

Alaska Stratigraphic Test Well Proposal

Department of Natural Resources
Division of Oil and Gas
August 12, 2003



Alaska Department of
**Natural
Resources**

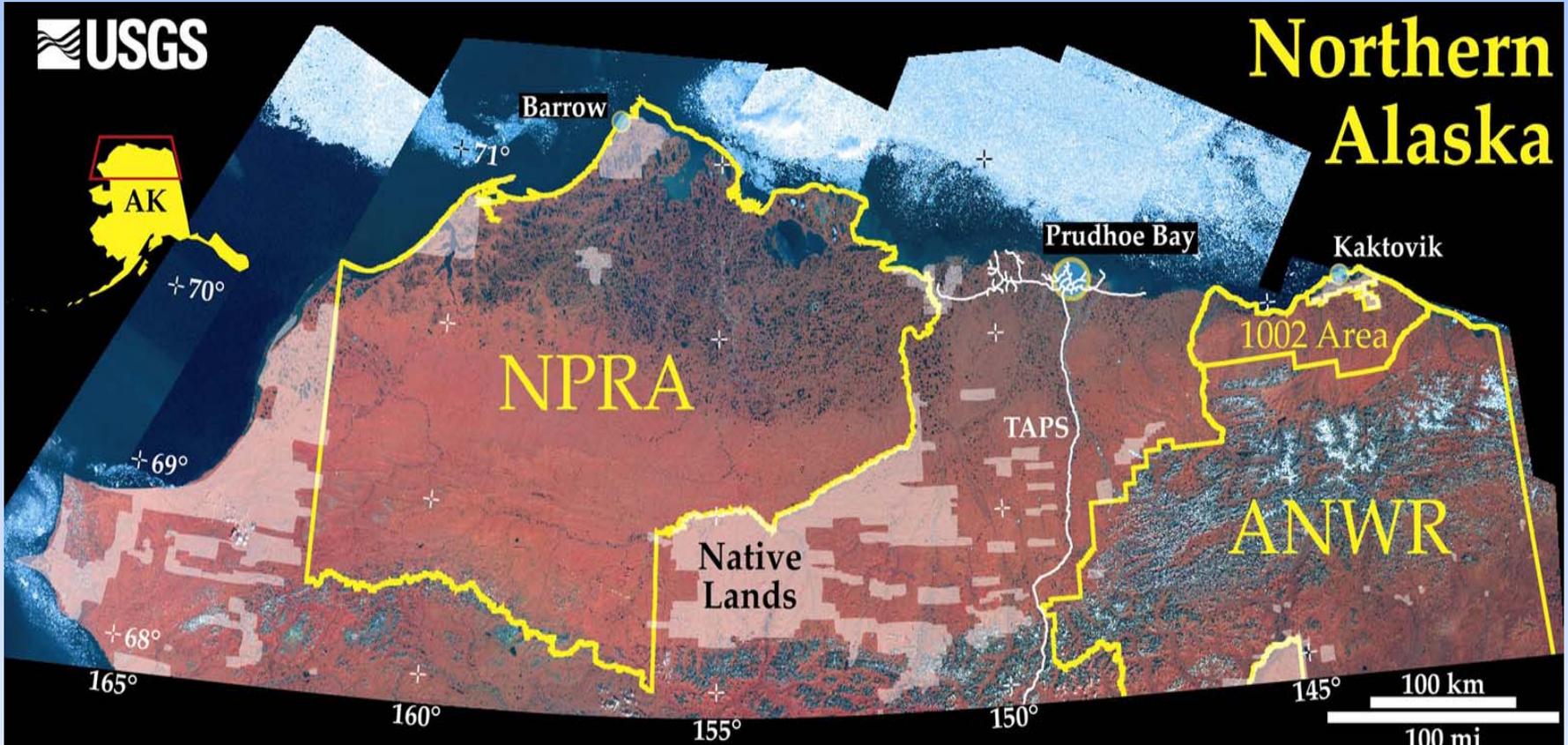
ANWR State Waters Stratigraphic Test Well

Objectives

- **Provide data to:**
 - Define nature of petroleum systems.**
 - Identify source rock potential.**
 - Evaluate hydrocarbon shows.**
 - Assess reservoir quality.**
 - Identify stratigraphic units.**
- **Establish the presence of Beaufortian and/or Ellesmerian section.**
- **Confirm structural complexities as seen on seismic.**
- **Determine gas versus oil potential of central**
- **and southern 1002 region.**
- **Enable calibration of seismic data to stratigraphy.**



