

# PETROLEUM POTENTIAL OF EXPLORATORY BLOCKS ON PERMANENT OFFER (OPEN ACREAGE)

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*2019-29-03, Rio de Janeiro, Brazil*

Brazil's Current State  
Open Acreage Overview  
G&G ANP's Plan (PPA)  
Potential of the Blocks  
Conclusion

**Outline**

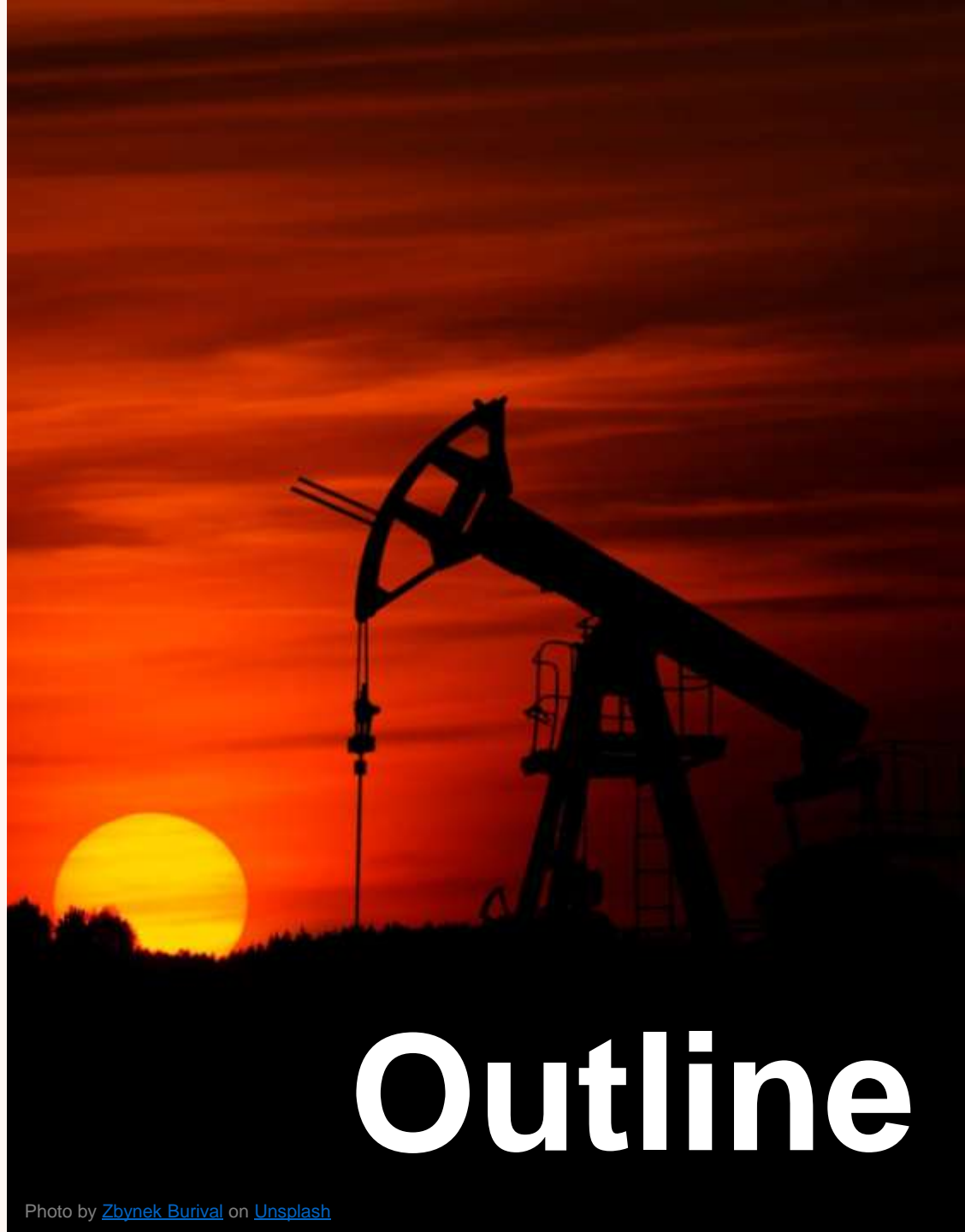
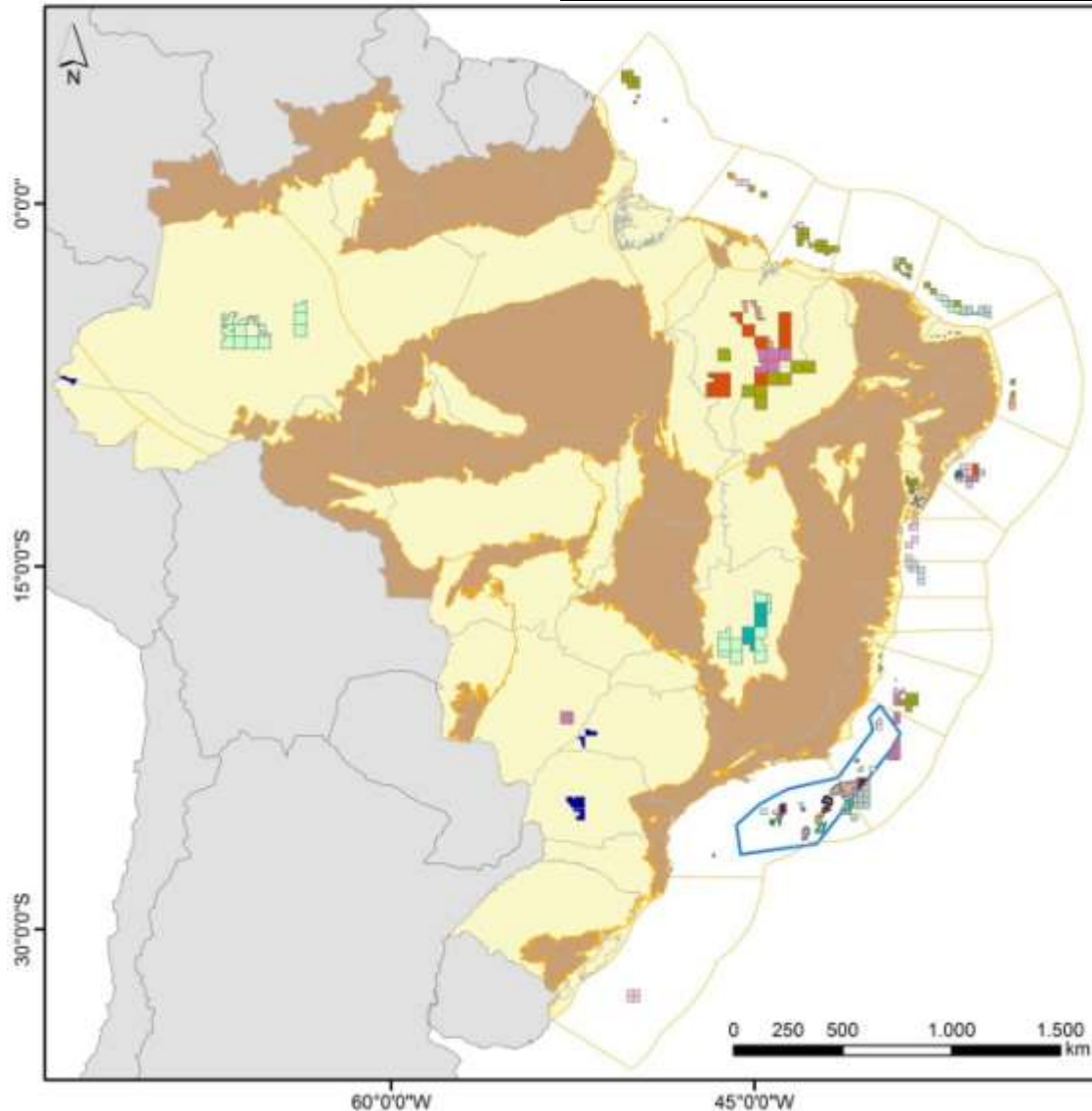


Photo by [Zbynek Burival](#) on [Unsplash](#)

# Brazil's Current State

Sedimentary Area: 7.5 million km<sup>2</sup>



Area under concession  
~ 280,000 km<sup>2</sup>

328 blocks

396 fields

98 companies

Production  
(Jan, 2019)

Oil 2.6 million bbl/d

Natural Gas 113 million m<sup>3</sup>/d

Proven Reserves  
(Dec, 2017)

Oil 12.8 billion barrels

Natural Gas 370 billion m<sup>3</sup>

10<sup>th</sup> largest oil producer in the world and  
the largest in Latin America

# Brazil's Current State

1998

Production (Dec, 1998)

**970** thousand bbl/d  
**30** million m<sup>3</sup>/d

2019

Production (Jan, 2019)

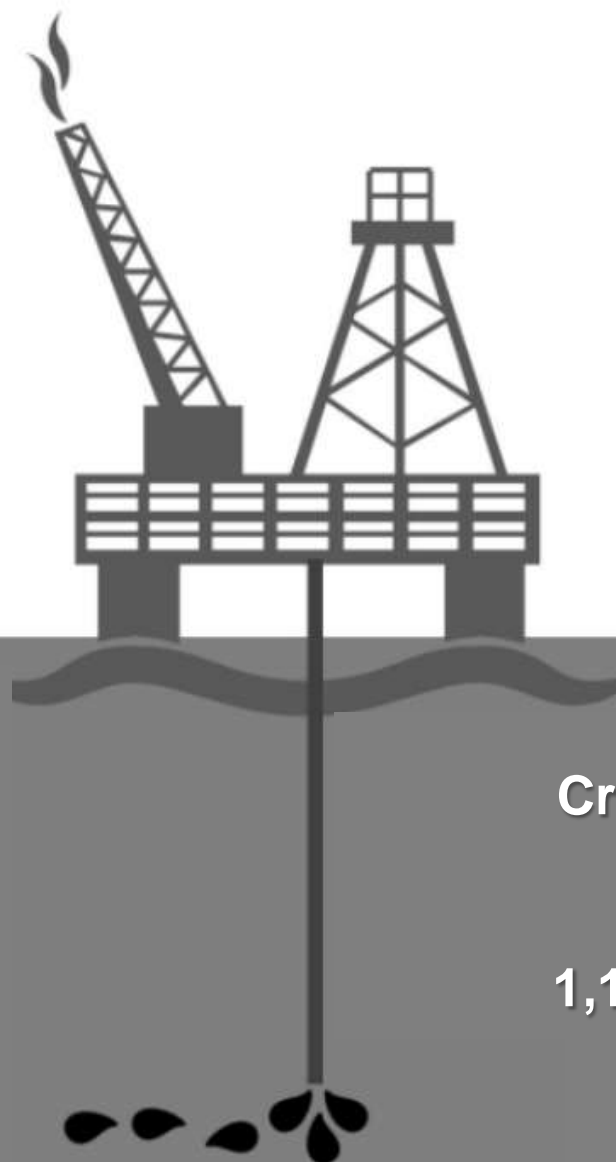
**2.6** million bbl/d  
**113** million m<sup>3</sup>/d

Oil Export  
(2000)

18,681 bbl/d

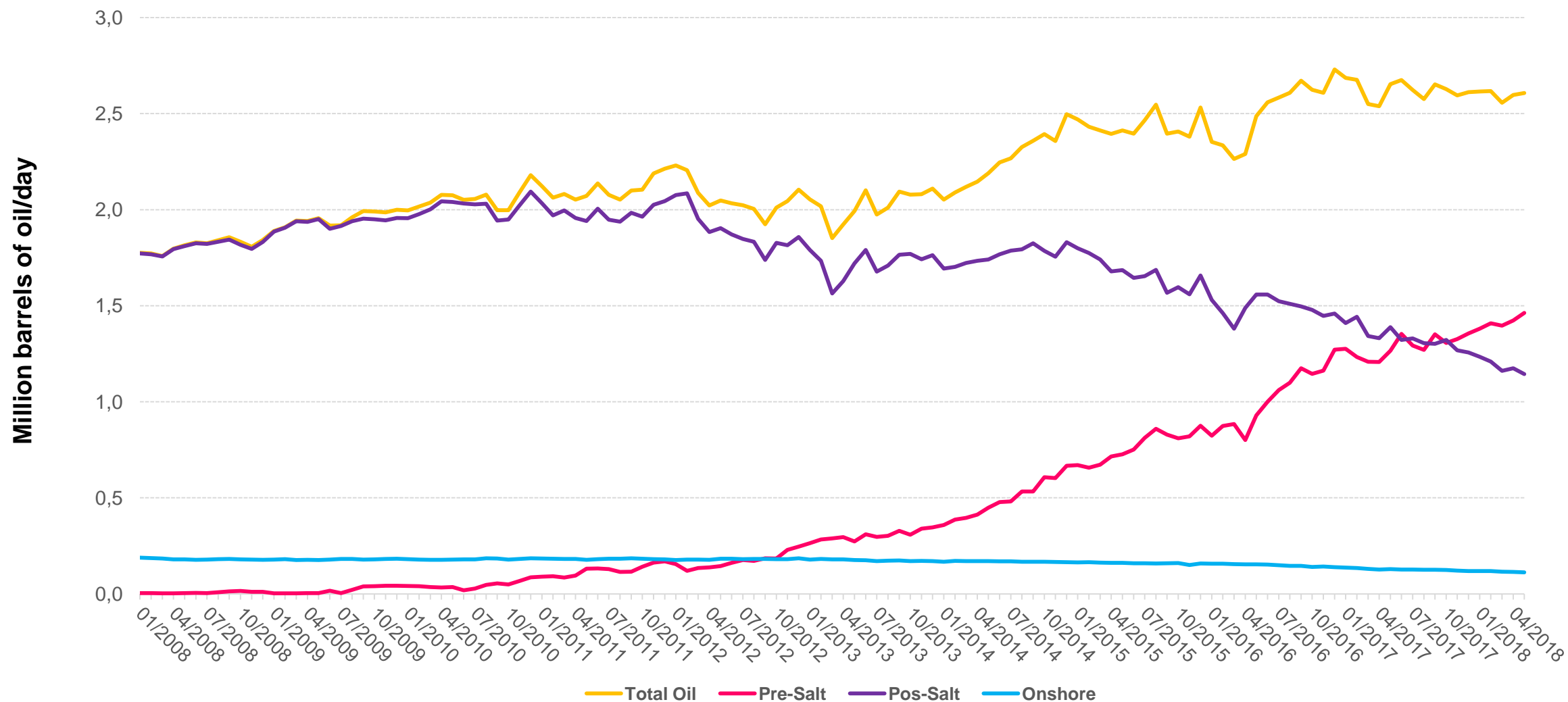
Crude Oil Export  
(2018)

1,12 million bbl/d





# Brazil's Current State





# Open Acreage Overview



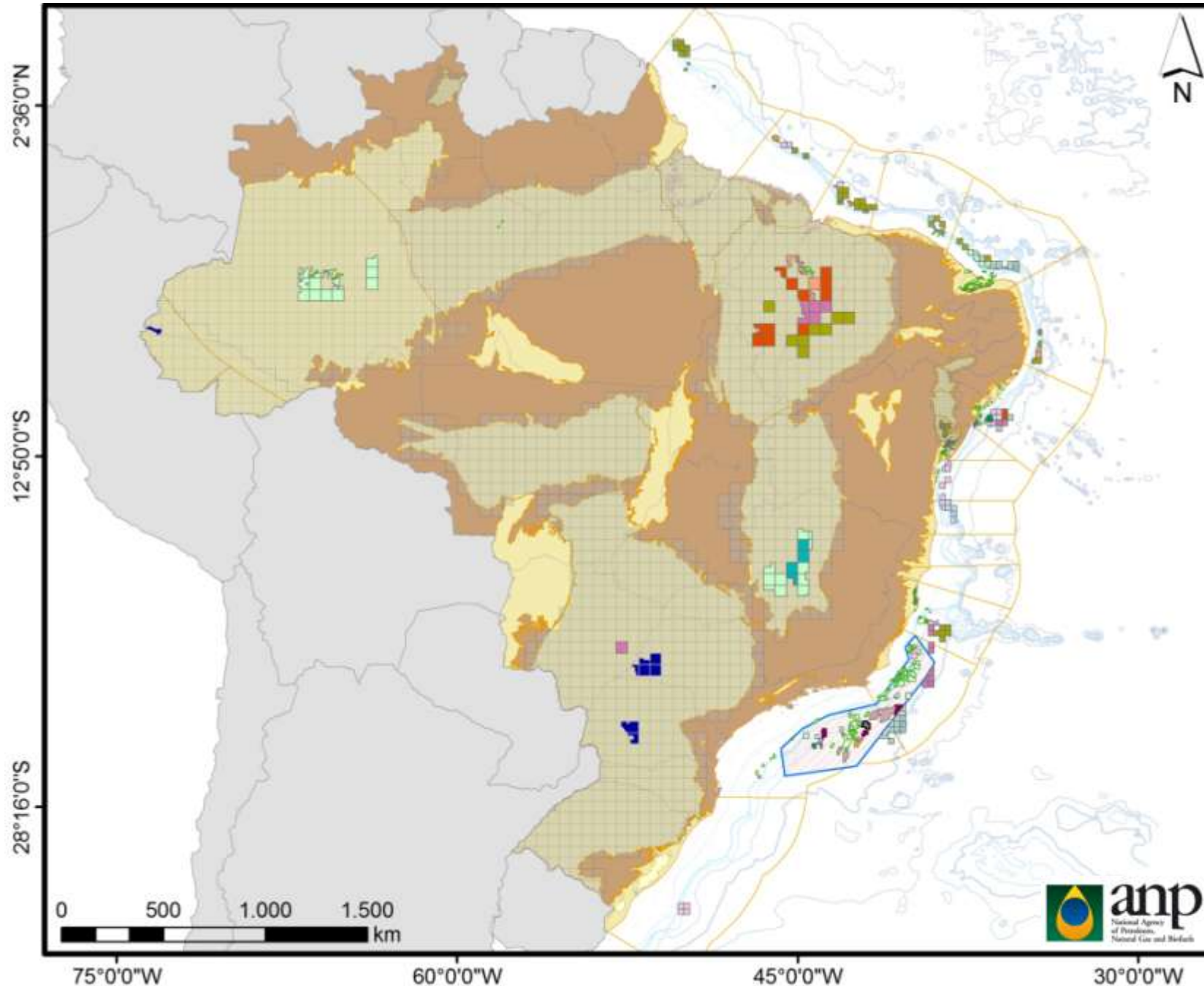
Continuous offer of blocks  
and mature fields.

Applications can be  
submitted anytime and  
not just at designated  
points.

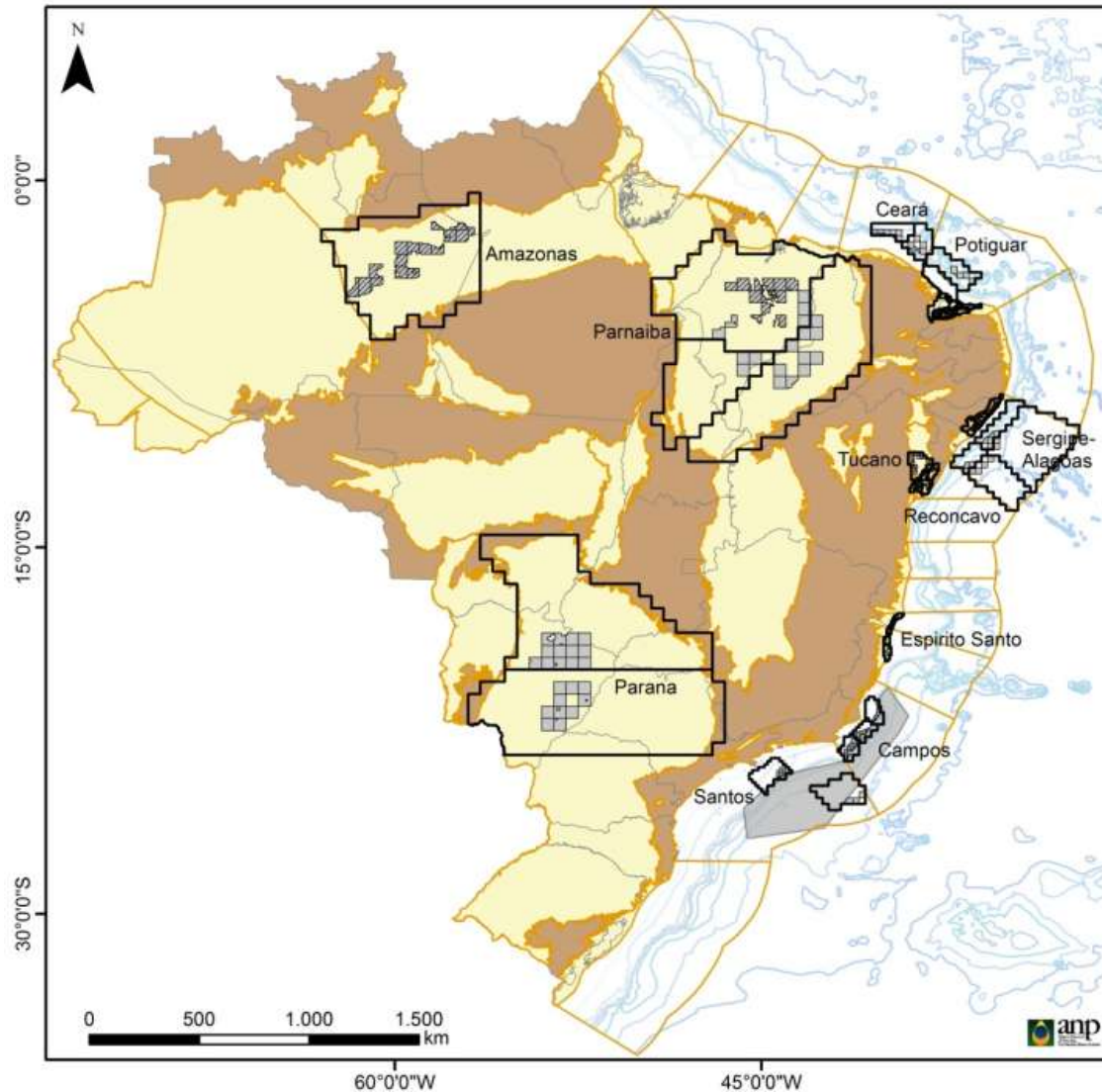


# Open Acreage

All the blocks in all the onshore basins are candidates to be included in the Open Acreage Process



# Open Acreage



**Area**  
230.040 km<sup>2</sup>

**14**  
Mature  
Fields

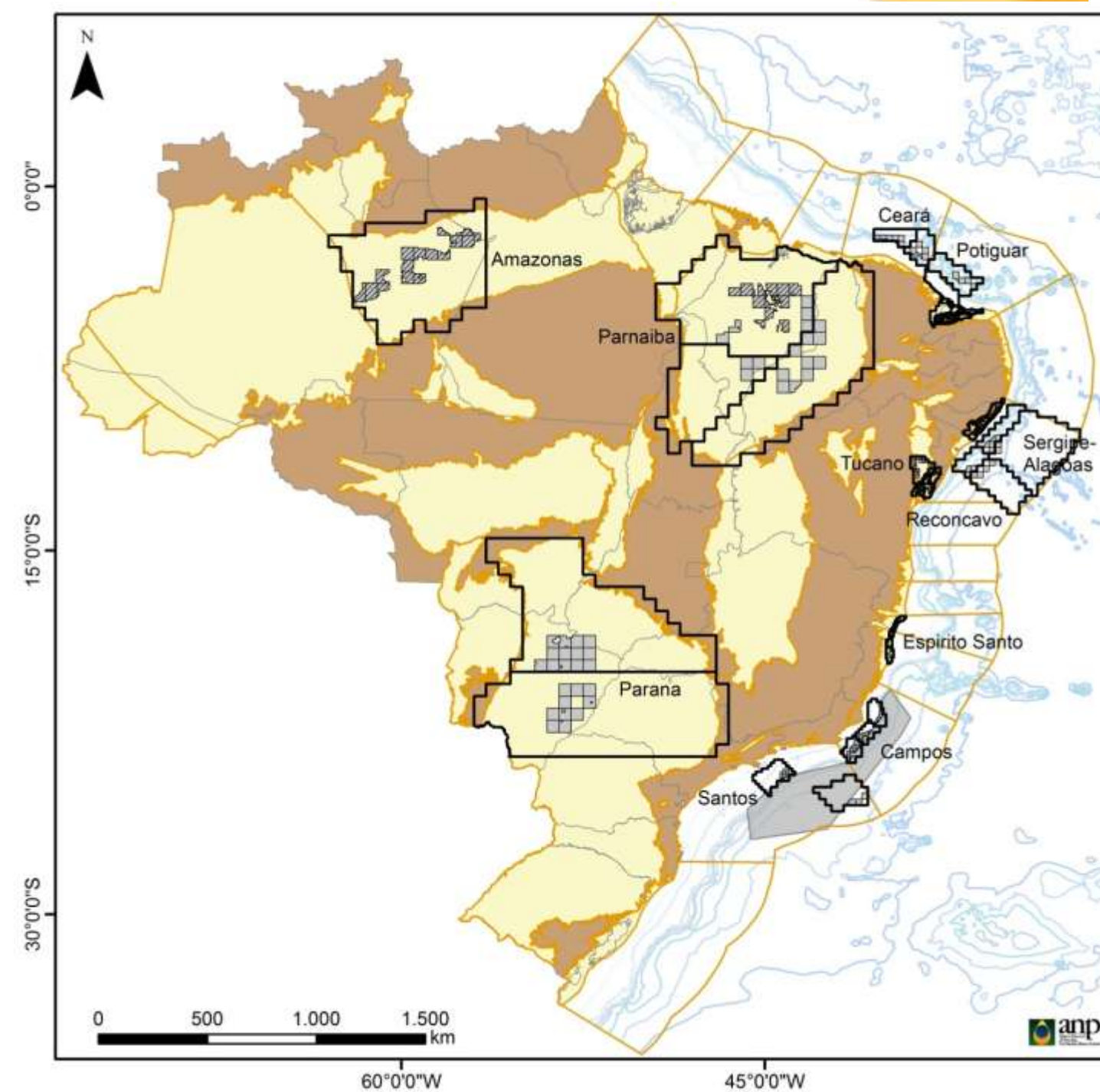
**616**  
Blocks

**13**  
Sedimentary  
Basins

**543** blocks in **8** onshore basins

**73** blocks in **5** offshore basins

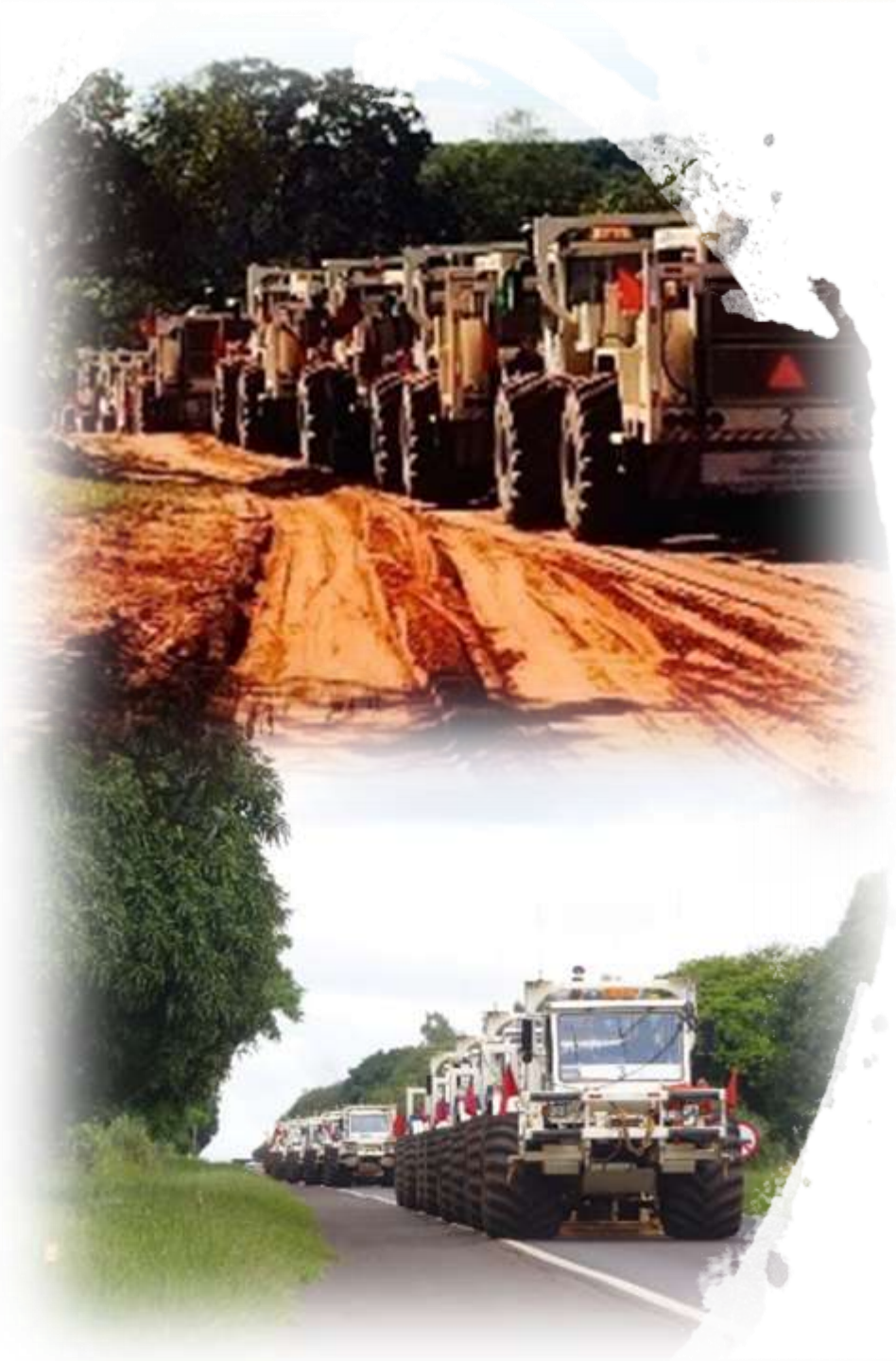




158 blocks are  
already available  
for nomination  
process

458 blocks are  
the target of the  
public audience





# **Geological and Geophysical ANP's Program**

# Geological and Geophysical ANP's Plan



This data acquisition program (PPA) was created to increase the knowledge of Brazilian sedimentary basins, specifically in the New Frontier areas.

