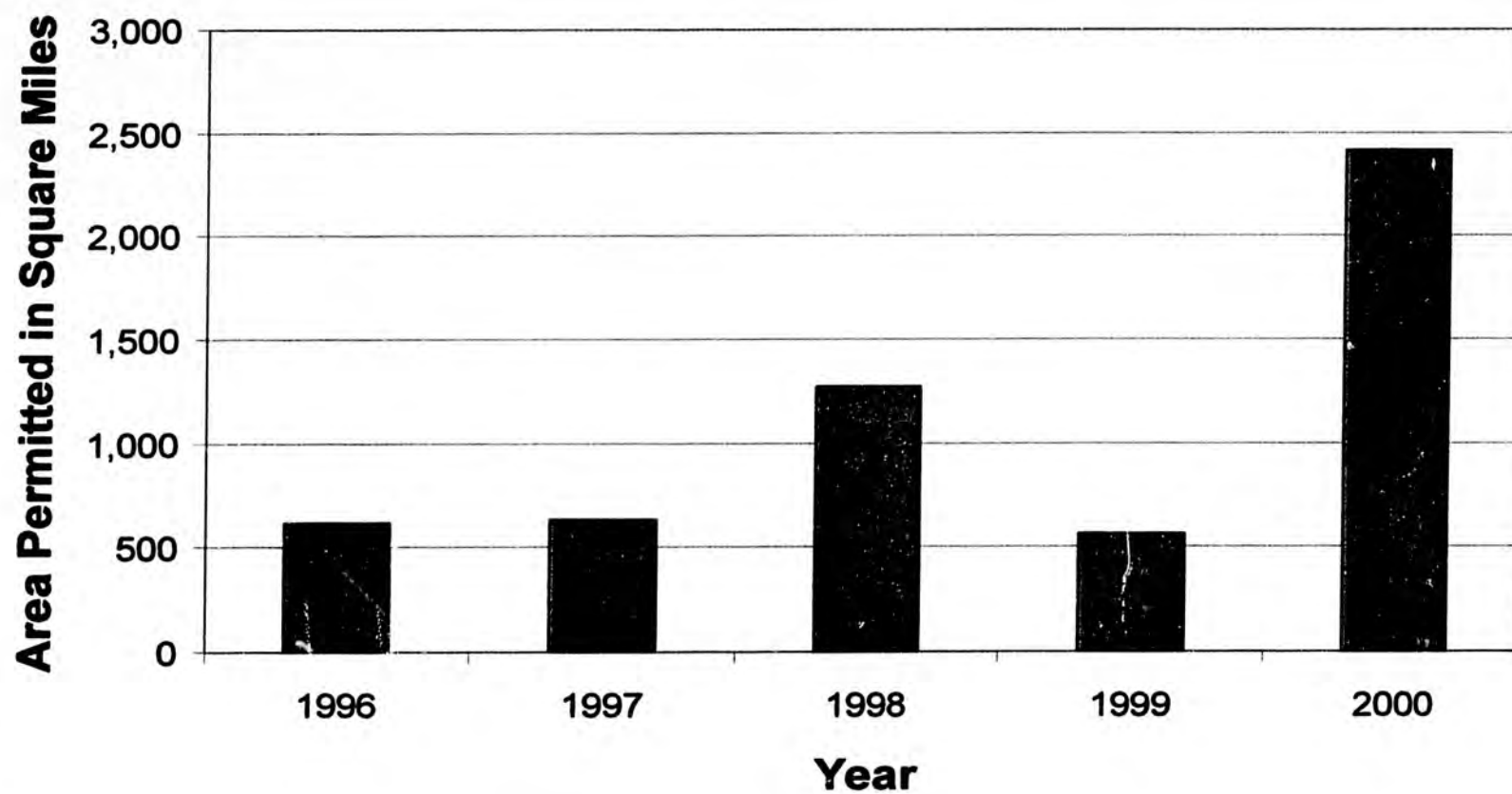
Lease Assignments in Alaska

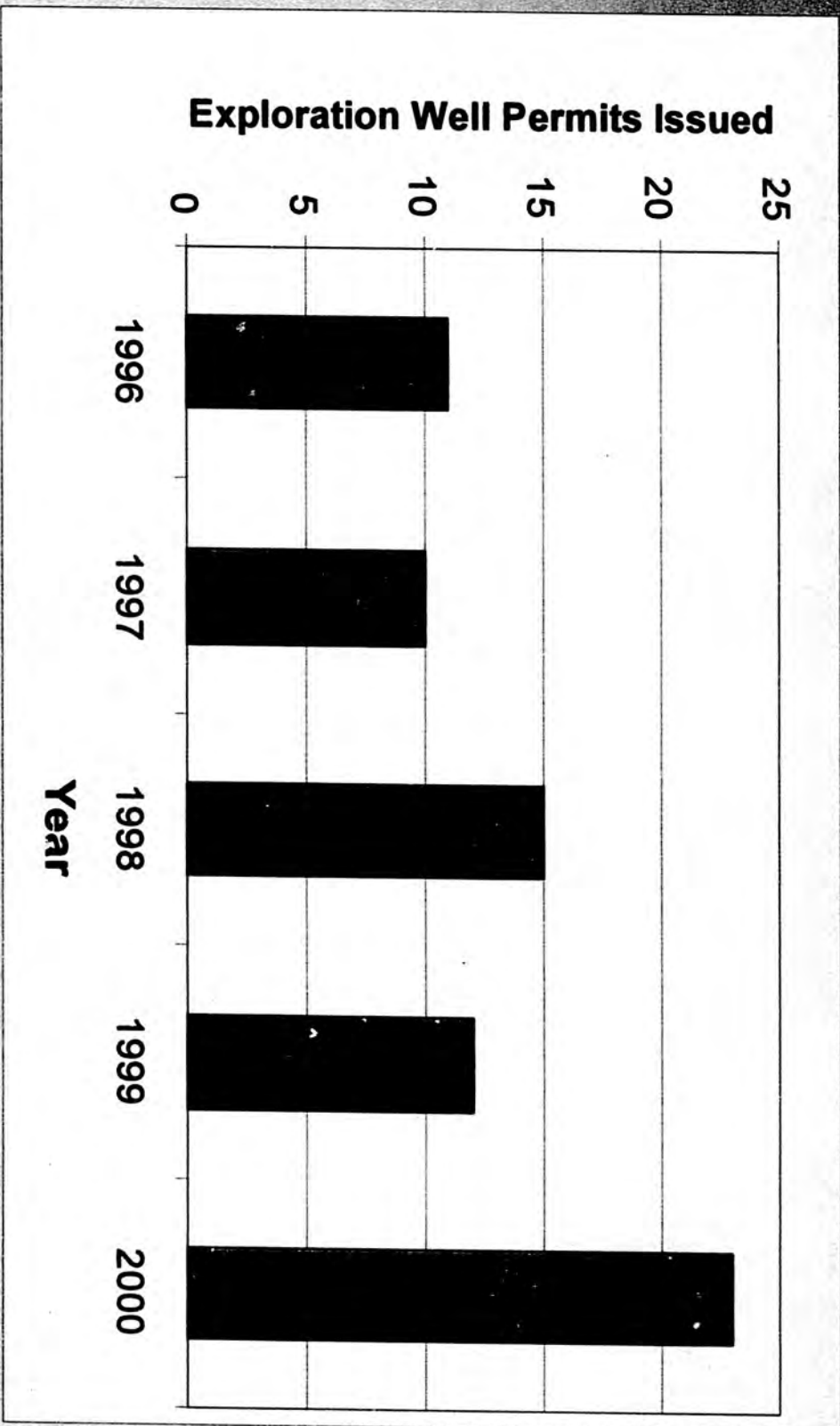


Plans of Development / Exploration



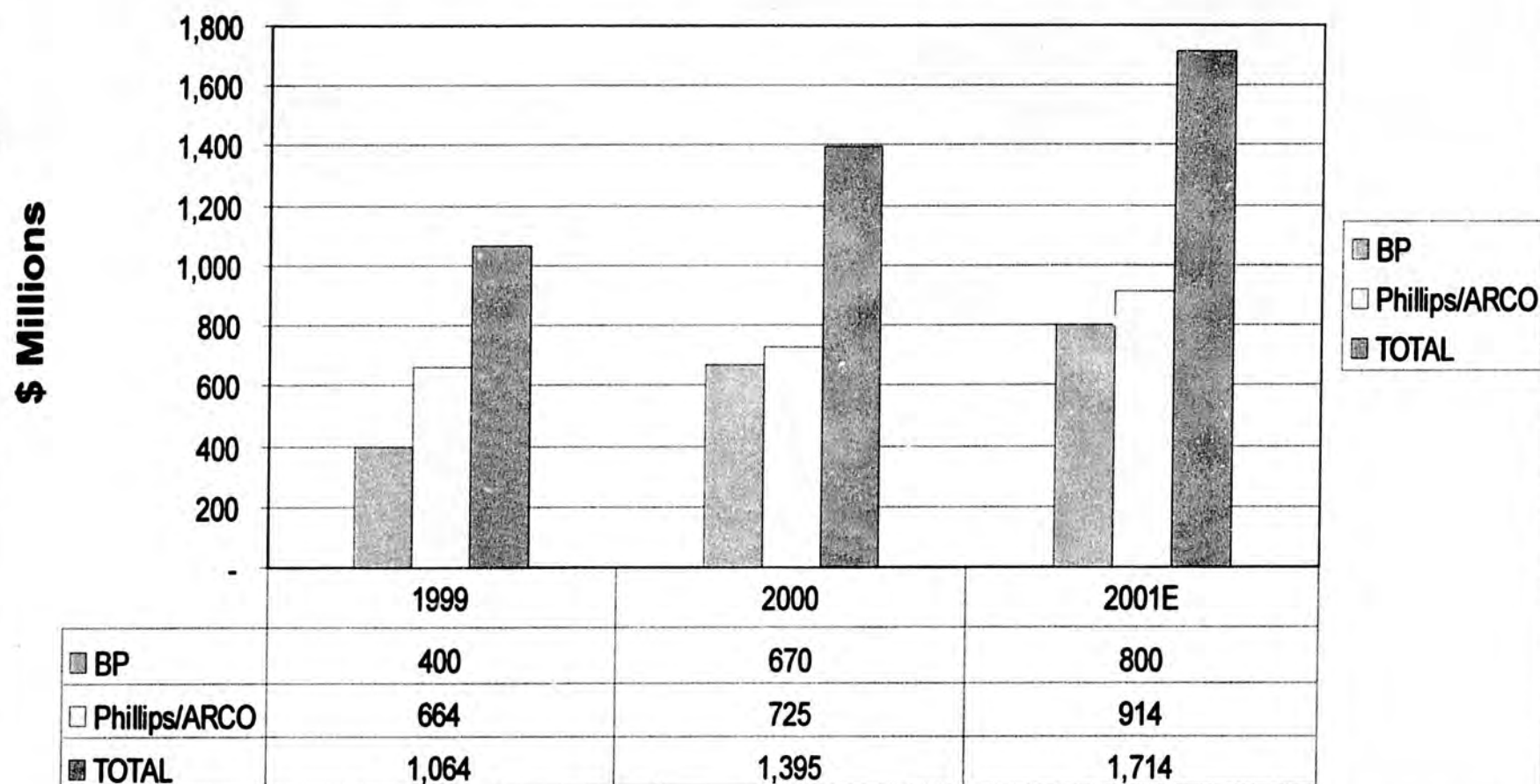
3-D Seismic Survey Miles in Alaska





Oil Industry Capital Spending In Alaska

BP and Phillips/ARCO Net Capital Spending in Alaska, 1999-2001



Elements of Successful Exploration

■ Source Rock

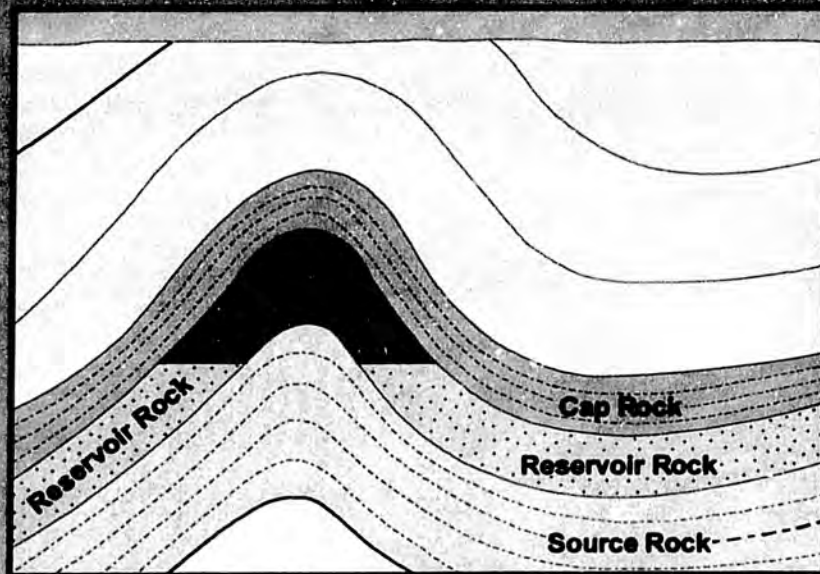
■ Generation

■ Migration

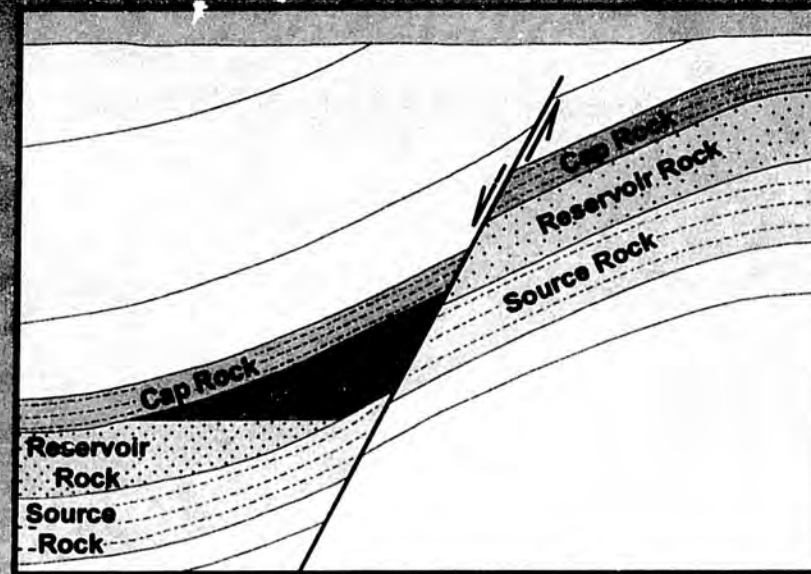
■ Reservoir Rock

■ Trap

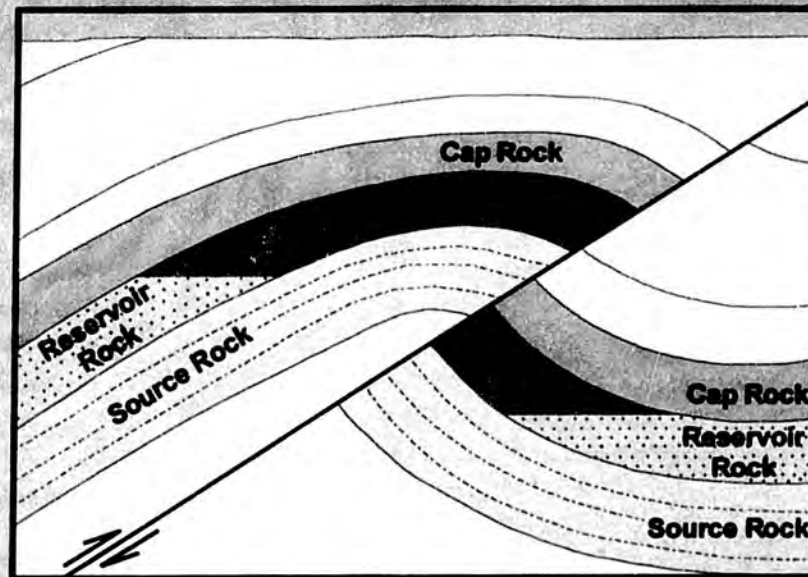
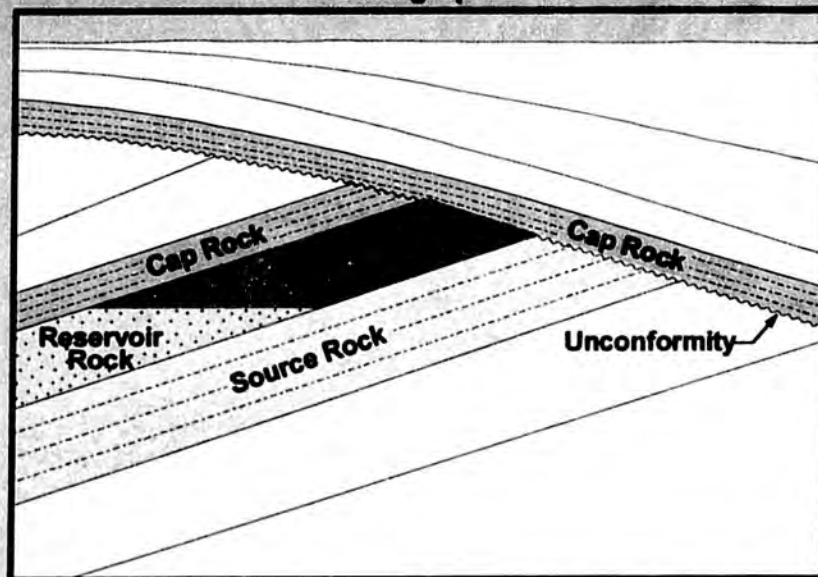
■ Seal



