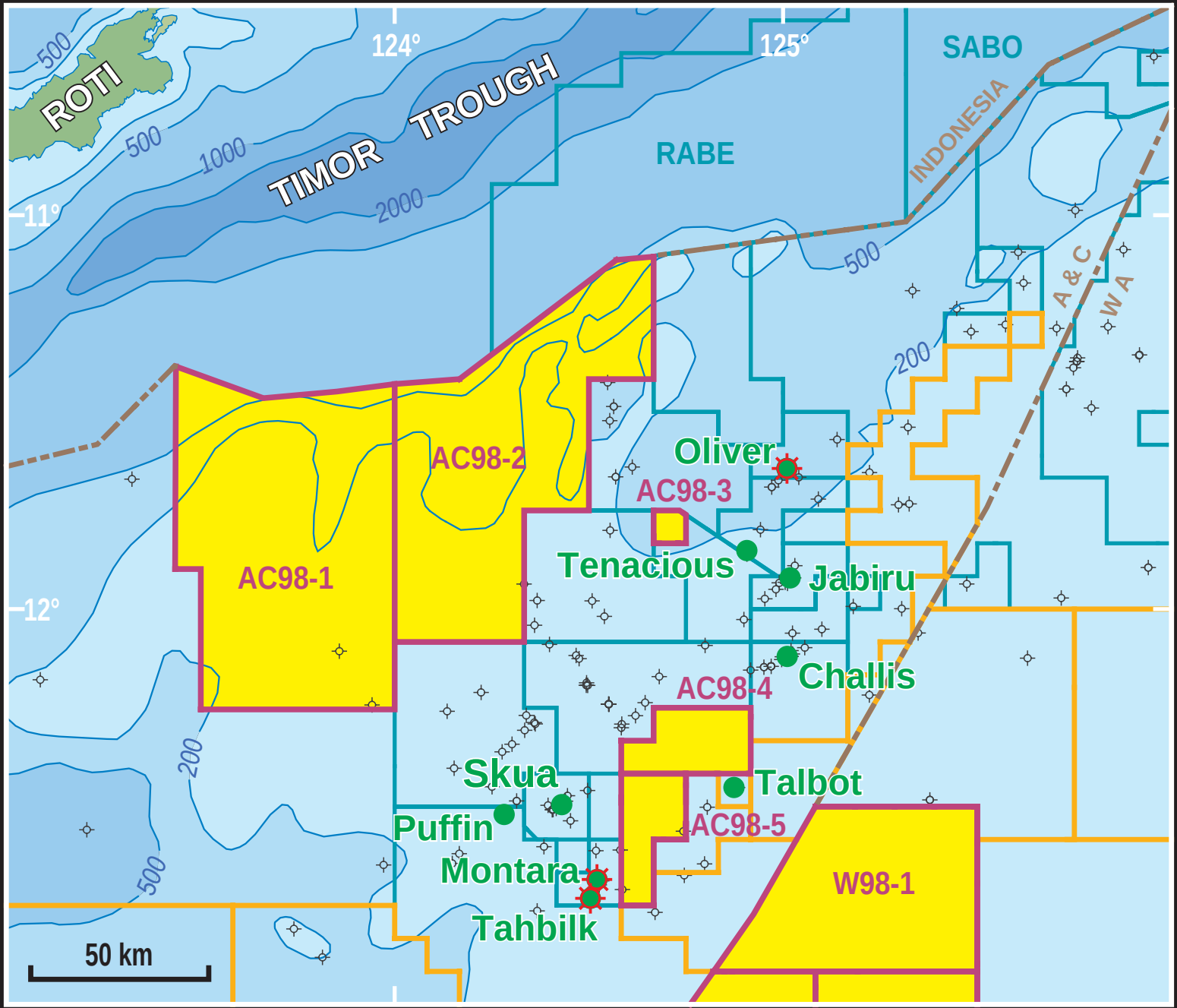
AC98-1 to 5

Ashmore Platform & Vulcan Sub-basin

Location Map
Point Summary (2)
Structural Elements
Stratigraphy
Sequence Stratigraphy Plays (2)
Seismic
Petroleum Systems
Hydrocarbon Related
Diagenetic Zones (7)
Trap Integrity Model (3)

GALLERY

BACK



ASHMORE PLATFORM & VULCAN SUB-BASIN

Release areas

- 1998
- 1997
- Existing

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AREAS AC98-1 & 2 Bonaparte Basin, Ashmore Platform

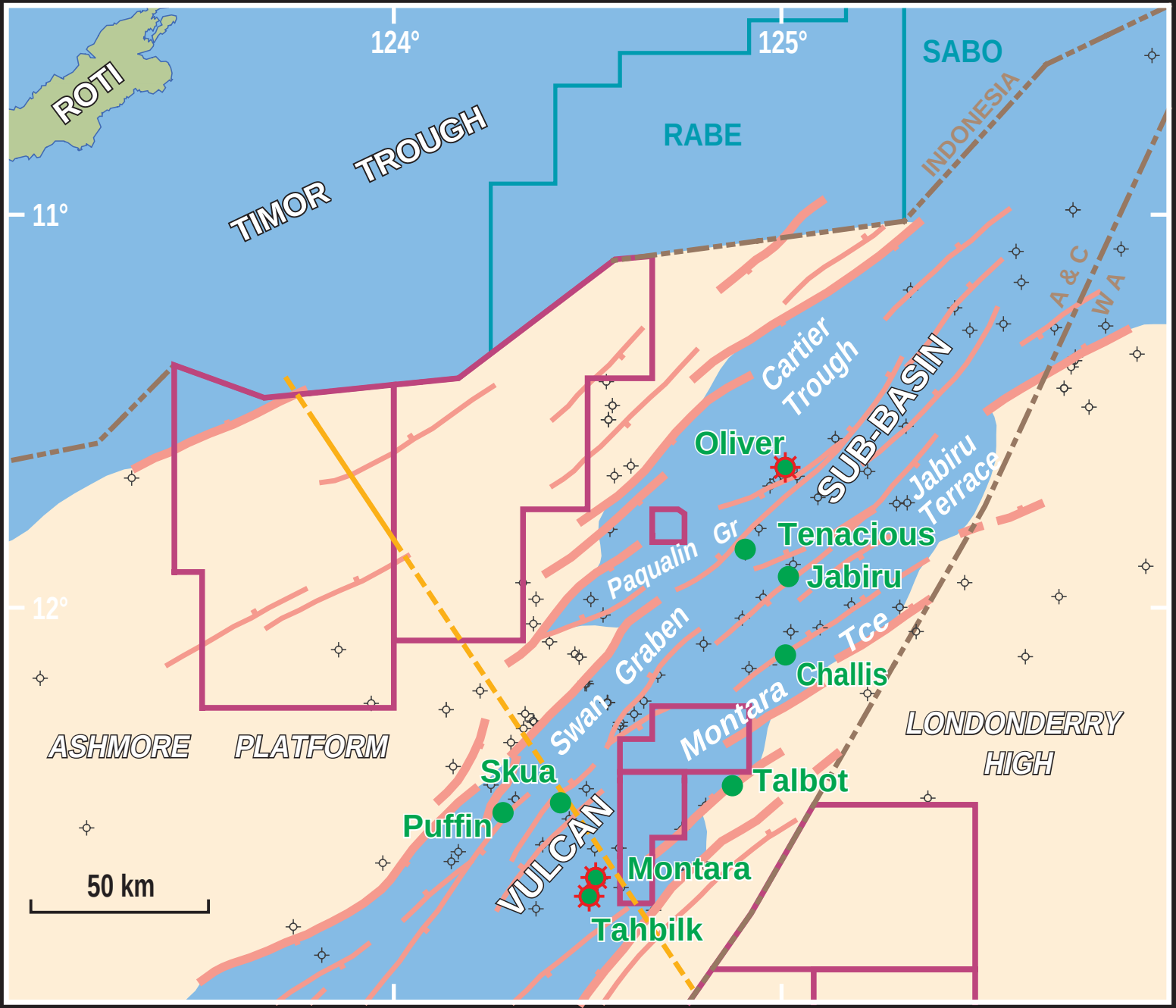
- Frontier moderately deepwater (150m-600m) areas
- Gas & ?oil potential from thick Permian-Triassic section
- Tilted Triassic horst blocks
- Late Cretaceous LST fans in south (Puffin)
- Potential Tertiary stratigraphic-structural plays
- 4 wells within or adjacent to SE margin of areas
- Spec industry (’96, ’97) & regional AGSO seismic

