

Alaska Oil and Gas Activities

Division of Oil and Gas
February 1998



Alaska Department of
**Natural
Resources**

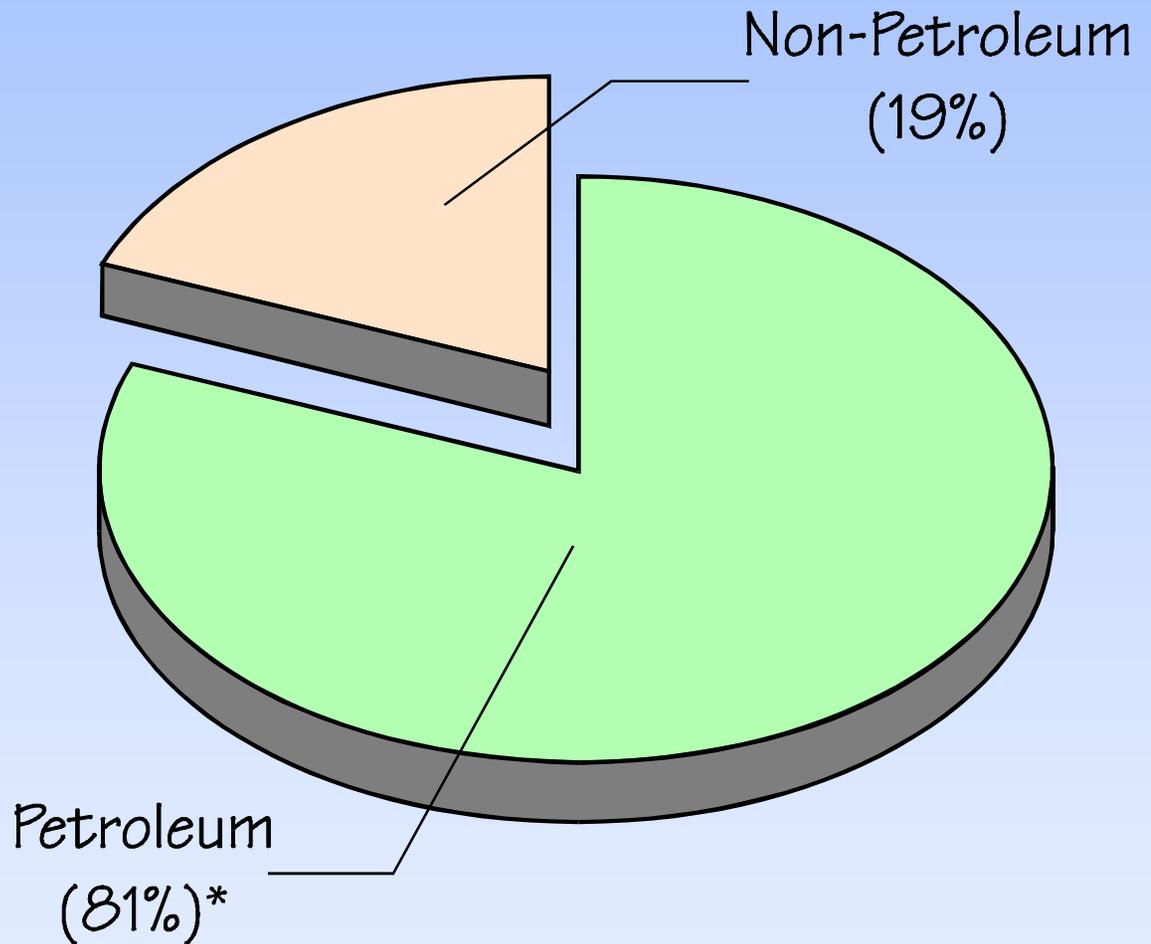
Where Our Money Comes From

Sources (FY97):

Bonus & Rents:
\$14.8 Million

Royalties:
\$1.07 Billion

Taxes:
\$975 Million**
(Oil & Gas Property Tax
+ Severance Tax)