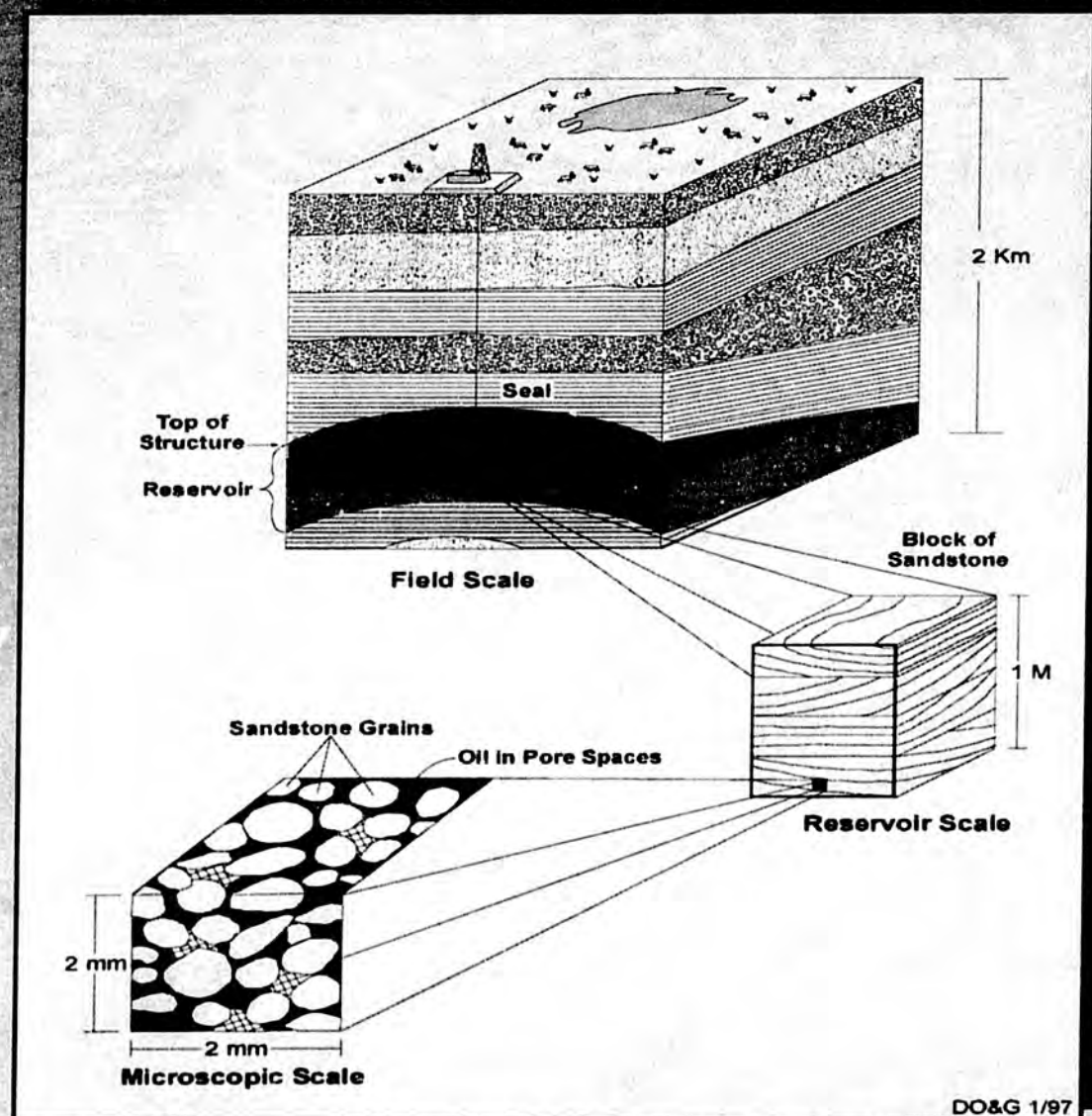
Stratigraphic

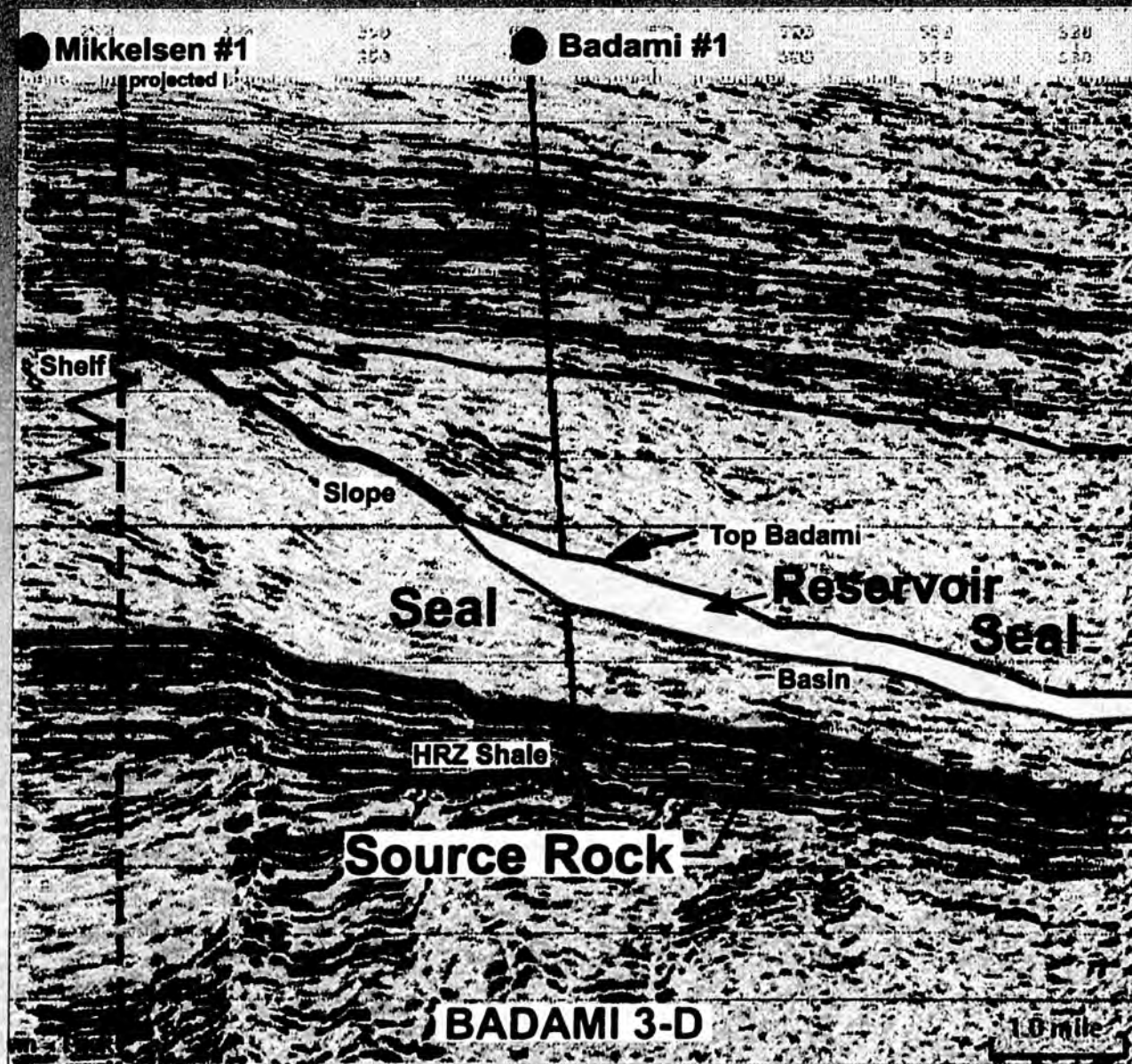


Thrust Fault



Oil in Sandstone Reservoirs Viewed at Different Scales



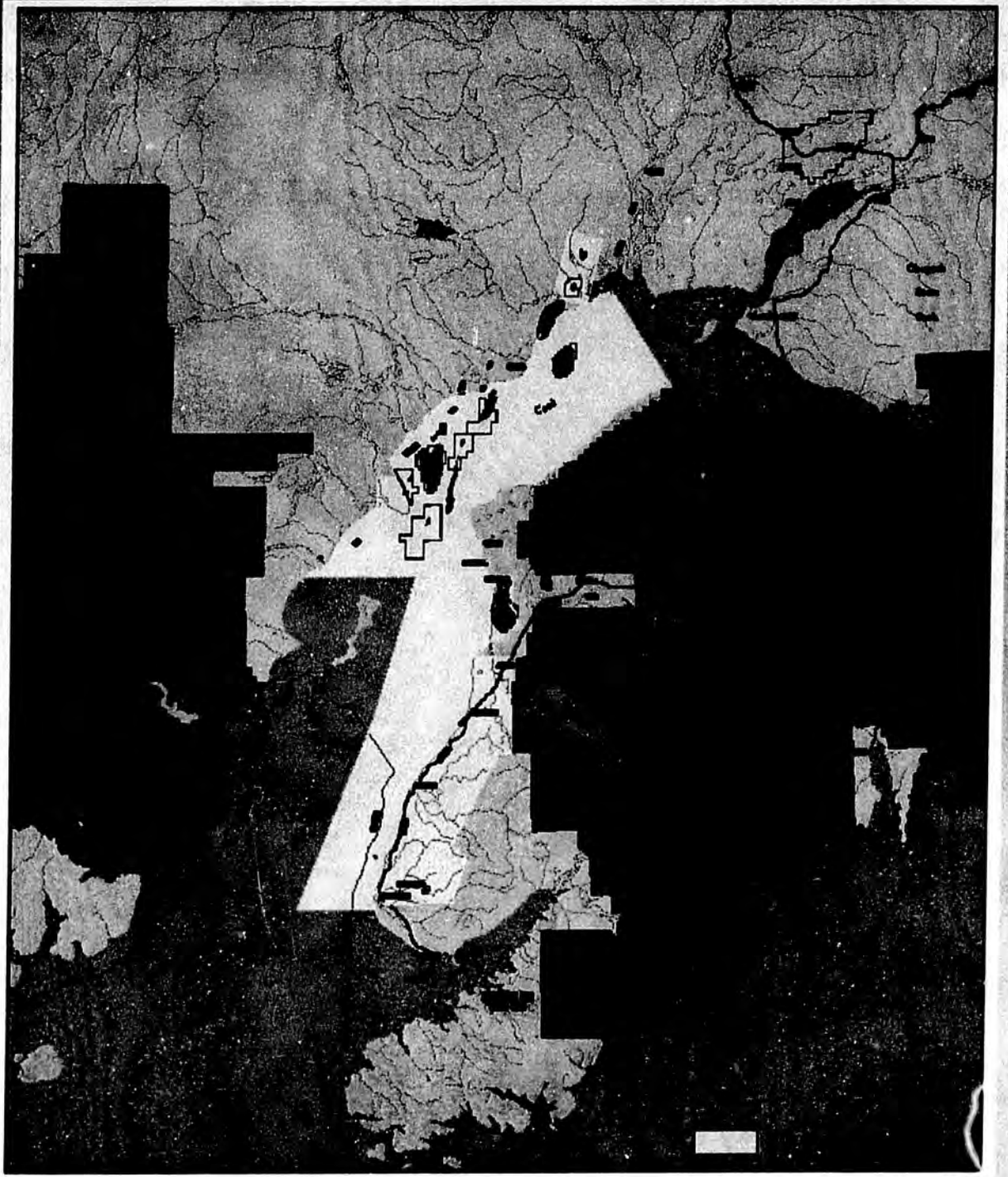


Submarine Fan Badami Depositional Model

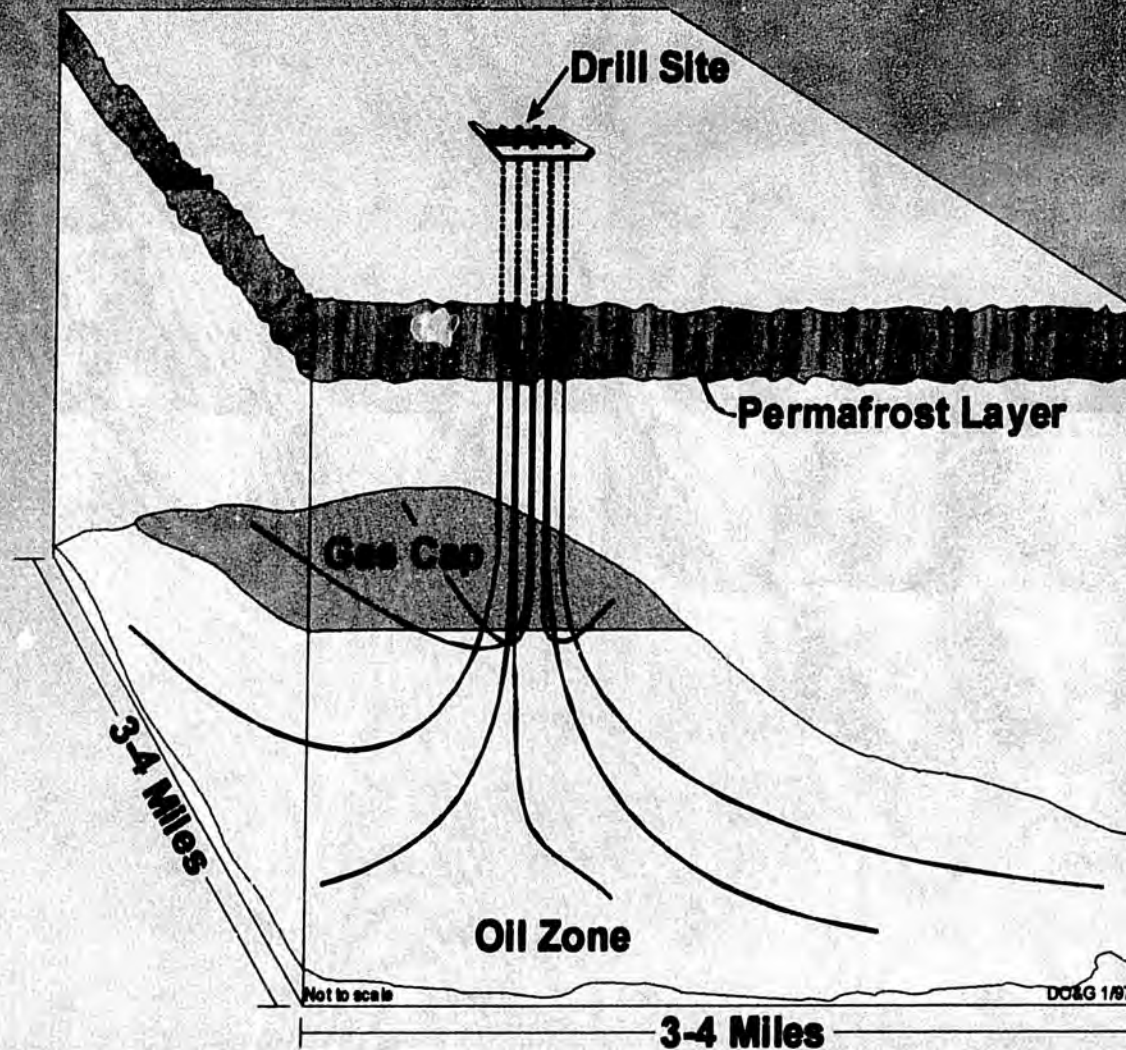




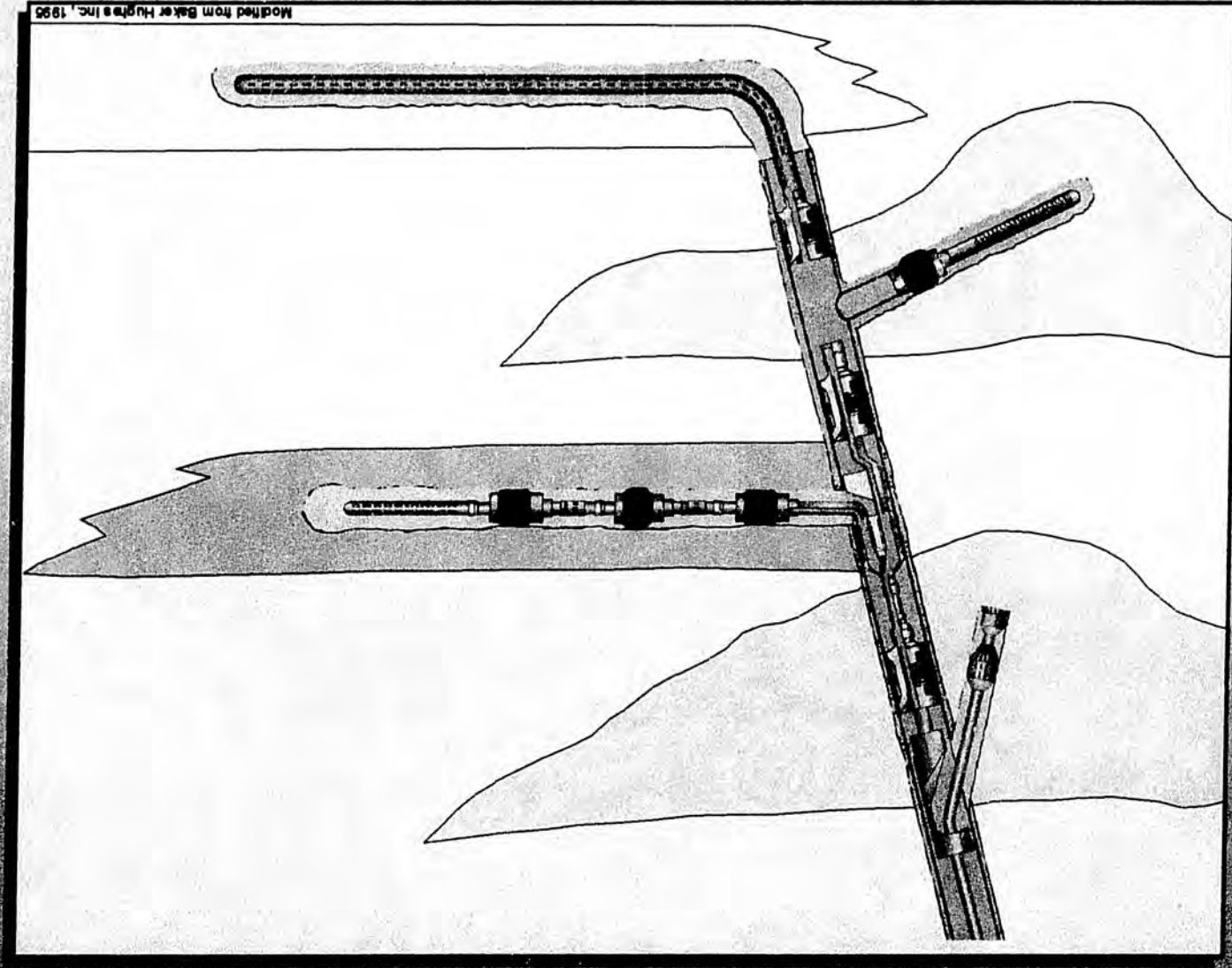
Survey Areas



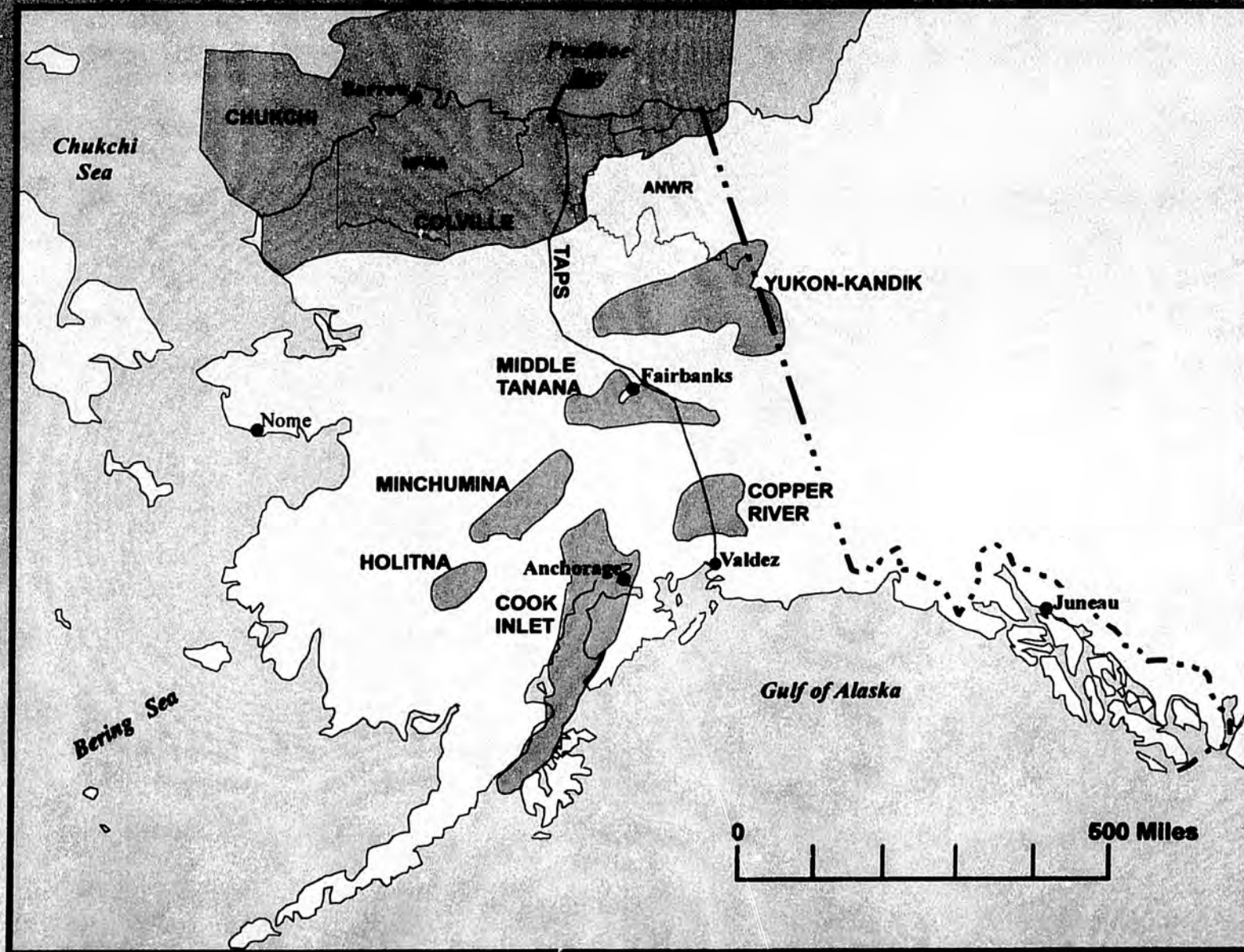
3-D View of North Slope Development Pad



Multi-Lateral Wellbore Completions



Alaska's Oil and Gas Reserves



1,200 m of Tertiary cover

- Basin structural style – Intermontane foreland
- No. of exploration wells drilled – Eleven
- Identified plays – Anticlines in Jurassic through Cretaceous clastics and carbonates, Tertiary coalbed gas
- Reservoirs – Naknek, Nelchina, and lower Matanuska formations
- Source – Mid-Jurassic marine shales, marine McCarthy Fm. shale and limestone, lower Matanuska Fm. shales
- Reported oil and gas shows – Minor oil and gas shows, more significant gas shows from Cretaceous in two wells
- Comments – Thick Cretaceous flysch, thin Tertiary cover

CORRECTION

**THE FOLLOWING DOCUMENT(S)
HAVE BEEN REFILMED TO
ASSURE LEGIBILITY OR PAGINATION**



Central Microfilm Services
Department of Education & Early Development
State of Alaska

Copper River Basin Petroleum Geology

- Area – 13,200 km²
- Basin fill – 2,700 m of Middle Jurassic through early Cretaceous sediments, 4,300 m of Early and Late Cretaceous flysch, and 1,200 m of Tertiary sediment
- Basin structural style – Intermontane lowland
- No. of exploration wells drilled – Eleven
- Identified plays – Anticlines in Jurassic through Cretaceous clastics and carbonates, Tertiary coalbed gas
- Reservoirs – Naknek, Nelchina, and lower Matanuska formations
- Source – Mid-Jurassic marine shales, marine McCarthy Fm. shale and limestone, lower Matanuska Fm. shales
- Reported oil and gas shows – Minor oil and gas shows, more significant gas shows from Cretaceous in two wells
- Comments – Thick Cretaceous flysch, thin Tertiary cover

Areawide Lease Sales

North Slope

