

**PRESENT-
ATION:
NENANA
BASIN GAS
& OIL
PROJECT,
3/30/05**

DAN BRITTON - FAIRBANKS

Alaska State Legislature
Senate/House Resources Committees
&
House Special Committee on Oil and Gas



State Capitol, Juneau, Alaska 99801-1182

Special Committee Hearing on Nenana Basin Gas & Oil Project
Senate Finance Committee Room

Wednesday, March 30, 2005 2:30 to 4:30 pm

Presentation agenda:

Andex Resources- Bob Mason

DNR- ~~Sean Parnell~~ (Deputy Dir. DO&G)

Bob Swenson (Deputy Dir. DGGGS)

Usibelli Energy- Mitch Usibelli

Doyon Limited- Jim Mery

Arctic Slope Reg. Corp.

Enstar- Curtis Thayer

Univ. of AK- Joe Beedle

Fairbanks Nat. Gas- Dan Britton

Fairbanks Home Build- Jack Abare

+ Teleconferenced

TOM OODS - FAIRBANKS HOME BUILD ASSOCIATES, LLC

South Central Alaska Natural Gas Demand

Presentation by:

ENSTAR Natural Gas Company

Tony Izzo, President/CEO

John Lau,

Director, Transmission Operations

Curtis Thayer,

Director, Public & Government
Affairs

March 30, 2005

State of Alaska

**Joint House & Senate
Resources Committee**



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A NOTE - APPROX 25

+ Teleconferenced

TOM QUINN - FAIRBANKS AND EX-ANDER ASSOCIATES LLC

What can they do?

- accelerate process - see time line
- ? help out w/ conceptual issues

EXPLORATION PHASE - HIGH RISK

only 8-10 weeks year to operate = so

need tax incentives program: extend
for New Region

- PERMIT RESPONSE TIMES (AUG/007 latest)
≠ drafts other than Jan Feb or March

South Central Alaska Natural Gas Demand

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Two Driving Principles

- Take Care of the Customer
- Keeping Cost Down



All Our Energy Goes Into Our Customers

ENSTAR
Natural Gas Company

Who We Are – ENSTAR Facts

- Established 1961
- Number of Alaskans Served* - 320,000
- Number of Meters – 118,000
- Miles of Distribution Mains and Transmission Mains – 3,000
- Direct Impact on Alaska's Economy - \$170 mil
- Number of ENSTAR Employees – 167
- Rank among Alaskan energy Utilities – 1
- New Customers in 2004 – 3,532

* 118,000 Meters x 2.7 Alaskan Consumers per Meter

1.1 Our Energy Goes Into Our Customers



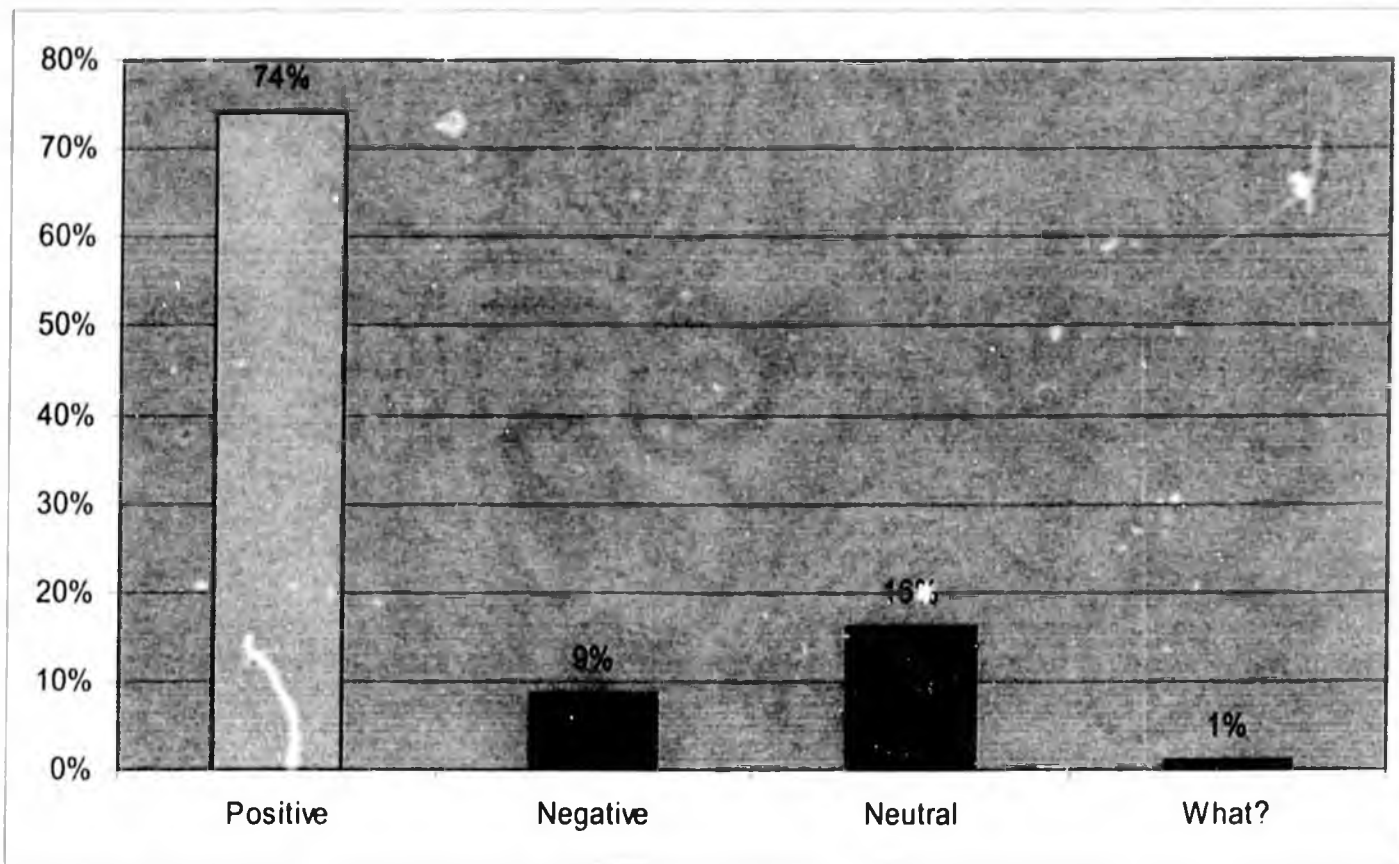
Alaska Pipeline Company (APC)

- Engineering/Construction
- 45 Years of Experience in Alaska
- Constructed and Operates 450 miles of Transmission Mains and 2600 miles of Distribution Mains
 - Represents 75% of all gas transmission pipeline in Alaska
 - Represents 100% of distribution mains in South-Central Alaska
- Expertise
 - Compression Plant Engineering & Construction
 - Engineering
 - Environmental/Permitting
 - Construction/Construction Management

All Our Energy Goes Into Our Customers



ENSTAR Natural Gas Company's rating

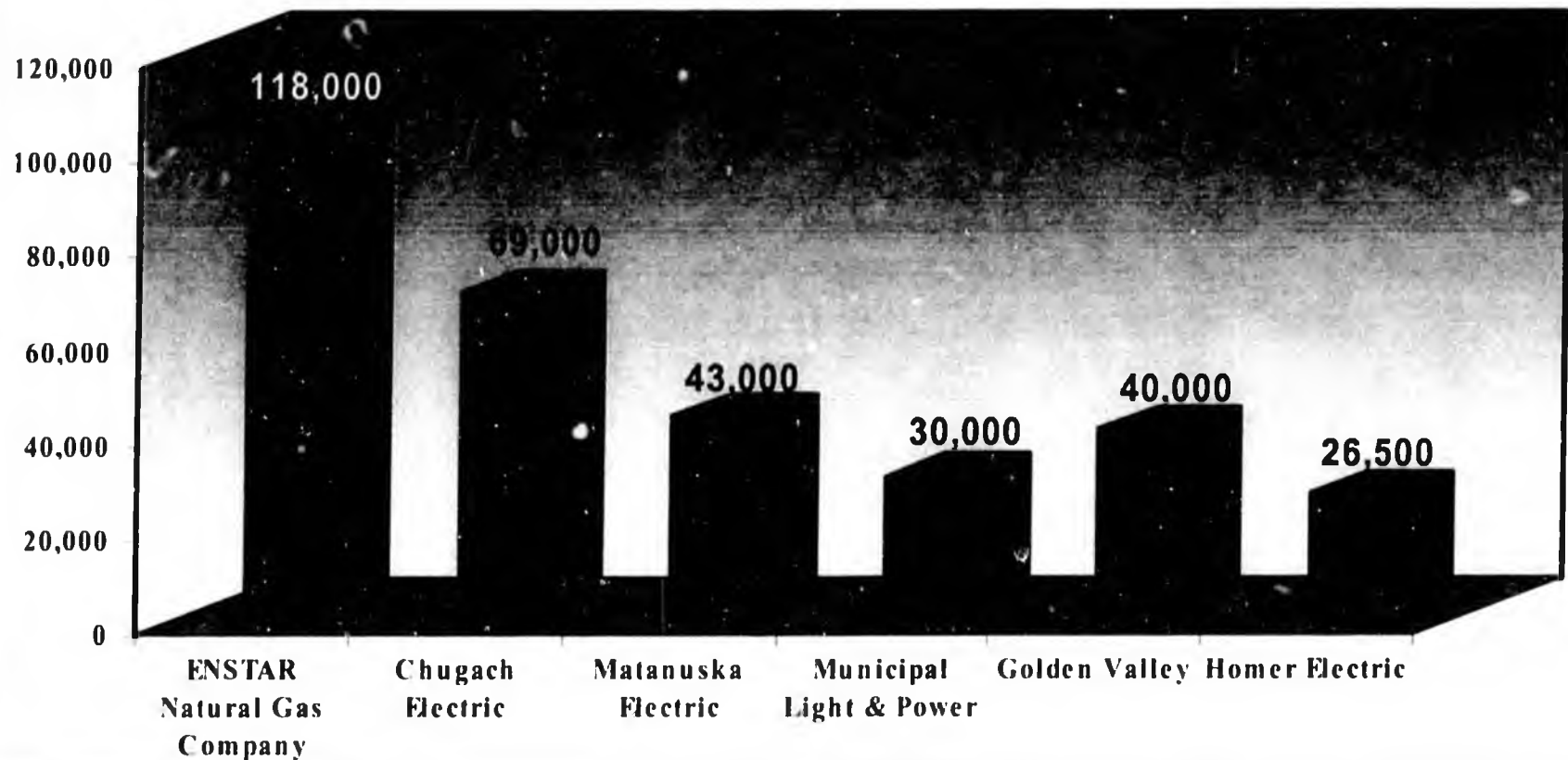


(Based on Anchorage survey performed by Hellenthal Associates on Feb 2005)

All Our Energy Goes Into Our Customers



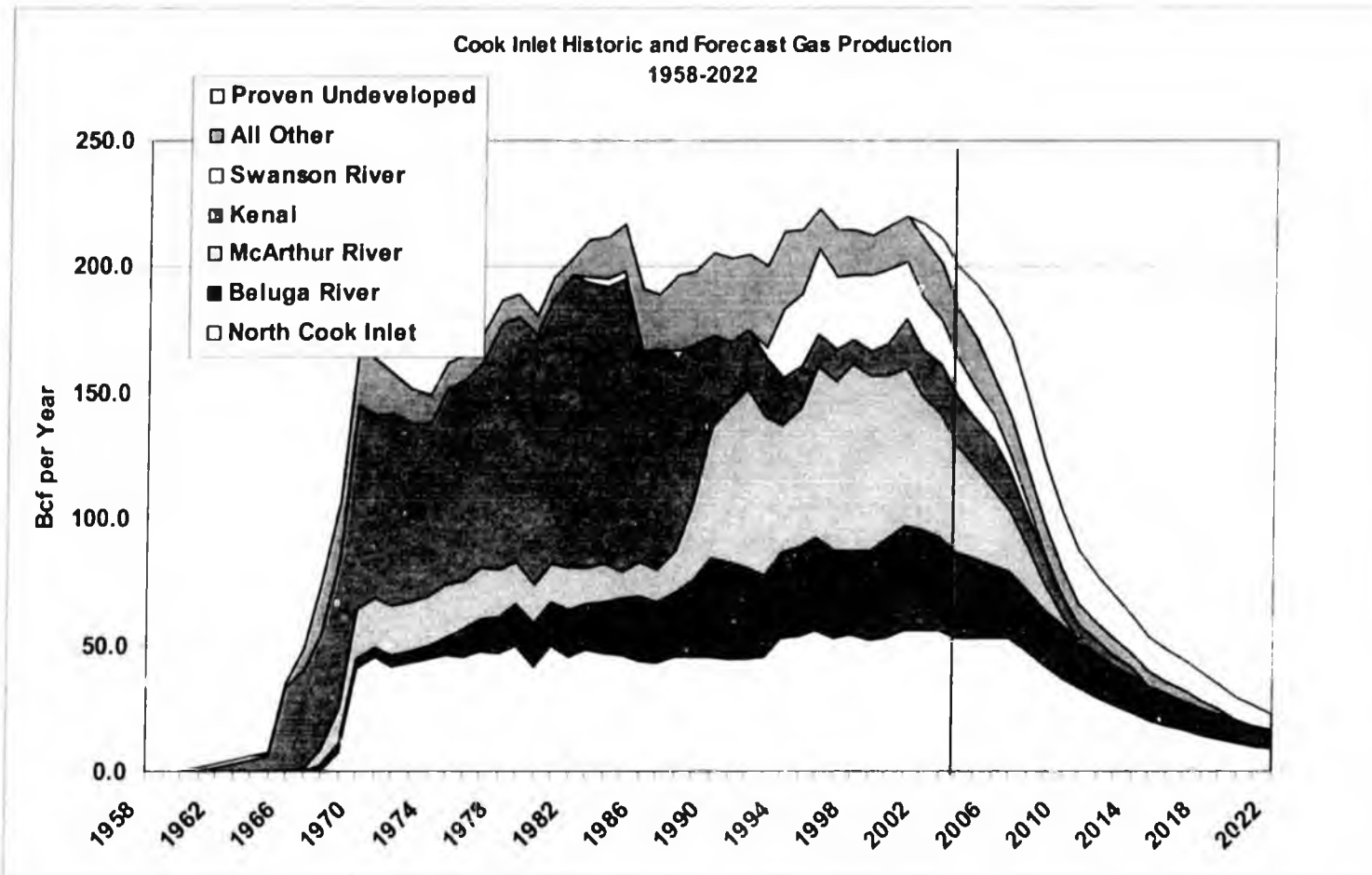
Utilities – Number of Meters



All Our Energy Goes Into Our Customers



Cook Inlet Gas Supply



ADNR Division of Oil and Gas, Alaska Oil & Gas Report, December 2003 has been updated and the new forecast is included.

