Petrovskoye Field Subsurface Diagnostics

Remote Geospace Survey Results & Final Investment Recommendation

Target Area: Petrovskaya Well #2 (Radius 1.5km)
Survey Area: 2.25 sq km (Saratov Region)
Contract Code: Saratov-1 (1-10-20)

We protect your financial interests if drilling conditions are hazardous; in this specific case, do not proceed.

Executive Verdict: High-Risk, Non-Commercial

GROUP POISK
RSS-NMR SEVSU Poisk

СЕВАСТОПОЛЬСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ

NO-GO

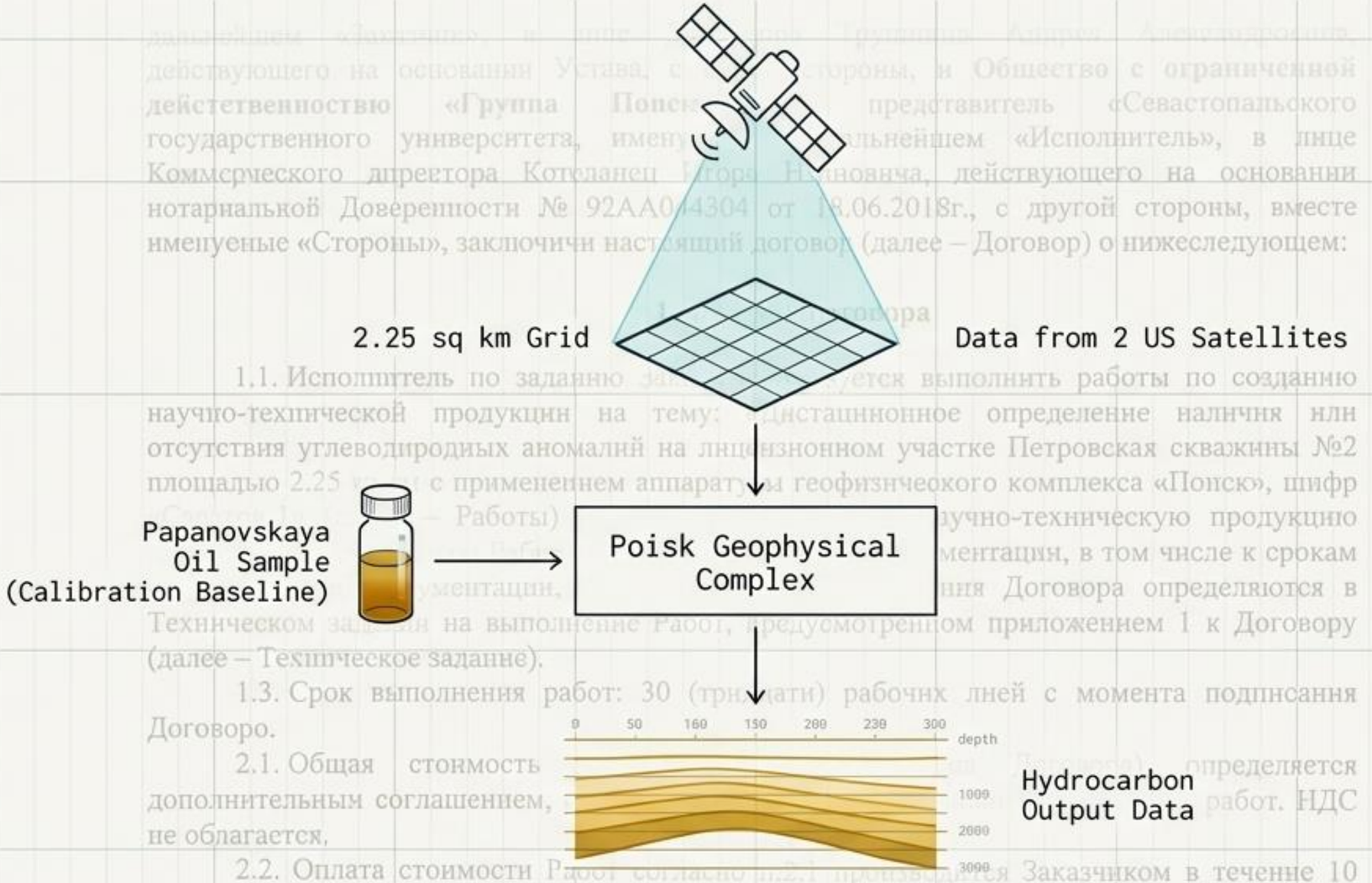
Recommendation: Suspend further seismic testing and drilling operations. The surveyed anomalies lack industrial significance.