- **3 Sales Held: 1998, 1999 & 2000**
- **1.4 Million Acres Leased**
- **\$65 Million in Bonus Bids**
- **1.9 Million Acres Under Lease**
- **6 Sales Proposed Over Next 5 Years**

Cook Inlet

- **2 Sales Held: 1999 & 2000**
- **215,000 Acres Leased**
- **\$2.3 Million in Bonus Bids**
- **716,000 Acres Under Lease**
- **5 Sales Proposed Over Next 5 years**

Beaufort Sea

- **1 Sale Held: 2000**
- **33,900 Acres Leased**
- **\$440,000 in Bonus Bids**
- **839,000 Acres Under Lease**
- **5 Sales Proposed Over Next 5 Years**

Oil and Gas Lease Sales: Major Issues

Cook Inlet

- **Beluga Whale Habitat**
 - Leasing deferred on 136 tracts
 - Cannot lease deferred tracts without court approval
 - Waiting for NMFS to develop a conservation plan

Beaufort Sea

- **Bowhead Whales**
 - Leasing deferred on 57 tracts
- **Oil & Gas Transportation -- ANWR & portions of NPRA off limits**
- **Oil Spill Cleanup during periods of broken ice**

Shallow Natural Gas Leasing

Statewide Program

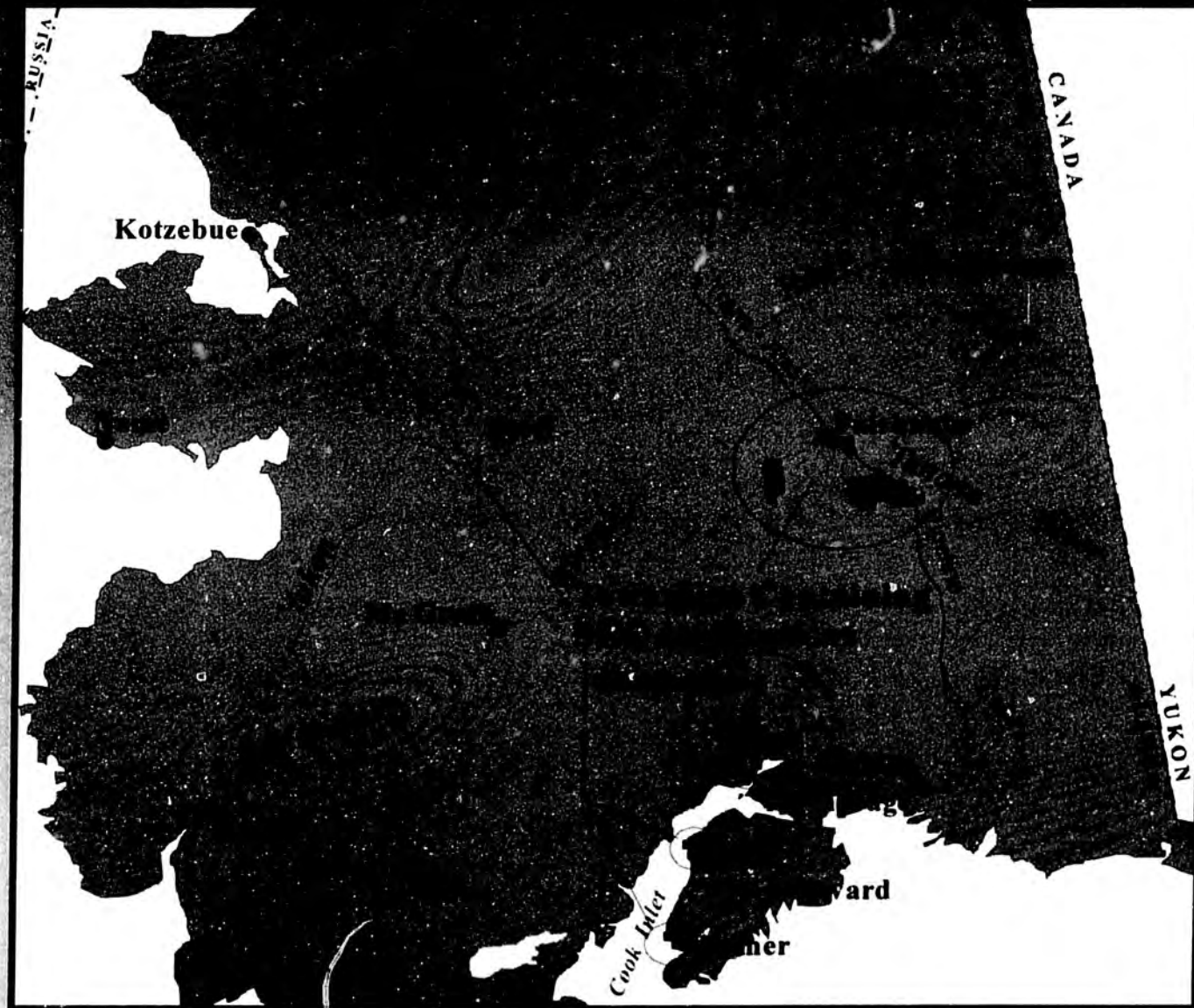
- **Allows drilling down to a depth of 3000 ft.**
- **Excludes areas included in Oil & Gas Leasing Program**
- **Purpose**
 - **Provide energy supply to rural areas**
 - **Encourage exploration in remote areas**
 - **Supplement declining Cook Inlet reserves**

Incentives

- **Reduced rents -- 50 cents/acre**
- **Reduced royalty -- 6.25%**
- **First-come, first-served**
- **No bonus bid, \$500 application fee only**
- **Exempt from c-plan**
- **Exempt from Best Interest Finding**
- **Reduced financial responsibility requirement**
- **Exempt from waste discharge permit during drilling**

Applications to Date -- 302

- **Northwest Arctic - 8 (Red Dog Mine)**
- **Interior - 100 (Nenana, Fairbanks, Big Delta)**
- **Railbelt - 194 (Talkeetna to Homer)**



Exploration Licensing

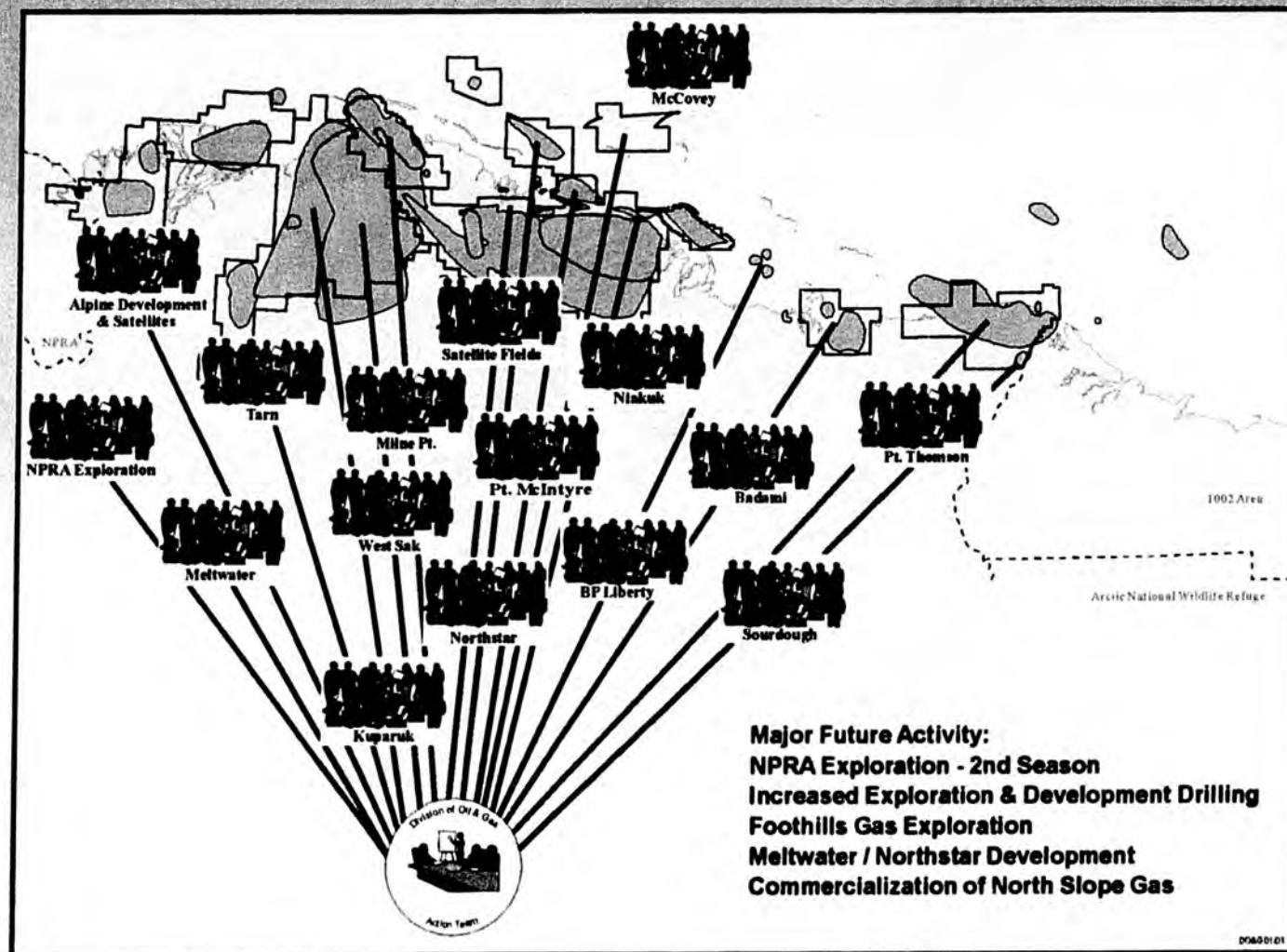
Issued -- Copper River Basin

- **State's first license: Issued October 1, 2000**
- **Anschutz Exploration Corp**
- **318,756 Acres**
- **Exploration commitment: \$1.42 million**
- **Term of license: 5 years**