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Trends in Alaska Natural Gas Usage

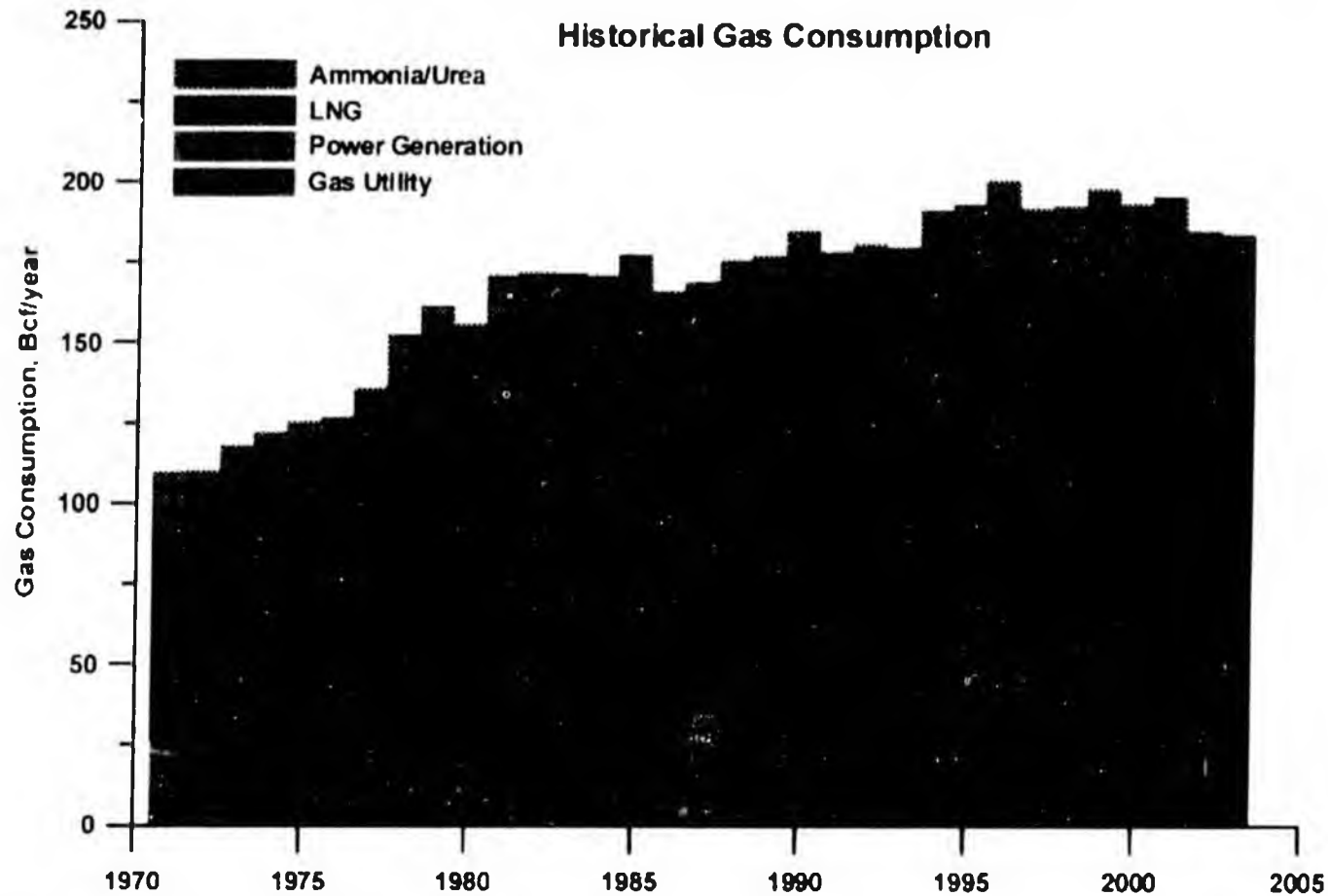
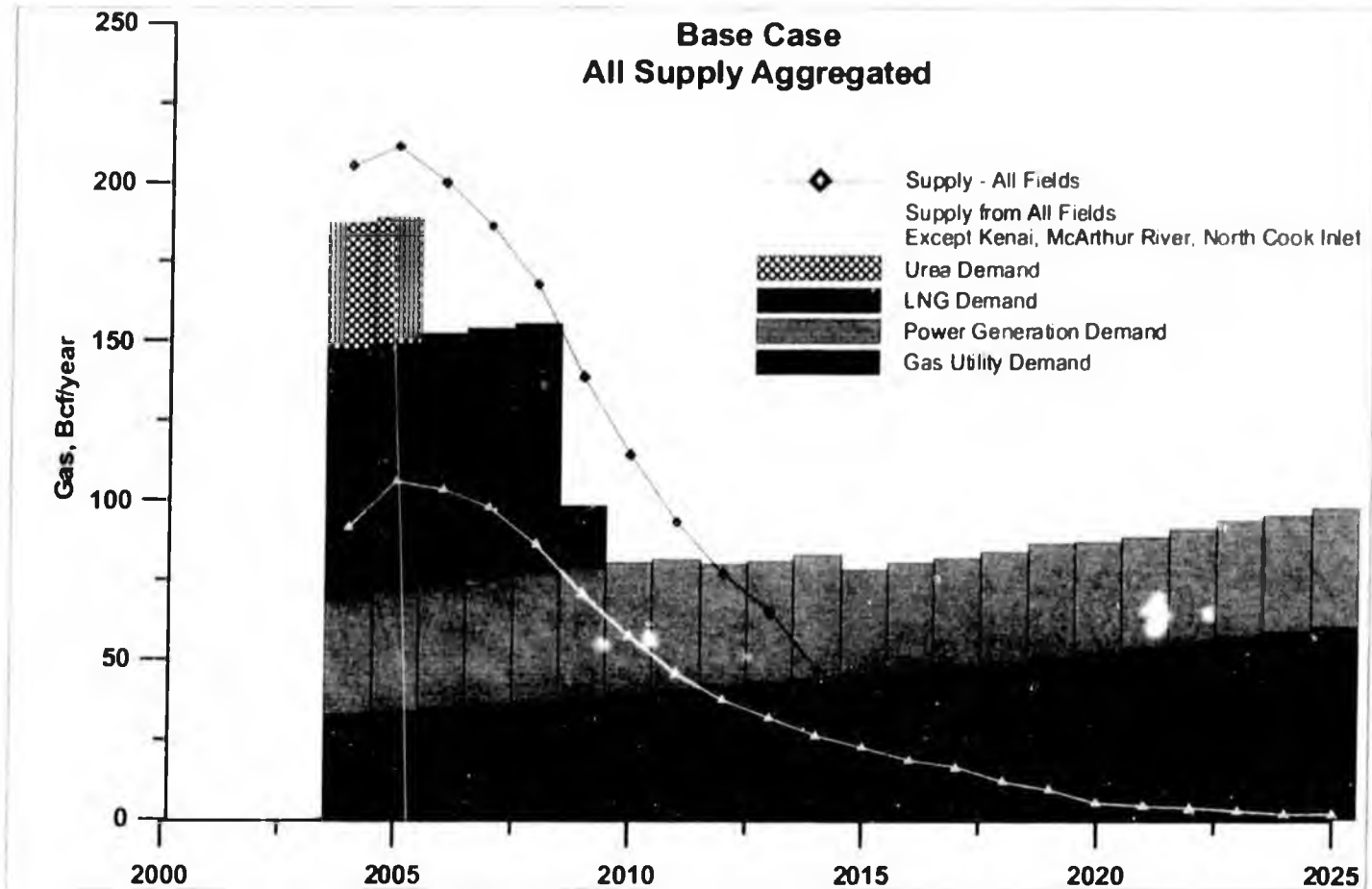


Figure 4.1. Historical gas consumption, excluding lease operations (ADNR, 2004)

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Base Supply & Demand

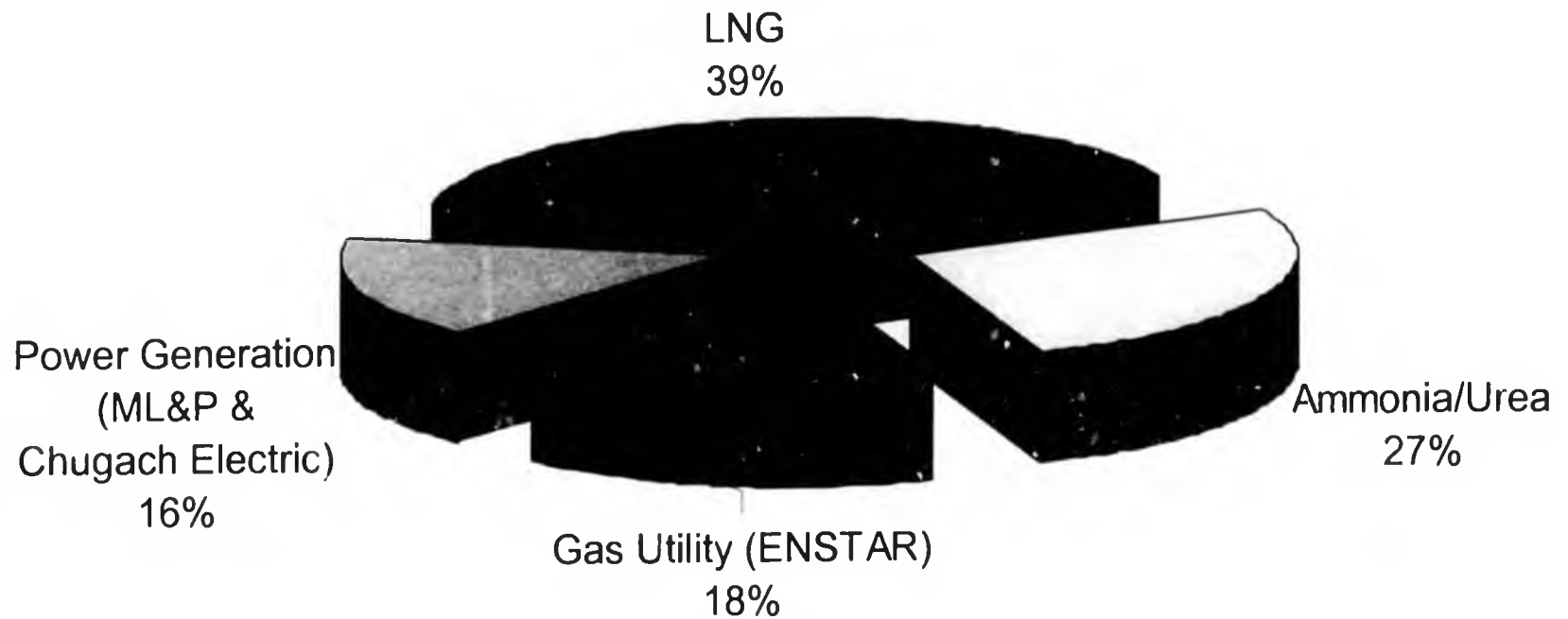


Department of Energy, June 2004

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Alaska Natural Gas Usage by %



South Central Alaska Natural Gas Study, Prepared for US Dept of Energy, June 2004

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Transportation Customers

Industrial

- Agrium
- Chugach Electric Assoc
- ConocoPhillips LNG Plant
- Dept. of Defense –
Ft. Richardson & Elmendorf
- Municipal Light & Power
- Northern Eclipse –
Fairbanks Natural Gas
- Tesoro Refinery

Commercial

- AK Native Medical Center
- Anch School District
- Dimond Center
- Municipality of Anchorage
- Providence Hospital
- State of Alaska
- Stevens Int'l Airport
- University of AK Anch

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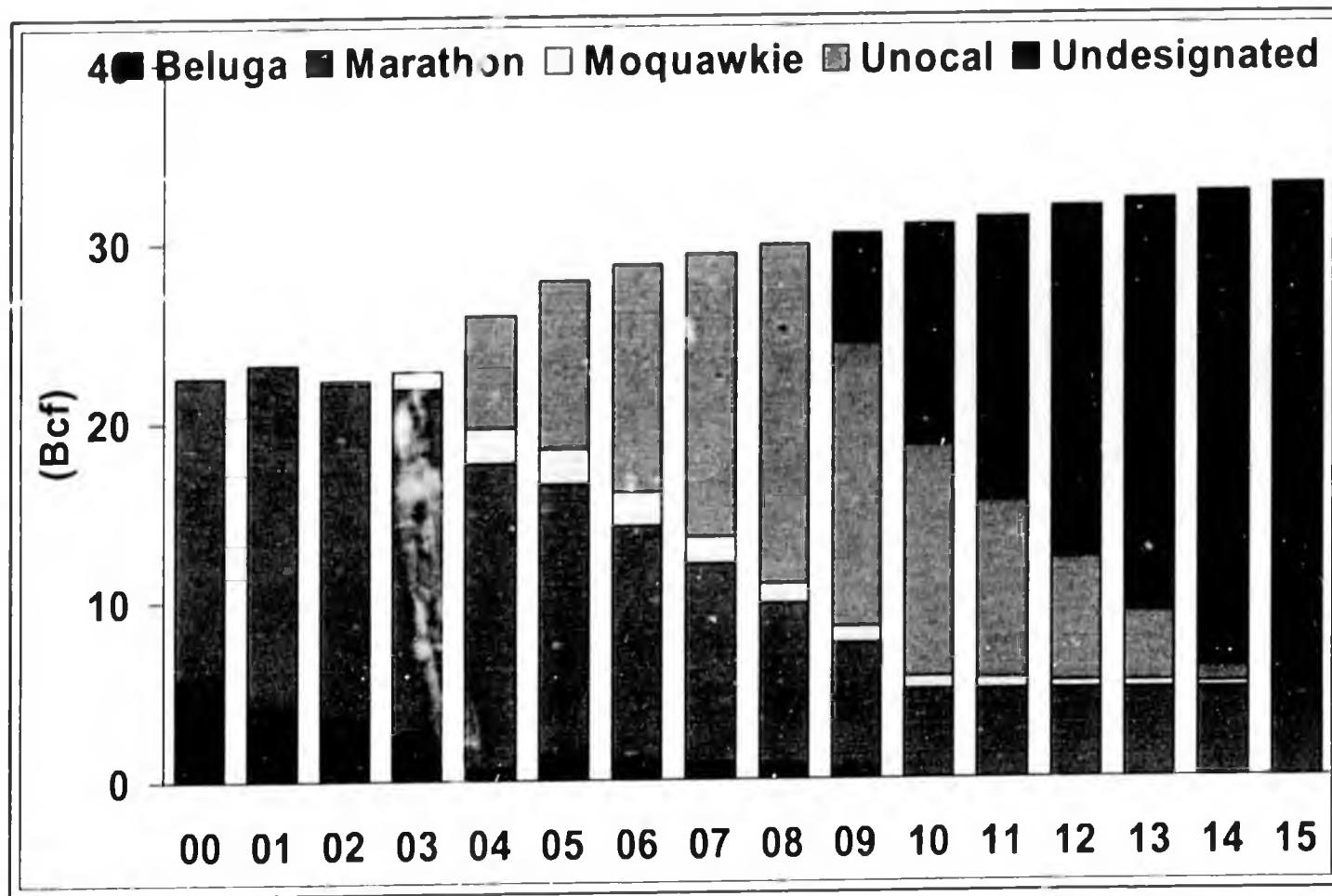
Cook Inlet Gas Consumers