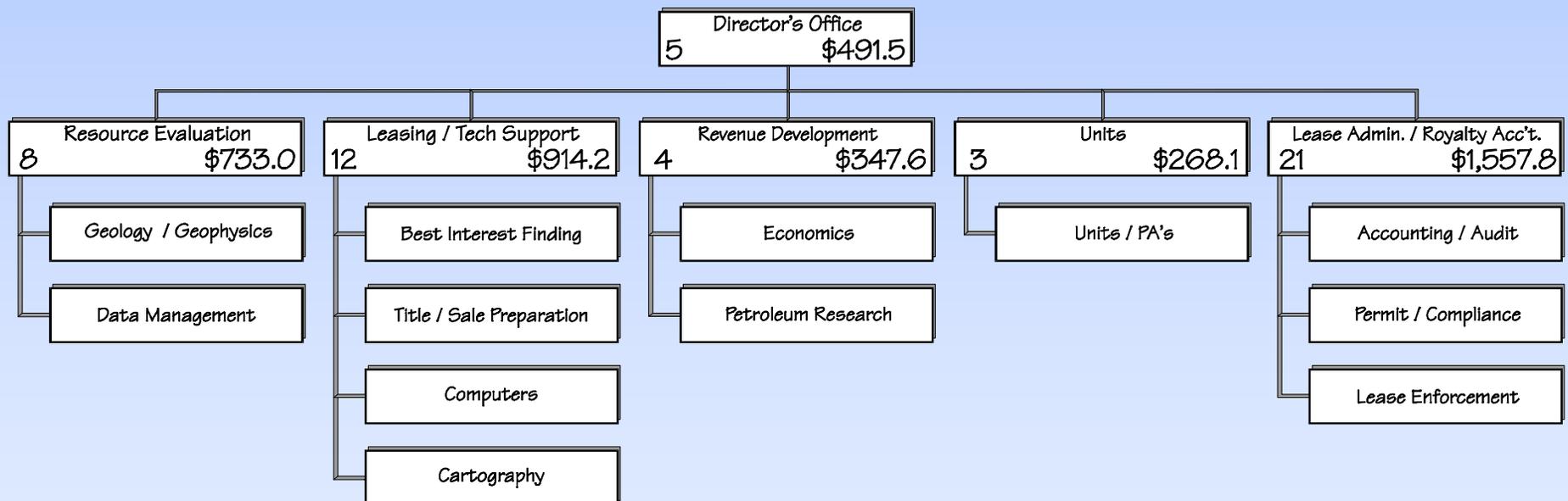


* From pg 17, DOR Fall 1997 Revenue Sources Book

** From pg 12, DOR Fall 1997 Revenue Sources Book

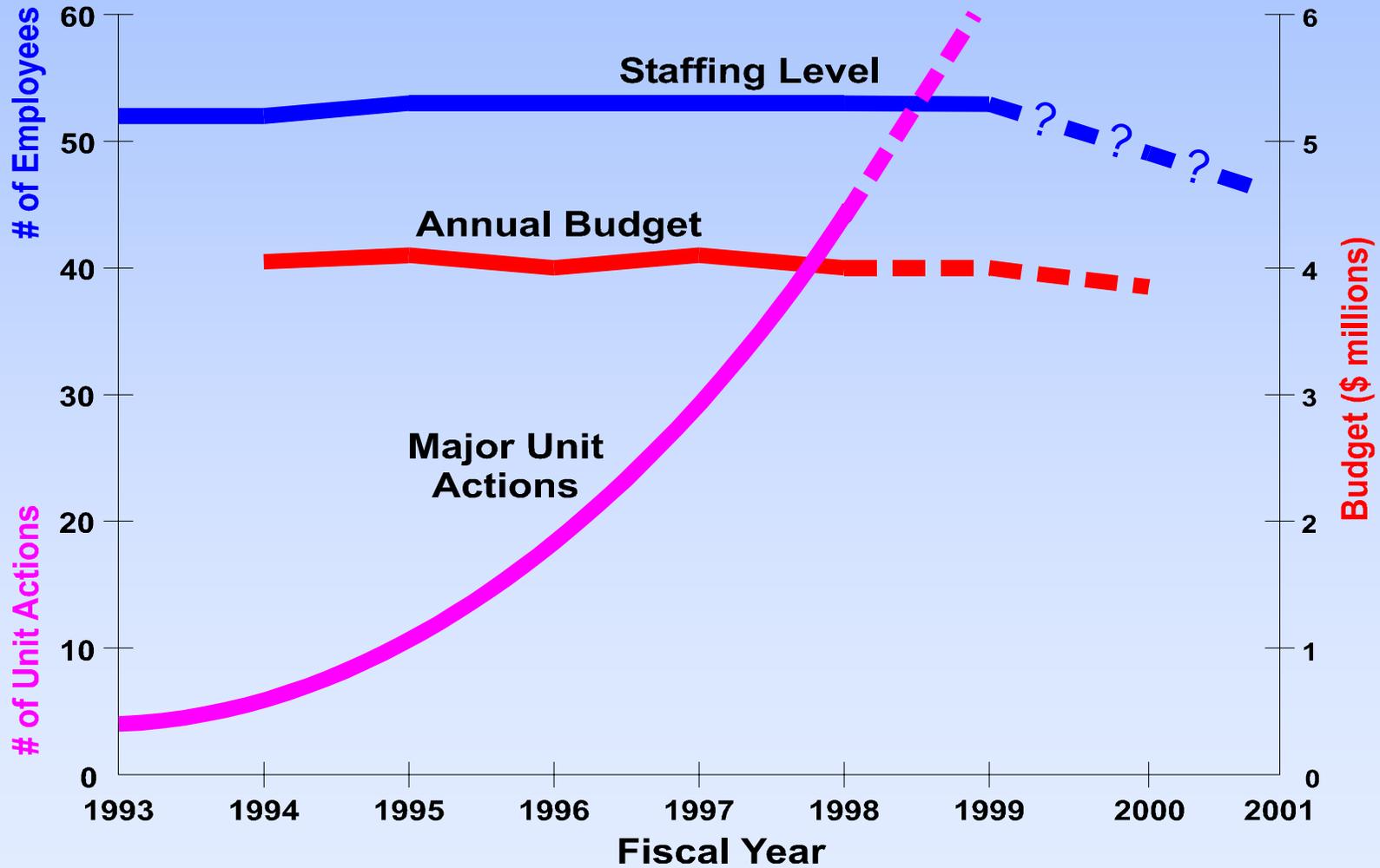
Division of Oil and Gas Organization

FY 1999 Request



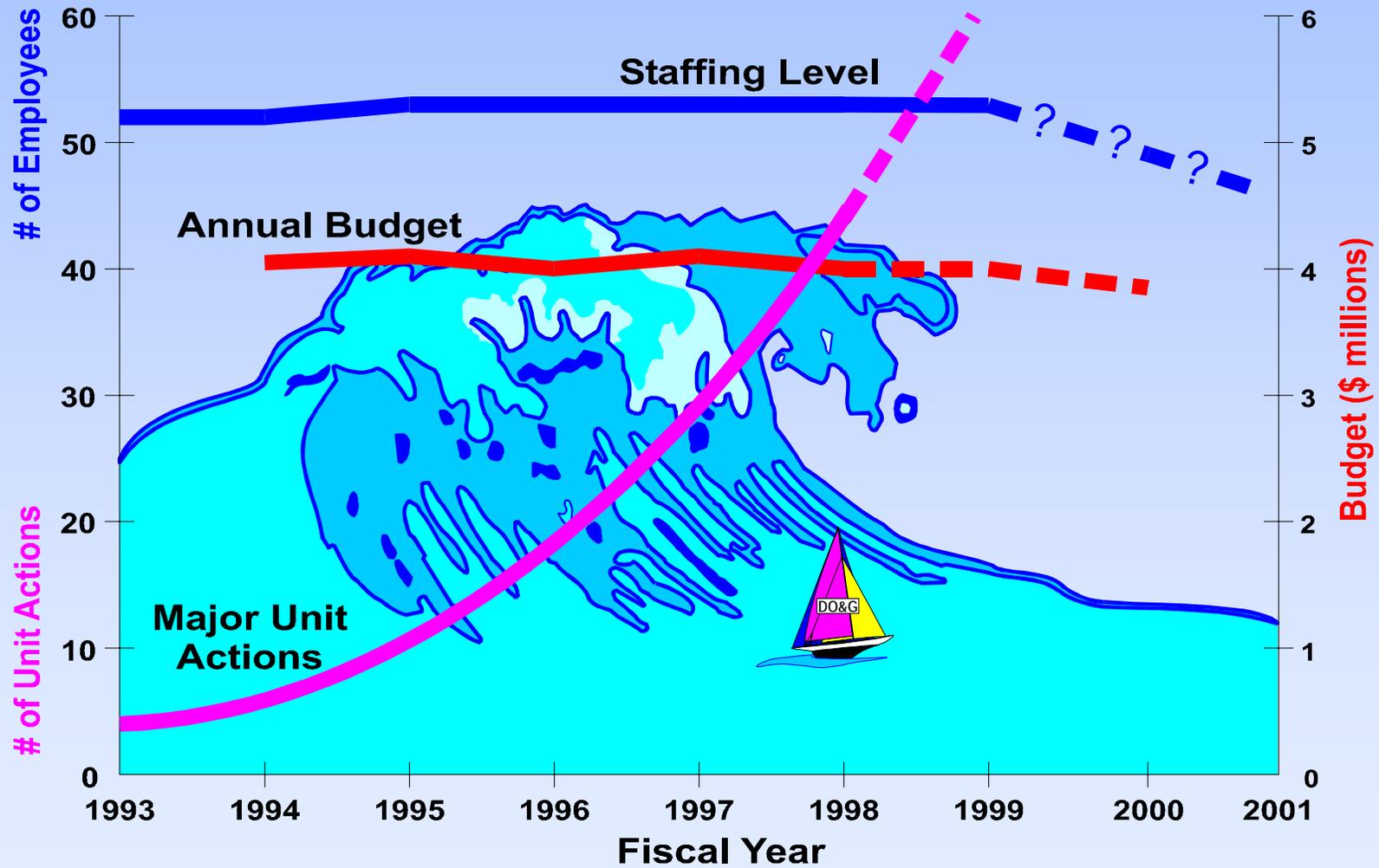
Division of Oil and Gas

Increased Workload with New Oil & Gas Activity



Division of Oil and Gas

Oil Niño Floods Alaska with new Oil & Gas Activity



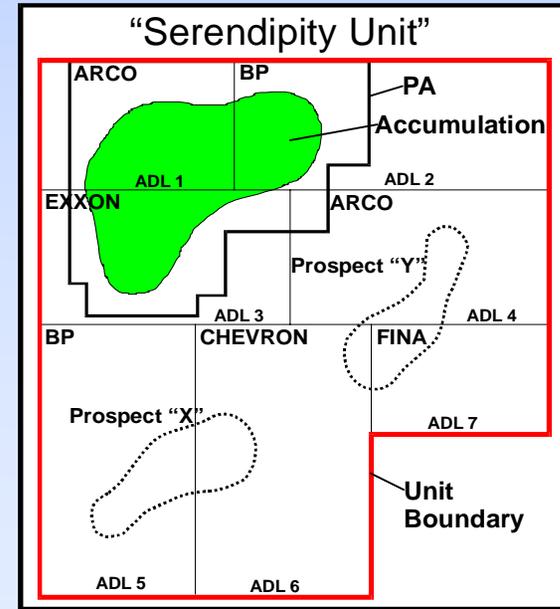
What Are The Common Lease/Unit Administrative Actions?

Unit - Units are groups of leases; units are established to efficiently explore and develop the leases covering one or more potential hydrocarbon accumulations

Participating Area (PA) - That portion of leases in a unit which cover a known or estimated accumulation and to which production is allocated via a unit agreement

Units Actions: Initial Formation
 Technical Evaluations - Reservoir Extent, Paying Quantities
 Negotiations - Unit Agreement
 Work Commitments
 Expansions
 Contractions
 Annual Plan of Exploration or Development

Participating Areas: Initial Formation
 Technical Evaluations - Commerciality
 Tract Allocation Factors
 Field Costs/Processing Costs
 Gas and Gas Liquids
 Fluid Commingling
 Facility Sharing
 Well Test Allocation
 Expansions
 Contractions
 Annual Plan of Development

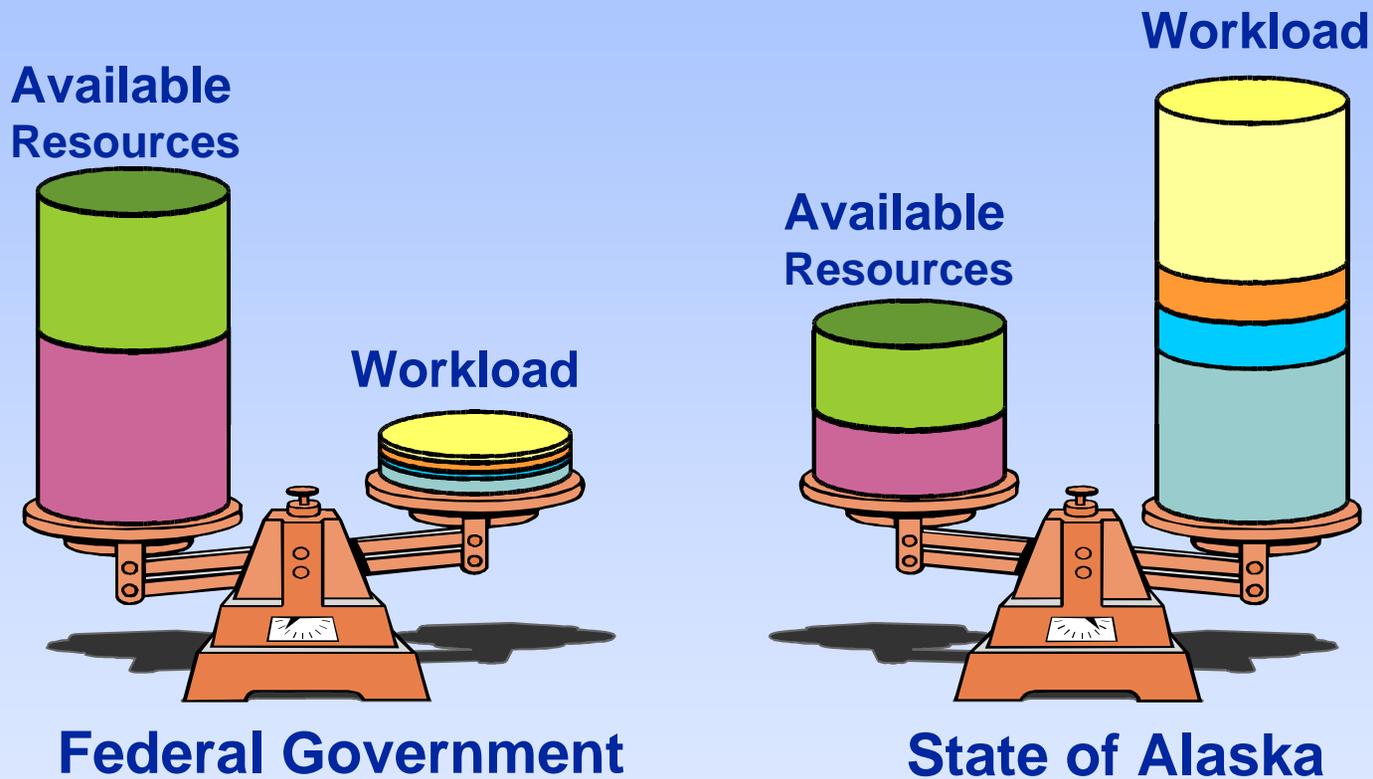


State-Federal Comparison Activity, Staffing and Budgets for Oil and Gas Agencies

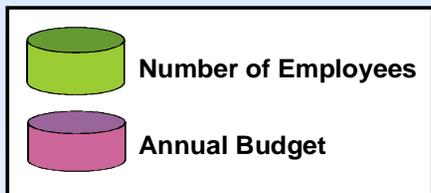
	<u>State DO&G</u>	<u>Federal</u> ⁽¹⁾
Active Leases	1,036	108
Active Units	28	8
Producing Leases	314	30 ⁽²⁾
Annual Oil Production	510.8 mmbbls	1.6 mmbbls ⁽³⁾
Number of Employees	54	92 ⁽⁴⁾
Annual Budget	\$4.2	\$11.7 million

- (1) combines MMS and BLM; does not include federal royalty accounting group in Denver
- (2) All producing leases are in Cook Inlet; mostly gas production
- (3) million barrels
- (4) includes 85 MMS employees and 7 BLM employees

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



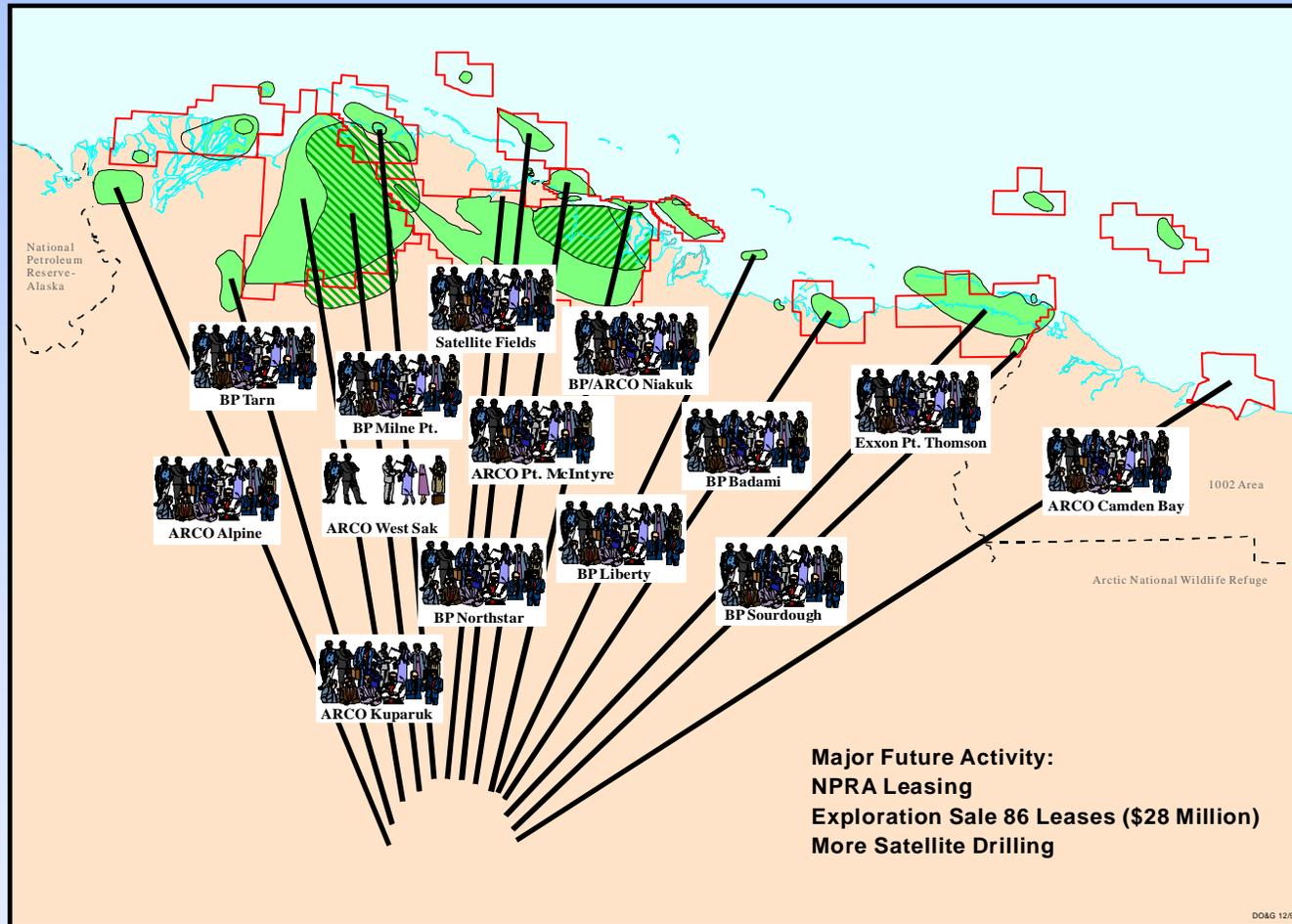
Available Resources:



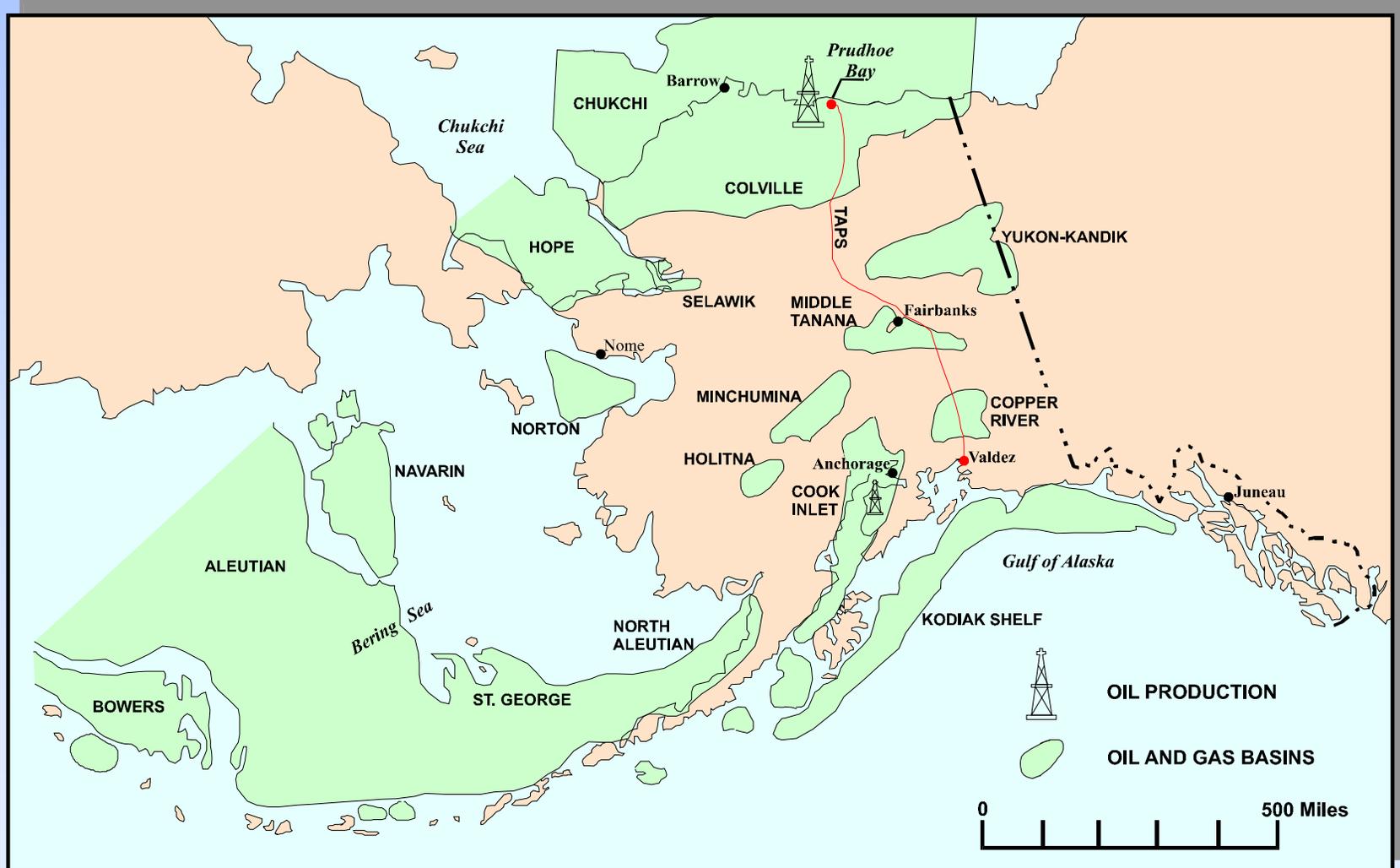
Workload:



Invigorated Oil & Gas Industry Company Asset Teams Inundate Division



Alaska Oil and Gas Basins



Alaska Reserves and Production

- **31% of total U.S. oil reserves.**
- 7.5 billion barrels of oil
- **18% of total U.S. gas reserves**
- 34.4 trillion cubic feet of gas
- **23% of total U.S. oil production**
- 1.25 million barrels of oil per day

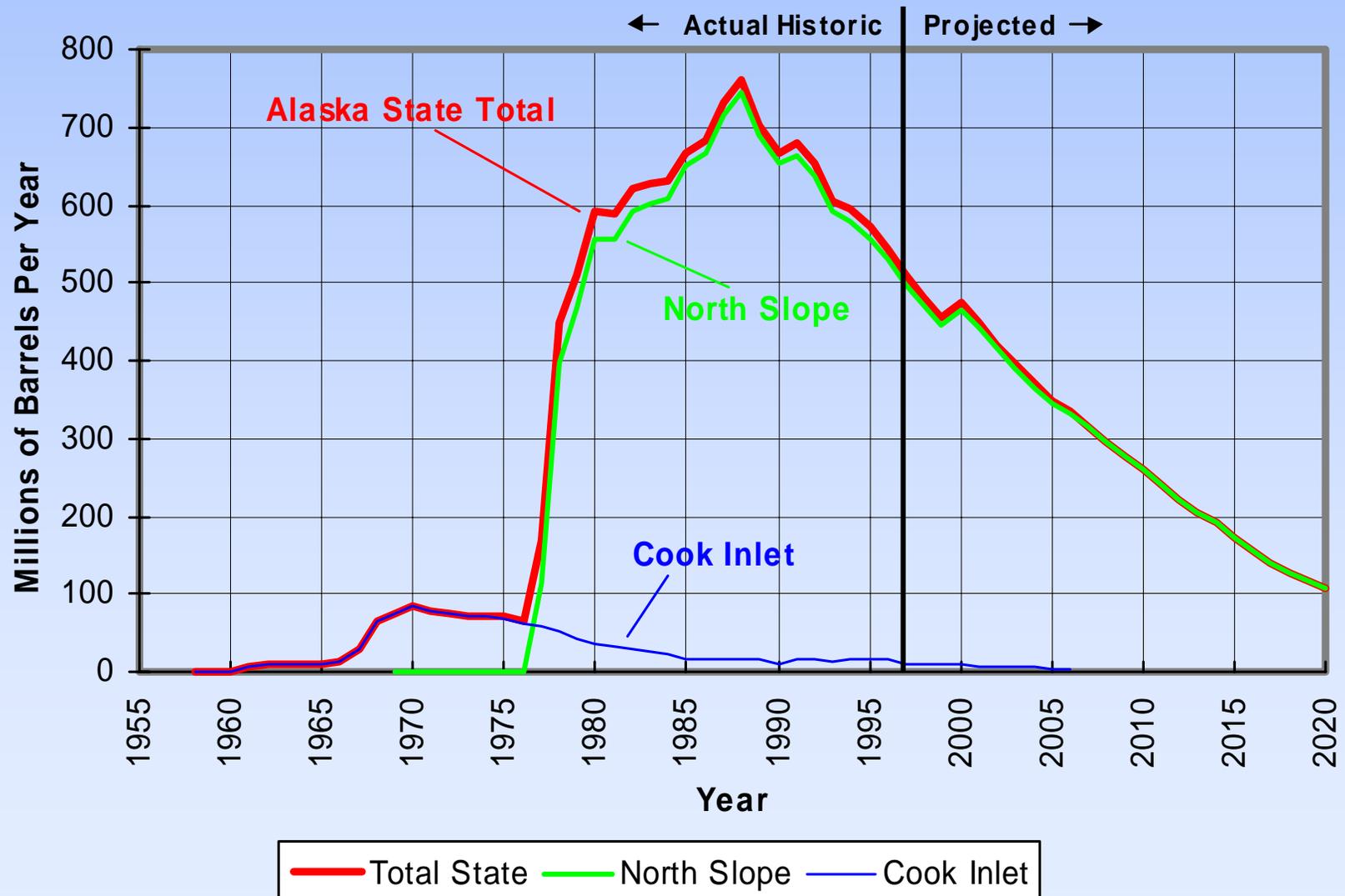
Sources: Alaska data are from Fall 1997 Revenue Source Book
U.S. data are from Energy Information Administration Annual Report 1996

Alaska Oil & Gas Facts

		<u>Cook Inlet</u>	<u>North Slope</u>
Producing Fields:	Oil	7	9
	Gas	17	3
Average Daily Production: (Millions of barrels oil or billion cubic feet gas)	Oil	0.031	1.225
	Gas (Net)	0.620	0.887
Cumulative Net Production: (Millions of barrels oil or billion cubic feet gas)	Oil	1,226	11,789
	Gas	5,351	3,287
Remaining Reserves: (Millions of barrels oil or billion cubic feet gas)	Oil	76	7,440
	Gas	3,281	31,155

Alaska Oil Production Rates

Historical and Projected



Independents - Alaska's New Players

■ Anadarko Petroleum Corp.

- ◆ Has been involved in some of the world's major oil finds in recent years
- ◆ One of U.S.'s larger and more aggressive independents
- ◆ Recently established Anchorage office
- ◆ CEO describes Alaska as "new core area" for Anadarko

■ Union Texas Petroleum Corp.

- ◆ One of U.S.'s larger and more aggressive independents
- ◆ Houston, Texas-based
- ◆ Independent bidder in recent State Cook Inlet and North Slope lease sales, won 4 tracts in Sale 86, paid the highest \$/acre bids in sale

■ Forcenergy.

- ◆ Bought Cook Inlet leases from Danco, including Redoubt Shoal, in 1996
- ◆ Purchased all of Marathon's oil interests in Alaska that same year
- ◆ Established an Anchorage office
- ◆ Bought assets of Stewart Petroleum in 1997, now operator of W McArthur River

■ Frontier Petroleum Corp. (company to watch).

- ◆ Small Syracuse, New York-based company
- ◆ Ranked 14th - State of Alaska lease acreage, up from no acreage held a year ago

Cook Inlet - Recent Activity

- State Lease Sale 85A-W (re-offer) set for late February.
 - ◆ Sale 85A was held in December 1996
 - ◆ Included over one million acres, drew \$3 million in bids
 - ◆ Joint DNR-Mental Health Lands Trust Sale
- North Middle Ground Shoal Unit established 1996.
- Redoubt Unit established, Forcenergy is operator.
- Forcenergy bought all of Stewart Petroleum assets.
- UNOCAL has proposed formation of Pioneer Unit.
- Growth Resources exploring for coalbed methane.
 - ◆ 3 shallow wells have permit-to-drills and are spudded
 - ◆ Locations are near Houston in south-central Alaska
- Ninilchik area 2D , Upper Cook Inlet offshore 3D and Swanson River 3D surveys completed in 1997.

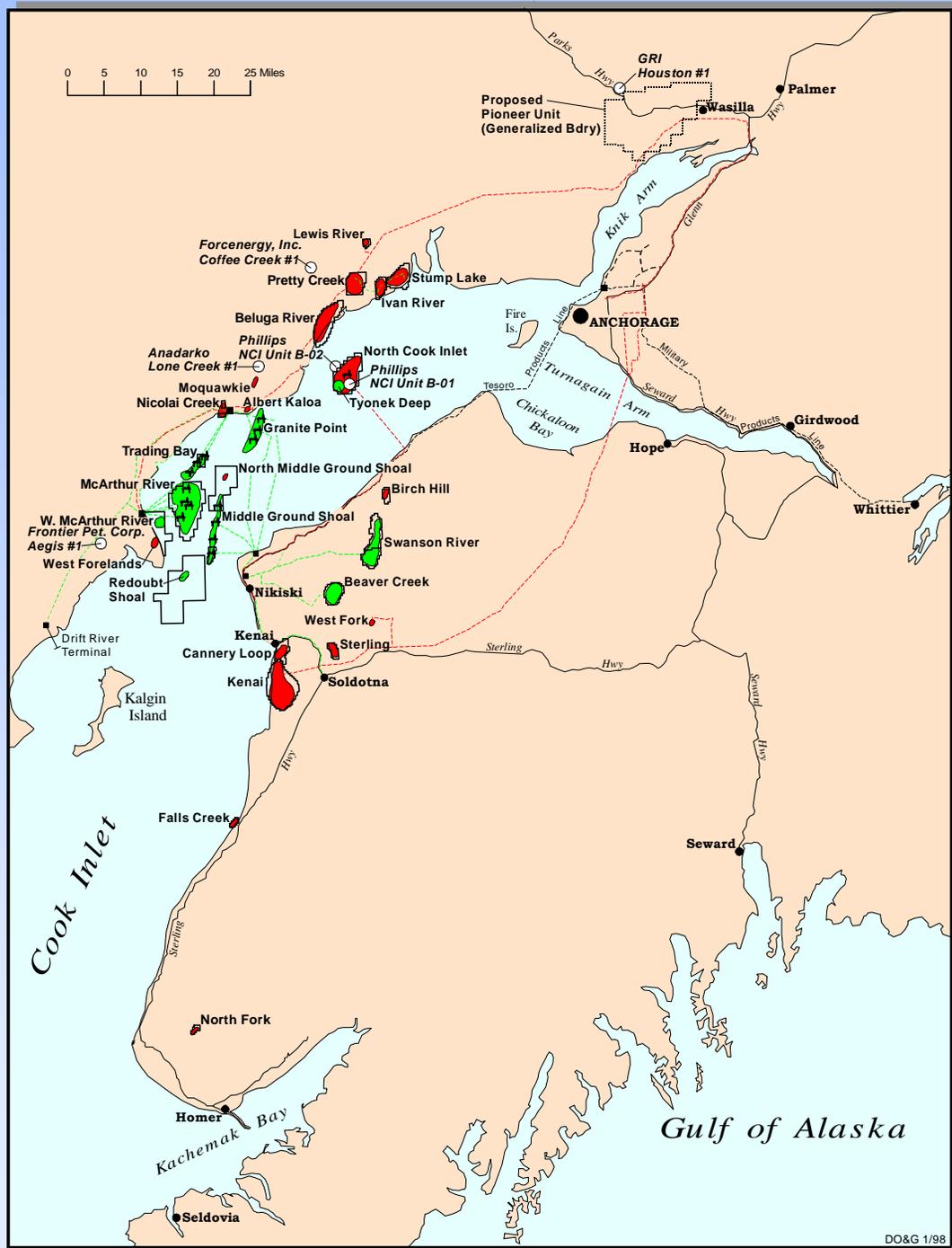
Cook Inlet Activity

Map Legend

-  Field/Accumulation
-  Oil Field / Accumulation
-  Gas Field / Accumulation
-  Selected Wells
-  Proposed / Active Wells
-  Platform
-  Pipelines
-  Production Facility



Map Area



Cook Inlet - Future Activity

- Forcenergy plans gas exploration well, Coffee Creek #1.
 - ◆ West of Pretty Creek Field on CIRI land
- Forcenergy plans drilling Boulder Shoal prospect.
 - ◆ Adjacent to West McArthur River Unit.
- Frontier Petroleum plans gas exploration well, Aegis #1.
 - ◆ Onshore west of Trading Bay Field
- Anadarko has proposed a well, Lone Creek #1.
 - ◆ Near Tyonek on Moquawkie (surface)/CIRI (subsurface) land
- Phillips plans more drilling for Tyonek Deep accumulation.
 - ◆ Formerly known as Sunfish
 - ◆ Located at a level below North Cook Inlet gas field
 - ◆ Results of latest delineation well non-commercial
- N Middle Ground Shoal 3D/2D survey planned for later in 1998