AREAS AC98-3 to 5 Bonaparte Basin, Vulcan Sub-basin

- Proven oil province
- AC98-3 Cartier Trough:
  - LST Tithonian fans (Tenacious-1)
  - LST Eocene fans
- AC98-4 & 5 Montara Tce:
  - Triassic-Jurassic horst blocks
  - TST Callovian-Oxfordian fan deltas
  - LST Late Cretaceous fans
- Good 2D seismic, new multi-client 3D survey
- Water depth 75m - 350m

ASHMORE PLATFORM & VULCAN SUB-BASIN

Structural Elements



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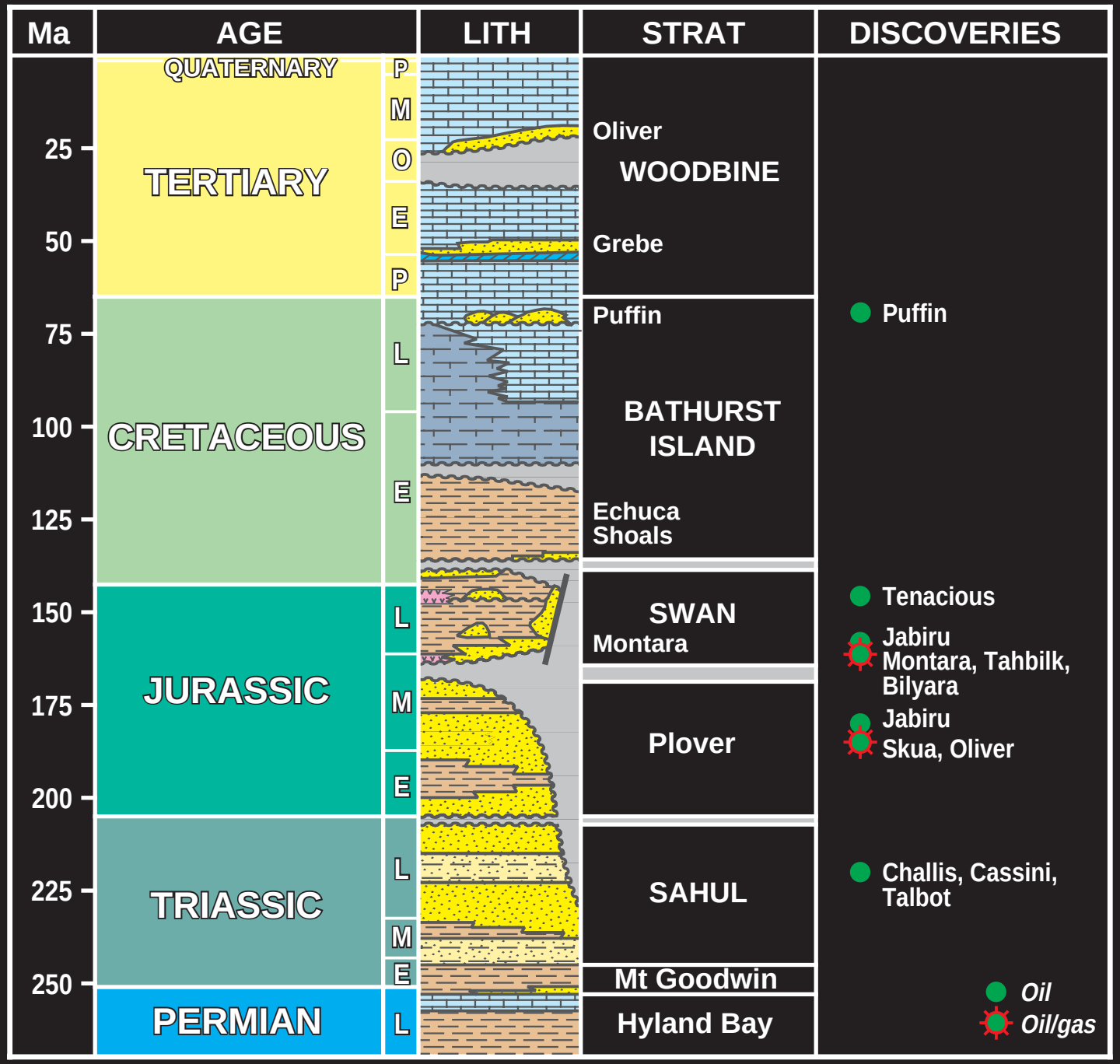
ASHMORE PLATFORM & VULCAN SUB-BASIN



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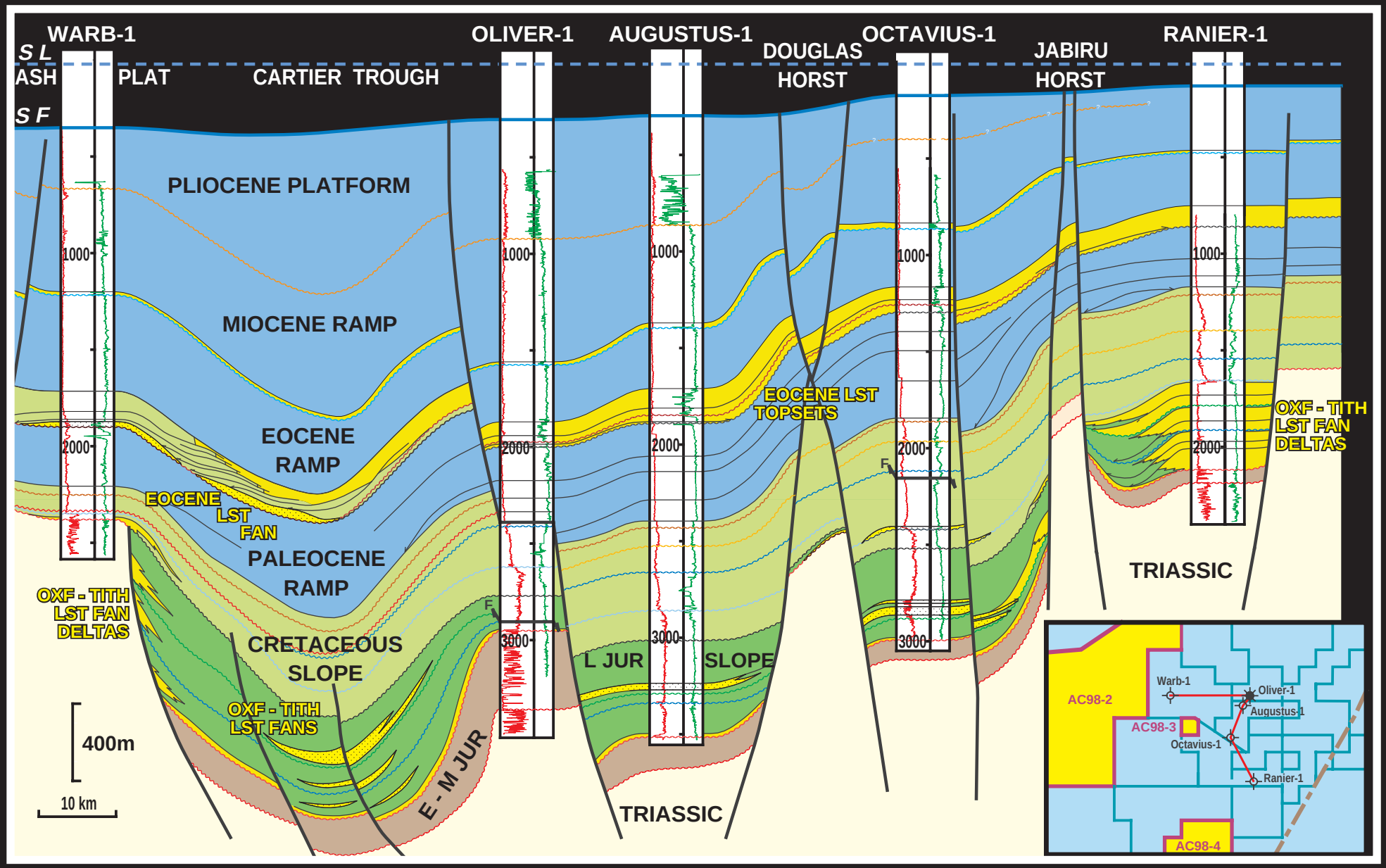

