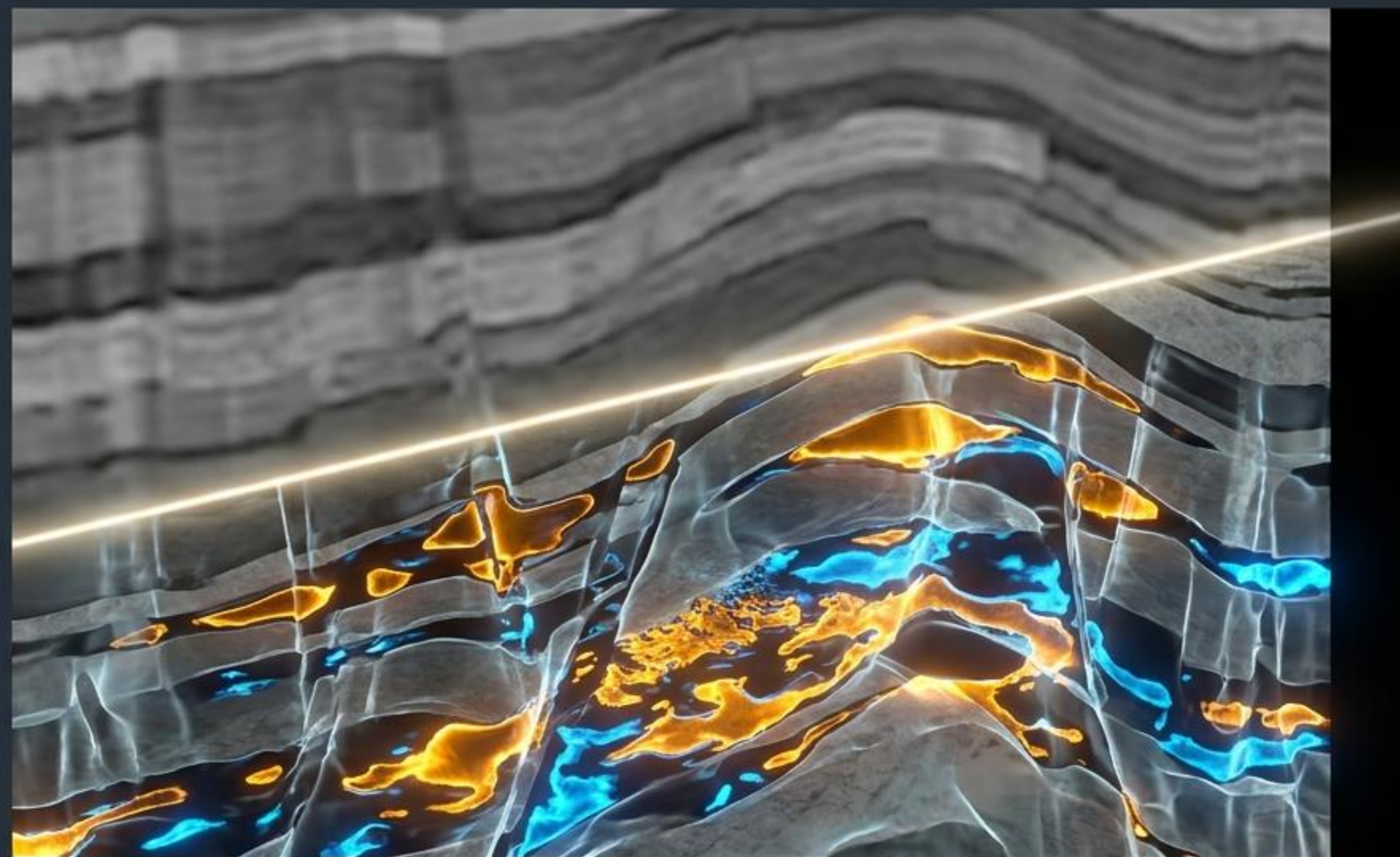
