

# Alaska Oil and Gas Activities

Presented to  
**The House Special Committee on Oil and Gas**  
January 18, 2005

**Mark D. Myers, Director**  
State of Alaska  
Department of Natural Resources  
Division of Oil and Gas



Alaska Department of  
**Natural  
Resources**

<http://www.dog.dnr.state.ak.us/oil>

# Briefing Agenda

- **Introduction**

- Revenue and Production Levels
- Exploration and Development Activities

- **Major Issues**

- Gasline Update
- Promoting New Investments
- Commercial Issues
- Coalbed Methane
- Questions/Discussion

# The State Revenue Pie

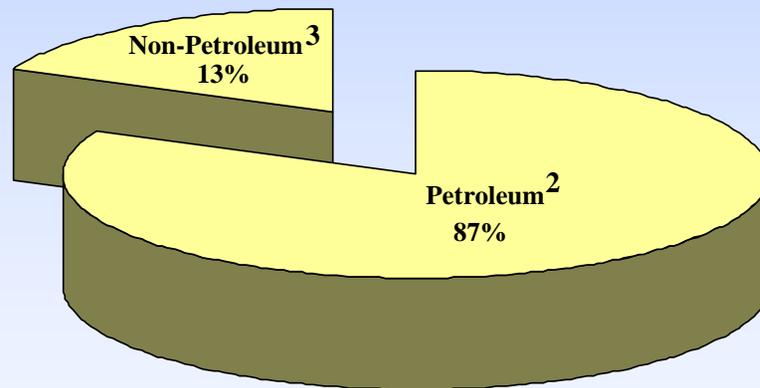
Petroleum Revenue Sources, (FY 2004, Estimate)

**Total Royalties, Bonuses, Rents & Settlements:**  
**\$1,417.8 Million**

General Fund Royalties, Bonuses & Rents:<sup>1</sup>  
**\$1,056.0 Million**

Royalties to Permanent Fund & School Fund:  
**\$361.8 Million**

FY 2004 Unrestricted Revenue



## Taxes:

**\$998.0 Million<sup>2</sup>**

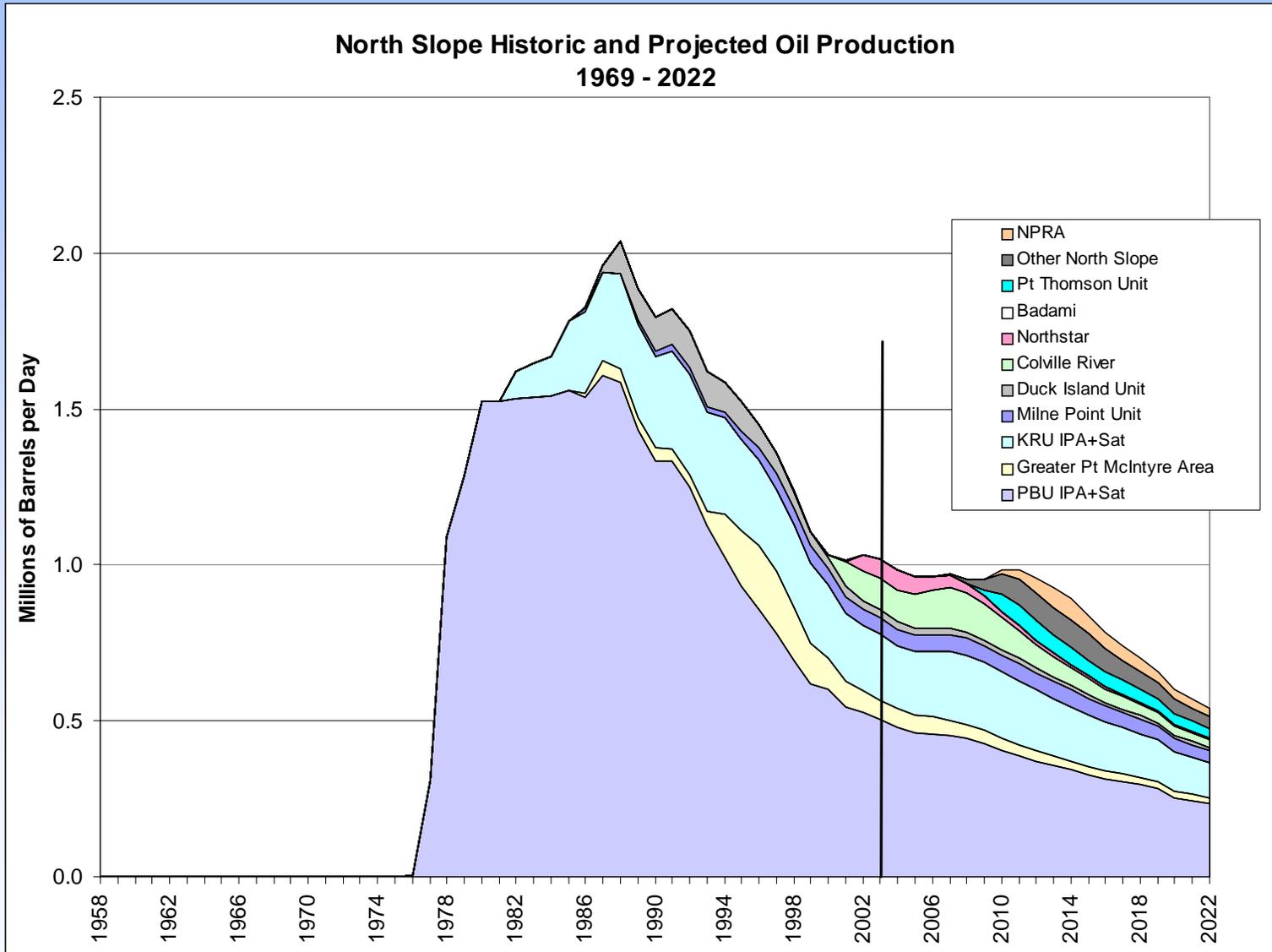
(Oil & Gas Property Tax + Income Tax + Severance Tax)

<sup>1</sup> Includes Federally shared rentals + royalties

<sup>2</sup> Source: DOR Spring 2004 Revenue Sources Book

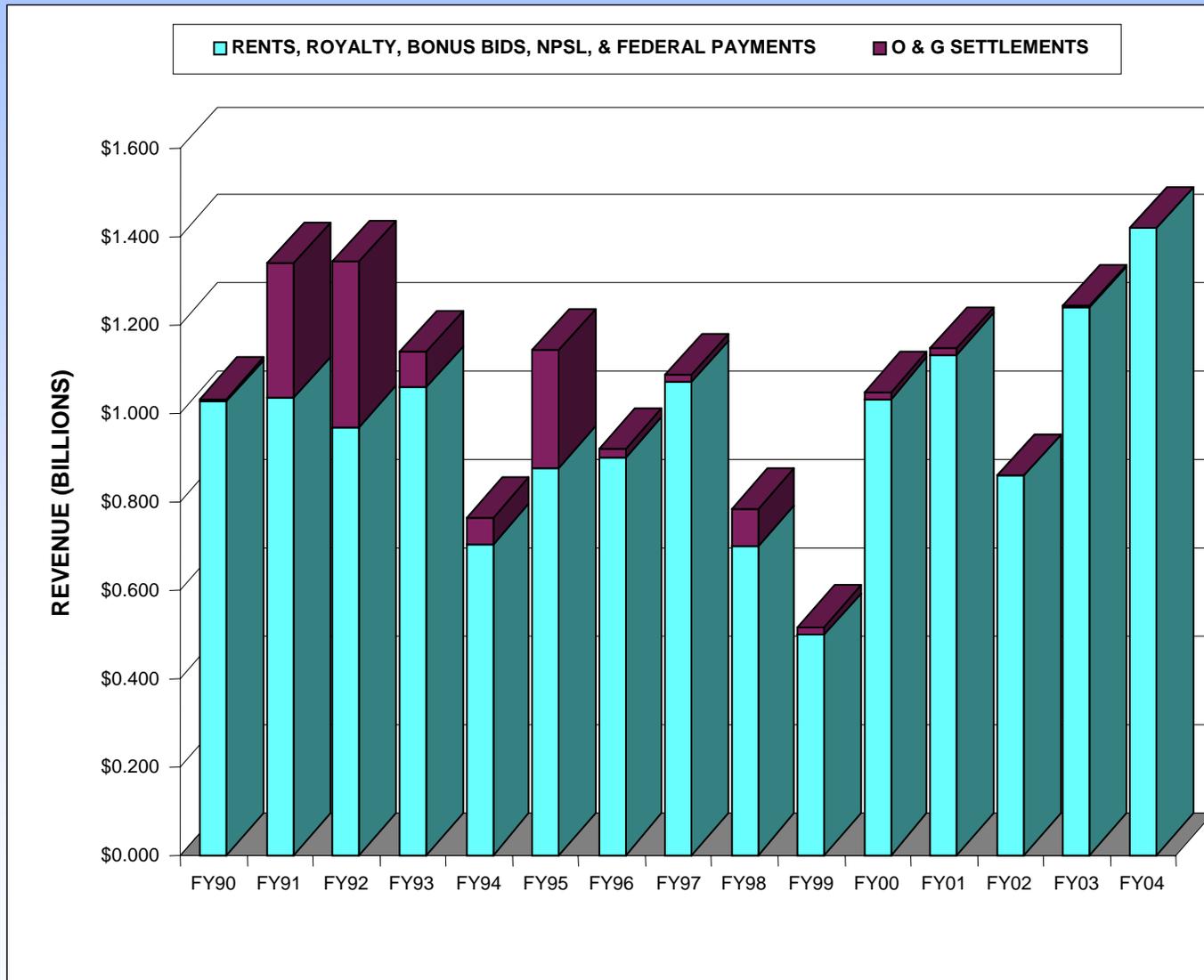
<sup>3</sup> Source: DOR Spring 2004 Revenue Sources Book