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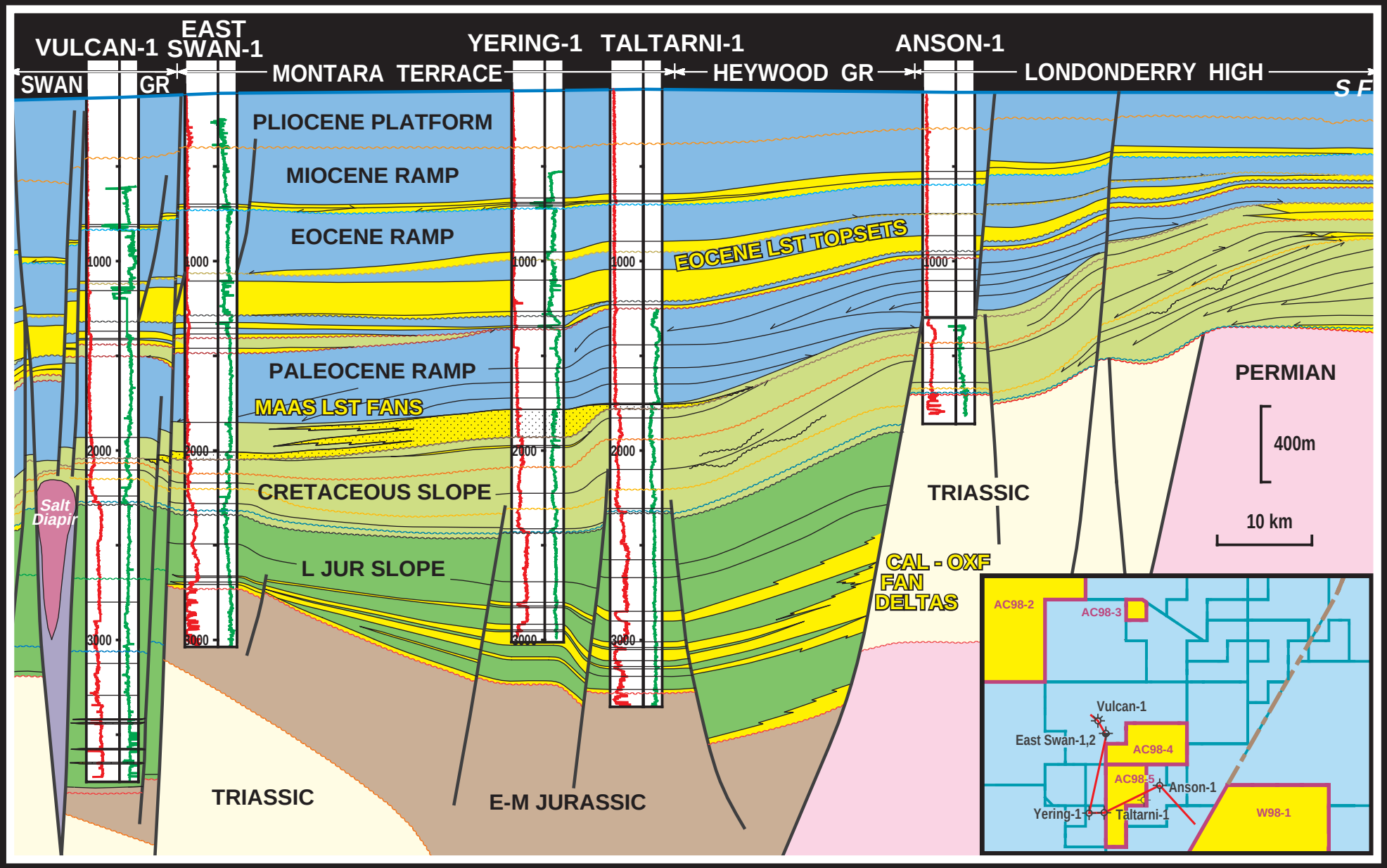

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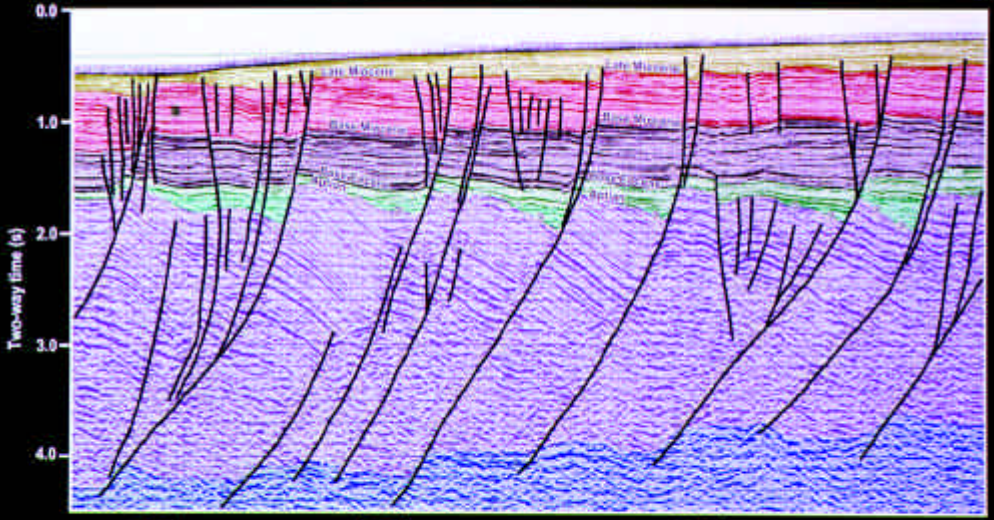
ASHMORE PLATFORM AC98-1