Broken Structural Integrity:
Tectonic faults directly intersect both identified anomalies, destroying the necessary geological traps.

Sub-Commercial Volume:
The estimated hydrocarbon pay thickness is an unviable ~1 meter.

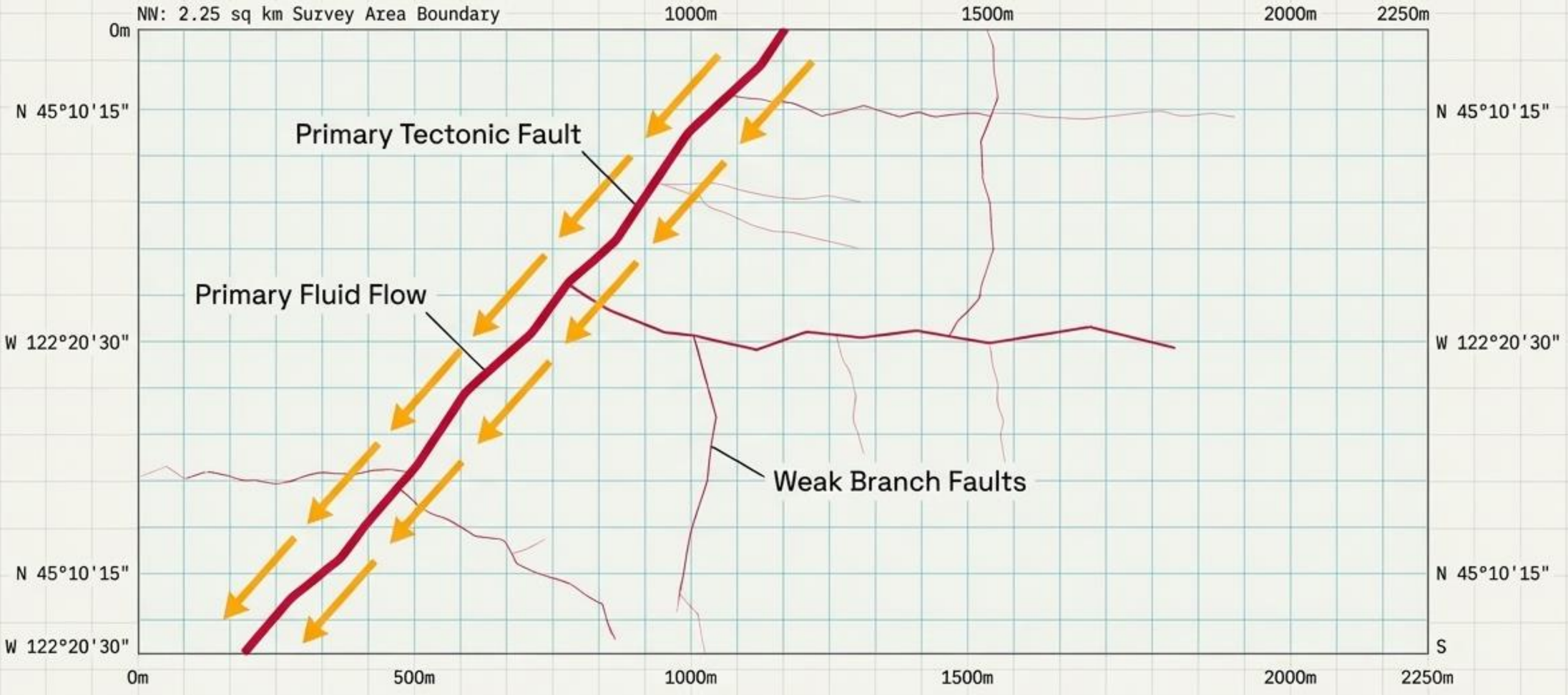
Water Flooding Risk:
The presence of migrating fluid flows through the broken faults introduces an unacceptable risk of water breaching the reservoir.