Northern Alaska



NPRA

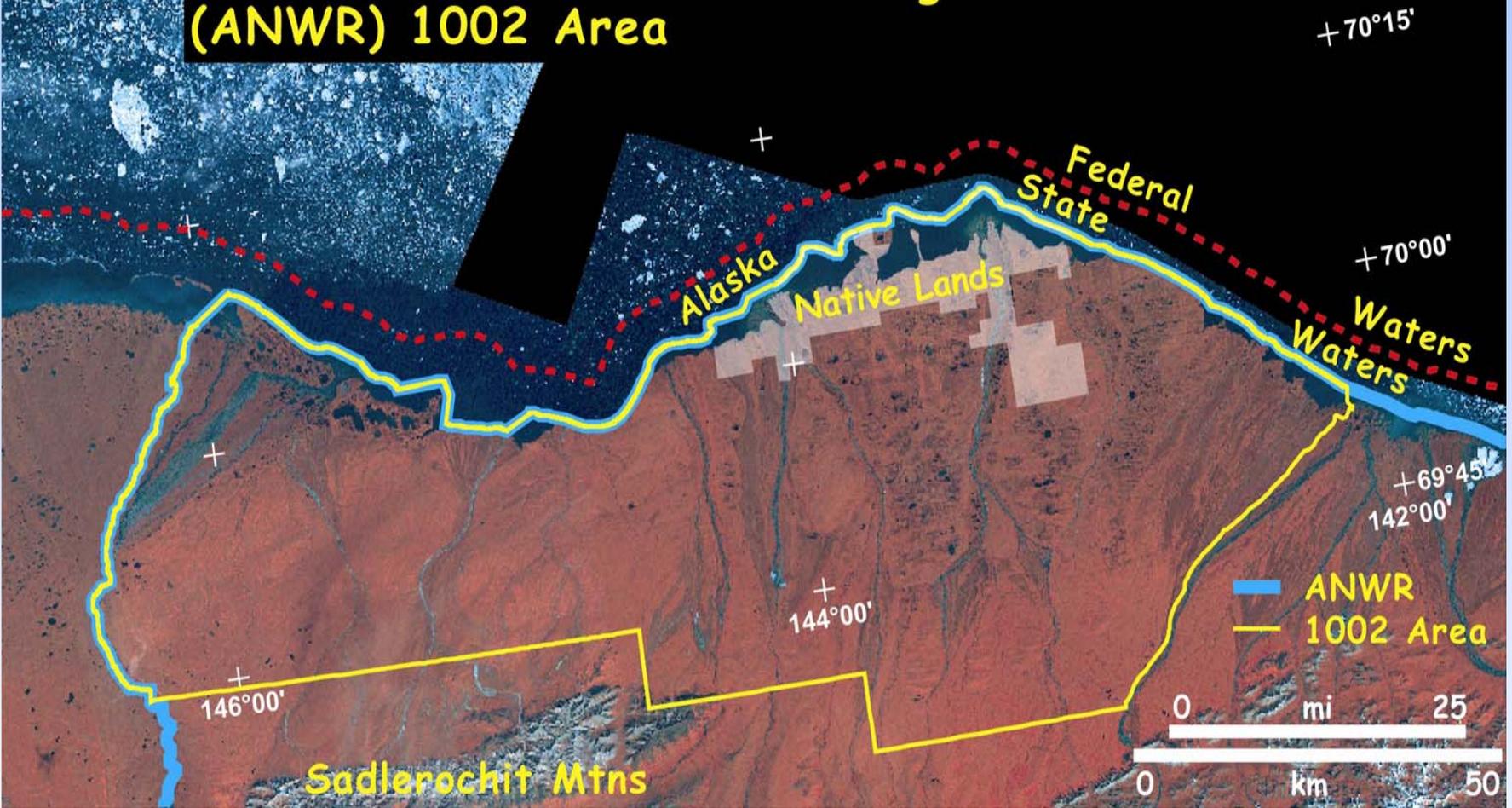
~23 million acres
~93,000 km²
~36,000 mi²
~Indiana

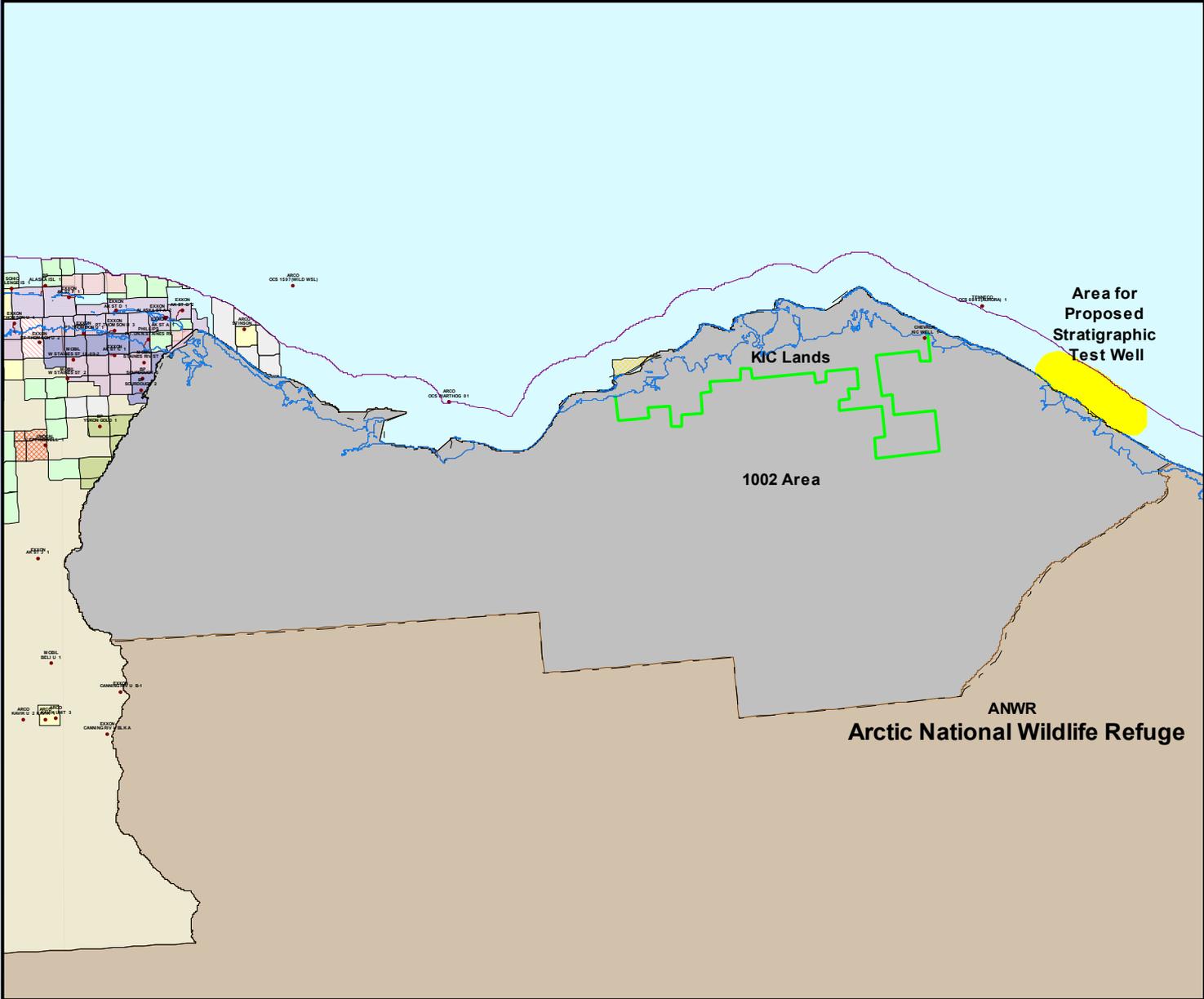
ANWR (1002 area)