AGSO LINE 98R/08 - SP 440-1540

AGSO 97/1409

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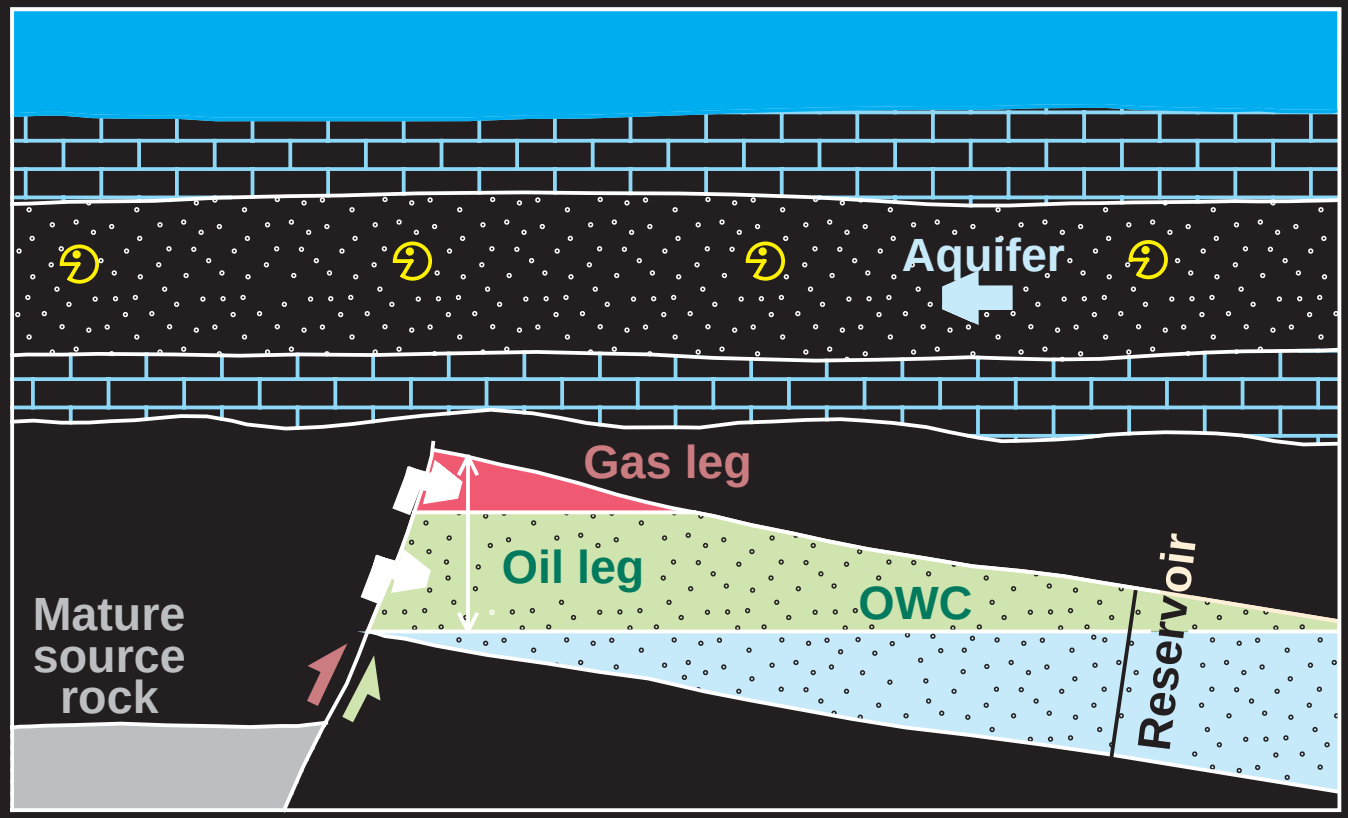
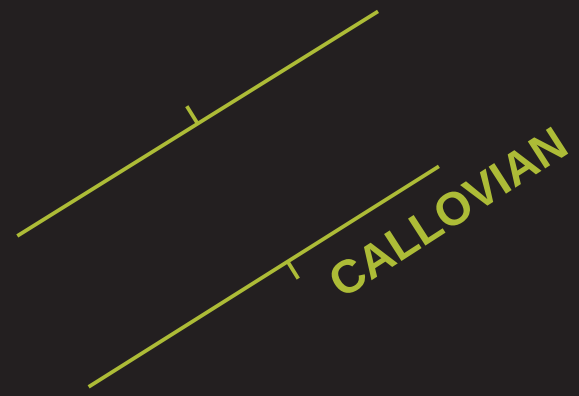
CHARGED TRAP: EARLY MIOCENE

EARLY MIOCENE - Charged, high-integrity trap High sealing capacity for oil and gas





I. Callovian faults define tilted fault block or horst

II. Gas leg with thicker oil leg present

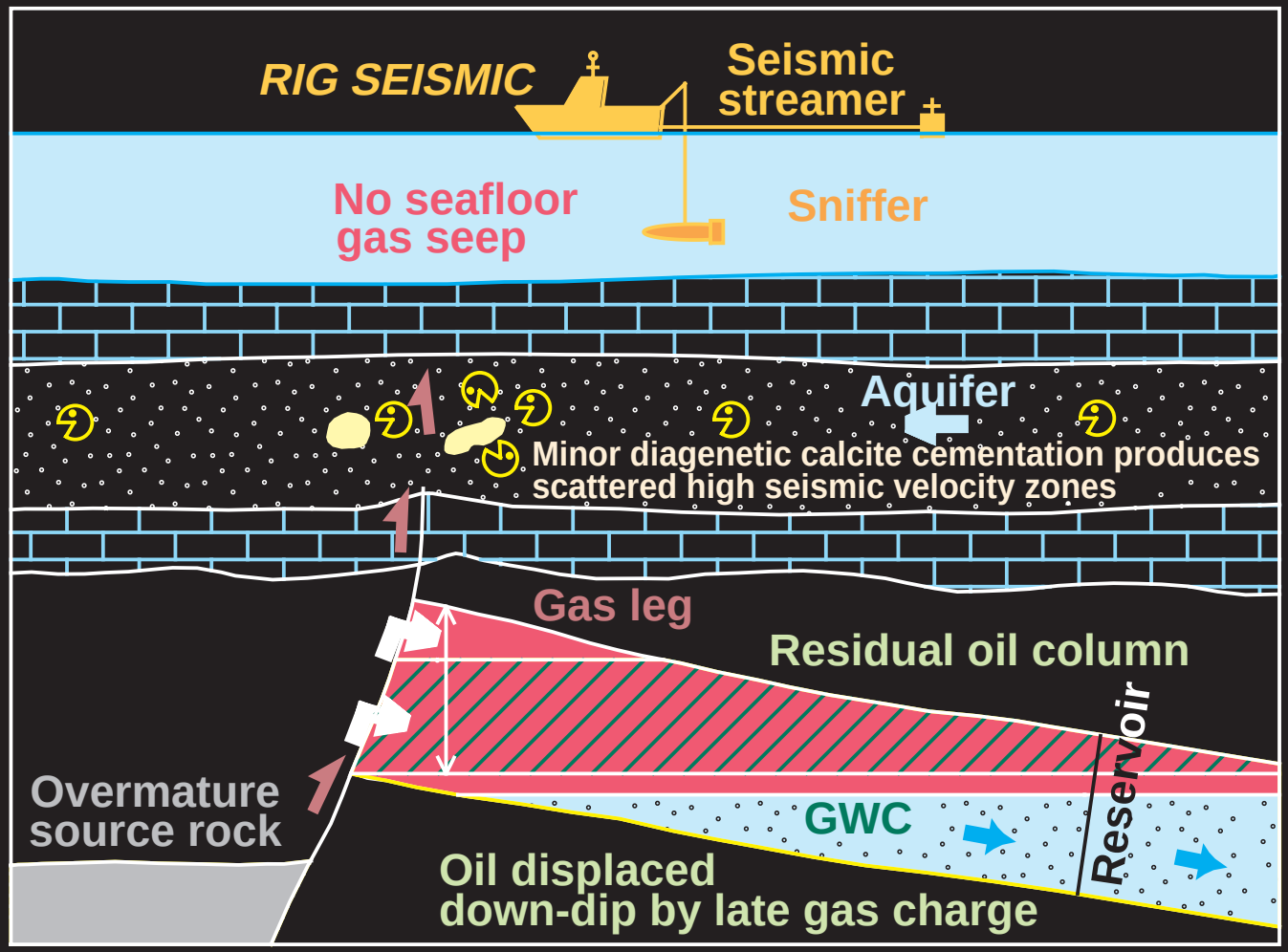
Migrating oil *Migrating gas* *Calcite-cemented sand* *Methane-oxidising bacteria*