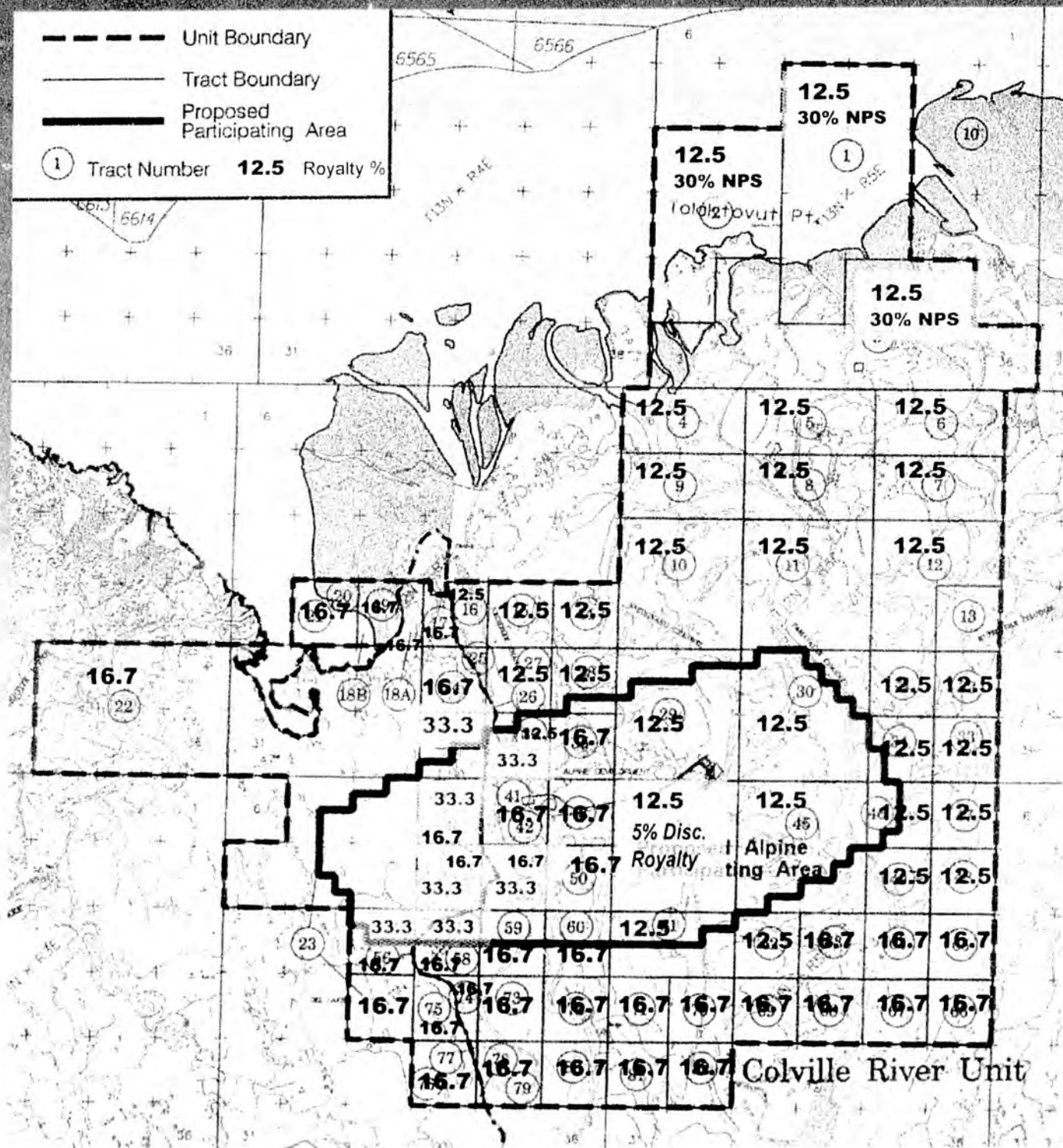
Proposed -- Susitna Valley

- **Forest Oil Corp (Forcenergy Inc.) submitted two proposals**
- **474,240 Acres each, located west of the Susitna River**
- **Exploration commitment for each: \$3 million**
- **DNR will determine terms of licenses & final configurations**
- **Preliminary Best Interest Finding (BIF) to be issued in April**
- **Final BIF and Decision to be issued in October**

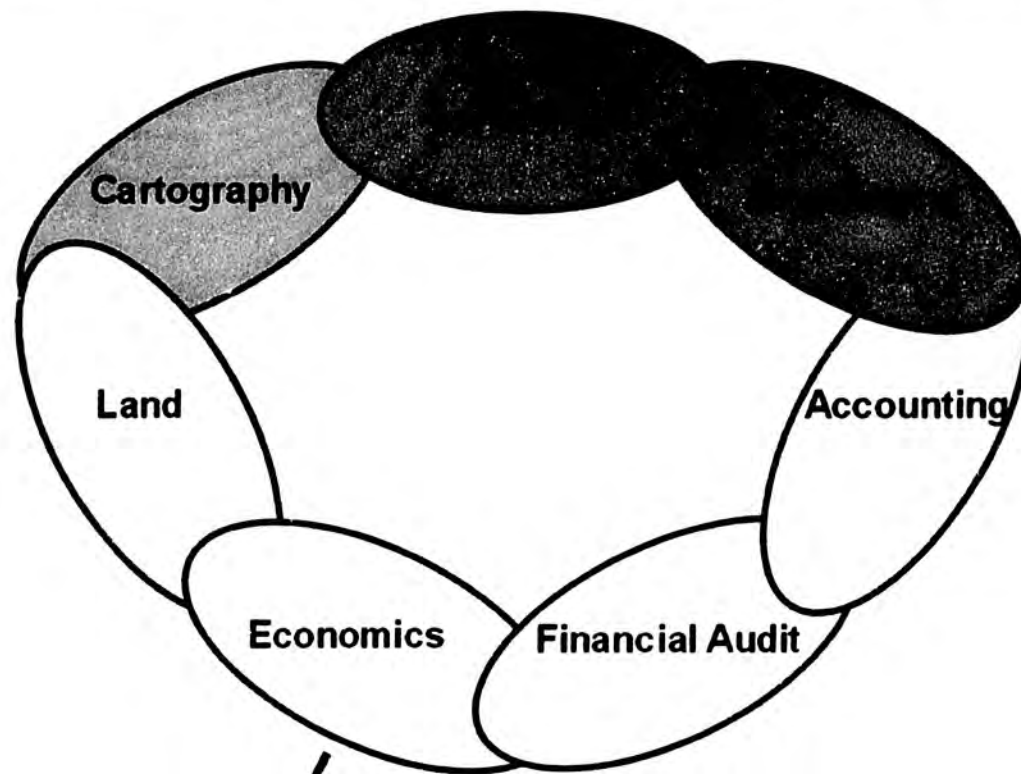
Invigorated Oil & Gas Industry Company Asset Teams Inundate Division



Colville River Unit Royalty Rates and Lease Terms



Division of Oil and
Gas Organization
Links Affect the
Bottom Line

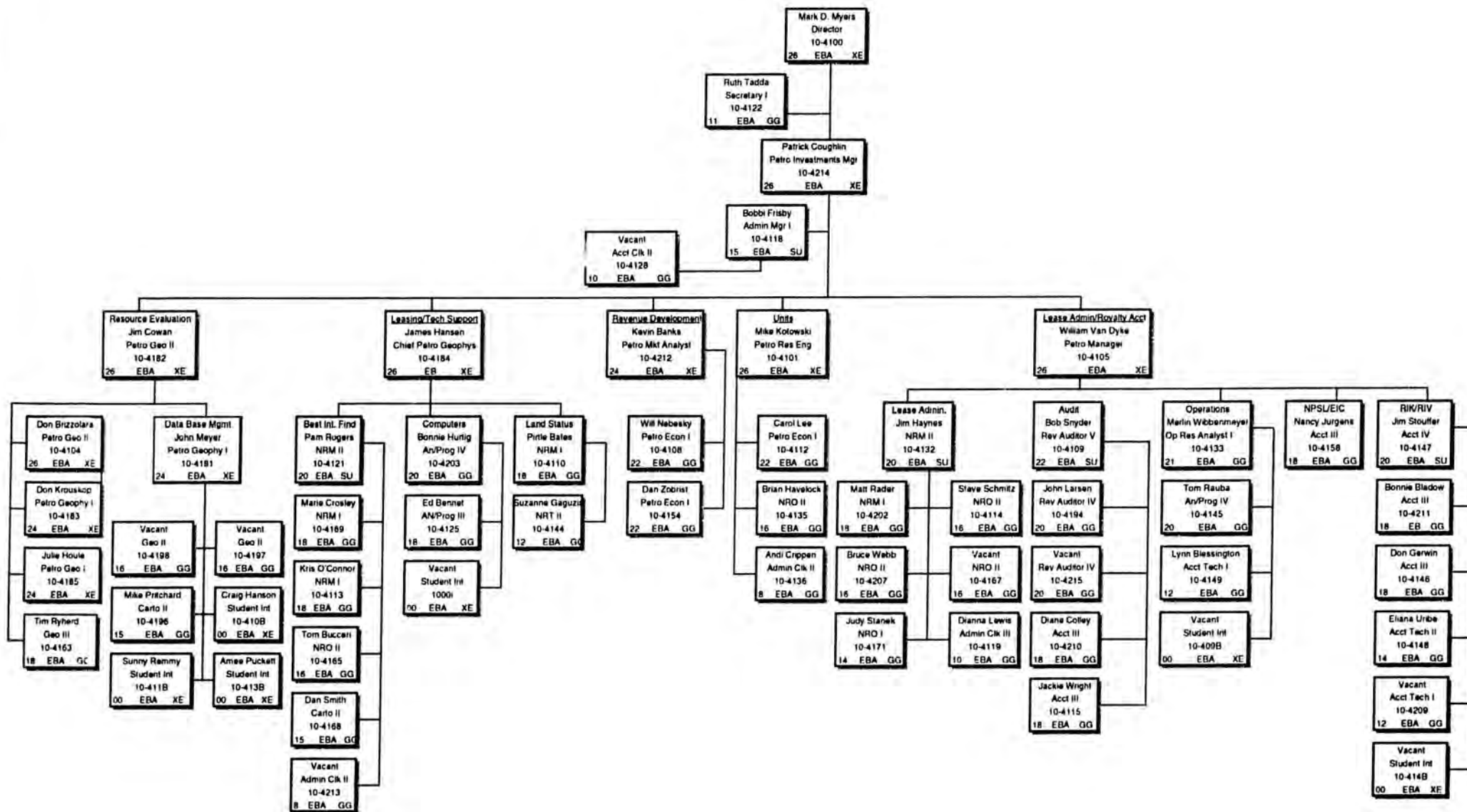


Oil and Gas Unit
and Participating
Area Decisions

→ **Royalty \$\$**

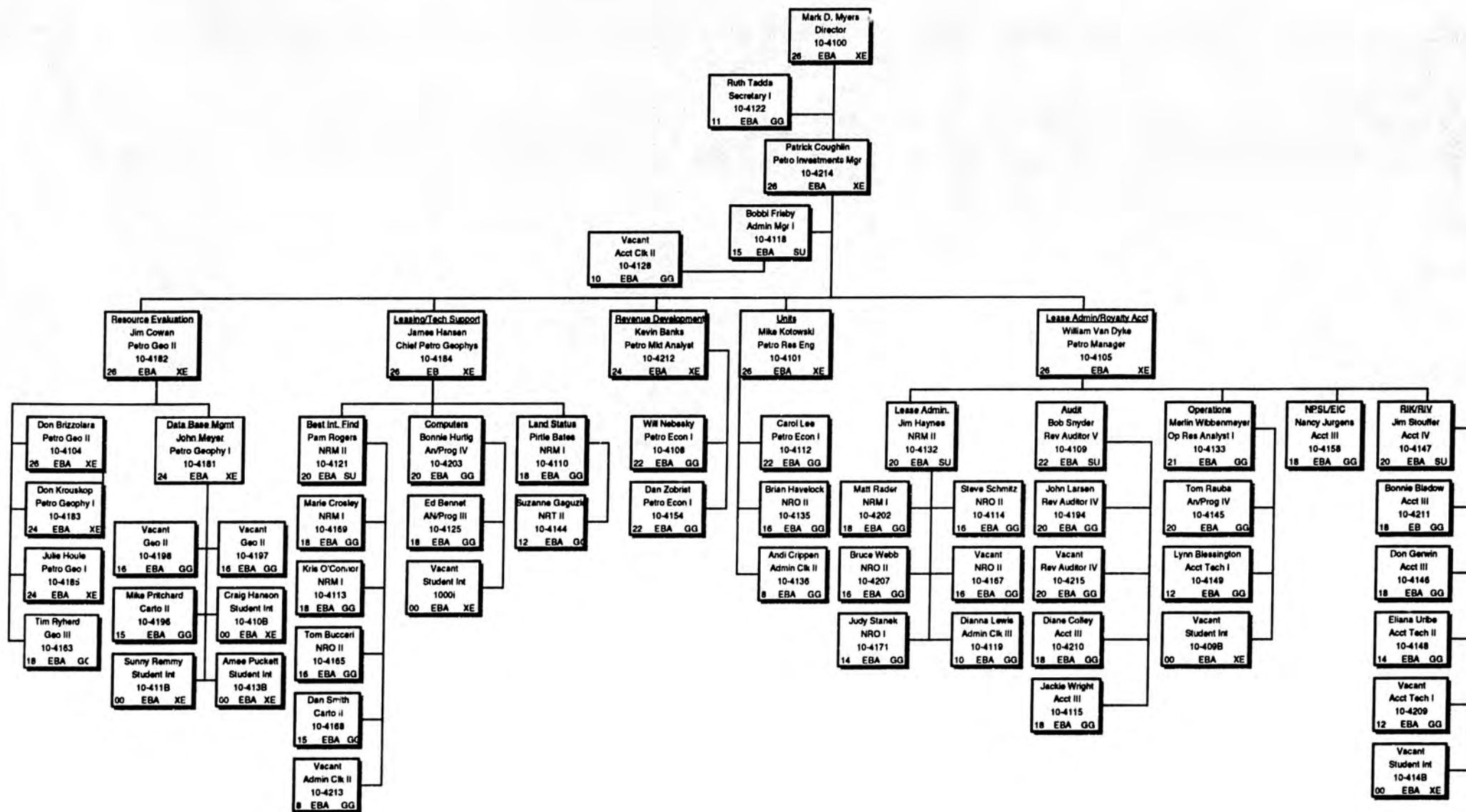
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS



DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS



State-Federal Comparison Activity, Staffing and Budgets for Oil and Gas Agencies⁽¹⁾

	<u>State DO&G</u>	<u>Federal</u> ⁽²⁾
Active Leases	1,202	171
Active Units	30	11
Producing Leases	320	38 ⁽³⁾
Annual Oil Production ...	462.6 mmbbls	1.0 mmbbls ⁽⁴⁾
Number of Employees	53	87 ⁽⁵⁾
Annual Budget	\$4.3	\$8.4 million

(1) all figures based on 1999 data

(2) combines MMS and BLM; does not include federal royalty accounting group in Denver

(3) all producing leases are in Cook Inlet, mostly gas production

(4) million barrels

(5) includes 80 MMS employees and 7 BLM employees

MEMORANDUM
DEPARTMENT OF NATURAL RESOURCES

State of Alaska
DIVISION OF OIL AND GAS

TO: Ken Boyd
Director

DATE: January 8, 2001

FROM: Patrick J. Coughlin
Deputy Director

TELEPHONE: 269-8800

SUBJECT: Salaries

The division's senior level managers and technical staff are grossly undercompensated relative to their peers in industry and government. This low salary level has been noted by the legislature's own consultants. For example, a KPMG salary survey conducted for LB&A examined the salaries of 92 state jobs. It concluded that only two job classifications, one of which was the geologist classification, were compensated below market range. The legislature's privatization study noted that the division's senior level employees appeared to be undercompensated. Industry and government data demonstrate the low level of compensation. In order to attract and keep qualified personnel, we need to pay competitive salaries and we are not.