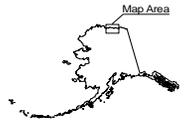
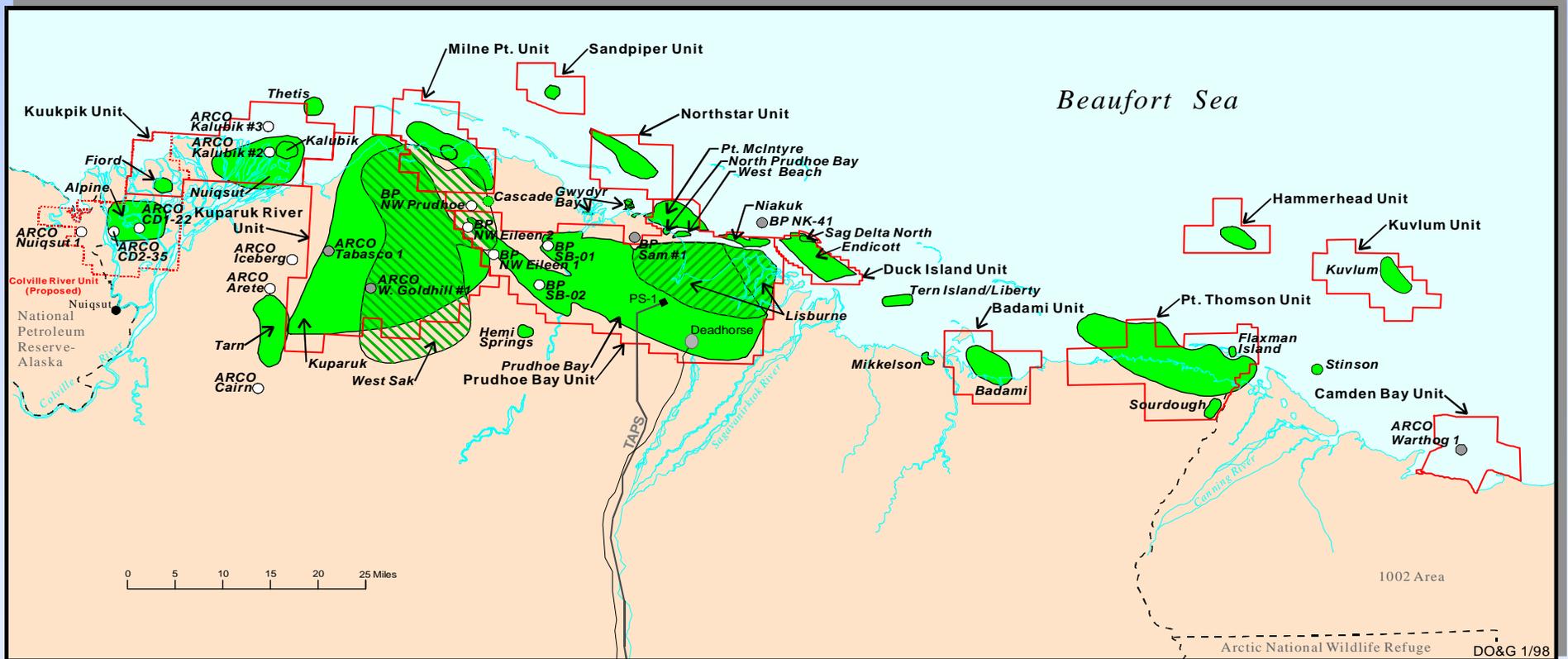
Tyonek Deep Accumulation

- Discovery Date: 1991, ARCO Sunfish #1 well.
- Reservoir: Tyonek Formation, “Sunfish” sandstone.
- Recoverable Reserve Estimate: 77(?) million barrels oil.
- Operator: Phillips Petroleum.
- Formerly known as Sunfish accumulation.
- Discovery well flowed 1,100 bopd 42° API gravity oil.
- Largest oil find in Cook Inlet since the 1970s.
- Located at a level deeper than North Cook Inlet gas field.
- Results of latest delineation well, NCIU B-01, non-commercial.

Northern Alaska Activity

Map Legend

-  Units
-  Oil Field / Accumulation
-  Selected Wells
-  Proposed / Active Wells

Primary Producing Oil Fields

Northern Alaska (February 1998)

Name Discovery Date	Projected Avg. Dly. Prod. 1998 (x 1,000 bbls/d)	Cumulative Production Thru '97 (x 1,000,000 bbls)	+	Remaining Reserves As of 1/98 (x 1,000,000 bbls)	=	Est. Ultimate Recovery As of 1/98 (x 1,000,000 bbls)
Prudhoe Bay 1967	715	9,508		3,511		13,019
Kuparuk River ¹ 1969	266	1,485		1,474		2,959
Endicott ² 1978	61	358		254		612
Point McIntyre Area ³ 1988	180	367		499		861
Milne Point ⁴ 1969	53	85		541		626

¹ Includes West Sak & Tarn

² Includes Sag Delta North

³ Includes Pt. McIntyre, Lisburne, Niakuk, West Beach, North Prudhoe Bay State, West Niakuk, Niakuk 28, & Niakuk 29

⁴ Includes Schrader Bluff & Sag River

Note: Primary means greater than 50 Mbbls/d projected
Numbers reflect Oil + NGL's - Injectant

Undeveloped Oil Accumulations

Northern Alaska (February 1998)

Name	Discovery Date	Estimated Recoverable Reserves	Comments
Point Thomson	1977	200 MMBO 3.5 TCFG	Near ANWR; gas, condensate, and oil
Flaxman Island	1975	? Oil	Tertiary turbidites , in Pt. Thomson Unit
Sourdough	1994	100 MMBO	Adjacent to ANWR, in Pt. Thomson Unit
Kuvlum	1992	325 MMBO	East Beaufort OCS, tested at 3400 BOPD
Tern Is./Liberty	1982	120 MMBO	Mikkelson Bay area OCS
Hammerhead	1986	? Oil	OCS waters north of Pt. Thomson
Colville Delta	1985	? Oil	Near Kuparuk Field
Fiord	1992	? Oil	Two intervals at 1245 BOPD
Kalubik	1992	? Oil	Two intervals at 1610 BOPD
Alpine *	1994	290 MMBO	Adjacent to NPRA
Badami *	1990	120 MMBO	Tested at 4250 BOPD
Northstar *	1984	144 MMBO	Beaufort Sea, including Seal Island
Tarn *	1991	40 MMBO	SW of Kuparuk Field, tested at 2,000 BOPD
Prudhoe Bay *	Satellites	241 MMBO	Several separate accumulations

* Development planned in the near term

Satellite Fields and Other Prospects

- BP Niakuk Field, Kuparuk reservoir extension.
 - ◆ Permit-to-drill issued on NK-41 for bottom outside existing PA.
- BP and ARCO Sambucca prospect.
 - ◆ One well with active permit-to-drill.
 - ◆ Ivishak/Sag River target.
- BP Prudhoe Bay SB prospects.
 - ◆ Two wells with active permits-to-drill.
 - ◆ Schrader Bluff target.
- BP Northwest Eileen prospect.
 - ◆ Up to 3 wells are planned, no permits-to-drill issued yet.
 - ◆ Kuparuk and Ivishak/Sag River target.
- BP Northwest Prudhoe (Texaco Prudhoe) prospect.
 - ◆ Up to 2 wells planned.
- ARCO West Kuparuk prospects (Iceberg, Arete, and Cairn).
 - ◆ ARCO will drill up to two wells on three prospects.
- ARCO Kalubik prospect.
 - ◆ Up to 2 wells planned, permit-to-drill issued for Kalubik #3.

Northern Alaska - Activity

- Milne Point field plans include additional drilling and increased production.
- Cascade tracts added to Milne Pt. Unit, new PA formed.
- Badami field development drilling has begun.
- Tarn development pad construction has begun.
- Tabasco development drilling has begun.
- West Goldhill oil discovery announced by ARCO.
- Warthog #1 plugged and abandoned, complete results secret.
- Wells certified as discoveries in the last year include: Stinson #1, Fiord #1, Kalubik #1, Kuukpik #3.

Northern Alaska - Activity (cont.)

- West Sak/Schrader Bluff heavy oil accumulations.
 - ◆ PA and pool rules established for West Sak “core area” accumulation
 - ◆ West Sak production began in December 1997
 - ◆ Development requires cutting-edge drilling and production technology
 - ◆ Producing about 4,000 BOPD in early 1998
 - ◆ Economically recoverable reserve estimate: 279 MMBO in West Sak “core area”, 281 MMBO in Schrader Bluff “core area”

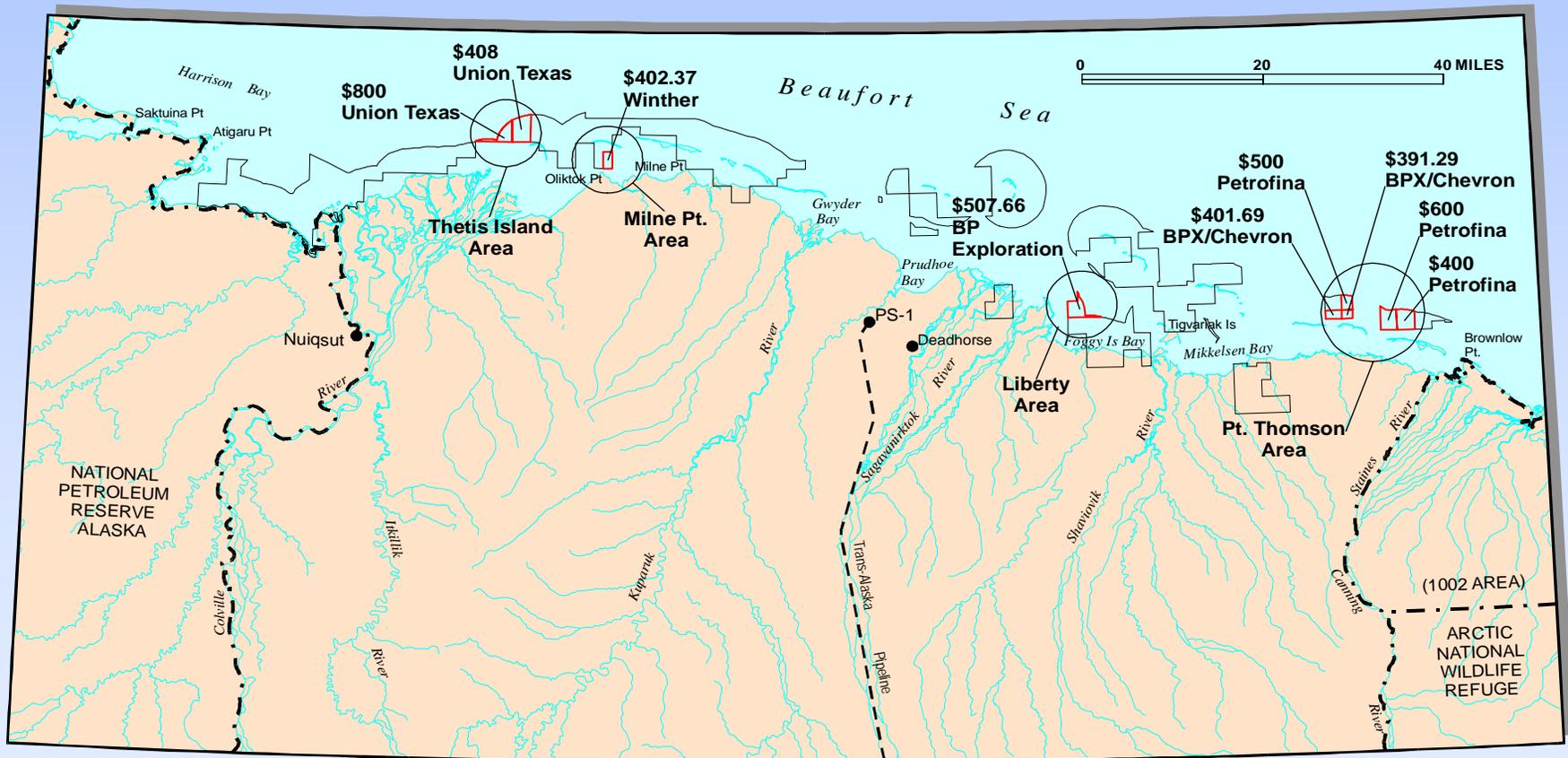
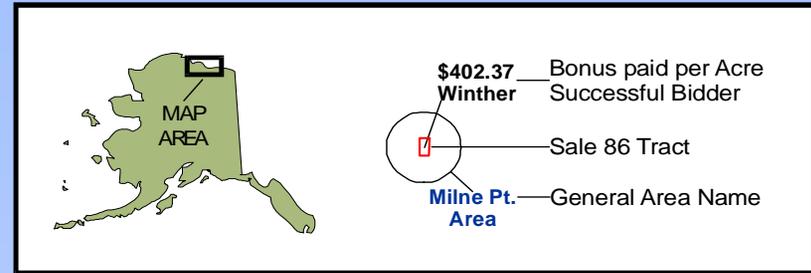
- Sale 86 - Beaufort Sea held in November 1997.
 - ◆ Drew \$28 million in total high bonus bids

- Thetis Island accumulation to be re-evaluated by Anadarko.

- Several seismic surveys were completed in 1997.
 - ◆ Kuukpik 3D, Cirque 3D, Kalubik 3D, Pt. Thomson 3D, Milne 3D.

- Several seismic survey permits have recently been issued.
 - ◆ Northern/BP for Hemi Springs/Sag River area south of Deadhorse
 - ◆ Northern/BP for Endicott to Camden Bay survey
 - ◆ Western/ARCO for Heald Pt. to Camden Bay survey.

