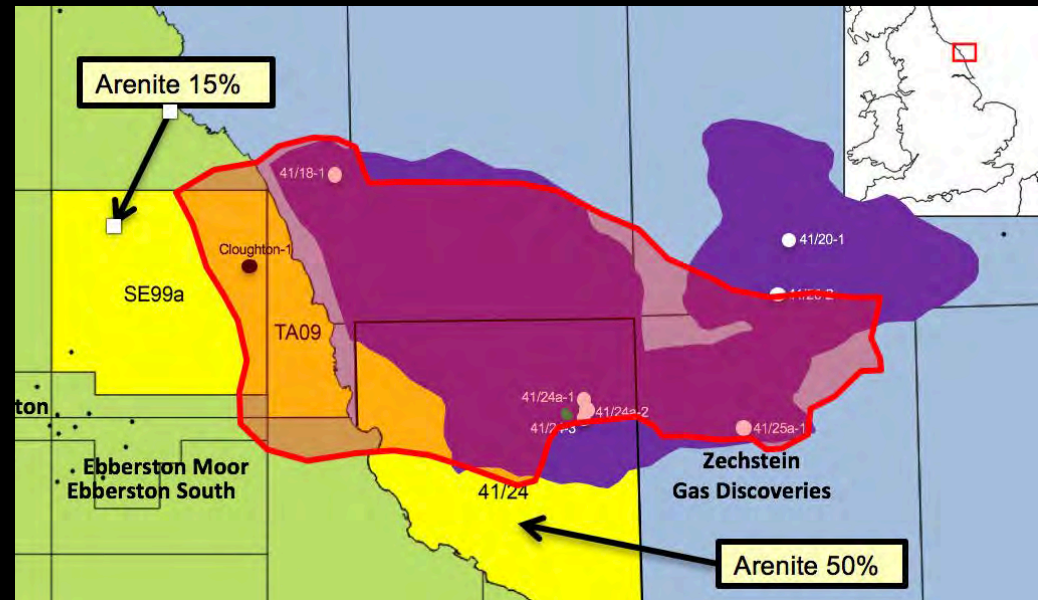




The Cleveland Dome Gasfield -  
how a giant gasfield just got  
bigger! An investment opportunity  
to develop a proven field