The following table compares the salaries of various senior employees within the division with their counterparts in industry and the local MMS office. The table illustrates the problem.

Location	Position	Base Salary	Bonus/Cola	Total	%(under)
Alaska	Director	93,384	0	93,384	na
MMS	Regional Director	100,000	33,000	133,000	-42
Industry Av	Manager (+20 yrs)	112,921	34,616	139,535	-49
Alaska	Engineer (+20 yrs)	90,012	0	90,012	na
MMS	Engineer (+20 yrs)	85,774	28,305	114,079	-27
Industry Av	Engineer(+20 yrs)	97,035	34,616	131,651	-45
Alaska	Geologist (+20 yrs)	75,036	0	75,036	na
MMS	Geologist (+20 yrs)	72,586	23,953	96,539	-29
Industry Av	Geologist (+20 yrs)	106,600	34,616	141,216	-88
Alaska	Economist (+18 yrs)	75,036	0	75,036	na
MMS	Economist (+18 yrs)	85,774	28,305	114,079	-52
Industry Av	Not Available				

The MMS figures are exact. The industry engineer and management salary and bonus are based on 1998 SPE data. The industry geology salary is based on 1999 AAPG data. The bonus is estimated using SPE data. The industry average figures are conservative because they do not include Alaska Cola paid by the most oil companies.



State of Alaska

Division of Oil and Gas

Department of Natural Resources

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Welcome to the Division

Mark D. Myers, Director

Welcome to the Division of Oil and Gas. Alaskans and computer users throughout the world have gained a new way to obtain information about the Division of Oil and Gas. I hope you will find this "home page" both useful and informative.

First let me introduce you to the Division of Oil and Gas. We are the agency within state government that is responsible for the leasing of state lands for oil and gas exploration. We do this by implementing innovative new programs to encourage exploration on state and private lands. We ensure the continued flow of state revenues through monitoring and auditing subsequent lease and unit agreement operations, including accounting for oil and gas rental and royalty payments and continuing to promote new opportunities for the sale of royalty oil and gas.

The Division's programs enable Alaskans to enjoy low taxes, continued growth of the Permanent Fund and direct and indirect employment as a result of oil and gas development and subsequent state and local spending.

The Division's "customers" are all of the residents of Alaska who benefit from the availability of oil and gas revenues for education, public safety, revenue sharing to communities, capital improvement projects, the Permanent Fund and other state and local programs.

The primary services of the Division of Oil and Gas are: (1) ensuring that promising oil and gas lands are made available for competitive leasing on a timely and predictable basis, and the state receives full value for the sale of these resources; (2) advancing innovative programs such as exploration licensing and expanded exploration incentive credits that will promote exploration and development on both state and private lands in frontier interior basins; (3) ensuring that all royalty, rental and bonus revenues due the state from leasing and production are received, and that shared federal royalties are properly received and allocated; (4) ensuring that the surface operations of lessees and permittees are conducted in an environmentally, socially, and economically sound manner; (5) advocating petroleum resource development throughout the state; (6) developing and advocating marketing strategies for Alaska oil and gas, including negotiating royalty oil purchase agreements with in-state refineries; and (7) providing technical and policy support on oil and gas issues for the DNR Commissioner's and Governor's office and Alaska's congressional delegation.



State of Alaska
Division of Oil and Gas
Department of Natural Resources

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Some State Statutes & Regulations
Related to Oil and Gas

[HOME PAGE](#)[WELCOME](#)[O&G STATUTES](#)[DEFINITIONS](#)

Statutes

Public Land

Authority and duties of the commissioner.

Sec. 38.05.020:

Powers and duties of the director.

Sec. 38.05.035:

Reservation.

Sec. 38.05.125:

Damages and posting of bond.

Sec. 38.05.130:

Applicability; Determination; Regulations.

Sec. 38.05.131:

Oil And Gas Exploration License.

Sec. 38.05.132:

License Procedures.

Sec. 38.05.133:

Conversion To Lease.

Sec. 38.05.134:

Leasing Generally; Payments And Interest.

Sec. 38.05.135:

Limitations.

Sec. 38.05.140:

Leasing Procedure.

Sec. 38.05.145:

Shallow Natural Gas Leases.

Sec. 38.05.177:

Oil and Gas Leasing.

Sec. 38.05.180:

Qualifications.

Sec. 38.05.190:

Deposits.

Sec. 38.05.860:

Assignment.

Sec. 38.05.920:

Notice.

Sec. 38.05.945:

Public Resources

Exploration incentive credits.

Sec. 41.09.010:

Duties and powers of Department of Natural Resources; limitations.

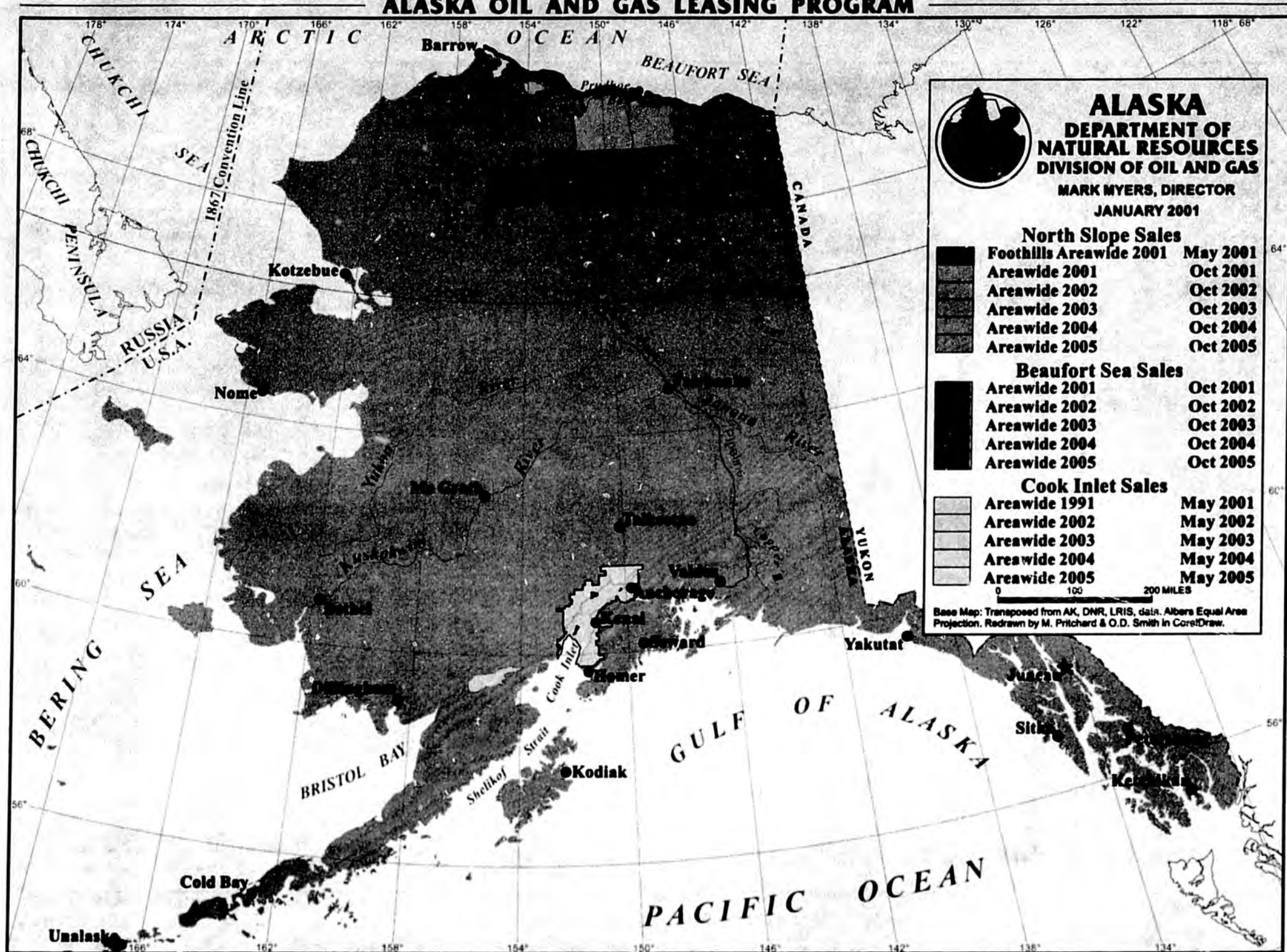
Sec. 41.21.020:

Regulations

Payment of O & G Royalties, Rents Competitive Bidding

and Bonuses.*Applicability.*11 AAC 04.010*Designated Payor.*11 AAC 04.020*Timing of Payments.*11 AAC 04.030*Supporting Documentation for Payments.*11 AAC 04.040*Methods of Payment; Payment Application.*11 AAC 04.050*Refunds and Credits.*11 AAC 04.060*Interest Payments.*11 AAC 04.070*Administrative Fee for Incomplete Royalty Reporting.*11 AAC 04.080*Waiver of Administrative Fee.*11 AAC 04.090*Appeal.*11 AAC 04.100*Definitions.*11 AAC 04.199**Fees For Departmental Services***Fees.*11 AAC 05.010**Mineral Leasing****Procedure***Qualifications.*11 AAC 82.200.*Statement Of Qualifications.*11 AAC 82.205.**Acreage Limitations***Chargeable Acreage.*11 AAC 82.300.*Statements.*11 AAC 82.305.**Unitization***Unit Plan Of Operations*11 AAC 83.346.*Certification Of Well Test Results.*11 AAC 83.361.**Exploration Incentive Credit***Exploration Incentive Credits.*11 AAC 83.800.**Practice and Procedure***Applicability.*11 AAC 88.100.*Applications.*11 AAC 88.105.*Withdrawal Of Applications.*11 AAC 88.110.*Parcels Offered For Competitive Lease.*11 AAC 82.400.*Method Of Bidding.*11 AAC 82.405.*Minimum Bid.*11 AAC 82.410.*Public Notice.*11 AAC 82.415.*Bid Form.*11 AAC 82.420.*Bid Deposit.*11 AAC 82.425.*Qualification Of Bidders.*11 AAC 82.428.*Joint Bids.*11 AAC 82.430.*Bids At Public Auction.*11 AAC 82.435.*Opening Bids, Holding Auctions.*11 AAC 82.440.*Incomplete Bids.*11 AAC 82.445.*Rejection Of Bids.*11 AAC 82.450.*Tie Bids.*11 AAC 82.455.*Additional Information.*11 AAC 82.460.*Bonus; Rental; Bond.*11 AAC 82.465.*Issuance Of Lease.*11 AAC 82.470.*Return Of Deposits.*11 AAC 82.475.**Miscellaneous Leasing Procedure***Bonding.*11 AAC 82.600.*Assignments.*11 AAC 82.605.*Permits Or Leases Segregated**By Partial Assignment.*11 AAC 82.610.*Application For Approval Of Assignment.*11 AAC 82.615.*Transfer By Death.*11 AAC 82.620.*Effective Date Of Assignments.*11 AAC 82.625.*Responsibility.*11 AAC 82.630.**General Oil and Gas Lease Provisions***Plan Of Operations.*11 AAC 83.158.*Failure To Pay Rental.*11 AAC 83.170.*Reinstatement.*11 AAC 83.175.**Miscellaneous Land Use***Operations; Drilling Permits*

ALASKA OIL AND GAS LEASING PROGRAM



01/01

SCOMM

128:2



SEVEN SNAPSHOTS OF OIL AND GAS IN ALASKA

presented to the

House Special Committee on Oil and Gas

by the

Alaska Oil & Gas Association

Snapshot #5

Permitting Requirements: Agency and Public Oversight

Randal G. Buckendorf

Counsel, Phillips Alaska, Inc.



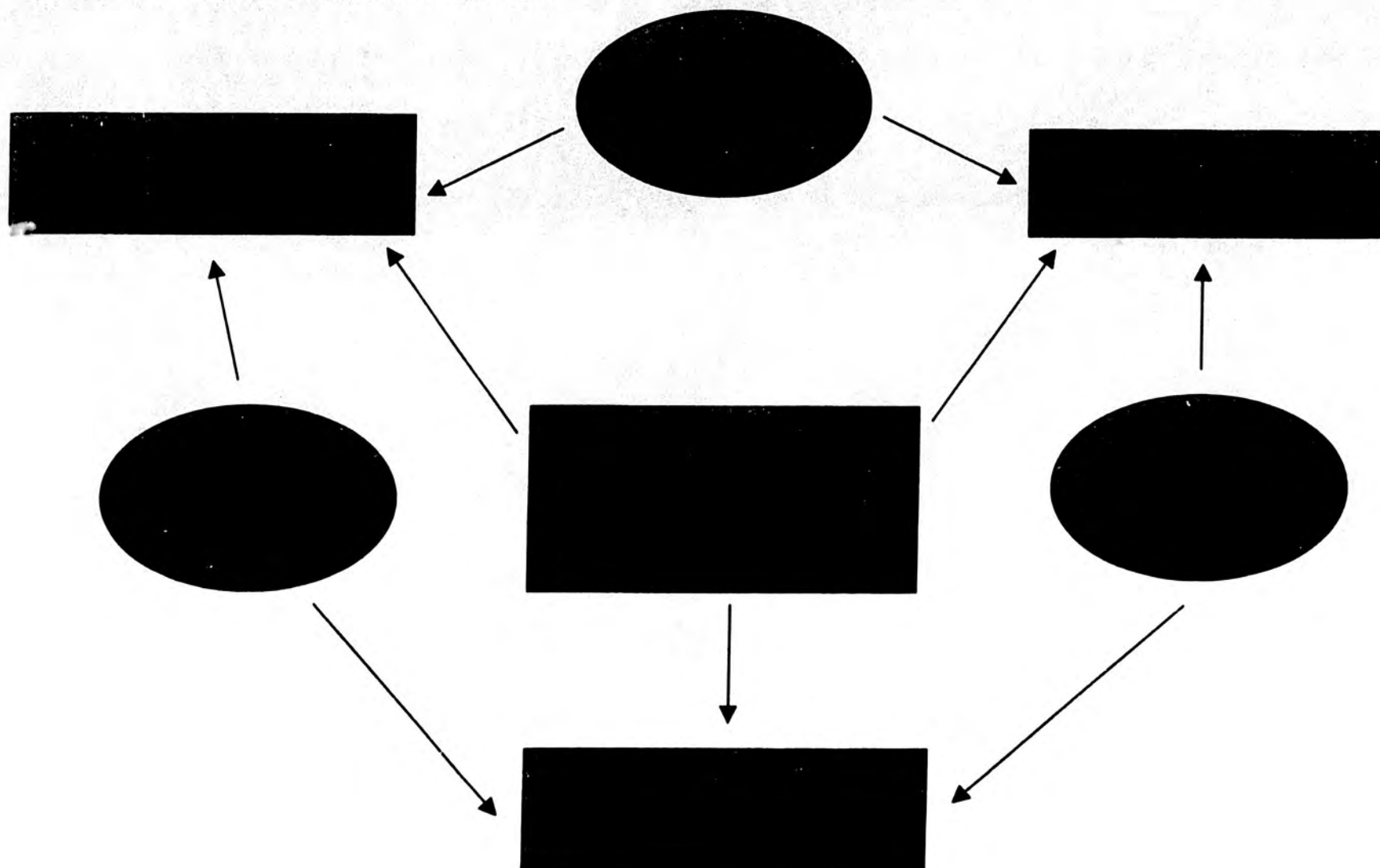
PHILLIPS Alaska, Inc.
A Subsidiary of PHILLIPS PETROLEUM COMPANY

BASIC STRUCTURE

- Complex system of interconnected jurisdiction
 - Federal
 - State
 - Local
- Overlapping requirements between agencies
- Multiple agencies for each substantive permit
- Complicated procedural requirements
 - NEPA
 - CZMA



PHILLIPS Alaska, Inc.
A Subsidiary of PHILLIPS PETROLEUM COMPANY





PHILLIPS Alaska, Inc.
A Subsidiary of PHILLIPS PETROLEUM COMPANY

SUBSTANTIVE PERMITS

AIR



EPA and ADEC

WATER



EPA, COE, ADEC, DNR, ADF&G, and AOGCC

- Surface discharge
- Underground discharge
- Use
- Placement of gravel

WASTE



EPA, ADEC, and AOGCC

- Site cleanup
- Underground discharge
- Spill reporting
- Hazardous wastes

WILDLIFE



COE, USFW, ADF&G, and NMFS



PHILLIPS Alaska, Inc.
A Subsidiary of PHILLIPS PETROLEUM COMPANY

PROCEDURAL

FEDERAL  **NEPA**

- Environmental Assessment
- Environmental Impact Statement

STATE/FEDERAL  **CZMA**

- ADGC

Minimal Impact Development

NORTH SLOPE DRILLING & CONSTRUCTION ACTIVITY

1



The first phase of the project is the construction of a road to the drilling site. This road will be used to transport equipment and materials to the site. The road will be constructed in a way that minimizes impact on the environment.