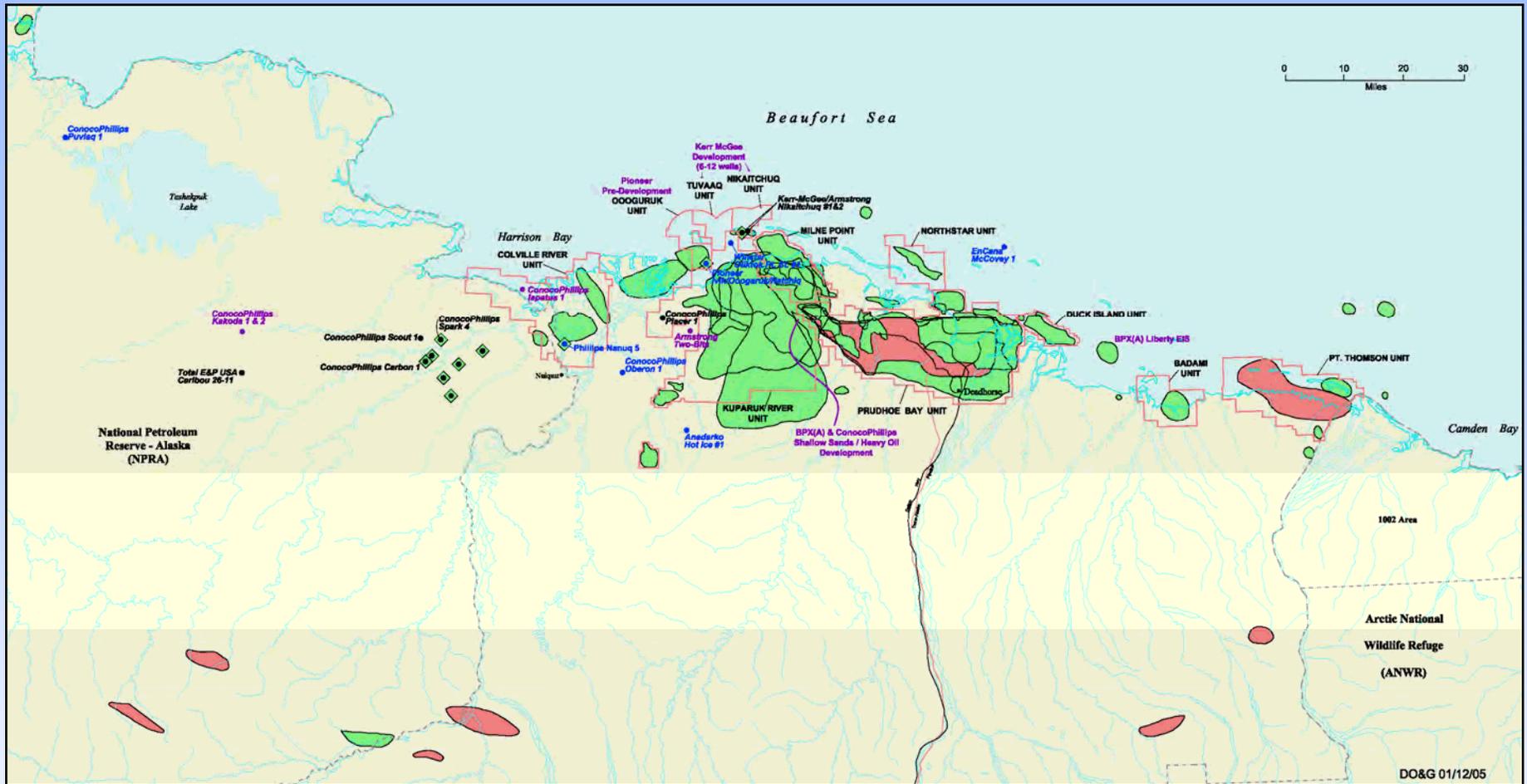
# Historic and Projected Oil Production 1969-2022



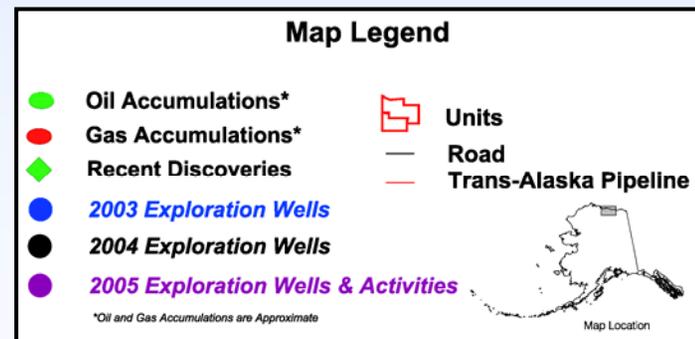
# Fiscal Year Oil and Gas Revenue From State Lands