Mike Cooper

Arenite Petroleum Limited

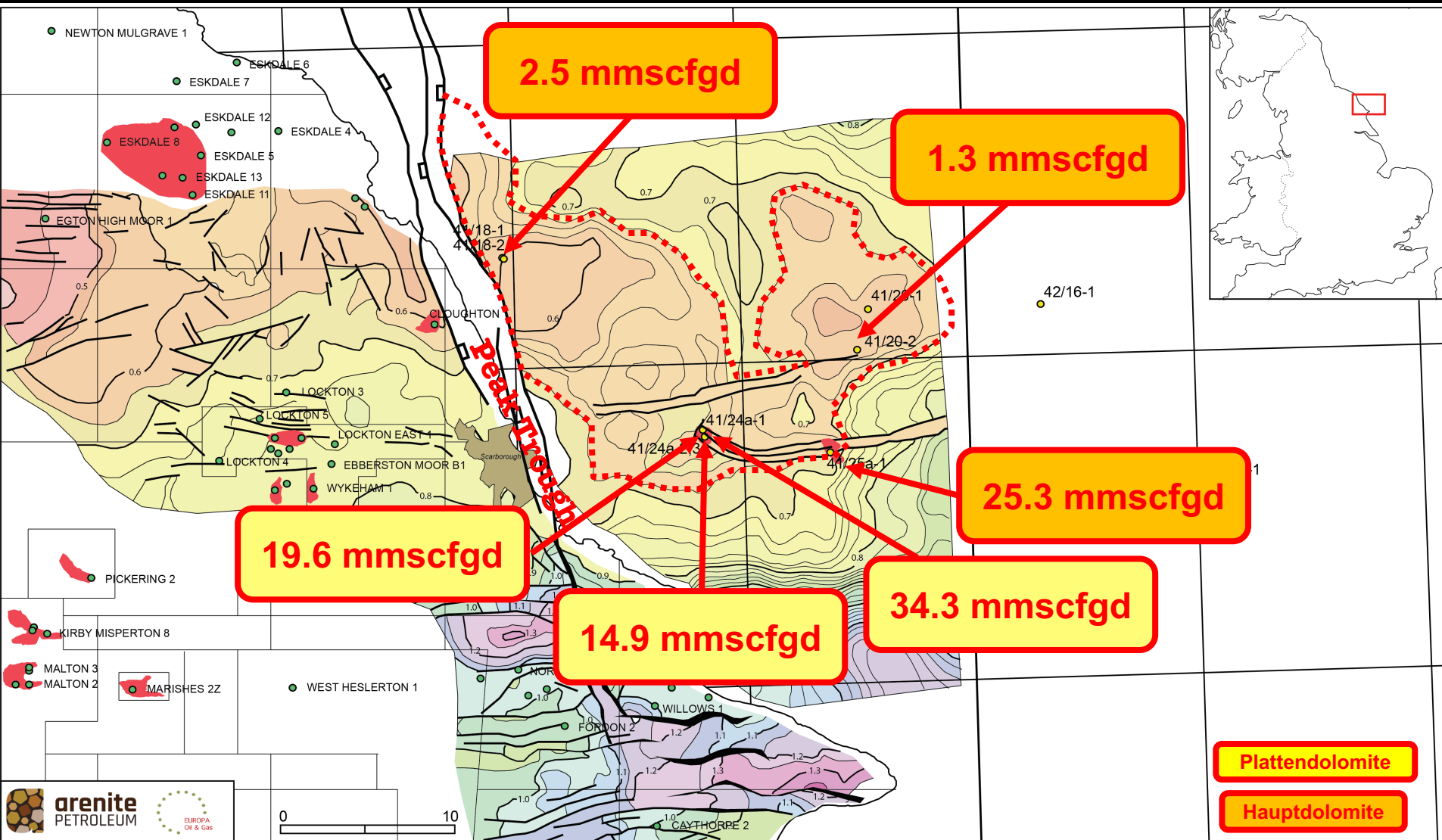


DEVEX 2017

Gordon Suite, AECC Aberdeen

16:05 – 16:25 hrs

# Maxwell Gasfield – 7 wells with Zechstein gas, 6 flowed on DST



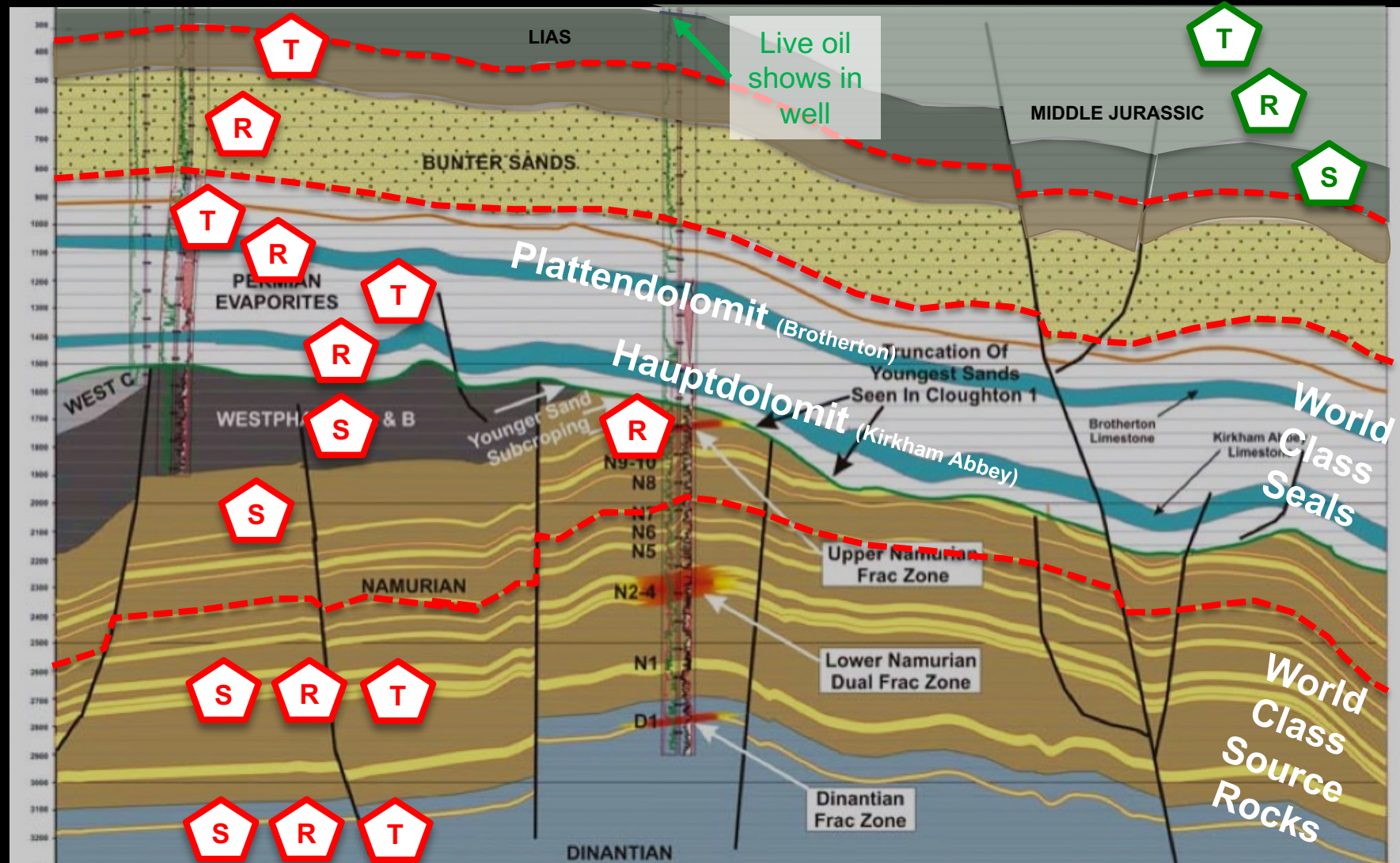
Plattendolomite Time Structure Map (with Peak Trough)

# Cleveland Basin - Stacked Petroleum Systems

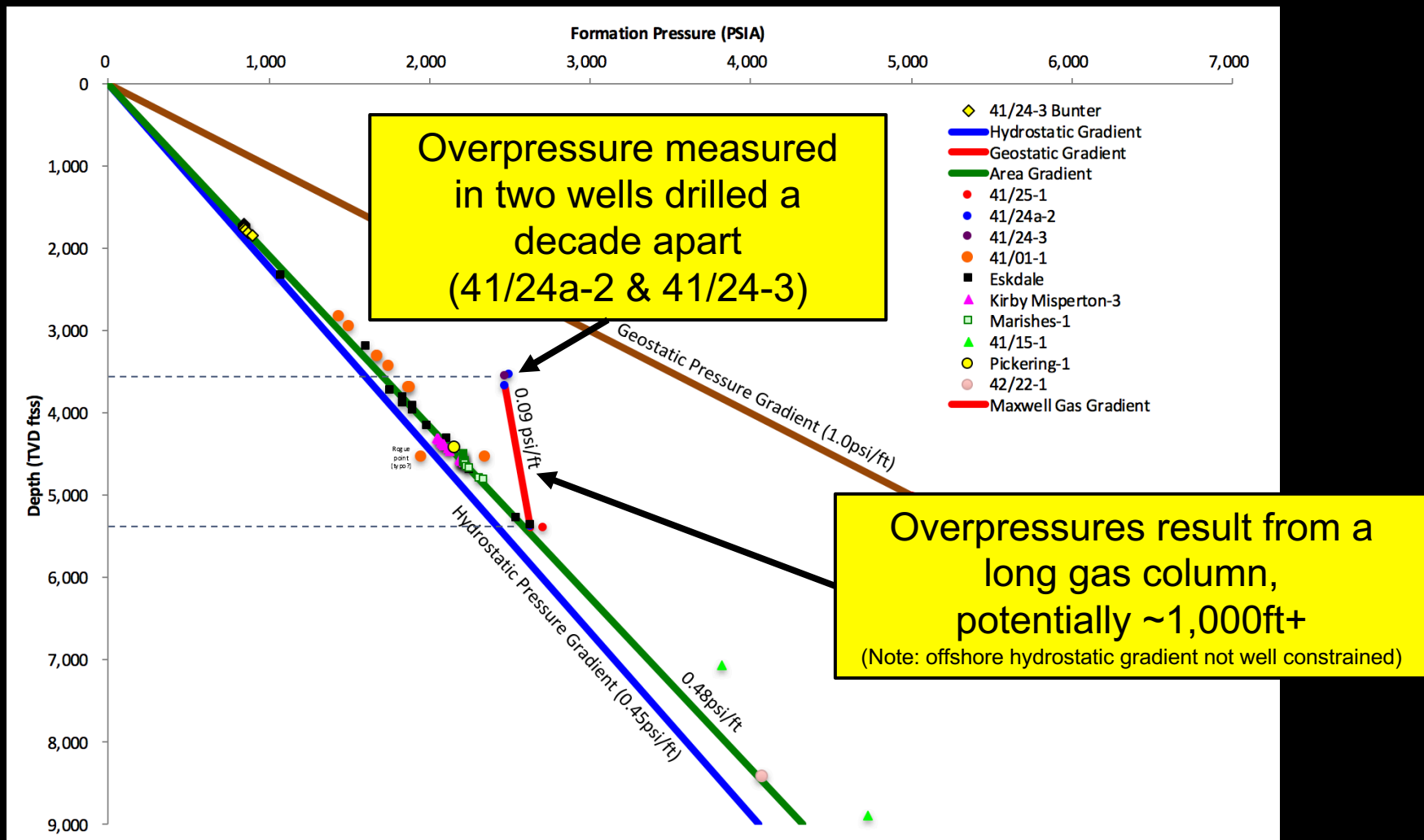
North

Cloughton-1  
(30 years old)