The second phase of the project is the drilling of the well. This will be done using a rotary drilling rig. The rig will be positioned on the road and will drill a hole into the ground. The hole will be lined with casing to prevent collapse.

The third phase of the project is the completion of the well. This will involve the installation of a pumpjack to lift the oil from the well. The pumpjack will be connected to the well by a long pipe. The pumpjack will be powered by a diesel engine.

The fourth phase of the project is the construction of a storage tank. This tank will be used to store the oil produced from the well. The tank will be constructed of steel and will be painted to prevent rust.

The fifth phase of the project is the construction of a pipeline. This pipeline will be used to transport the oil from the storage tank to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

The sixth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The seventh phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

The eighth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The ninth phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

The tenth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The eleventh phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

The twelfth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The thirteenth phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

The fourteenth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The fifteenth phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

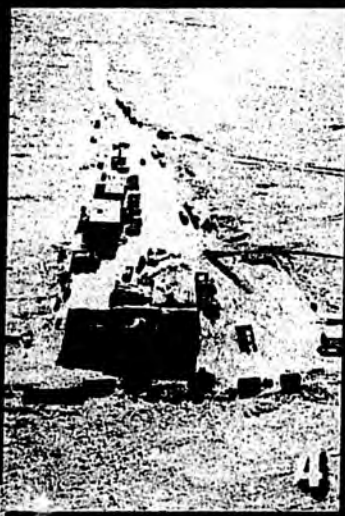
The sixteenth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The seventeenth phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

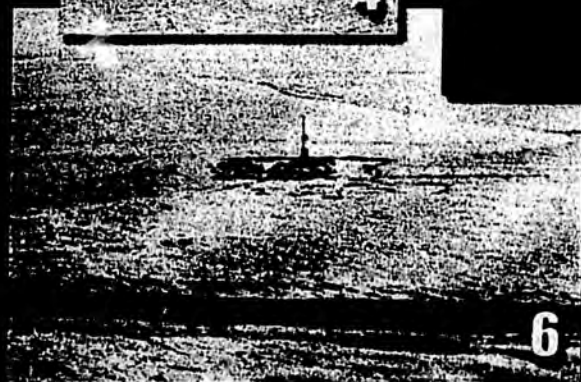
The eighteenth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.

The nineteenth phase of the project is the construction of a pipeline to the market. This pipeline will be used to transport the oil from the market to the refinery. The pipeline will be constructed in a way that minimizes impact on the environment.

The twentieth phase of the project is the construction of a road to the refinery. This road will be used to transport the oil from the refinery to the market. The road will be constructed in a way that minimizes impact on the environment.



4



6

3



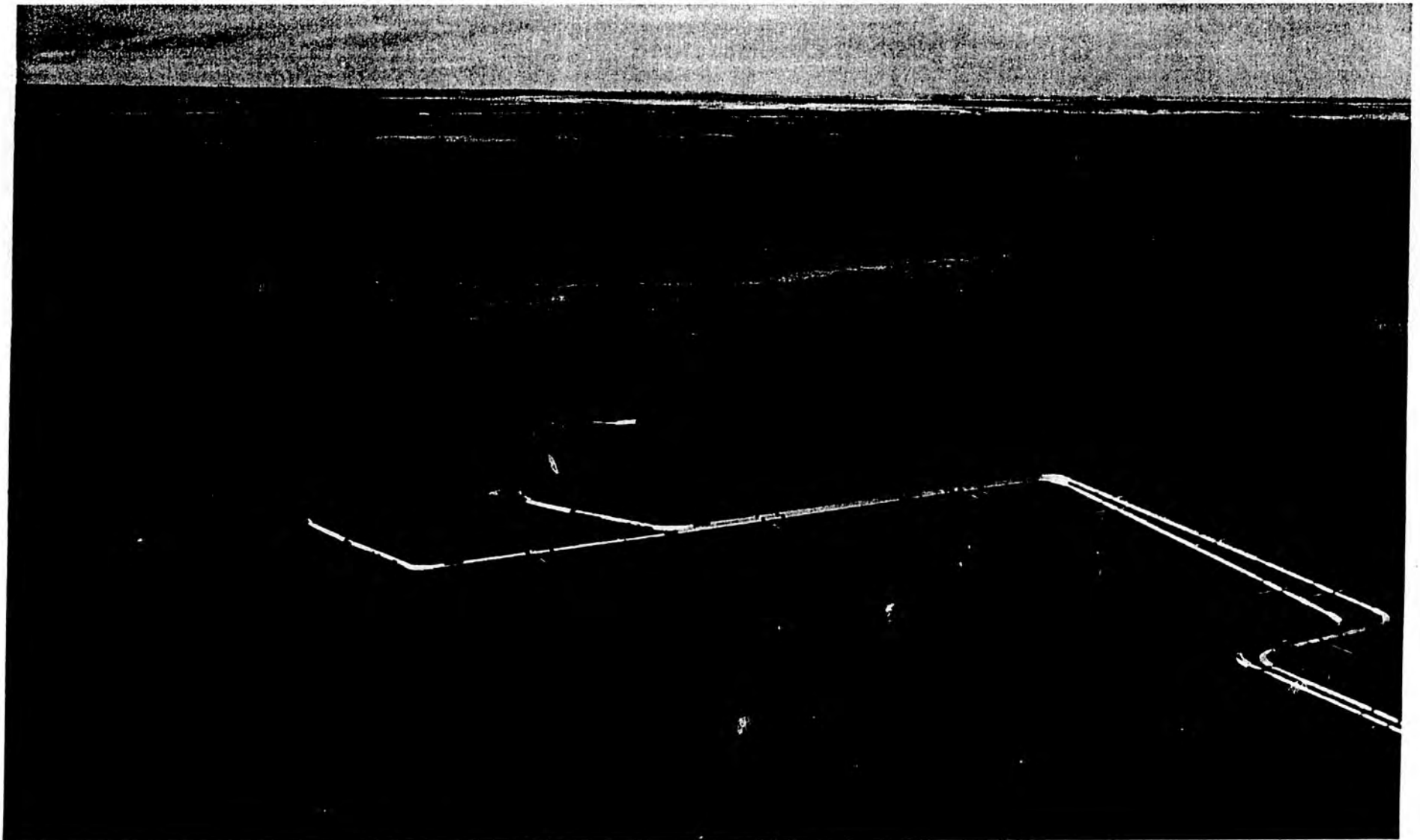
5



7



Colville River Crossing



Winter Exploration



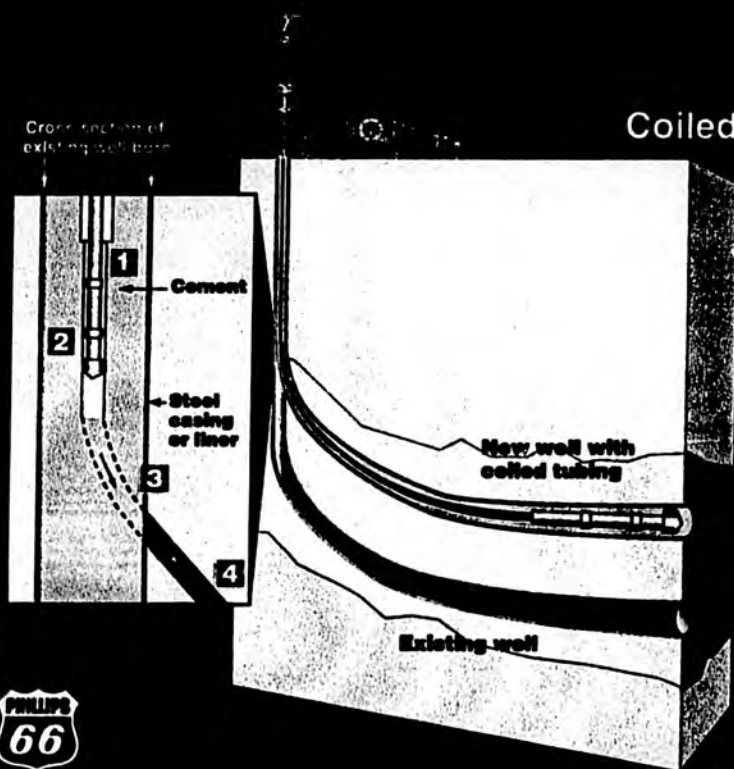
Well Location - Summer



Technology

- Coiled Tubing Drilling
- Directional Drilling
- Colville River Bored Crossing

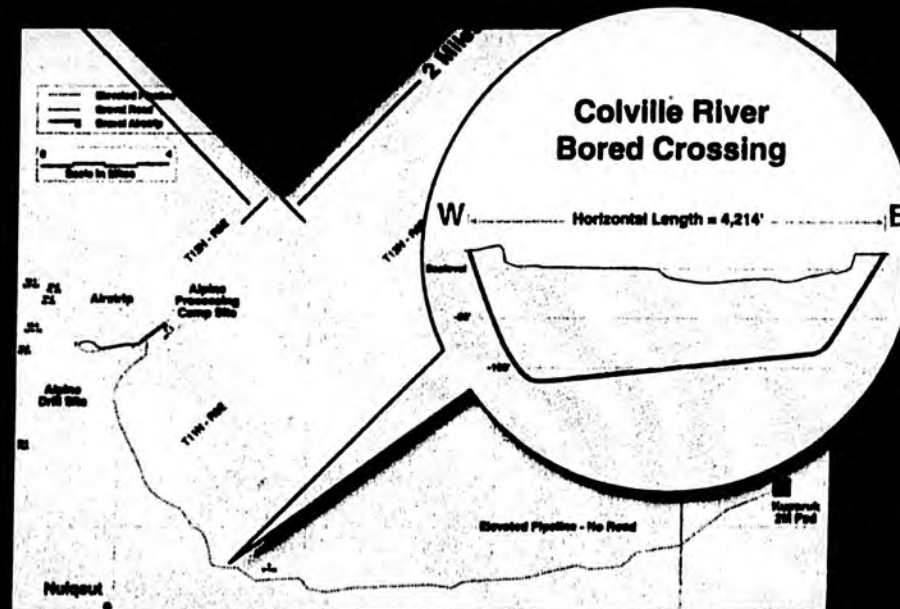
Coiled Tubing Drilling



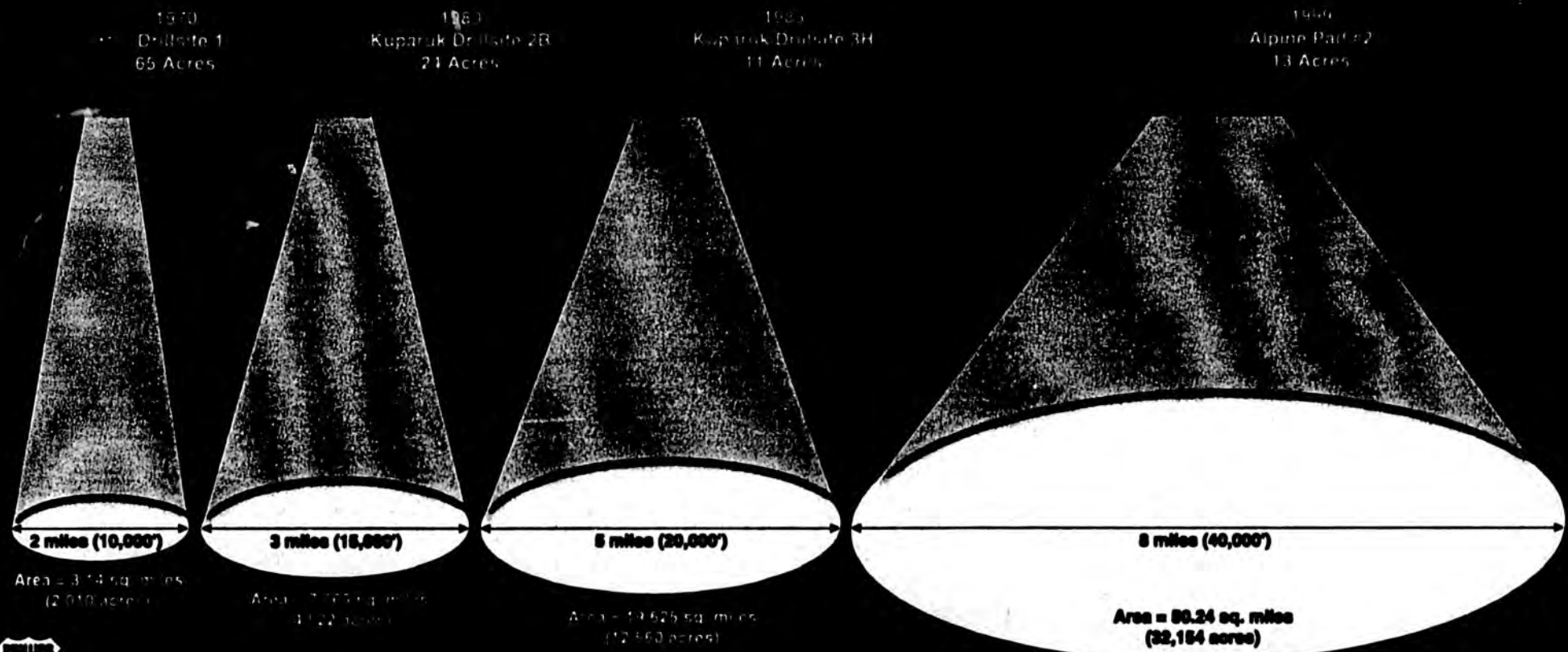
What happens downhole

Directional Drilling

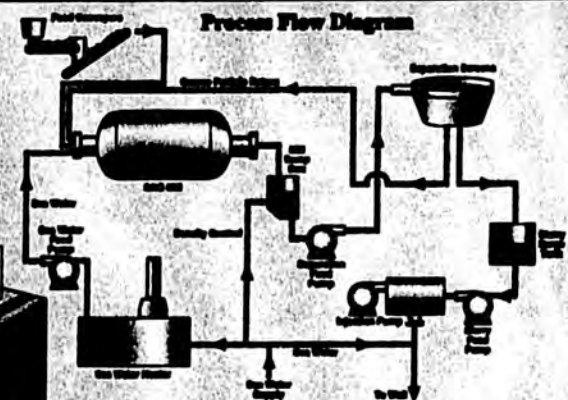
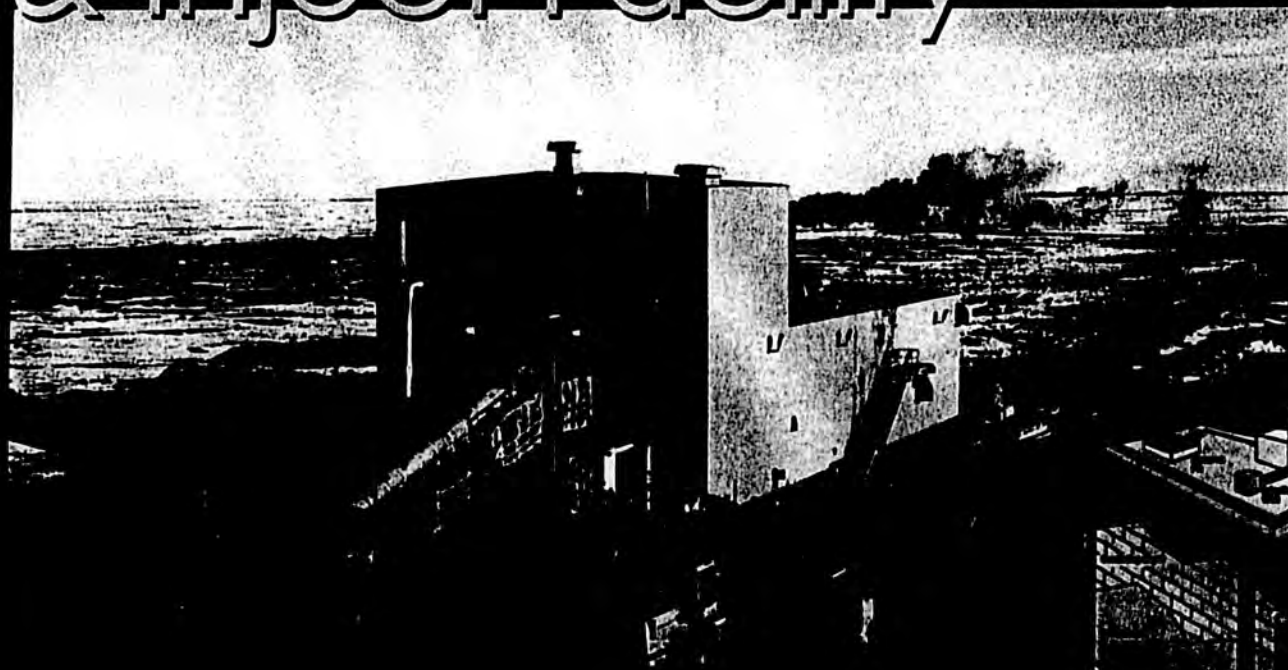
River Crossing