Fiscal Years 1990 through 2004





# North Slope Oil & Gas Activities & Discoveries January 2005



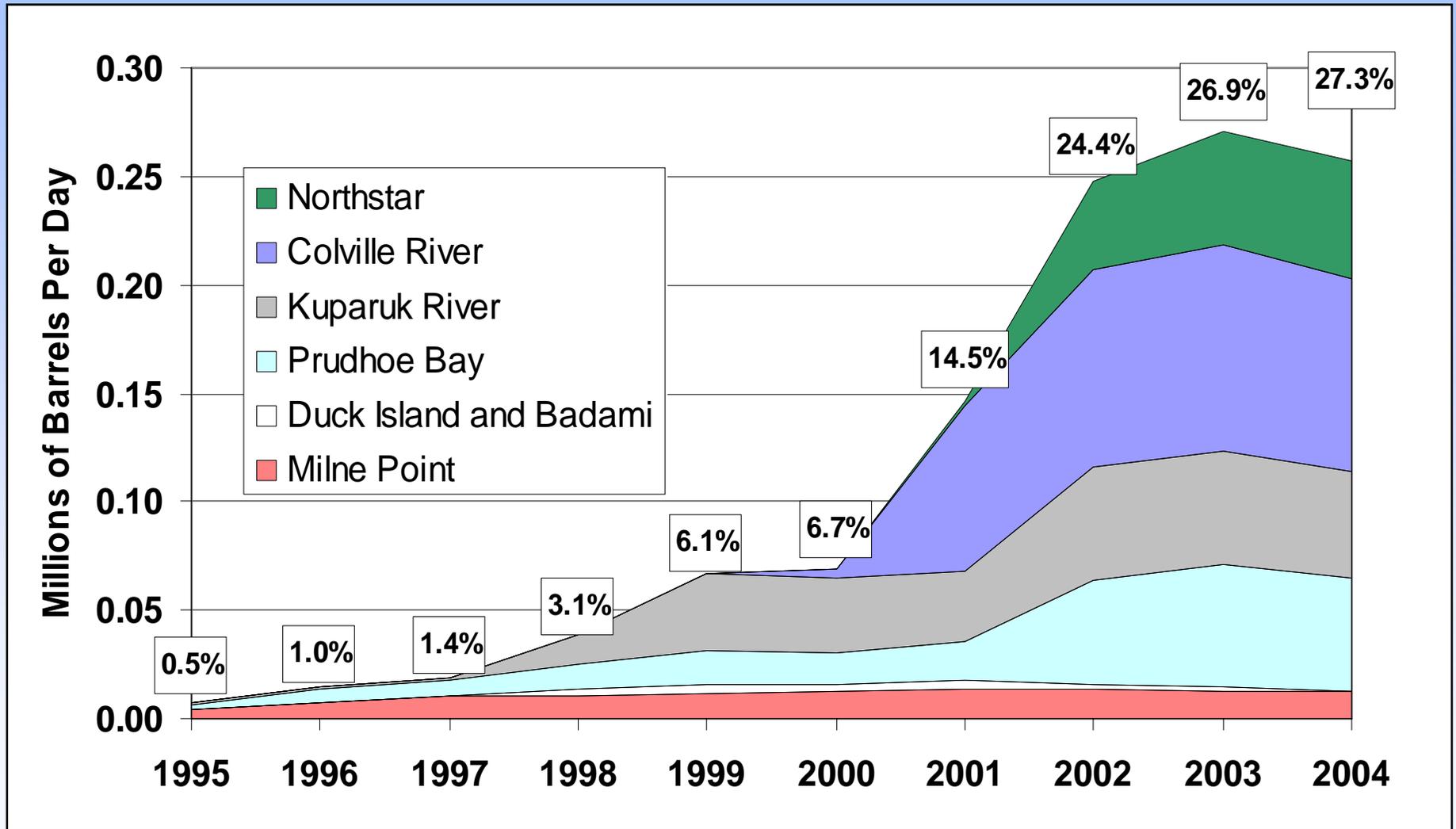
# North Slope Development Activities

## 2004-2005

### Northern Alaska

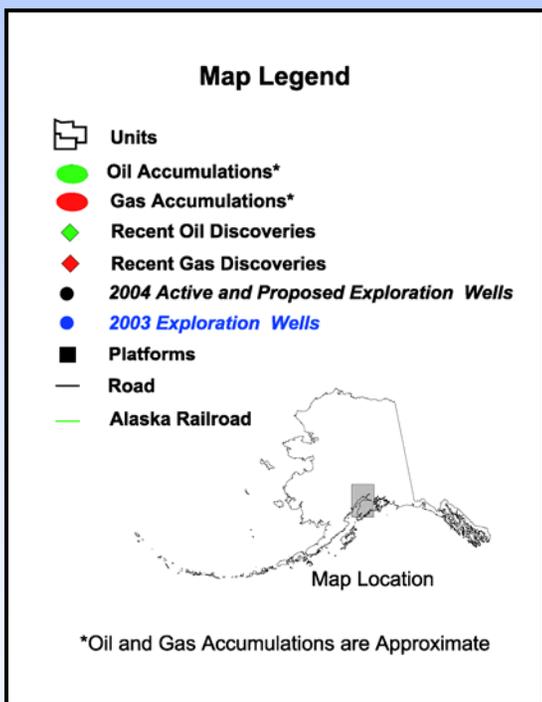
Project Name	Status	Expected Start-Up Date	Estimated Reserves or Expected Production	
PBU Oil Rim - field gas offtake expansion w/ increases miscible injectant for EOR	Projects Underway	2003-2004	10,000-15,000 BOPD	
PBU Pt.McIntyre PM2 to GC1 Project	Pt. McIntyre PM2 production to GC1	Mar-04	8,000 - 10,000 BOPD increase	
PBU Borealis	Development continuing/PA expansion submitted second quarter 2004	Producing	35,000 BOPD	
Shallow Sands/ Heavy Oil (West Sak/Schrader Bluff)	Development continuing	Producing	1.0 - 1.5BBO recoverable 140MBOPD by 2010 (est) 30,000+ BOPD New	
KRU Palm (DS-3S)	Development continuing	2002 (Nov.)	35 MMBO	16,000 bbls. oil/day
CRU Fiord	Technical studies, permitting, EIS or EA	2006	10,000-20,000 BOPD	
CRU Nanuq	Technical studies, permitting, EIS or EA	2006	10,000-20,000 BOPD	
CRU ACX-1: Various Facility Expansion Projects: Upgrades to Oil & Gas Processing Capacity; Produced Water System and Handling. Seawater Injection System	Projects Underway	4th Qtr 2004	5,000 - 10,000 BOPD increment	
CRU ACX-2: Further capacity increases to Oil Processing & Seawater Injection Systems	Planning / Some Early Acceleration	3rd Qtr 2005	25,000 - 30,000 BOPD increment	
Nikaitchuk/Tuvaak Development	Planning 6-10 development wells	2004-05	Not disclosed	
Point Thomson	Begin development drilling by June 2006, must have 7 wells & approved PA by June 2008	2008	75,000 bbls. condensate/day	
Liberty Development	EIS for artificial drilling/development island	2007	120MMBO recoverable (est)	

## Incremental North Slope Oil Production since 1995 by Unit



Note: Percentage figures show fraction of incremental oil since 1995, as a proportion of total North Slope production by year.  
Sources: AOGCC and ADNR.

# Cook Inlet Oil & Gas Activities & Discoveries December 2004



# Cook Inlet Drilling Summary – 2004 (1)

- Cosmopolitan Unit – Conoco Phillips (Oil discovered in 1967 by Penzoi)
  - Hansen #1 well P&Aed, Forest reported successful results, no word from Conoco Phillips yet
  - Hansen #1A well completed as oil producer, test production is being trucked to Nikisiki refinery.
- Iliamna Prospect – Pelican Hill
  - Iliamna #1 drilled and suspended, now converting to disposal well
- Kasilof Unit – Marathon (Gas)
  - Unit approved in October 2002
  - Kasilof South #1 and #1L drilled, evaluating
- Middle Ground Shoals Field – Unocal & XTO
  - While XTO continues operations at two platforms, Unocal has ceased operations at this field and placed its two platforms (Dillon and Baker) in lighthouse mode.
  - Decision on “decommissioning” platforms still to come
  - XTO drilling C31-26RD in progress
- Nicolai Creek Unit – Aurora Gas
  - NCU #3 production of gas ended March 2004
  - NCU #2, 1B, 9 completed, producing gas since November 2003
- Nikolaevsk Unit – Unocal
  - Red #1 drilled, results confidential. First of a 5-year 3 well commitment
  - Results Confidential
- Ninilchik Unit – Marathon
  - G.O. #1 well completed as gas well, tested at 11.2 MMCF/D from one zone
  - G.O. #2 well completed as gas well, tested at 11.9 MMCF/D from three zones between 8,048 and 9,440 ft. (MD).
  - Falls Creek #1RD completed as gas well, tested at 6.8 MMCF/D from a depth of 8,714 ft. (<D).
  - Susan Dionne #3 (SDPA) completed as gas well; Falls Creek #3 (FCPA) active, no details available.
  - Abalone #1 well drilled in 2003 at north end of unit, not completed, currently shut down, no other details available.
  - Plans to drill Susan Dionne #2 (SDPA), Ninilchik State #1 (GOPA).
  - Production started at GOPA in Septmeber 2003, currently about 15 MMCF/D rate.

# Cook Inlet Drilling Summary – 2004 (2)

- North Fork Unit and Deep Creek Unit – Unocal
  - Unit getting renewed interest from small investor group
  - Non-binding pipeline contract with ENSTAR signed in September 2003
  - Development drilling will begin 2005
- Redoubt Unit – Forest Oil (Oil discovered in 1968 by Pan Am)
  - Production began Dec. 9, 2002
  - Recent drilling results indicate field is more complicated than previously thought; reserves probably to be reduced
  - Waterflood most likely to come online soon (end of 2005?)
  - RU#3 well began producing fuel gas on 7/28/2003
- South Ninilchik Unit and Deep Creek Unit – Unocal
  - Pearl #1 and Deep Creek NNA #1 wells completed as gas producers in 2002, Unocal reported disappointing results.
  - Nine wells drilled to date, two more in progress. Some of these wells have been successful, some not.
  - Unocal built gas pipeline connecting Happy Valley pad to KKPL. Start-up Nov. 1, 2004.
- Three Mile Creek Unit
  - Unit approved March 26, 2004.
  - Objective is Beluga Formation gas zones bypassed by early opener.
  - Additional 2-D seismic acquired
  - Three mile Creek #1 well drilled
- Trading Bay Unit/McArthur River Field – Unocal
  - T.B.U. #K-13 came on production at 7,100 BOPD, highest rate of any well in Cook Inlet
  - Unit and PA expansions approved to bring boundaries into agreement with producing areas

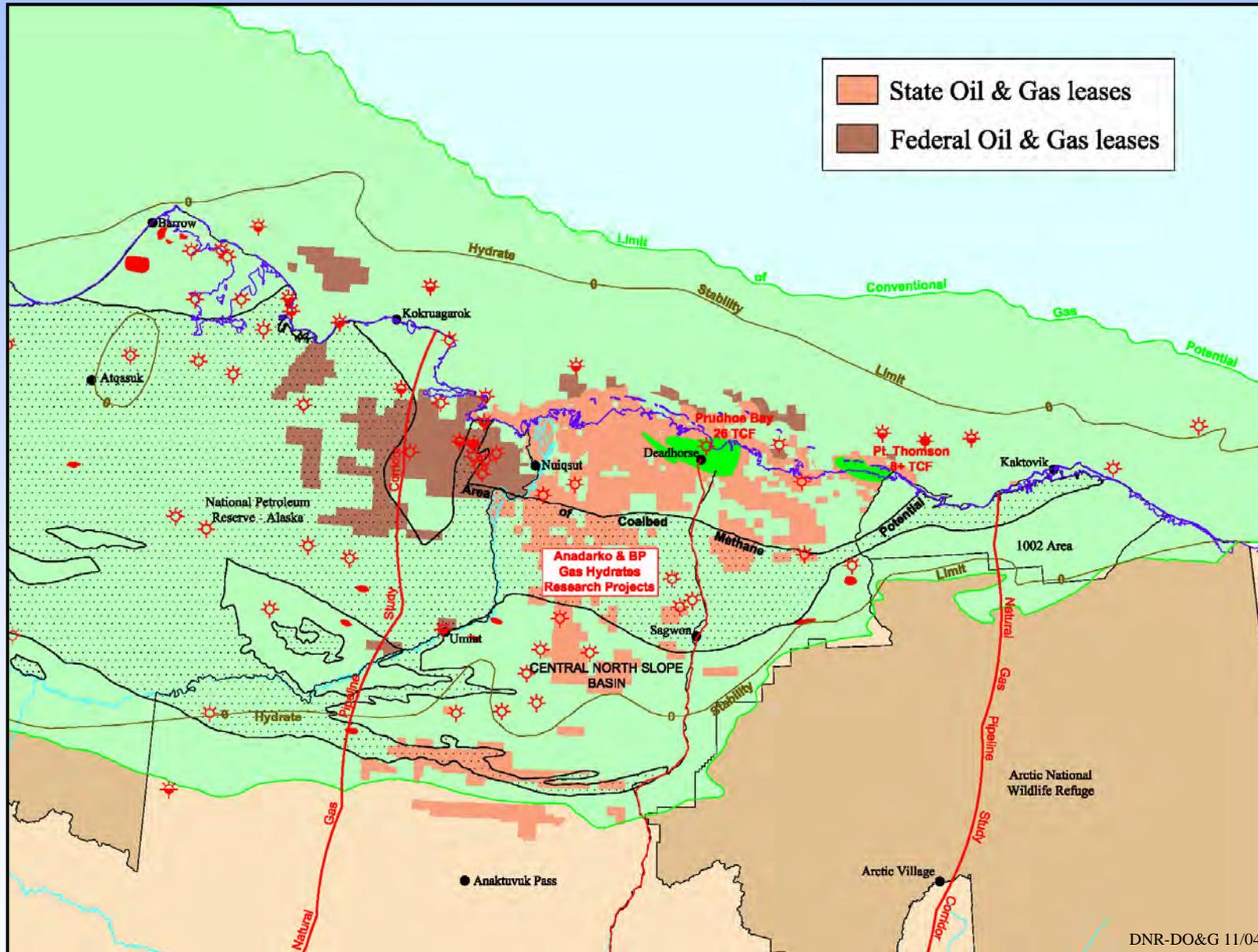
# Gasline Update

- **Stranded Gas Negotiations (Producers / Transcanada)**
- **MOU discussions (ANGDA/Port Authority)**
- **Economic Modeling**
- **Regulatory discussions (FERC)**
- **Right-of-Way Permitting**
- **Resource Assessments**

