RhoVe™ Method
(U.S. patent pending - copyright © 2017)

A New Empirical Pore Pressure Transform
JIP – seeking $55,000 investment* for:

- Commercial implementation of RhoVe & RhoVe T (temperature-based) methods
- Plug-in or web-based application to include:
  - Real-Time WITSML connectivity,
  - notebook (iPad) capability,
  - 1D temperature modeling capability,
- Explore automation capabilities

* Investors will receive extended licenses & Beta version(s), along with an opportunity to influence functional capability and access
RhoVe™ T Method

- **Study Area includes 20 GoM wells:**
  - South Marsh Island (1 well - shelf)
  - Eugene Island (Rask 1997 – 1 well Shelf)*
  - Port Isabel (1 well)
  - Mississippi Canyon (4 wells)
  - Viosca Knoll (1 well)
  - Walker Ridge (5 subsalt)
  - Keathley Canyon (7 subsalt)

- **Margin of error <7% (+/-0.5 PPG.EMW) for 16 of 20 Deepwater GoM wells (out-of-the-box)*
  - Master Power Law relationship (temperature – alpha’)
  - RhoVe™ T method is applied as an instantaneous series
  - PP calculated for any well in the GoM by changing one parameter: (+/-) ΔT
  - Single transform converts dtco/rhob for Plio-Pleistocene, Miocene, Oligocene & Paleogene (Wilcox)
  - Predrill, Real-Time (goal to greatly reduce or eliminate NPT) & Post Drill Analysis
  - Fully Automated applications for large data volumes
Power Law

\[ \alpha' = A (T^\circ F - \Delta T)^B \]
ALPHA' vs TEMP

$(+/-) \Delta T$

- $55^\circ F$ (GoM Shelf & Onshore (drained))
- $31^\circ C$
- $15^\circ F$
- $8^\circ C$
- $+75^\circ F$
- $+42^\circ C$
- $270$
- $260$
- $250$
- $239$
- $227$
- $214$
- $198$
- $180$
- $156$
- $125$
ALPHA' vs TEMP

(+/-) ΔT

GoM
Shelf & Onshore (drained)

Rhob
ALPHA' vs TEMP

(+/-) ΔΤ

2 wells

16 wells

+/−7% margin of error
(+/-0.5 PPG.EMW)

dT
Sub-Regional Study Area
Deepwater Gulf of Mexico

- KC
- WR

- Tiber
- Keathley Canyon
- Sigsbee Escarpment
- Walker Ridge
- Amery Terrace

- Kaskida
- Rickenbacker
- Moccasin Buckskin
- Bioko
- Hadrian
- Logan
- Lewis
- Julia
- Jack

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Non-subsalt
Sub-Regional Study Area
Deepwater Gulf of Mexico
SMI23-5

Rask 1997

Tiber

Shenandoah

District Boundaries
Gulf of Mexico OCS Region
GoM Central Deepwater

-55° F
-31° C

GoM Shelf & Onshore (drained)

+75° F
+42° C
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