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Pad Size and Corresponding Subsurface Drillable Acres



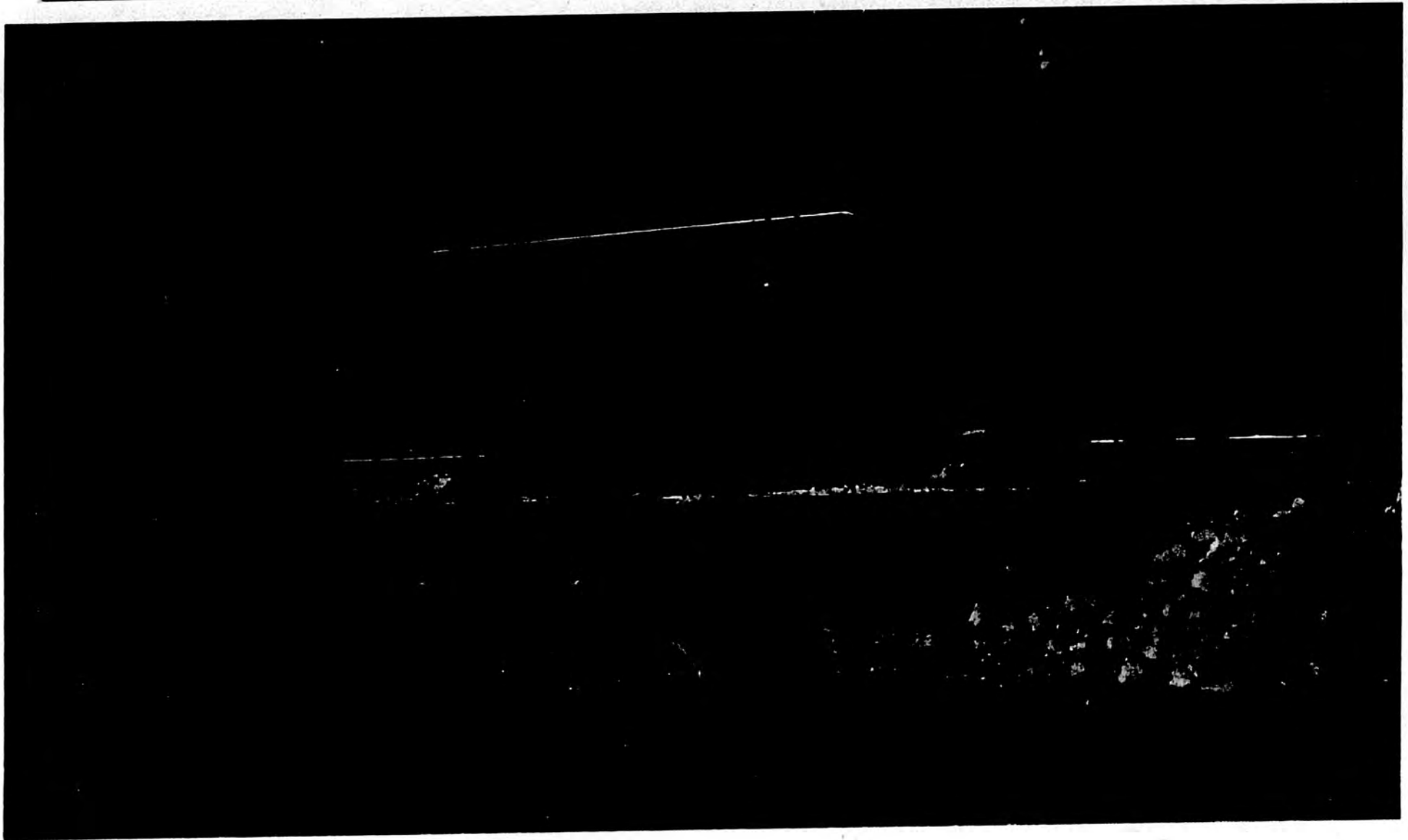
North Slope Grind & Inject Facility



The North Slope Grind & Inject Facility is a new facility designed to grind and inject waste materials into the ground. The facility is located on the North Slope of Alaska and is owned and operated by the U.S. Environmental Protection Agency. The facility is designed to handle up to 10,000 gallons of waste materials per day. The waste materials are first ground into a fine powder and then injected into the ground using a specialized injection system. The injection system consists of a series of pipes and pumps that deliver the waste materials to the injection point. The waste materials are then injected into the ground at a depth of approximately 100 feet. The injection process is monitored using a series of sensors and instruments that provide real-time data on the injection rate and the depth of the injection. The facility is designed to be a permanent solution for the disposal of waste materials and is expected to be in operation for many years to come.



Pipeline Vertical Loop



Mammal and Bird Studies Colville/Alpine 1992-96

Aerial Surveys

Ground Surveys

Threatened & Endangered

Mountain
Goat

Caribou

Arctic Fox

Grizzly Bear

Spectacled
Eider

Regional Important

Tundra Swans

Brant

Yellow-billed Loons

White-fronted Geese

Methods



Large Mammal and Caribou in Alaska
with ground-based surveys

Large Mammal and Caribou in Alaska
with ground-based surveys

Large Mammal and Caribou in Alaska
with ground-based surveys

Large Mammal and Caribou in Alaska
with ground-based surveys

Large Mammal and Caribou in Alaska
with ground-based surveys

Satellite Habitat Mapping

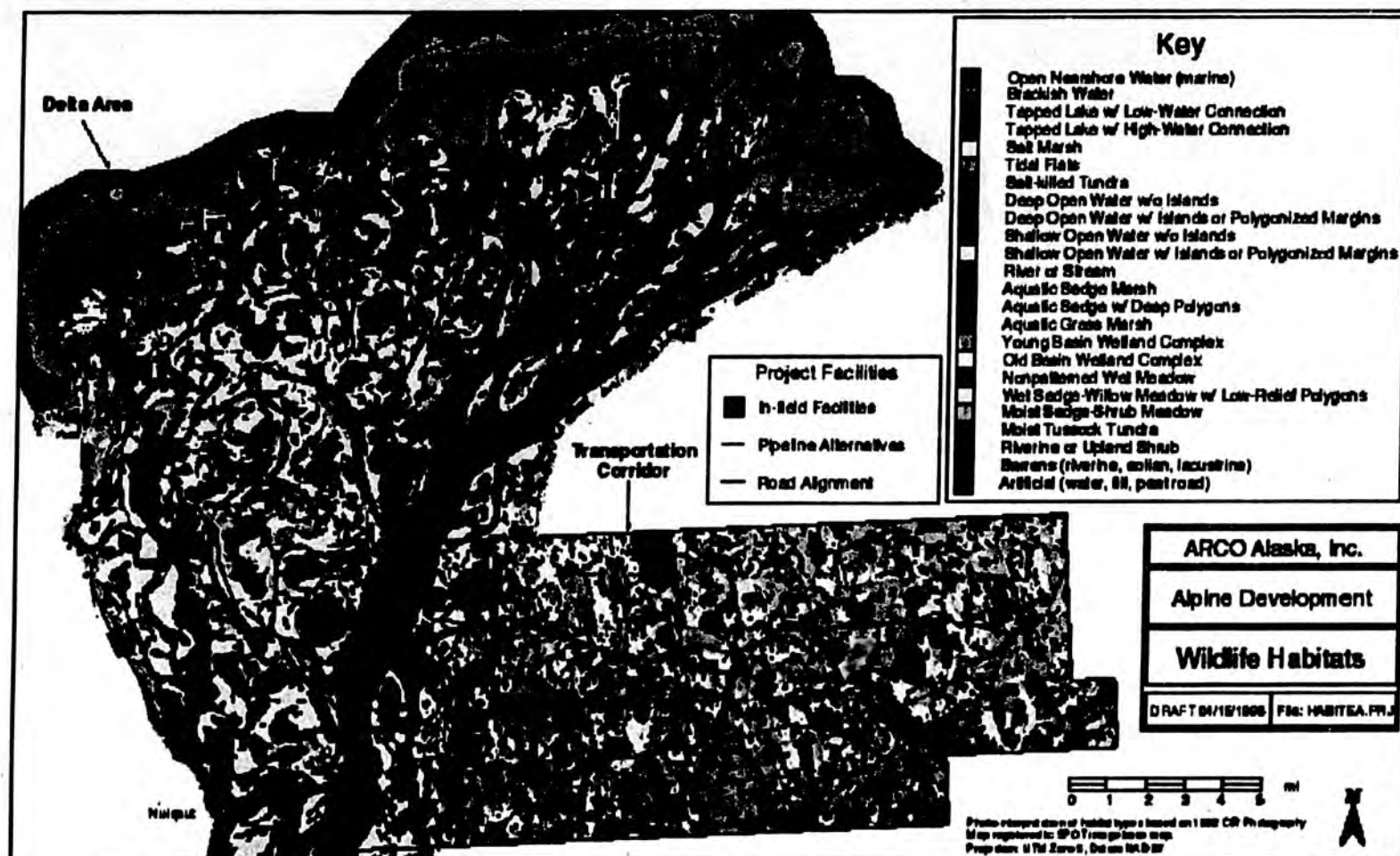


Figure 4.4.1-1. Wildlife habitat map of the Colville River Delta and transportation corridor for the proposed Alpine Development.

FLIR



RESTRICTED

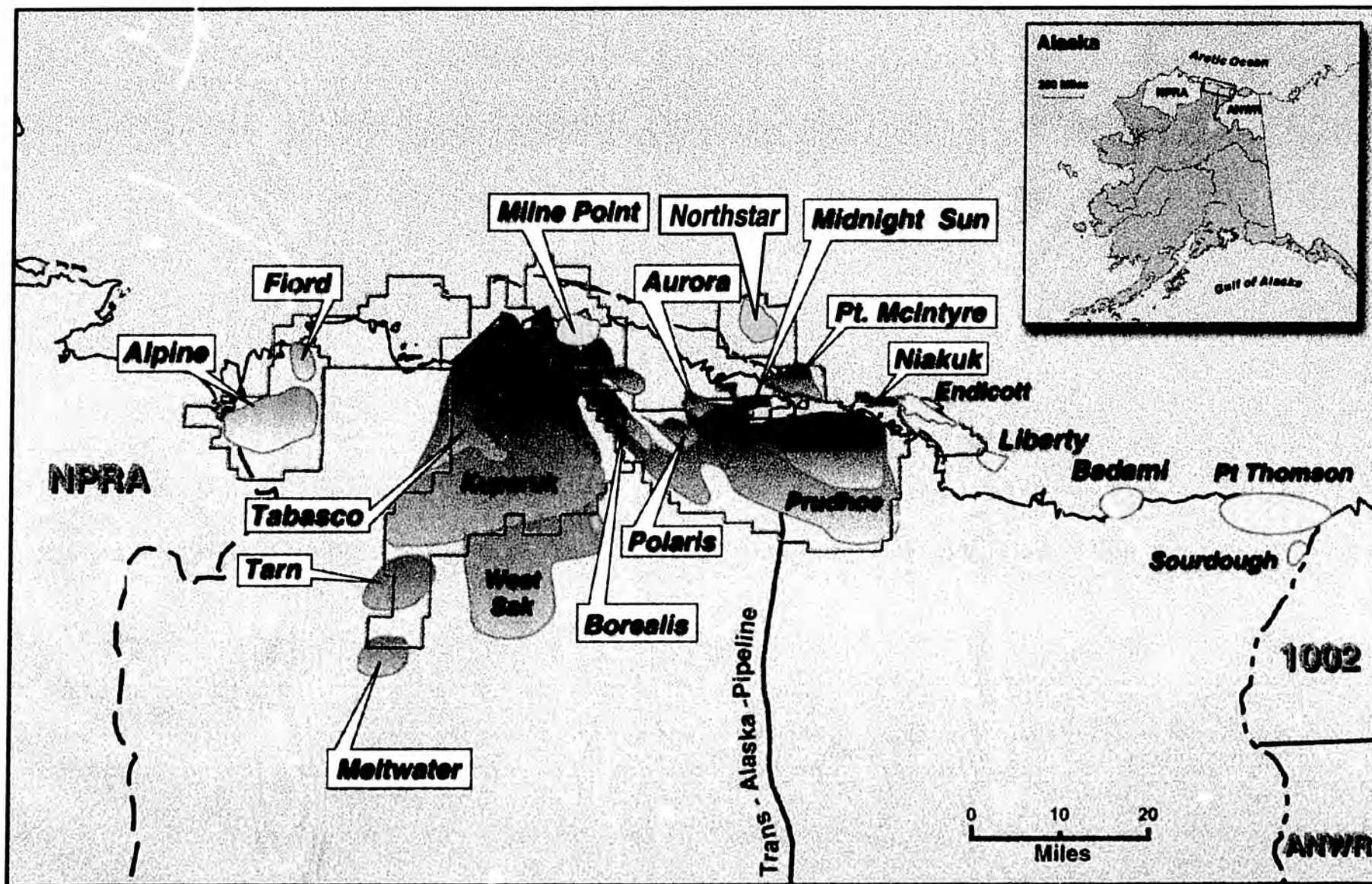
Forward Looking InfraRed Sensor System

The airborne FLIR unit is an effective tool in surveying pipelines for potential corrosion and detecting leaks. FLIR is also a powerful spill response tool for tracking spill movement under ice and snow. FLIR can image a spill site and return pertinent information to Incident Command as video footage or as a video frame registered map.

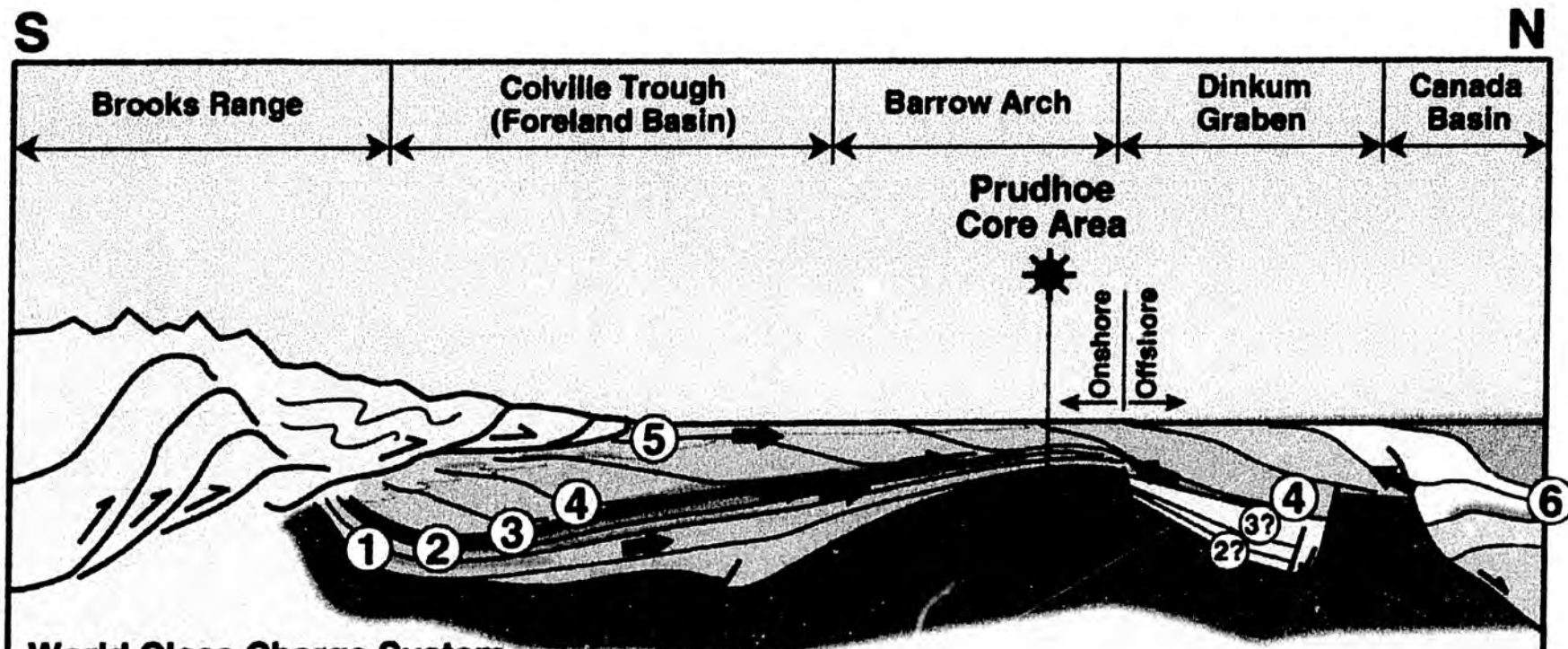
Recently, Kuparuk applied FLIR technology to assist the U.S. Fish & Wildlife Service by verifying the locations of polar bear dens. Pregnant polar bears den on the sea ice and onshore along coastal and flooplain bluffs. The U.S. Fish & Wildlife Service places satellite collars on female bears to monitor denning activity throughout the Beaufort Sea region.