Sale 86 - High Bid Tracts



Projects Under Development

Northern Alaska (February 1998)

Project	Status	Expected Start Up Date	Expected Peak Production Rate (Mb/d)
Badami	Construction Work Underway	1999	35
Northstar**	Final Design and EIS Underway	2001 ?	40
Alpine	Final Design and Permitting Underway	2000	60
Prudhoe Bay Satellites	Exploration / Delineation Underway	1998 *	40
Kuparuk River Satellites	Exploration / Delineation Underway	1998 *	25
West Sak	Initial Development Underway	1998 *	56
Schrader Bluff	Expansion Work Underway	1998	56

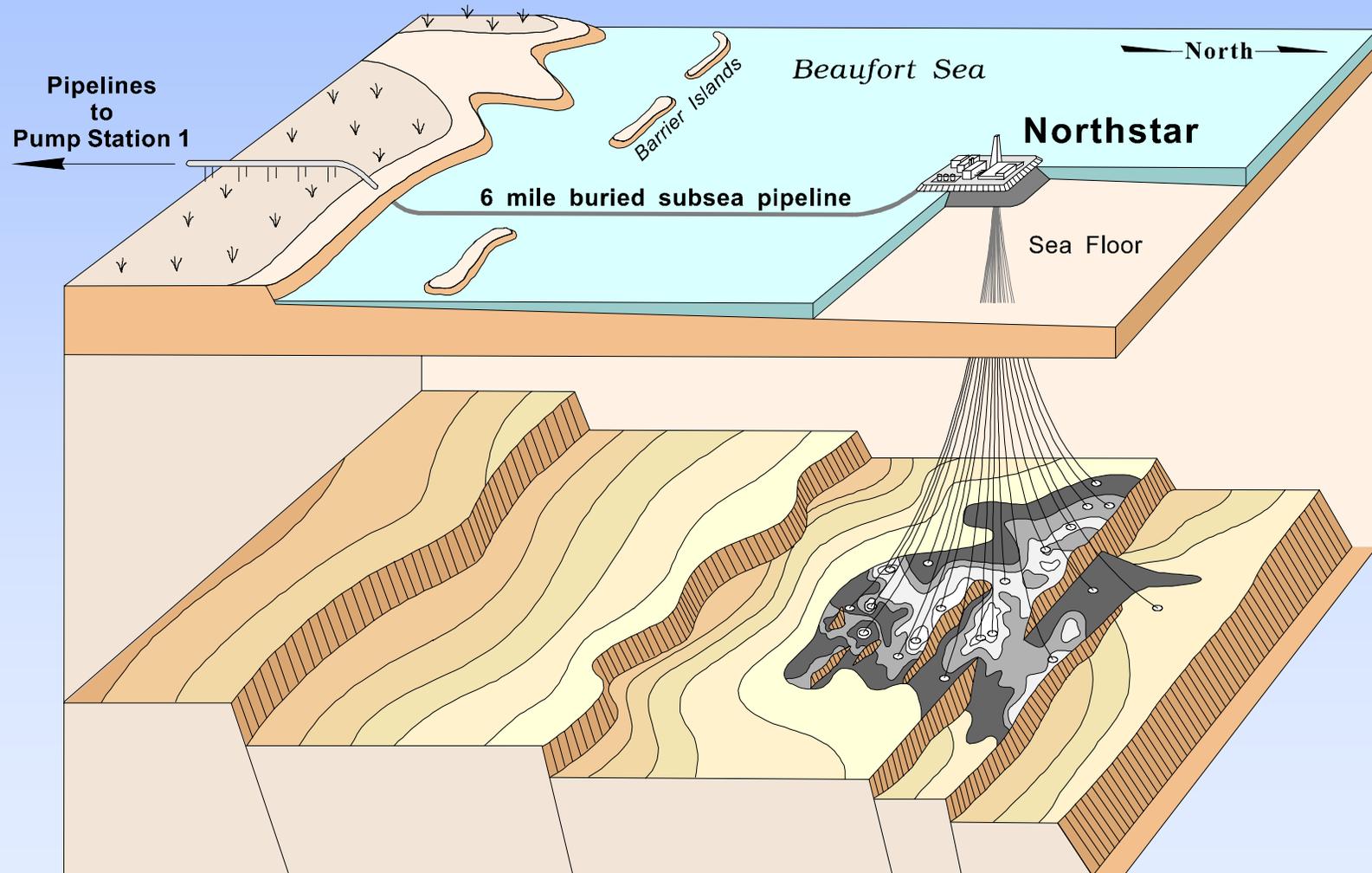
* Various Facility Sharing Agreements Needed Prior to Start-Up

** Construction of modules halted, moving forward with permitting.

Northstar Field

- Discovery Date: 1982 , Shell BF-47 (Seal Island) #1 well.
- Reservoir: Ivishak Sandstone.
- Recoverable Reserve Estimate: 144 million barrels oil.
- BP Operator (98%), Murphy Oil (2%).
- Located entirely offshore north of Prudhoe Bay field.
- Construction activities halted pending outcome of lawsuit and permits.
- Permitting/EIS proceeding very slowly.
- Next draft of the EIS is not expected until April 1998.

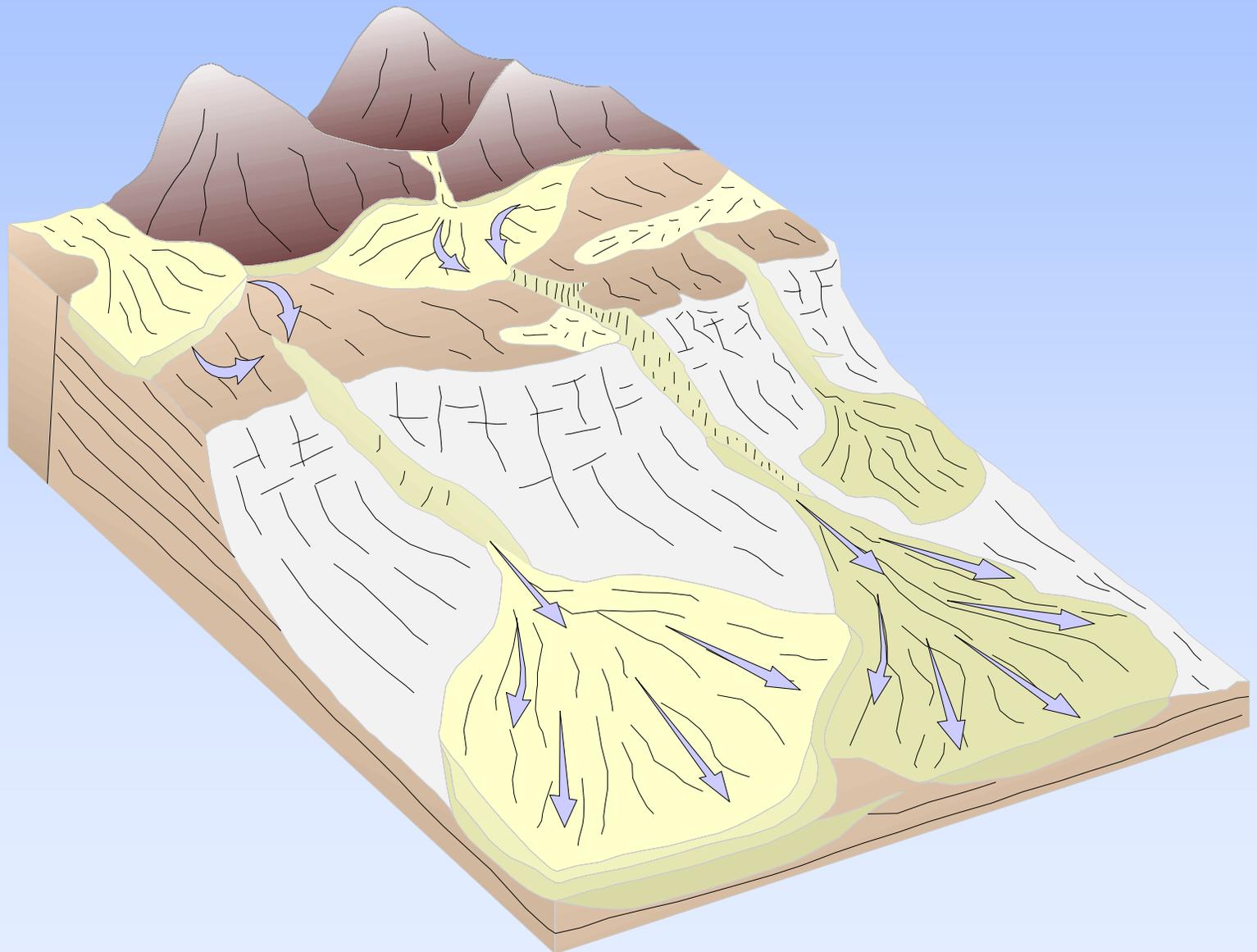
Northstar Schematic Block Diagram



Badami Field

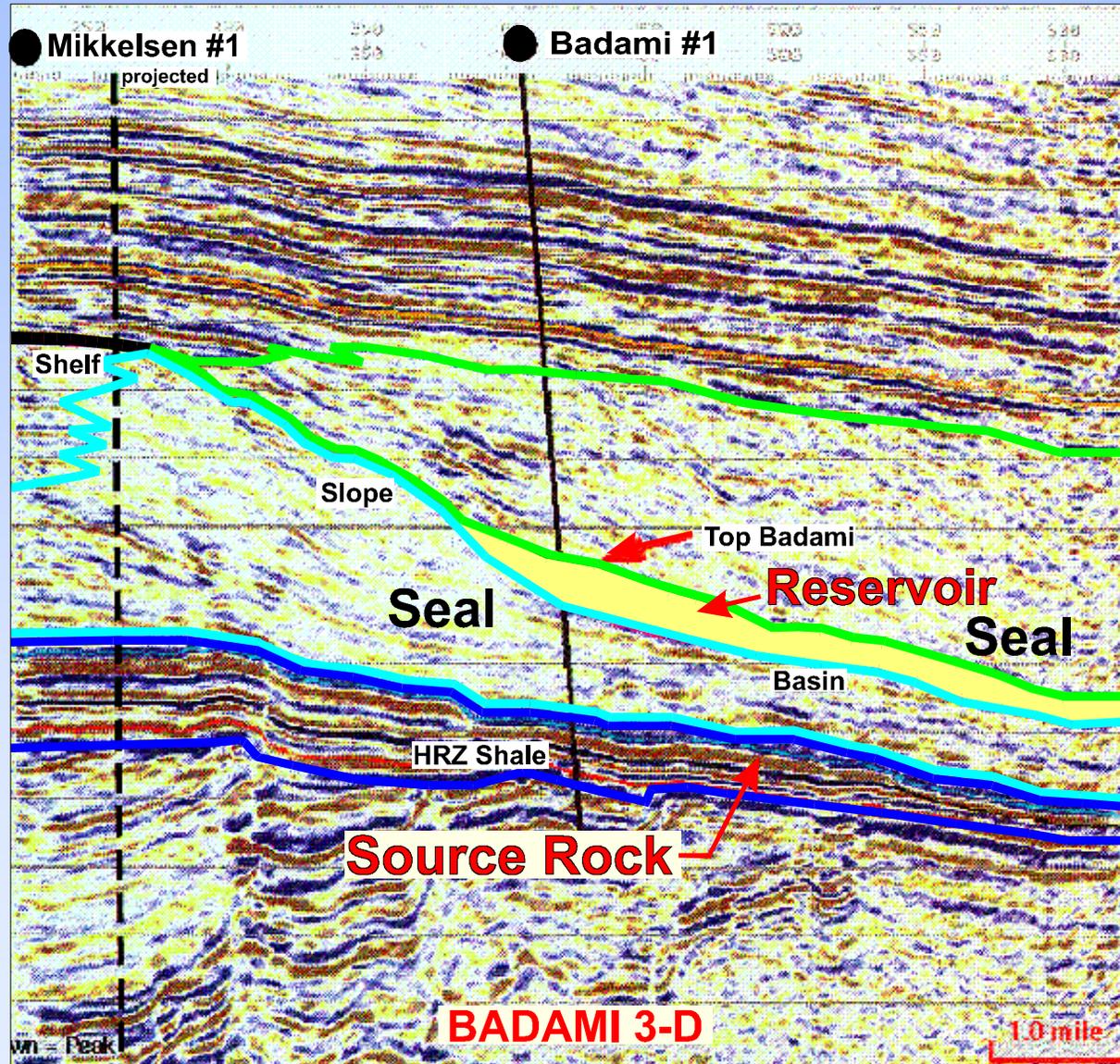
- Discovery Date: 1990, Conoco Badami #1 well.
- Reservoir: Brookian turbidite.
- Recoverable Reserve Estimate: 120 million barrels oil.
- BP Operator (70%), Petrofina (30%).
- Badami field development drilling has begun, plan is to drill 38 wells before 2001.
- Production facilities should be in place in mid-1998, production start-up planned for 1998.
- Designed as remote, stand-alone facility.
- Facilities designed for production rate up to 35,000 bopd.

Submarine Fan Badami Depositional Model



Badami Seismic Cross-Section

(Example of a Stratigraphic Trap)



Point Thomson / Sourdough Area

Pt. Thomson:

- Discovery Date: 1977. Operator: Exxon.
- Recoverable Reserve Estimate: 200 MMB oil, 5 TCF gas.
- Reservoirs: Lower Cretaceous Thomson sandstone, Tertiary Flaxman turbidite.
- Exxon and State negotiating the terms of latest Plan of Development.
- Co-owners airing differences over reserve amounts present.