~19 million acres (1.5)
~77,000 km² (6,100)
~30,000 mi² (2,300)
~South Carolina (Delaware)



Arctic National Wildlife Refuge (ANWR) 1002 Area







ANWR 1002 - Petroleum Systems

Megasequences



Kuvlum, Stinson
Hammerhead
Badami, Flaxman

Tarn
Pt. Thomson
Kuparuk River
Alpine
new NPRA Disc.

Prudhoe Bay

Lisburne
Endicott



Canning -
Sagavanirktok (?)



Hue-Thomson (!)



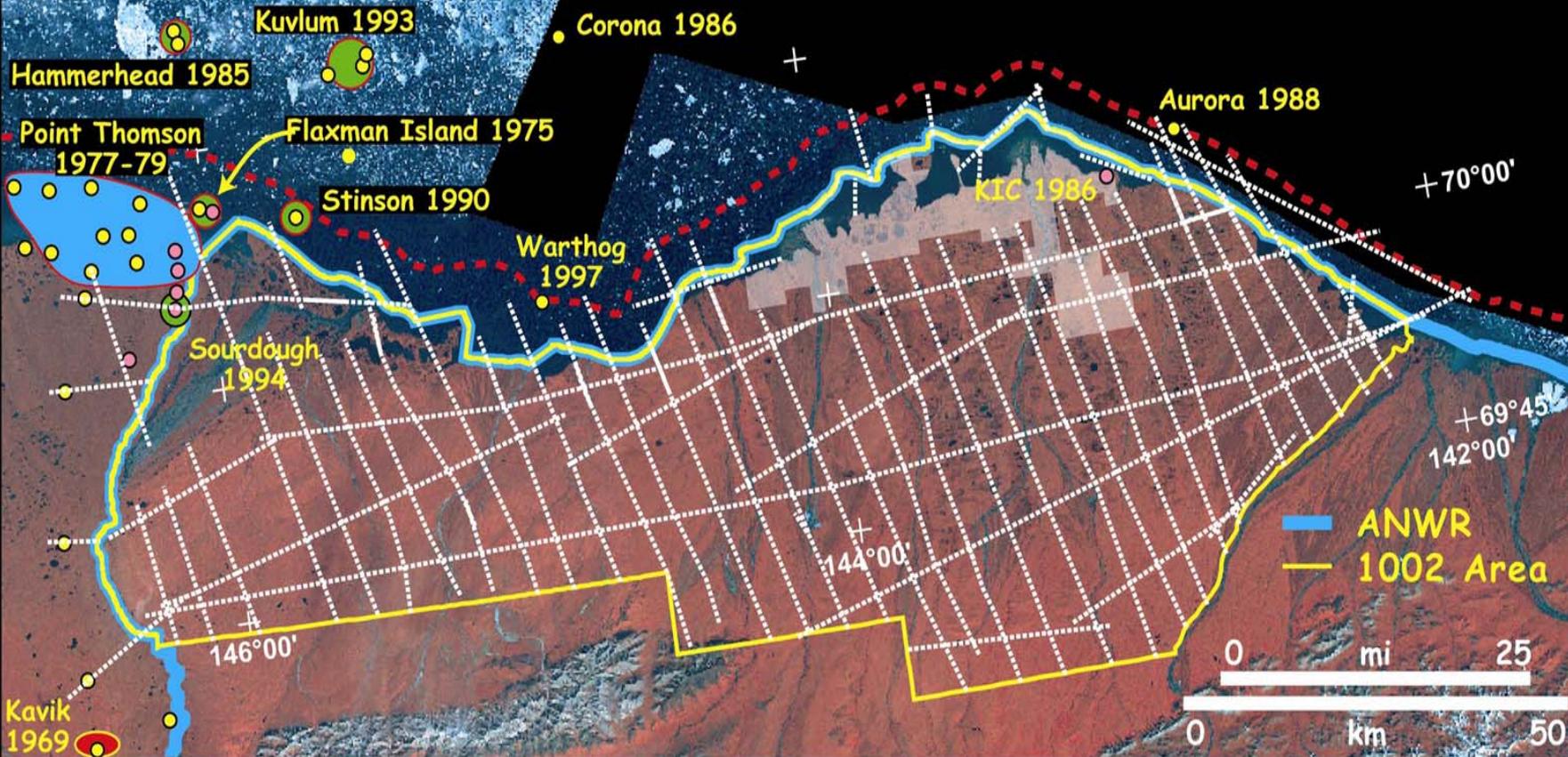
Ellesmerian (!)