- 473,000 + electricity consumers from Homer to Fairbanks
 - 67% of electricity generated by natural gas
- 320,000 natural gas consumers

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2004 Gas Supply



All Our Energy Goes Into Our Customers



Supply Strategy

- Contract for additional supply
 - We have clearly moved from an “Excess Supply” market to a “Supply & Demand” market
- Identify and evaluate options to meet future natural gas demand
 - Achieved Federal support for an in-depth Department of Energy study of Cook Inlet supply and demand

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Observations

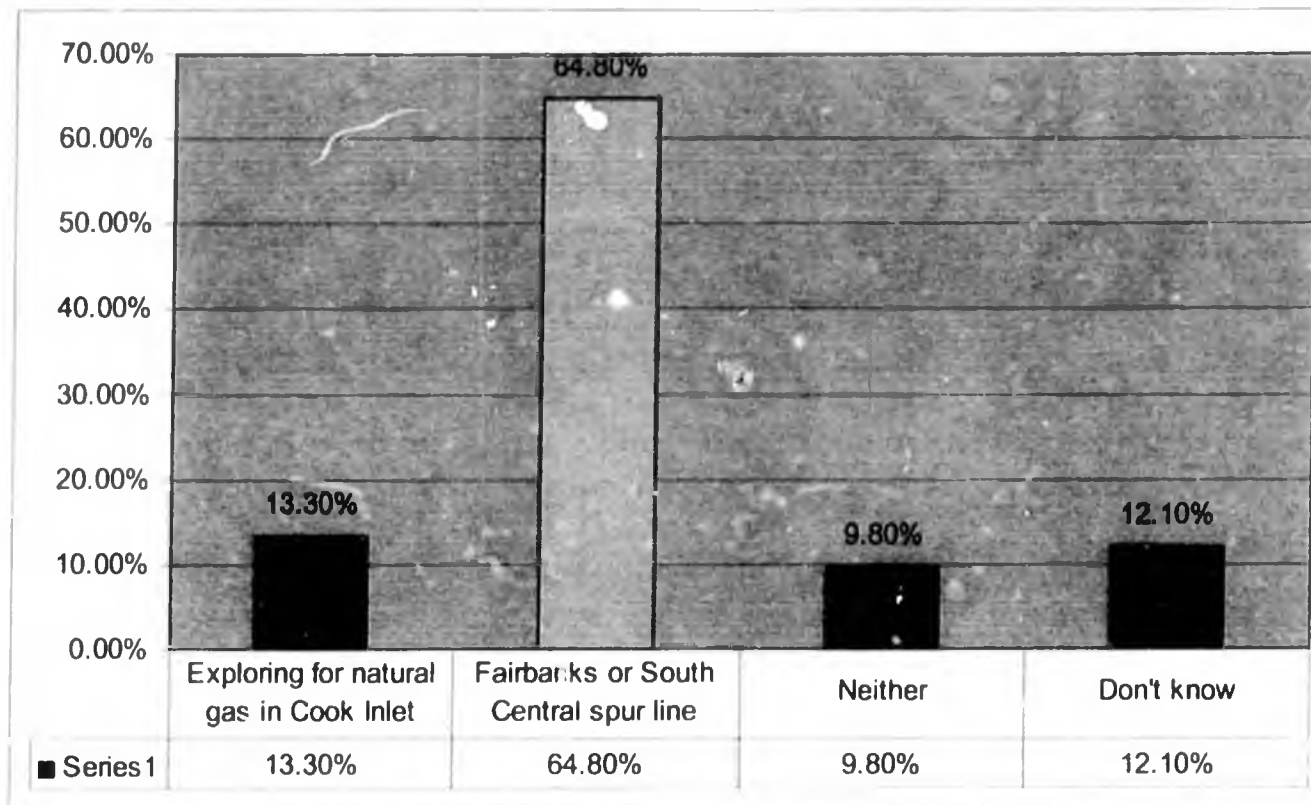
- Reserves Growth in Cook Inlet
- New Exploration in Cook Inlet
- North Slope/Nenana Gas to Cook Inlet

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Exploring for natural gas in Cook Inlet or spur line?

(Based on statewide survey performed by Hellenthal Assoc on Feb 2005)



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Reserves Growth in Cook Inlet

- With assumed reserves growth, (1.5 Tcf), there may be sufficient gas through 2025 for commercial and residential consumers and perhaps one industrial user
 - Reserves growth is estimated at \$465 million

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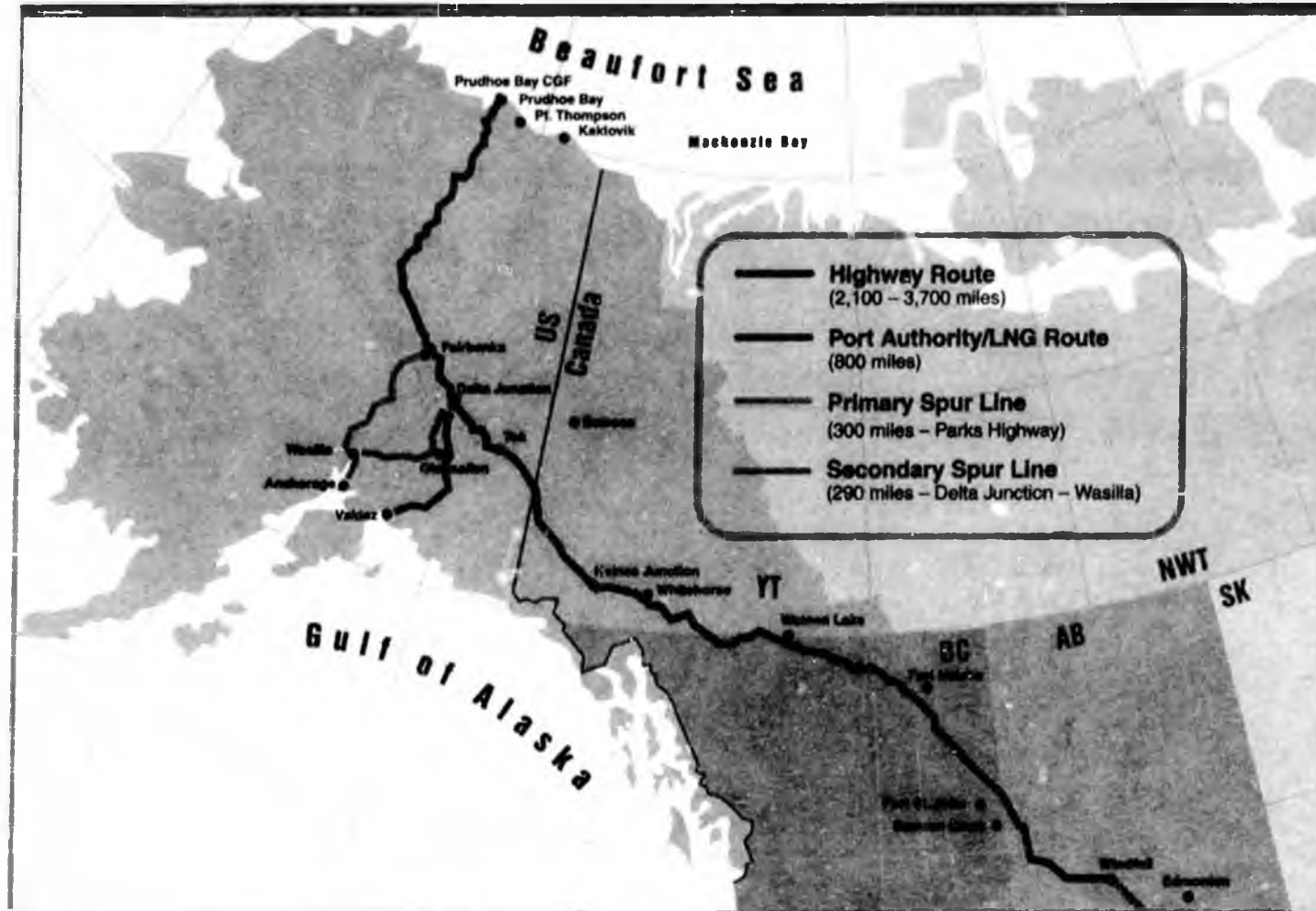
New Exploration in Cook Inlet

- The potential exists for an additional 13-17 Tcf of conventionally recoverable gas
- Investment required to explore and develop 50% of the estimated resources *potentially* available to be discovered could require investment of \$5 to \$6 billion, if the fields are onshore

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Possible Natural Gas Pipeline Routes



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Natural Gas Company

North Slope/Nenana Basin Gas to Cook Inlet

- Spurline: cost \$500 million
 - North Slope gas- 35-200 Tcf
 - Nenana Basin – 5-10 Tcf
- Opportunities:
 - Create value-added products in Alaska
 - Competitive industrial businesses
 - 100 year life span

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Conceptual Study

- Cost - \$6 million (\$2.5 million funded)
- Route Issues
 - Conceptual Engineering
 - Cost Estimate (within 20%)
 - Environment
 - Permitting
 - Potential Resource Development
 - Right of Way ownership
 - Socio/Economic Impact Analysis

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Natural Gas Company

Time Line

Task Name	Timframe	2005	2006	2007	2008	2009	2010
Conceptual Study	18 months	←————→					
Engineering	12 months			←————→			
Permitting	18 months			←————→			
Order Equipment	6 months				←————→		
Construction	24 months				←————→		
RCA Review	12 months					←————→	

*All Our **Energy** Goes Into Our Customers*



Route Factors to Consider

Overall Length

300 Miles

Archaeological Impact

New Infrastructure (Acres)

Compressor Stations (#), Horsepower (Thousands)

Total CO2 Emissions (Million Tons / Year)

Seismic Zones

Steep Slopes

Water Crossings (#)

Continuous Permafrost

Discontinuous Permafrost

Previously Undisturbed Corridor

Important Wildlife Habitat

Environmentally Managed Areas/Wetlands

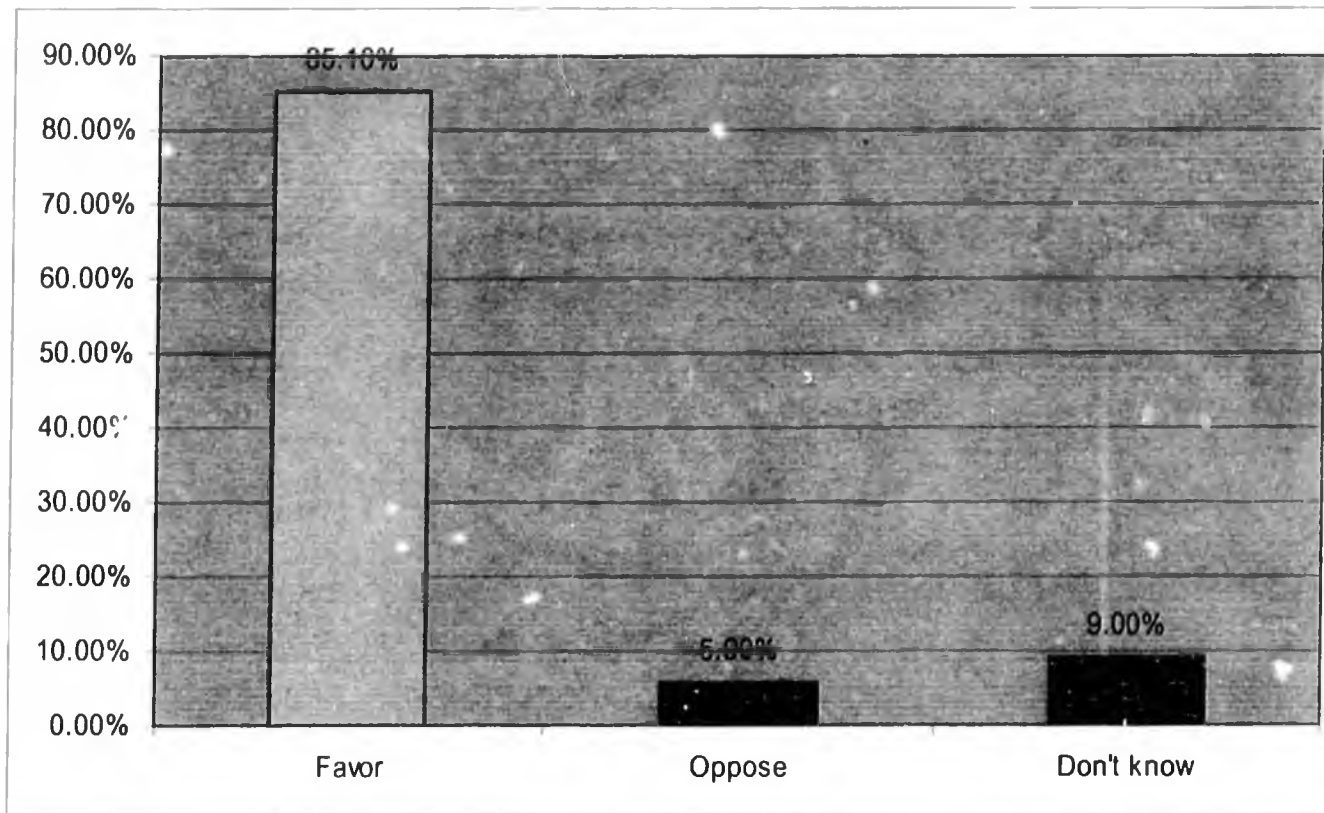
Threatened or Endangered Species Along Route (#)

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Spur line from Fairbanks to South Central Alaska?