The main goal is to gain knowledge about the petroleum potential, reduce exploratory risk and attract investors to enhance exploratory activities.

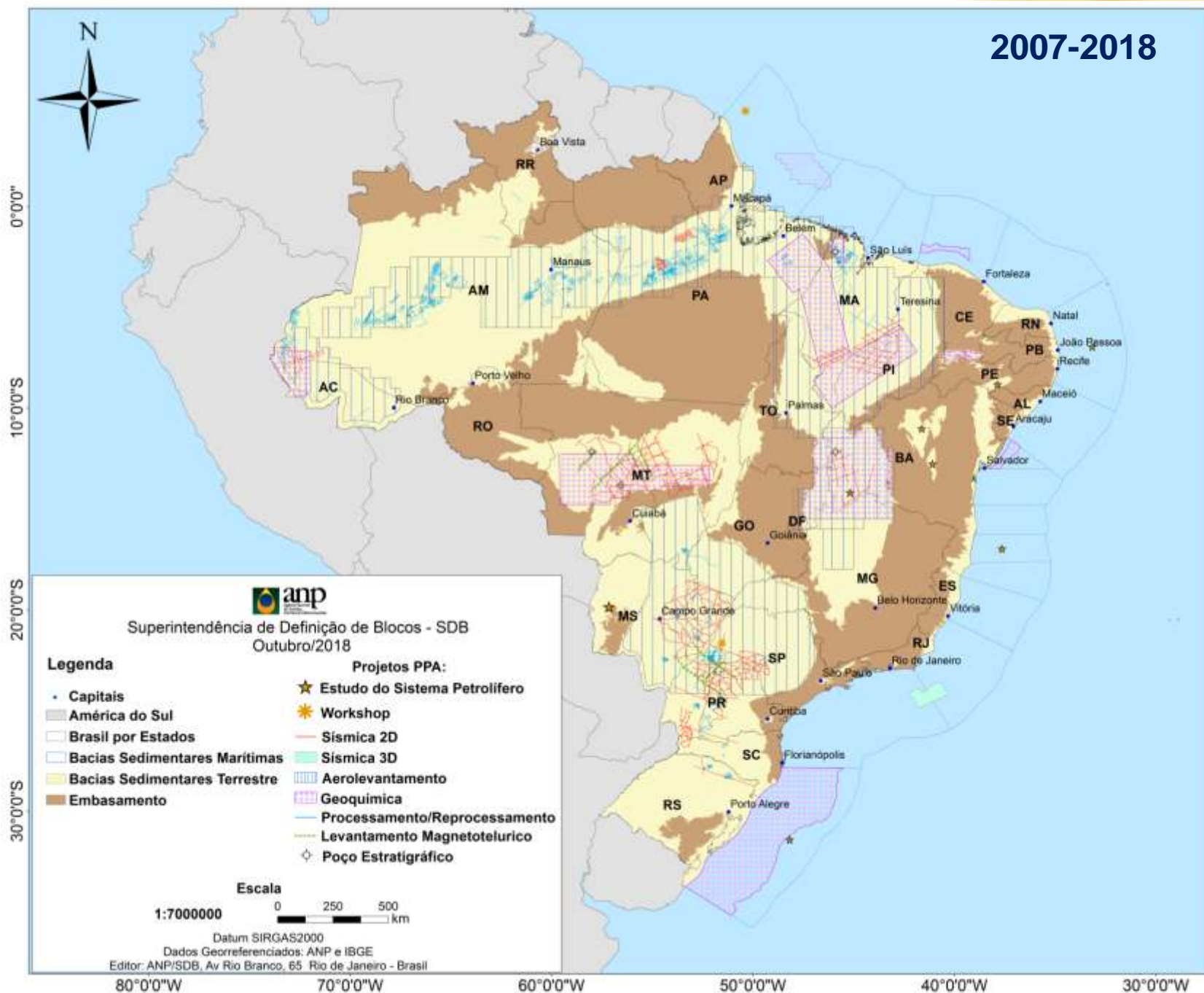
**Between 2007 and 2018  
R\$ 1.5 billion was invested.**



2007-2018

## R\$ 1,5 Billion Invested

- 833,000 linear kms of aero surveys (gravimetric and magnetometric data);
- 17,200 samples of soil (geochemical surveys);
- 4,000 sediment samples from the ocean floor; (Piston Core)
- 23,500 linear kms of 2D onshore seismic data;
- Processing of 42,000 km of old seismic data (pre-1998);
- 742 magnetotelluric data stations;
- 7 studies of petroleum systems;
- 4 stratigraphic wells





Open Acreage  
Onshore Blocks  
Geological Potential  
Paleozoic and Proterozoic  
Giant Basins



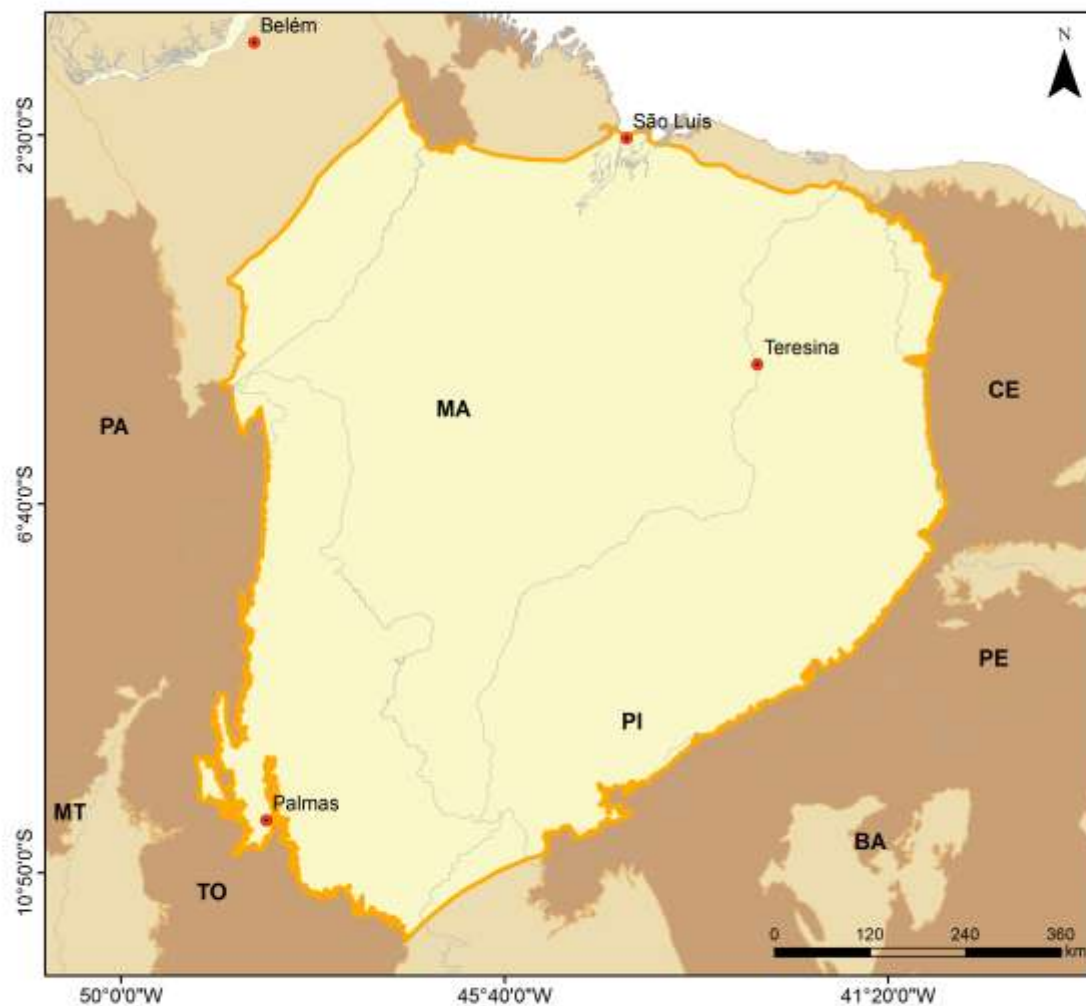
# Onshore New Frontier Basins



**Solimoes and Parnaiba** are the only new frontier producing basins in Brazil

Acre, Amazonas, Parana, Parecis and Sao Francisco are **gas prone basins**

# Parnaíba Basin



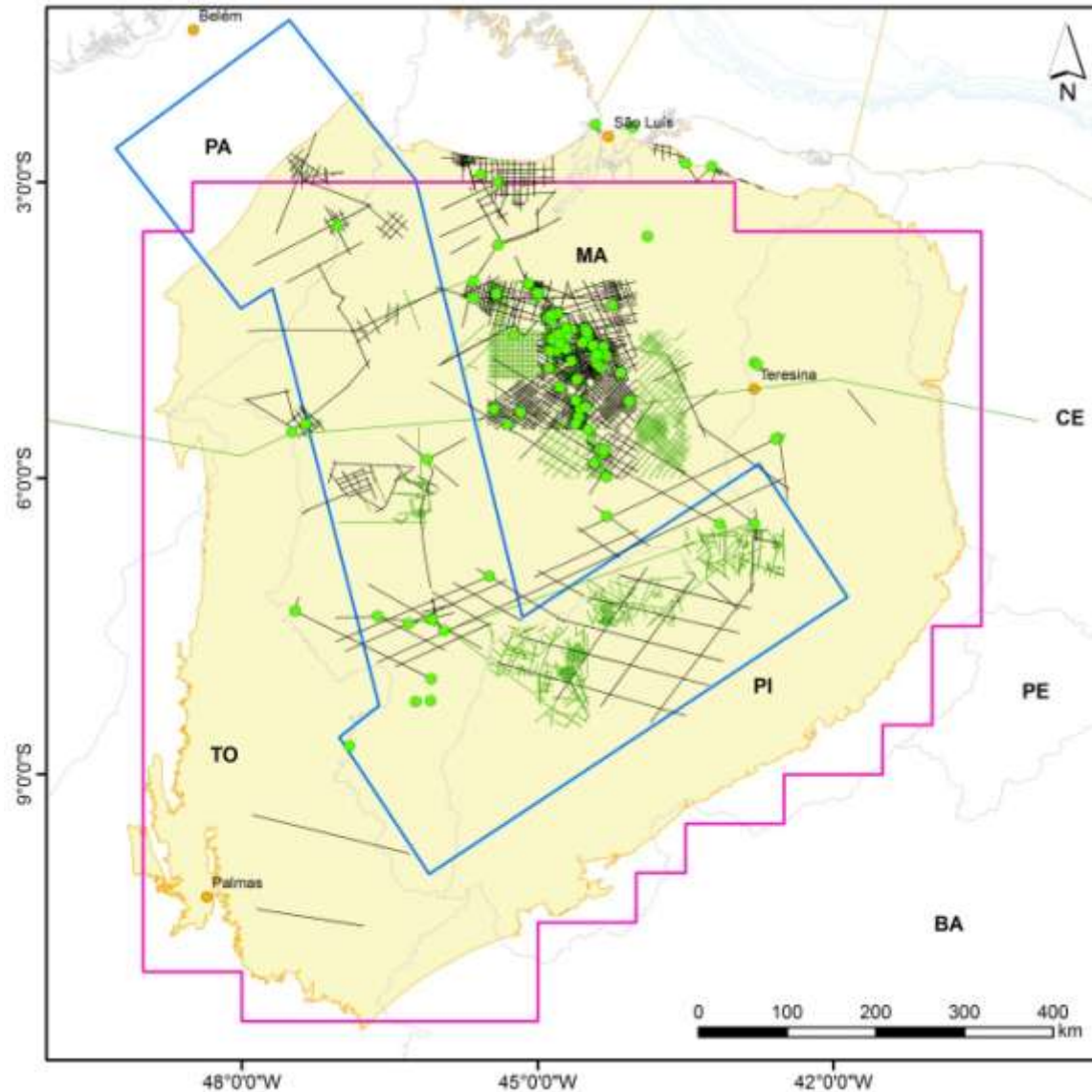
0 360

- Capital
- State Boundary
- Parnaíba Basin
- Sedimentary Basin
- Basement





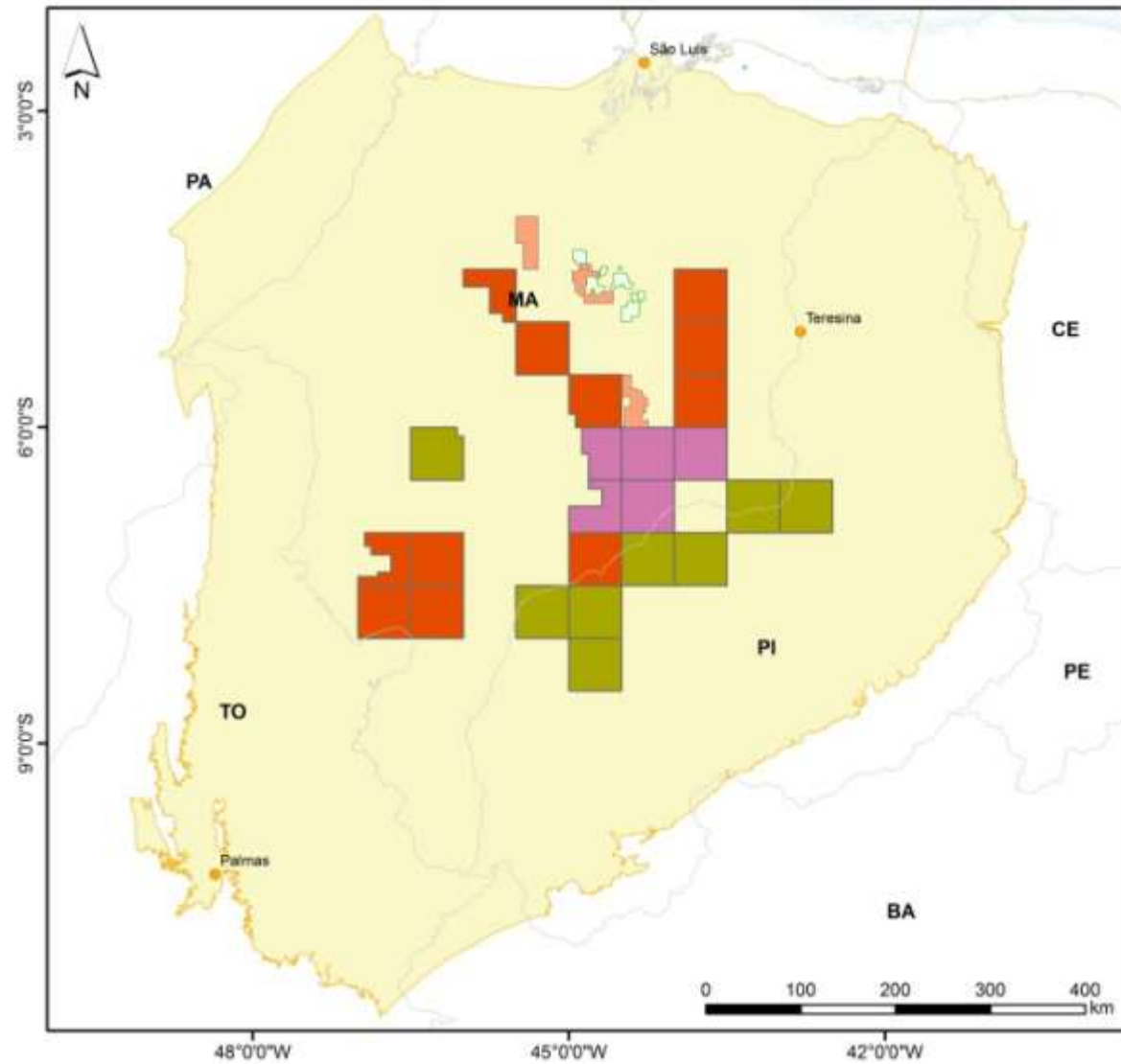
# Available Data - Parnaíba Basin



## Wells (117 Exploratory)

- 2D Public Seismic
- 2D Confidential Seismic
- Surface Geochemistry
- Geophysical Survey
- Exploratory Wells
- Sedimentary Basin

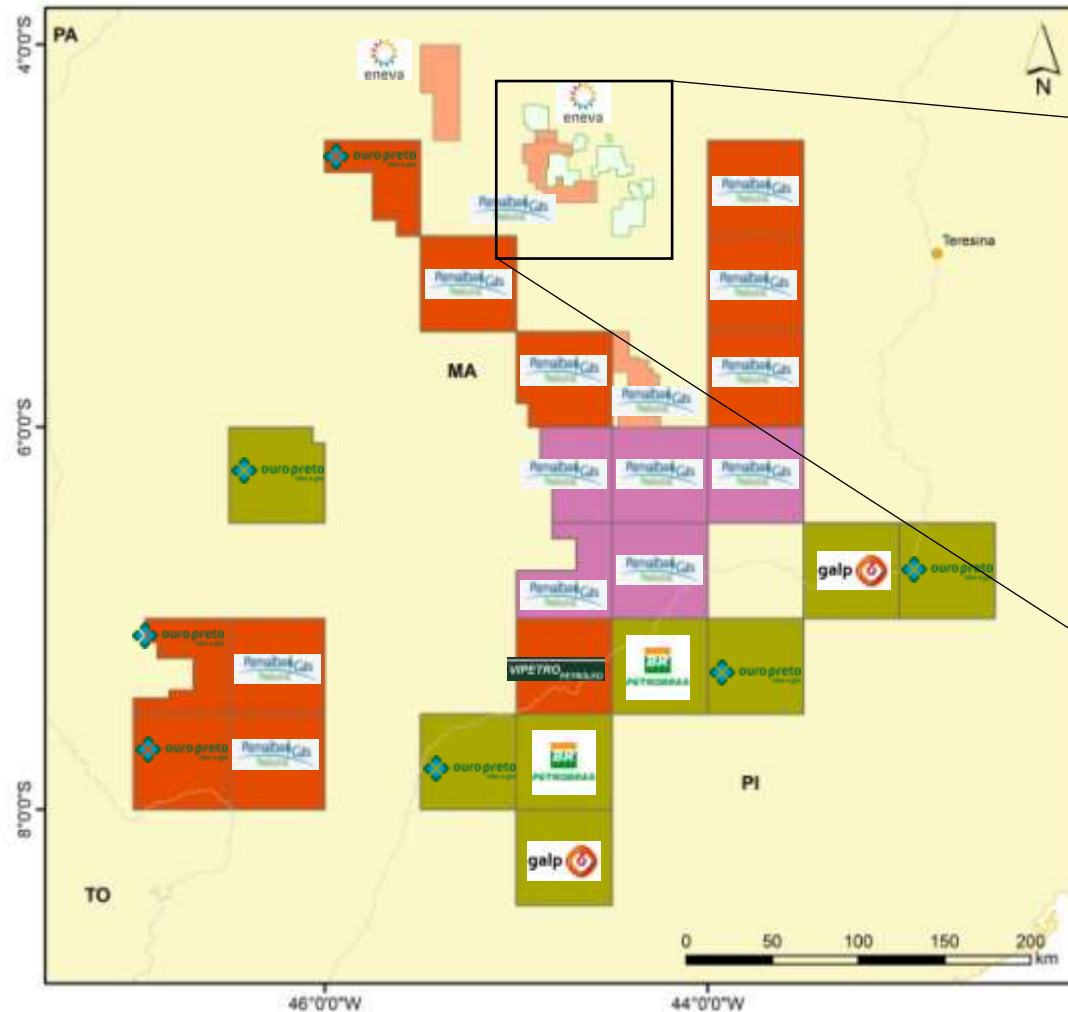
# Area Under Concession - Parnaíba Basin



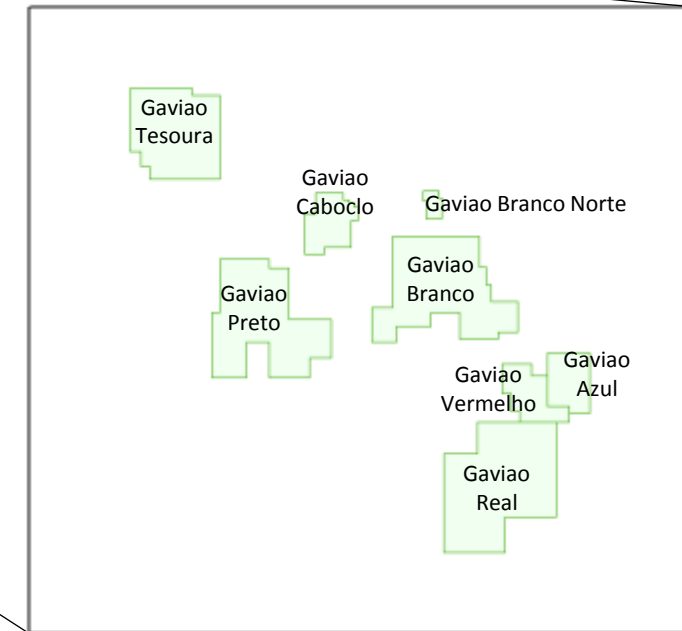
- Round 14
- Round 13
- Round 11
- Round 9
- Natural Gas Field
- Sedimentary Basin

# Area Under Concession - Parnaíba Basin

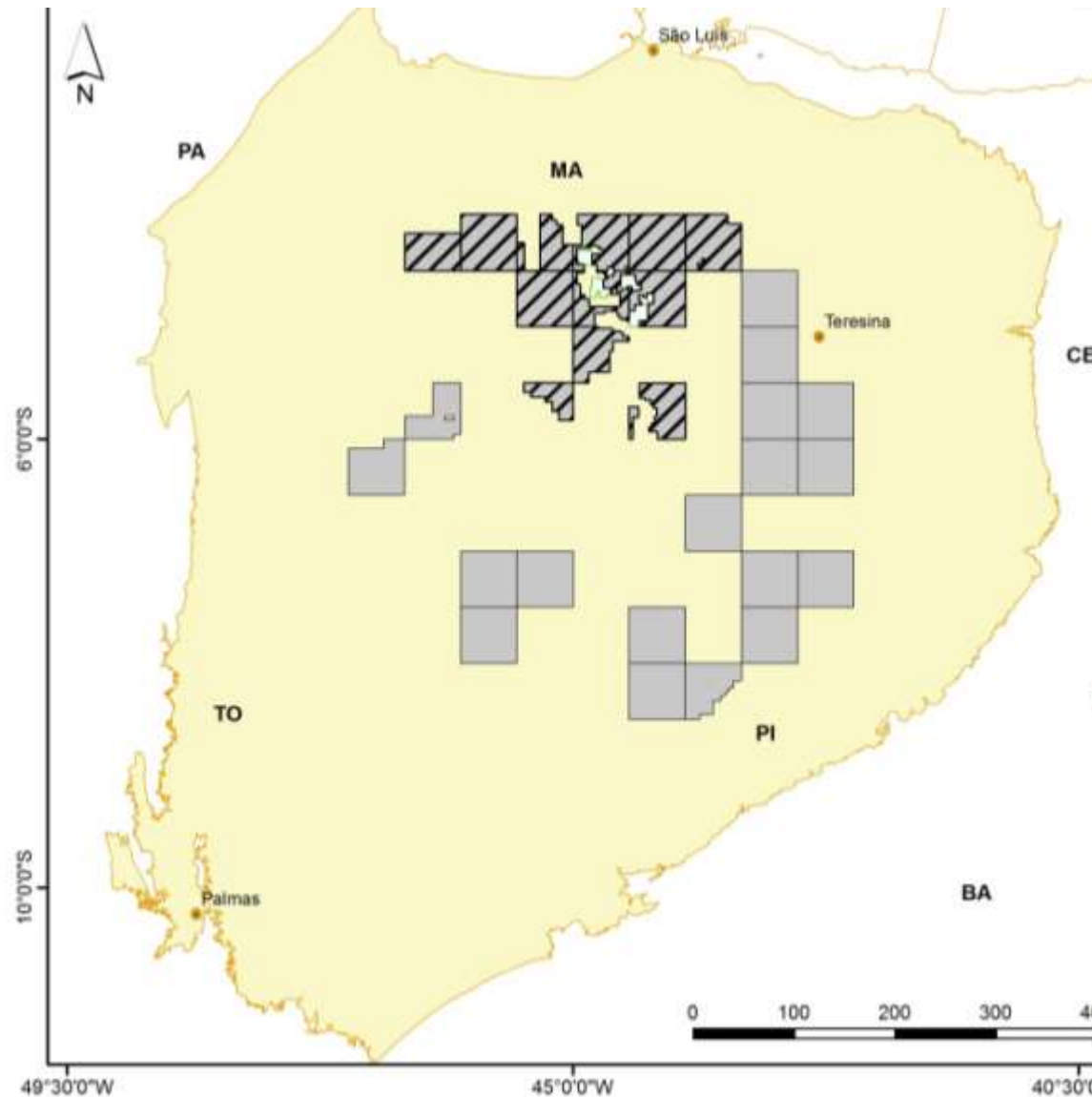
Area under concession  
~ 73,400 km<sup>2</sup>



Natural Gas Production:  
~ 3,9 million m<sup>3</sup>/d (2018)



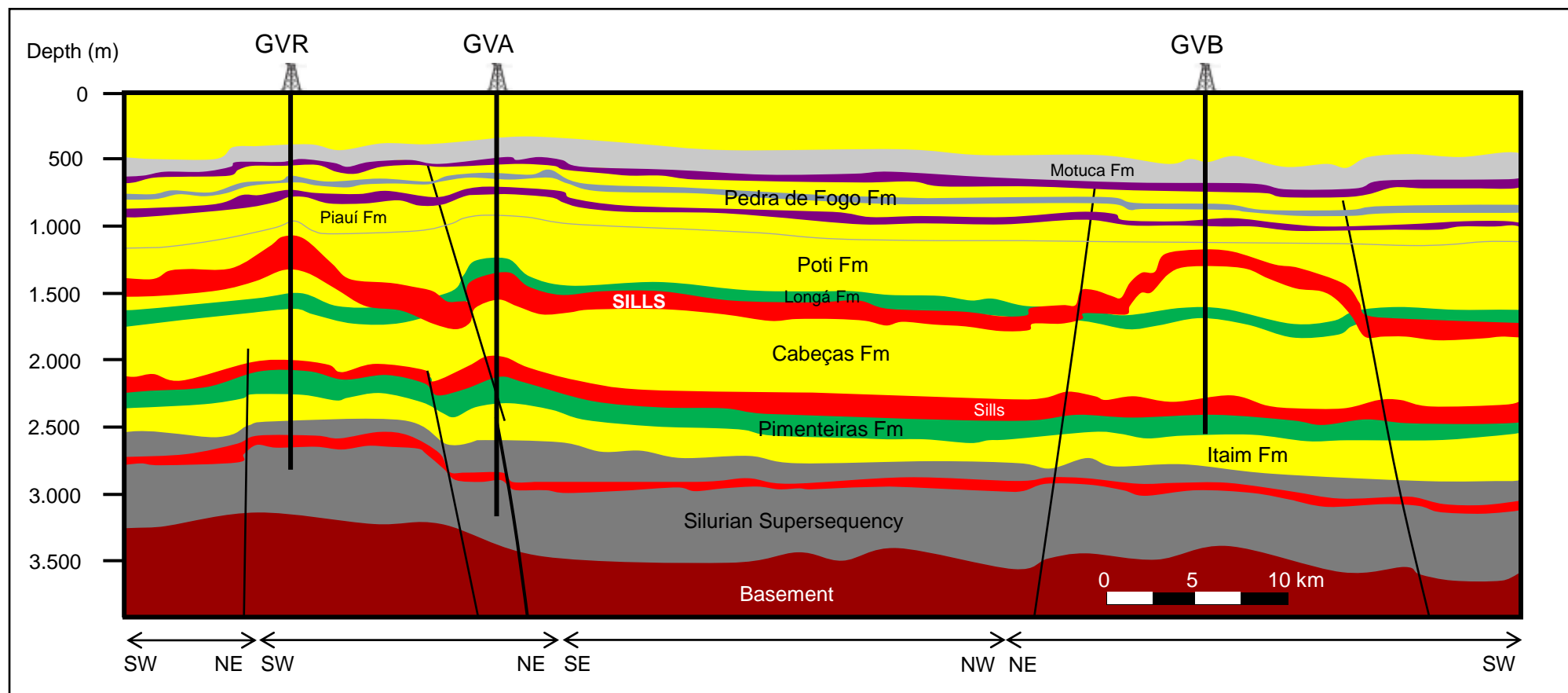
# Parnaíba Basin Open Acreage



- Open Acreage – 18 Blocks Already Available
- Open Acreage – 12 Block on Public Audience
- Natural Gas Field
- Sedimentary Basin