■ Source
● Reservoir



ANWR 1002 Area Wells, Discoveries, & Seismic Data

Belcher 1989
+70°15'



Exploration Wells: • Public Domain • Tight Hole
Discoveries: ● Oil ● Gas & Condensate ● Gas

2-D Seismic Grid
1984-1985 Vintage

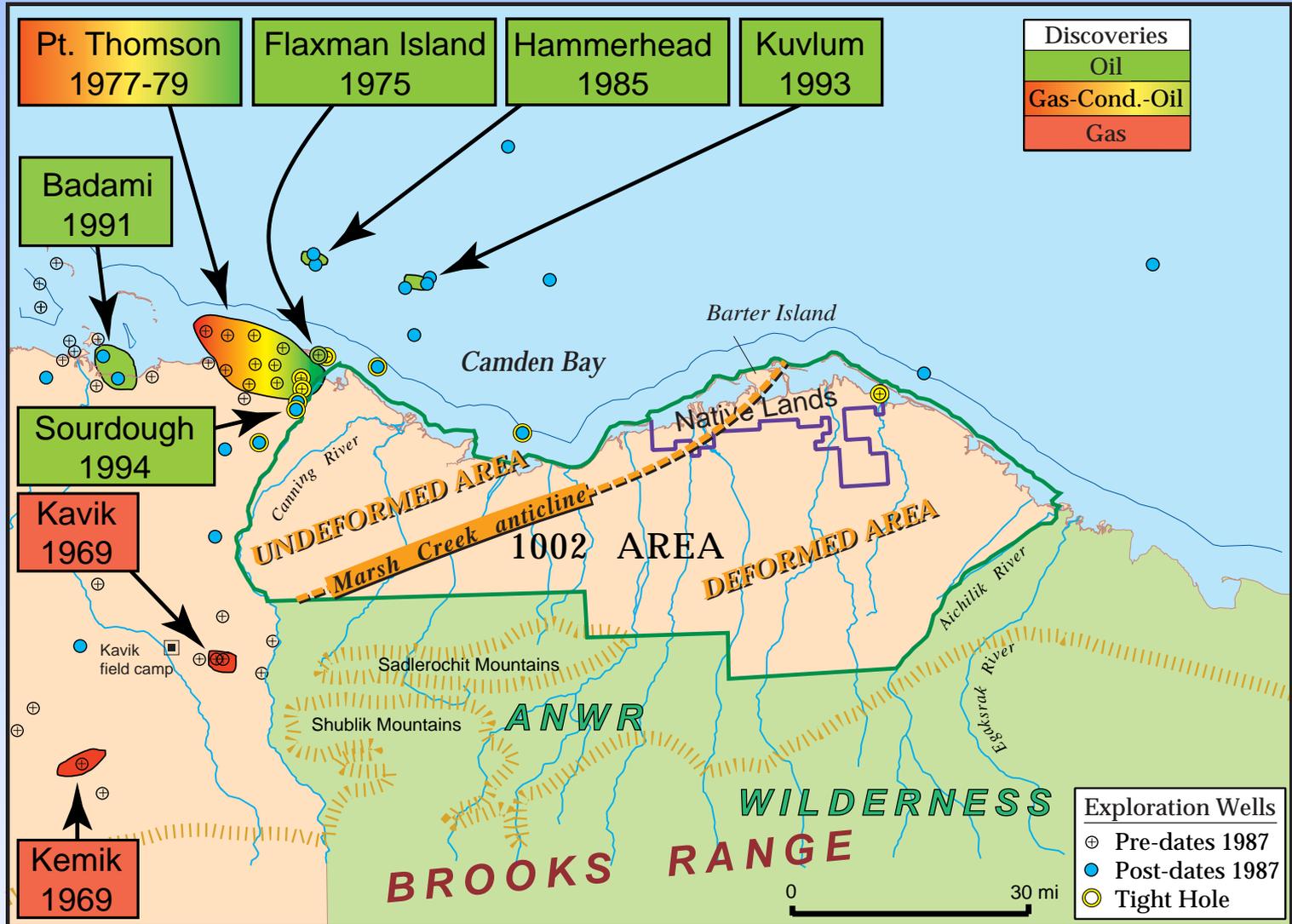
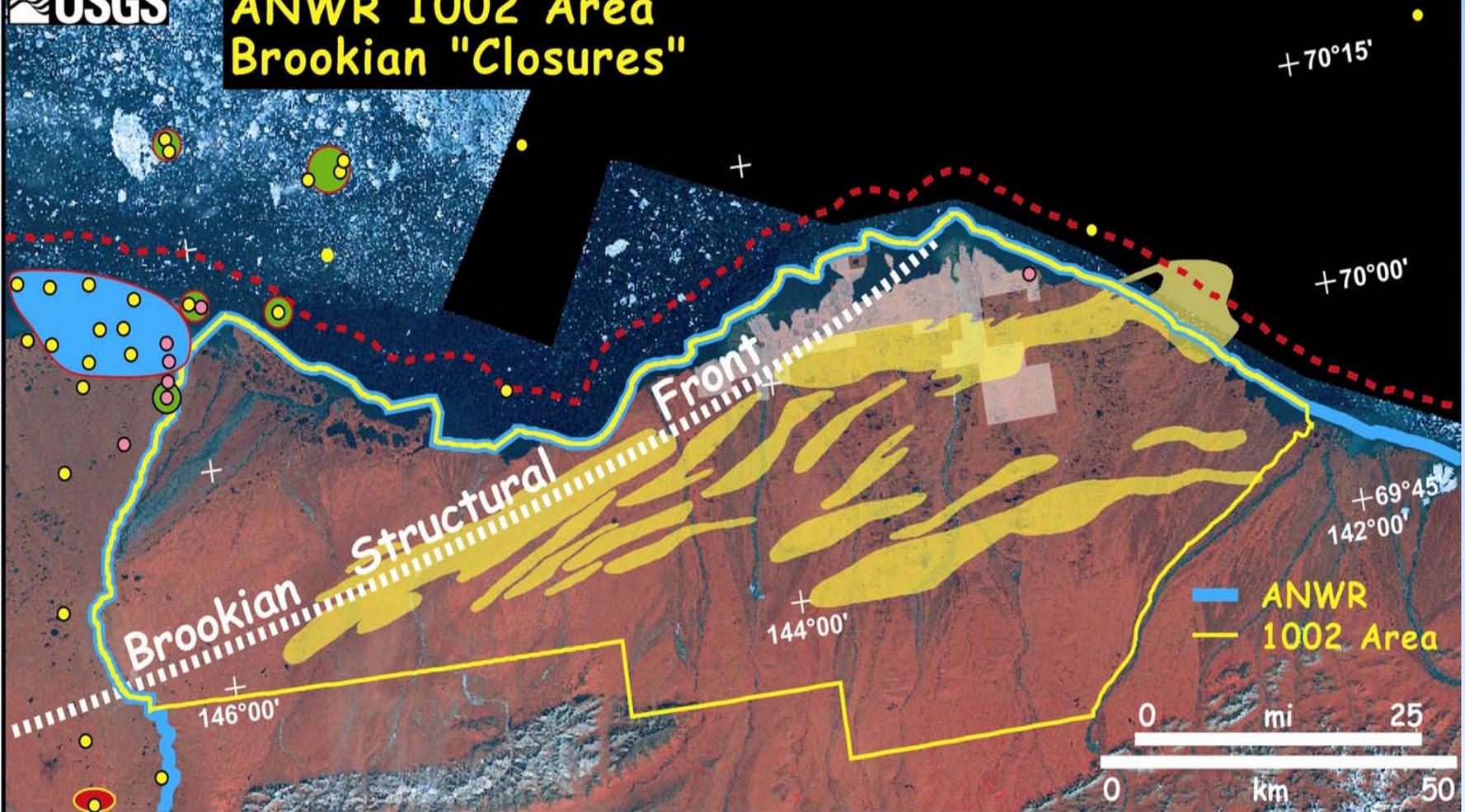