AGSO 95/028

MENU

REACTIVATION SCENARIO I

L. MIO. TO PRESENT DAY - Weakly to unreactivated trap. High sealing capacity for oil and gas



LITTLE OR NO REACTIVATION

I. Minor to absent Late Miocene faulting

II. Late gas charge displaces oil down-dip

III. Residual oil column present within present-day gas column

IV. Significant down-dip potential

V. HRDZs very rare to absent

Migrating oil

Migrating gas

Calcite-cemented sand

Methane-oxidising bacteria

AGSO

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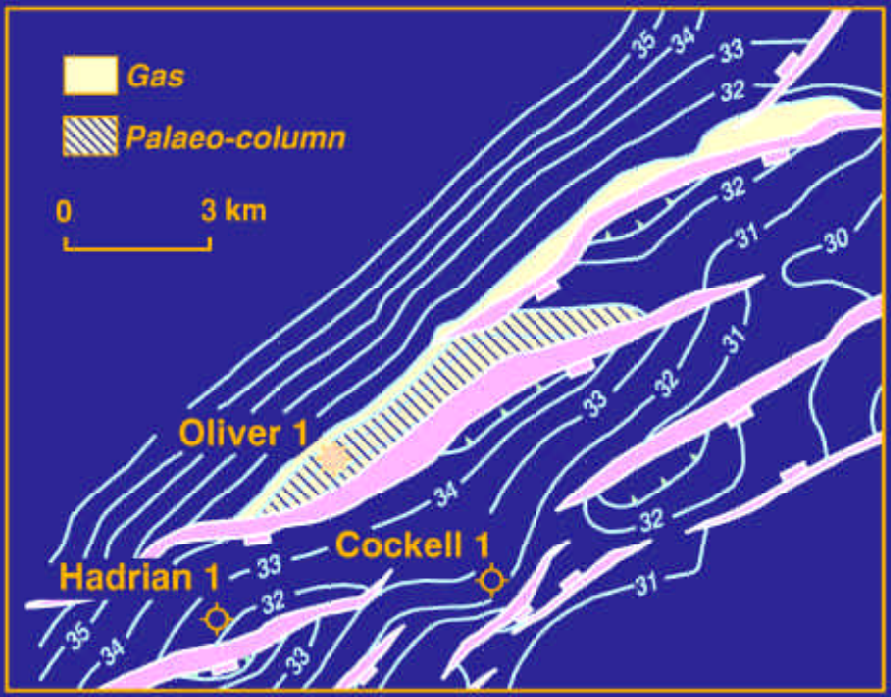

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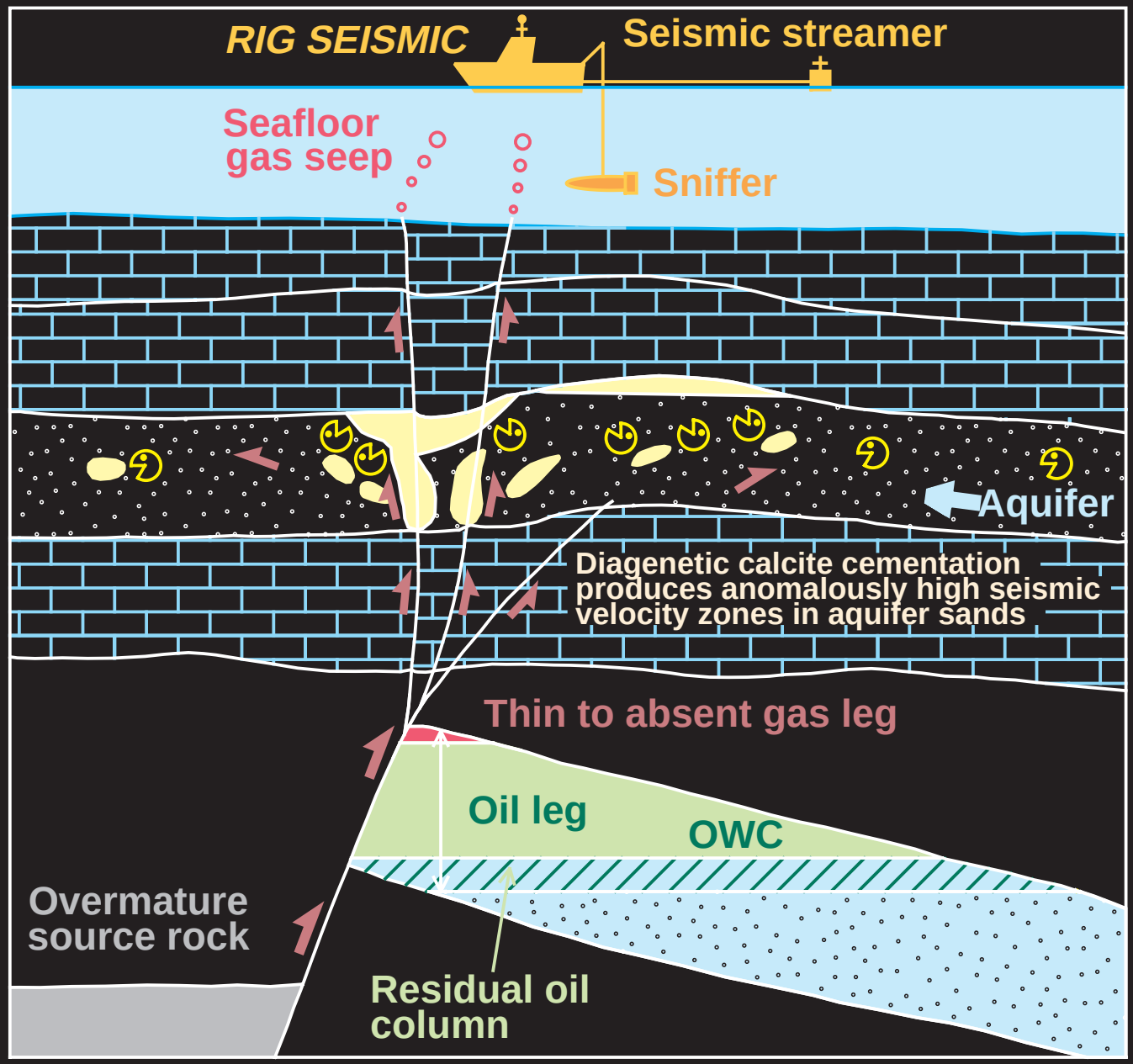
REACTIVATION SCENARIO II