South



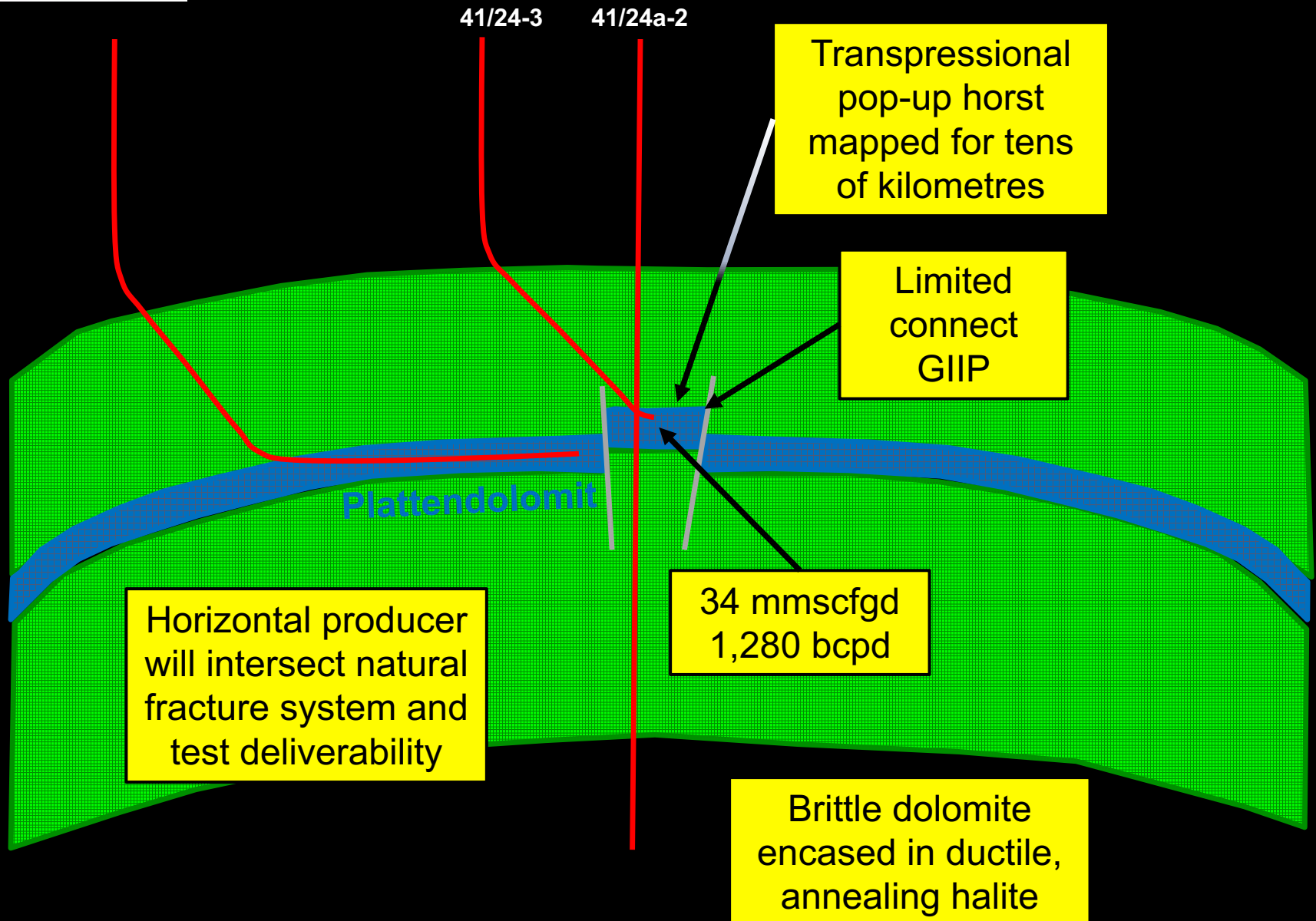
# Evidence for a long gas column



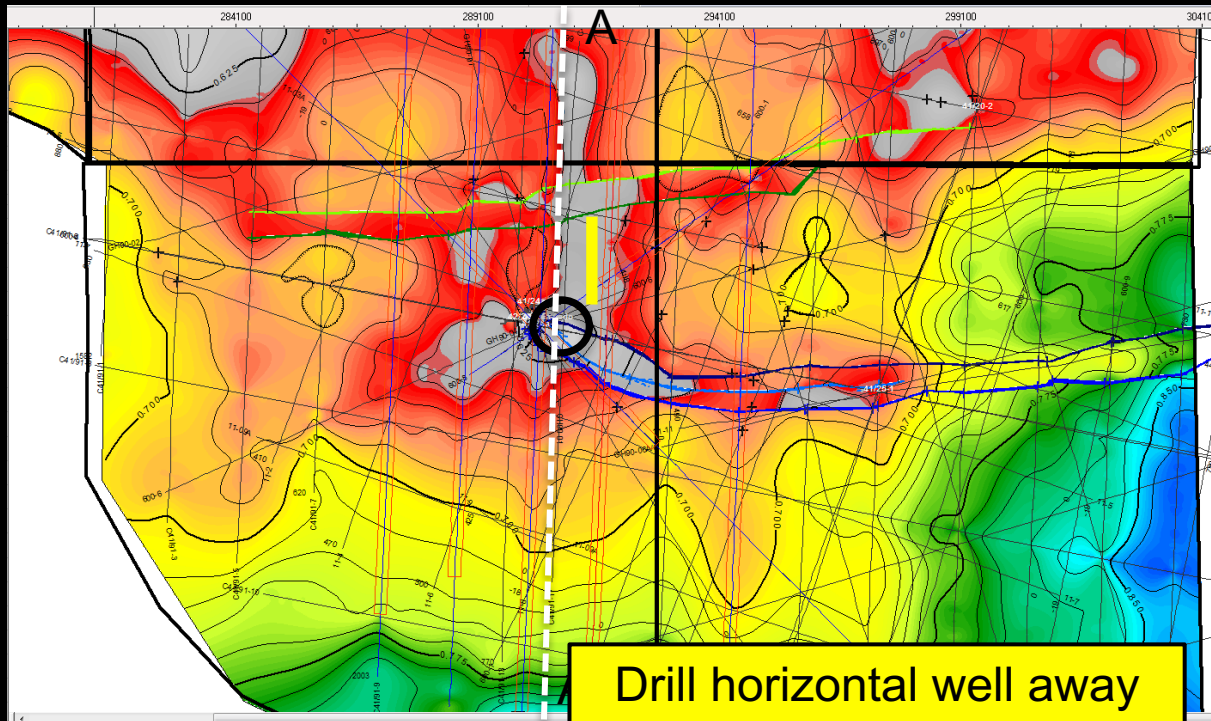
Most offshore well operations in the basin pre-date the RFT tool  
 Ryedale fields gas column heights in range 140-250ft, possibly up to 400ft if Malton stratigraphic trap is assumed



## Geoseismic Conceptual Model



# Plattendolomit TWT Map

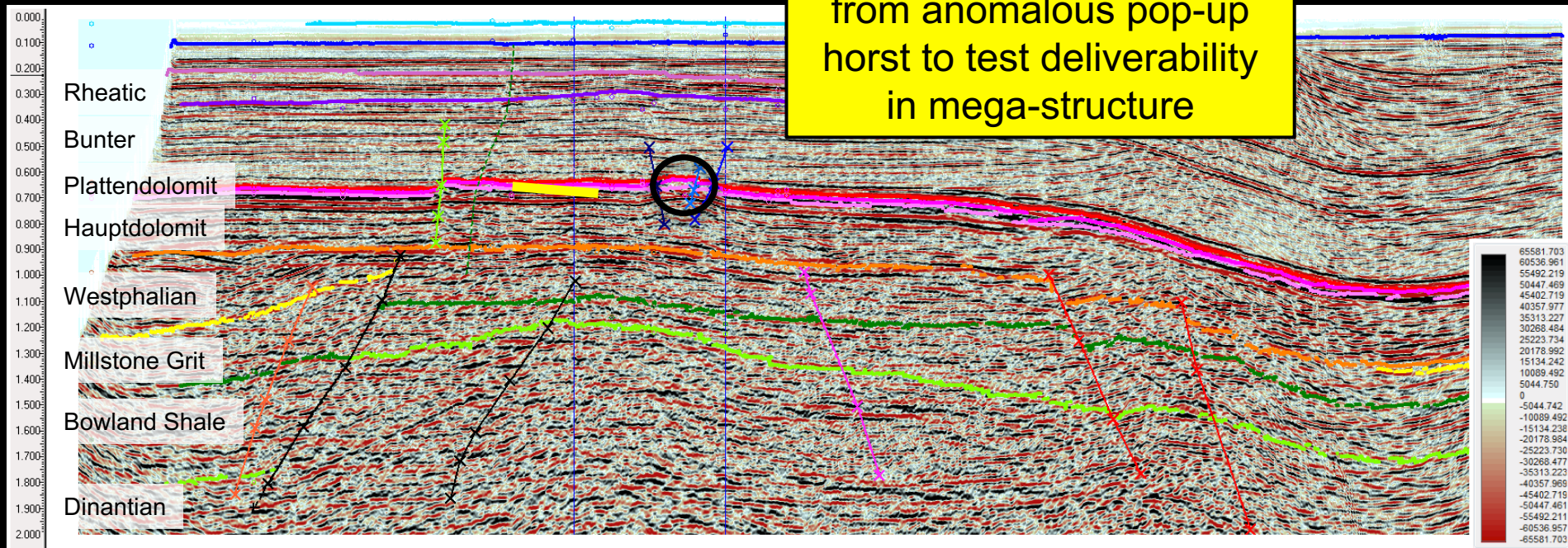


41/24-1,2 & 3  
within "blue"  
fault zone

Drill horizontal well away  
from anomalous pop-up  
horst to test deliverability  
in mega-structure

A

A'