(Based on statewide survey performed by Hellenthal Assoc on Feb 2005)



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What is ENSTAR doing?

- Partnering with Department of Energy, ML & P & Chugach Electric, Alaska Natural Gas Development Authority and all concerned parties
- Analyzing the optimum mix of energy supply options to ensure continued economic growth in Alaska
- Measure possible benefits, costs and challenges of developing gas storage facilities in South Central Alaska
- Provide a detailed conceptual analysis to define the cost and benefits of a spur pipeline between South Central Alaska and Fairbanks

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ALASKA STATE LEGISLATURE



Official Business

SENATE RESOURCES COMMITTEE

Senator Tom Wagoner, Chair

State Capitol, Room 427

Juneau, AK 99801-1182

Phone: (907) 465-4907 Fax: (907) 465-4779

Senator Ralph Seekins, Vice-Chair

Senator Ben Stevens

Senator Kim Elton


Senator Fred Dyson

Senator Bert Stedman

Senator Gretchen Guess

DATE: March 23, 2005

TO: Senate Secretary

FROM: Senator Tom Wagoner, Chair 
Senate Resources Committee

RE: Meeting Schedule: March 28 through April 1, 2005

Room #205 - 3:30pm

March 28: no meeting

March 30: (Please note time & location change)

+ Senate Finance Room 532: 2:30 – 4:30pm
+ Joint Senate & House Resource Committees
Nenana Basin Gas & Oil Project

April 1:

+ SB 113: Gulf of Alaska Groundfish Fishery
(testimony by invitation only)

+ Teleconferenced

* First Hearing

Oil and Gas Activities in the Nenana Basin

Presented to

**The House Resources Committee,
The Senate Resources Committee,
and
The House Special Committee on Oil and Gas**

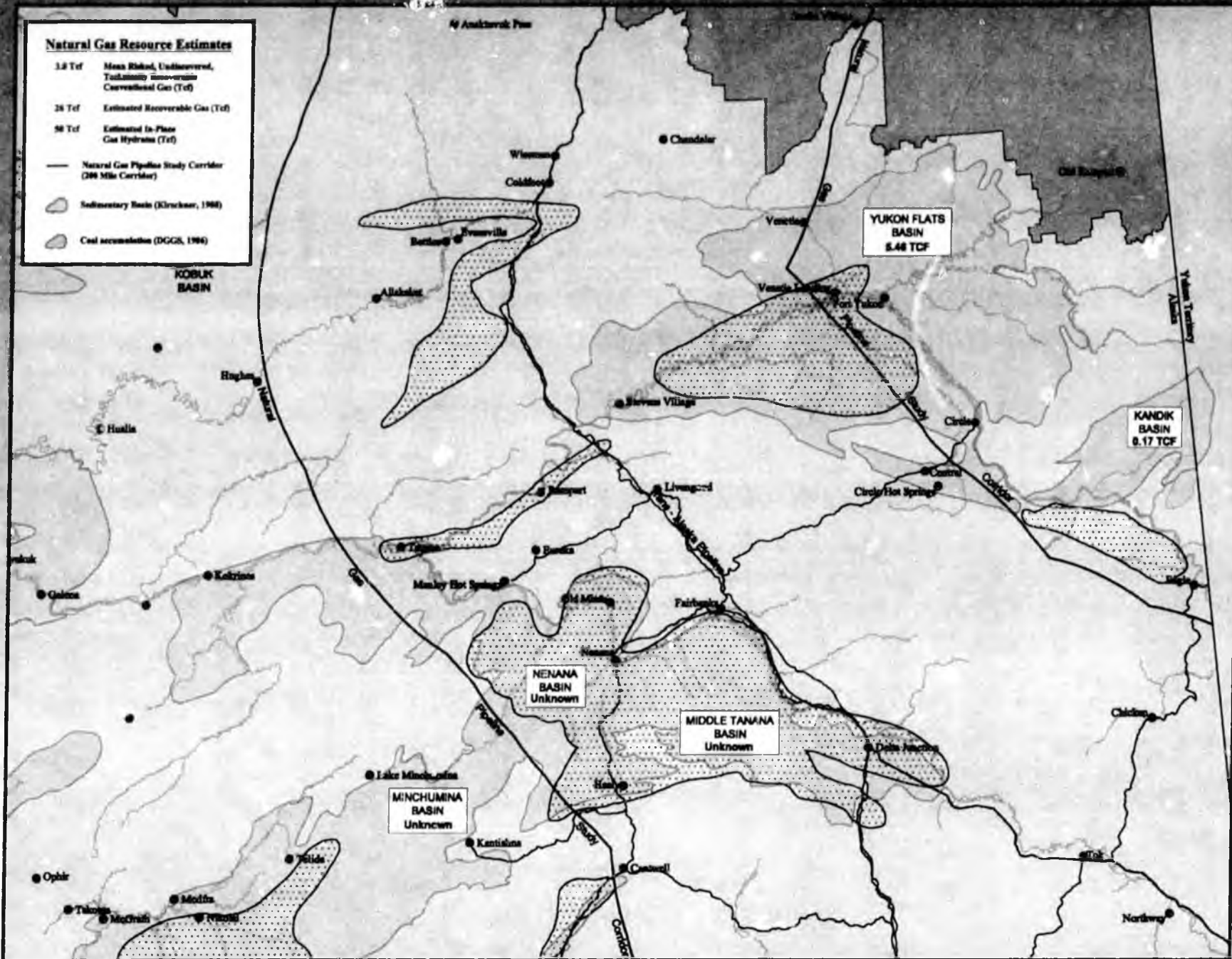
March 30, 2005

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



Alaska Department of
**Natural
Resources**

Gas Potential - Interior Area



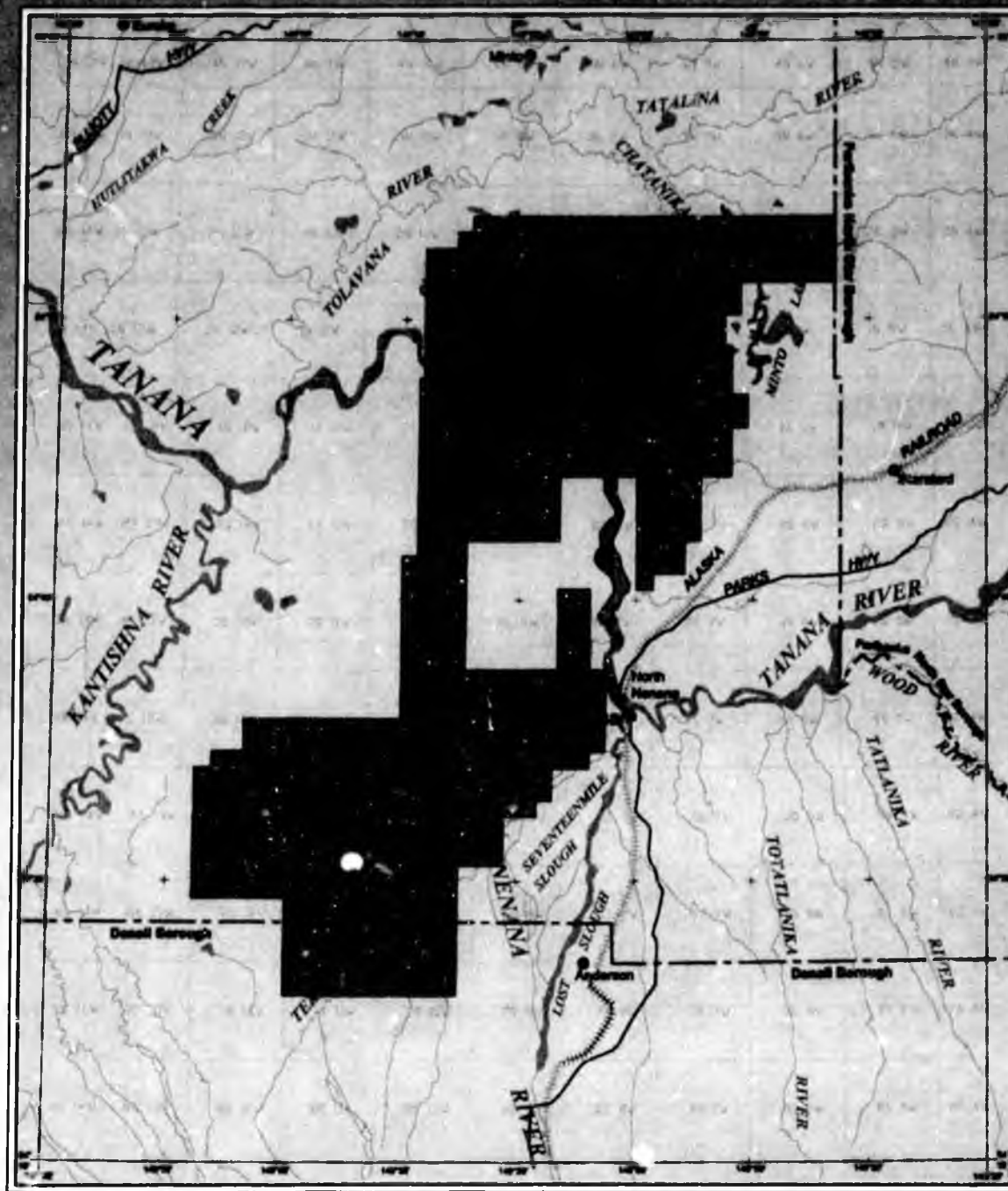
Nenana Basin Oil & Gas Potential

- **Andex Resources, LLC, holds a 7-year Exploration License for 482,942 acres with a \$2.5MM work commitment. License expires September 2009.**
- **Tertiary-age alluvial basin covering 8,500 square miles and up to > 18,000 feet deep in its northern area.**
- **Potential for coal bed methane and conventional thermogenic natural gas is good.**
 - Good reservoir rocks are associated with thick coal seams.
 - Deep source and reservoir rocks and geothermal history are conducive for formation and entrapment of conventional natural gas.
 - Tertiary sedimentary section is time-equivalent to Cook Inlet's productive Kenai Group.
- **Potential for oil is low due to thin low-organic source rocks.**
- **With only limited G&G data the basin is "under-explored":**
 - Unocal Nenana #1 (1962) – 3,062' deep, coal seam gas shows.
 - ARCO Totek Hills #1 (1984) – 3,590' deep, coal seam gas shows.
 - 350 miles 2-D seismic data in southern and central basin areas (1981-82).
 - Gravity coverage across entire basin..

Nenana Basin Exploration License Area

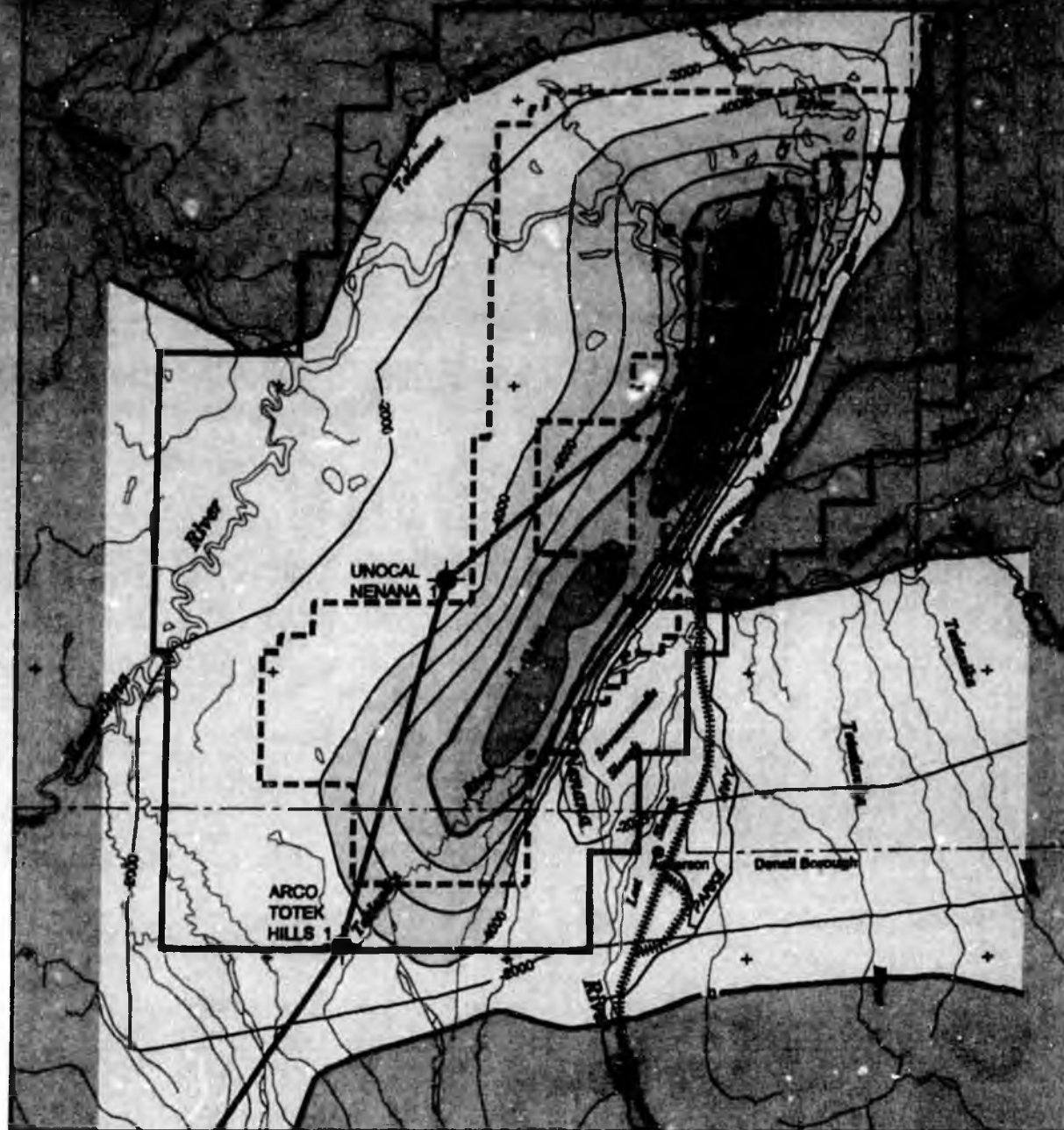
PGS is conducting a 2D seismic survey on behalf of Andex Resources, L.L.C.