L. MIO. TO PRESENT DAY - Obliquely reactivated trap Low sealing capacity for gas, high for oil



SLIGHT TO MODERATE REACTIVATION

I. Late Miocene faulting slightly oblique to Callovian Faulting

II. Most to all gas cap lost up faults

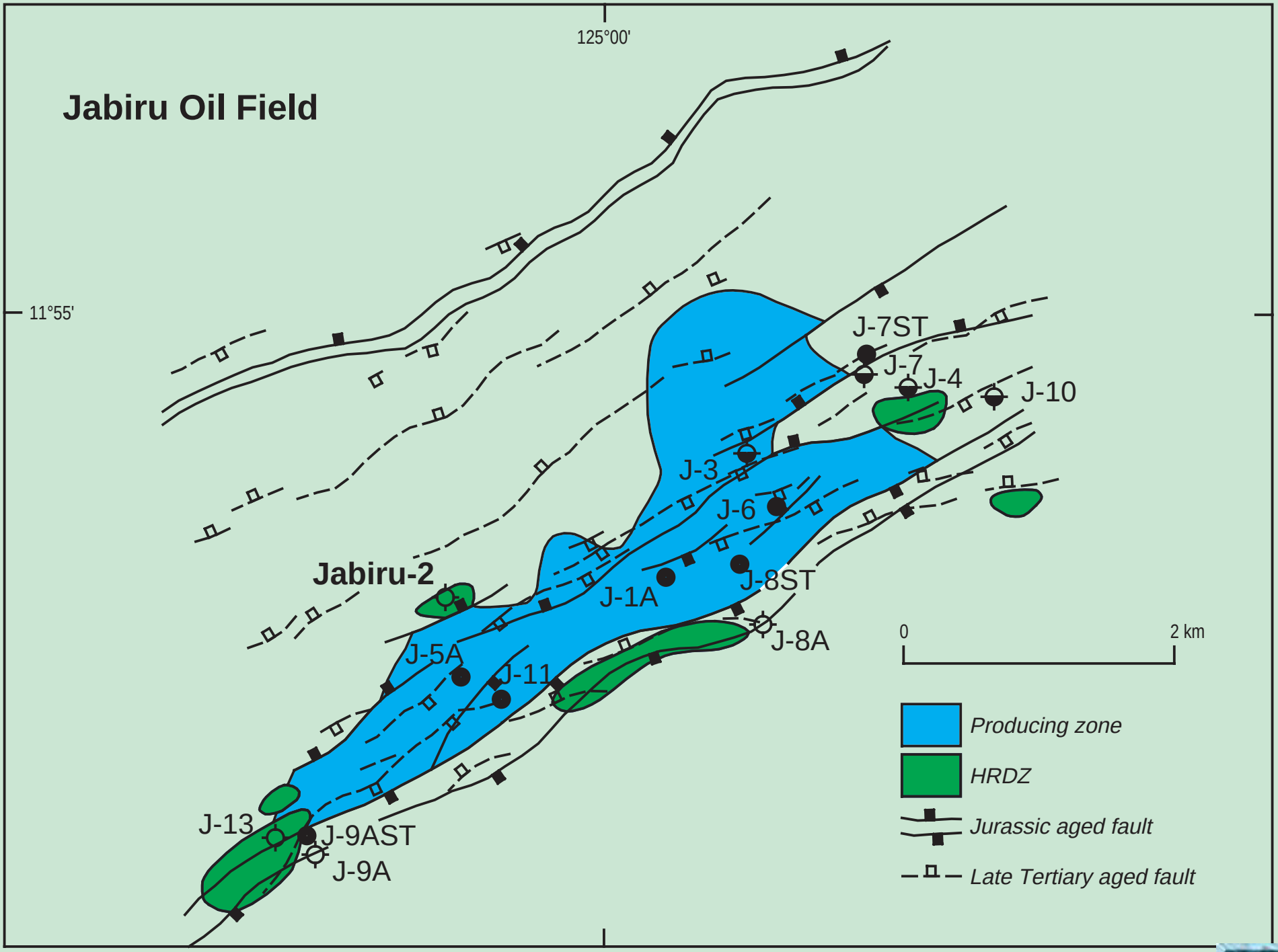
III. Residual oil column produced at base of present day OWC

IV. Down-dip potential low

V. HRDZs small to medium in size, common and moderately well developed

Migrating gas *Calcite-cemented sand* *Methane-oxidising bacteria*

MENU



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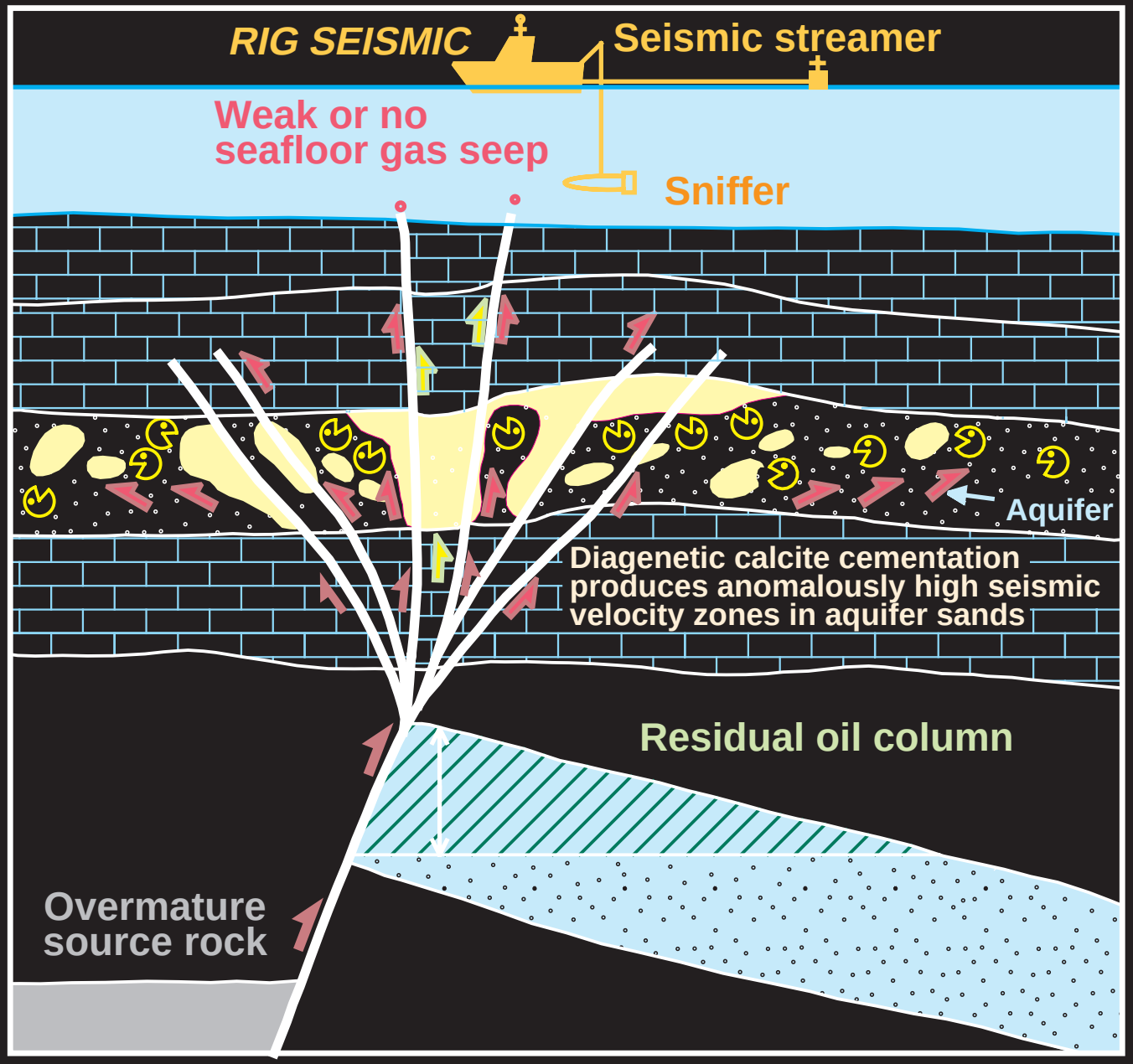
LATE MIOCENE TO PRESENT DAY - Strongly obliquely reactivated trap