Sourdough Area (BP Operator):

- Two wells - Sourdough #2 (3/94), #3 (3/96); #1 never drilled.
- Sourdough discovery confirmed, 100 mmbo estimated reserves.
- Wells confidential.
- Originally planned drilling for 1998 postponed.

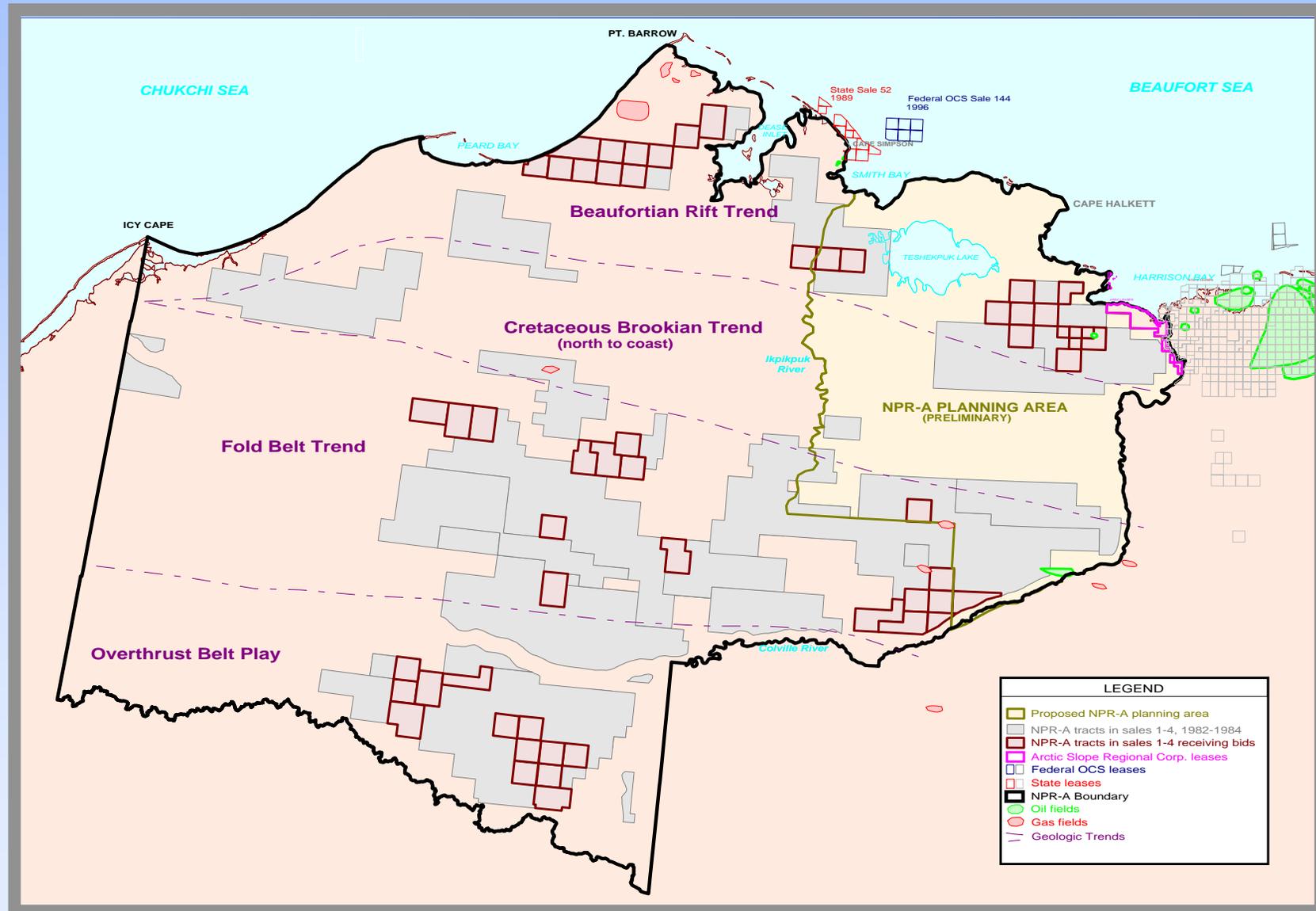
Niakuk Field and Tract Operations

- Discovery Date: 1985 , BP Niakuk #5 well.
- Reservoir: Kugaruk Formation.
- Recoverable Reserve Estimate: 90 million barrels oil.
- Operators: BP and ARCO.
- Interim Niakuk PA approved in 1997.
- Directional drilling record achieved with drilling of ARCO NK-28 well.
 - ◆ Over 18,000 feet horizontal reach
- Kugaruk reservoir extension exploration drilling planned to the northwest outside the existing PA.
 - ◆ Permit-to-drill issued on NK-41, bottom outside existing PA.

Alpine Field

- Discovery Date: 1994 , ARCO Bergschrund #1 well.
- Reservoir: “Alpine sandstone”, Jurassic age.
- Recoverable Reserve Estimate: 250-350 million barrels oil.
- ARCO Operator (56%), Anadarko (22%), UTP (22%).
- Will be first oil production from Native-owned lands on the North Slope.
- Facilities pad and air-strip construction has begun.
- ARCO plans drilling up to three wells in 1998.
 - ◆ Two planned development wells will be drilled from newly constructed drilling pads.
 - ◆ One proposed delineation well will be drilled west of infrastructure on ASRC land.

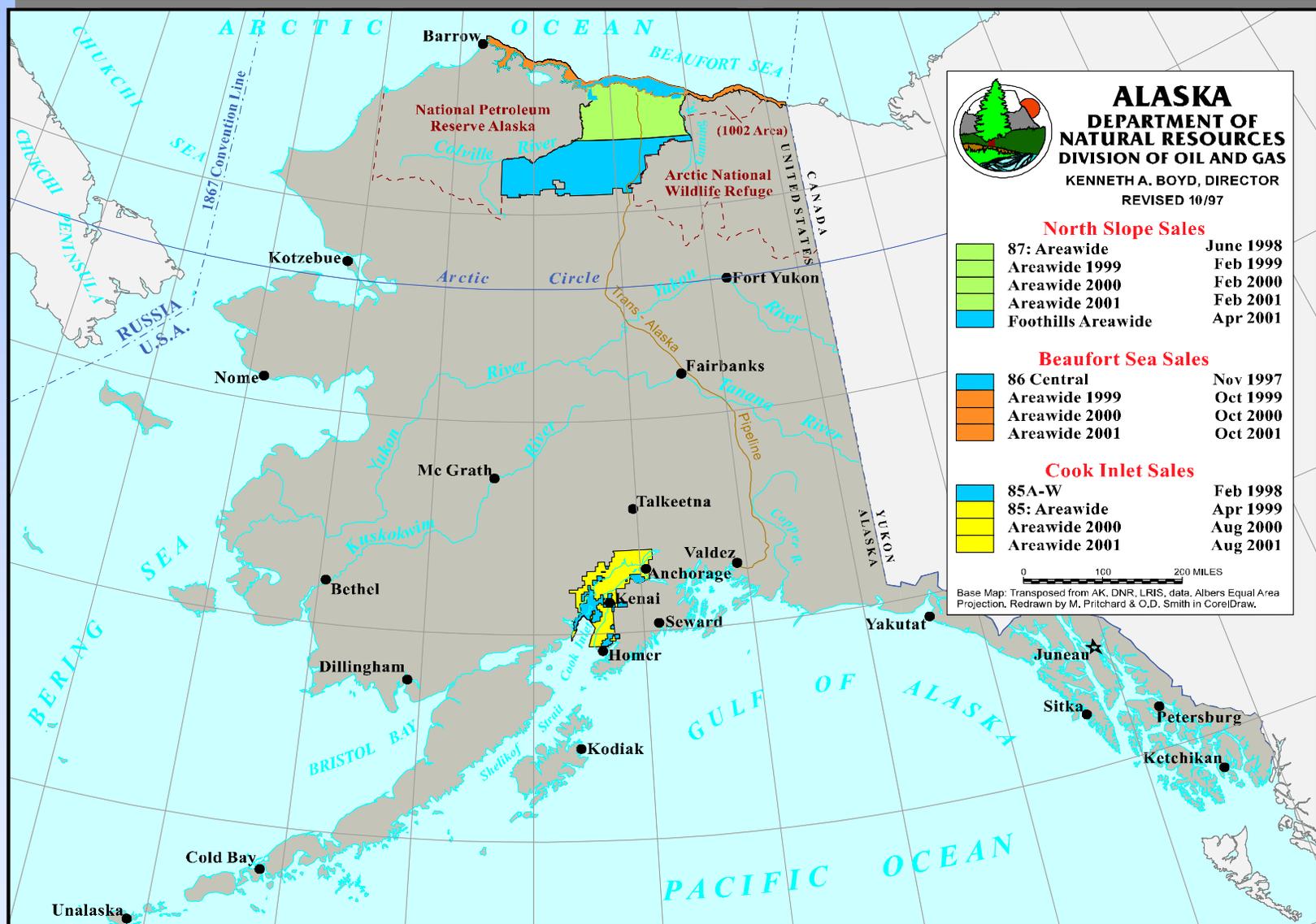
National Petroleum Reserve-Alaska (NPR-A)



Issues Regarding NPR-A

- Possible leasing in 1998.
- U.S. Interior Secretary considering 5 leasing options.
- EIS required before leasing occurs.
- Environmental Issues: New technology, drilling restrictions, stipulations, mitigation and monitoring.
- DNR is performing technical evaluation in support of leasing.
- NPR-A technical studies/outreach dependent on additional funding and outreach.
- Anadarko, ARCO and BP, possibly others, have contracted for NPRA 2D and 3D seismic surveys.

Alaska Oil & Gas Leasing Program



Five-Year Oil and Gas Leasing Program

Public Notification Schedule

Proposed Sale Area & Date	1996					1997					1998					1999					2000					2001																			
	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D			
86 Central Beaufort Sea 9/97						P	E				N	F		S																															
85A-W Cook Inlet Roffer 2/98						A					C ₄	E		N	F	R	S																												
87 North Slope Areawide 6/98														P	E		N	F		S																									
North Slope Areawide 1999 Feb	C ₁	E				A										C ₄	E	N	F	R	S																								
85 Cook Inlet Areawide 4/99						C ₃					E					P	E				N	F		S																					
Beaufort Sea Areawide 1999 Oct	C ₁	E				C ₂					E					C ₃					E						P	E		N	F	S													
North Slope Areawide 2000 Feb	C ₁	E				A															C ₄	E	N	F	R	S																			
Cook Inlet Areawide 2000 Aug	C ₁	E				A															C ₄	E	N	F	R	S																			
Beaufort Sea Areawide 2000 Oct	C ₁	E				A															C ₄	E	N	F	R	S																			
North Slope Areawide 2001 Feb	C ₁	E				A															C ₄	E	N	F	R	S																			
North Slope Foothills Areawide 2001 April	C ₁	E				A								C ₂			E											C ₃						E			P	E	N	F	S				
Cook Inlet Areawide 2001 Aug	C ₁	E				A																						C ₄	E	N	F	R	S												
Beaufort Sea Areawide 2001 Oct	C ₁	E				A																						C ₄	E	N	F	R	S												