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



Thickness of Sedimentary Basin (Tertiary)

Contour Interval = 2,000 Ft.



Usibelli Group in Outcrop Belt South of
Nemana Exploration License Area

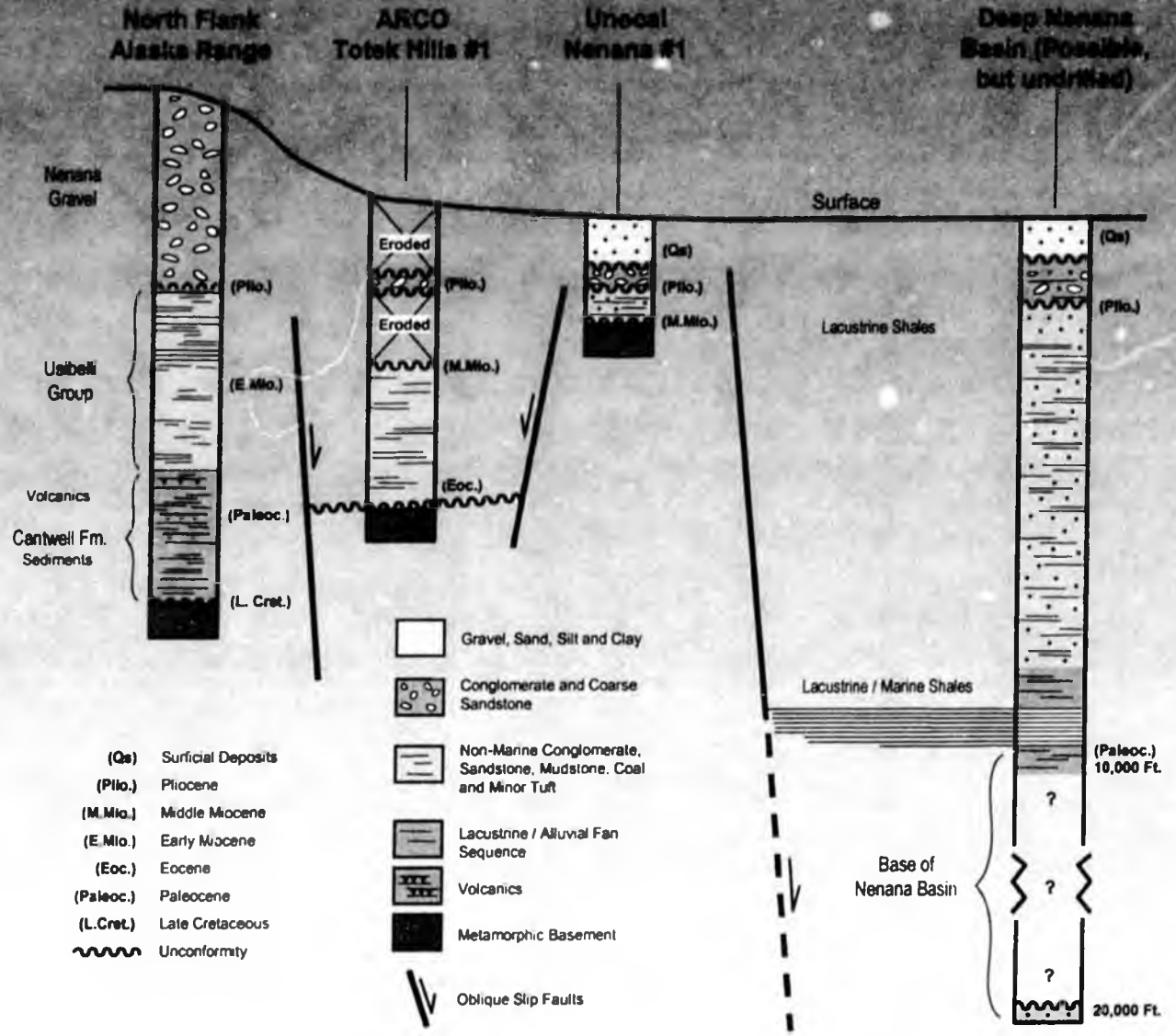


Roy D. Merritt, DGGS 08/95

Nenana Basin Stratigraphic Sections

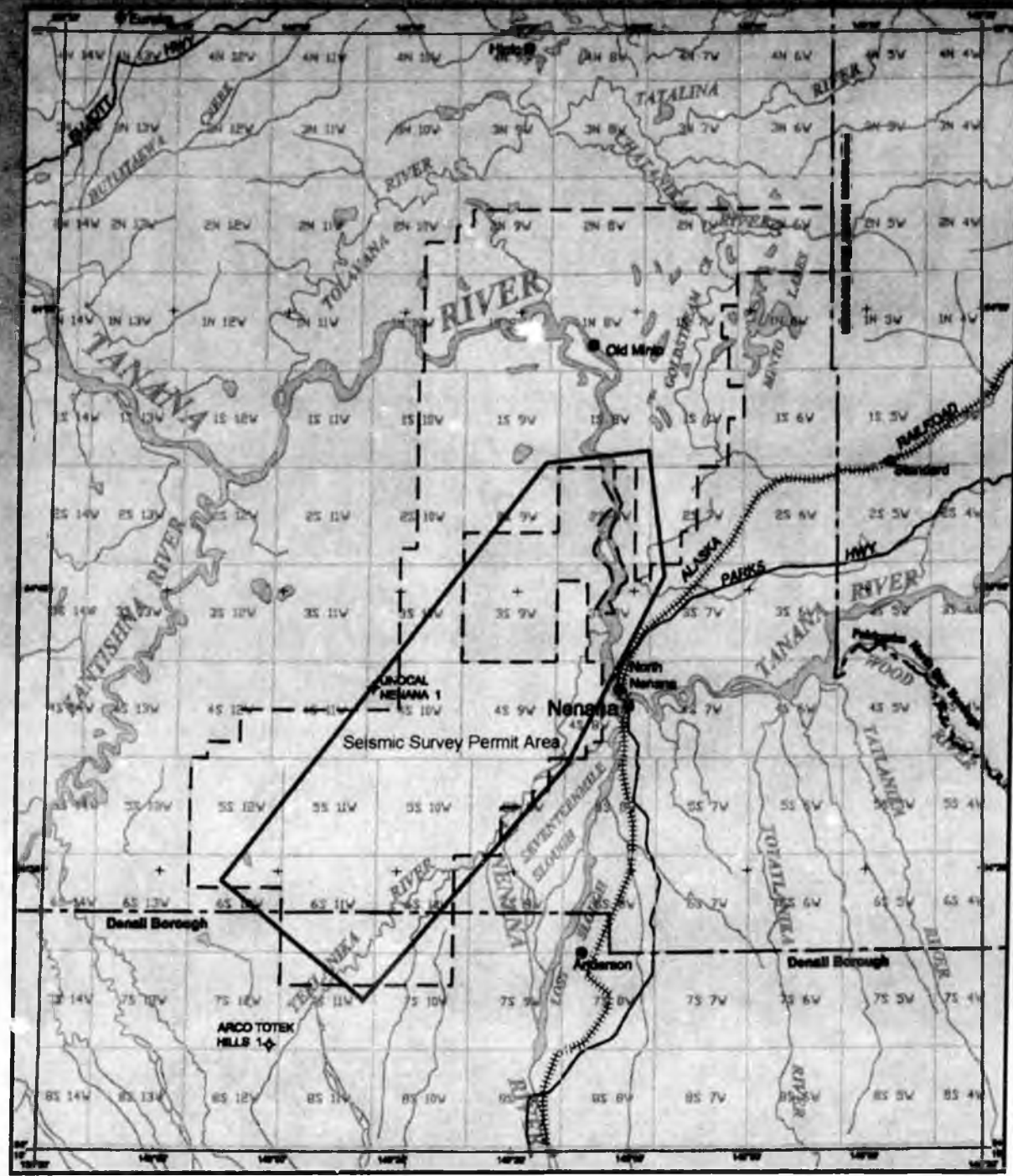
SOUTH

NORTH



From C.E. Paris, 1999

**Nenana
Exploration License
Area
with
Seismic Survey
Area**



Potential In-State Demand for Natural Gas in the Greater Fairbanks Area

	Actual		Projected		
	2000	2004	2009	2020	
				(medium)	(high)
(Billion Cubic Feet per year)					
Res & Comm ¹	0.1	0.5	3.1	6.5	
Power ²			6.5	12.0	27.0
Industrial ³			-na-	30.0	300
SubTotal	0.1	0.5	9.6	48.5	333.5
Expected Southcentral Shortfall ⁴				18.0	91.5
TOTAL	0.1	0.5	9.6	66.5	425.0
Proportion of Cook Inlet Basin		0.3%	4.8%	33.2%	212.5%
Proportion of Gasline Throughput		0.035%	0.6%	4.2%	27.1%



¹ Equal to 2000 and 2004 actual gas usage in the Fairbanks local gas distribution system operated by Fairbanks Natural Gas, LLC. Projection in 2009 based on Econ One (2002) study for DNR assuming 50% penetration for both residential and commercial space heating. Projection in 2020 based on extrapolation of actual usage growth during 1998-2004 using 2nd order polynomial time-trend model.

² Based on central station (gas-by-wire) civilian and military power generation in Greater Fairbanks region assuming 50% penetration in 2009 and 83% penetration in 2020 (Econ One).

High-case power consumption (27 Bcfy) based on combination of central station (gas-by-wire) and fuel-switching in interior region utilities that could be served by gas pipelines.

³ Examples of Industrial usage are:

- Internet Server Farm - 4.3 Bcfy (Econ One)
- Petchem Plant - 30-to-300 Bcfy (Econ One and ANGDA)
- Fairbanks Separator Plant - 73 Bcfy (ANGDA)
- Fertilizer Plant - 50 Bcfy (Agrium)

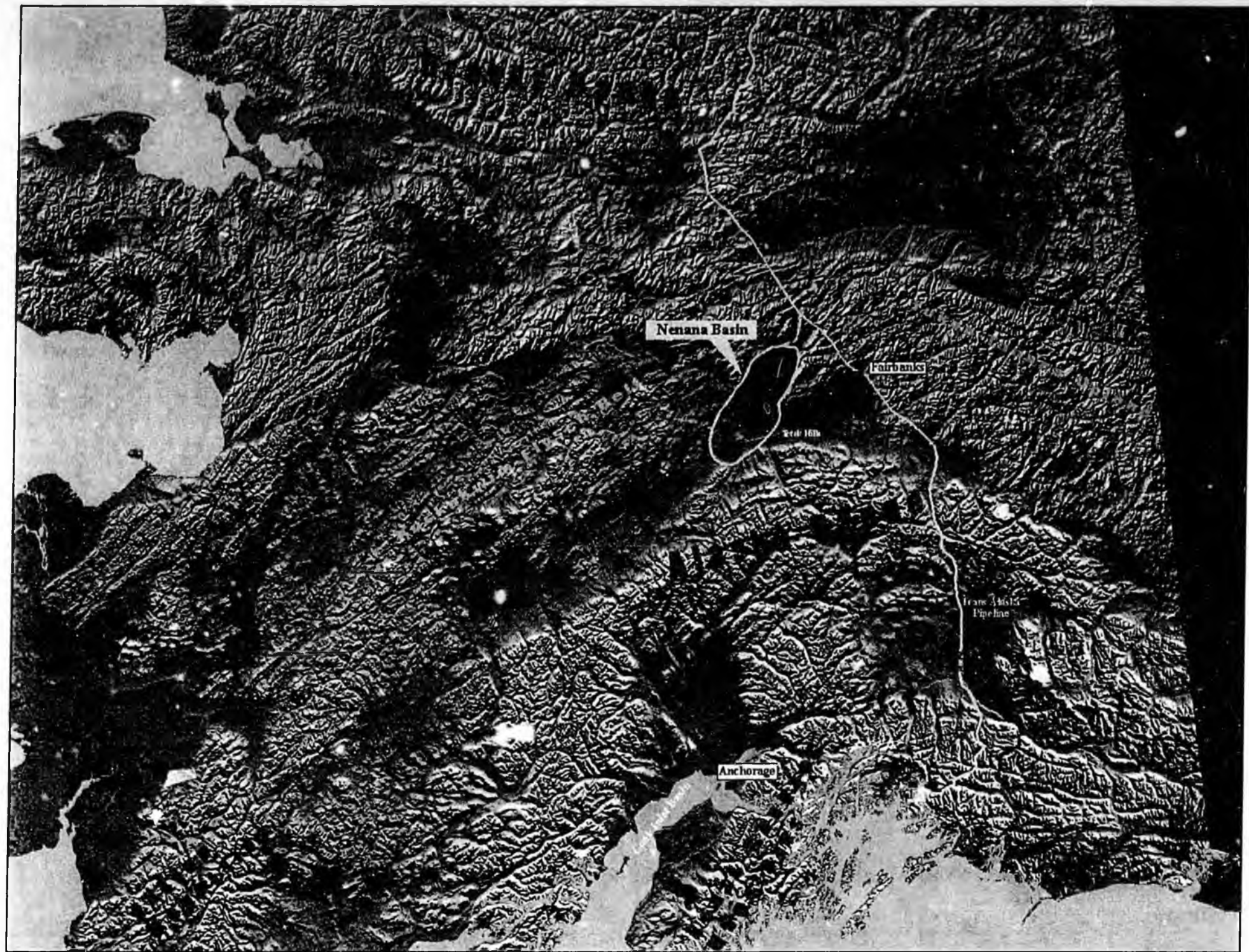
⁴ Medium-case based on 50 Mmcf/d assuming 1.5 Tcf reserves expansion in Cook Inlet Basin (CIB), LNG closure in 2009 and Fertilizer at 50%. High-case based on 250 Mmcf/d assuming zero reserves growth in CIB, Fertilizer plant closure in 2006, LNG plant closure in 2009 (Lukens)