# Accumulation Model

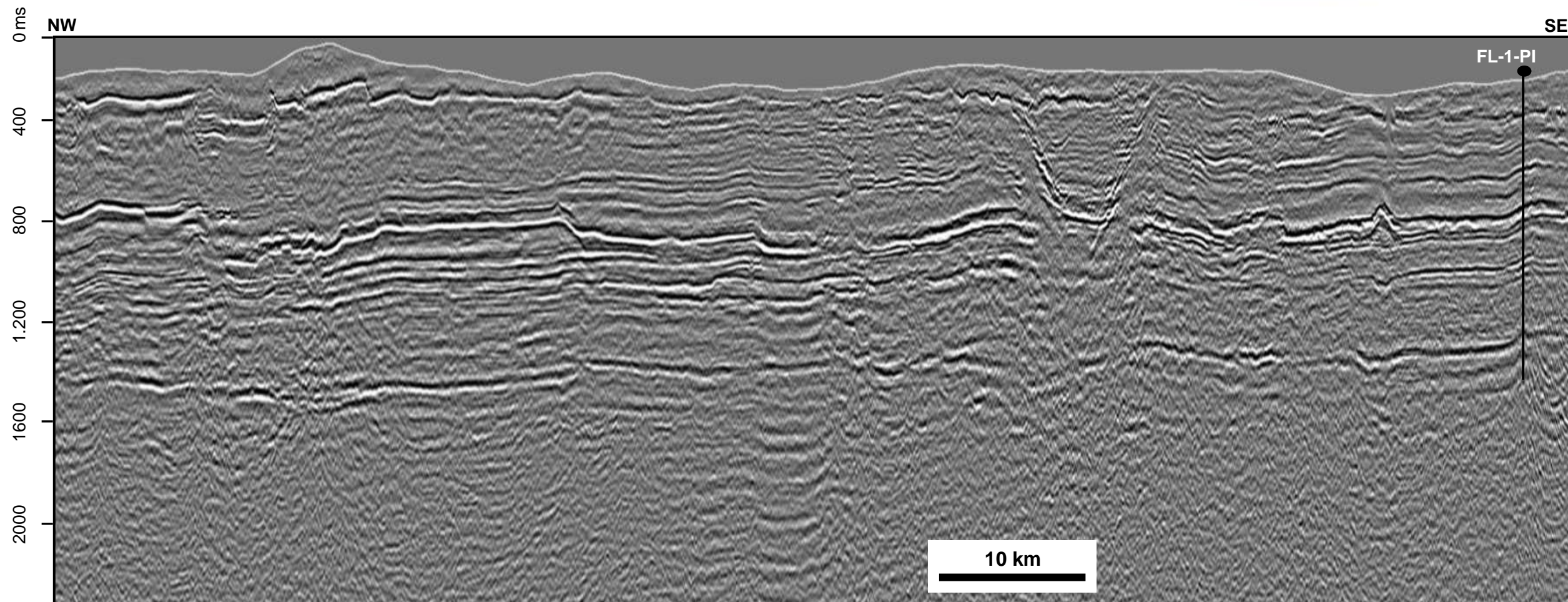
## Gavioes Cluster – Parnaíba Basin



Source: Cunha *et al.*, 2012



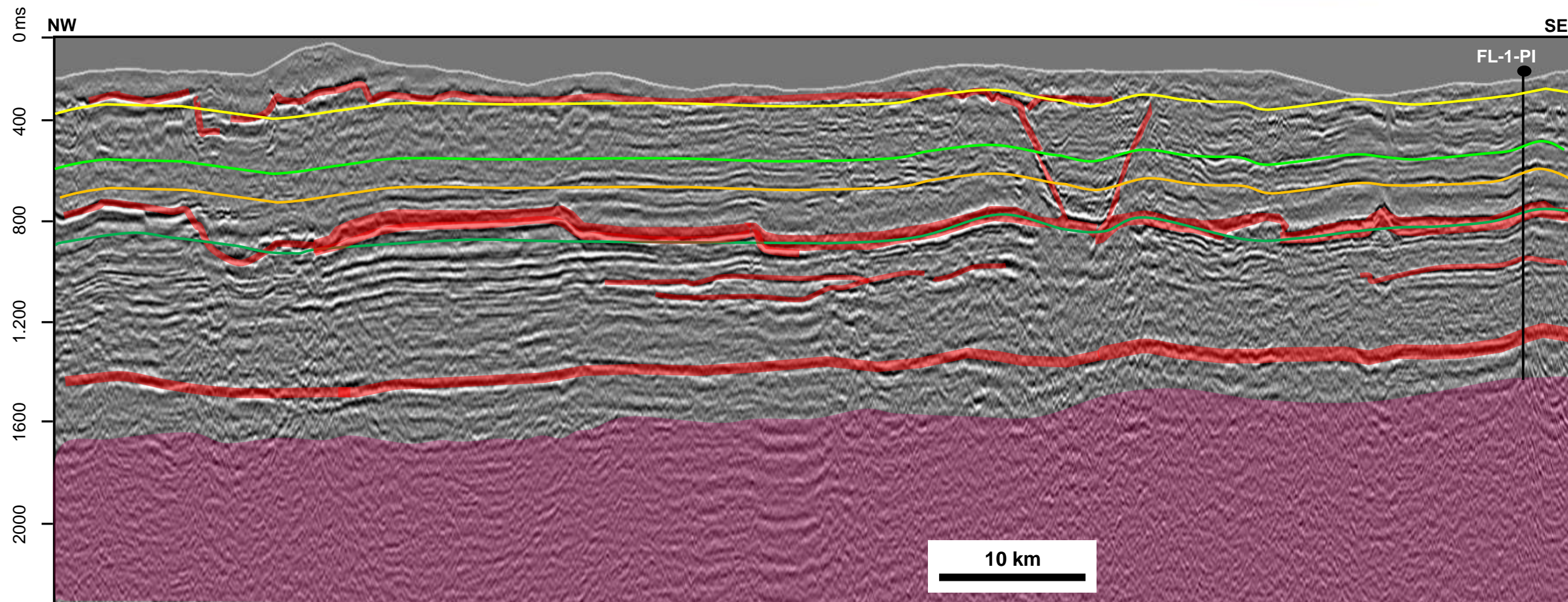
# Leads – Parnaíba Basin



Line 0317-0113 / Survey 0317\_ANP\_BACIA\_DO\_PARNAIBA



# Leads – Parnaíba Basin



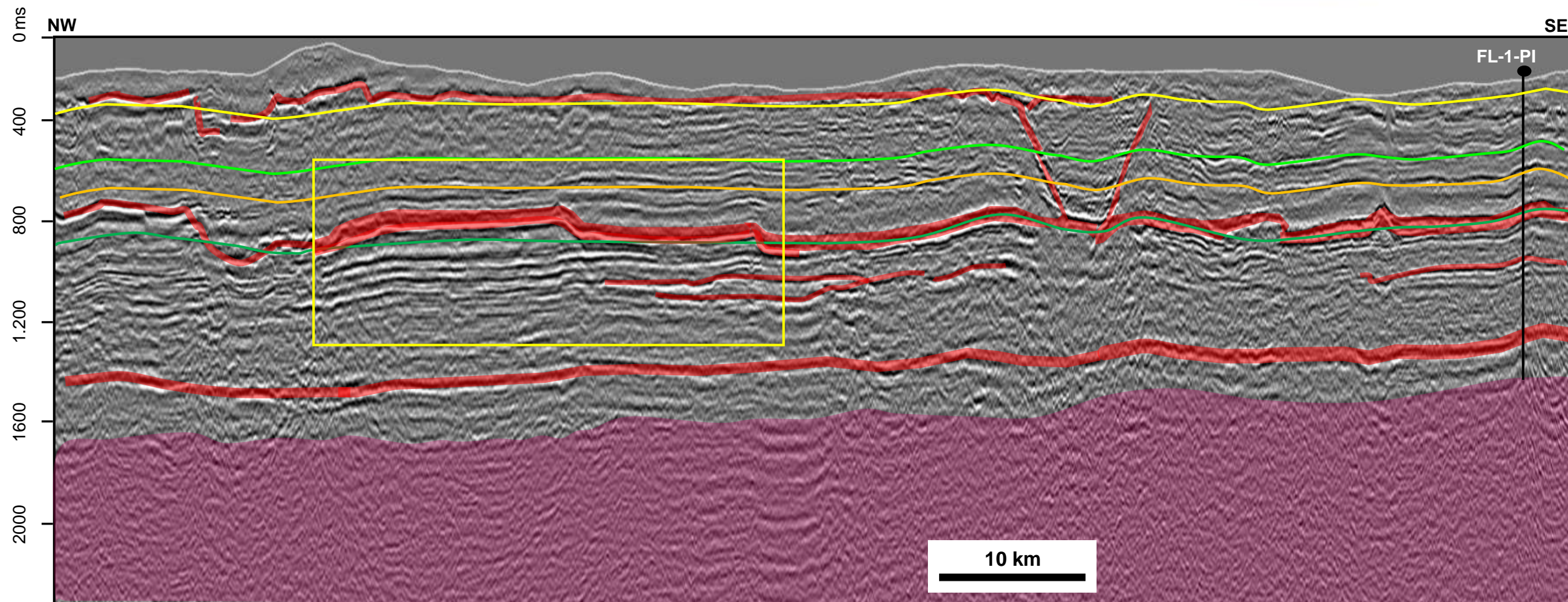
Line 0317-0113 / Survey 0317\_ANP\_BACIA\_DO\_PARNAIBA

- Top of Poti Fm
- Top of Longa Fm
- Top of Cabecas Fm
- Top of Pimenteiras Fm

- Sill
- Basement



# Leads – Parnaíba Basin



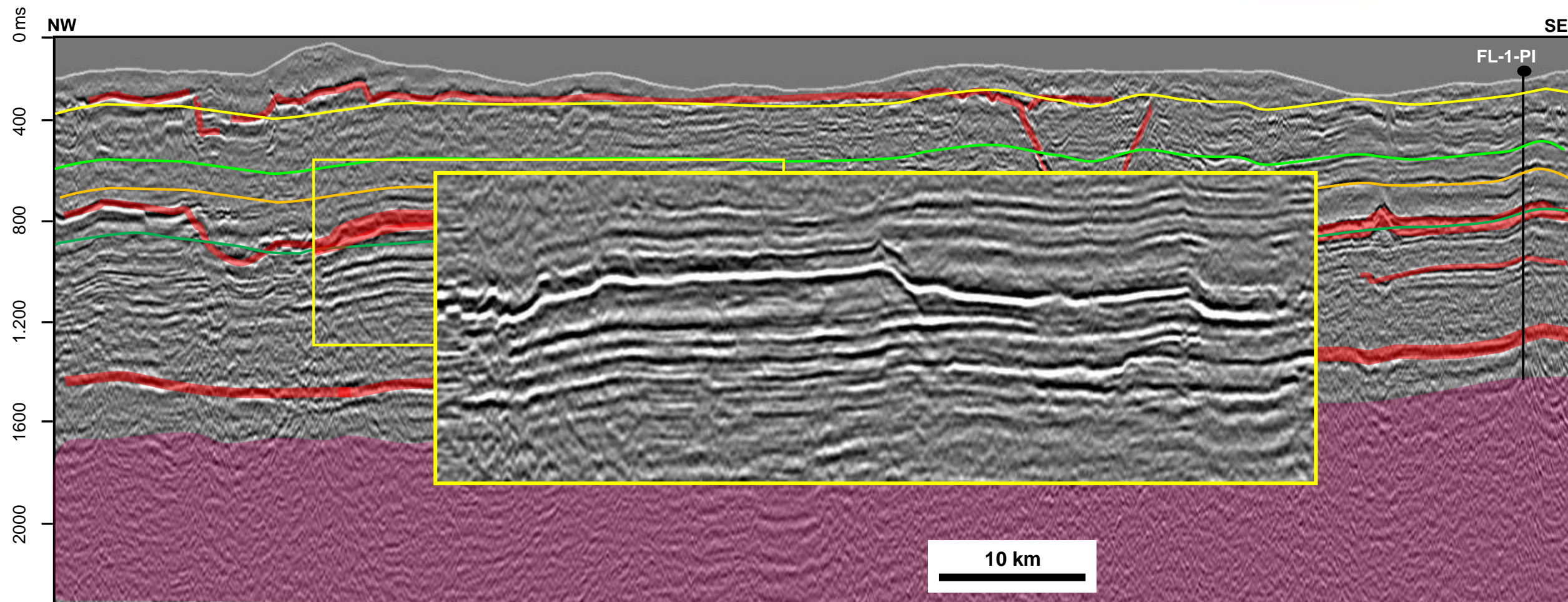
Line 0317-0113 / Survey 0317\_ANP\_BACIA\_DO\_PARNAIBA

- Top of Poti Fm
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- Sill
- Basement



# Leads – Parnaíba Basin



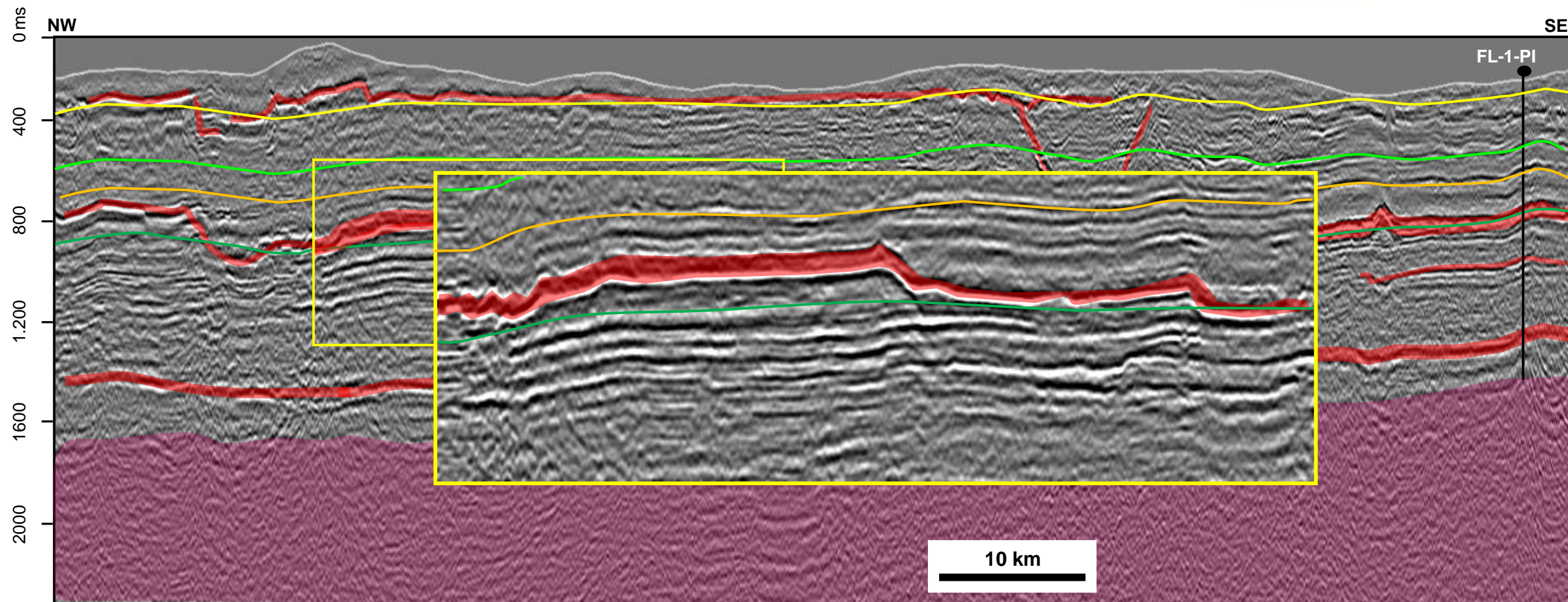
Line 0317-0113 / Survey 0317\_ANP\_BACIA\_DO\_PARNAIBA

- Top of Poti Fm
- Top of Longa Fm
- Top of Cabeças Fm
- Top of Pimenteiras Fm

- Sill
- Basement



# Leads – Parnaíba Basin



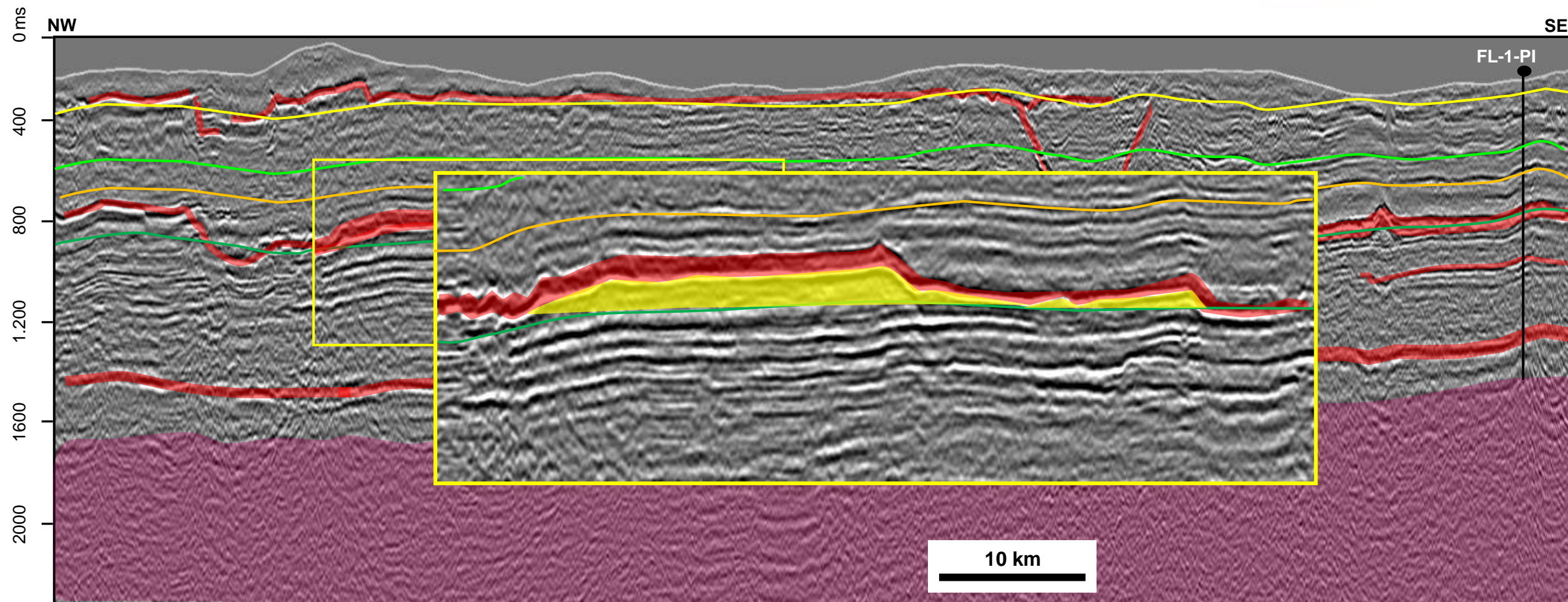
Line 0317-0113 / Survey 0317\_ANP\_BACIA\_DO\_PARNAIBA

- Top of Poti Fm
- Top of Longa Fm
- Top of Cabeças Fm
- Top of Pimenteiras Fm

- Sill
- Basement



# Leads – Parnaíba Basin

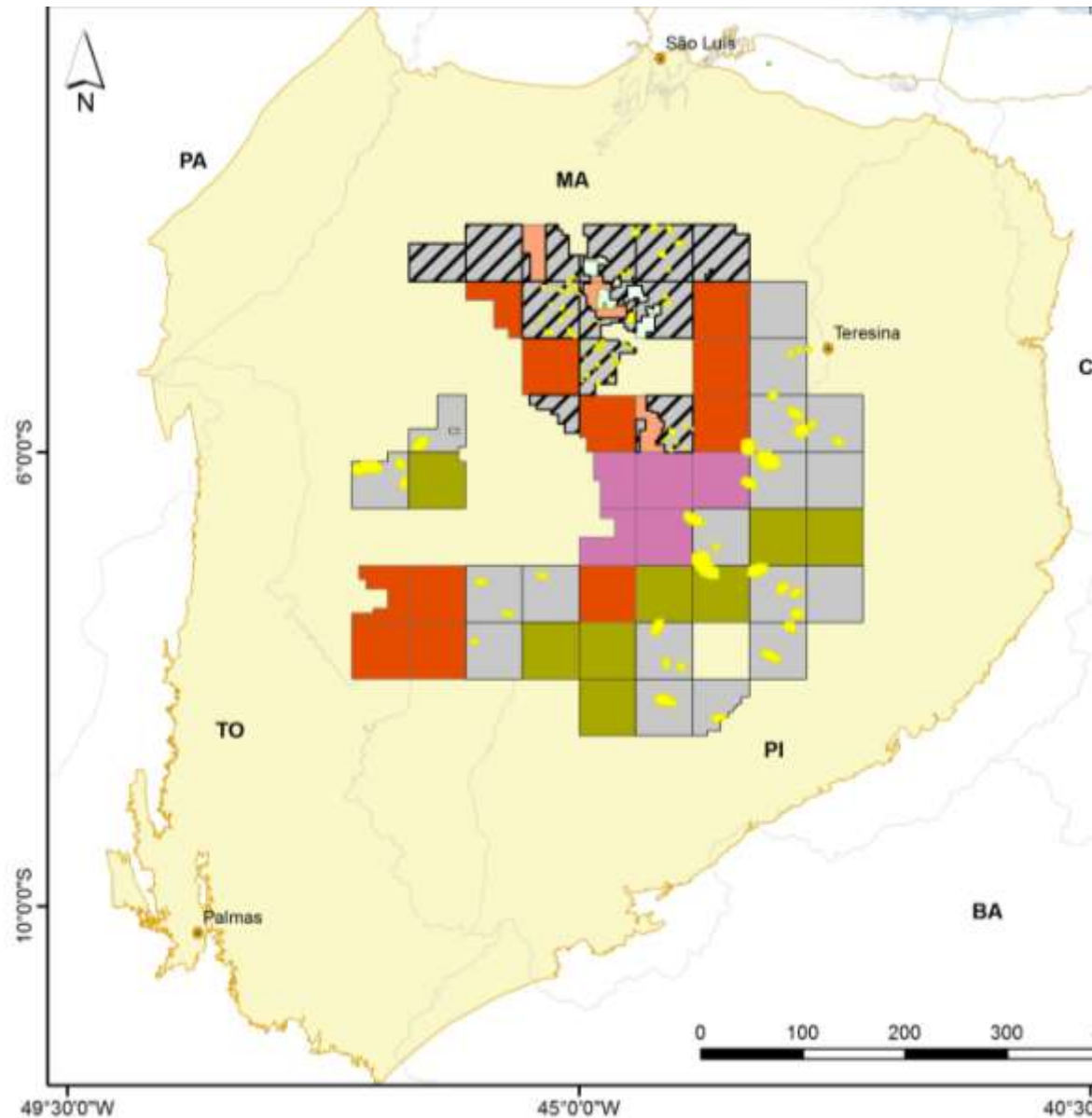


Line 0317-0113 / Survey 0317\_ANP\_BACIA\_DO\_PARNAIBA

- Top of Poti Fm
- Top of Longa Fm
- Top of Cabeças Fm
- Top of Pimenteiras Fm

- Sill
- Basement
- Lead

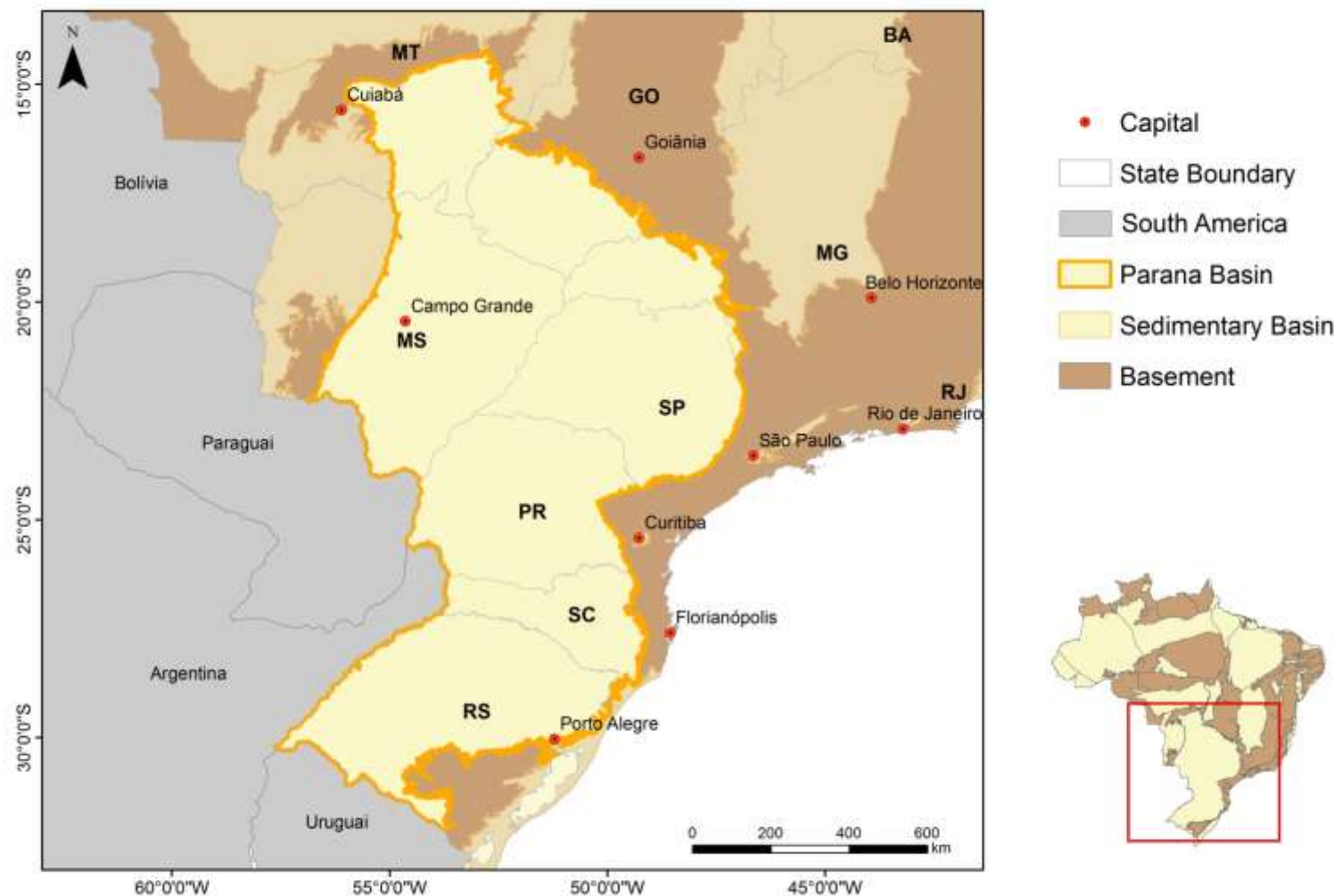
# Parnaíba Basin - Open Acreage



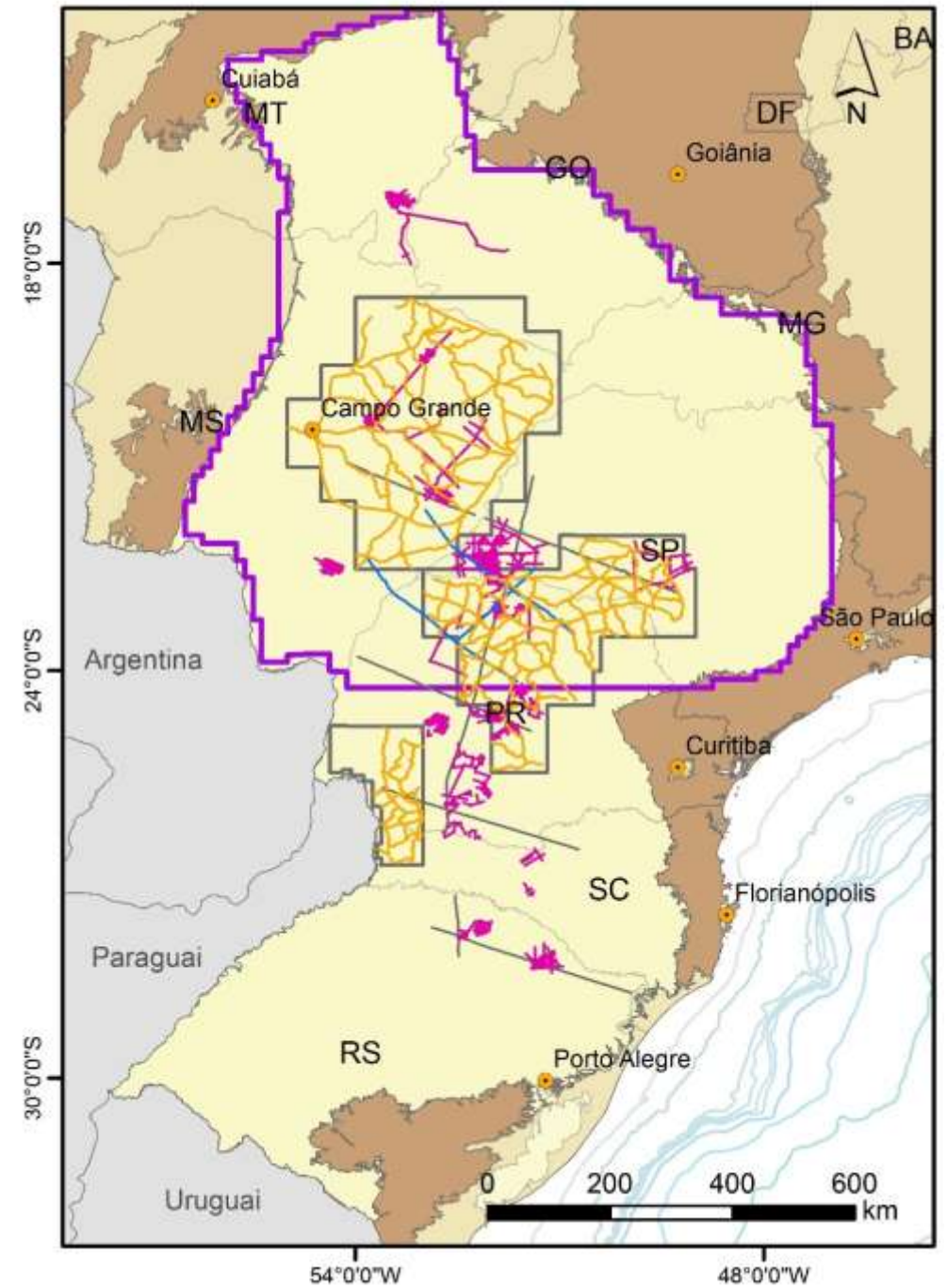
- Round 14
- Round 13
- Round 11
- Round 9
- Natural Gas Field
- Sedimentary Basin
- Open Acreage – Public Audience
- Open Acreage – Already Available Blocks
- Leads