Geospace Intelligence Methodology



Radius: 1.5km around Well #2
Reliability Factor: 68–70% confidence interval
Margin of Error: ± 50–60m depth tolerance

Macro Topography: Tectonic Faults & Fluid Migration



Key Insight: The primary fault dominates the region's subsurface mechanics. While the main fault itself is devoid of hydrocarbons, its weaker branches act as secondary migration pathways.

-100W 0' 30E

200°

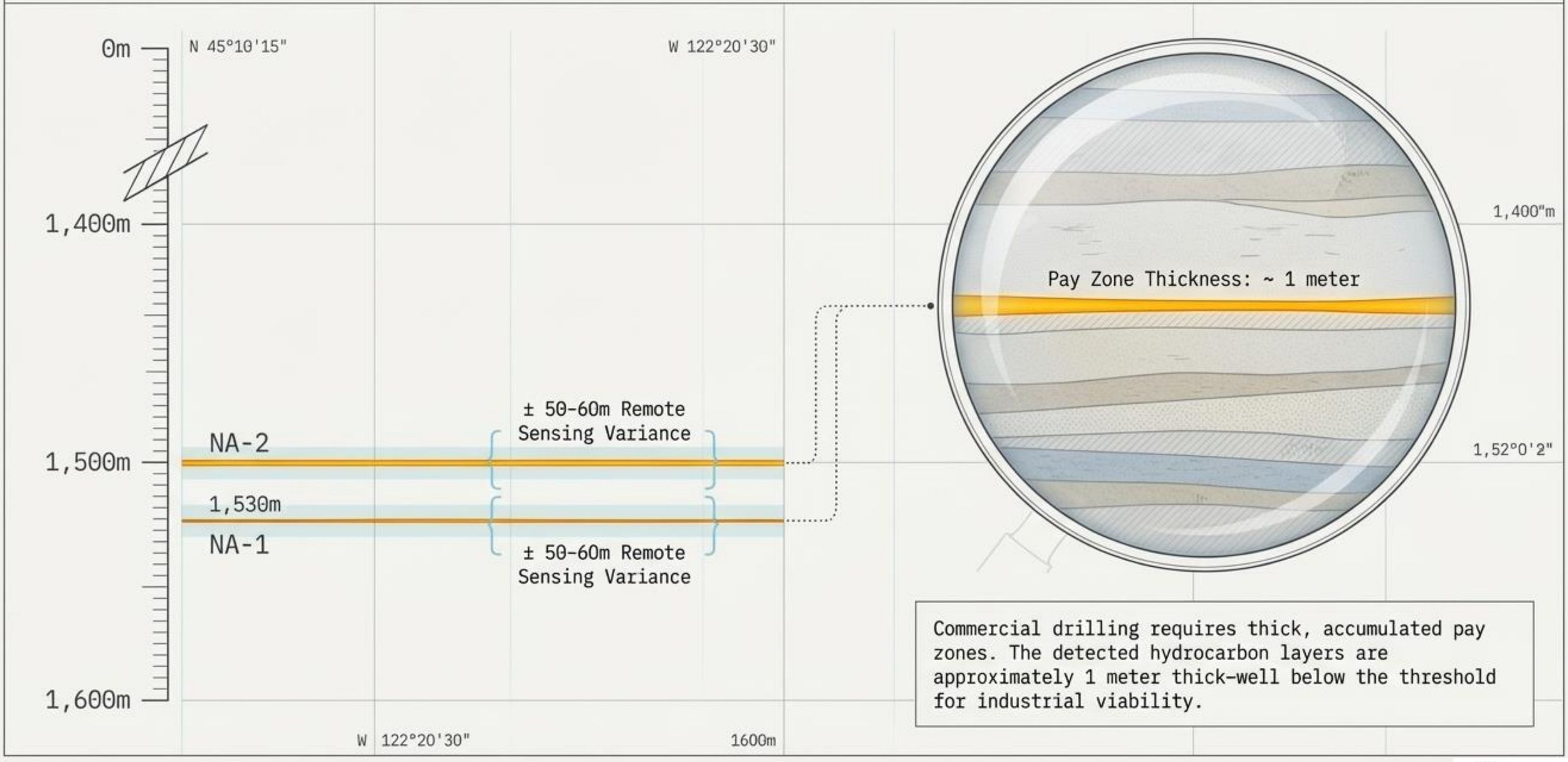
190°

Hydrocarbon Anomaly Diagnostic Matrix

	Anomaly NA-1	Anomaly NA-2
Location	Northern Branch	Southern Branch
Estimated Area (S)	49,000 sq meters	120,000 sq meters
Depth to Reservoir (H)	1,530 – 1,540 m	1,500 – 1,510 m
Pay Thickness	**~ 1 meter**	**~ 1 meter**
Signal Intensity	Weak, matching fluid flows	Weak, matching fluid flows

Despite NA-2 offering more than double the spatial area, both anomalies exhibit an identical, fatal lack of pay thickness.

Subsurface Blueprint: The Unviable Pay Zone



Commercial drilling requires thick, accumulated pay zones. The detected hydrocarbon layers are approximately 1 meter thick—well below the threshold for industrial viability.