# Resource Assessments

- **Alaska's gas can make a huge contribution to reducing our nations dependence on foreign sources of energy.**
- **Federal and state geologists believe that the 35 TCF of gas from Prudhoe Bay and Pt. Thomson is just the tip of the iceberg.**
- **North Slope and offshore conventional mean technically recoverable undiscovered resource potential exceeds 236 TCF.**
- **Gas hydrate resource in the Prudhoe/Kuparuk Milne Pt. field area alone is 100 TCF.**

# Gas Potential – North Slope Area with Oil & Gas Leasing Activity



# Mean Value, Total Natural Gas Reserve and Resource Base for Gas Pipeline Supply Report

All Values Trillions of Cubic Feet (TCF)  
Alaska Division of Oil and Gas (01/12/05)

BASIN	KNOWN RESERVES	RISKED UNDISCOVERED CONVENTIONALLY RECOVERABLE RESOURCE	RISKED UNDISCOVERED CONVENTIONALLY RECOVERABLE DEEP GAS RESOURCE <sup>2</sup>	GAS HYDRATES IN PLACE RESOURCE <sup>6</sup>	COALBED METHANE IN PLACE RESOURCE	BASIN TOTAL
NORTH ALASKA (onshore)	35.000 <sup>1</sup>	141.700 <sup>8</sup>	17.700 <sup>2</sup>	590.000 <sup>6</sup>	800.000 <sup>7</sup>	1,566.700
NORTH ALASKA (Beaufort shelf) <sup>2</sup>	0.000	32.070	N/A	32,325.000 <sup>3</sup>	N/A	32,357.070
NORTH ALASKA (Chukchi shelf) <sup>2</sup>	0.000	60.110	N/A	50.000 <sup>3</sup>	N/A	110.110
CENTRAL ALASKA <sup>4</sup>	0.000	2.760	N/A	N/A	N/A	2.760
YUKON FLATS <sup>9</sup>	0.000	5.460	N/A	N/A	N/A	5.460
KANDIK <sup>5</sup>	0.000	0.116	N/A		N/A	0.116
NENANA/TANANA	0.000	N/A	N/A	N/A	N/A	N/A
COPPER RIVER	0.000	N/A	N/A	N/A	N/A	N/A
<b>TOTAL BY GAS TYPE</b>	<b>35.000<sup>1</sup></b>	<b>242.216</b>	<b>17.700<sup>2</sup></b>	<b>32,965.000</b>	<b>800.000<sup>7</sup></b>	<b>34,042.216</b>

After Craig, J., and Sherwood, K., Prospects for development of Alaska natural gas: a review as of January 2001, Minerals Management Service, Alaska Region. tbl. 9, p. 76.  
Modified to include only North and Central Alaska basins and updated to include new information as footnoted.

N/A = Not Assessed

<sup>1</sup> Current estimate of known "stranded" recoverable North Slope conventional gas reserves in Prudhoe Bay, Point Thomson and smaller fields.

<sup>2</sup> Subcategory of and included in "Undiscovered Technically Recoverable Conventional Reserves". Represents Basin Deep or Basin Centered component > 15,000' depth.

<sup>3</sup> Craig and Sherwood arbitrarily split offshore hydrate resource estimates between Beaufort and Chukchi Sea shelves. Total North Alaska offshore gas hydrate potential remains 32,375 tcf.

<sup>4</sup> 1995 National Assessment of United States Oil and Gas Resources, U.S. Geological Survey, Open File Report, Digital Data Series-30, pub. 1995. For all central Alaska basins except the Kandik Basin. Other basins not evaluated individually.

<sup>4,5</sup> Geological Survey of Canada estimated mean undiscovered gas in place ~ 0.489 - 0.800 TCF. Alaska component estimated as 0.116 Tcf.

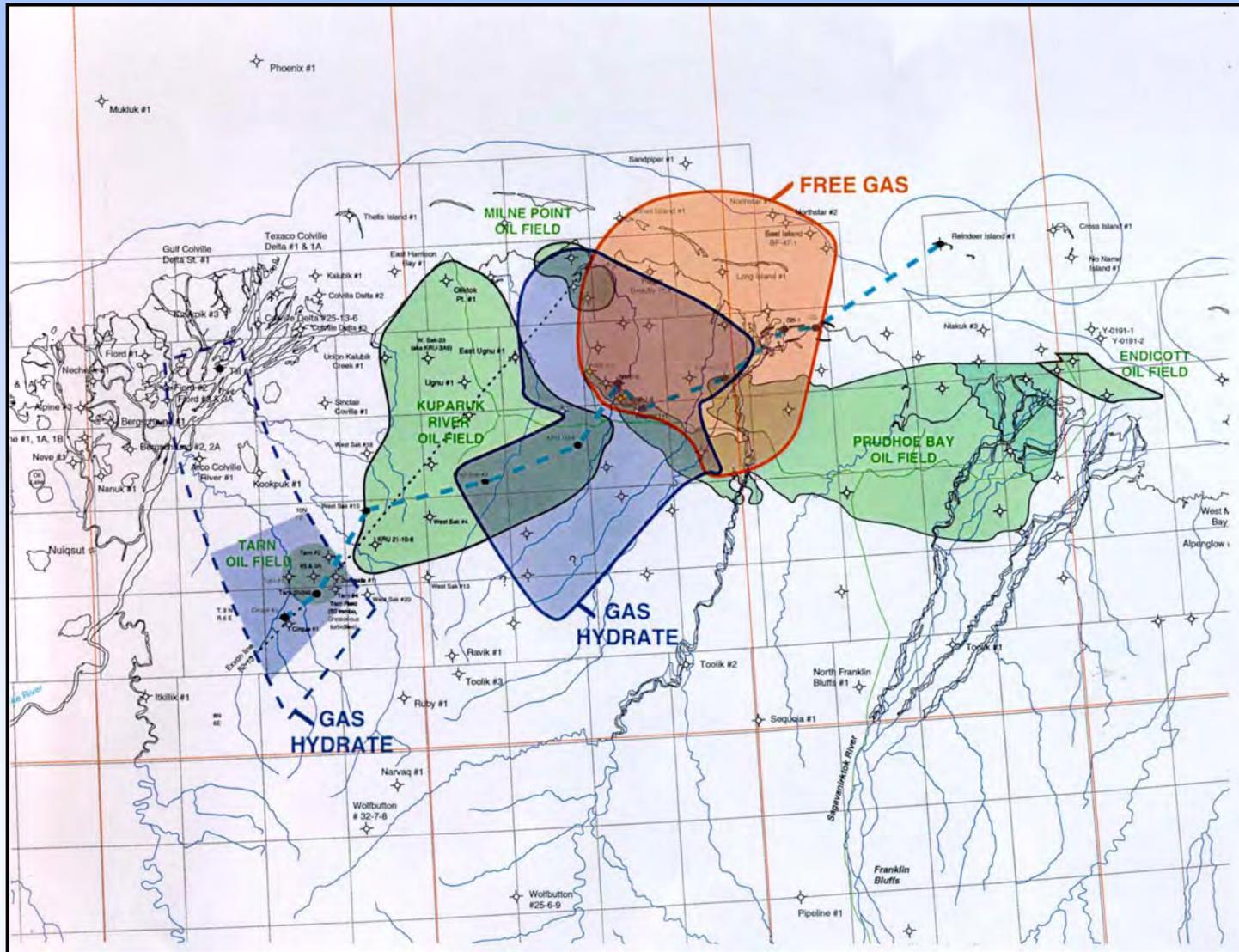
<sup>6</sup> Collett, personal communication, 11/26/04.

<sup>7</sup> Barker, C.E., Clough, J.G., Roberts, S.B., and Fisk, R., Coalbed methane in Northern Alaska: potential resources for rural use and added supply for the proposed trans-Alaska gas pipeline; AAPG-SPEM Joint Technical Conference, Anchorage, AK, May 2002.

<sup>8</sup> Includes nonassociated and associated gas. State and Native lands are estimated to be approximately 60 TCF and are included in this total.