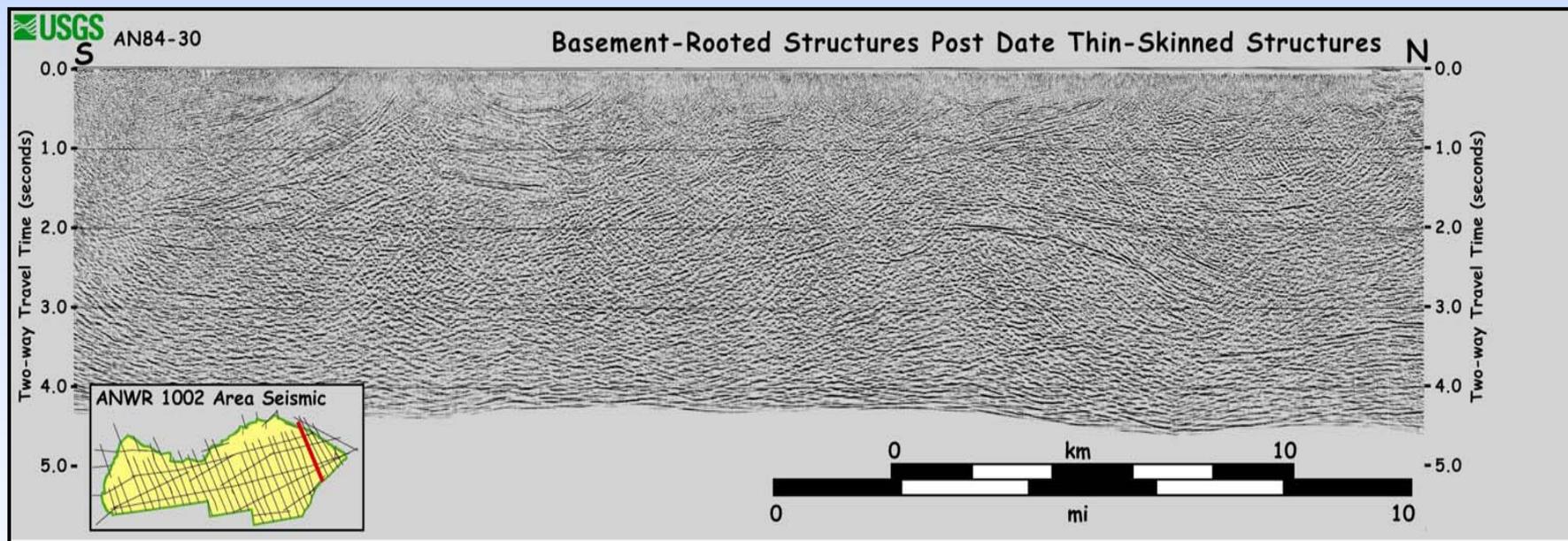
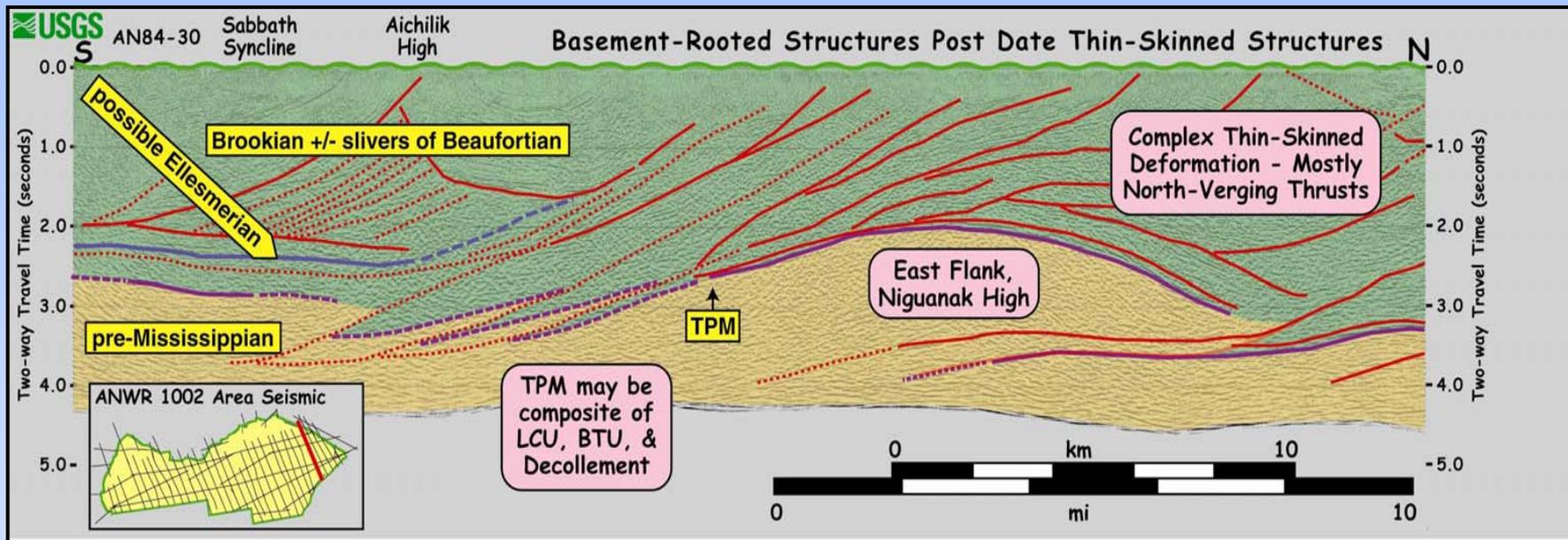
Figure 2. Map of the ANWR 1002 and adjacent areas showing petroleum discoveries and status of exploratory wells relative to 1987 USGS assessment. Orange dashed line marks approximate boundary between undeformed area, where rocks are generally horizontal, and deformed area, where rocks are folded and faulted.