# Parana Basin

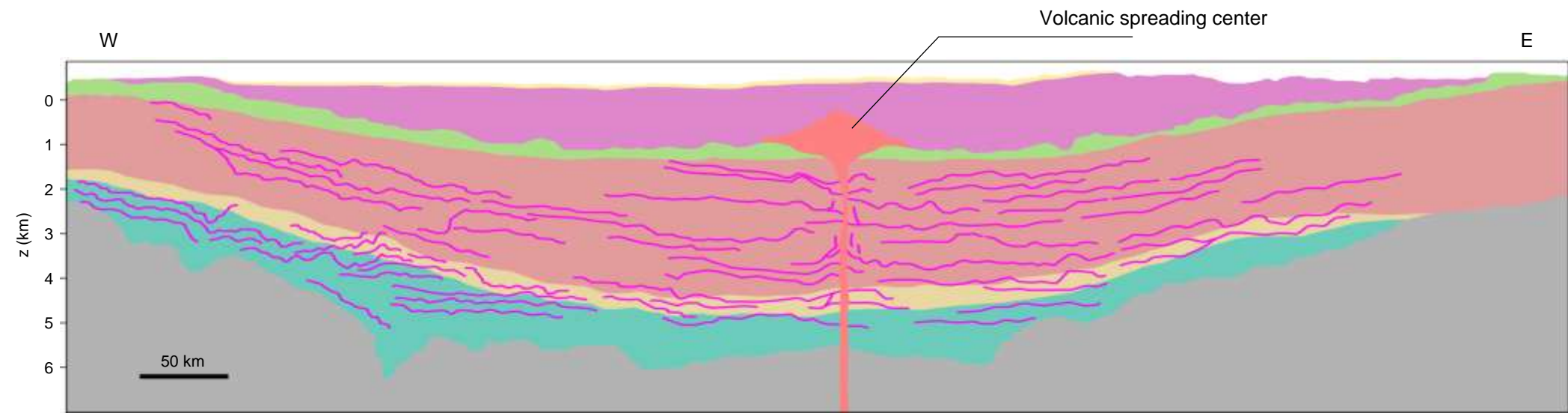
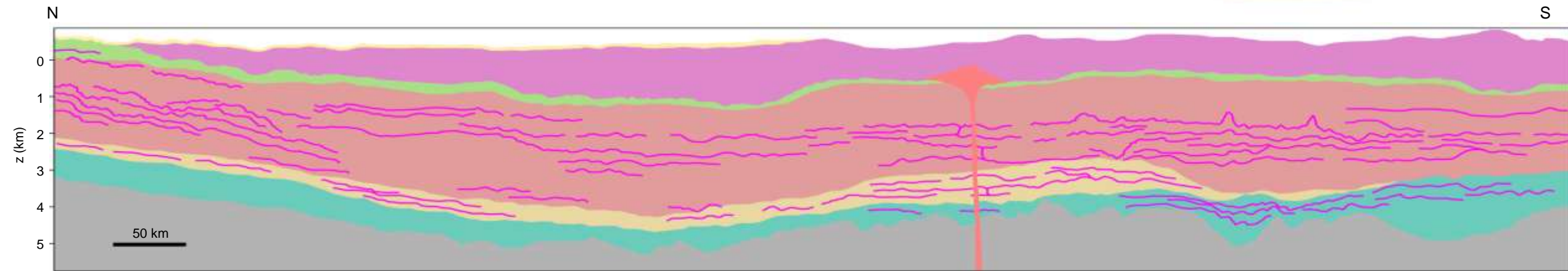