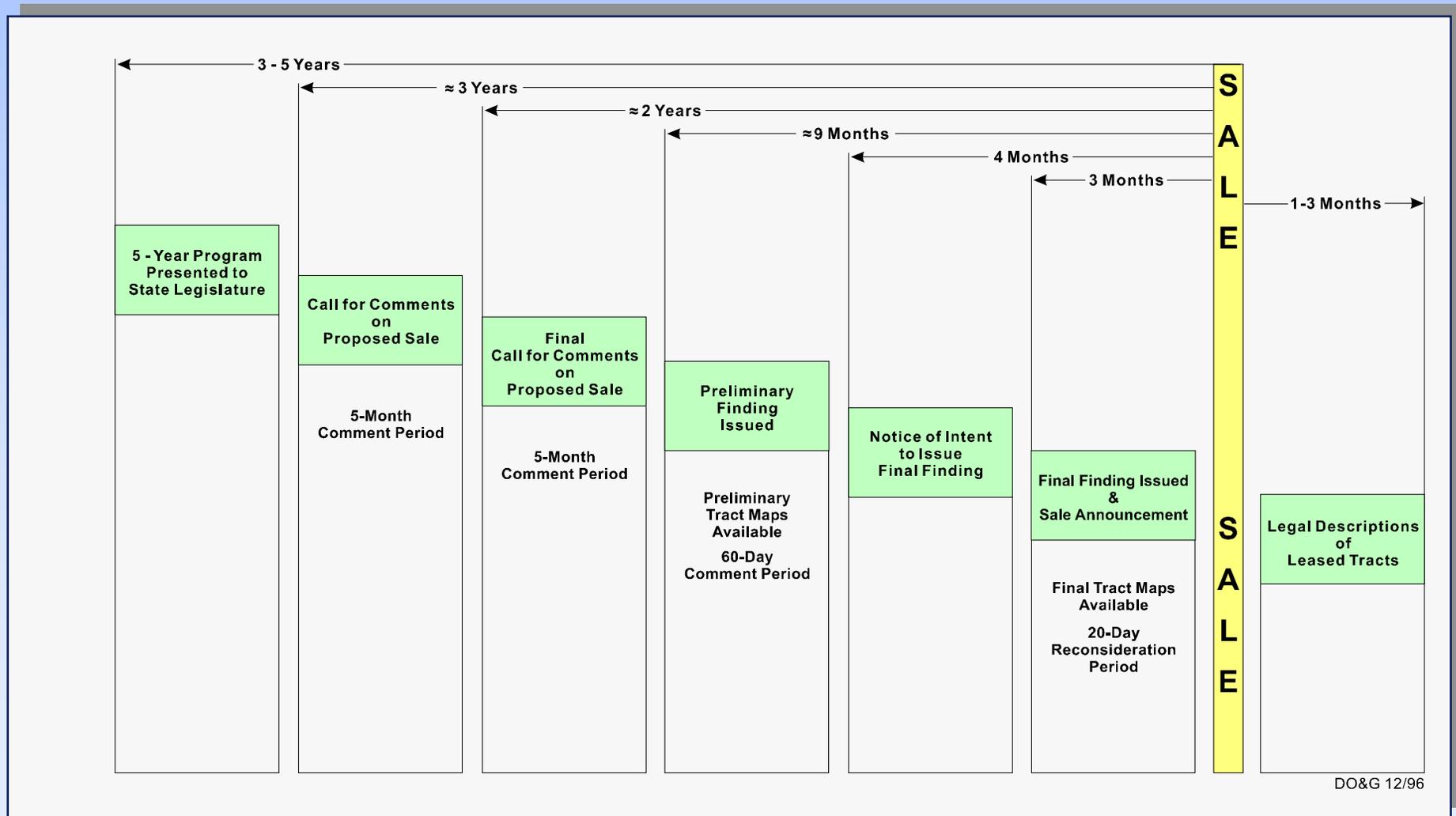
A = Sale Added to Schedule.
 C = Call for Comments:
 1 = New Sales and 5-Year Program Revisions.
 2 = Request for General Information.
 3 = Request for Socioeconomic and Environmental Information.
 4 = Request for New Information Made Available Since Last Finding.
 E = End of Comment Period.

P = Preliminary Best Interest Finding /
 ACMP Consistency Analysis. (If required.)
 N = Notice of Intent to Issue Final / Supplement to Finding.
 F = Final Finding and Notice of Sale and Terms.
 R = Supplement to Final Finding and/or Notice of Sale and Terms.

S = Sale.
 Best Interest Finding Process
 Public Meetings may be held at any time.

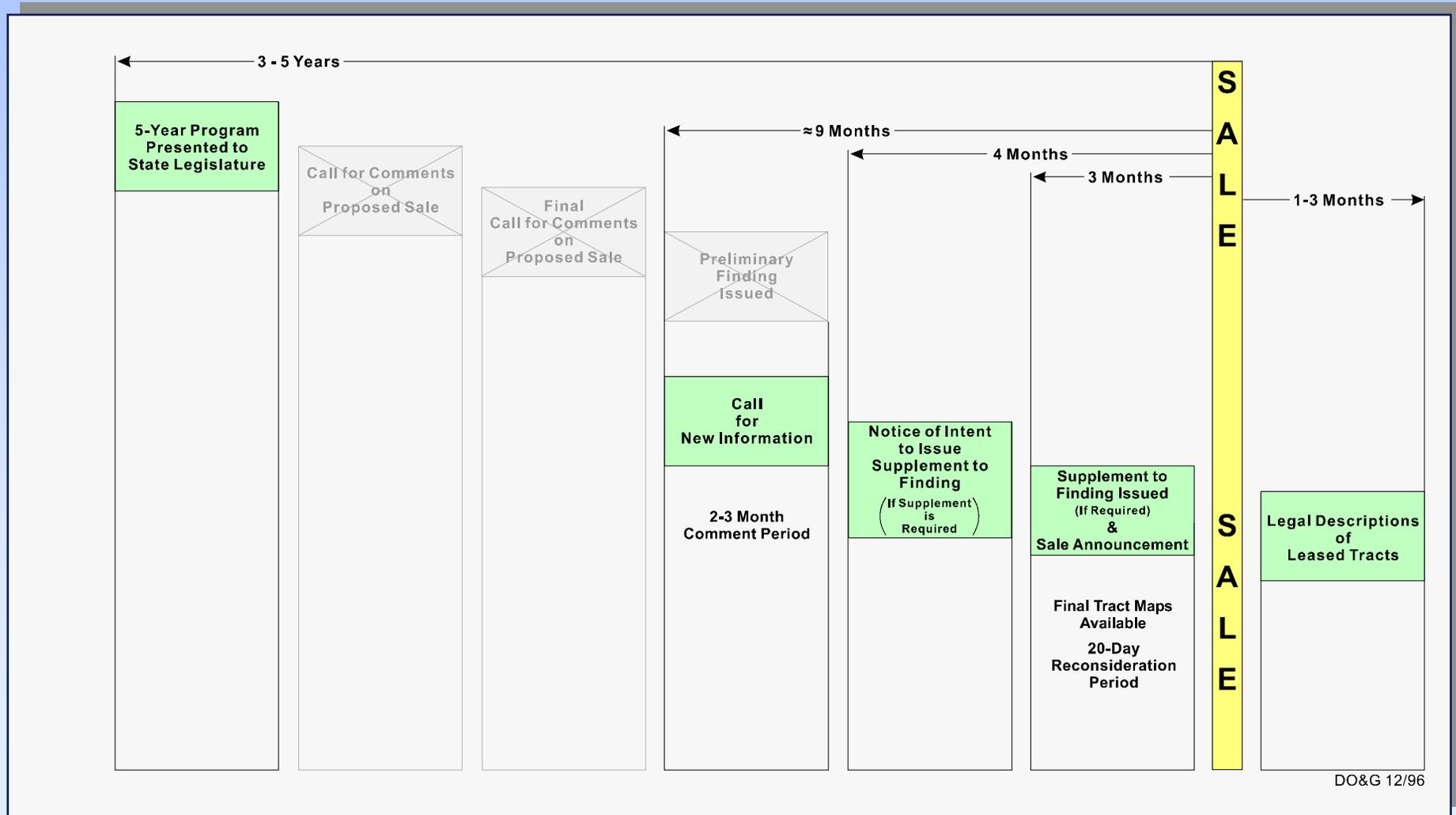
Oil and Gas Lease Sale Public Notification Process

When an Original Finding is Required



Oil and Gas Lease Sale Public Notification Process

When an Original Finding is Not Required



New Programs

- Areawide Lease Sales
- Exploration Incentive Credits (Unleased & Private Land)
- Royalty Reduction
- Cook Inlet Discovery Royalty
- Shallow Gas Leasing
- Exploration Licensing

Areawide Lease Sales

- First Areawide Sale:
 - ◆ Sale 87, North Slope -- June 1998
- Beginning in 1999:
 - ◆ Lease sales in North Slope, Beaufort Sea & Cook Inlet
 - ◆ Best Interest Findings good for 10 years
 - ◆ Subsequent lease sales held annually in each area
- Allows companies to plan exploration activities years in advance.
- Results in more efficient exploration and earlier development.

Exploration Incentive Credits Title 38 Program

- May be given to exploratory well on state lease.
 - ◆ Up to 50% of cost of drilling
 - ◆ Applied against royalty, rentals, taxes, benefit may be assigned
 - ◆ To date, \$58.7 million credits granted to 20 wells

- Also applies to geophysical surveys.
 - ◆ Data made public following lease sale
 - ◆ No geophysical EIC's have been requested

Exploration Incentive Credits Title 41 Program

- May be given to exploratory well on any land.
 - ◆ Up to 50% of costs if on state land
 - ◆ Up to 25% of costs if on federal or private land
 - ◆ Applied against royalty, rentals, taxes, benefit may be assigned
 - ◆ Credit may not exceed \$5 million per well
 - ◆ Total of all credits may not exceed \$30 million
- Also applies to geophysical surveys.
 - ◆ Data may be shown to 3rd parties, but not transferred
- This EIC provision ends July 1, 2004.
- None earned to date.

Cook Inlet Discovery Royalty

- For wells that discover oil or gas in a previously undiscovered pool.
- Wells must be capable of producing in paying quantities.
- Royalty set at 5% for 10 years.
- Applied only to lease containing the discovery well.
- Applied only to the new pool.

Revenue Development

- New five-year royalty-in-kind (RIK) contract with Mapco will be submitted for Legislature's approval.
- Probable new one-year RIK crude oil contract for Tesoro.
- Evaluate domestic sale of RIK gas to south-central Alaska market.
- Ongoing review of effectiveness of royalty value settlement agreements.
- Evaluate probable upcoming royalty reduction applications.

Shallow Gas Leasing

- Over-the counter leasing for exploration down to 3,000 feet.
- No Best Interest Finding required.
- Reduced Lease Rental: \$0.50 per acre.
- Establishes royalty rate of:
 - ◆ 12.5 % if gas exported from the state
 - ◆ 6.25% if gas is used intrastate
- Exempted from obtaining Waste Discharge Permit (DEC).
- May operate without Oil Discharge Prevention & Contingency Plan.
- Reduces proof of financial responsibility from \$1 million to \$25,000.
- DO&G is developing regulations.

North Slope Natural Gas Development Options -- Gas to Liquids or Liquefied Natural Gas?

- Not a winner take all situation.
- The competition between the processes is out in the market place--
 - ◆ Which project(s) will produce a rate of return sufficient to attract investors and operators?
 - ◆ What products does the market want/need for the next 20 years?
- Both processes may ultimately be used on the North Slope, either in the same field or in different fields.
- You folks are in the business -- You tell me where North Slope gas fits in the global picture.
 - ◆ What is the competition?
 - ◆ Who is the competition?

Points of Comparison

North Slope LNG

- Known markets
- Large volume market needed
- Lacks a transportation system
- Requires a very large investment
- Large scale project needed up front
- Good expansion economics
- Makes gas available to south-central Alaska
- Technology proven
- Good track record for estimating costs
- Extends life of Prudhoe Bay Unit oil--gas carries most of the operating cost

North Slope GTL

- Known markets
- Smaller markets available
- Transportation system already in place
- Requires a large investment
- Manageable-sized expansions possible
- Expansion economics unknown
- No new gas available south of the Brooks Range
- Technology being developed
- Cost estimates still uncertain
- Extends life of TAPS and lowers TAPS tariff--extends life of most North Slope oil fields

Royalty Reduction

- To encourage otherwise uneconomic production of oil and gas.
- In State's interest and must make a clear and convincing showing.
- If a field has not previously produced:
 - ◆ Reduced to as low as 5%
- To prolong economic life of existing field:
 - ◆ Reduced to as low as 3%
- To establish production of shut-in field:
 - ◆ Reduced to as low as 3%
- Provisions expire July 1, 2015.

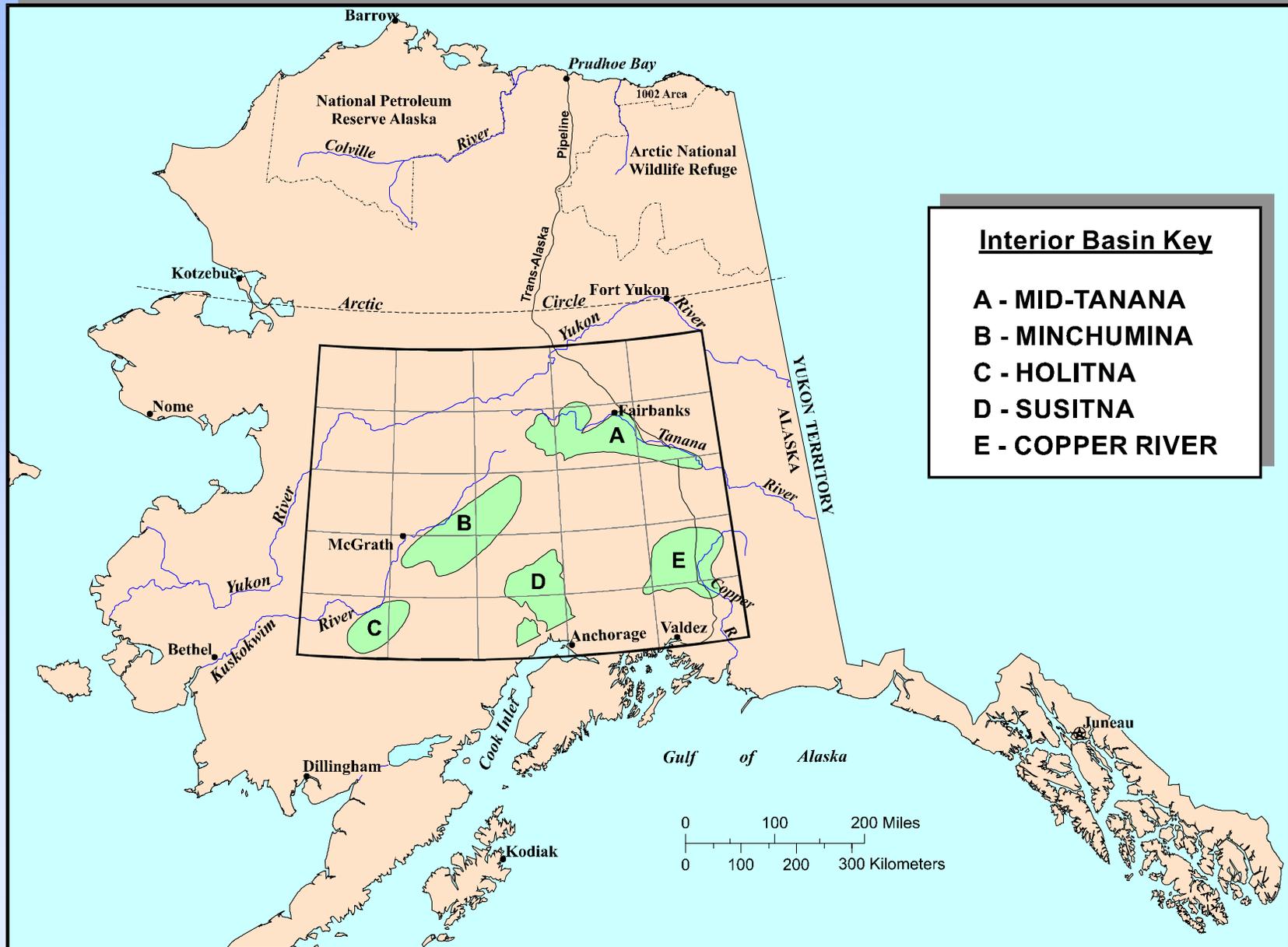
Exploration Licensing

- Purpose:
 - ◆ To supplement conventional oil and gas lease sales
 - ◆ Encourage exploration for oil and gas on certain state lands
- The State Grants:
 - ◆ The exclusive right to explore, for up to 10 years, designated tracts of not less than 10,000 acres nor larger than 500,000 acres, limited to 2 million acres per licensee
 - ◆ Option to convert license areas to standard leases
- The Licensee Accepts:
 - ◆ Obligation to perform exploration work
 - ◆ The requirement to post a substantial performance bond
 - ◆ Relinquishment and termination provisions such that:
 - ➔ Complete 25% of work within 4 years or forfeit license
 - ➔ Complete 50% of work within 4 years or relinquish acreage