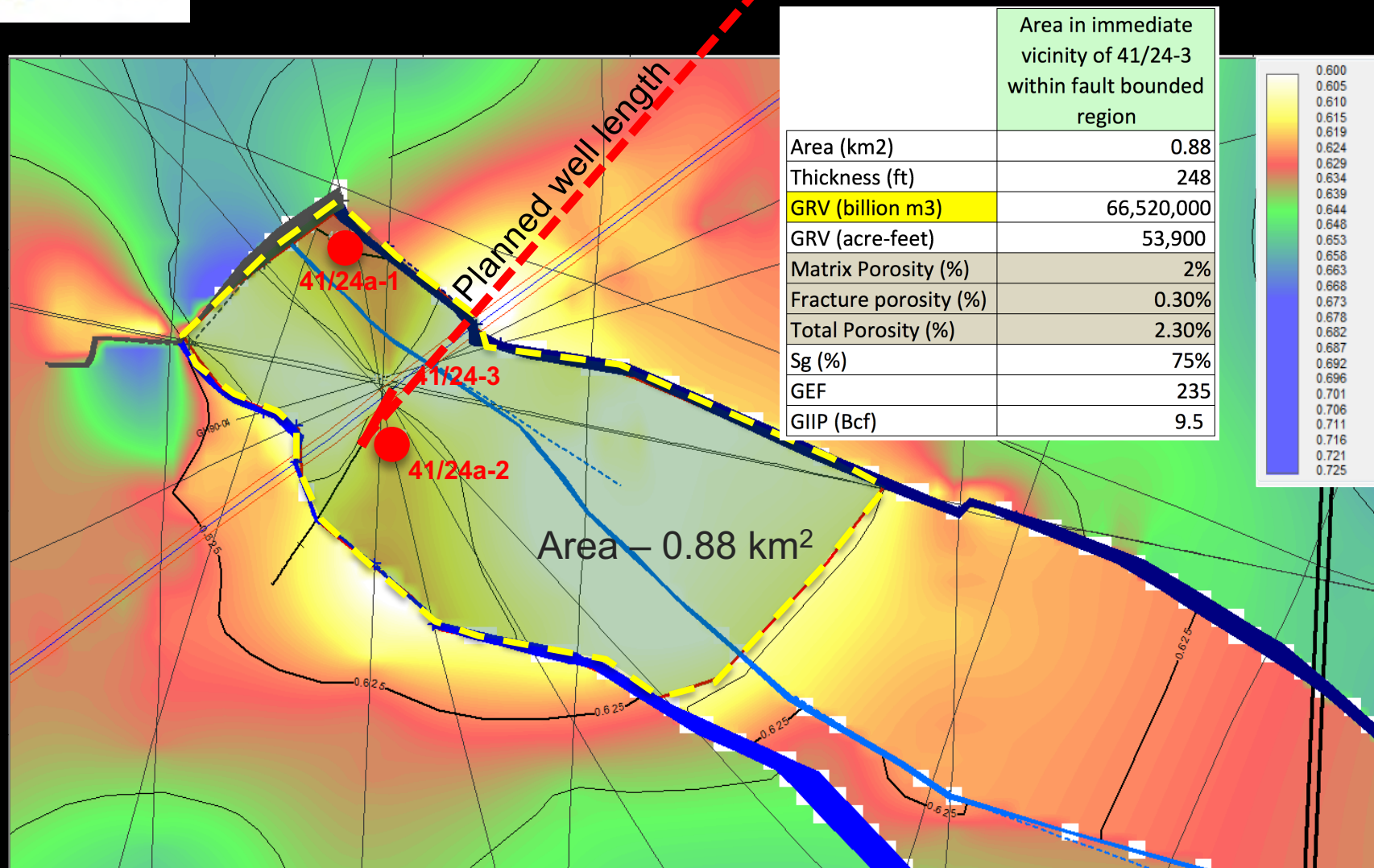


Horizontal well not to scale

C41/19-19



## Plattendolomit TWT map showing 41/24-3 horizontal well

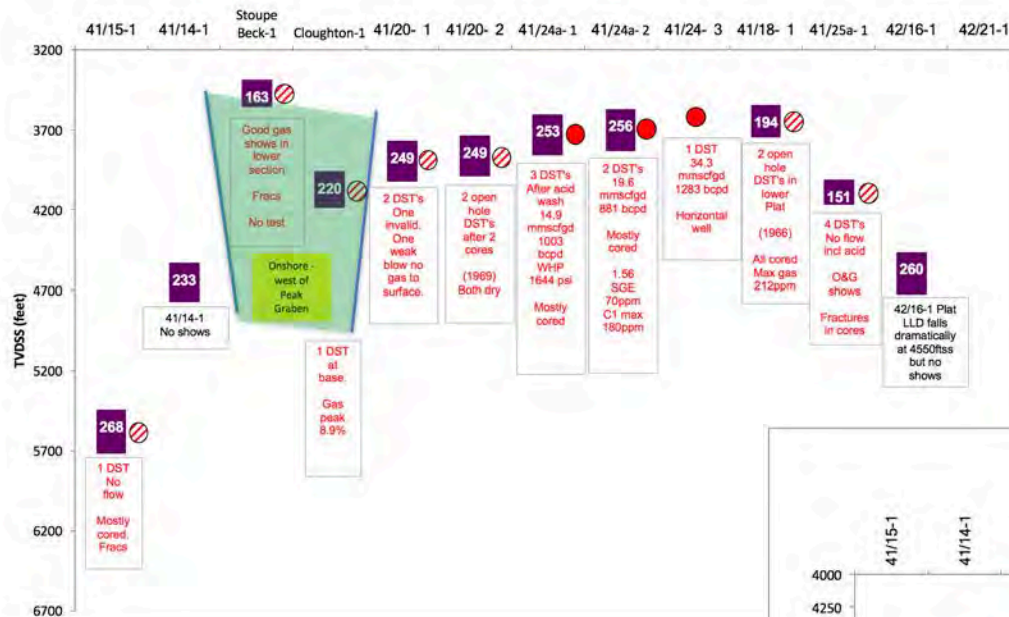


Connected GIIP (from DST) = 9.5 Bcf

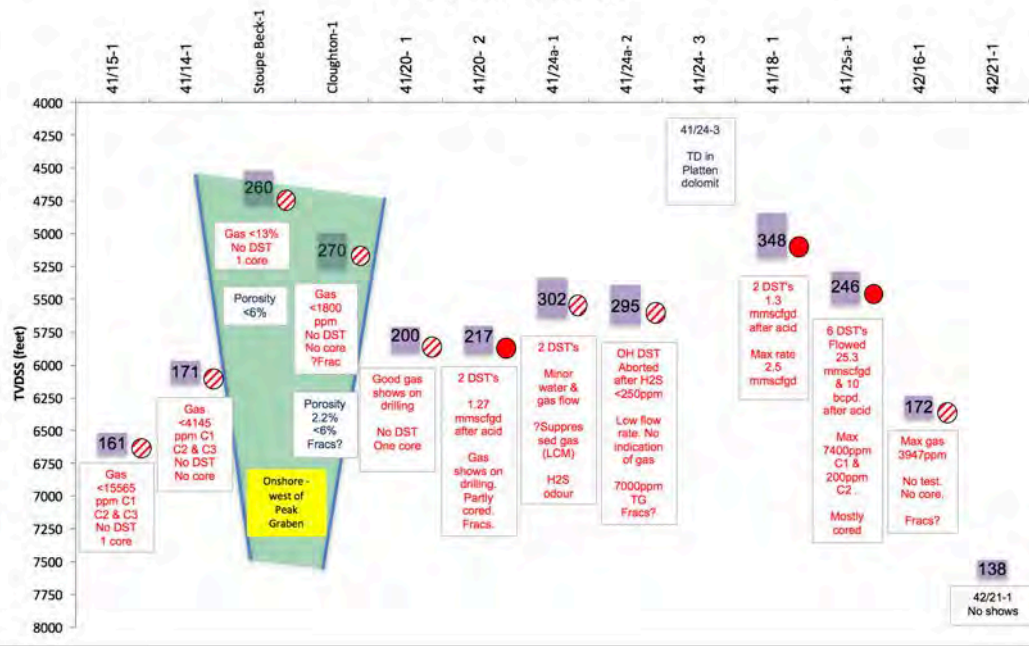
Conoco 1991 failed to reach TD (370ft of planned 3000ft)