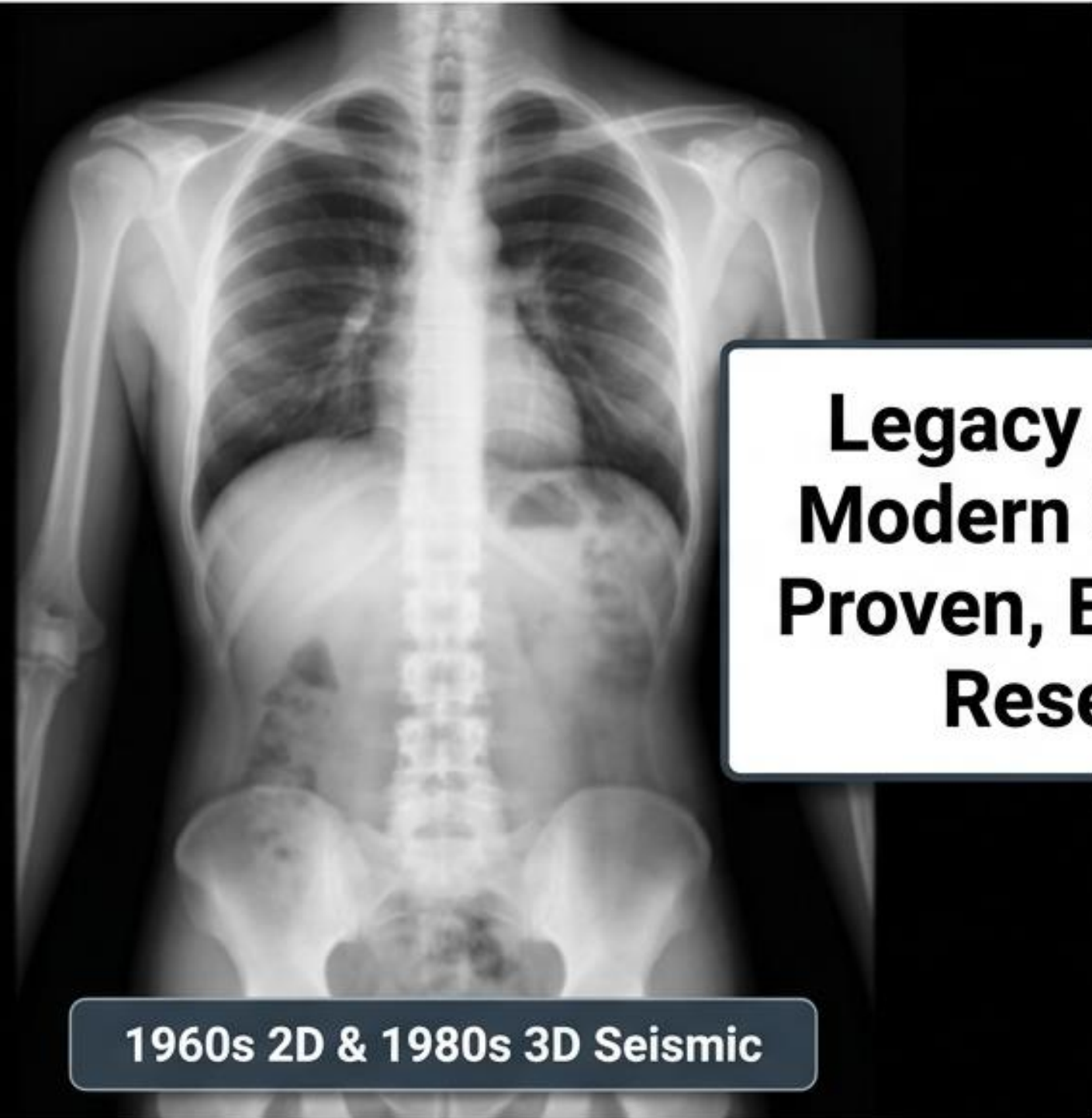