ANWR 1002 Area Brookian "Closures"



"Closures" Represent Culminations of Thin-Skinned Thrusted Anticlines
May Include Composite Traps and Breached Traps



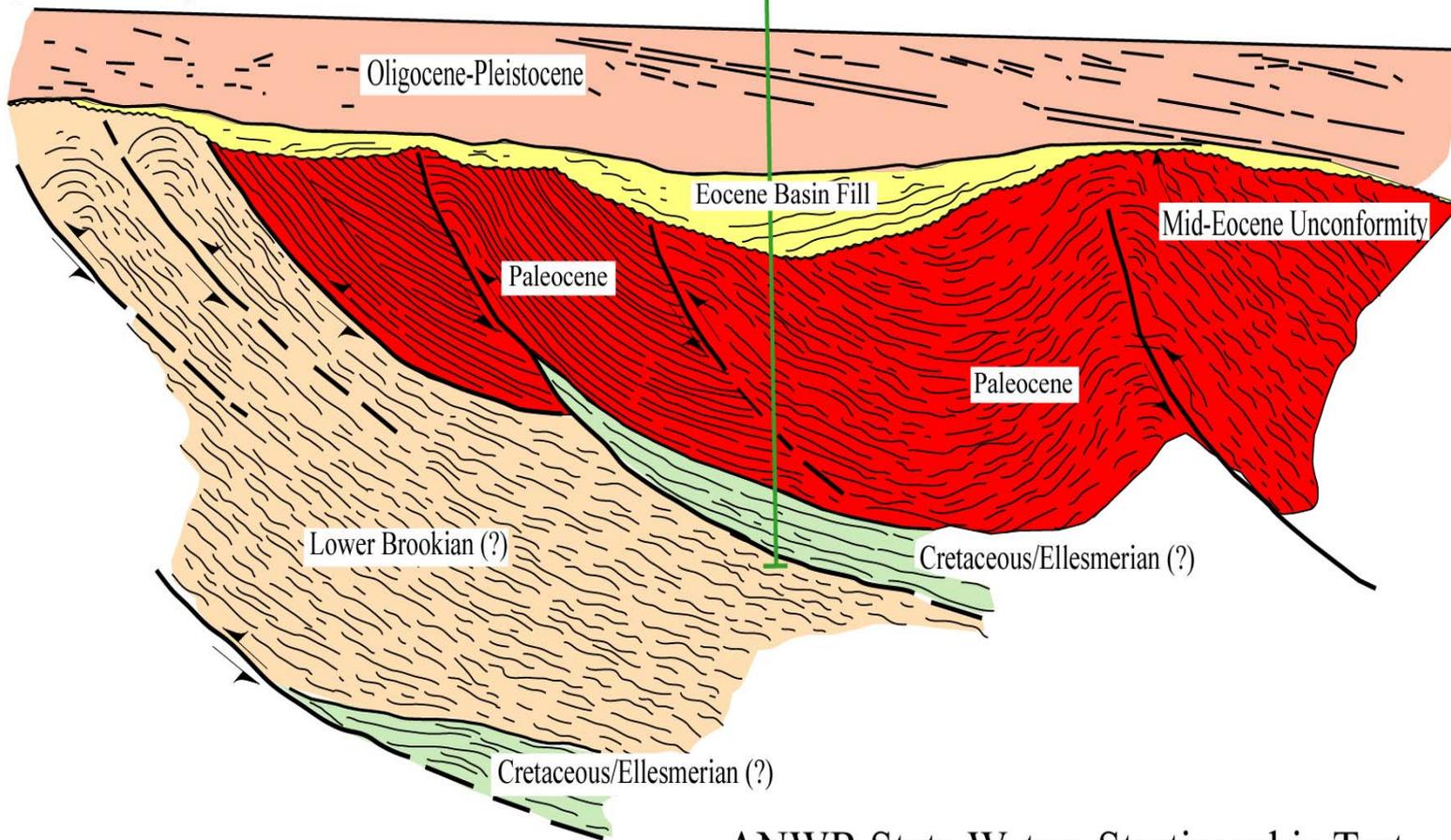
Northwest

Proposed Stratigraphic Test

Southeast

Angun Point Oil Seep

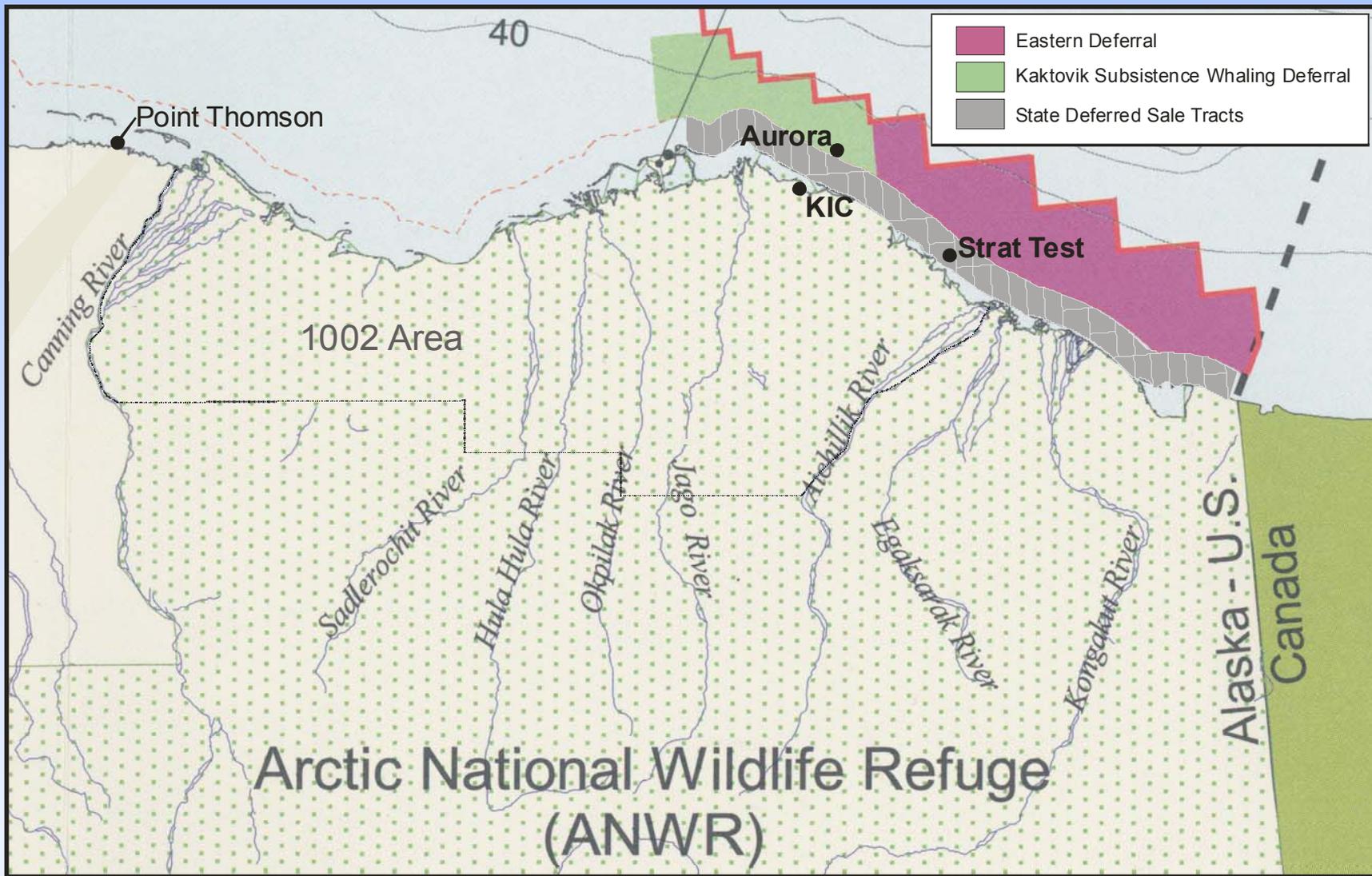
(14,000' - 15,000' TD)



ANWR State Waters Stratigraphic Test
Geologic Cross Section

**Angun Point
Tar seep - ANWR**





SITE CLEARANCE SURVEY REQUIREMENTS
Alaska Oil and Gas Conservation Commission (AOGCC)
AAC 25.061

WELL SITE SURVEYS.

- (a) For an exploratory or stratigraphic test well, near surface strata to a depth of 2,000 feet in the vicinity of the well must be evaluated seismically by common depth point refraction or reflection profile analysis, or by another method approved by the commission, to identify anomalous velocity variations indicative of potential shallow gas sources. Analysis results must be included with the application for the Permit to Drill (Form 10-401).
- (b) For a well drilled offshore from a mobile bottom-founded structure, jack-up rig, or floating drilling vessel, the vicinity of the well must be evaluated by sidescan sonar and other pertinent surveys to determine whether potential seabed hazards to drilling operations are present. Survey results must be included with the application for Permit to Drill.
- (c) Upon request by the operator, the commission will, in its discretion, waive the requirements of this section if the operator can identify, by other equally effective means, the likelihood of encountering potential shallow gas or seabed hazards or if the commission already has information that substantiates the presence or absence of shallow gas or seabed hazards.

History -

Eff. 4/13/80, Register 74; am 4/2/86, Register 97; am 11/7/99, Register 152

Authority -

AS 31.05.030

**Alaska Stratigraphic Test Well
Exploration Incentive Credits (EIC)