# The Maxwell Gasfield – DST's & shows, all released wells

Plattendolomit Isochore



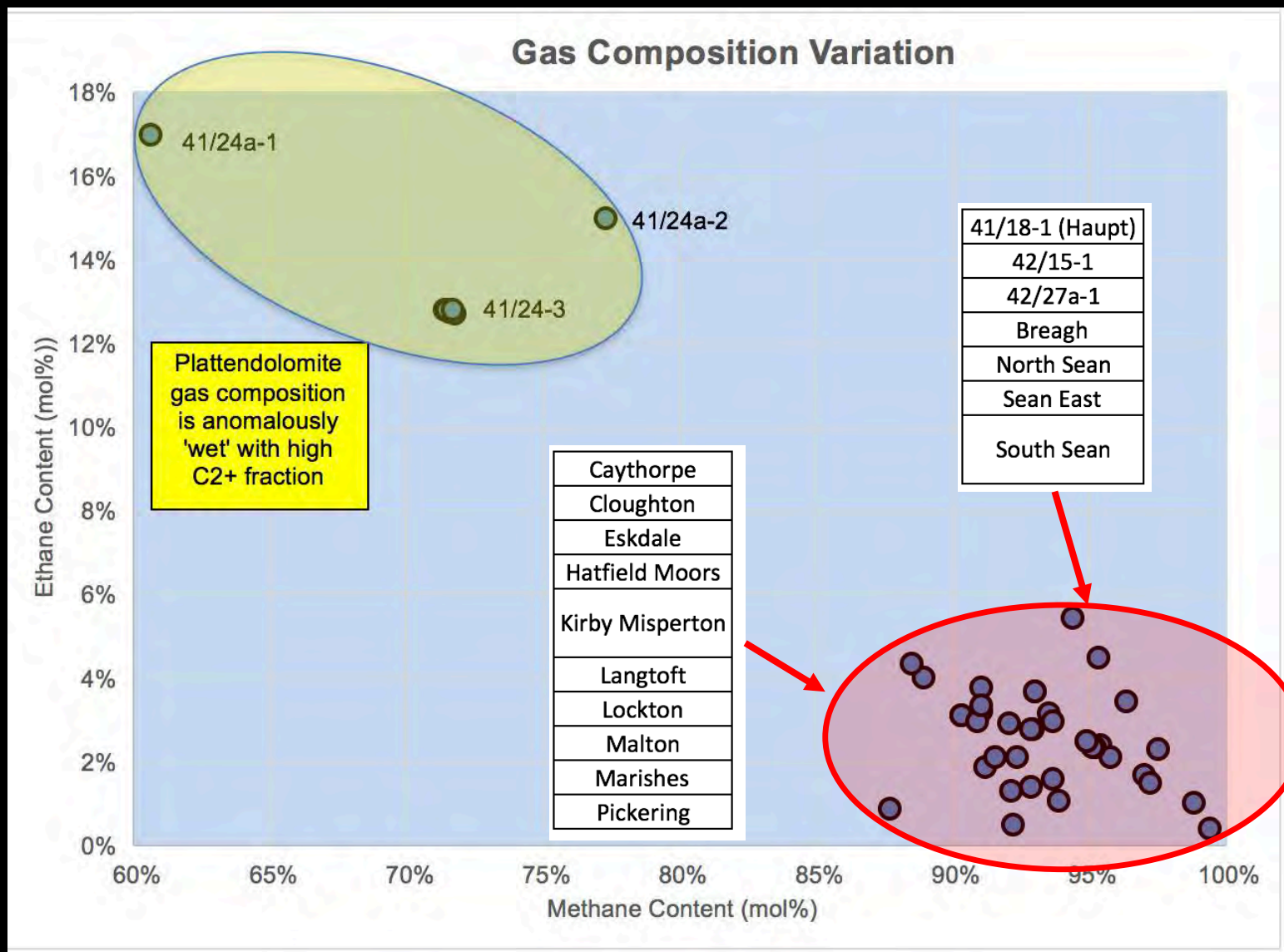
Hauptdolomit Isochore



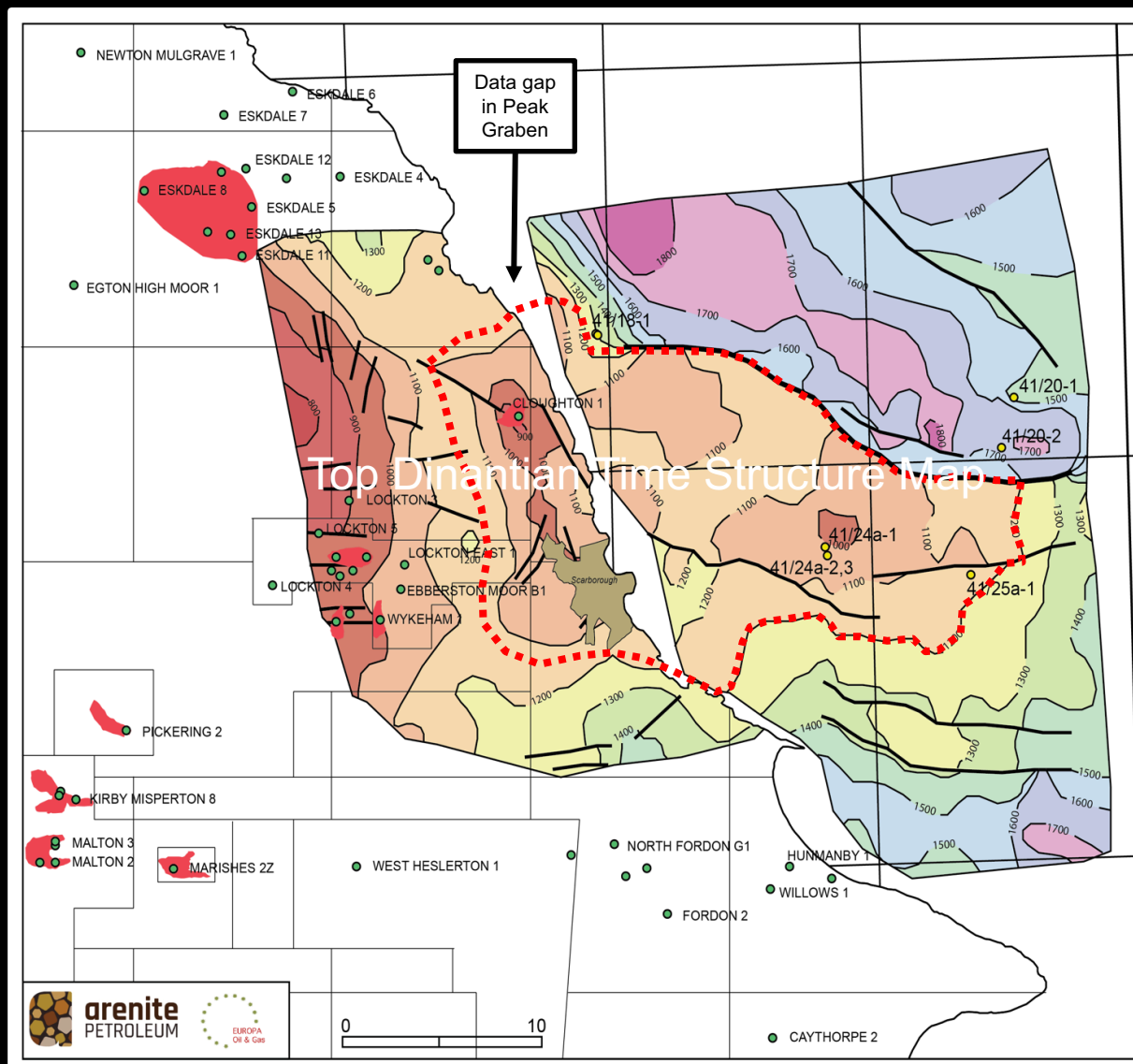
TVT Isochore thickness (ft)