Interior Basins Study

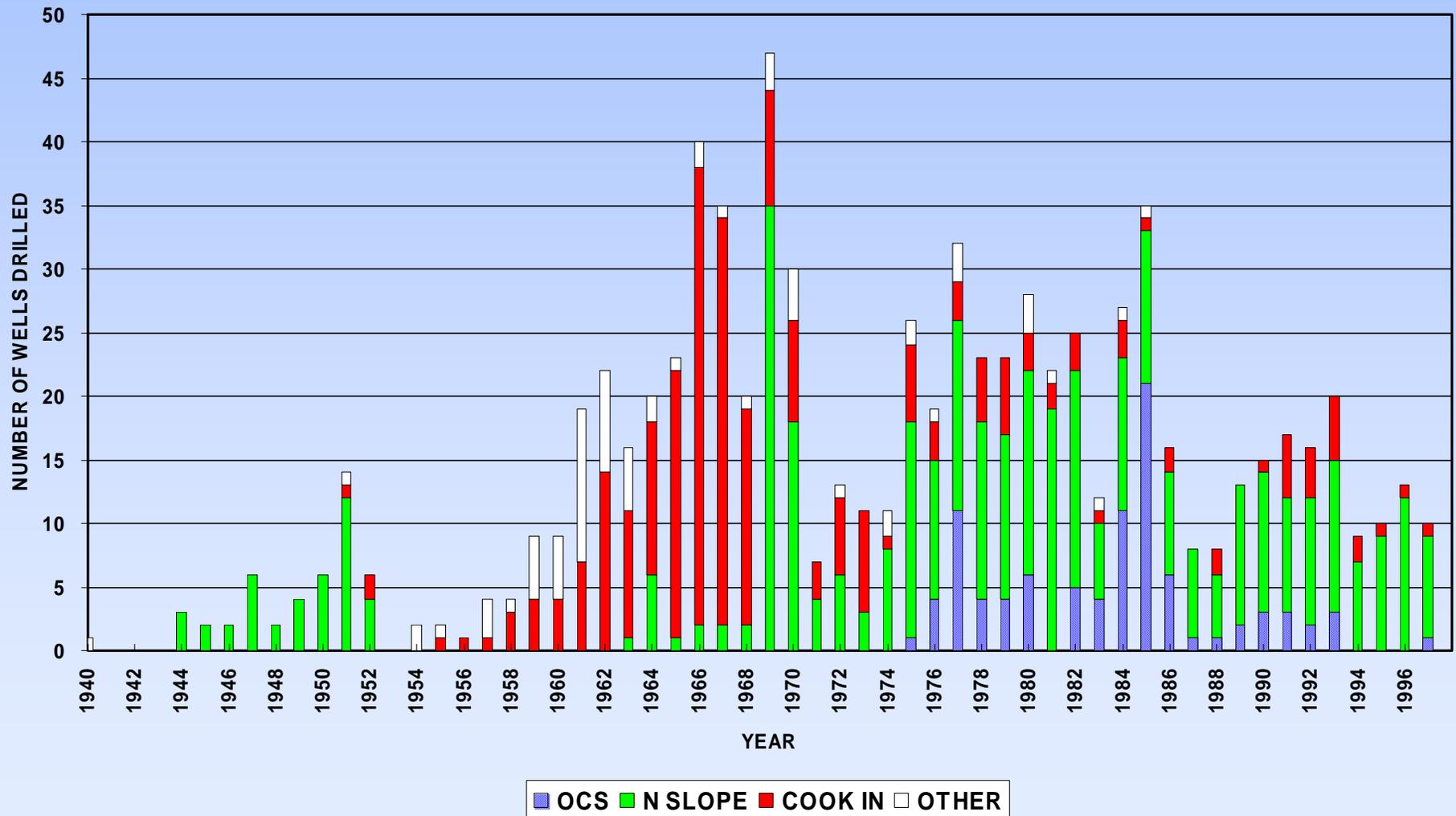
- Intended to promote exploration of Alaska's interior basins.
 - ◆ Study area is a 25 quad area of south-central Alaska
 - ◆ Little or no exploration activity over vast areas
 - ◆ Little is known about the area's oil and gas potential
- Joint USGS/DO&G geology compilation in progress.
 - ◆ Digital data files and maps available in mid-1998
- Published set of magnetic and gravity maps over interior Alaska.
 - ◆ The first time there has been a compilation of all publicly-available data for interior Alaska
 - ◆ The data is available in hardcopy and digital files

Geology and Gravity/Magnetic Data



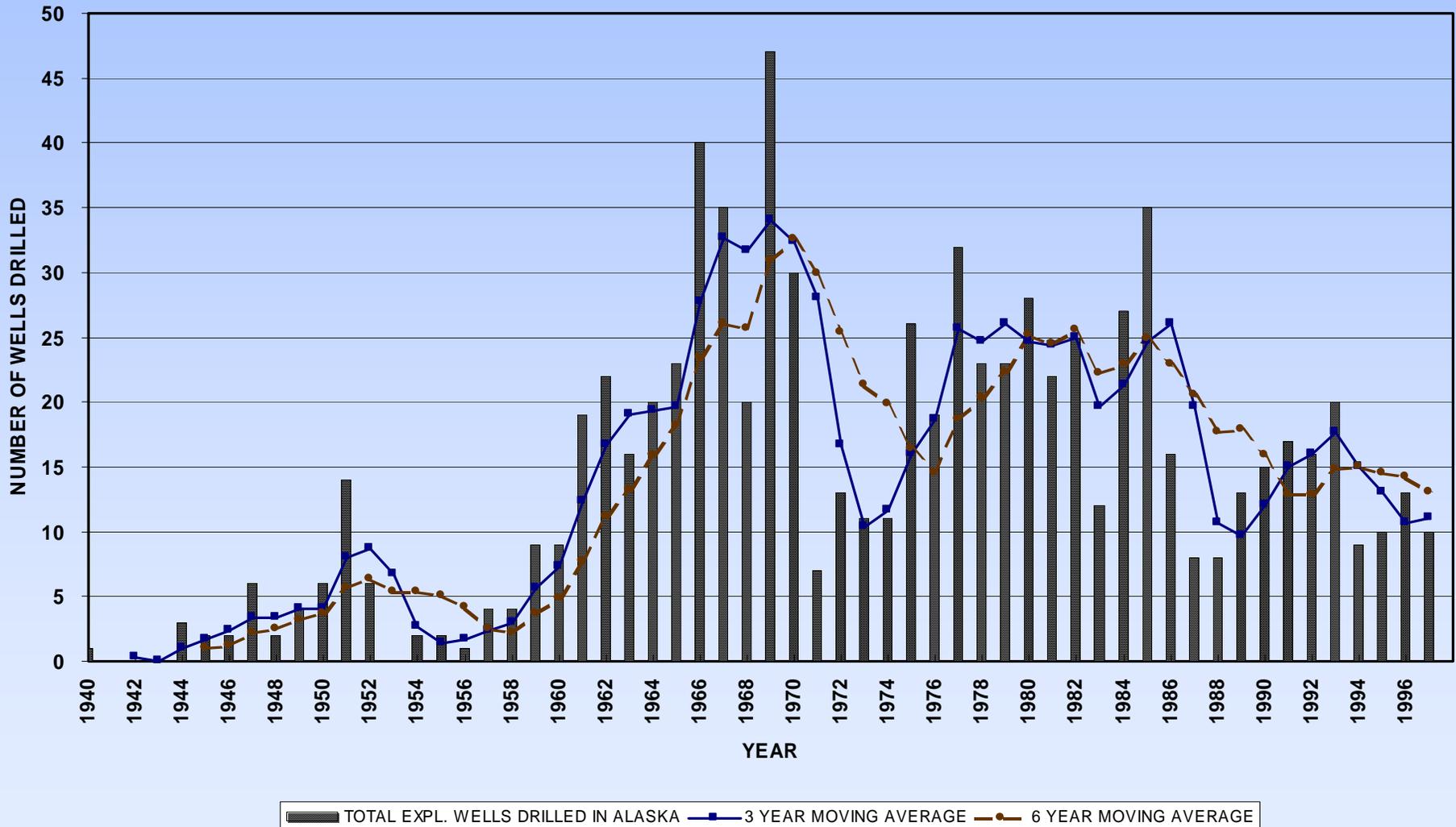
Alaska Exploration Well Statistics

Grouped By Area



Alaska Exploration Well Statistics

Total Exploration Wells vs. 3 & 6 Year Moving Averages



Seismic Exploration Activity

■ 2D vs. 3D Seismic

- ◆ 2D -- targets larger areas to define general subsurface structures
- ◆ 2D -- more cost effective regional exploration tool for under-explored areas
- ◆ 3D -- because of high costs, usually covers smaller areas with high density data grid creating 3D subsurface images
- ◆ 3D -- targets previously identified prospects or known accumulations for delineation and development
- ◆ 3D surveys have increased significantly in past 5 years, 2D mileage down significantly
- ◆ Only two seismic contractors have worked in Alaska in the last several years

■ Cook Inlet Seismic Activity

- ◆ Ninilchik area 2D survey recently completed
- ◆ Upper Cook Inlet offshore 3D and Swanson River 3D surveys completed in 1997
- ◆ North Middle Ground Shoal 3D, and possibly 2D, survey planned for later in 1998

■ North Slope Seismic Activity

- ◆ Completed in 1997: Kuukpik 3D, Cirque 3D, Kalubik 3D, Pt. Thomson 3D, Milne 3D
- ◆ Anadarko, ARCO and BP, possibly others, have contracted for NPRA seismic surveys
- ◆ Permits issued to Northern/BP for Hemi Springs/Sag River area south of Deadhorse, Northern/BP Endicott to Camden Bay survey, and Western/ARCO Heald Pt. to Camden Bay survey

Alaska DNR Well Activity on the WWW

www.dnr.state.ak.us/oil/data/wells.htm

Division of Oil and Gas Web Server - Well Status Information -- Active Wells - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Guide Print Security Stop

Bookmarks Location: <http://www.dnr.state.ak.us/oil/data/wells.htm>

Internet WSJ Wtrhs. Sec. Lookup New&Cool

Warthog 1

API Number:	50 171 00012 00	Permit Number:	97-0085
Operator:	ARCO	Permit Date:	10/31/1997
Well Name:	Warthog	Status:	P&A
Well Number:	1	Completion Date:	12/06/1997
Basin/Area:	North Slope	Total Depth:	10286
Lease:	ADL 371014	True Vertical Depth:	8602
Surface Latitude:	70.04127	Bottom Latitude:	70.31738
Surface Longitude:	149.9219	Bottom Longitude:	149.9394
Surface MTRS Location:	N/A		
Bottom MTRS Location:	Urmiat, T08N-R29E-20, 3287 FNL, 1407 FEL		

Results of Warthog 1

On January 7, 1998 ARCO Alaska Inc. announced that the Warthog 1 well, located offshore from the Arctic National Wildlife Refuge in Camden Bay, about 80 miles east of Prudhoe Bay and 30 miles west of Kaktovik, "did not encounter commercial hydrocarbons" and would be plugged and abandoned. Additional information collected from the well will remain confidential. An ARCO spokesman said that the company has no additional plans to continue exploration in the area.

Reference: Petroleum Information Alaska Report, 12/10/1997, p. 1; Petroleum News Alaska, 12/29/1997, p. A-21; Anchorage Daily News, 12/6/1997, p. F-1; Anchorage Daily News, 1/8/1998, p. F-1.

[Return to the Well Status Table](#)

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