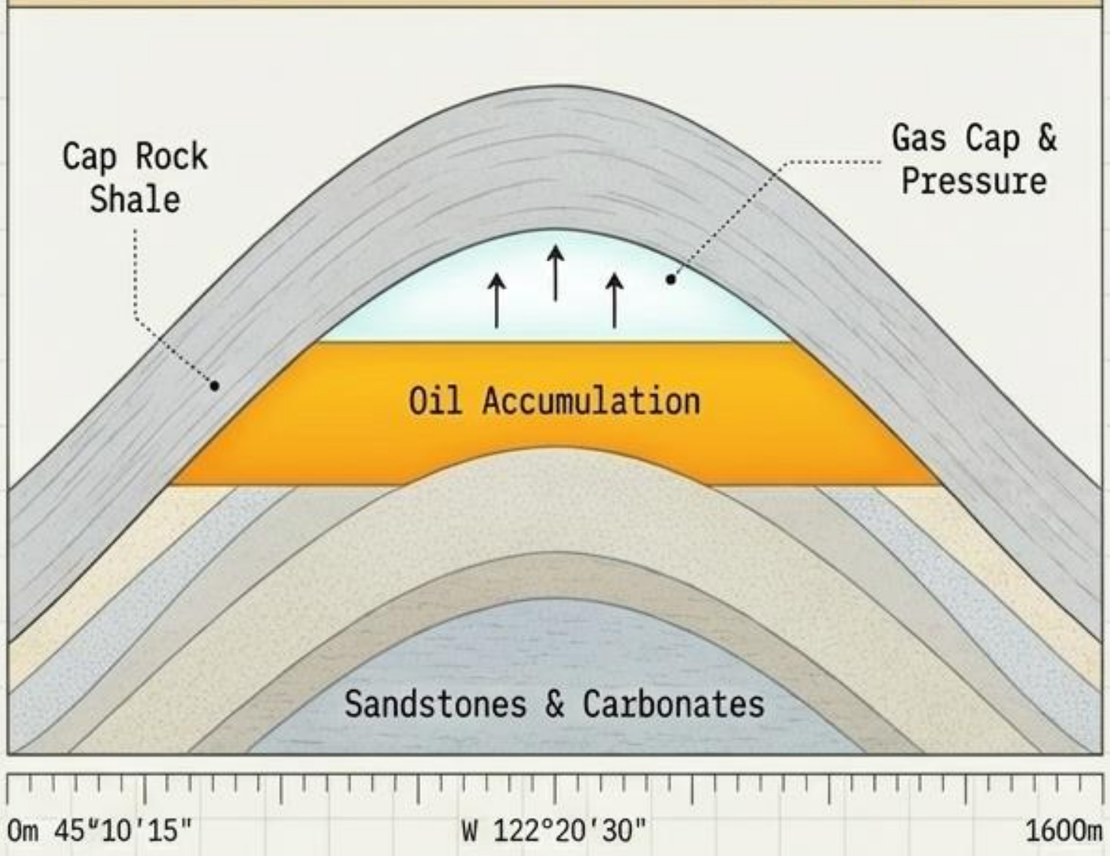
-100W 0' 30E