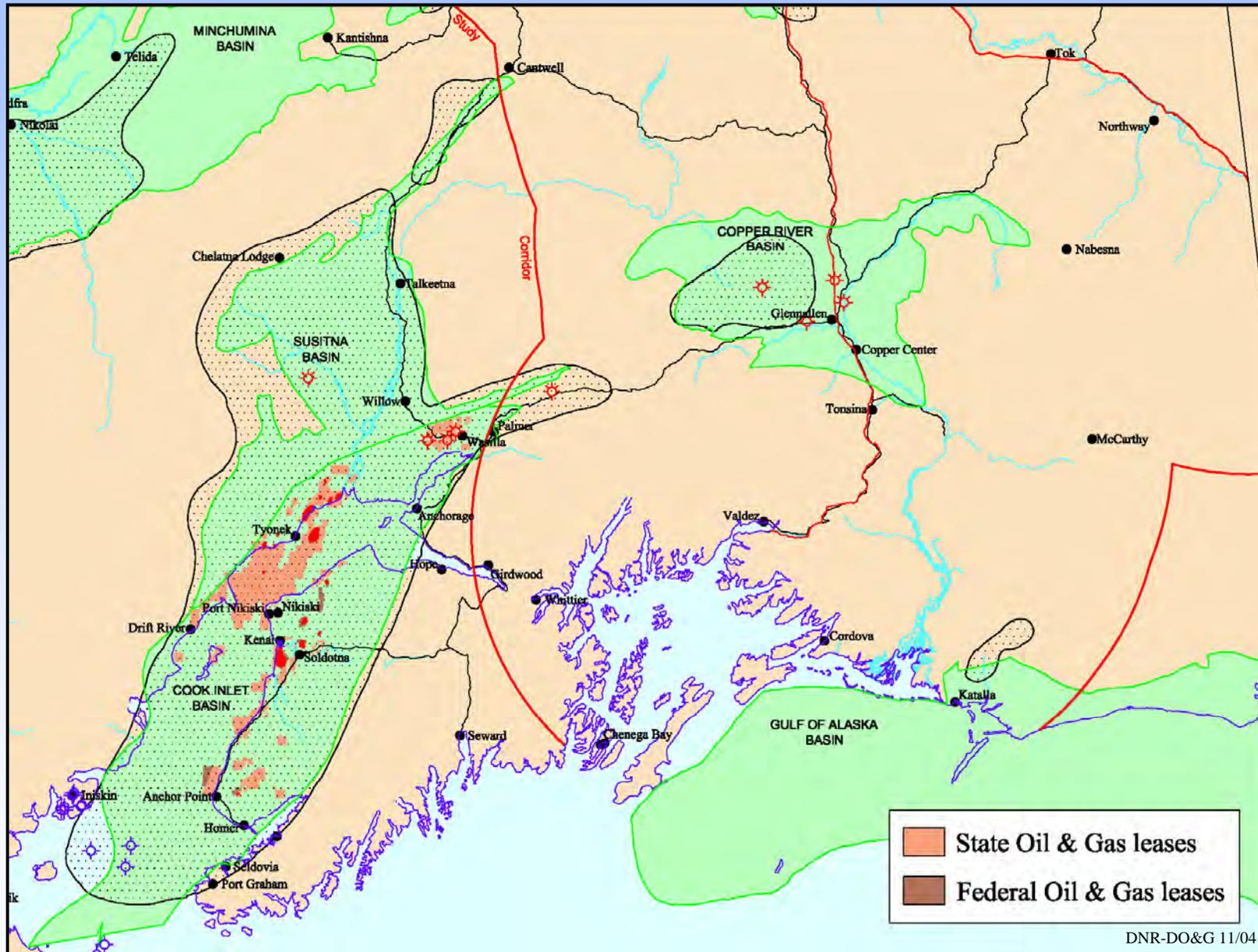
<sup>9</sup> Oil and Gas Assessment of Yukon Flats, East-Central Alaska, 2004, USGS Fact Sheet 2004-3121, December 2004.

# Known Gas Hydrate Accumulations (shown in blue)





# Gas Potential – Southcentral Area with Oil & Gas Leasing Activity



# Promoting New Investments

- **Leasing / Licensing New Areas**
- **Data Integration**
- **DOE Grant**
- **Governor's meetings with the Independents**
- **Streamlined Permitting**
- **Maximizing the Use of Existing Facilities**
- **Development of New Infrastructure**

# Susitna Basin Exploration License Area

## Susitna Basin License 1:

Licensee - Forest Oil Corp.

386,207 Acres

Work Commitment - \$2,520,000

Effective Date – 11/1/03

Term – 7 years

## Susitna Basin License 2:

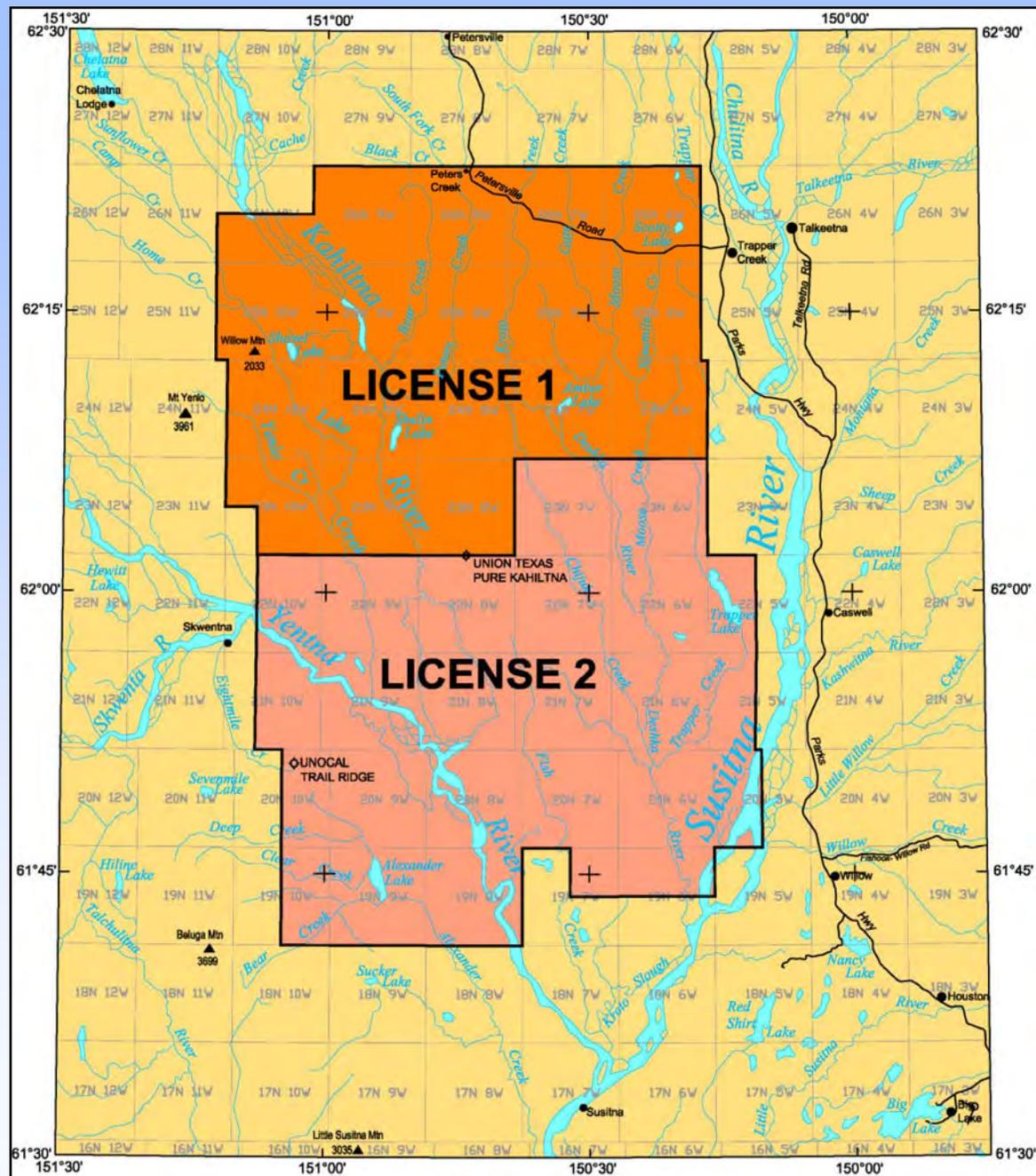
Licensee - Forest Oil Corp.