Expanded tests of other FLIR applications for locating polar bears and other large mammals and birds in the Arctic coastal plain are planned.

North Slope Fields



North Slope Hydrocarbon System



World Class Charge System

- Multiple charge events spanning ≥ 120 my
- Long lived Regional High w/ Bidirectional charge

① Lisburne Group Shale, Limestone

② Shublik Fm. Shale

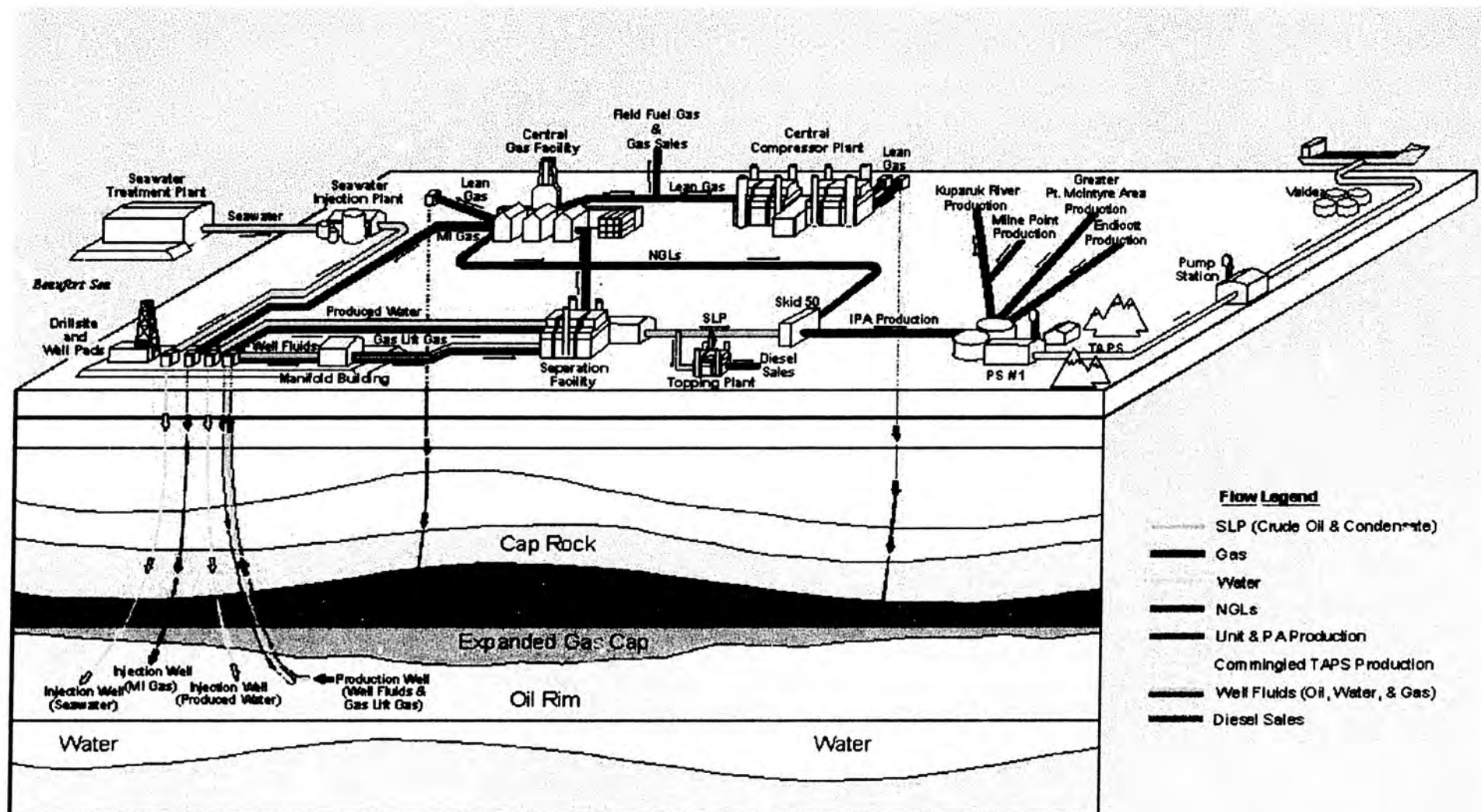
③ Kingak Fm. Shale

④ HRZ / Lower Torok Fm. Shale

⑤ Nanushuk Group / Prince Creek Fm. Coal (?)

⑥ Tertiary Shale

North Slope Field Development



Courtesy AKDOG



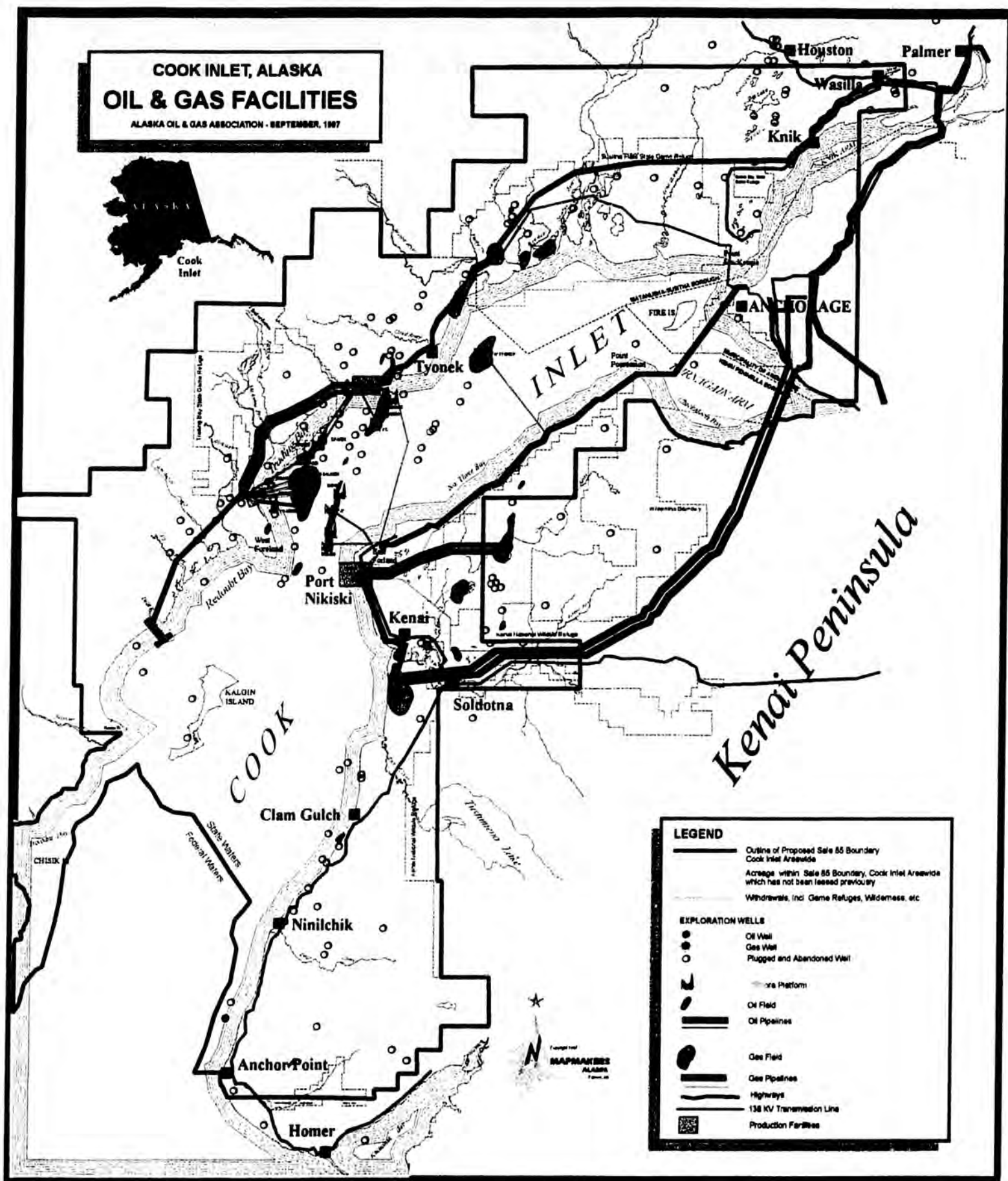
Map Legend

-  Units
-  Oil Field / Accumulation
-  2001 Prospects
-  Active Wells
-  Road
-  Trans-Alaska Pipeline



COOK INLET, ALASKA OIL & GAS FACILITIES

ALASKA OIL & GAS ASSOCIATION - SEPTEMBER, 1967



LEGEND

- Outline of Proposed Sale 85 Boundary
- Cook Inlet Area-wide
- Acres within Sale 85 Boundary, Cook Inlet Area-wide which has not been leased previously
- Withdrawals, incl. Game Refuges, Wilderness, etc.

EXPLORATION WELLS

- Oil Well
- Gas Well
- Plugged and Abandoned Well
- Offshore Platform
- Oil Field
- Oil Pipelines
- Gas Field
- Gas Pipelines
- Highways
- 138 KV Transmission Line
- Production Facilities

**Seven Snapshots
of
OIL & GAS in ALASKA
Presented to the
House Special Committee on Oil & Gas
by the
Alaska Oil & Gas Association**

The Alaska Oil and Gas Association (AOGA) is pleased to present "Seven Snapshots of Oil and Gas in Alaska" as a basic introduction for policy makers whose expertise is in areas other than in oil and gas. AOGA is a private non-profit trade association. Its members companies represent the majority of oil and gas exploration, production, transportation, refining and marketing activities in Alaska.

Panel I January 23 2001

Moderator: Marilyn Crockett, Assistant Executive Director, Alaska Oil & Gas Association

- Snapshot #1 - Oil and Gas in Cook Inlet: Why It Is; Where It Is, Who Produces It?
Gary Carlson, Senior Vice-President, Forest Oil Corporation
- Snapshot #2 - Oil and Gas on the North Slope: Why It Is; Where It Is, Who Produces?
Dan Kruse, Development Manager for the Greater Kuparuk Area, Phillips Alaska, Inc.
- Snapshot #3 - Taxes & Royalties: How Much and To Whom? The State, Local and Federal Share
Tom Williams, Alaska Tax Counsel, BP Exploration (AK) Inc.

Panel II January 25 2001

Moderator: Judy Brady, Executive Director, Alaska Oil & Gas Association

- Snapshot #4 - Environmental Practices: Doing It Right
Joe Hegna, Director of Regulatory Affairs, Phillips Alaska, Inc.
- Snapshot #5 - Permitting Requirements: Agency and Public Oversight
Randal Buckendorf, Environmental Counsel, Phillips Alaska, Inc.
- Snapshot #6 - Betting on Technology: Advances in Exploration/Production Technology
Mark Stanley, Coil-Tubing-Drilling Superintendent, BP Exploration (AK) Inc.
- Snapshot #7 - Refining in Alaska: Adding Value
Gene Burden, Senior Vice-President-Government Relations, Tesoro Alaska Company

Alaska's Oil & Gas Industry



Fact Sheets

Prepared by:
Alaska Oil & Gas Association
AOGA



Fact Sheet: Oil in Alaska

Oil production from Alaska accounts for nearly 20 percent of all oil produced in the United States. Production currently averages more than a million barrels of oil per day.

♦ HISTORY OF OIL

Alaska's modern oil industry was born in 1957 when a large oil field was discovered at Swanson River in the Kenai Moose Range (now the Kenai National Wildlife Refuge). The discovery established Alaska's long-term potential as a resource producer and laid the economic foundation for statehood, which Congress granted in 1959.

During the late 1950's and early 1960's geologic surveys were conducted on Alaska's North Slope. In 1968, after nearly a dozen "dry holes", Prudhoe Bay, the largest field in North America, was finally discovered. Since Prudhoe Bay production began in 1977, nearly 10 billion barrels of oil have been produced. It is expected that more than 13 billion barrels will be recovered. The field also contains 26 trillion cubic feet of recoverable natural gas.

Prudhoe Bay development led to discovery and development of other North Slope oil fields. To the west of Prudhoe Bay is the Kuparuk field which was discovered in 1969 and began production in 1981. The Kuparuk field is North America's second largest producing field. Today, four of the United States' 10 largest producing oil fields - Prudhoe Bay, Kuparuk, Point McIntyre and Endicott - are on Alaska's North Slope.

The discovery of Prudhoe Bay and Kuparuk led to the building of one of the largest construction projects ever undertaken by private industry - the 800-mile trans-Alaska pipeline system (TAPS). Pipeline construction began in 1974 and in 1977, only three years later, TAPS began carrying oil from the North Slope to the ice-free port of Valdez. In 1988, throughput peaked at more than two million barrels per day. Production has declined by nearly 50 percent since then.

♦ PRODUCTION & TRANSPORTATION

Alaska ranks second in daily production behind Texas. Alaska has produced nearly 14 billion barrels of oil and 44 trillion cubic feet of natural gas. Most of the gas has been re-injected to maintain reservoir pressure and increase oil production, however, Cook Inlet gas fields supply natural gas for Southcentral Alaska.

There are more than a dozen producing fields on Alaska's North Slope including Prudhoe Bay, Kuparuk, Endicott, Lisburne, Milne Point, Niakuk and Point McIntyre. In 1999, North Slope fields produced 372 million barrels of oil and 32 million barrels of natural gas liquids.

Cumulative oil production from North Slope fields is 12.6 billion barrels of oil, 37 trillion cubic feet of natural gas and 345 million barrels of natural gas liquids.

Oil from the North Slope travels 800 miles from Prudhoe Bay to Valdez via the trans-Alaska pipeline system. From Valdez, the oil is transported by tanker to Cherry Point, Wash; San Francisco and the Los Angeles Basin in Calif; Hawaii and at times some oil is transported to Asian markets.

North Slope oil supplies about five percent of the oil used in the U.S. and is a major source of feedstock for domestically-produced gasoline, jet fuels and petrochemicals for the Western United States.

Seven producing oil fields on the Kenai Peninsula produced nearly 11 million barrels of oil in 1999. Last year, the 17 gas fields in the Cook Inlet region produced 177 billion cubic feet of natural gas. Offshore fields in Cook Inlet are tapped by 15 production platforms. Operations at three of the platforms have been temporarily suspended due to market conditions and low production volumes. The Kenai Peninsula and offshore fields in Cook Inlet have produced a cumulative total of 1.2 billion barrels of crude oil and 5.6 trillion cubic feet of natural gas.

◆ ECONOMIC BENEFIT

Oil revenues are a significant source of income to the state. Historically, petroleum revenue has provided more than 70 percent of the state's General Fund unrestricted revenue since FY 1978, Prudhoe Bay's first full year of production. In FY 1999, the state received nearly a billion dollars in unrestricted General Fund revenue from oil and gas production, representing about 70 percent of the state's total unrestricted revenue. In addition, the state receives millions of dollars in royalty revenues each year which are deposited into the Permanent Fund. The Permanent Fund was established as a state savings account for a portion of its petroleum income.

The oil and gas industry employs about 8,000 Alaskans and, although the oil and gas industry is not labor intensive, University of Alaska economists have determined that oil revenue contributes substantially to all Alaskans' personal income.

Since oil production began on Alaska's North Slope in 1977, the state has received more than \$46 billion in taxes and royalties. The state currently receives more revenue from oil operations every three days than the \$7.2 million the United States paid Russia to purchase Alaska in 1867.

◆ PROCESSING

One of Alaska's few "value-added" industries is the in-state processing of its oil and gas resources. Alaska has four refineries which produce gasoline, diesel and jet fuel for Alaska markets. Two refineries are located in Fairbanks and refineries also are located at Nikiski and Valdez.

A chemicals plant in Nikiski uses natural gas from Cook Inlet as a feedstock to manufacture more than 5,000 tons of fertilizer per day. The plant, which is the largest fertilizer complex on the West Coast, is a major supplier to the agriculture industry in the Western United States.

◆ EXPORTS

Cook Inlet natural gas is processed for export to Japan at a gas liquefaction plant at Nikiski, the only one of its type in North America. The plant supplies 1.3 million barrels of liquefied natural gas to Japan each month.

With the lifting of the 32-year federal ban on exporting North Slope crude oil, at times some of Alaska's North Slope production is exported to Asian markets.

◆ RESERVES

Alaska oil reserves total 6.5 billion barrels of oil which accounts for 30 percent of total U.S. oil reserves. Alaska's gas reserves total more than 34 trillion cubic feet of gas, accounting for 21 percent of total U.S. gas reserves.