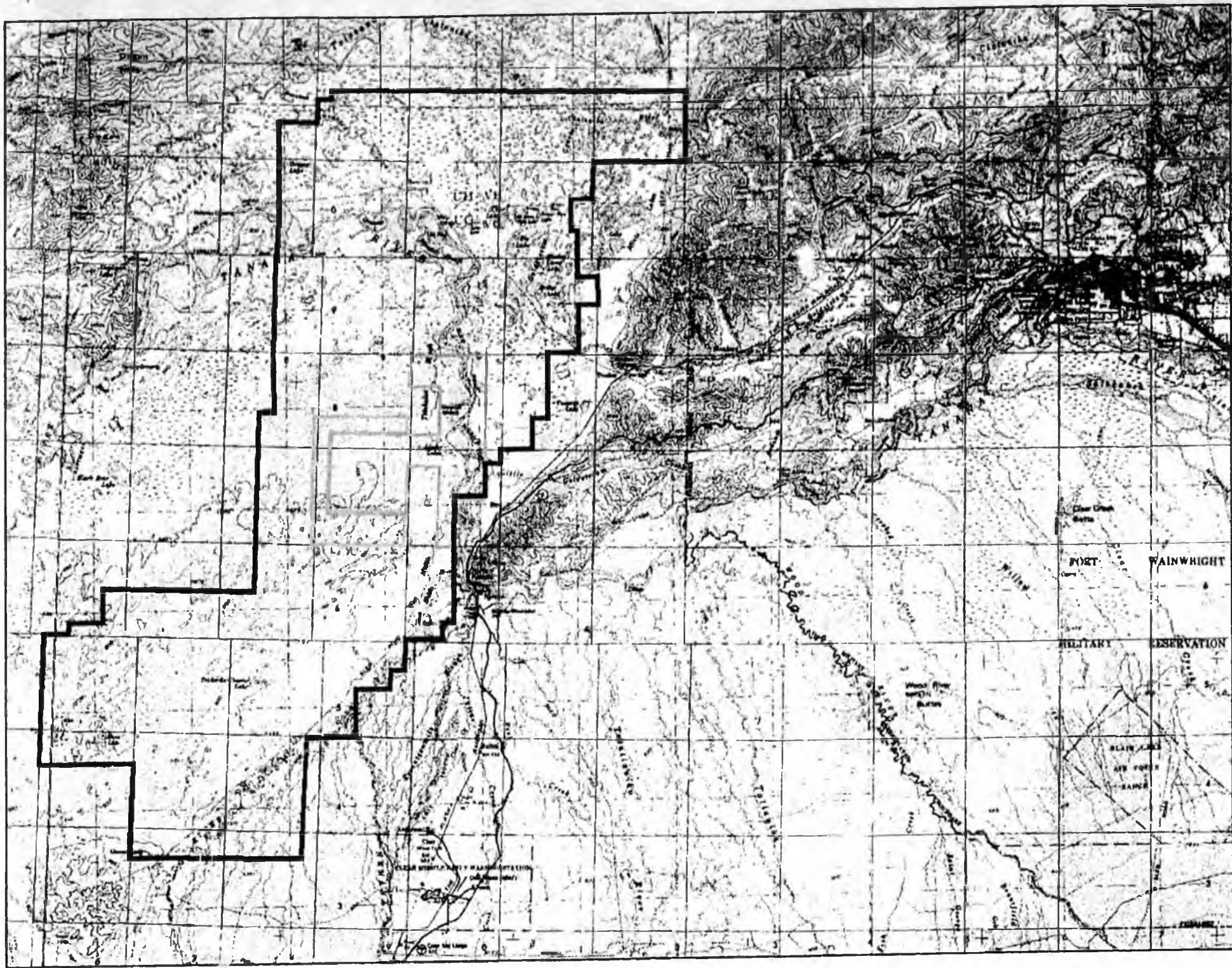
NENANA BASIN ALASKA

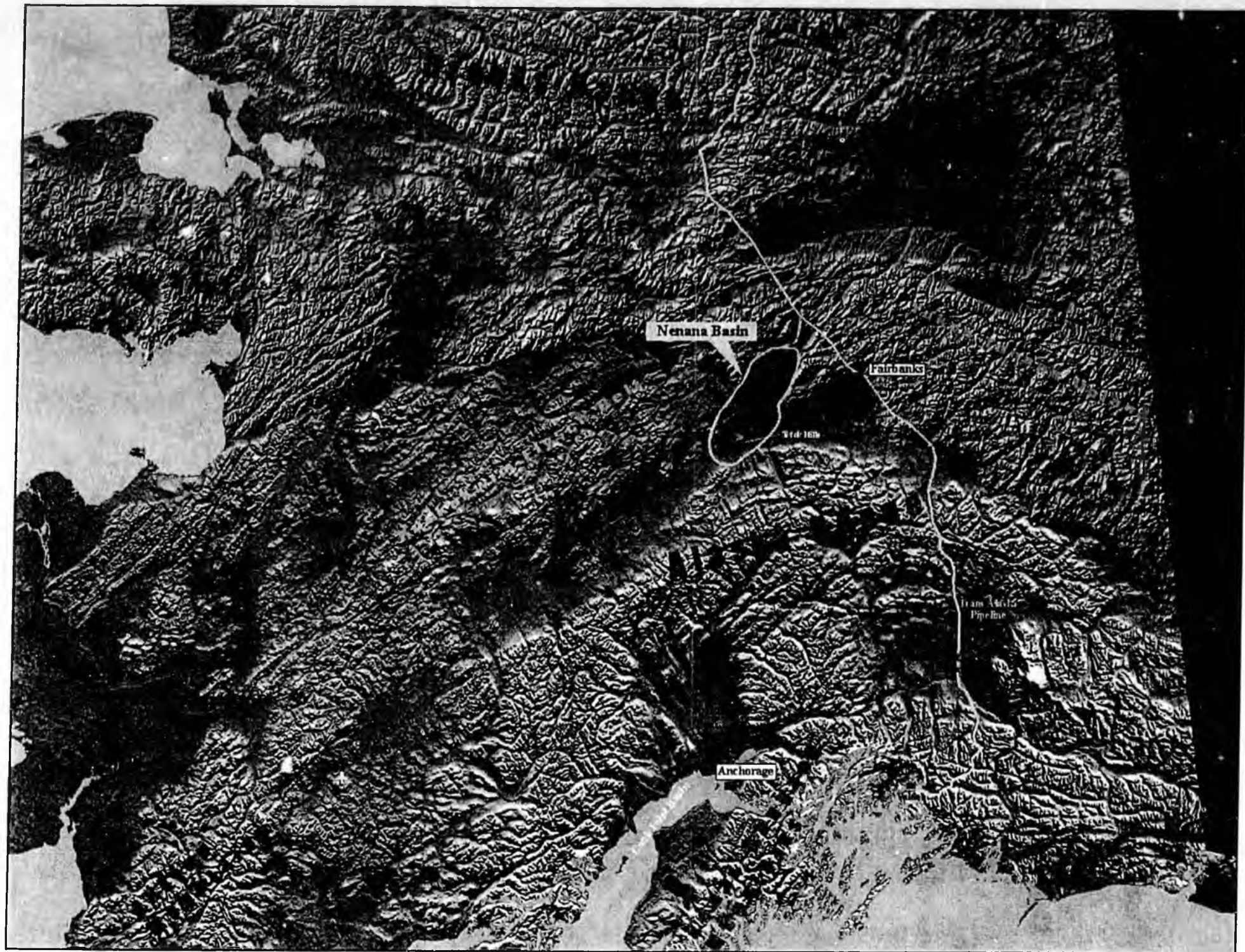
- **ANDEX RESOURCES, LLC**
- **USIBELLI ENERGY**
- **DOYON, LTD**
- **ARCTIC SLOPE REGIONAL CORP.**