# ANP's Investments in the Parana Basin

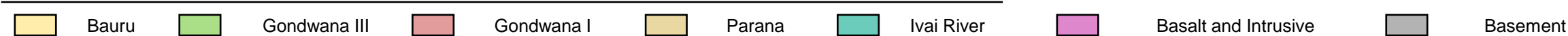




# Schematic Geological Section - Parana Basin

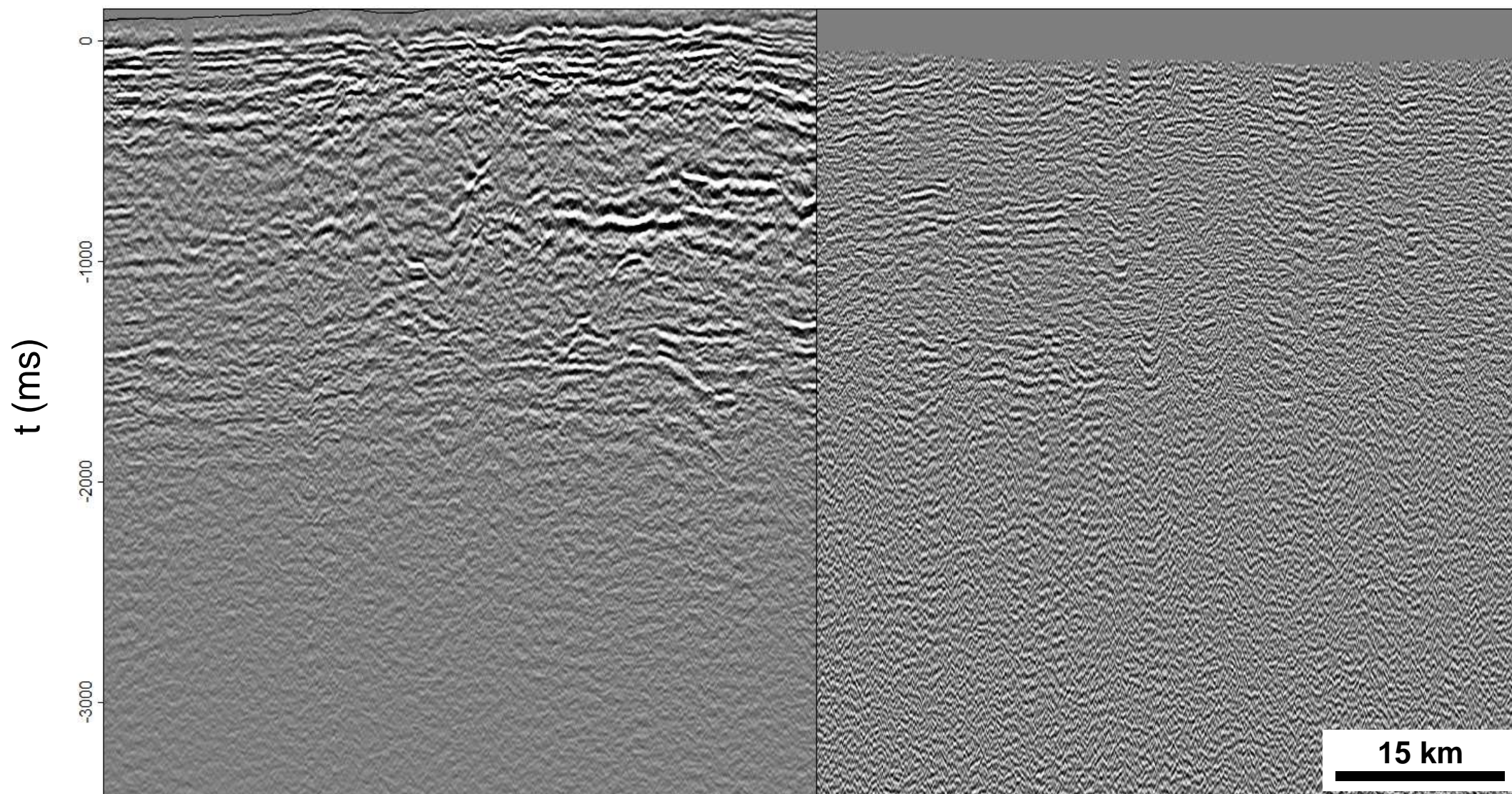


Supersequences





# Seismic Survey Comparison

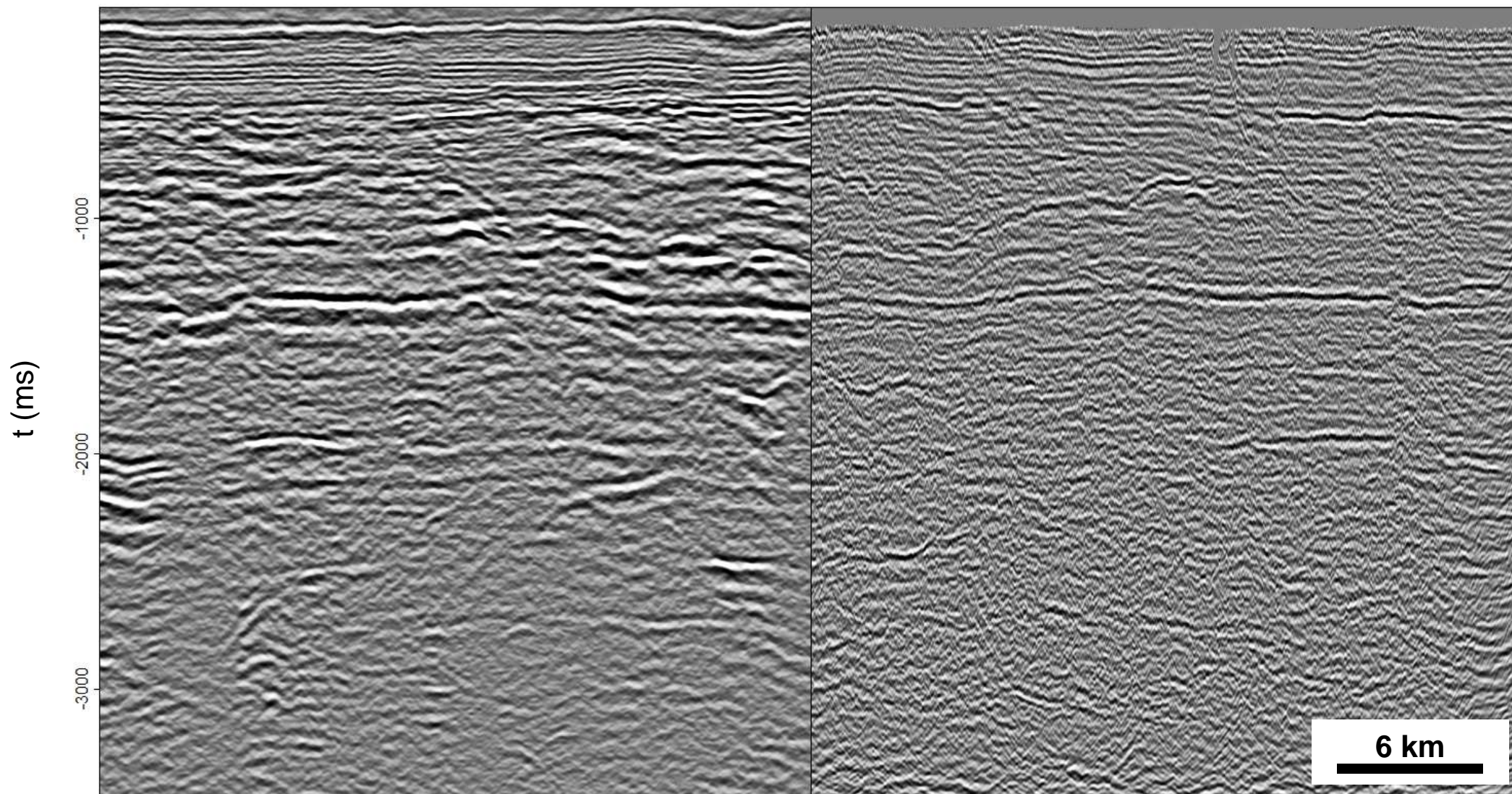


Survey 0319\_2D\_VIBROSEIS\_ANP\_PARANA

Survey 0077\_PARANA\_51\_PSTM\_FOMENTO  
reprocessing in 2015



# Seismic Survey Comparison

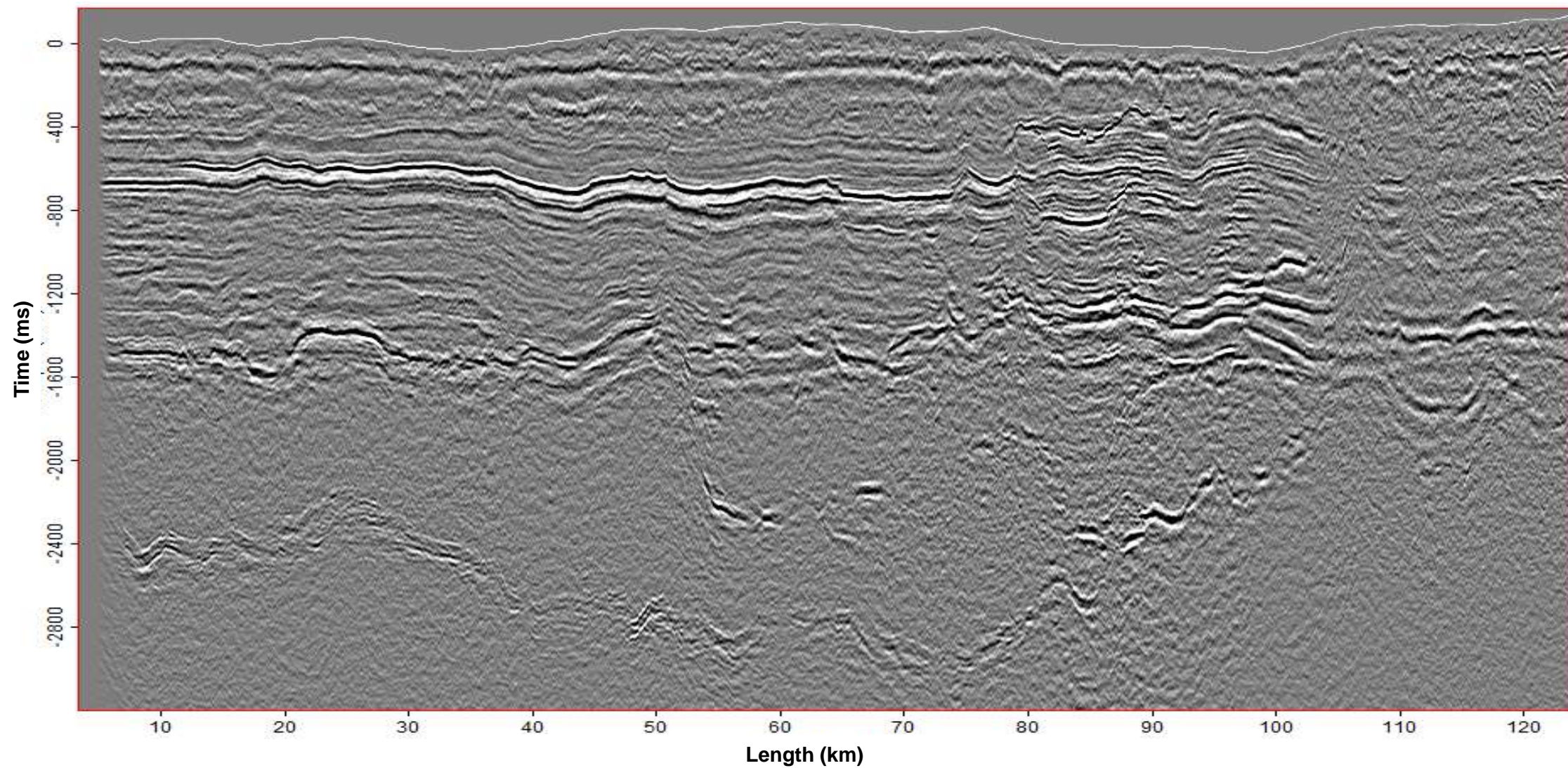


Survey 0319\_2D\_VIBROSEIS\_ANP\_PARANA

Survey 0065\_PARANA\_51\_PSTM\_FOMENTO  
reprocessing in 2015

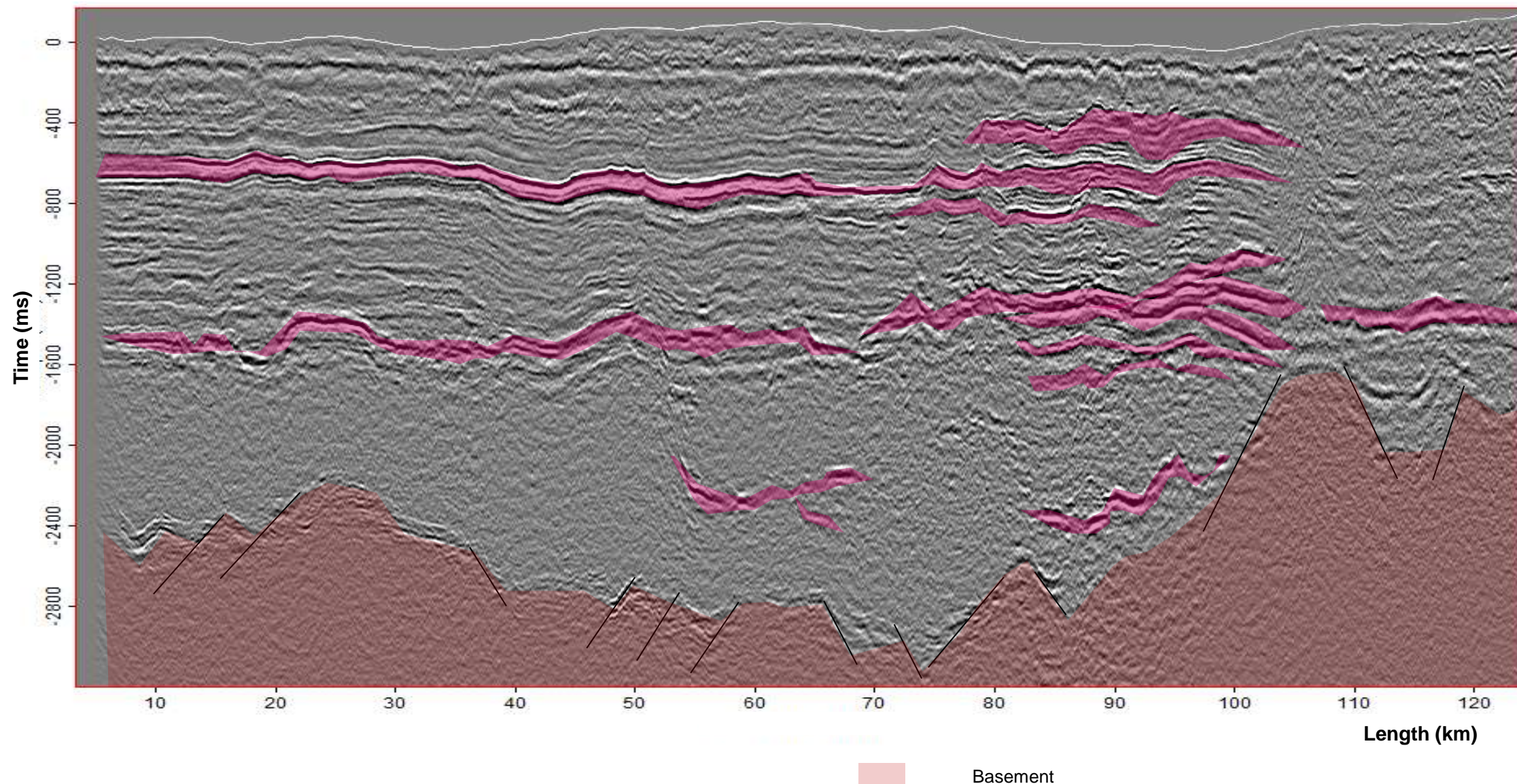


# Leads – Parana Basin



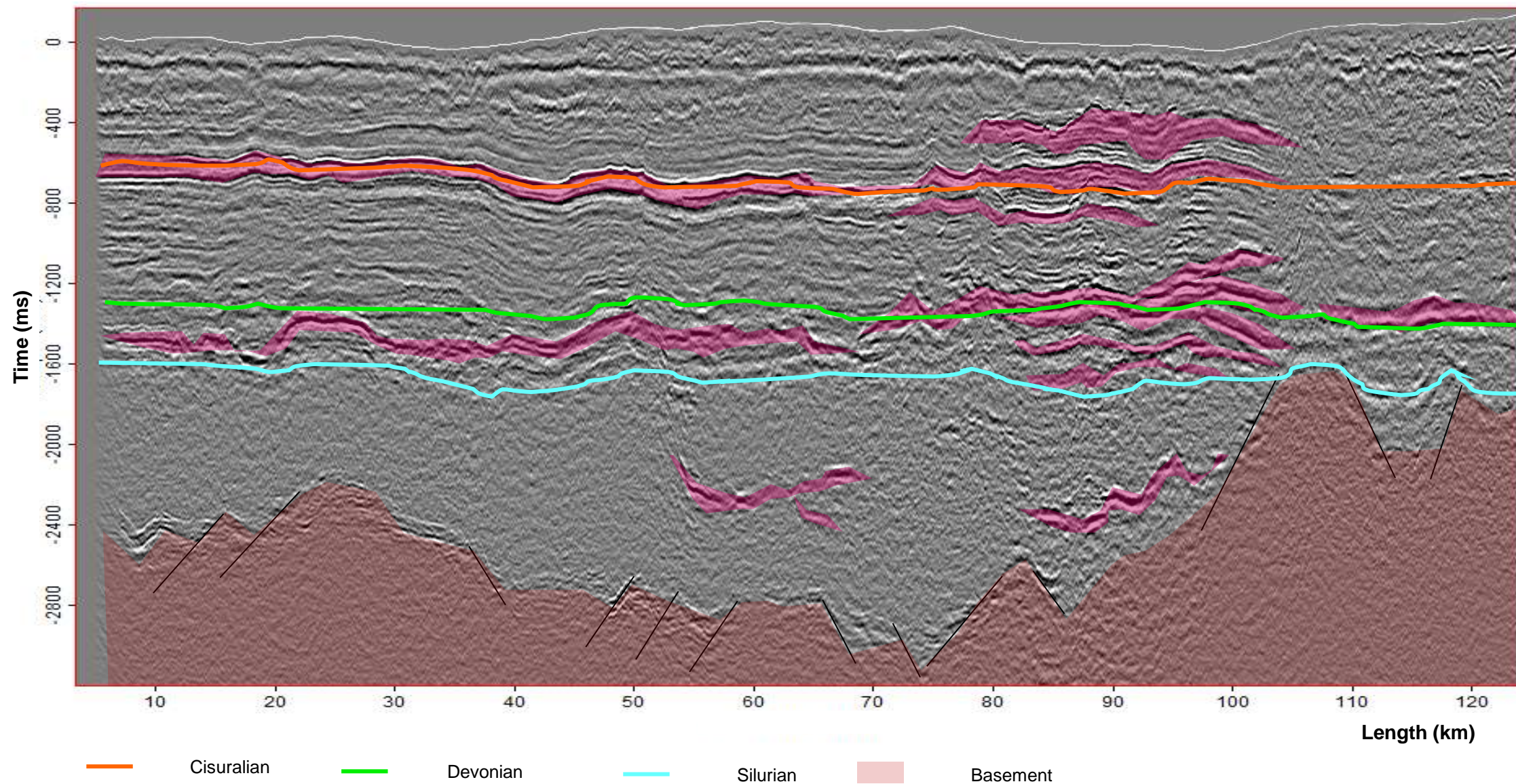


# Leads – Parana Basin



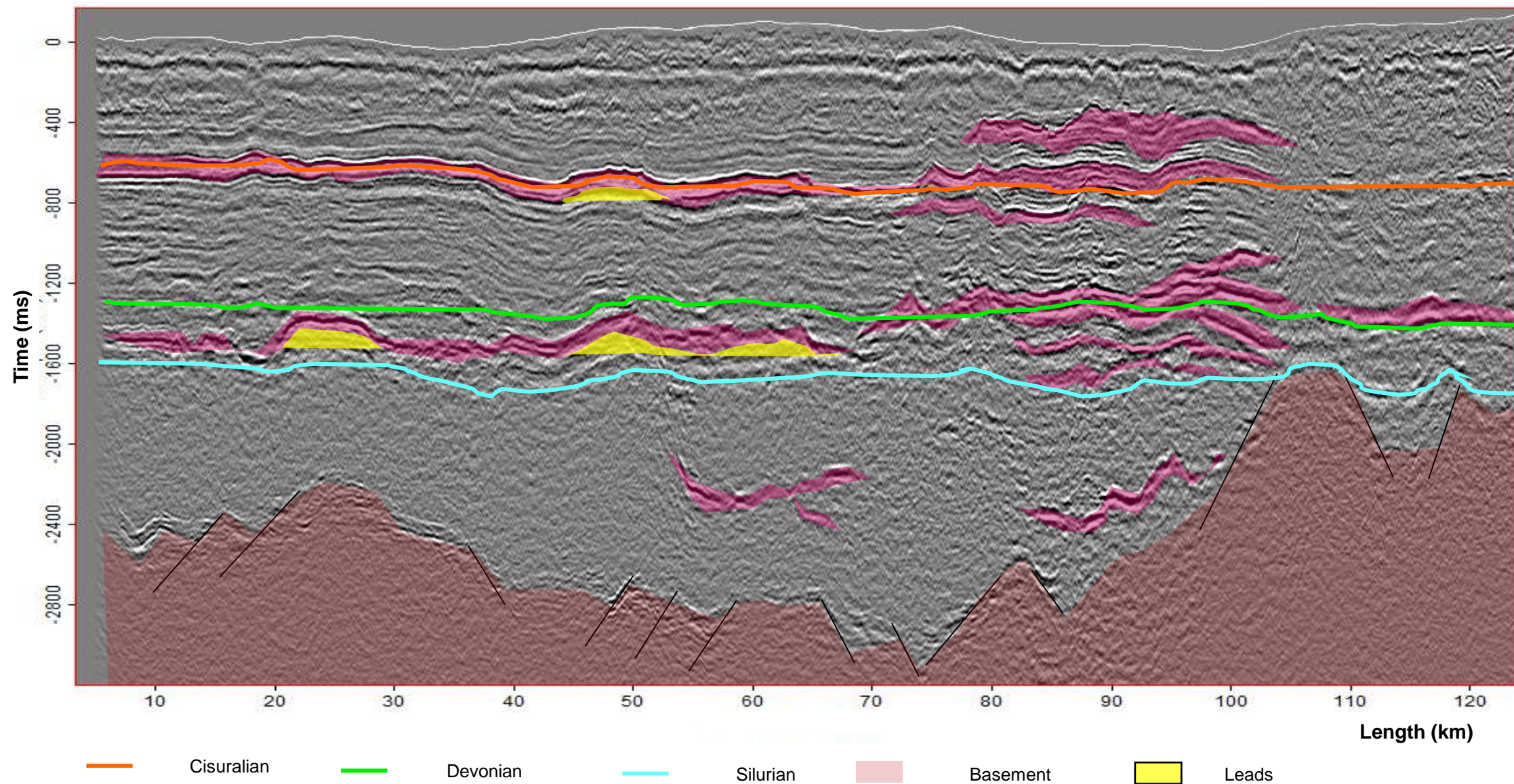


# Leads – Parana Basin



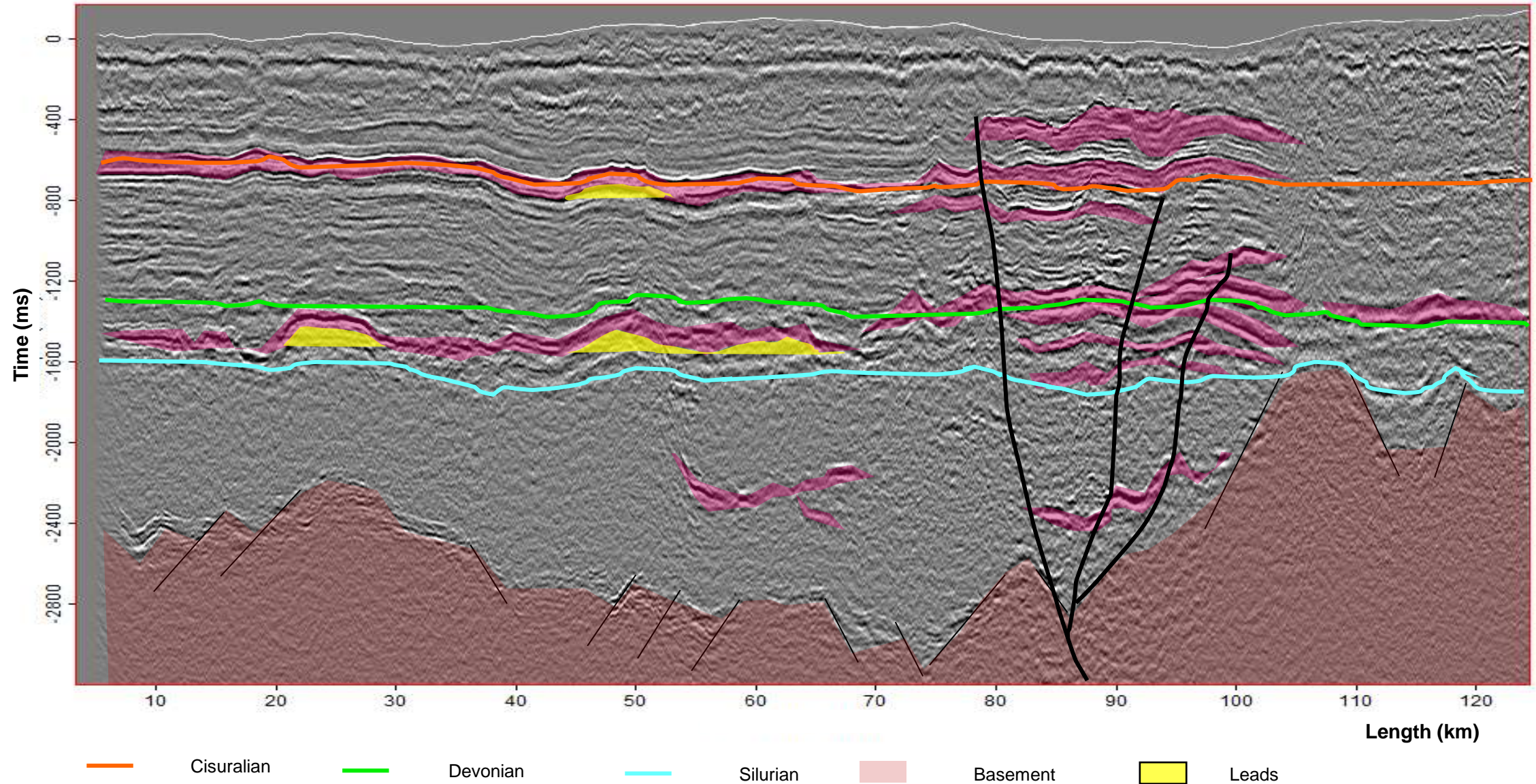


# Leads – Parana Basin



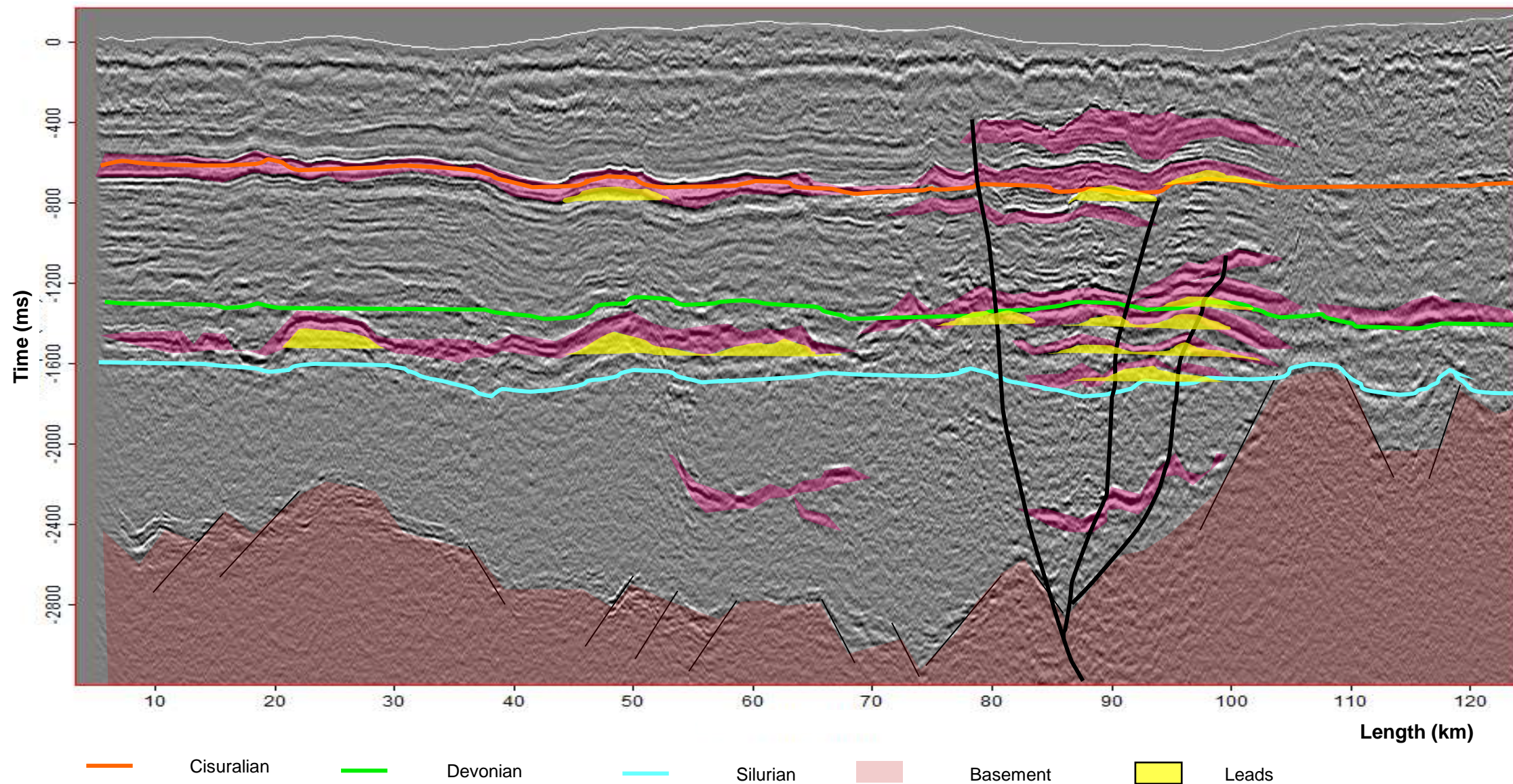


# Leads – Parana Basin



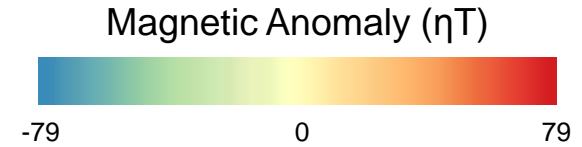
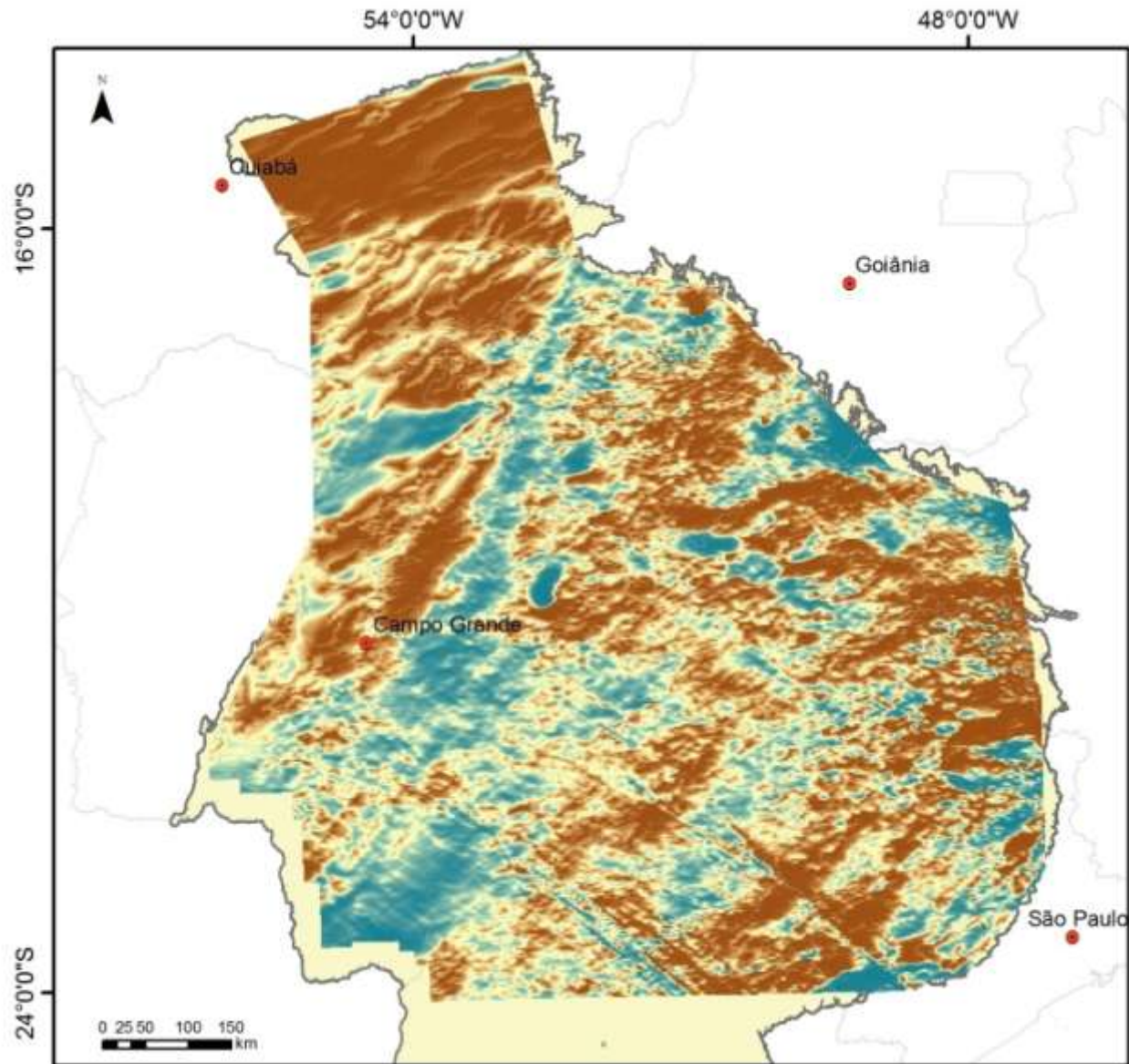


# Leads – Parana Basin

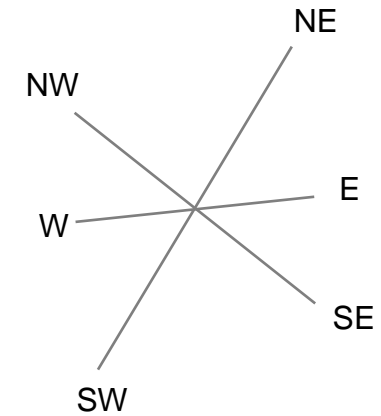




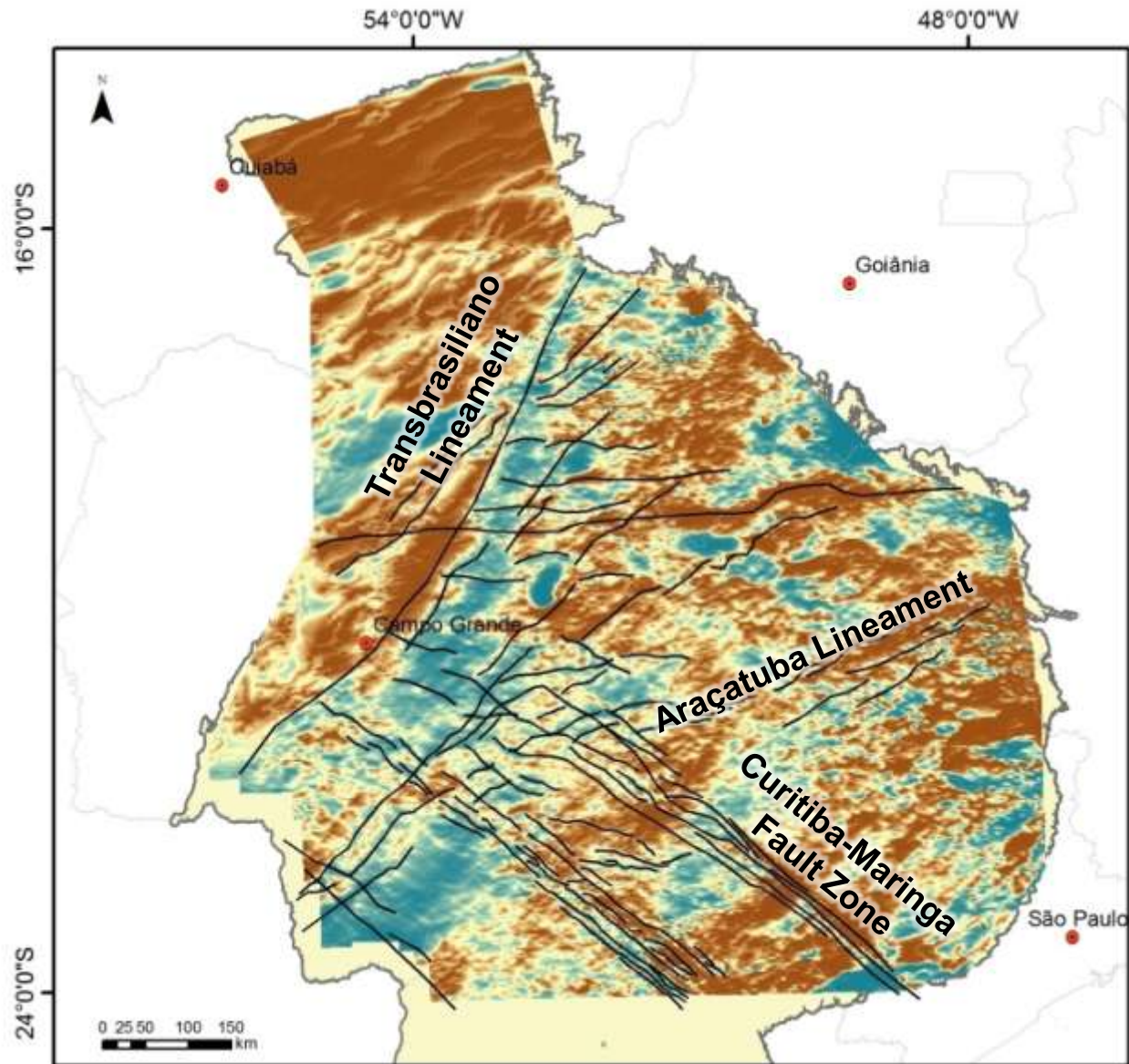
# Parana Magnetic Anomaly



## Lineaments Orientation



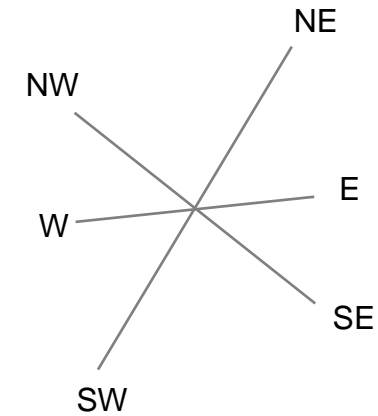
# Parana Magnetic Anomaly



Magnetic Anomaly ( $\eta T$ )

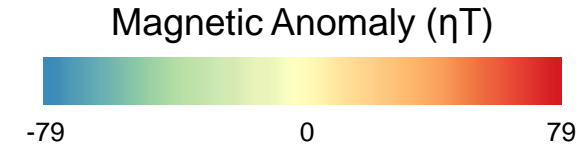
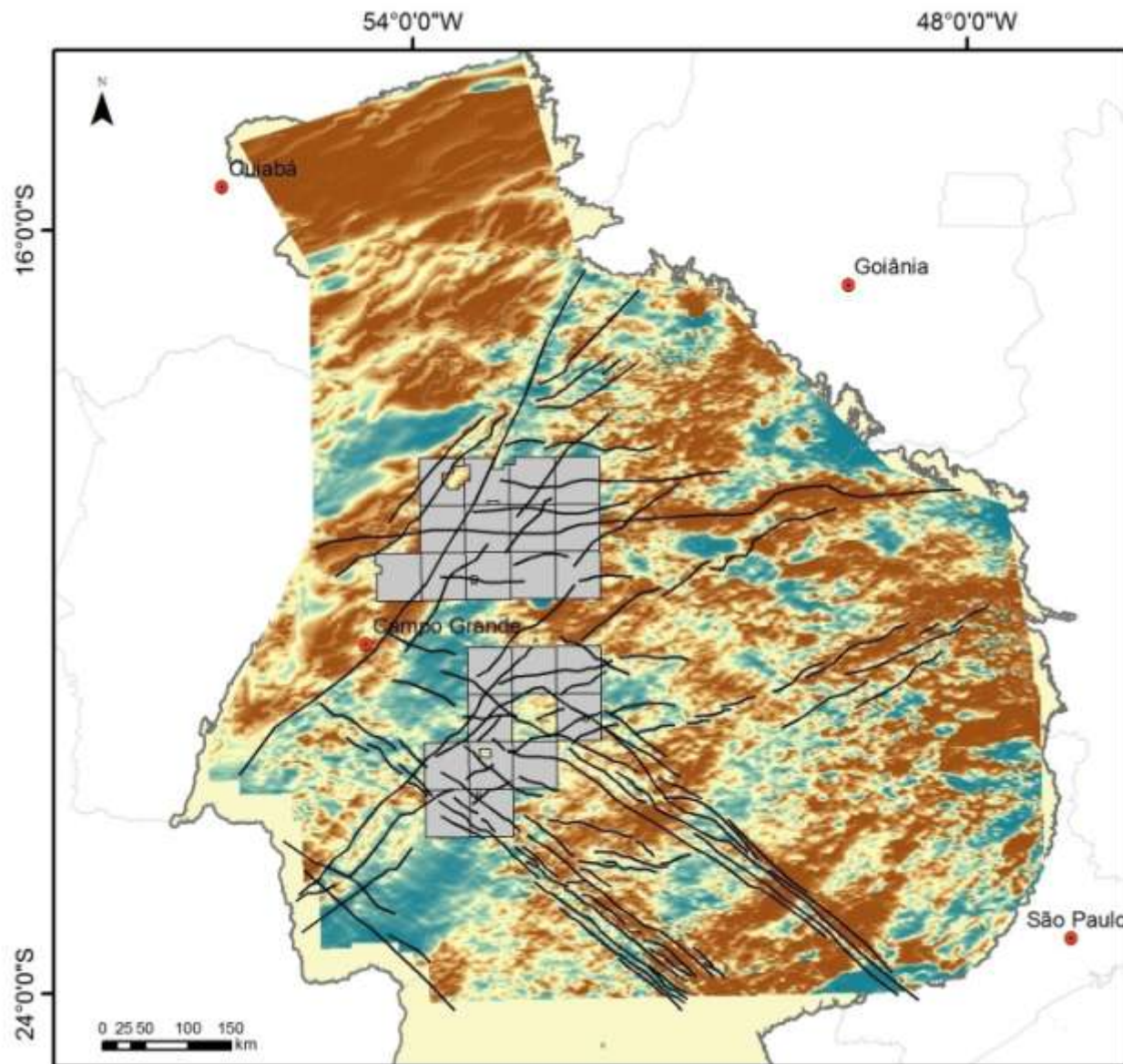
-79 0 79

## Lineaments Orientation

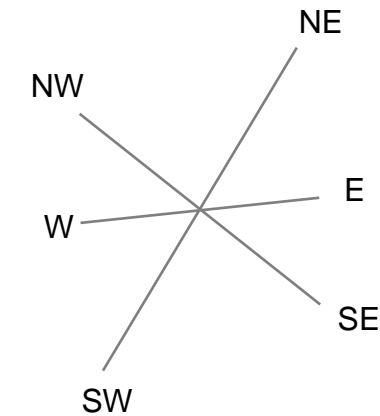




# Parana Basin - Open Acreage

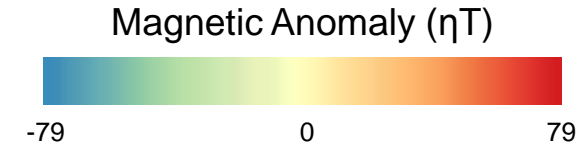
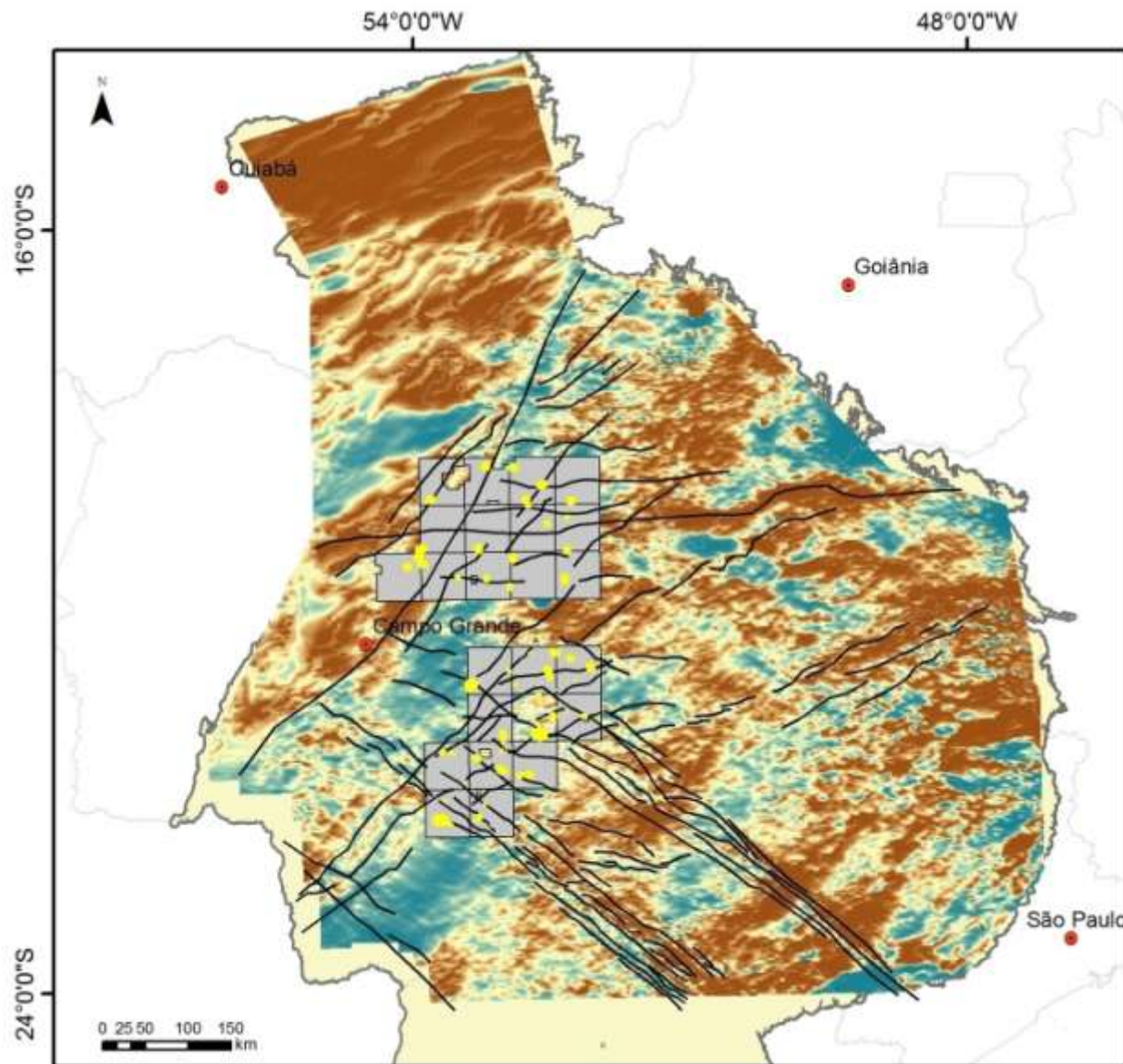


## Lineaments Orientation

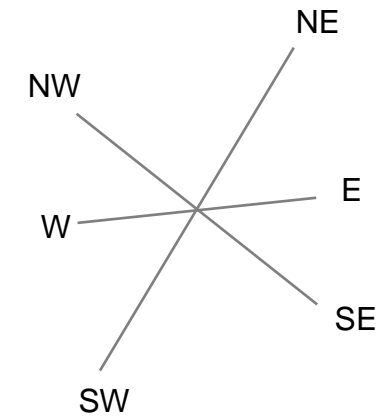


 Open Acreage – Blocks Already Available

# Parana Basin - Open Acreage



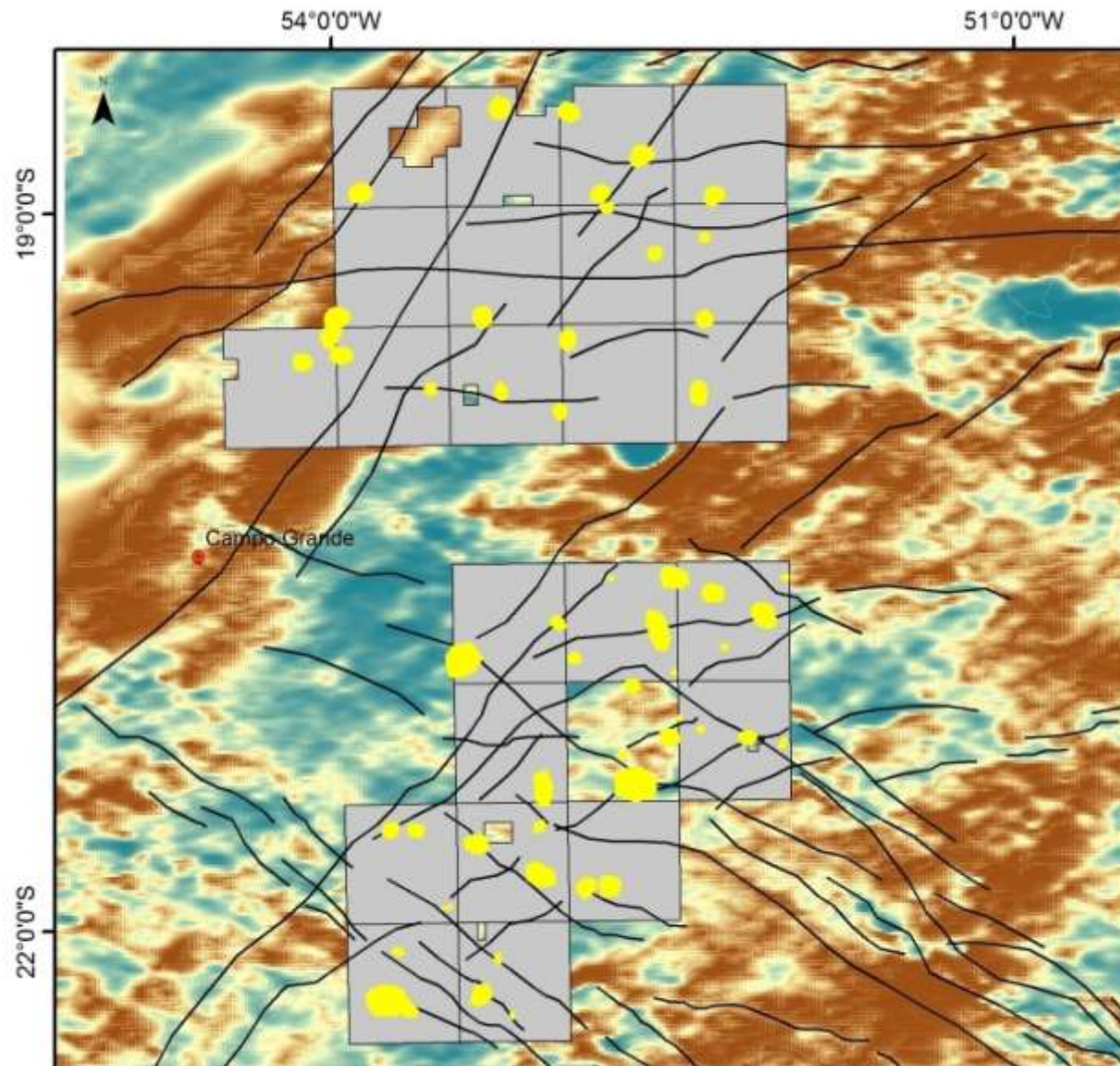
## Lineaments Orientation



- Open Acreage – Blocks Already Available
- Leads



# Parana Basin - Open Acreage



## 23 Blocks

- Open Acreage – Blocks Already Available
- Leads



## **Reconcavo, Potiguar, Sergipe-Alagoas and Espirito Santo basins**

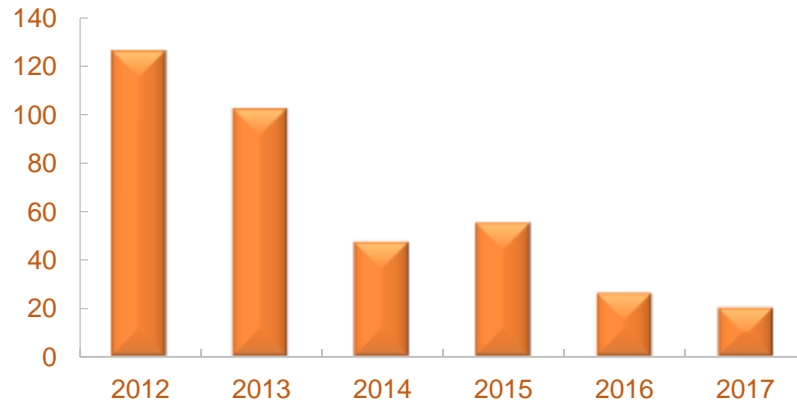
- Advanced exploration stage
- Oil & Gas Infrastructure available
- Excellent opportunity for small and medium-sized companies
- Recent discoveries
- Remaining Potential



# Onshore Mature Basins

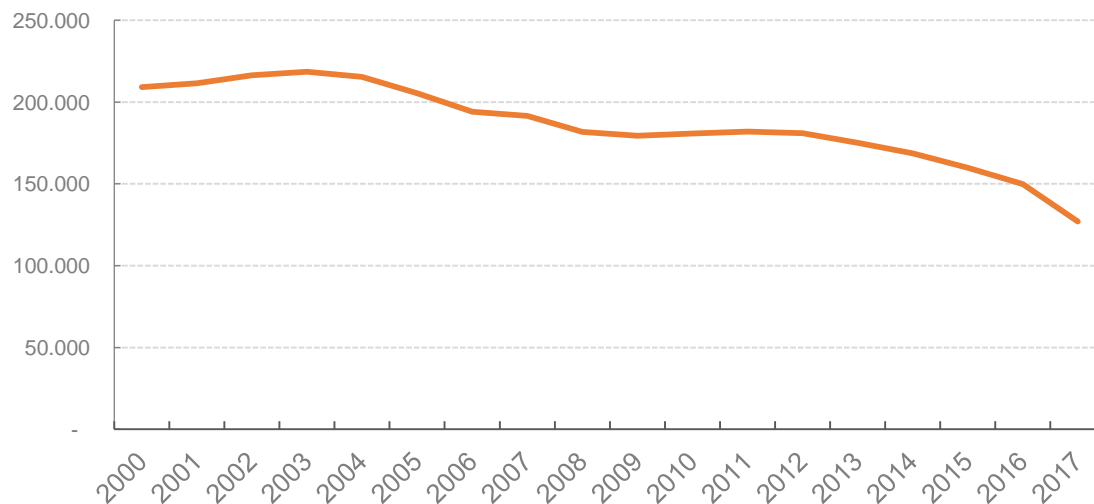
Concluded Wells

▼ 84%



Need to **revitalize** activities in onshore fields, by attracting **small and medium companies expert in mature fields**

Onshore Oil Production bbl/day



Gas

21

Million m<sup>3</sup>/dat

Oil

127

Mil bbl/day

▼ 30%

# Reconcavo Basin

## 1937 – 1953

First discovery(1939)