No sealing capacity for gas or for oil



REACTIVATION SCENARIO III

VERY STRONG REACTIVATION

I. Late Miocene faulting strongly oblique to Callovian Faulting

II. All of the gas and oil columns lost up faults

III. Residual oil column present

IV. No down-dip potential

V. HRDZs very large, common and very well developed

VI. Present-day seafloor gas seepage weak to absent

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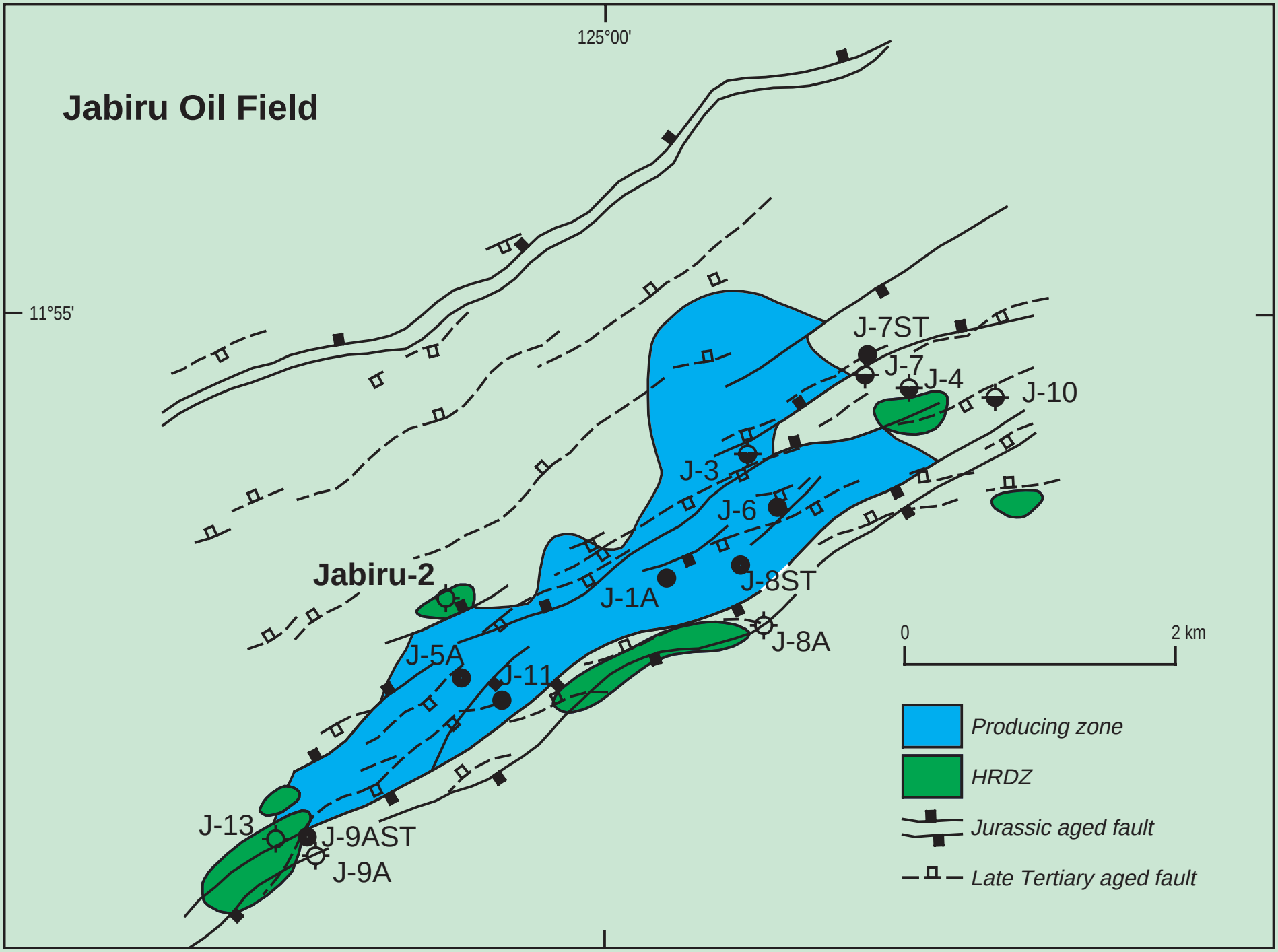
Migrating oil *Migrating gas* *Calcite-cemented sand* *Methane-oxidising bacteria*

MENU



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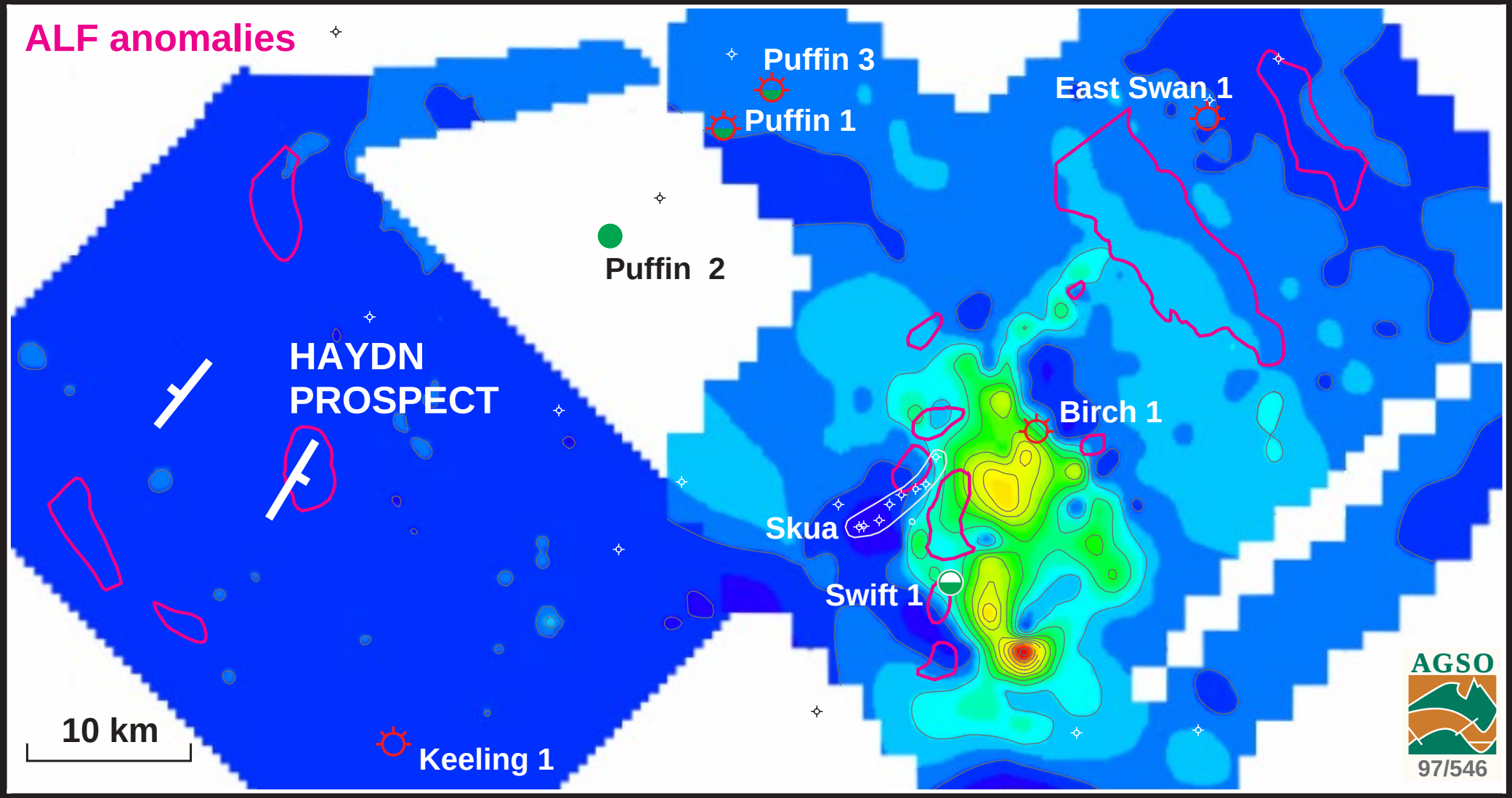
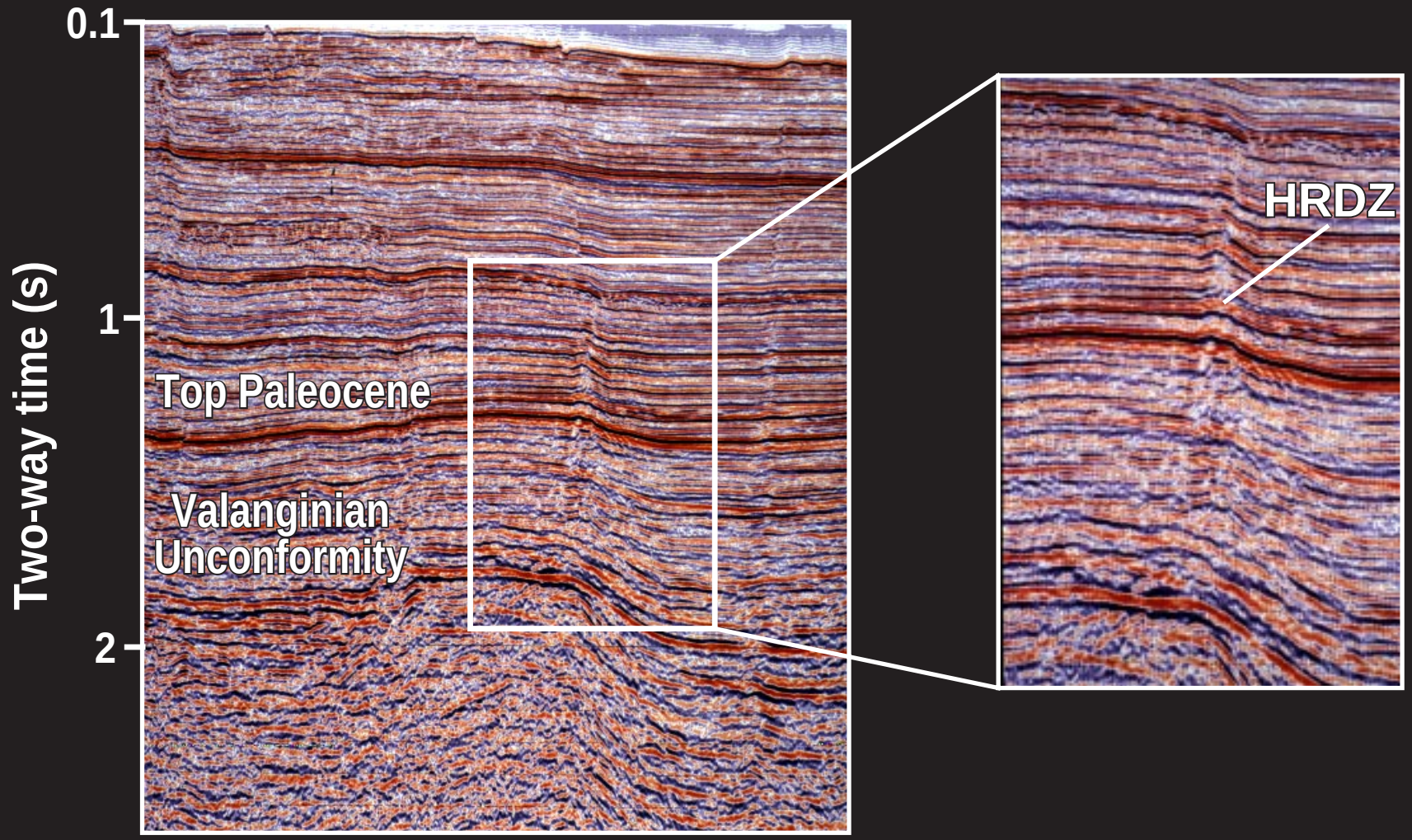
Vulcan Sniffer Survey (Ethane ppm) and ALF anomalies