AS 41.09.010**

Highlights:

- Applies to geophysical work, stratigraphic wells and exploratory wells regardless of land ownership.
- Applicable as offset of taxes payable under AS 43.20 and oil and gas bonus payments payable under AS 38.05.180(i).
- Application must be made before and approved before activity begins.
- Activity must be completed before July 1, 2007.
- Copies of all derived raw and processed data must be provided to the commissioner within 30 days after abandonment.
- Stratigraphic test well data cannot be kept confidential more than 24 months after receipt by the commissioner, unless the well owner(s) authorizes earlier disclosure.
- Interested third parties may view the data if, in the commissioner's opinion, limited disclosure furthers the state's interest in evaluating and developing its land. Appropriate confidentiality provisions will apply and data may not be provided in hard copy or electronic form to viewing third parties.
- Amount of the EIC shall be based upon eligible costs with 50% or \$5,000,000 maximum for approved activities on state land.
- The EIC must be used within five years after approval and is transferable to approved qualified applicant.
- A qualified applicant owing a liquidated debt to a state agency or a public corporation of the state is ineligible.

Definitions:

- **Stratigraphic Test Well:** A well that is not intended to encounter an oil or gas accumulation and that is drilled to a sufficient depth to measure the geological, geophysical, and engineering parameters used for determining an area's oil and gas potential.
- **Eligible Costs:** Those direct costs incurred for activities in support of an exploration program, based upon the footage drilled or miles surveyed, that are reasonable in the amount for the area of the state in which a well is drilled or geophysical activity is conducted.