10 fieds

78 wells

## 1954 – 1996

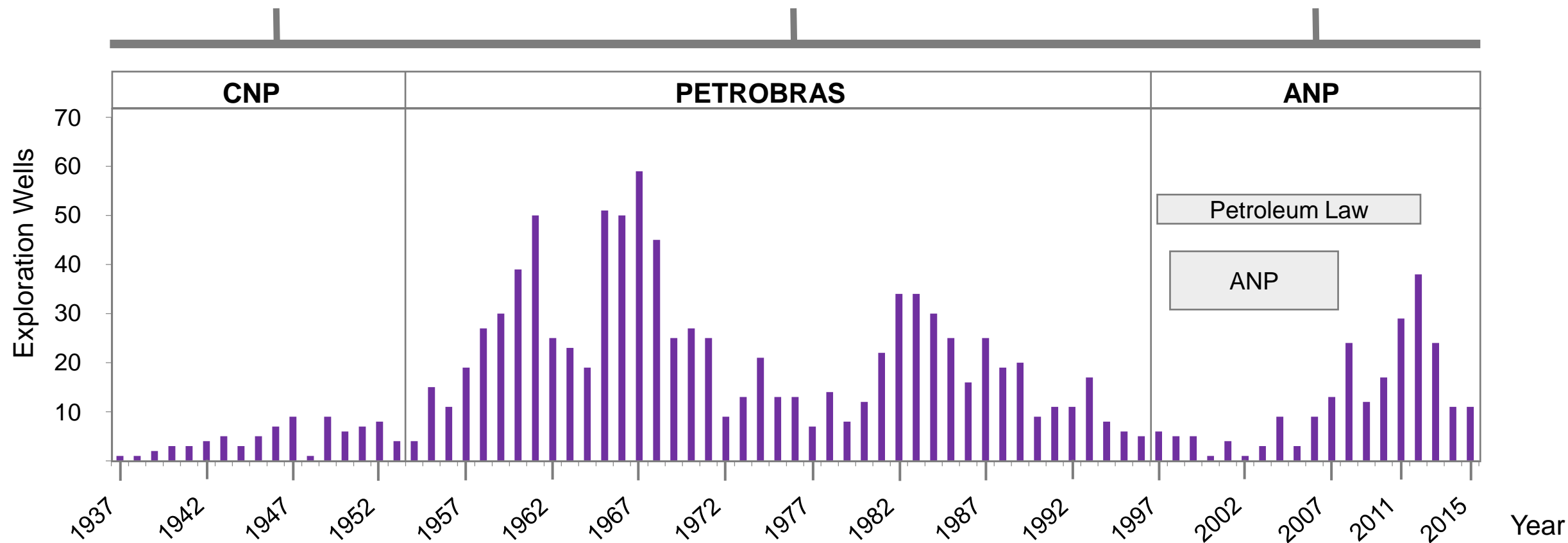
82 fieds

952 wells

## 1997 – 2015

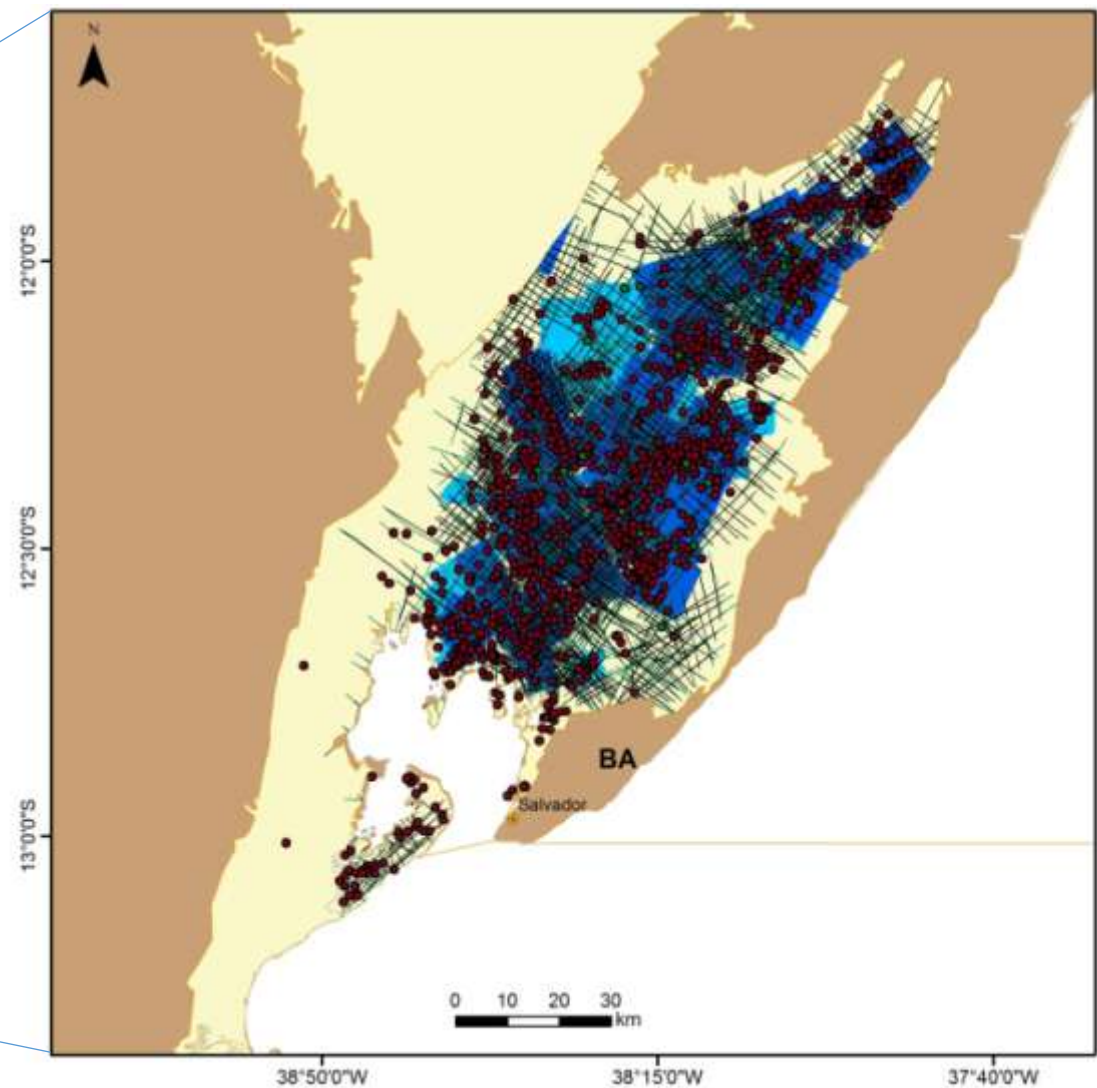
20 fieds

219 wells





# Reconcavo Basin

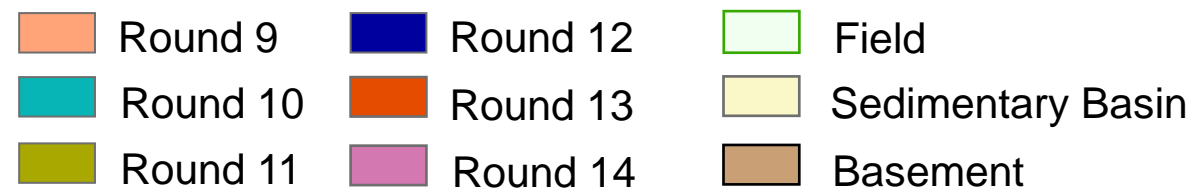
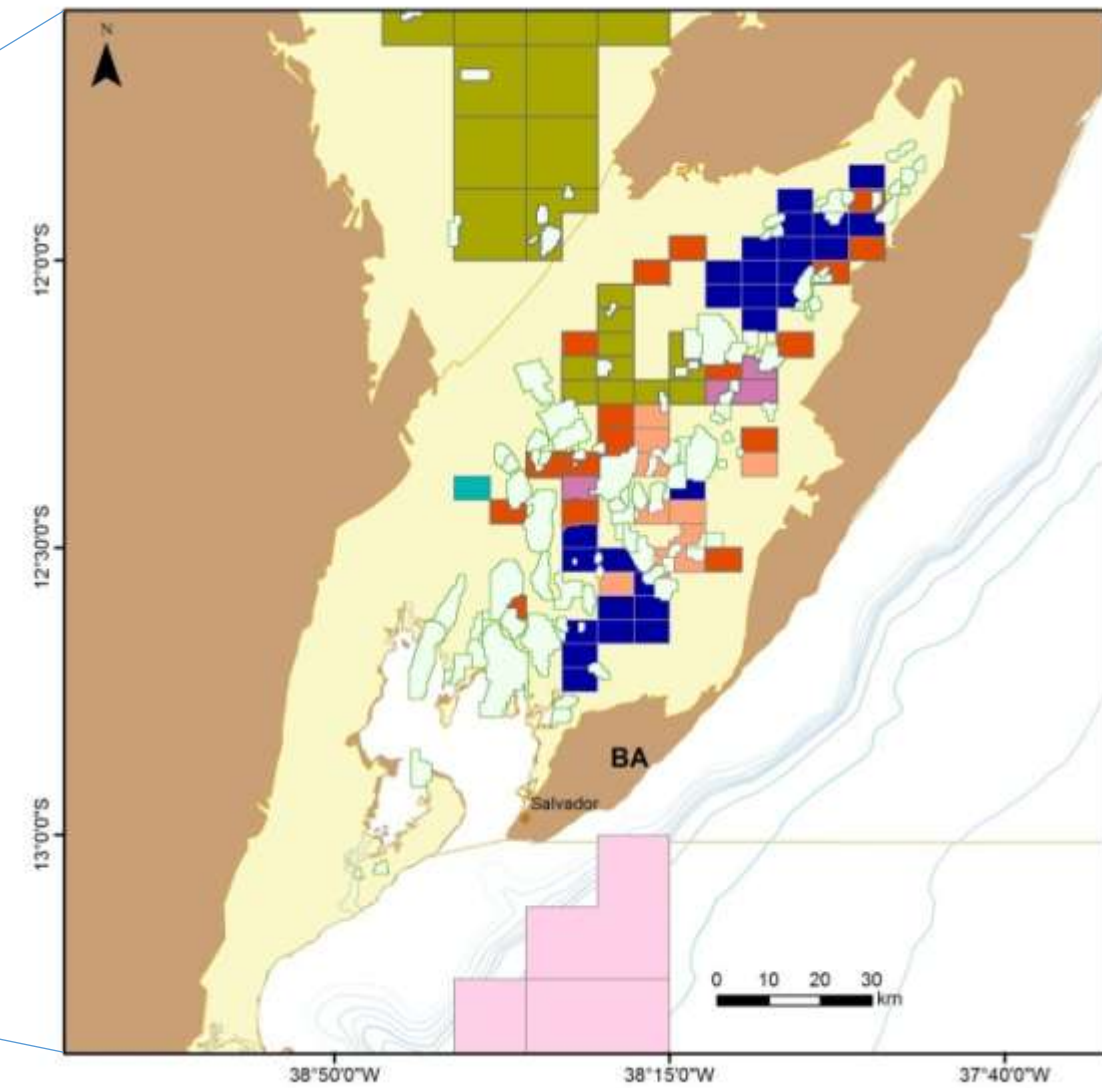


- Wells
- 2D Seismic

- 3D Seismic (Public)
- 3D Seismic (Exclusive and non Exclusive)

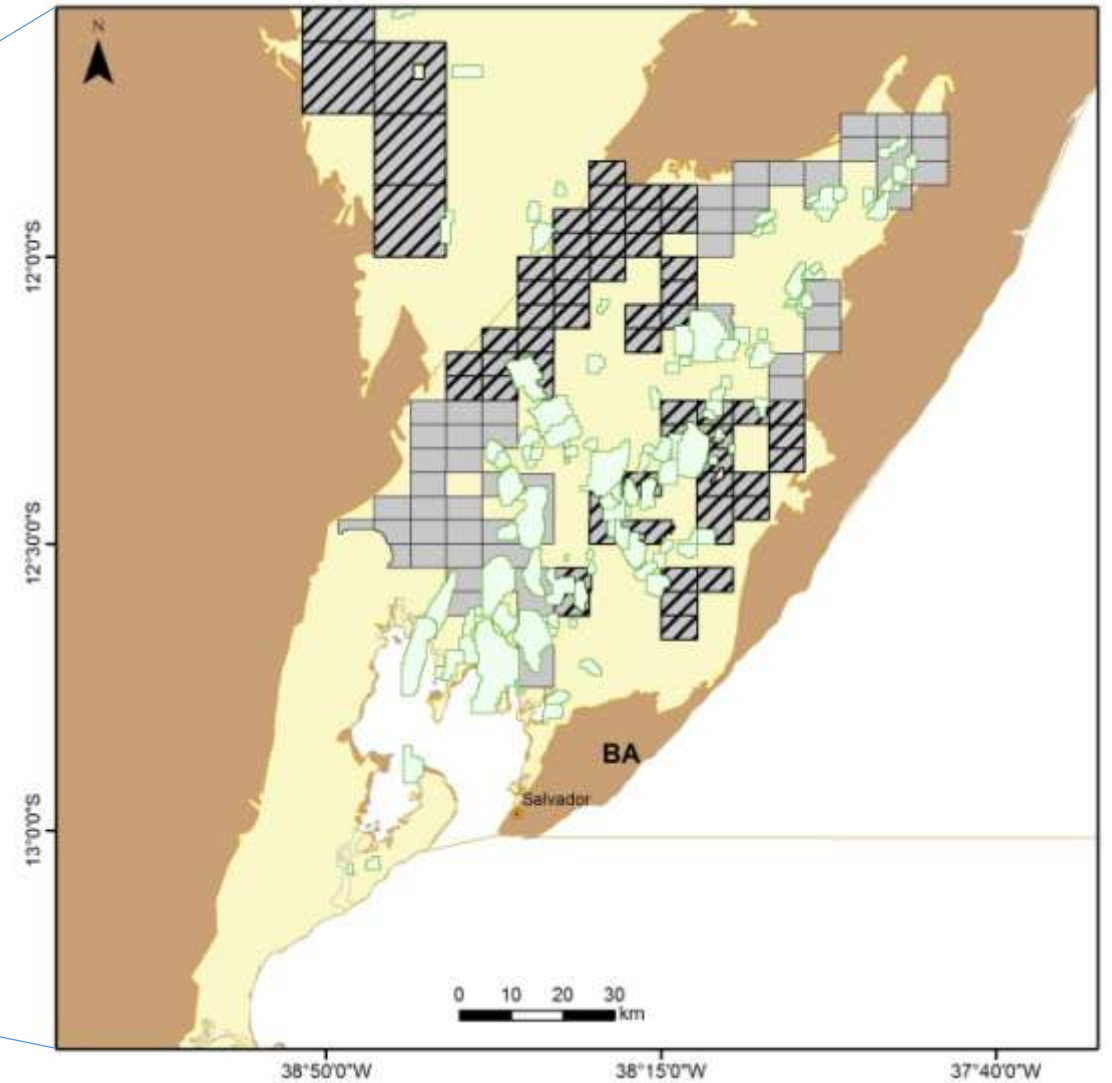
- Sedimentary Basin
- Basement

# Reconcavo Basin



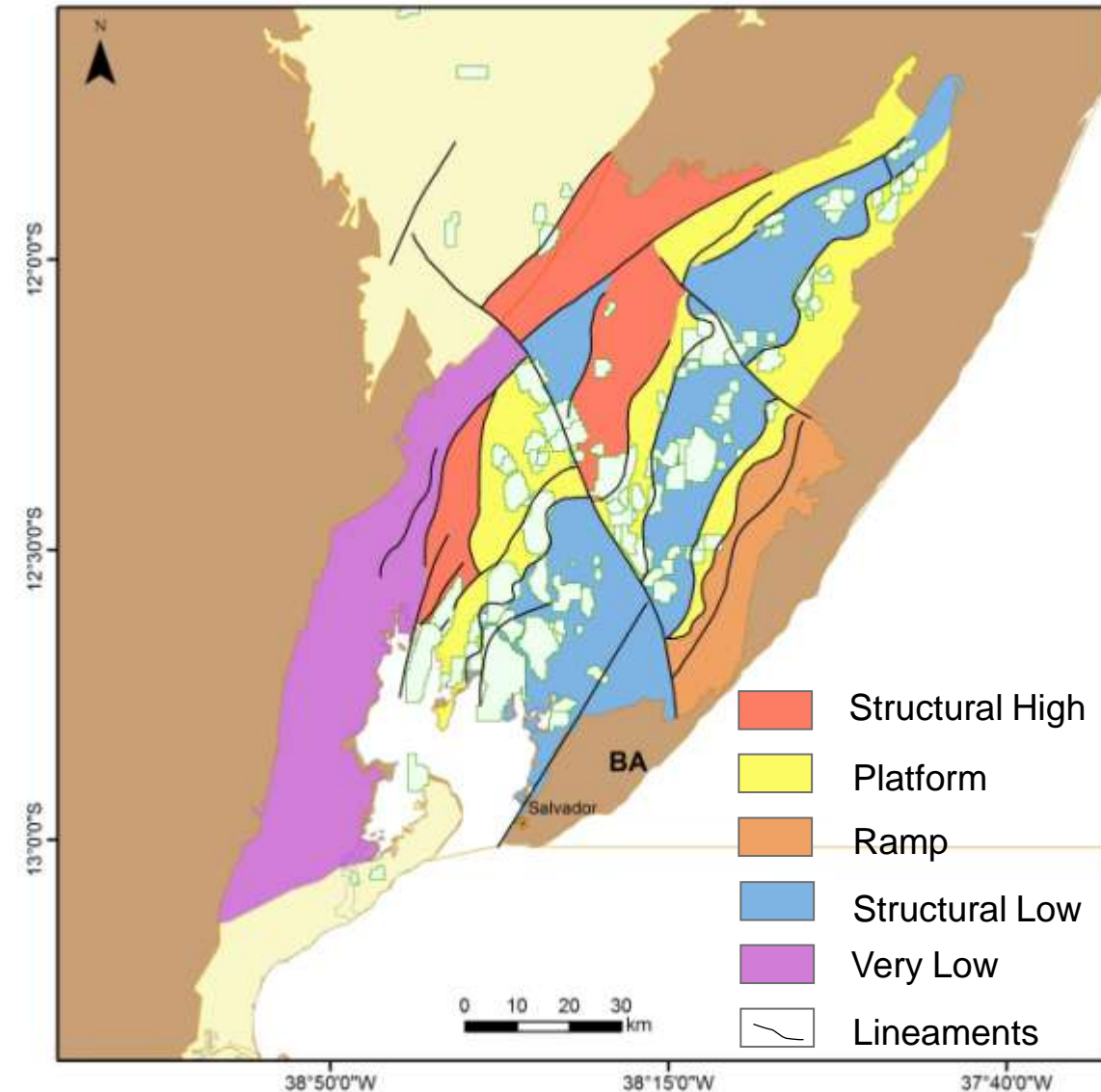


# Reconcavo Basin

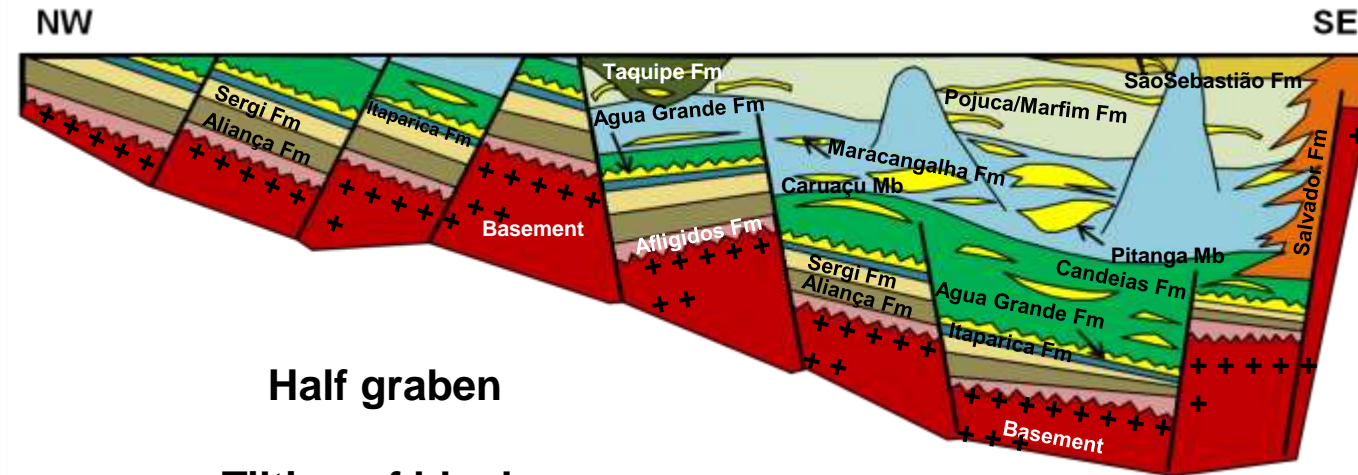


-  Open Acreage Blocks - Already Available
-  Open Acreage - Public Audience

# Reconcavo Basin



## Schematic Geological Section



Half graben

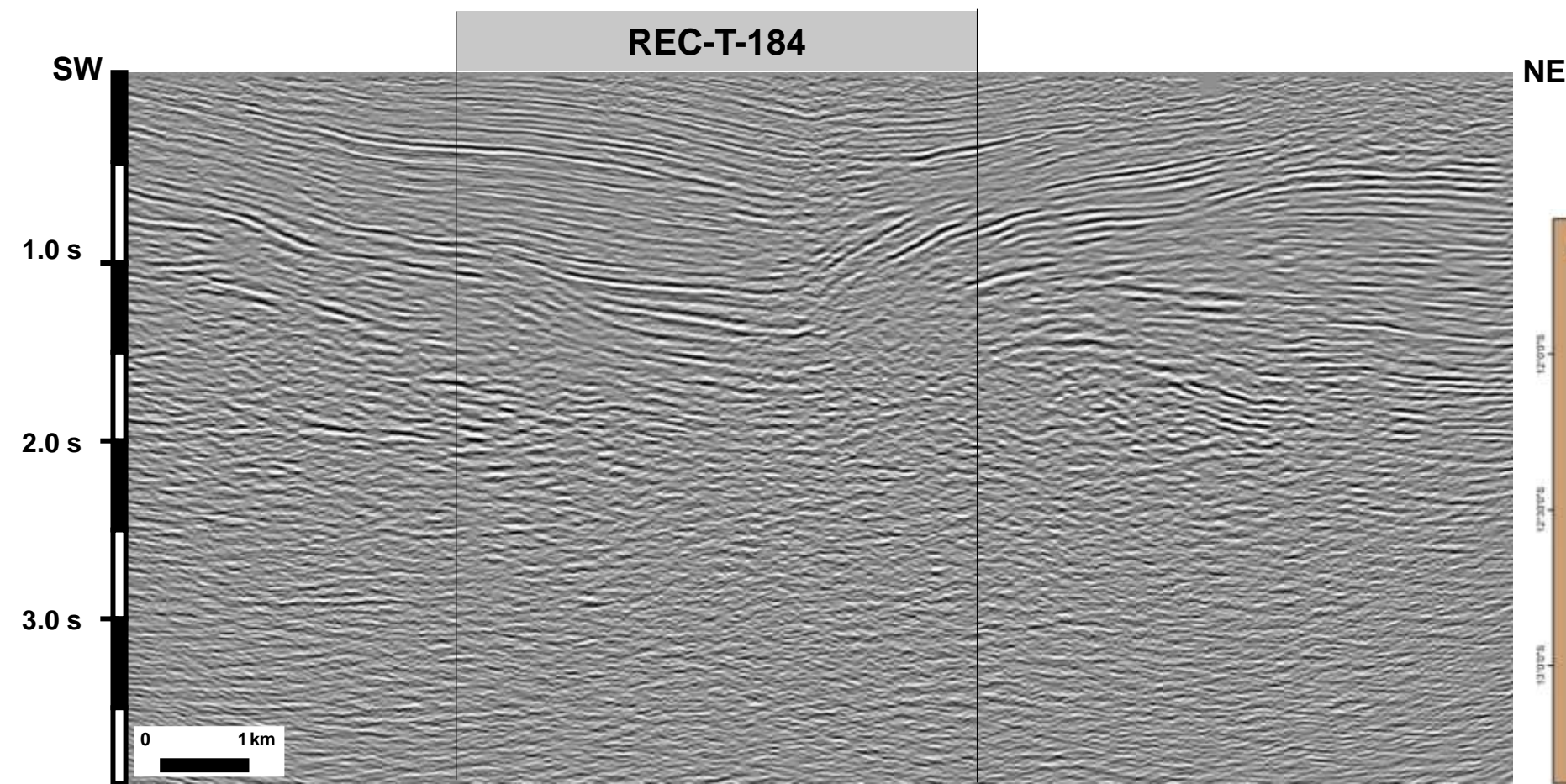
Tilting of blocks

Layers dip Southeast

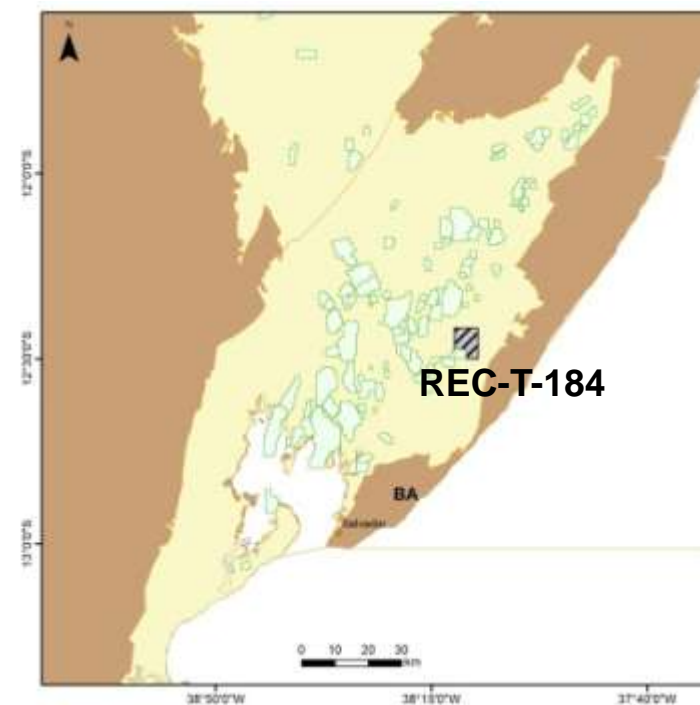
Source: Milhomem *et al.*, 2003



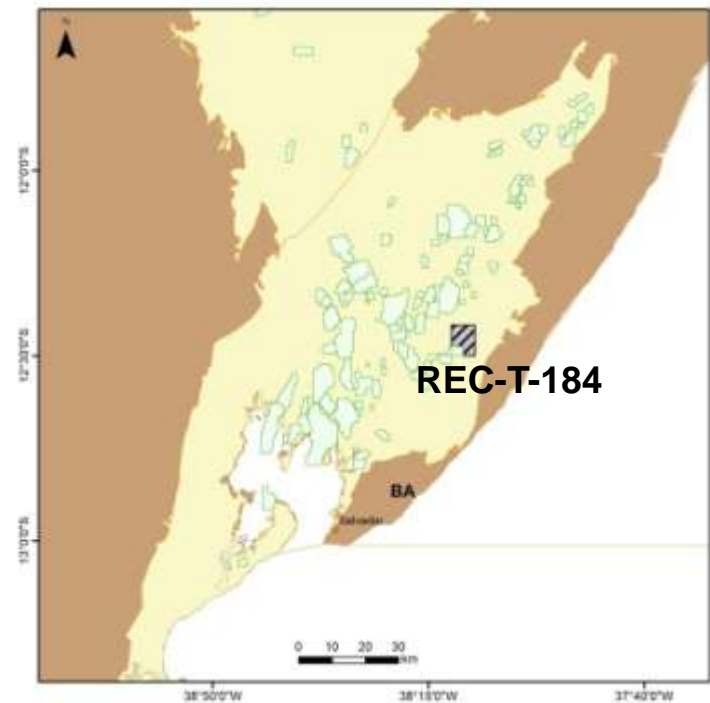
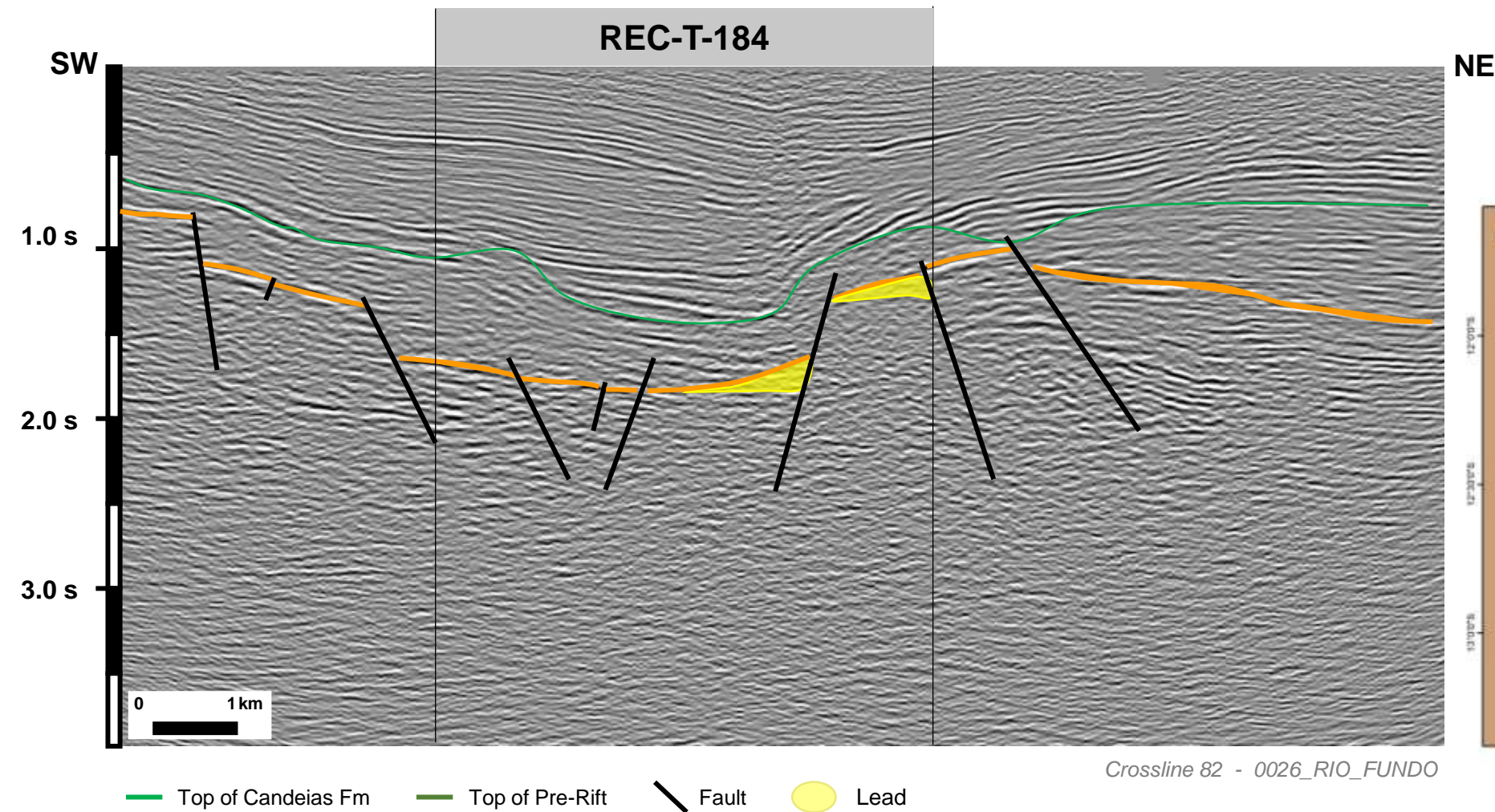
# Leads – Reconcavo Basin