# Maxwell Plattendolomite gas sourced from Zechstein?



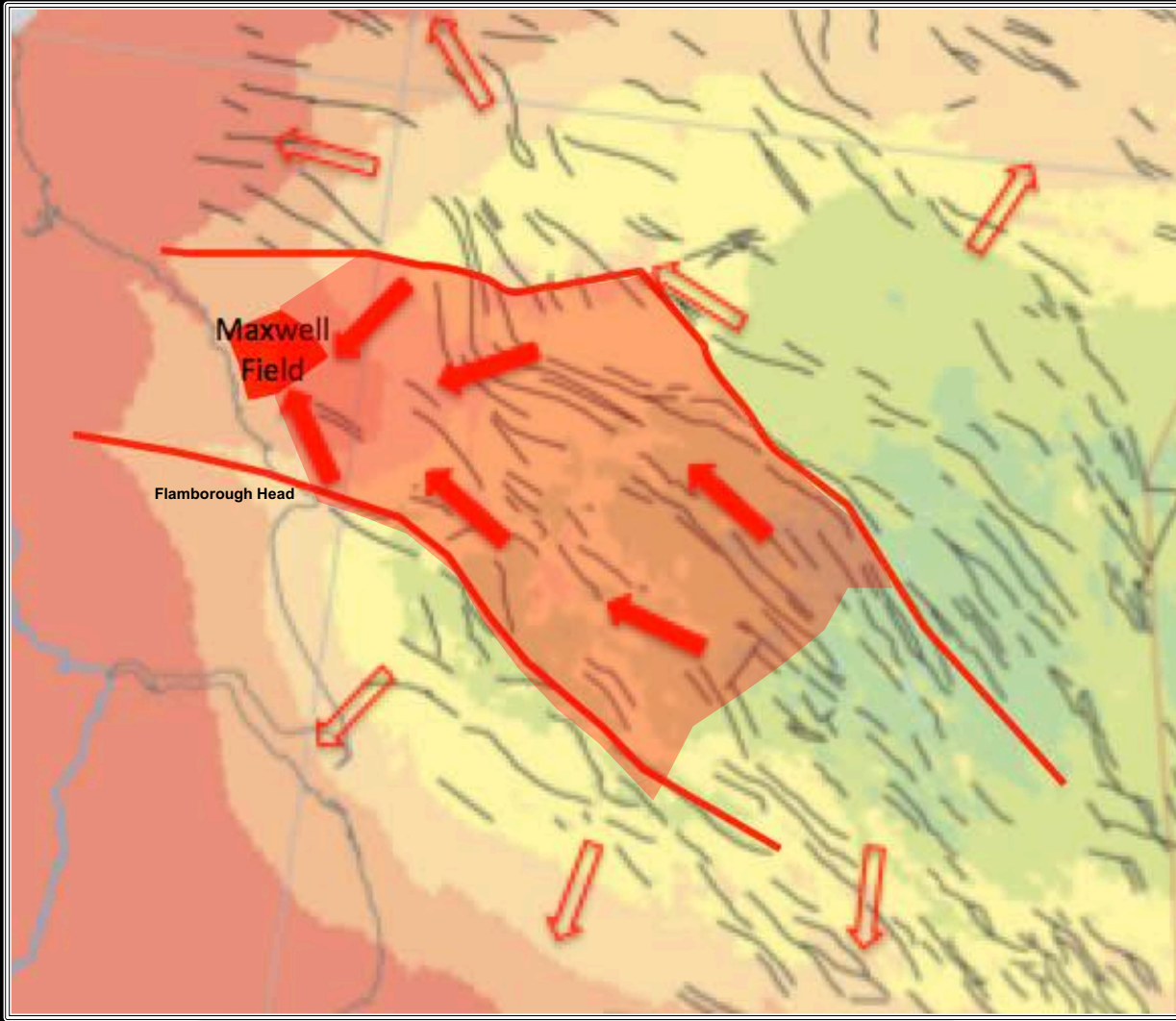
# The Cleveland Dome Gasfield (Carboniferous)





**arenite**  
PETROLEUM

## Enormous Carboniferous Gas Drainage Kitchen



Depth in metres  
below sea level

<1500  
1500 - 2000  
2000 - 2500

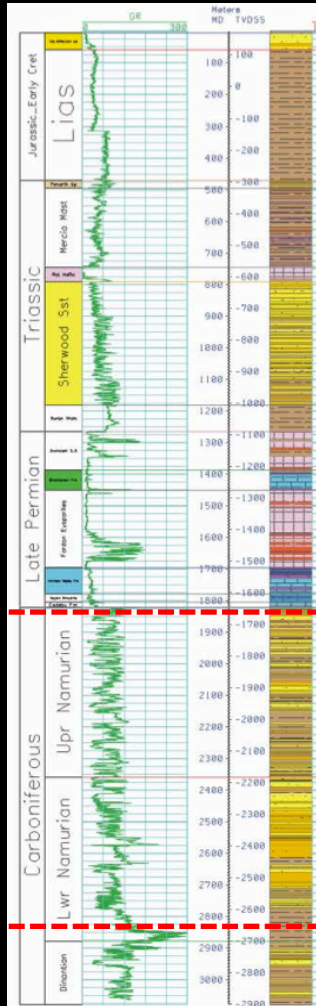
2500 - 3000  
3000 - 3500  
3500 - 4000

A plunging nose and  
associated regional high  
since at least mid-  
Miocene.