Revealing the Hidden Pay

Transforming Legacy
Brownfields into High-
Margin Assets via RSS-
NMR.



The Brownfield Paradox



**Legacy Assets +
Modern Science =
Proven, Exploitable
Reserves.**

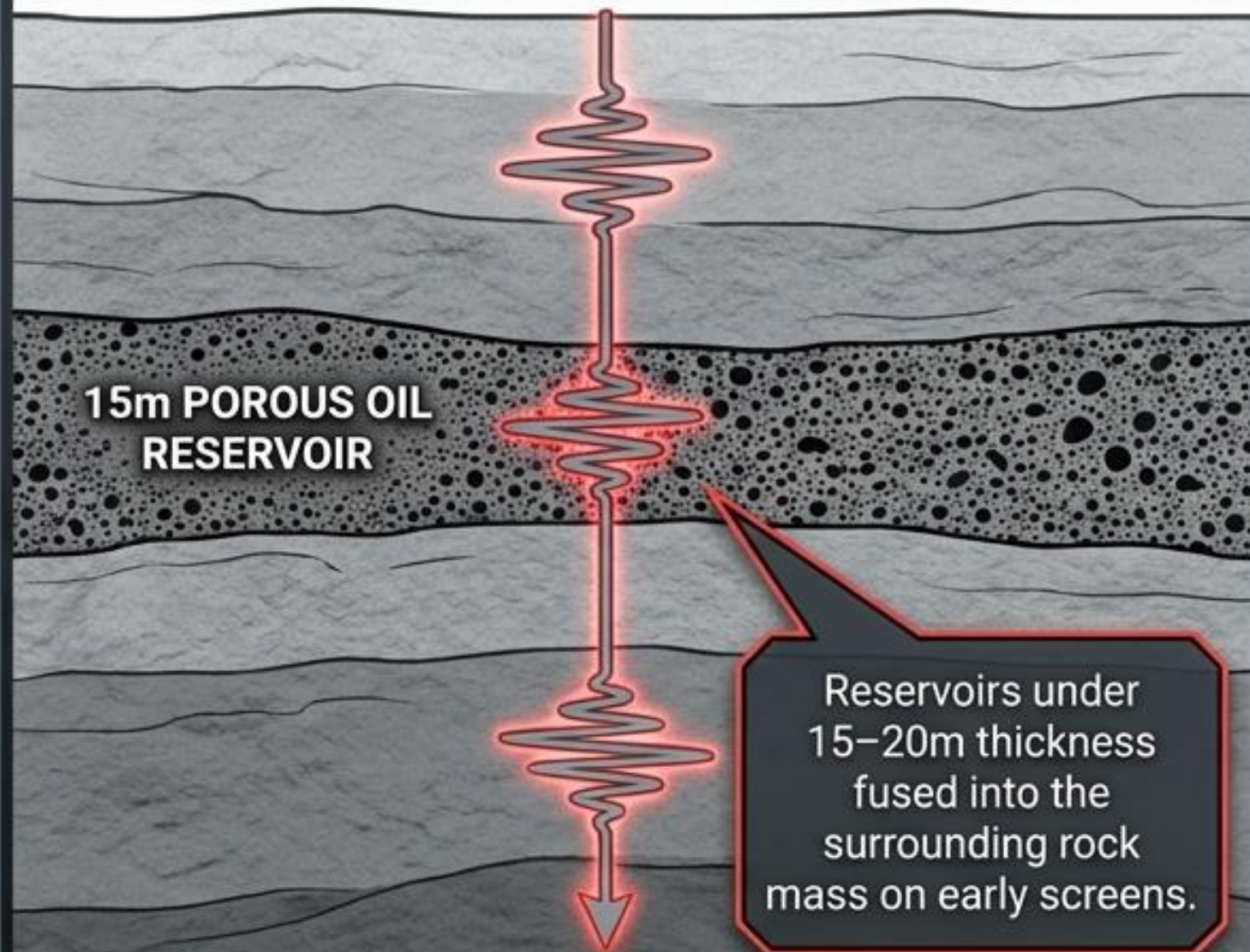


Working with historical seismic data is like reading a blurry medical radiograph. Operators can deduce broad structural contours, but critical, high-margin details remain invisible.