Predictive Trap Accumulation Model

Sniffer Anomaly	ALF Anomaly	HRDZ	Fault Reactivation	Predicted Trap Accumulation
X	X	X	X	Gas (oil displ)
X	X	X	Mod-High	Never charged
1-2 km	1-2 km	<1.5km	Moderate	Large Oil
X	1-2 km	<1.5km	Moderate	Small Oil
X	3-6 km	3-5 km	High	Breached

HAYDN PROSPECT



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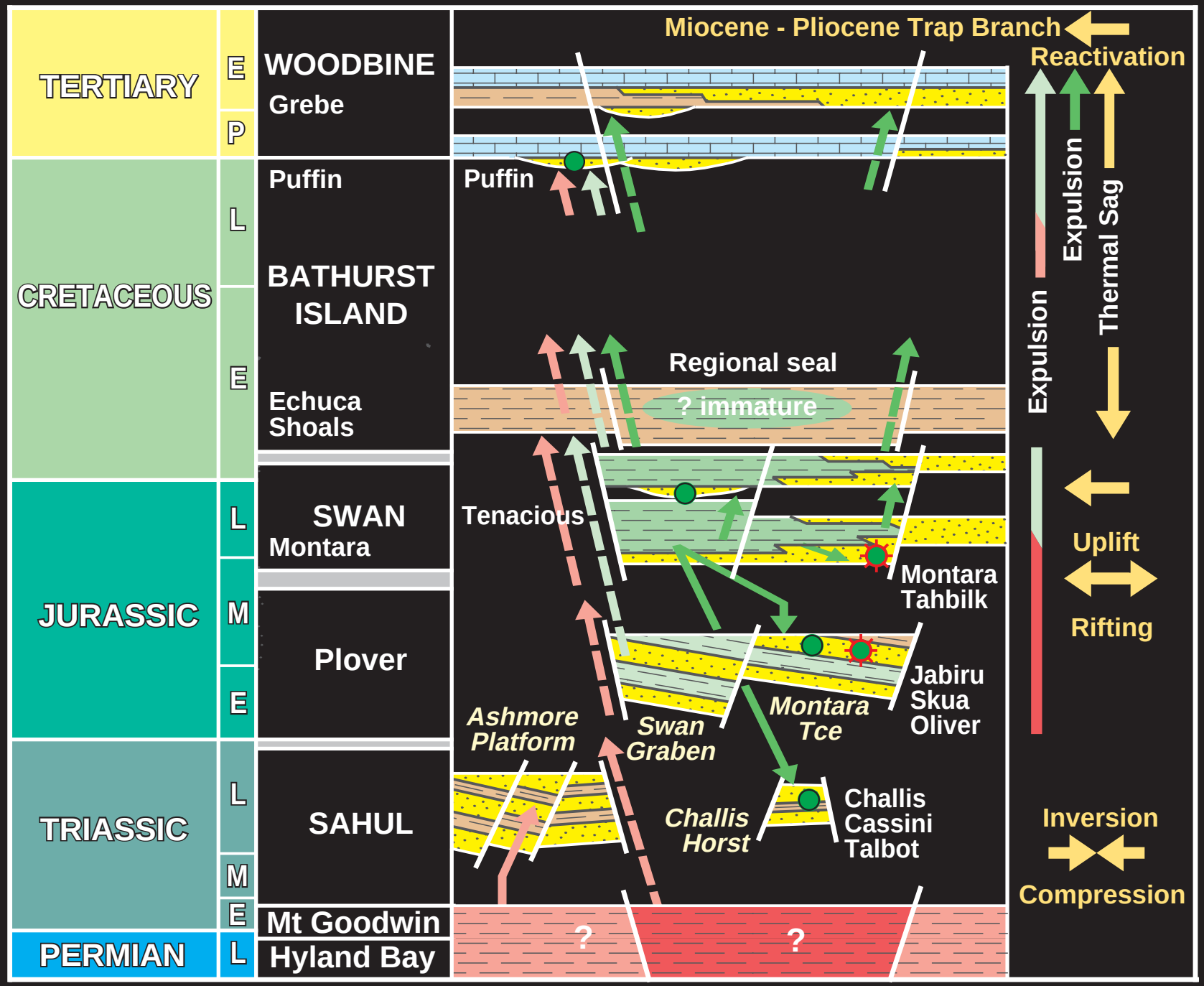
ASHMORE VULCAN PETROLEUM SYSTEMS



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