200'

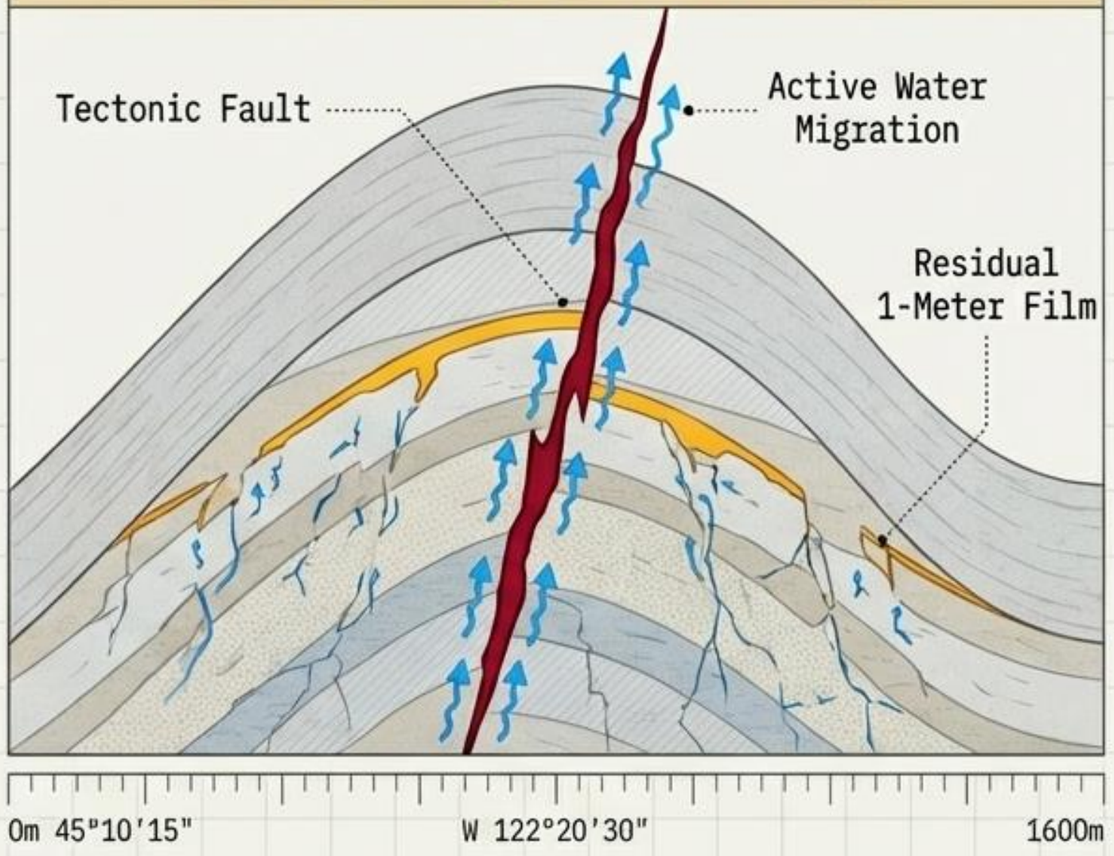
190'