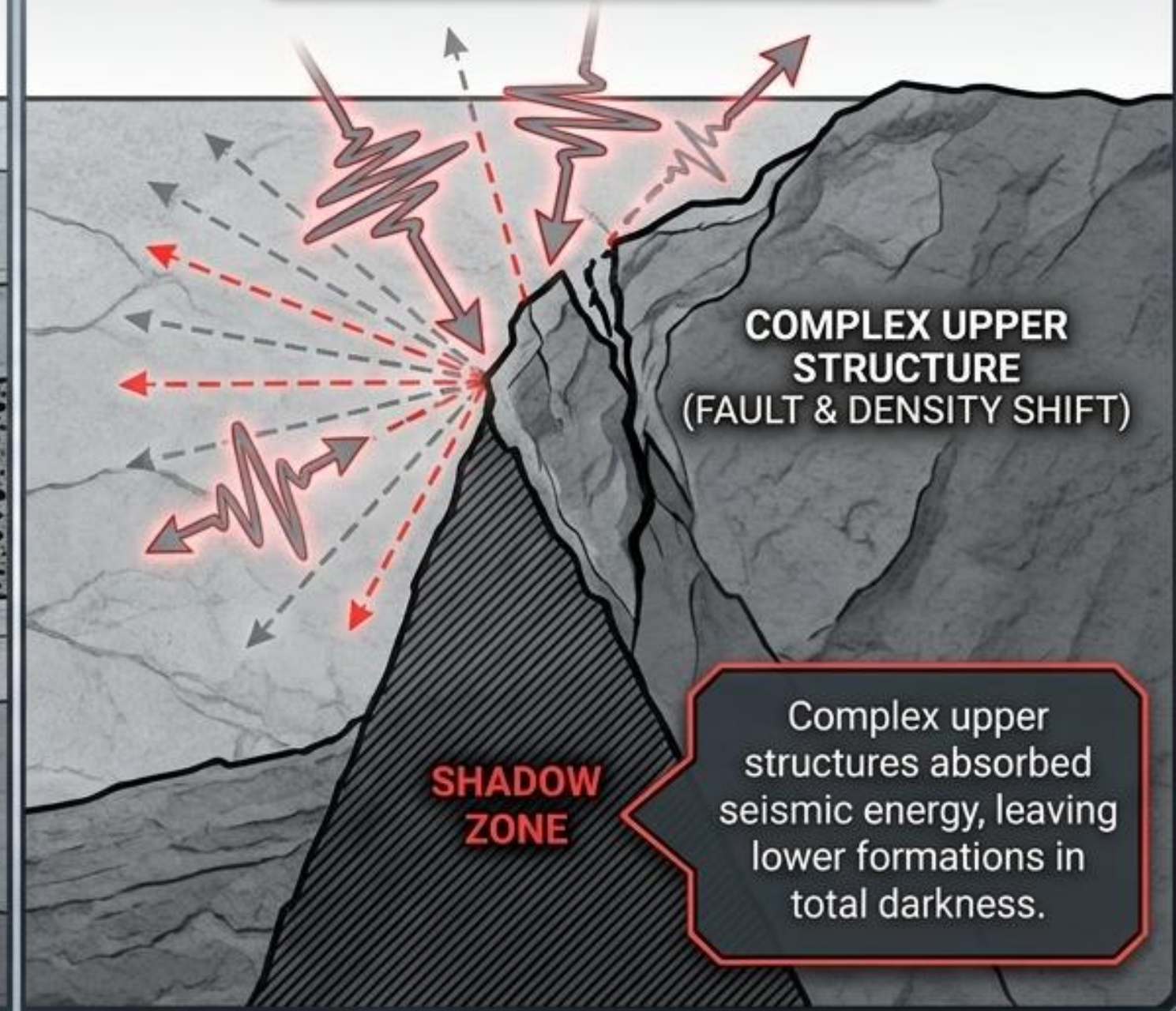
RSS-NMR rewrites the geological history of the block, proving that 'exhausted' assets are actually rich with hidden pay zones.