Crossline 82 - 0026\_RIO\_FUNDO

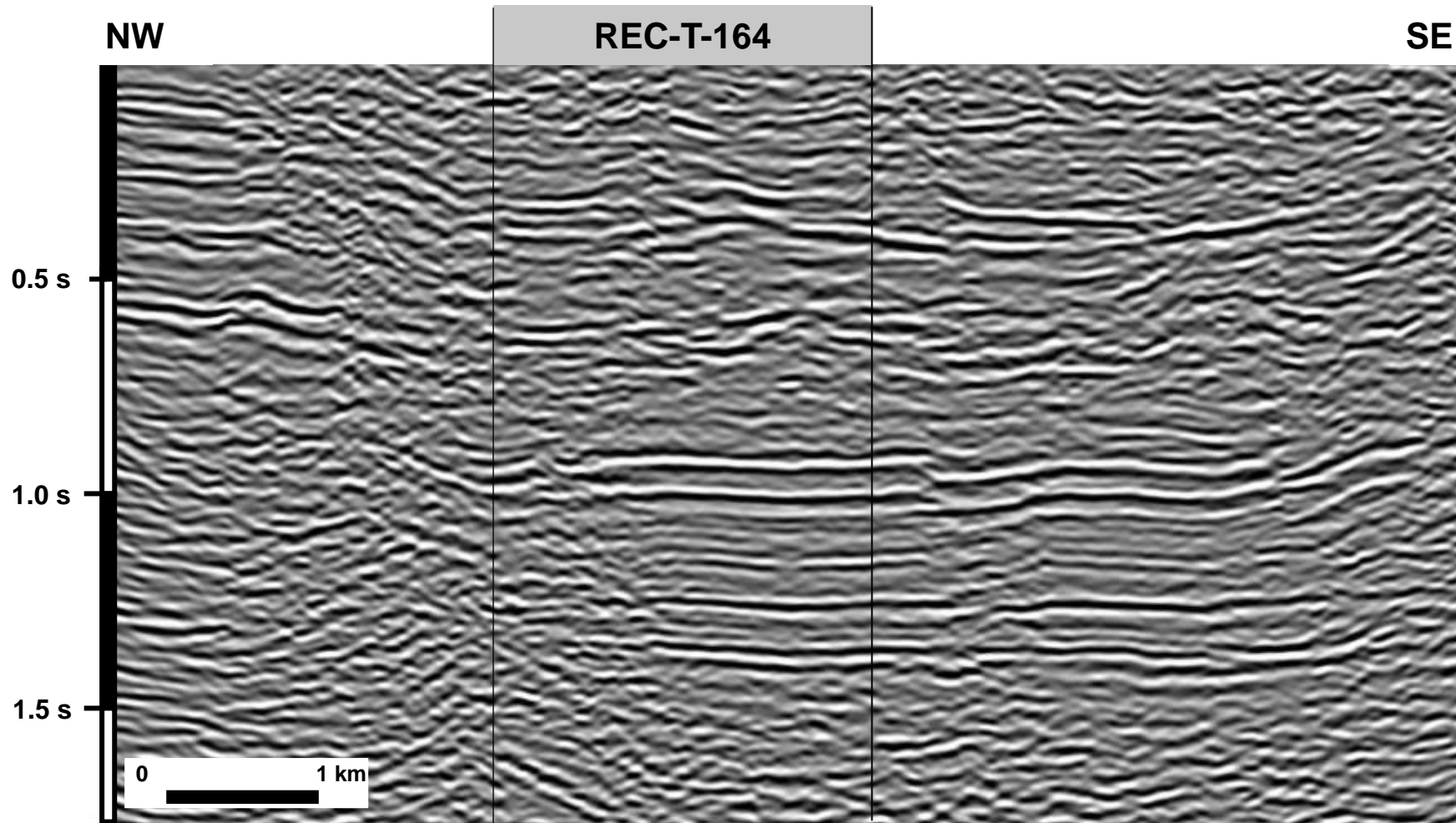


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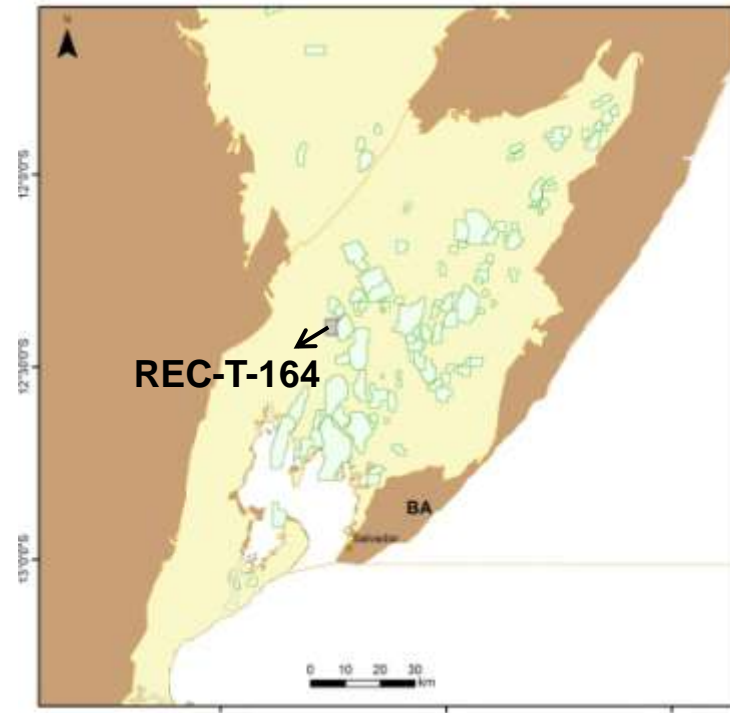




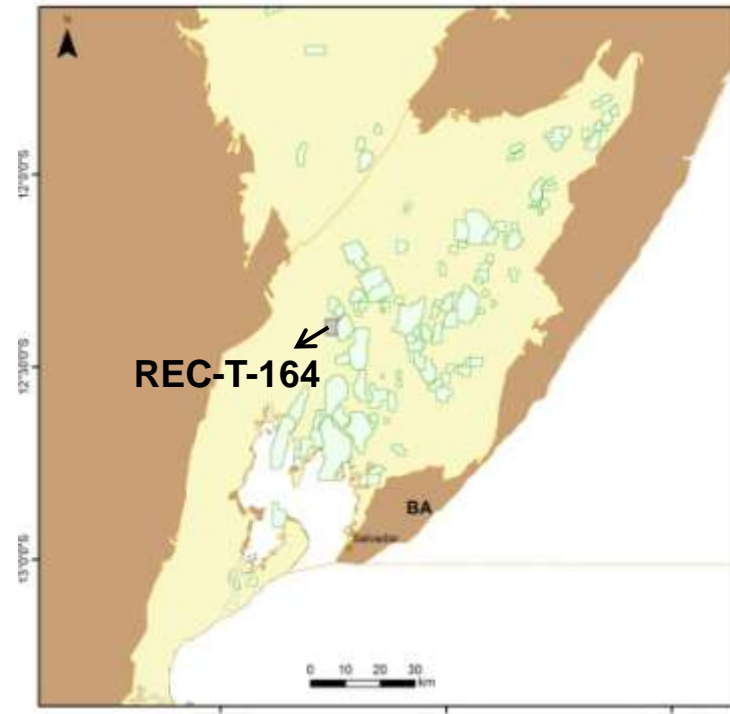
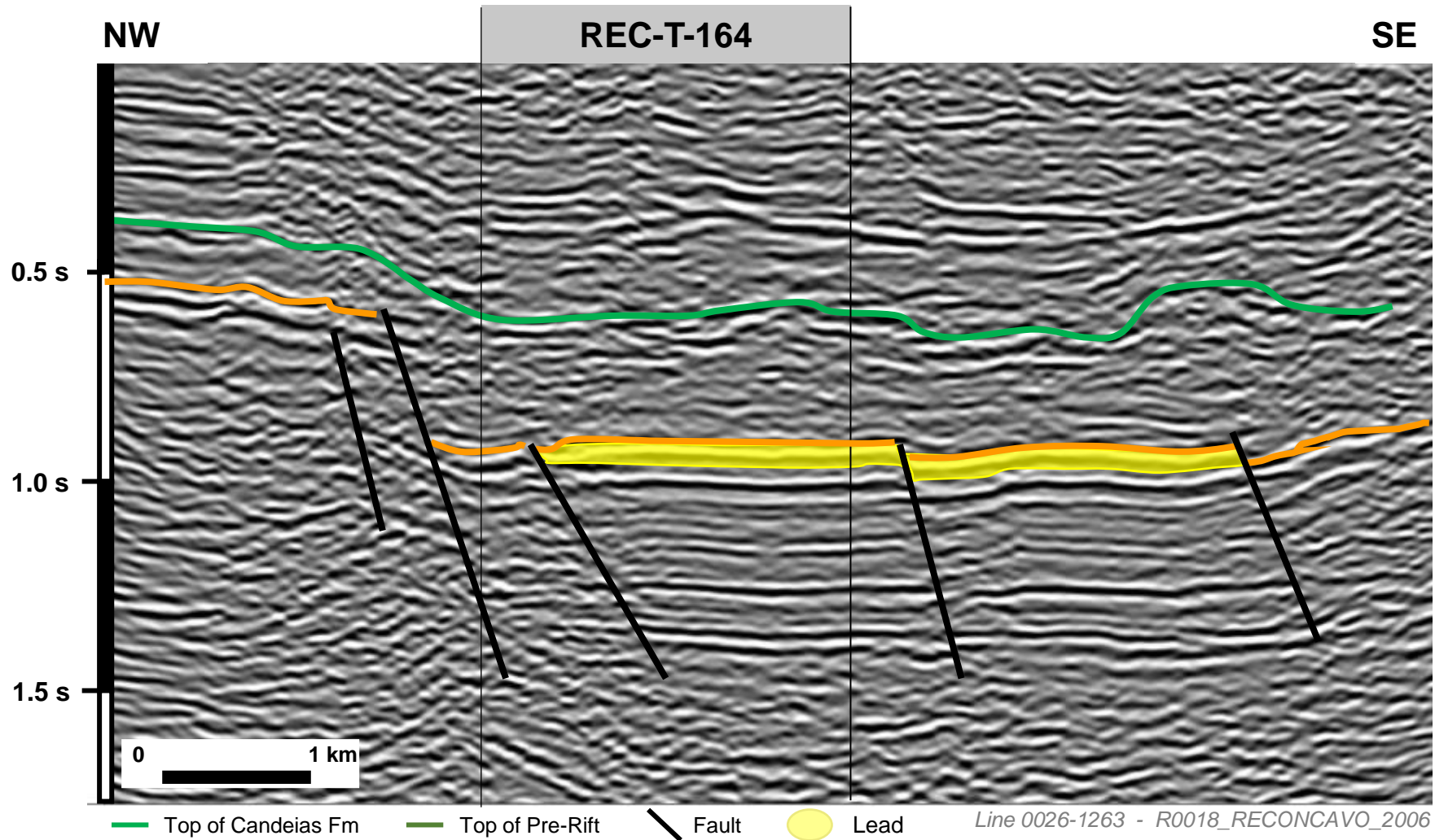
# Leads – Reconcavo Basin