LOCATION MAP

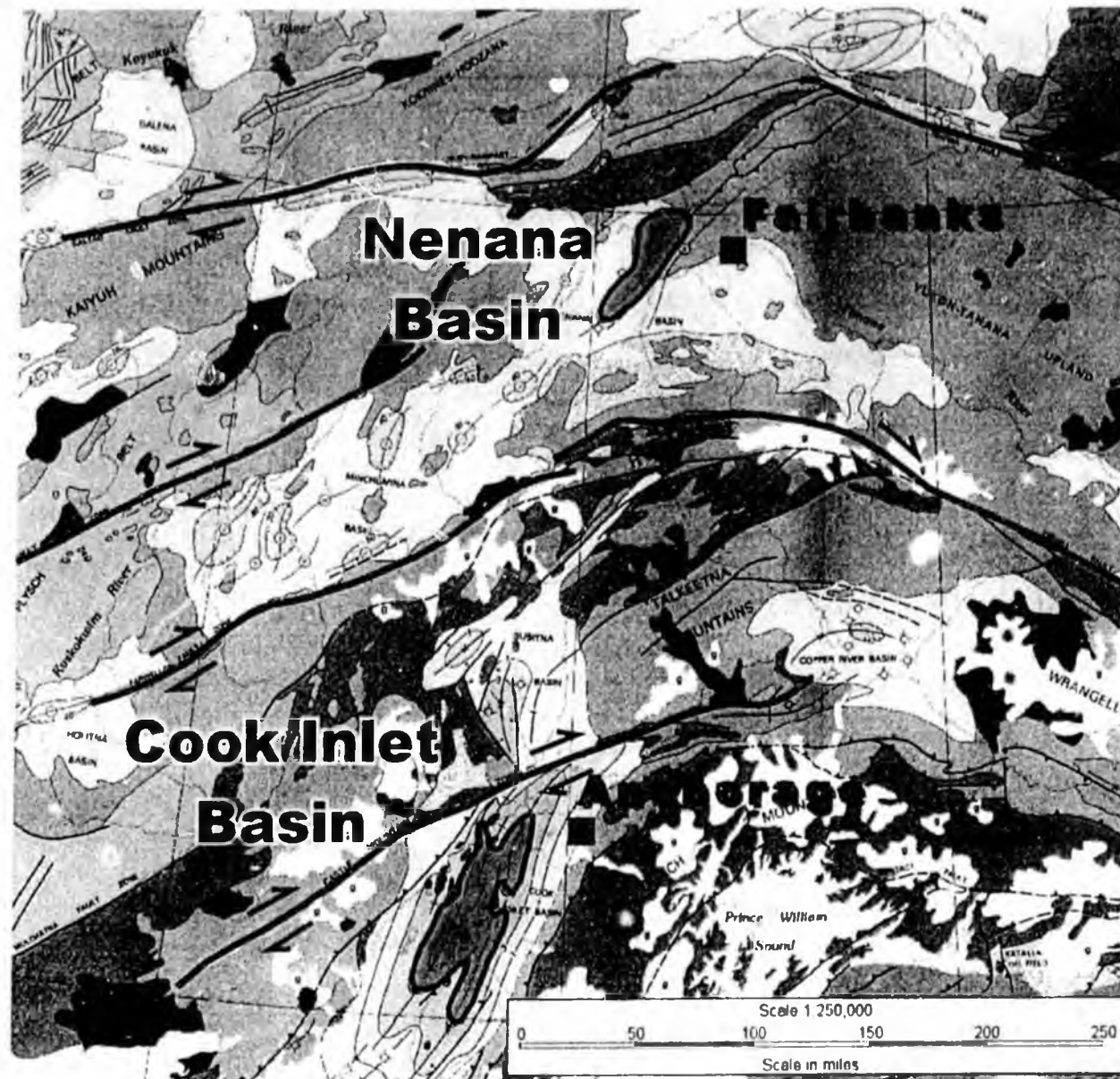


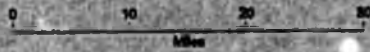






SEDIMENTARY BASINS

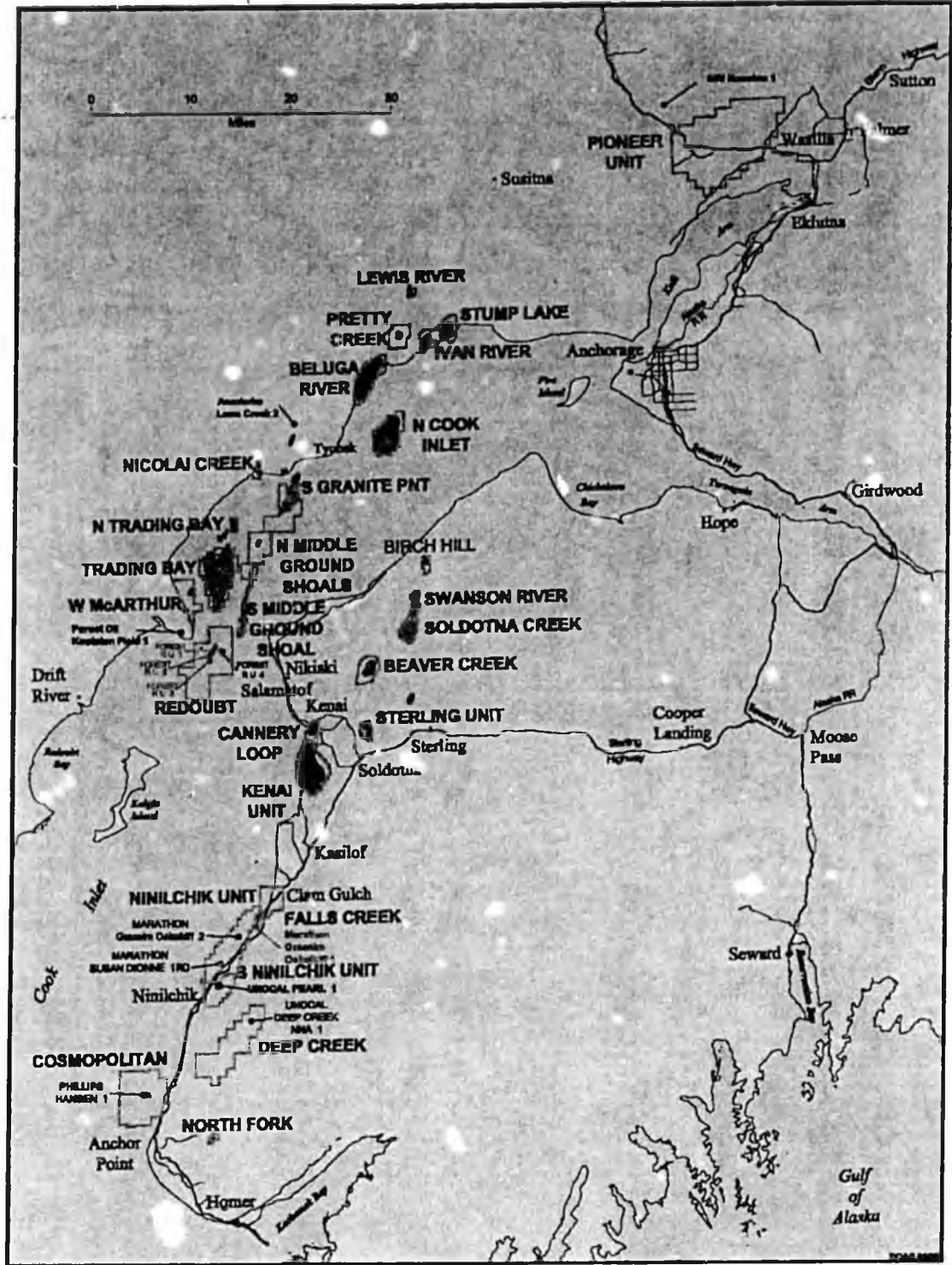




Map Legend

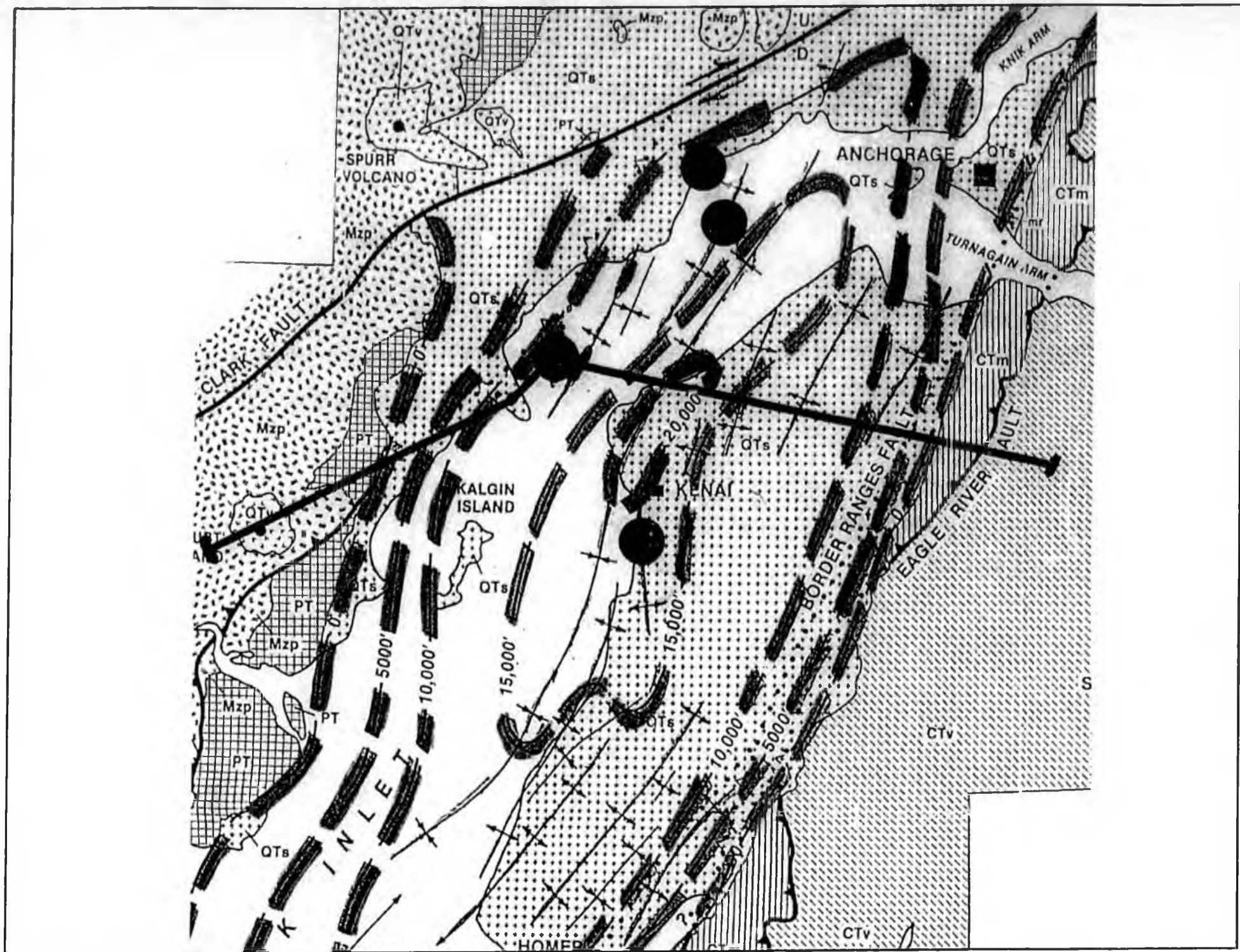
- Units
- Oil Field / Accumulation
- Gas Field / Accumulation
- 2001 Exploration Wells
- Proposed Wells
- Platforms
- Road
- Alaska Rail Road

Map Location



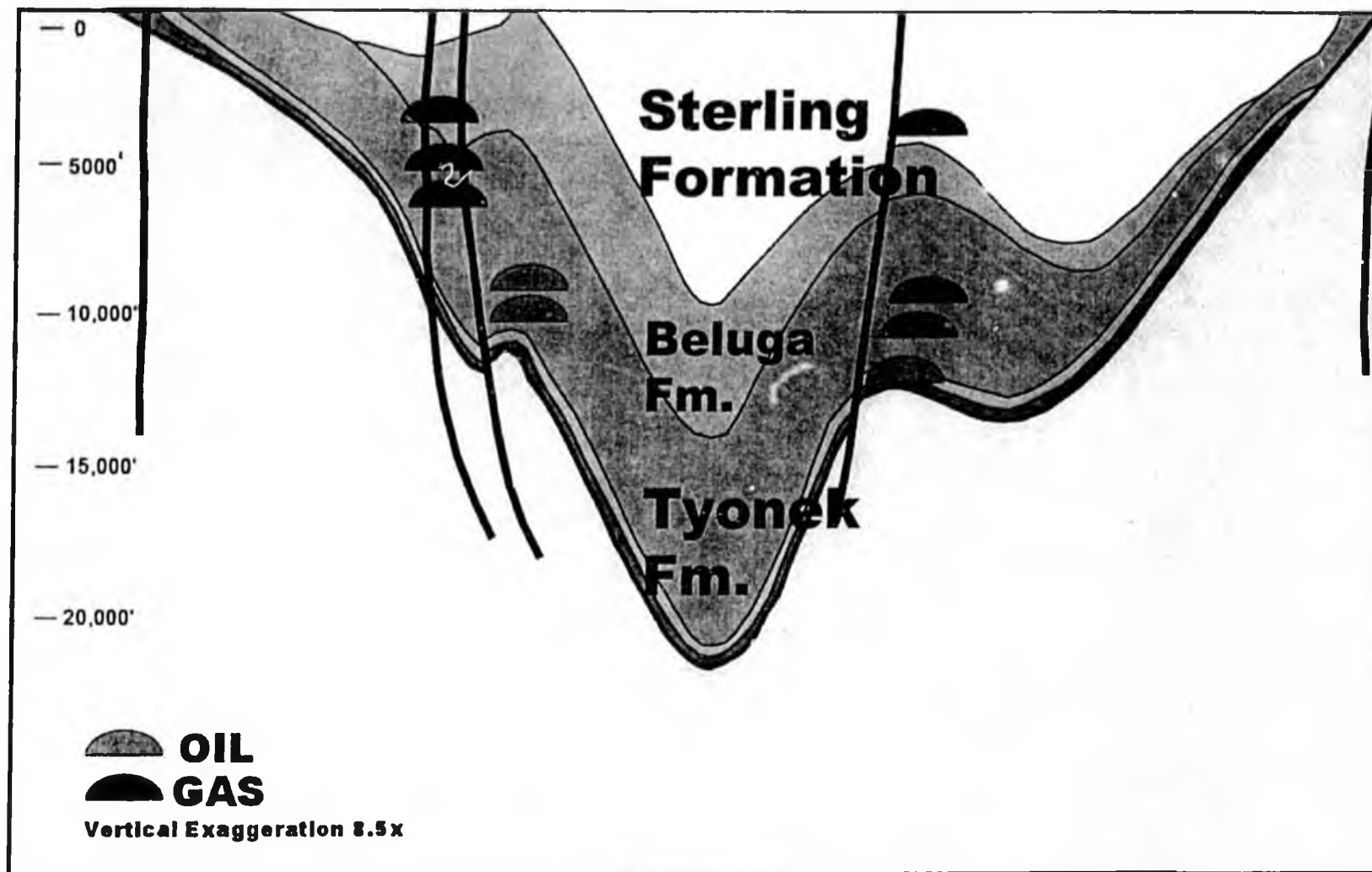
KENAI GROUP

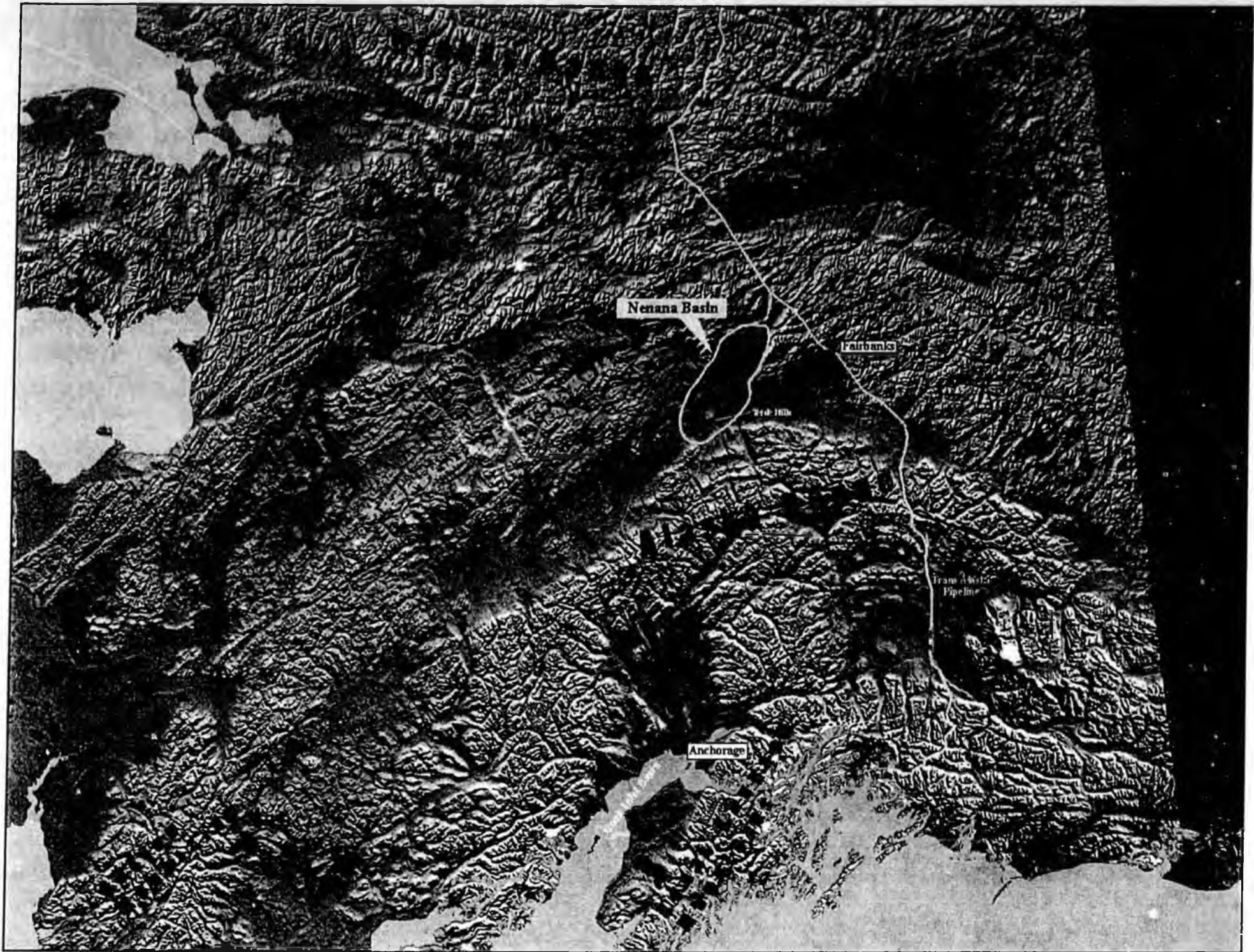
PLIOCENE	STERLING FORMATION
MIOCENE	BELUGA FORMATION
OLIGOCENE	TYONEK FORMATION
EOCENE	W. FORELAND FORMATION
PALEO- CENE	CHICKALOON FORMATION



COOK INLET

DIAGRAMMATIC CROSS SECTION



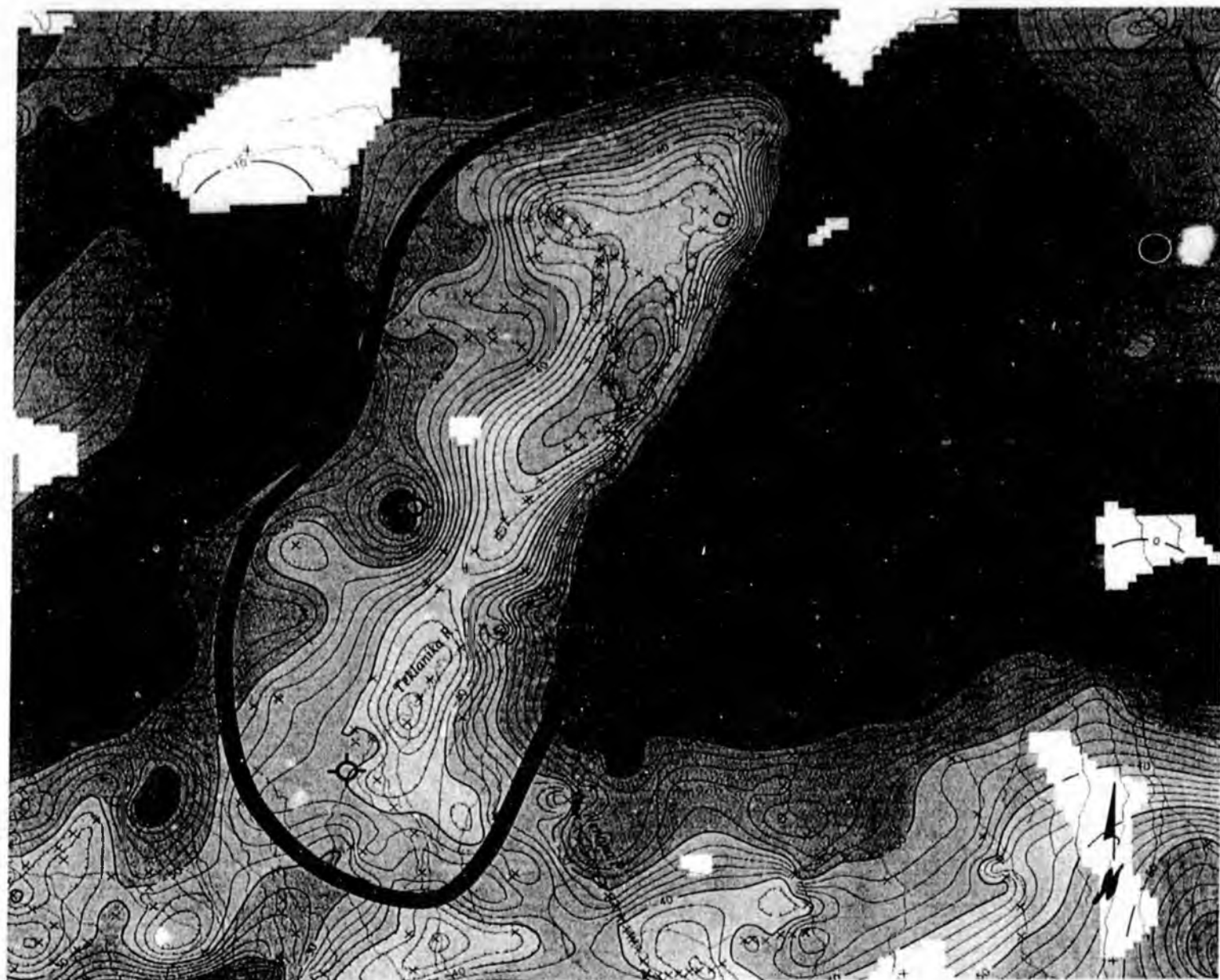


KENAI GROUP

PLIOCENE	STERLING FORMATION
MIOCENE	BELUGA FORMATION
OLIGOCENE	TYONEK FORMATION
EOCENE	W. FORELAND FORMATION
PALEO-CENE	CHICKALOON FORMATION