Why Legacy Technologies Missed the Oil

The Vertical Resolution Gap



The Masking Effect

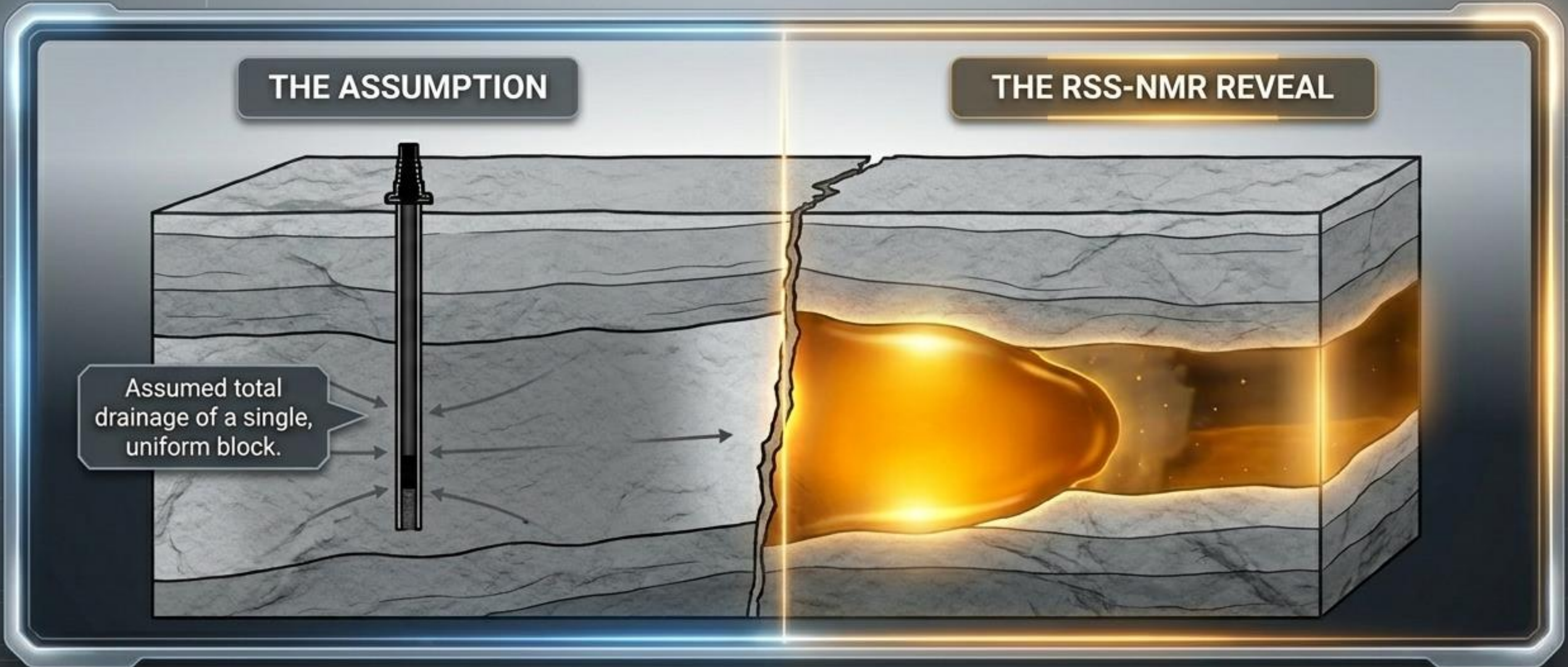



Moving from Rock Impedance to Fluid Signatures


	Legacy Seismic	RSS-NMR
Primary Target	Acoustic impedance of solid rock.	Direct targeting of fluids via Hydrogen signatures.
Spatial Resolution	Broad structural geometry; blind to formations <20m.	High-fidelity, pore-level mapping.
Complex Geology	Blinded by structural masks and density shifts.	Bypasses rock matrix entirely to illuminate shadow zones.


Key Takeaway: RSS-NMR doesn't attempt to improve the picture of the rock. It frees itself from the rock entirely to look directly at the fluid.

Discovery I: Isolated Compartments



 Legacy mapping visualized massive, continuous structures.

 RSS-NMR reveals tight segmentation by impermeable micro-faults (micro-faults).

 **The Result:** Intact, high-pressure compartments sitting immediately adjacent to historical production wells, completely untouched.