471,474 Acres

Work Commitment - \$3,000,000

Effective Date – 11/1/03

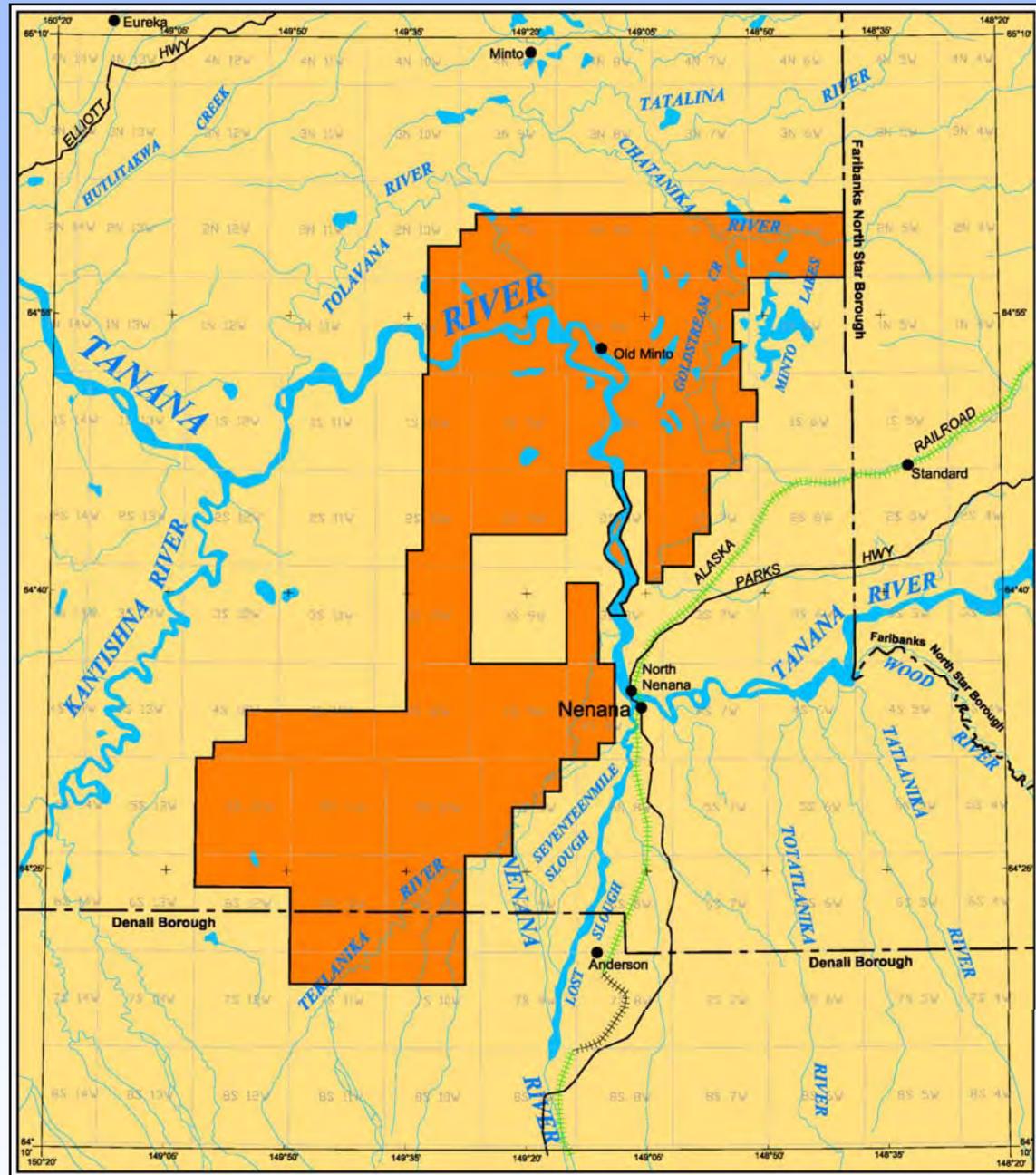
Term – 7 years



# Nenana Basin Exploration License Area

PGS is conducting a 2D seismic survey on behalf of Andex Resources, L.L.C.

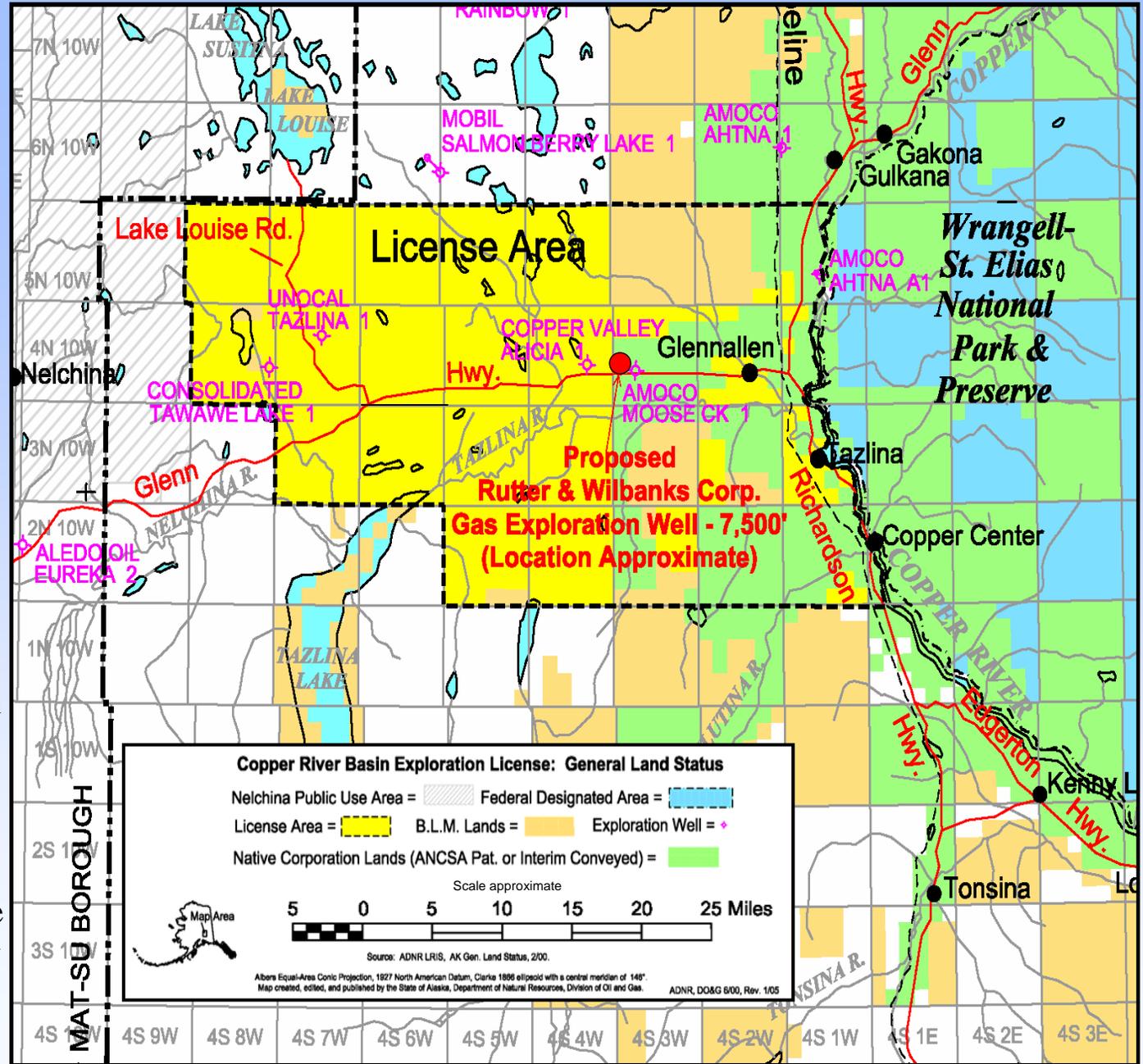
- Geophysical exploration permit issued from Dec. 1, 2004 to April 30, 2005.
- Approximately 200 2D line miles proposed.



# Copper River Basin Exploration License Area

Proposed Rutter &  
Wilbanks Corp.  
Gas Exploration Well

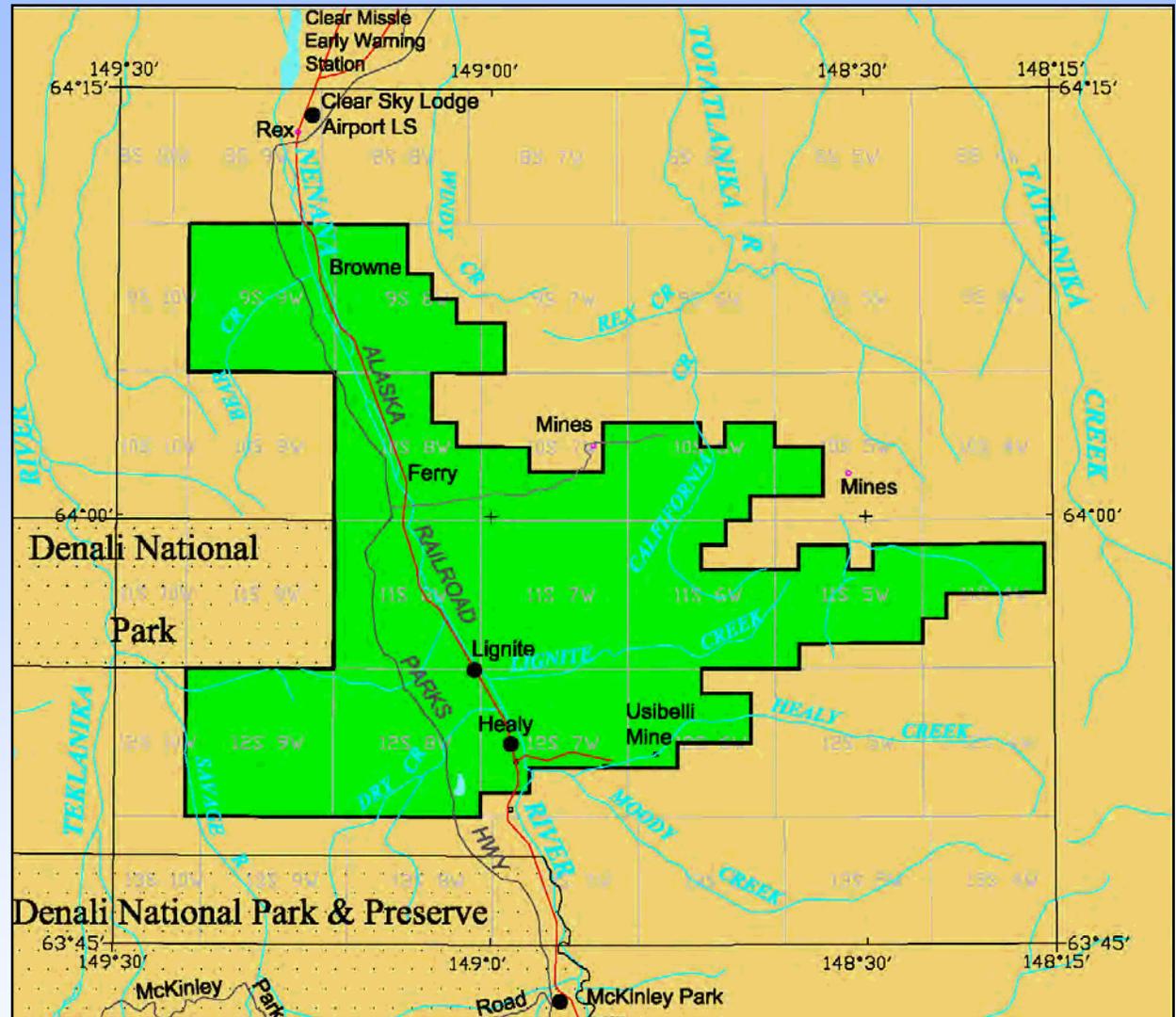
- Plans to drill in February 2005 to 7500 feet.
- The first gas exploration well in the Copper River basin in more than 20 years.
- The Exploration License expires Oct. 2005. It may be converted to leases at licensee's option.