USIBELLI GROUP

PLIOCENE	NENANA GRAVEL
MIOCENE	GRUBSTAKE FORMATION
OLIGOCENE	HEALY CREEK FORMATION
EOCENE	
PALEO-CENE	CANTWASH FORMATION



mGal

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

-100

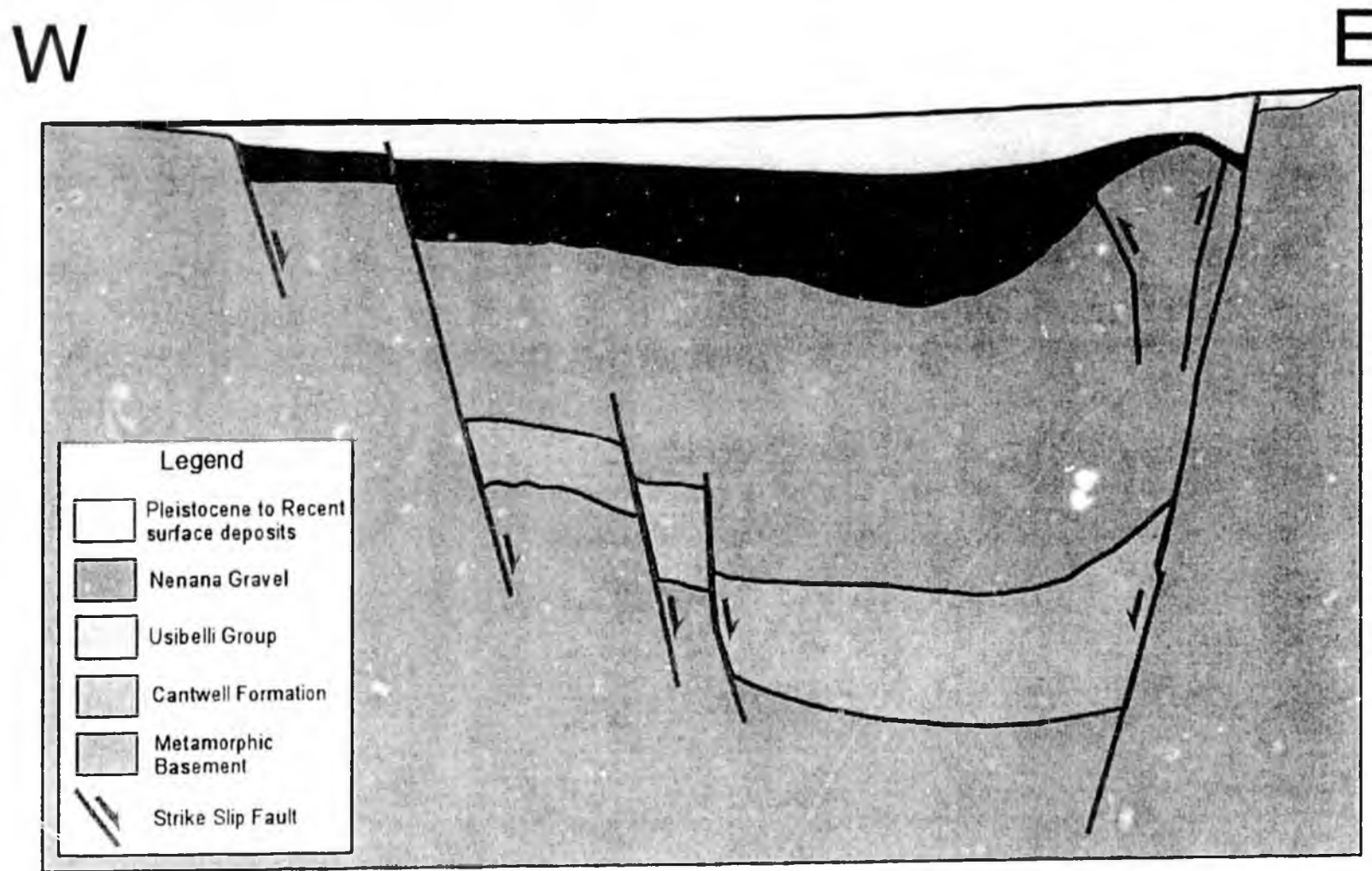
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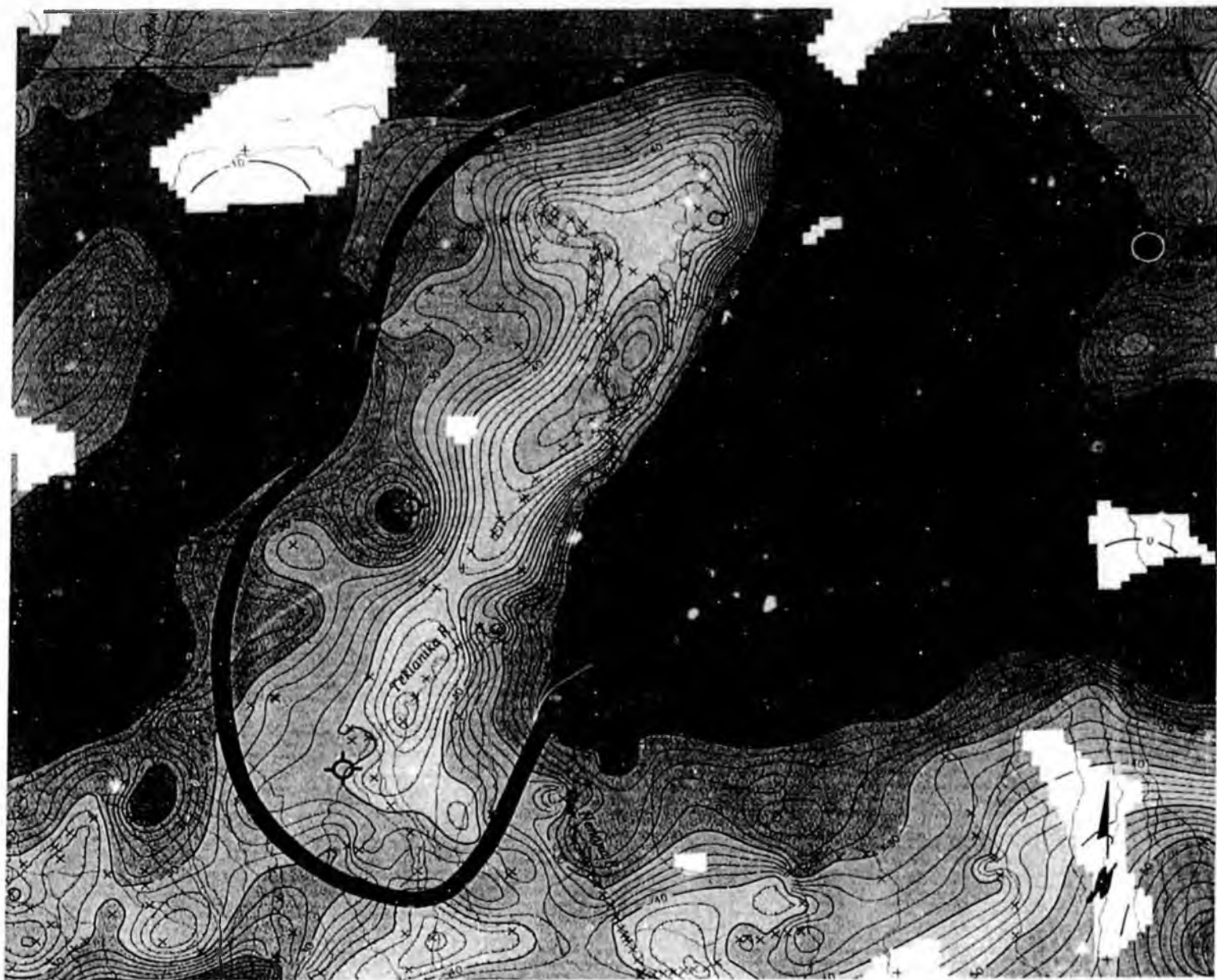
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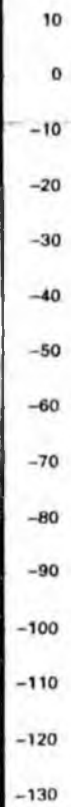
NENANA BASIN

Diagrammatic Cross Section





mGal



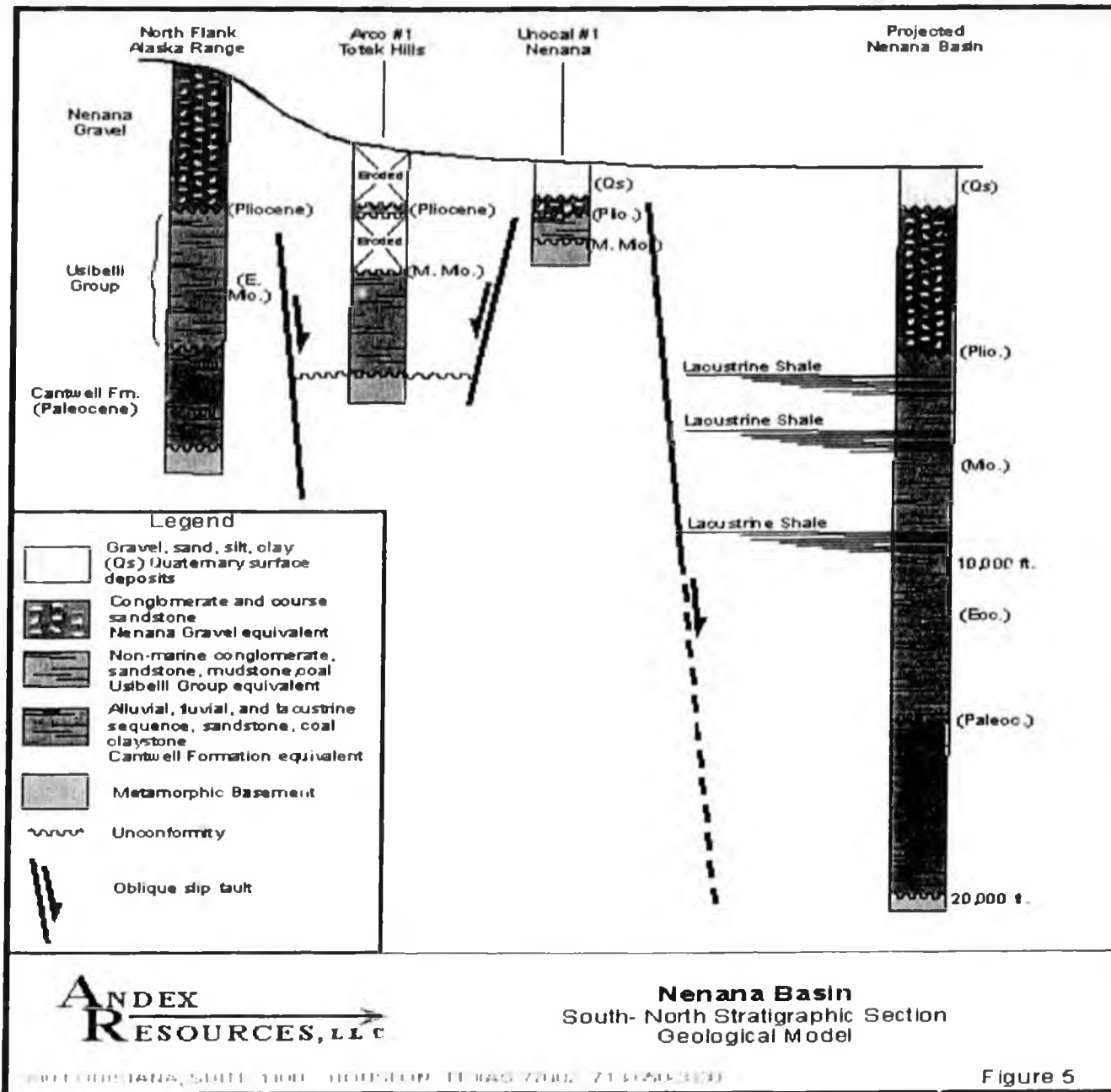


Figure 5

NENANA BASIN

- **SOURCE ROCKS**
- **RESERVOIRS**
- **SEALS**
- **TRAPS**
- **DEPTH**
- **ACCESSIBILITY**
- **MARKET**

EXPLORATION LICENSE

- **483,174 ACS**
- **OCTOBER 1, 2002**
- **PRIMARY TERM: 7 YEARS**
- **LEASE OPTION: 7 YEARS**
- **WORK COMMITMENT: \$2,500,000**