Discovery II: Stratigraphic Traps & Pinch-Outs

1980s Assumed Sterile Boundary



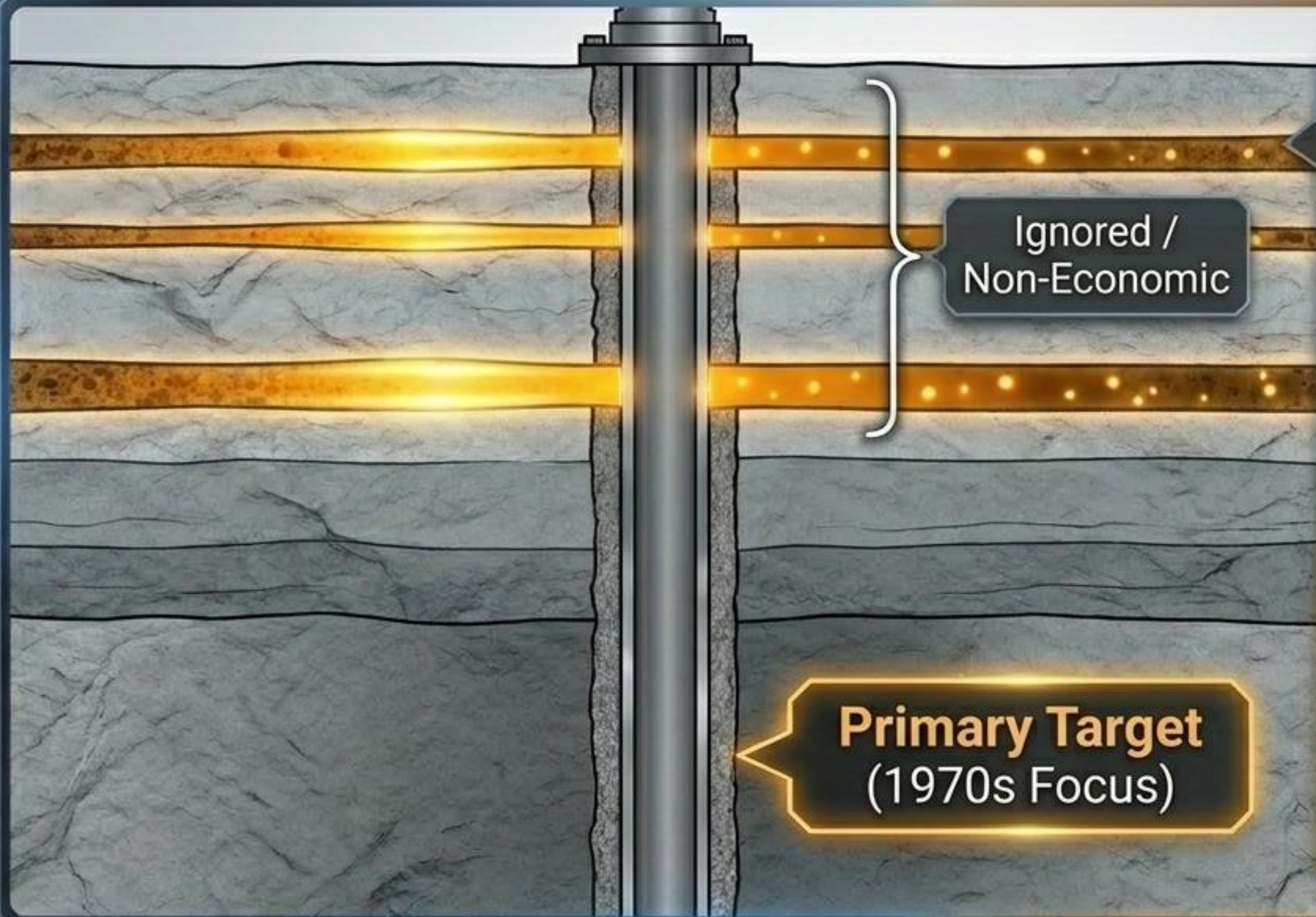
Old technology relied on abrupt fault stops and struggled to map gradual transitions from porous sand to compact clay.