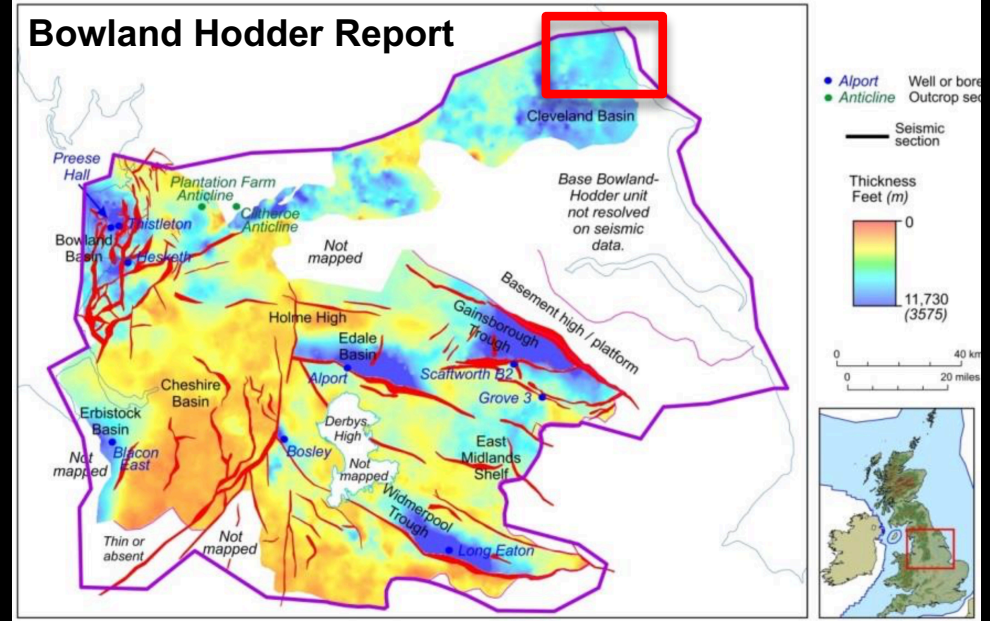
Drainage area is >1  
UKCS Quadrant

# Mature shale & coal source rocks throughout

## Cloughton-1



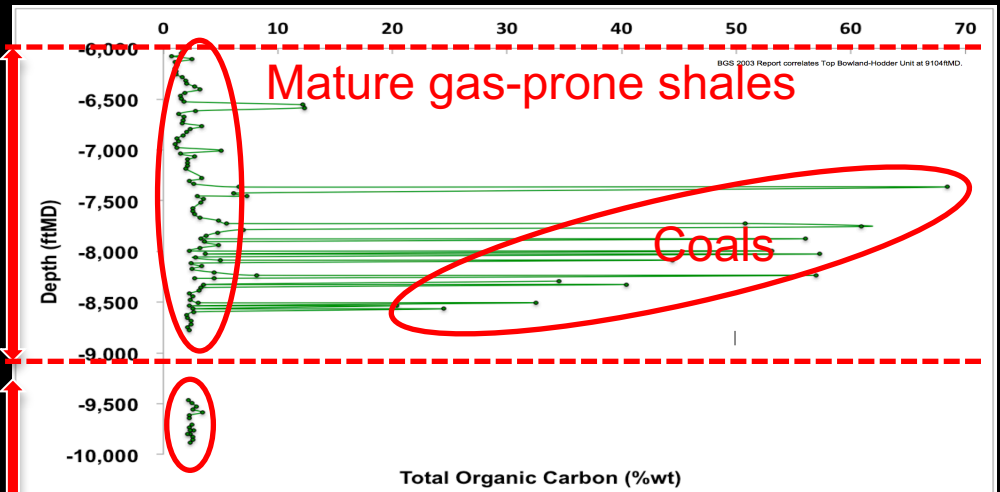
## Bowland Hodder Report



After BGS, 2013

3,000ft  
Namurian  
Shales &  
Interbedded

BGS Bowland-  
Hodder Report



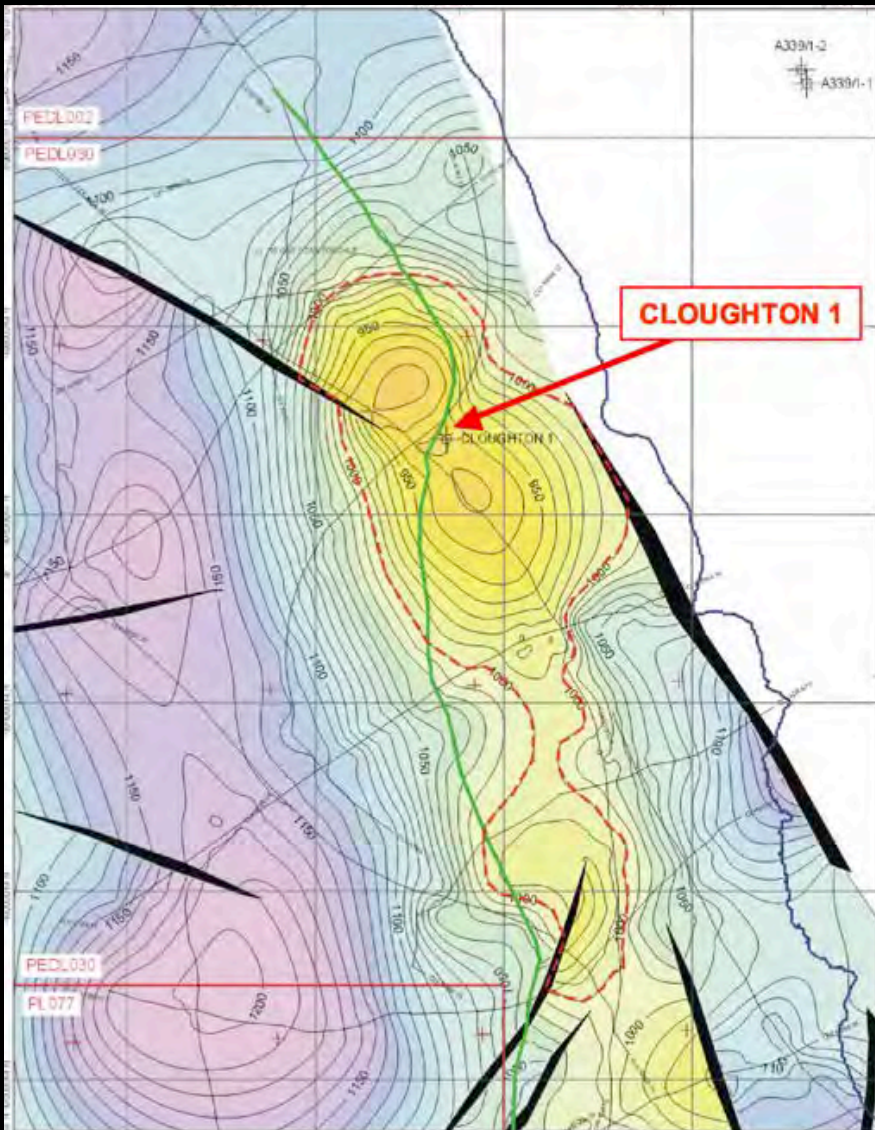
Base Carboniferous?