The Mechanics of a Compromised Reservoir

The Ideal: A Healthy Trap



The Reality: Petrovskoye



The tectonic faults mapped on the surface pierce directly through both NA-1 and NA-2. These faults shattered thatted the geological traps, allowing historical hydrocarbons to escape and leaving the remaining 1-meter residual layer highly vulnerable to water flooding from active fluid streams.

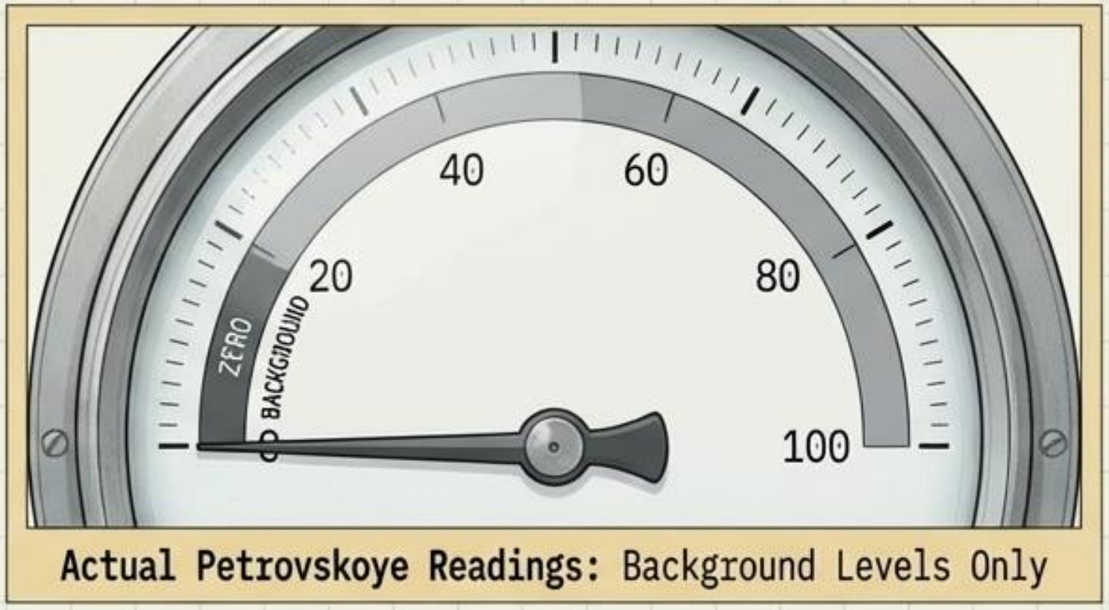
-100W 0' 30E

200'

199'

Corroborating Evidence: The Pressure Deficit

Expected for Commercial Find: Elevated Methane Pressure



Actual Petrovskoye Readings: Background Levels Only

- Zero industrial gas anomalies detected in the 2.25 sq km radius.
- Only trace, background levels of Methane and CO2 mixtures present.
- Detected 'oil' signals are identical in weak intensity to the non-commercial fluid streams.

The complete absence of elevated, excessive methane pressure confirms the structural traps are breached. The reservoir cannot maintain the pressure required for commercial extraction.

Final Risk Assessment & Closeout

Disqualifying Factors

- ☒ Unviable Volume (1m thickness)
- ☒ Broken Geological Structures (No traps)
- ☒ High Water-Flooding Risk
- ☒ Zero Industrial Gas Pressure

Proceeding with seismic validation or exploratory drilling carries extreme
financial risk with a near-zero probability of securing commercial hydrocarbon flow rates. The 68–70% data reliability threshold is sufficient to definitively recommend project cessation.