By tracking pure hydrogen signatures, RSS-NMR proves that mobile oil extends much further into subtler geometric traps than previously calculated.

Key Takeaway:

Discovery III: Bypassed Secondary Pay



Ignored /
Non-Economic

Primary Target
(1970s Focus)

- Early drillers hunted only the most massive, obvious targets, ignoring shallower intercalated zones due to poor evaluation tools.
- RSS-NMR confirms excellent mobile oil saturation in these secondary layers.
- **The ROI:** Access this hidden pay via simple recompletion (perforating higher up the casing)—requiring zero new drilling.

The Absolute Reservoir Lifecycle Strategy

RSS-NMR is the indispensable bridge.
It funds future EOR by first maximizing low-cost traditional recovery.

Targeted Smart EOR
Tertiary recovery driven by precision chemical/gas injection.

RSS-NMR Scan & Traditional Extension
Repurposing existing infrastructure to drain hidden pockets.

Legacy Primary/Secondary Recovery
Exhaustion of the obvious zones found via 60s/80s seismic.

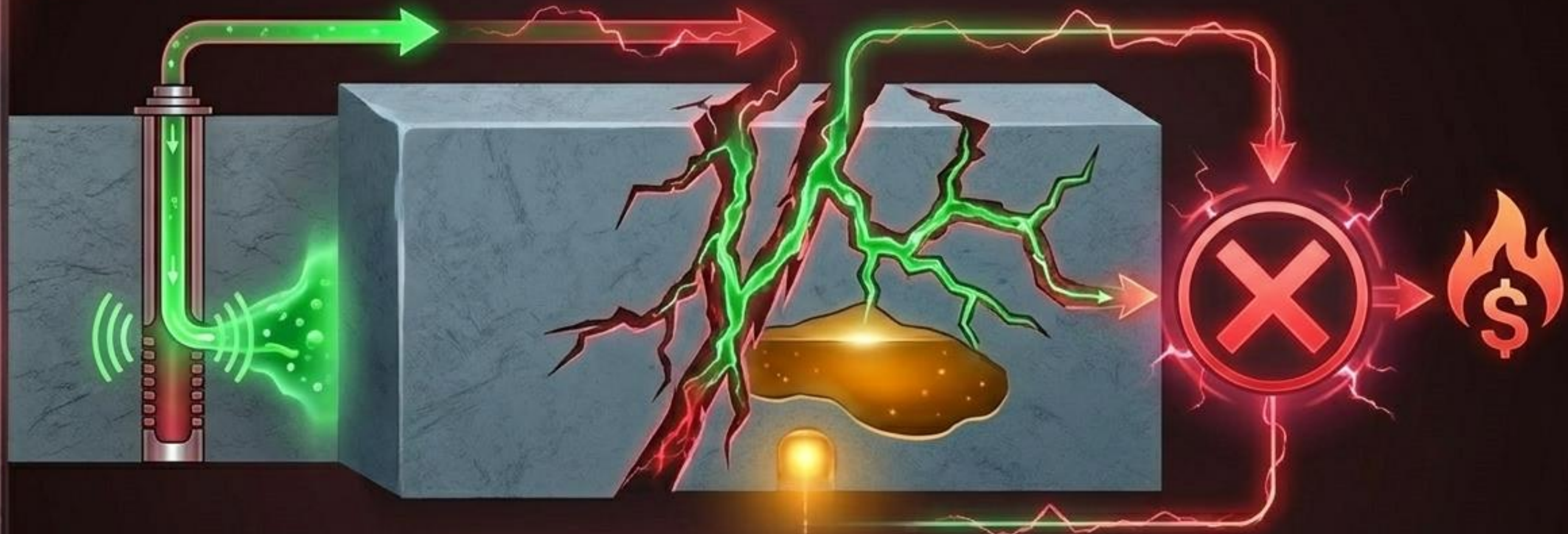
Phase 1: Maximizing Traditional Recovery

- Before investing millions in Tertiary Recovery, RSS-NMR allows operators to push conventional methods to their absolute limits.
- By targeting bypassed pockets of high-porosity mobile oil, operators amortize current installations.
- Prolong natural production and standard water injection without major technological overspend.