**arenite**  
PETROLEUM

# Cloughton-1

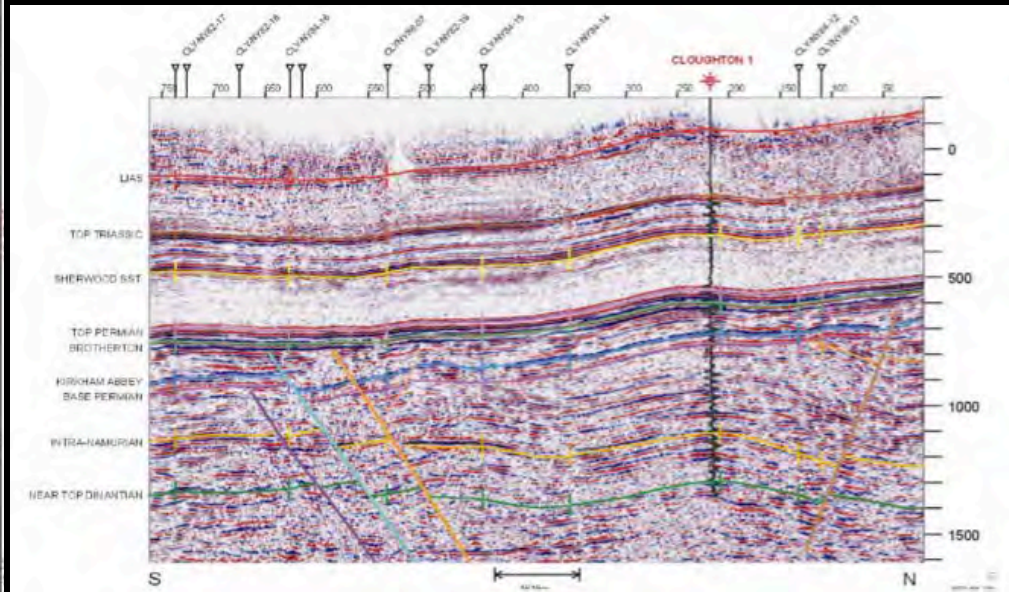


Intra-Namurian TWT Structure Map

Roc Oil, 2005

South

North



**Bow Valley, 1986 well**

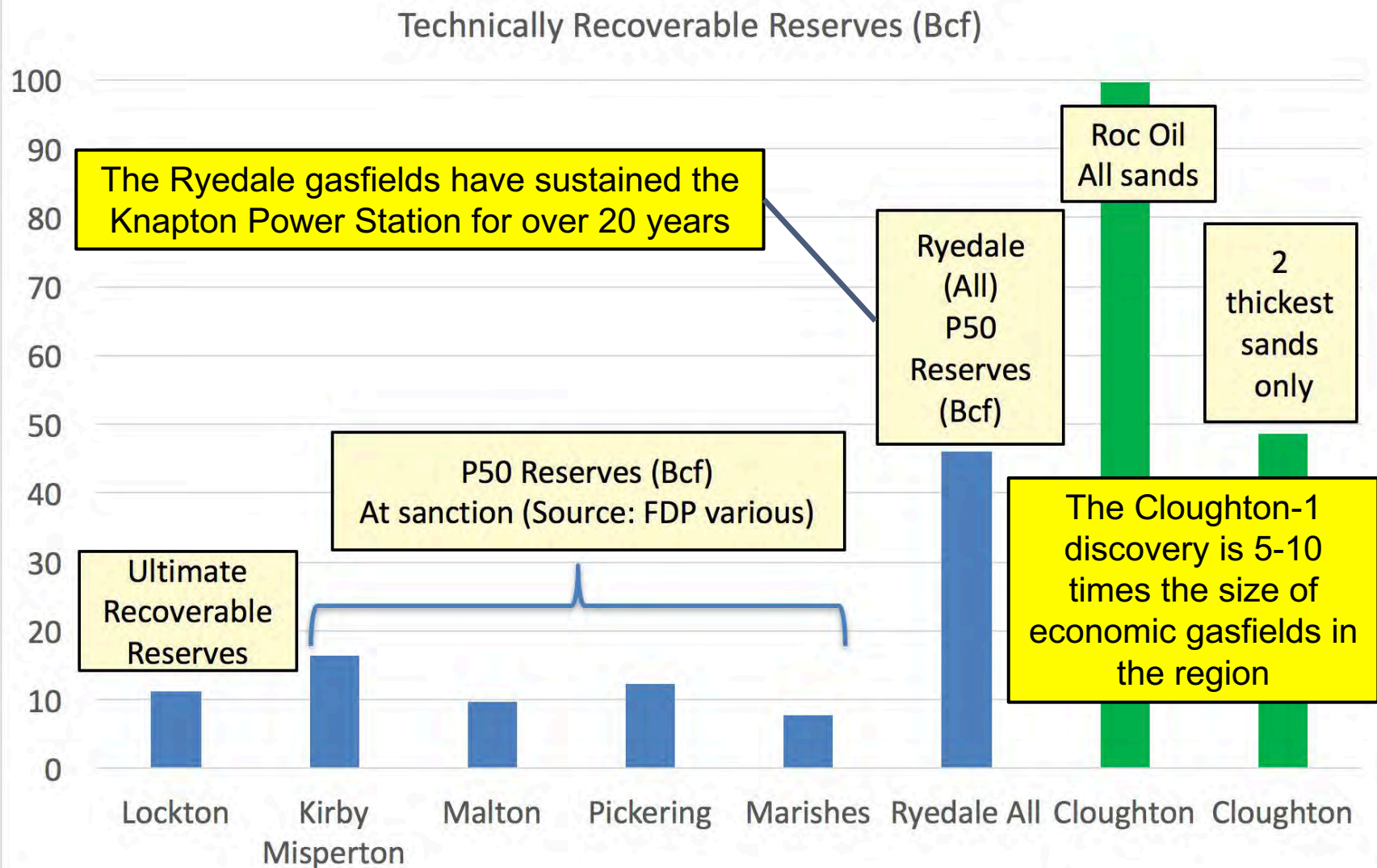
**Tested 3 Carboniferous intervals –flowed at sub-economic rates.**

**No stimulation carried out.**

**The entire section is gas-bearing.**

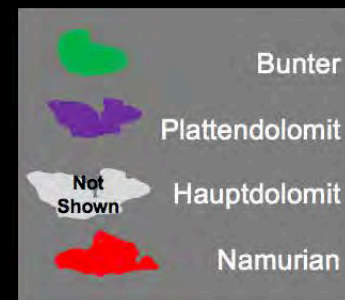
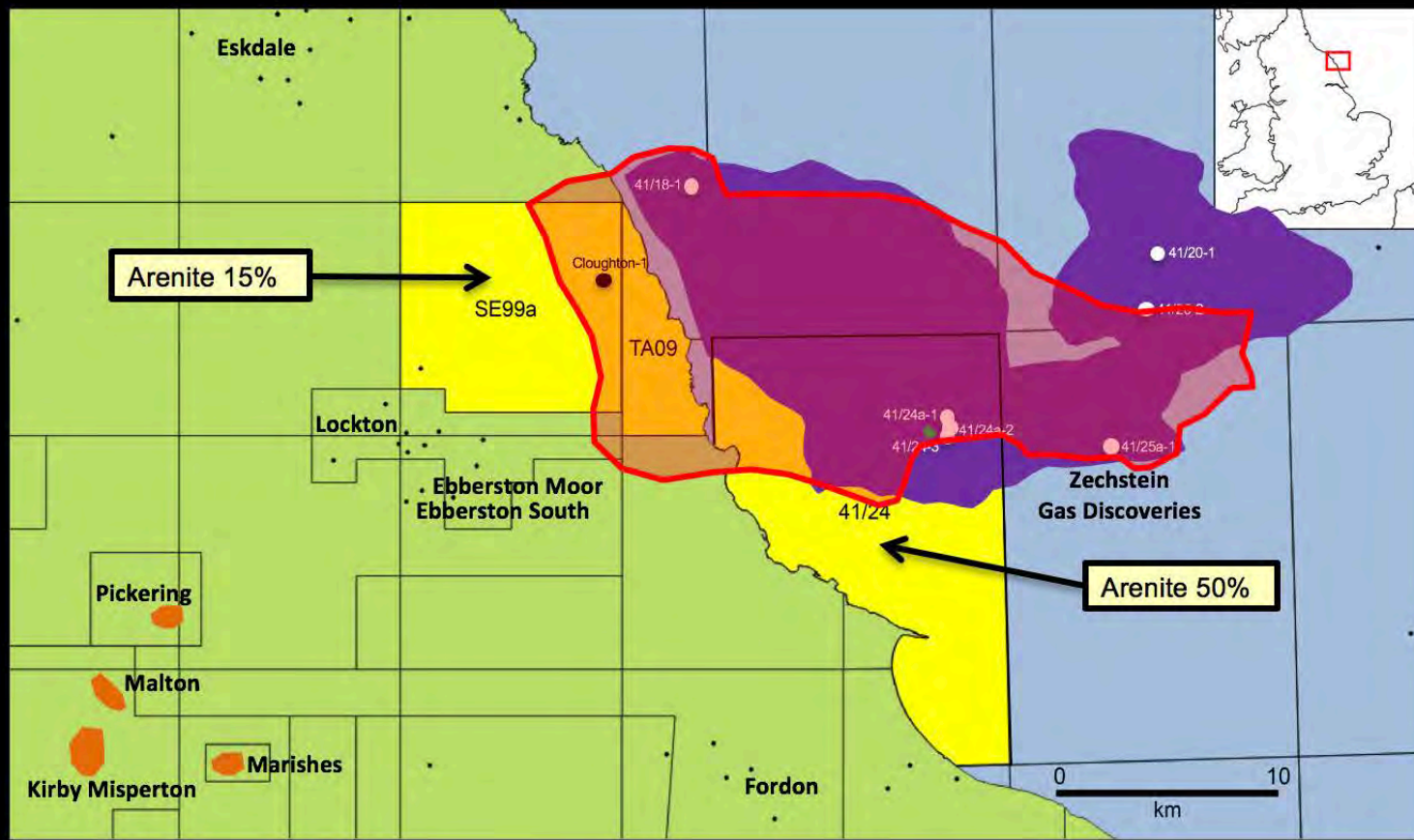
**>300ft vertical relief. 3000 acre closure**

# Cleveland Basin Economic Gasfield Size





# Summary Map & Reserves Estimates



Plattendolomit	600	Bcf
Hauptdolomit	220 - 420	Bcf
Carboniferous	50 - 100	Bcf
	40+	<b>Tcf GIIP</b>

(Cloughton, proven, conventional)  
(No reserves estimated at this time)

## Summary

- **Two proven gasfields:**
  - **Maxwell - Zechstein (conventional)**
  - **Cleveland Dome – Carboniferous (unconventional)**
- **Seeking operator to progress appraisal & development.**
- **Next step: Acquire 3D seismic? Proof of concept well(s)**
- **Well results imminent:**
  - **e.g. Kirby Misperton, Ravenspurn Deep and other unconventional well tests**





**For further information on the Cleveland Dome &  
Maxwell gasfield opportunities:**

**[info@arenitepetroleum.com](mailto:info@arenitepetroleum.com)**