Well location from Dwight's Alaska Report; Section 19, Twp. 4N, Rge. 3W, Copper River Meridian.

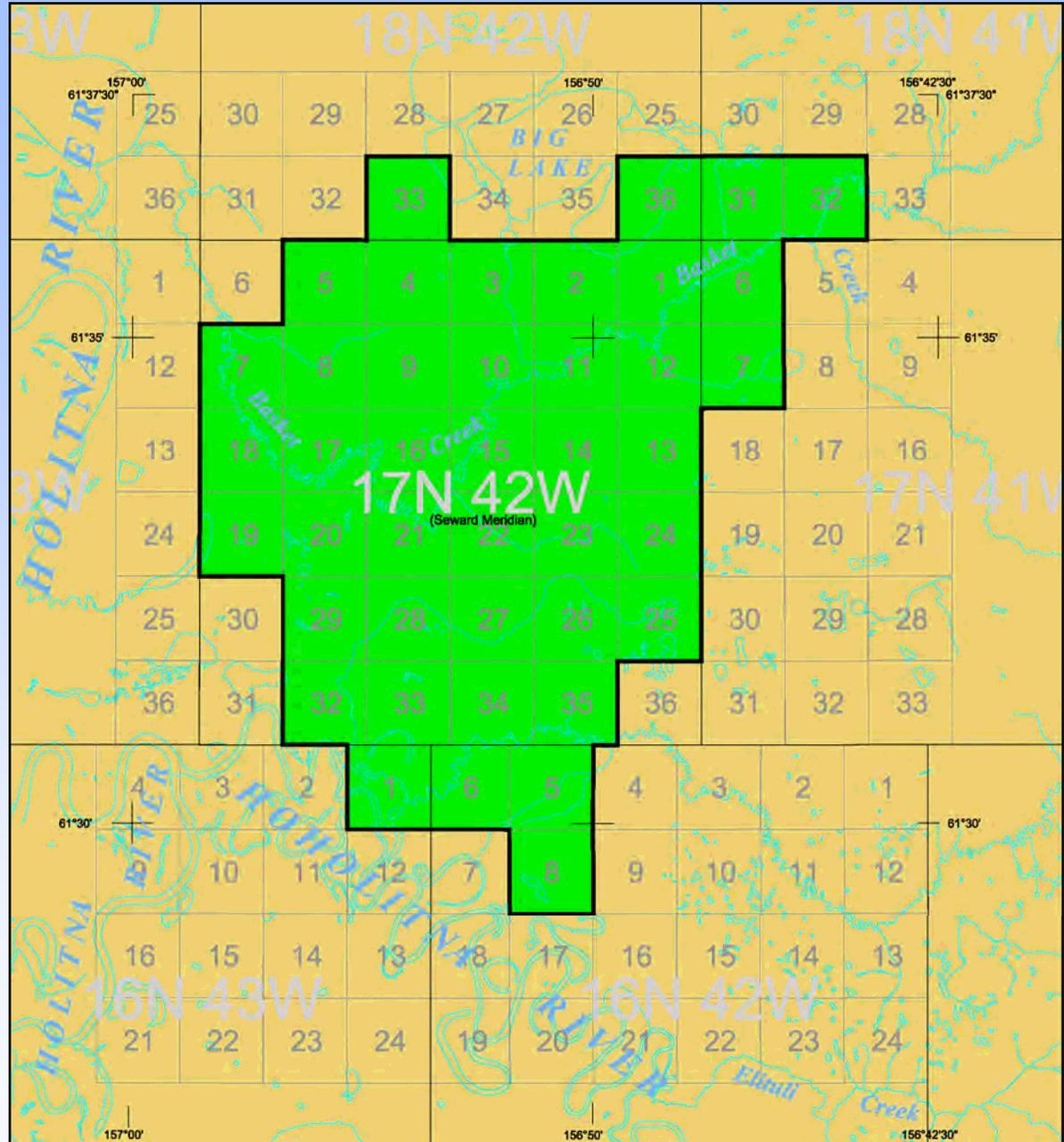
# Proposed Healy Basin Exploration License Area

- Usibelli Coal Mine Inc. proposed a work commitment of \$500,000 with a 10 year term.
- Solicitation of Competing Proposals ended Dec. 9 (none received).
- Solicitation of Public Comments (Deadline March 11).
- Public Meeting in Healy (Jan. 19).
- Preliminary Best Interest Finding (April 2005).
- Final Best Interest Finding (Summer 2005).



# Proposed Holitna Basin Exploration License Area

- Holitna Energy Co. converted from Shallow Natural Gas applications (Under HB 531).
- Solicitation of Public Comments (Ended Dec. 21).
- Preliminary Best Interest Finding (March/April 2005).
- Final Best Interest Finding (Summer 2005).



# Proposed Alaska Peninsula Areawide Oil and Gas Lease Sale Area





**Oil Seeps  
along  
Oil Creek - Alaska Peninsula**



# Gas seep; hot springs



# Alaska Peninsula Areawide Oil and Gas Lease Sale Timeline

AK Peninsula Areawide Leasing	2003						2004						2005						2006					
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
Request for agency information																								
Request for public comment																								
DO&G conducts public informational meetings																								
Draft Prelim. Finding & ACMP Consistency Analysis																								
Issue Prelim. Finding and Consistency Analysis																								
Public comment period																								
DO&G interprets geological and geophysical data																								
DO&G and DGGS geologic field parties																								
Draft proposed ACMP Consistency Determination																								
Consistency Determination elevation period																								
Draft Final Best Interest Finding (BIF)																								
Issue BIF & CD; Announce sale																								
Reconsideration (30-day)/Court Appeal (30-day)																								
<b>LEASE SALE</b>																								
Title review																								
Leases awarded																								
Effective date of leases - April 1																								

# Promoting New Investments

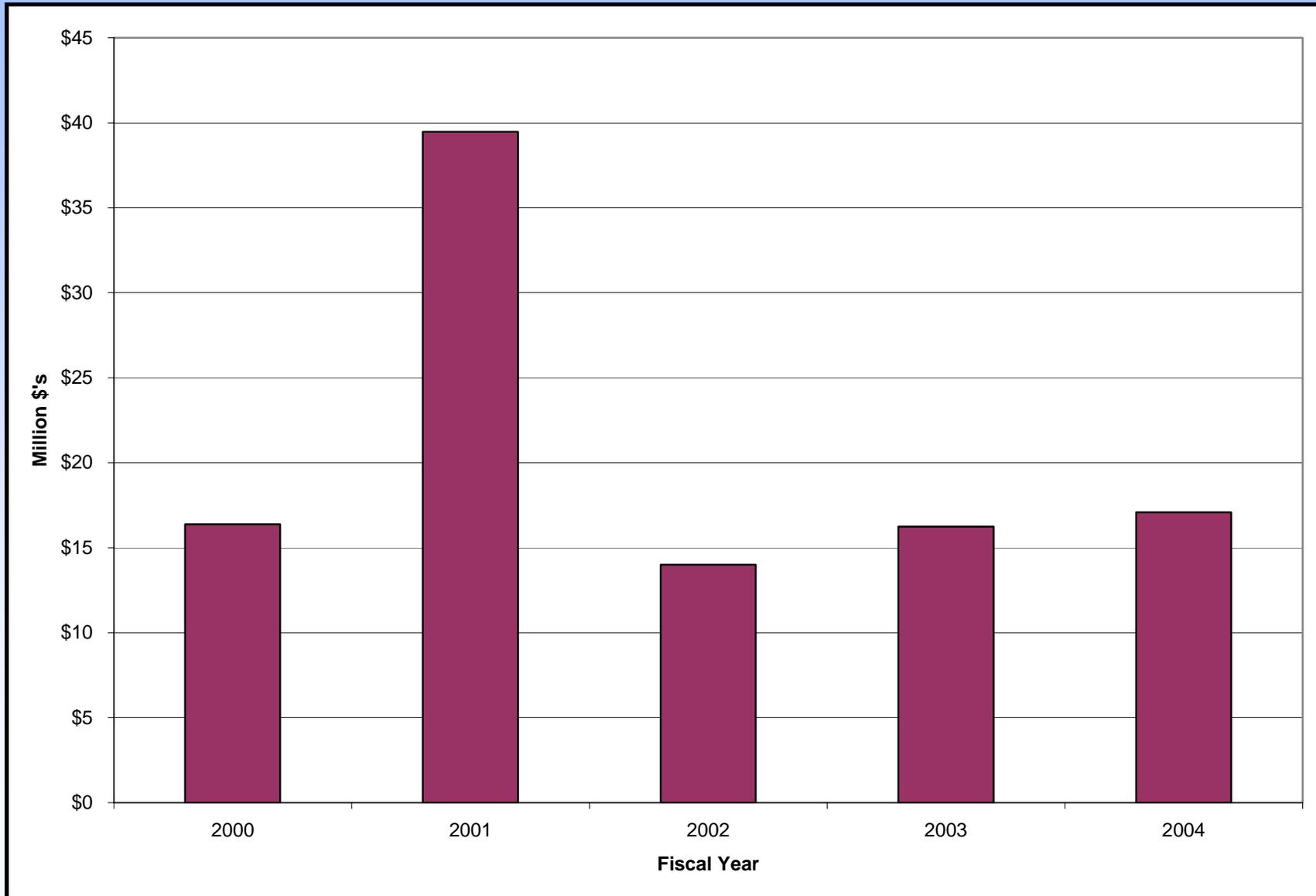
- **Data Integration**
- **DOE Grant**
- **Governor's meetings with the Independents**
- **Streamlined Permitting**
- **Maximizing the Use of Existing Facilities**
- **Development of New Infrastructure**