Efficiency Dashboard



The EOR Dilemma: Why Blind Injection Fails

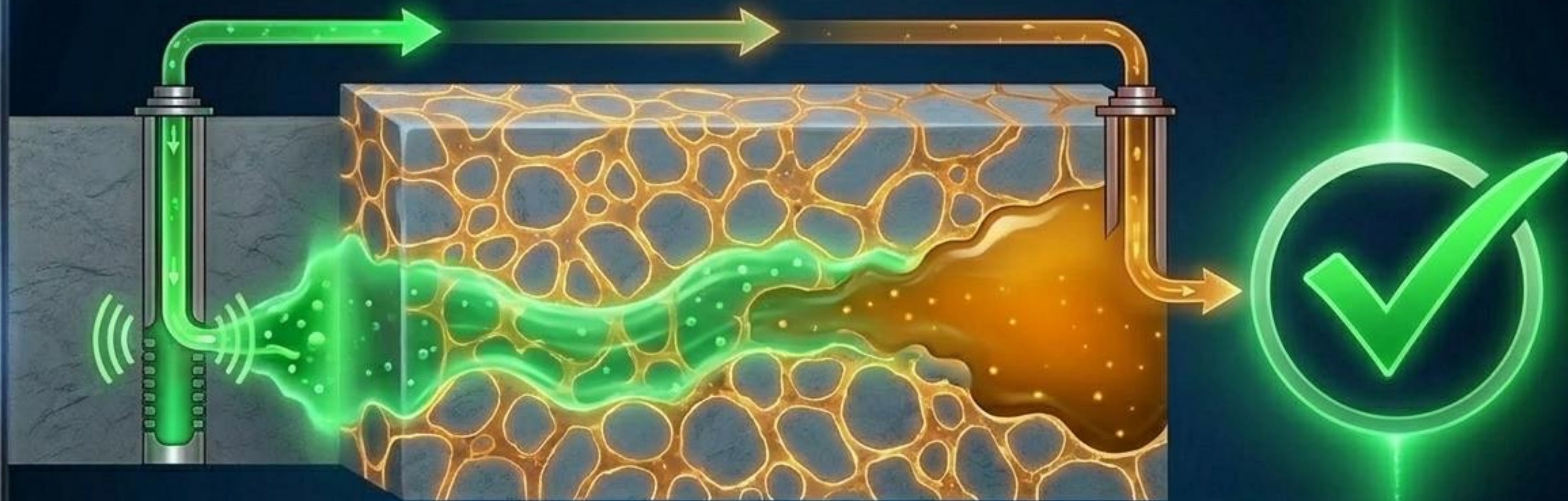


Enhanced Oil Recovery (Polymers, Surfactants, CO₂, Thermal) is highly capital intensive.

Applying EOR blindly across an entire block based on legacy geometric data guarantees chemical waste and disastrously poor sweep efficiency.

If you don't know exactly where the trapped oil is, your chemicals will only find the empty fractures.

Phase 2: RSS-NMR as the 'Smart EOR' Enabler



Residual Oil Saturation (Sor):

Continuous/spectral NMR measures the exact volume of immobile oil stuck to pore walls, proving mathematical profitability before injection begins.

Permeability & Heterogeneity Mapping:

Delivers a clear image of pore size distribution. Operators predict exactly how polymers or gas will sweep the reservoir, enabling hyper-targeted "Smart EOR".

Rewriting Geological History



What engineers in the 1960s and 80s abandoned due to technical limitations is now your most profitable asset. By leveraging RSS-NMR, operators transform administrative shadow zones into proven, immediately exploitable reserves—extracting every last drop with maximum capital efficiency.

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VERSATILITY OF APPLICATION



HYDROCARBONS

- Oil
- Gas
- Condensed



PRECIOUS METALS AND BASES

- Gold
- Copper
- Lithium
- Nickel



STRATEGIC

- Uranium
- Diamonds
- Coal



WATER RESOURCES

- Drinking Water
- Underground
- Geothermal

The technology eliminates false positives by identifying the specific type of mineral.