# Commercial Issues

- **Royalty Settlement Reopeners**
- **Pipeline Tariffs**
- **RIK Progress Report**
- **Audits (next slide)**

# Audit Section

## Royalty Revenue Recovered in Audit



# Coalbed Methane

- **HB 531 – Shallow Natural Gas / Coalbed Methane**
- **Mat-Su Valley Coalbed Methane Enforceable Standards**

## **HB 531 – Shallow Natural Gas / Coalbed Methane**

- Repeals existing over-the-counter shallow gas leasing program and replaces it within current exploration licensing and conventional competitive leasing programs.
  - Both these programs require the Department of Natural Resources to do a Best Interest Finding (BIF) prior to leasing. The BIF process includes extensive public noticing and public input and requires the Commissioner to balance interests prior to holding a lease sale or issuing a license.
- Gives the Commissioner the discretion to issue either oil and gas or gas only leases.
- Limits the discretion of DNR to extend the existing shallow gas leases.
- Gives a one-time opportunity for pending lease applicants to apply for a noncompetitive exploration license with a Best Interest Finding and a work commitment.
- On a gas-only-lease allows for the lessee to make a showing to DNR that can result in lower rentals and royalties if the gas doesn't compete with other gas and the lease has only non-conventional gas potential.

## **HB 531 – Shallow Natural Gas / Coalbed Methane (Cont.)**

- Repeals the HB 69 provisions allowing the Commissioner of DNR to override authority over local zoning ordinances.
- Requires the DNR Commissioner to establish setbacks and noise mitigation measures for compressor stations prior to approving coalbed methane operations on any state leases.
- Includes additional ground water protections involving the production of non-conventional gas through requiring the AOGCC to regulate:
  - Hydraulic fracturing
  - Disposal of wastes
  - Reinjection of produced water
  - Prohibiting the production of gas from aquifers that serve as a source of water for human consumption or agricultural purposes unless it can be demonstrated that it will not adversely affect the aquifer.
- Requires the operator design and implement a water well testing program to provide baseline data on water quality and quantity as a condition for approval of an AOGCC permit to drill a coalbed methane well for production or production testing.
- Specifies bonding requirements on gas-only leases.
- DNR, AOGCC, AOGA, Tech Cominco, and Usibelli worked on this bill. HB 531 goes a long way to fixing the issues raised by the public with respect to the shallow natural gas program.

# **Matanuska-Susitna Valley Coalbed Methane Enforceable Standards**

- **These standards will be implemented by DNR when making decisions related to coalbed methane development in the Mat-Su Borough.**

## **Types of decisions:**

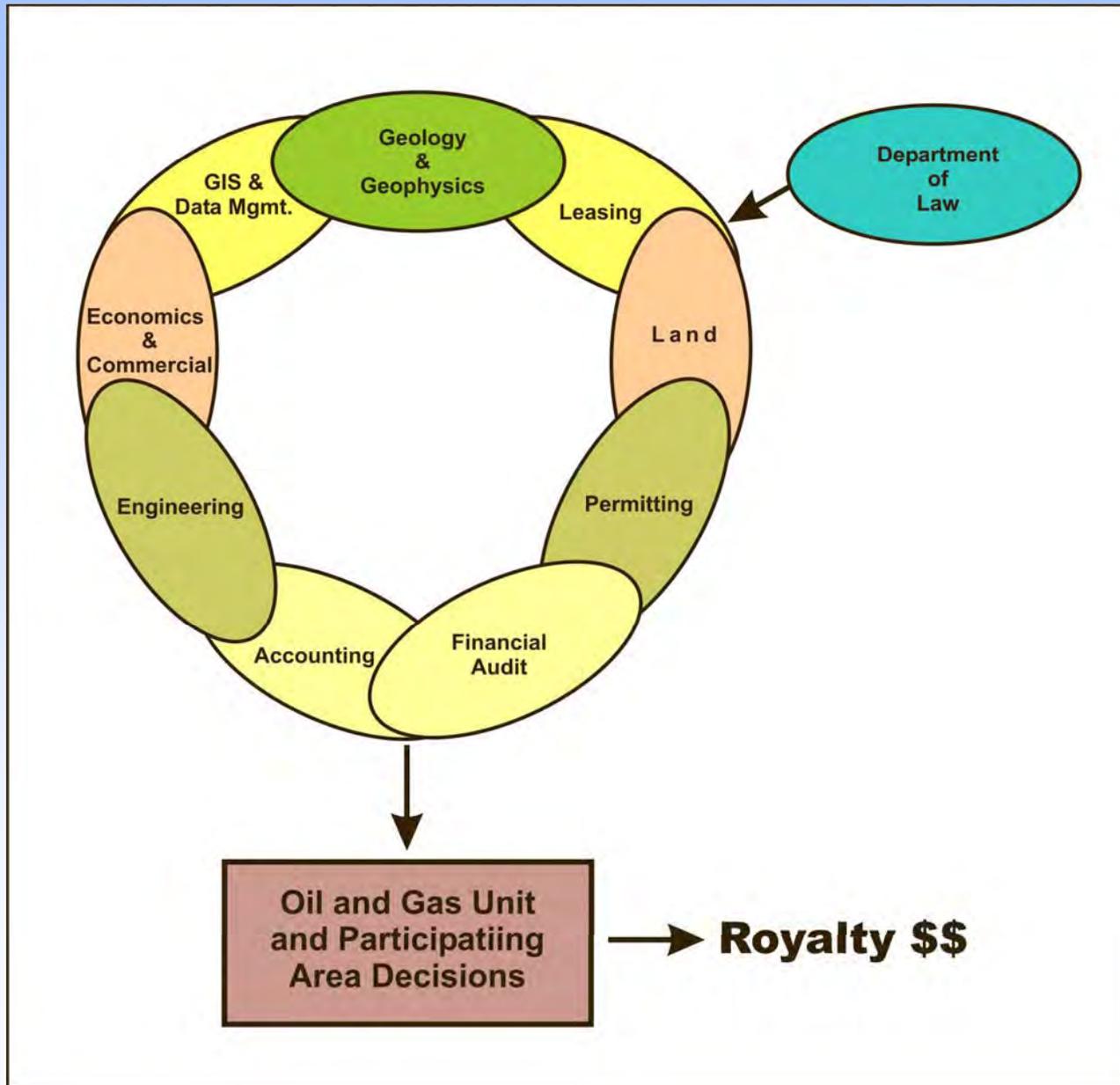
- Issuing oil and gas leases or licenses.
  - Reviewing proposed plans of operations.
  - Reviewing applications for the formation or alteration of oil and gas units.
- 
- **Public Participation**
    - Public workshops were held in the Mat-Su Borough in January and February 2004.
    - A draft of these standards was released in April 2004 for public review with a 60-day comment period.
    - During the comment period, three public meetings were held in the Mat-Su Borough to review the draft document and take public comment.
    - The public comments were used to develop the final enforceable standards.

## **Enforceable Standards**

- **Public Notice**
- **Public Information**
- **Setbacks**
- **Surface Impacts**
  - Noise Mitigation
  - Visual Mitigation
  - Light Shielding
  - Solid Waste Storage
  - Erosion Control Plan
  - Permanent Erosion Control
  - Timber Harvesting
- **Split Estate**
- **Water Management**
- **Hydraulic Fracturing**
- **Roads and Pipelines**
- **Public Access**
- **Monitoring**
- **Well Spacing**
- **Geophysical Hazards**
- **Dismantlement, Removal, and Rehabilitation**



# Division of Oil & Gas Organization Links Affect the Bottom Line



**End**