Line 0026-1263 - R0018\_RECONCAVO\_2006

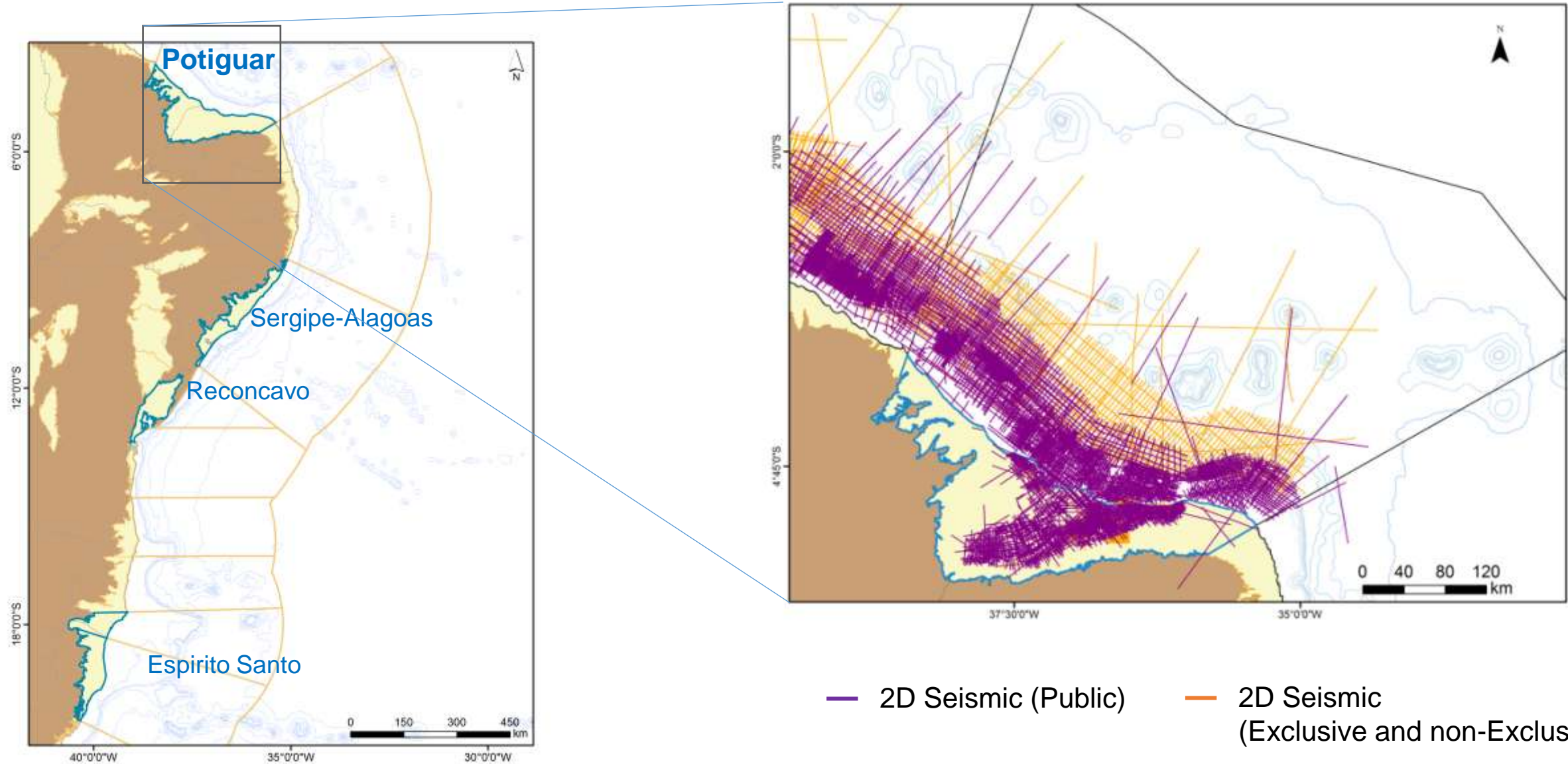


# Leads – Reconcavo Basin

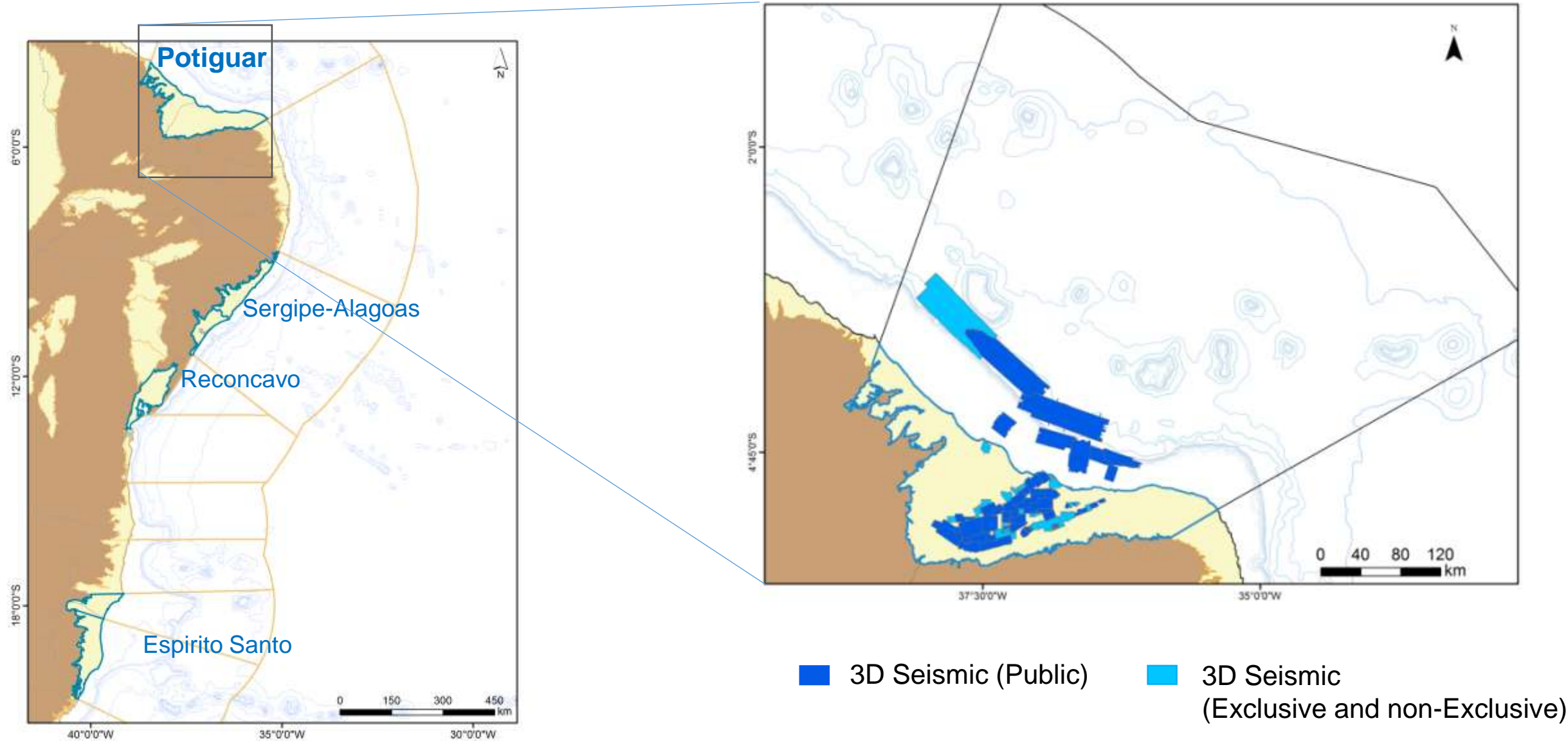




# Potiguar Basin

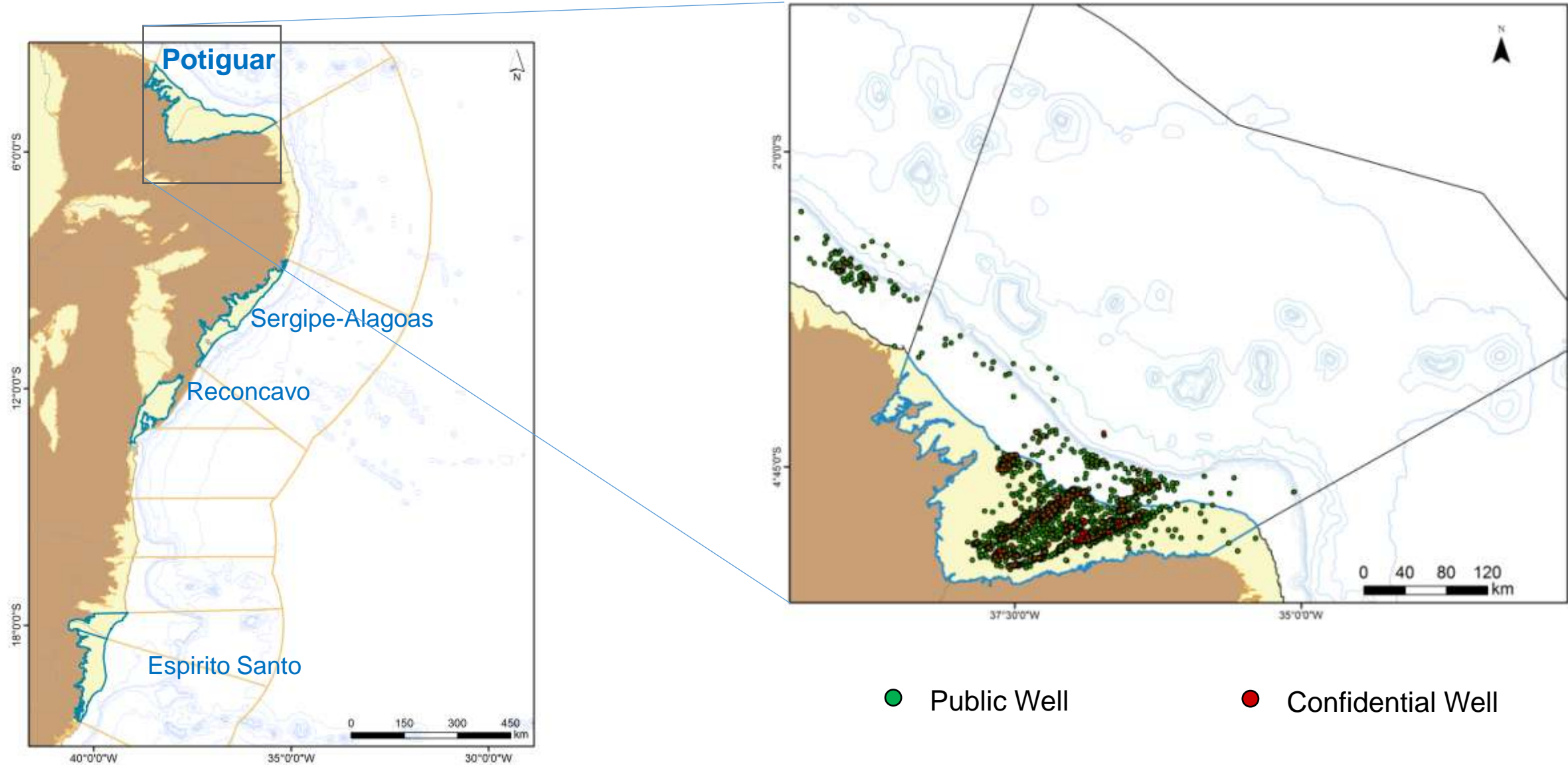


# Potiguar Basin

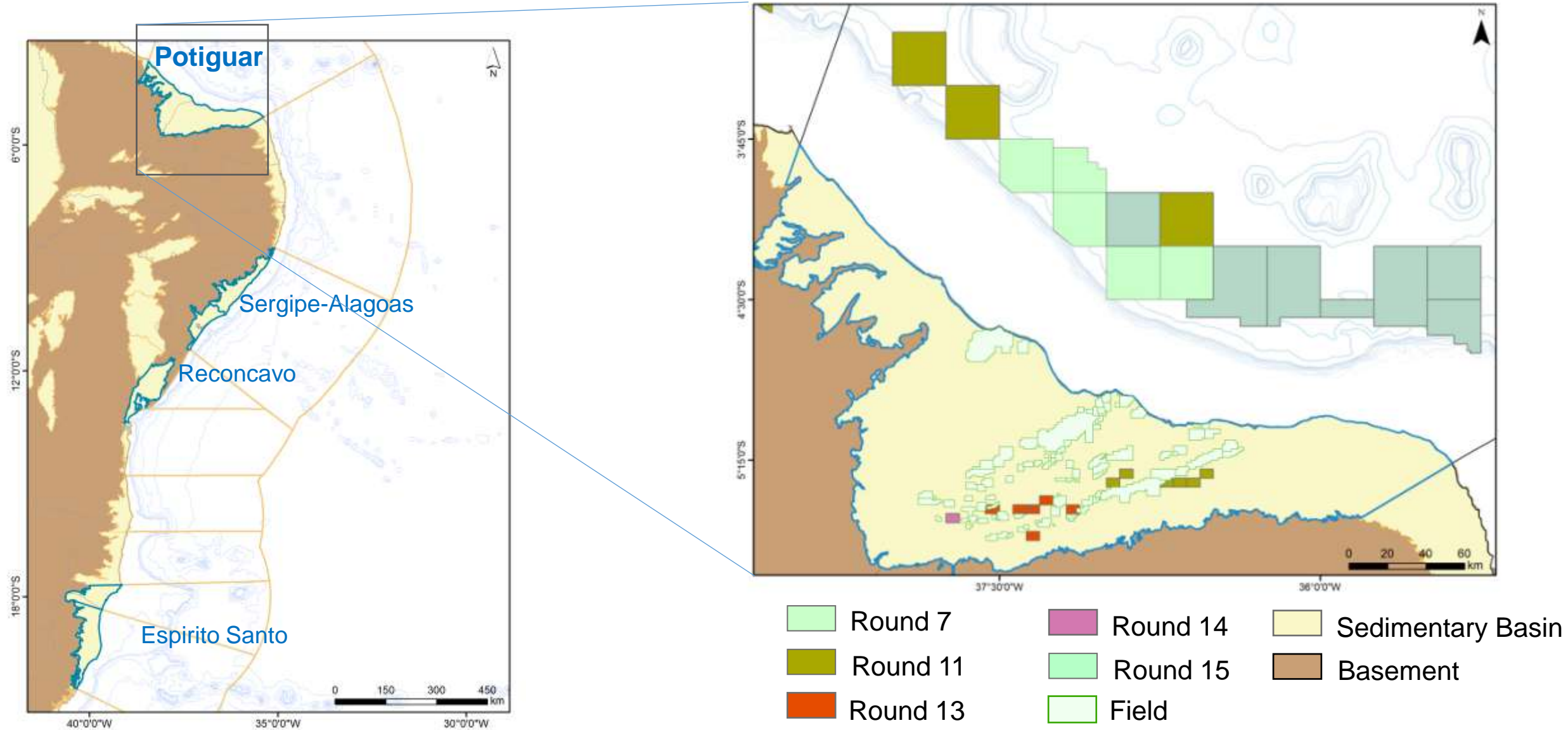




# Potiguar Basin

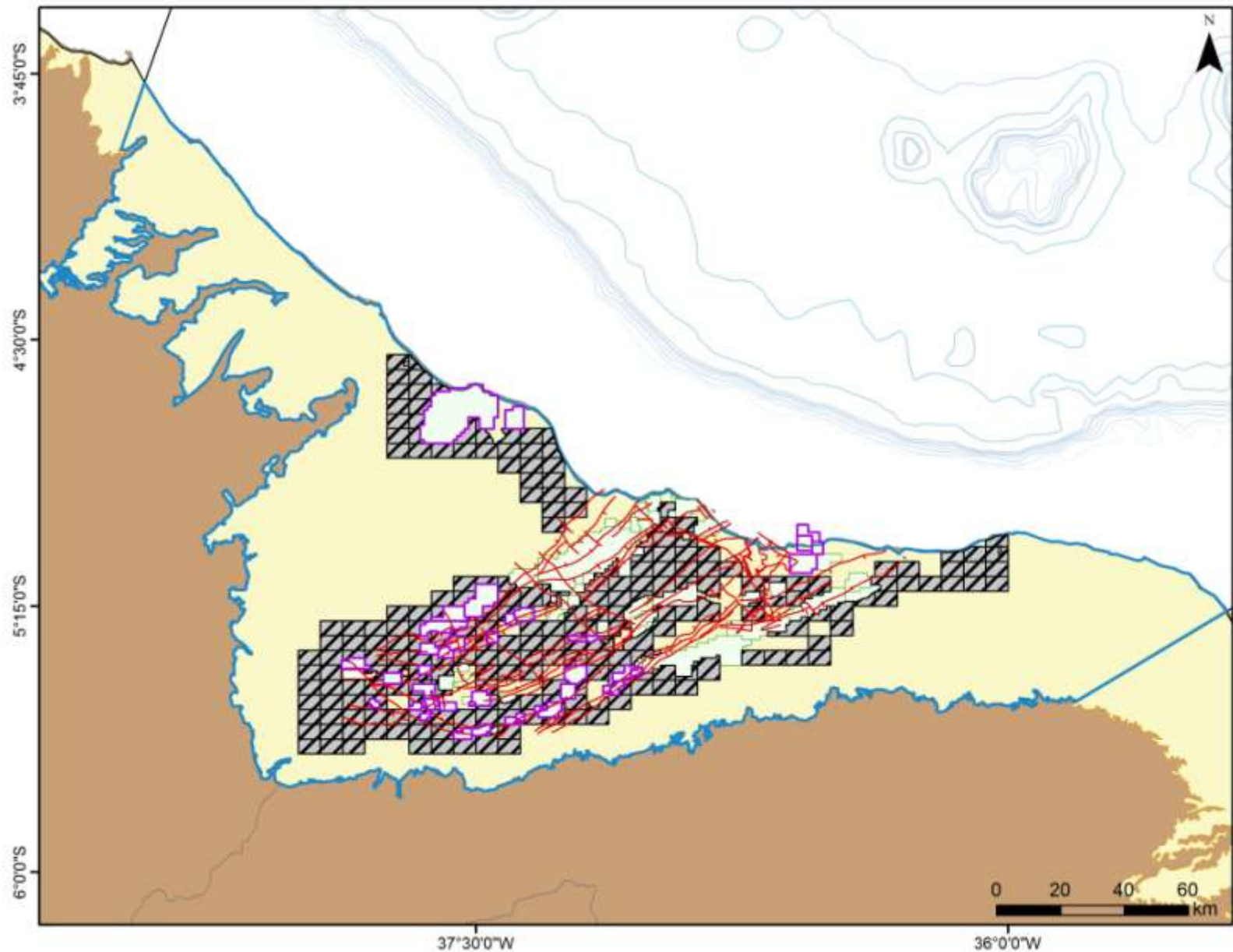


# Potiguar Basin



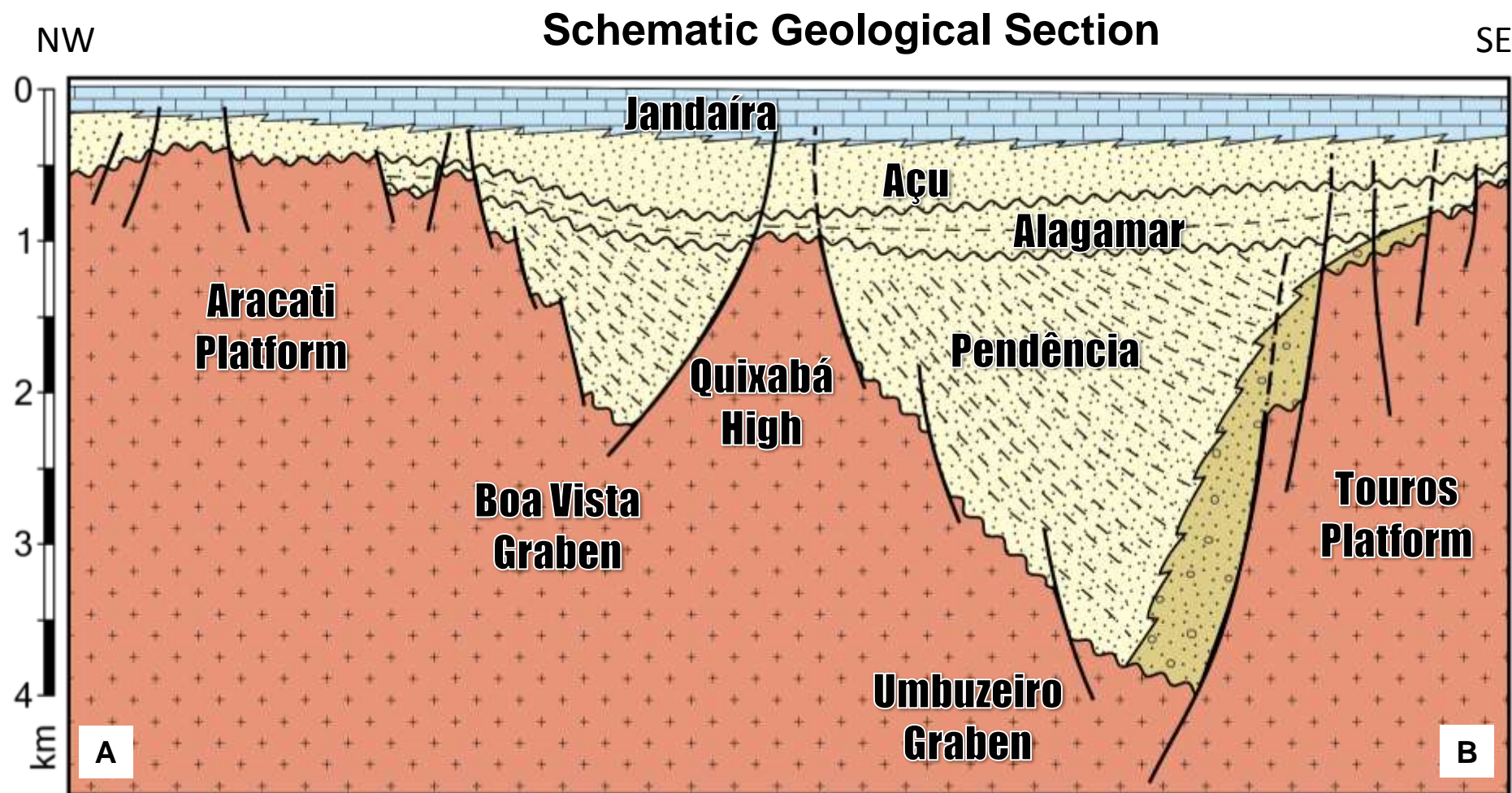


# Potiguar Basin – Onshore – Open Acreage



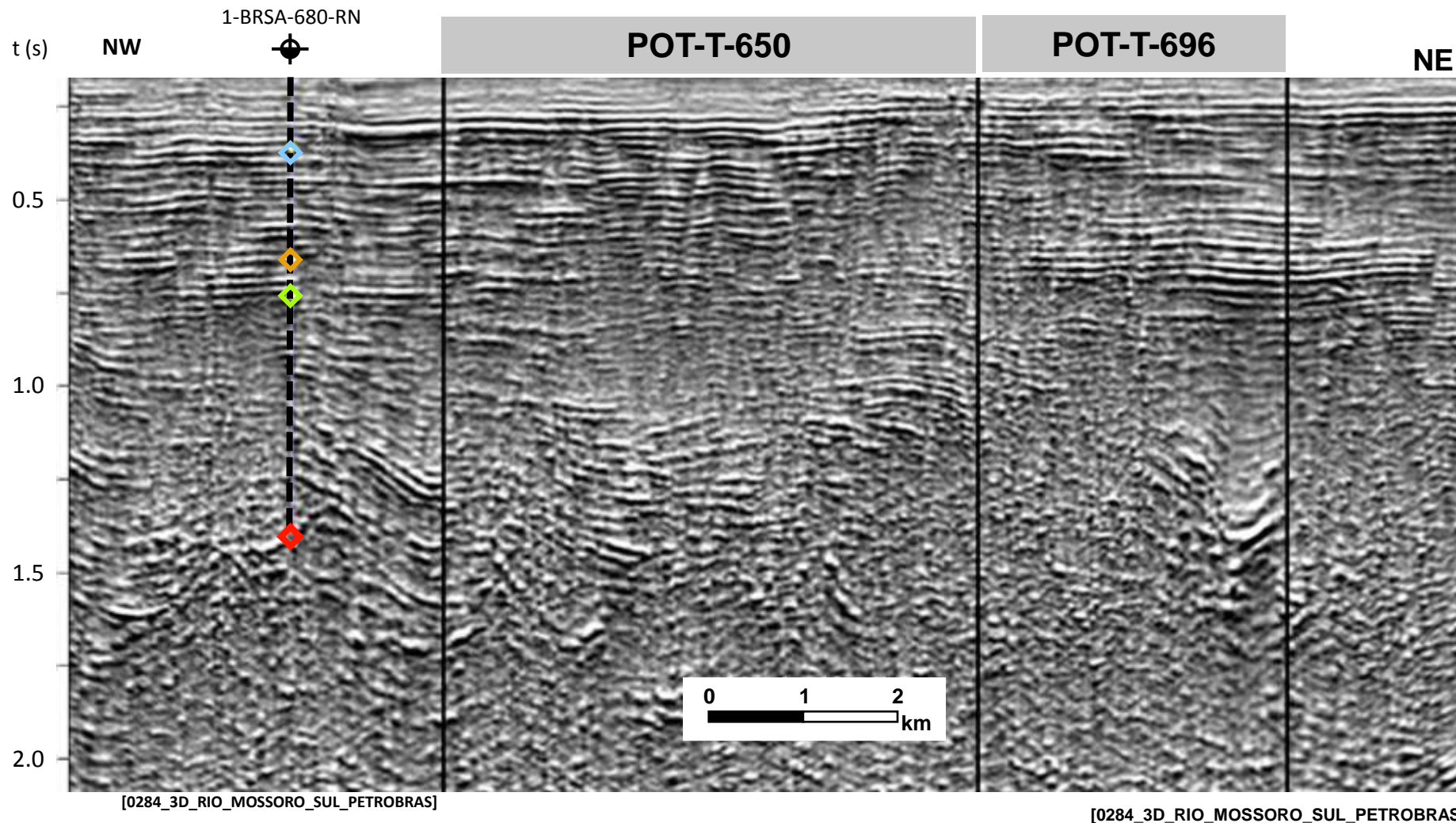
Open Acreage Blocks

# Potiguar Basin – Onshore

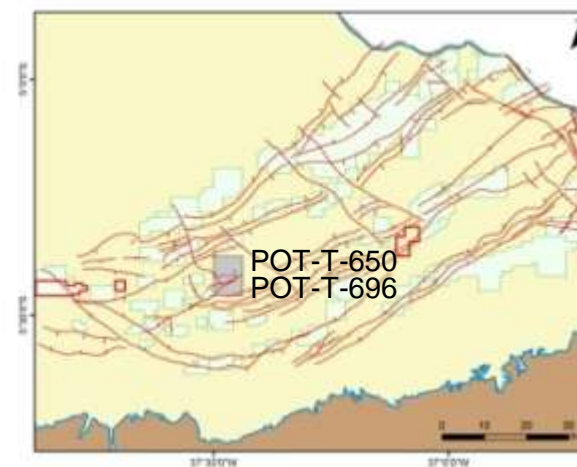




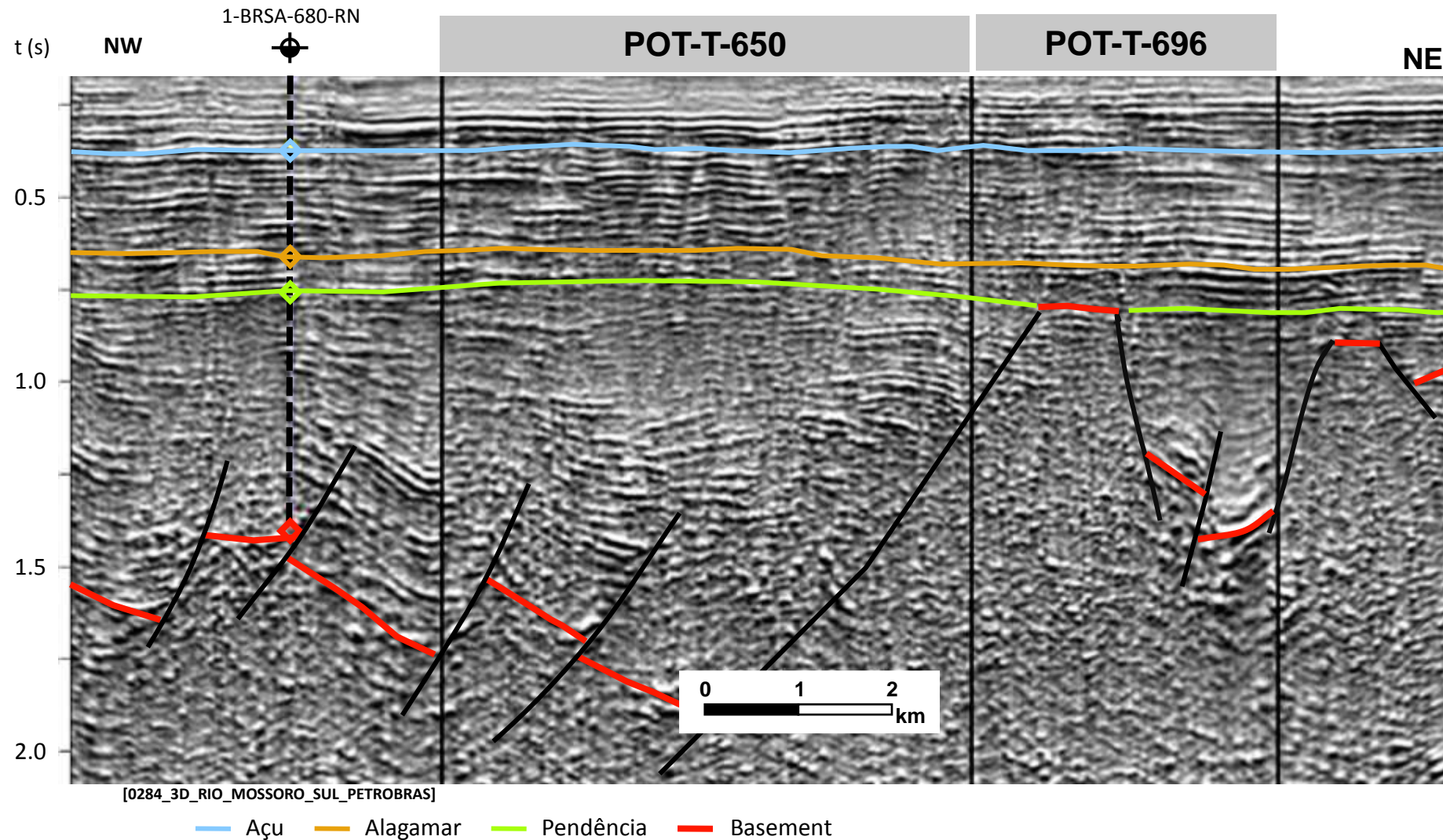
# Leads – Potiguar Basin



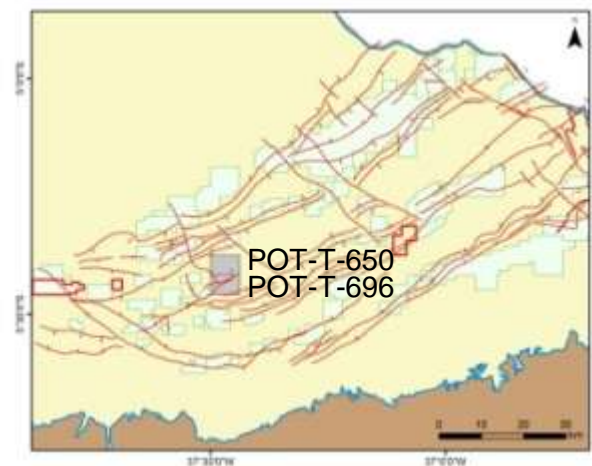
Open Acreage  
1<sup>st</sup> Stage



# Leads – Potiguar Basin

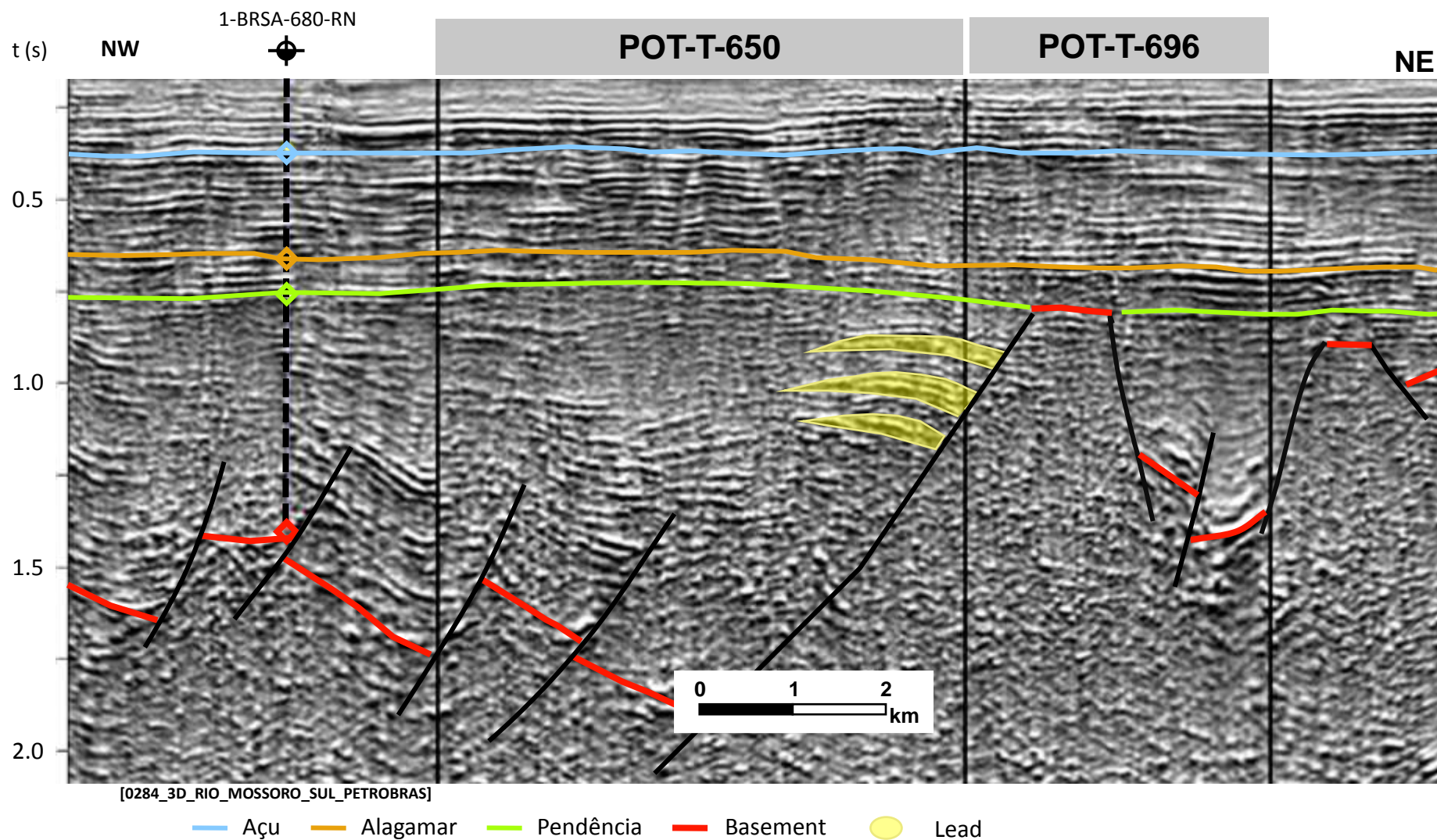


Open Acreage  
1<sup>st</sup> Stage

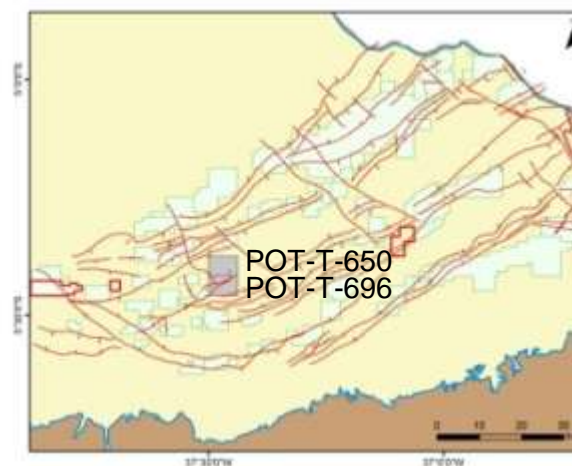




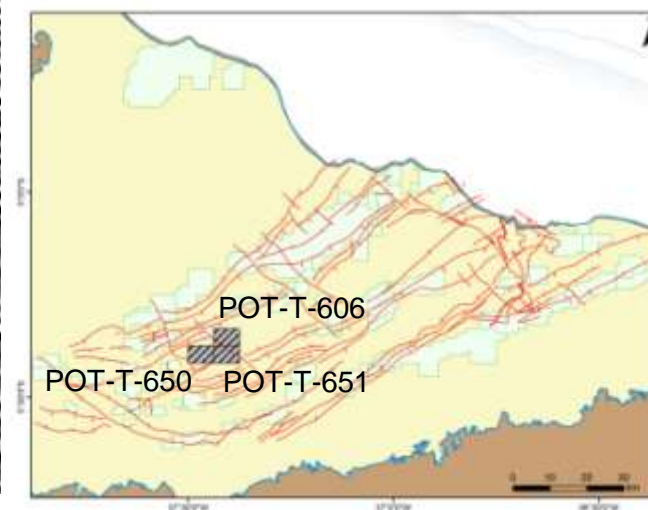
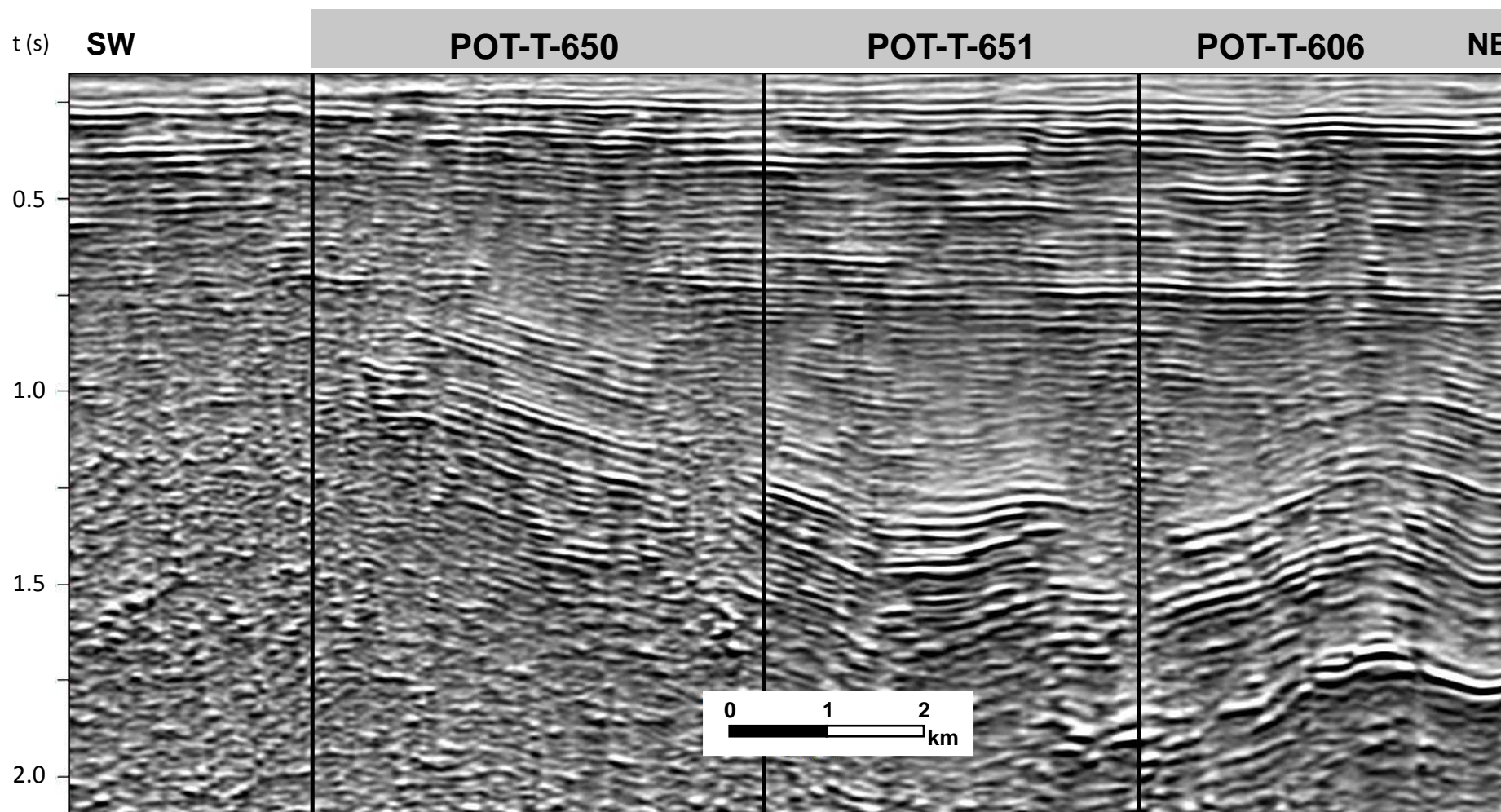
# Leads – Potiguar Basin



Open Acreage  
1<sup>st</sup> Stage

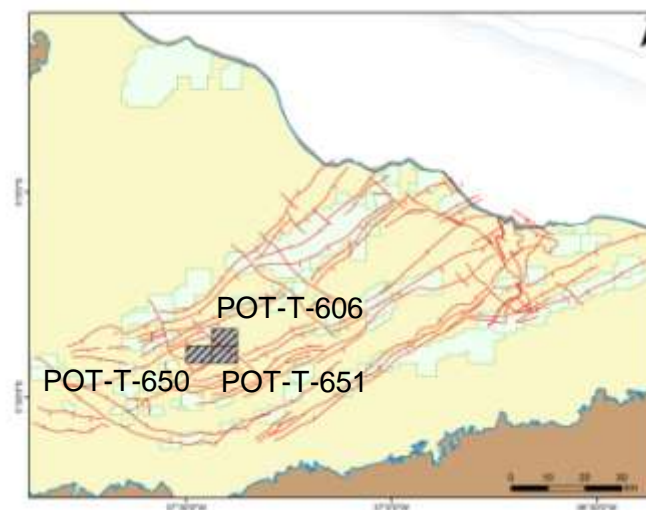
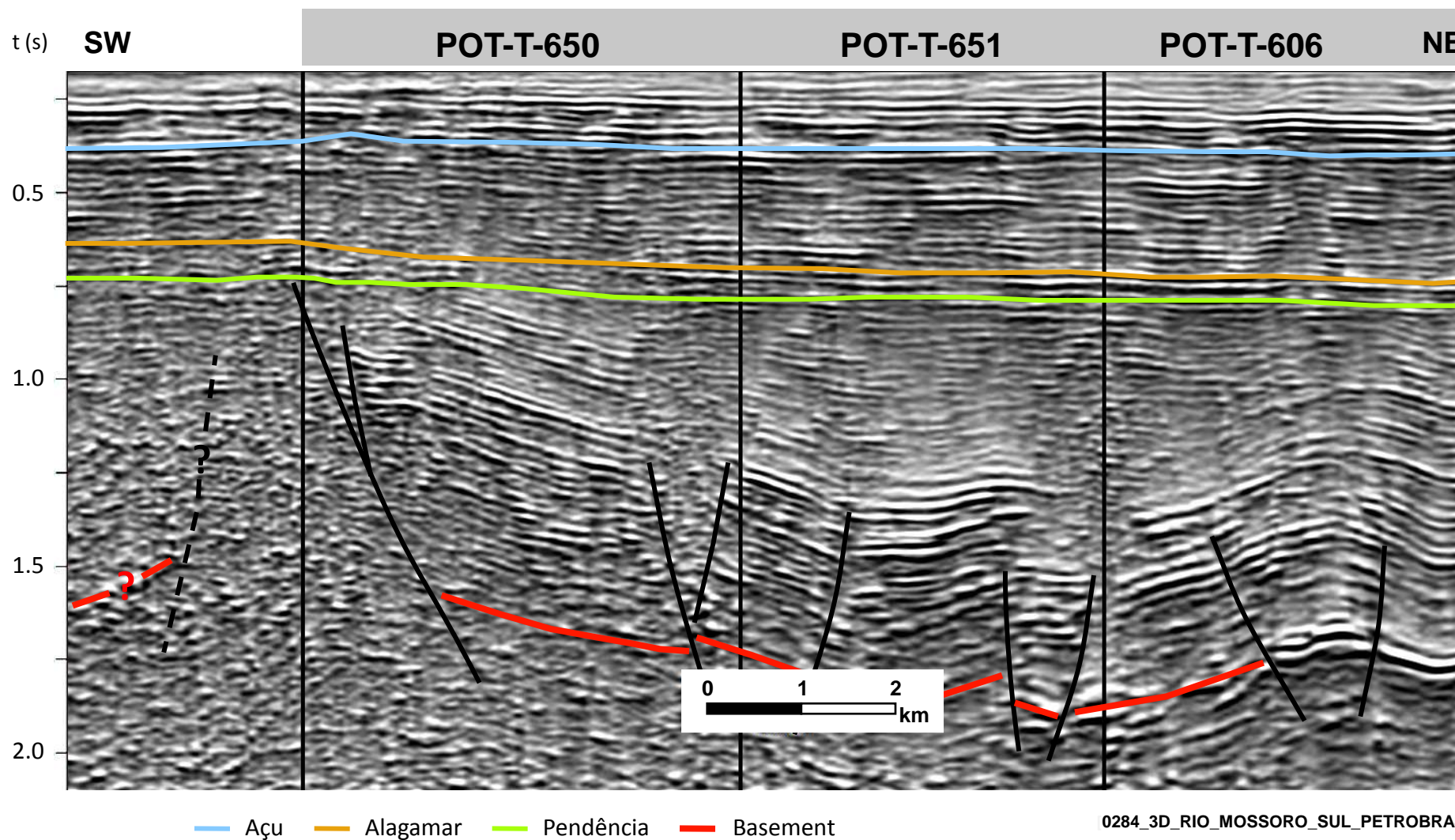


# Leads – Potiguar Basin

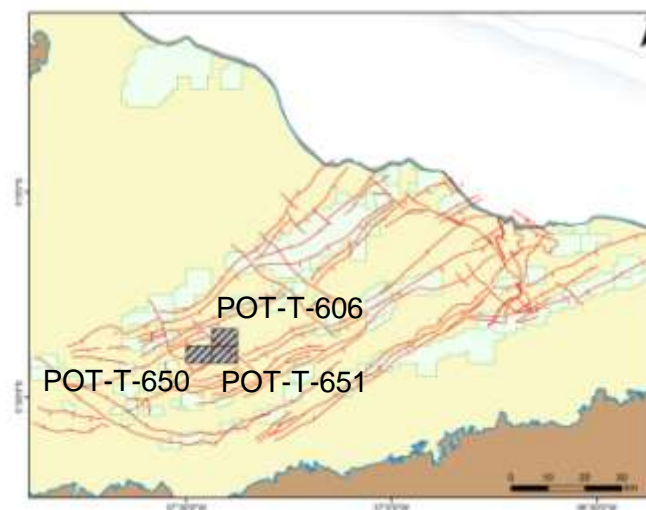
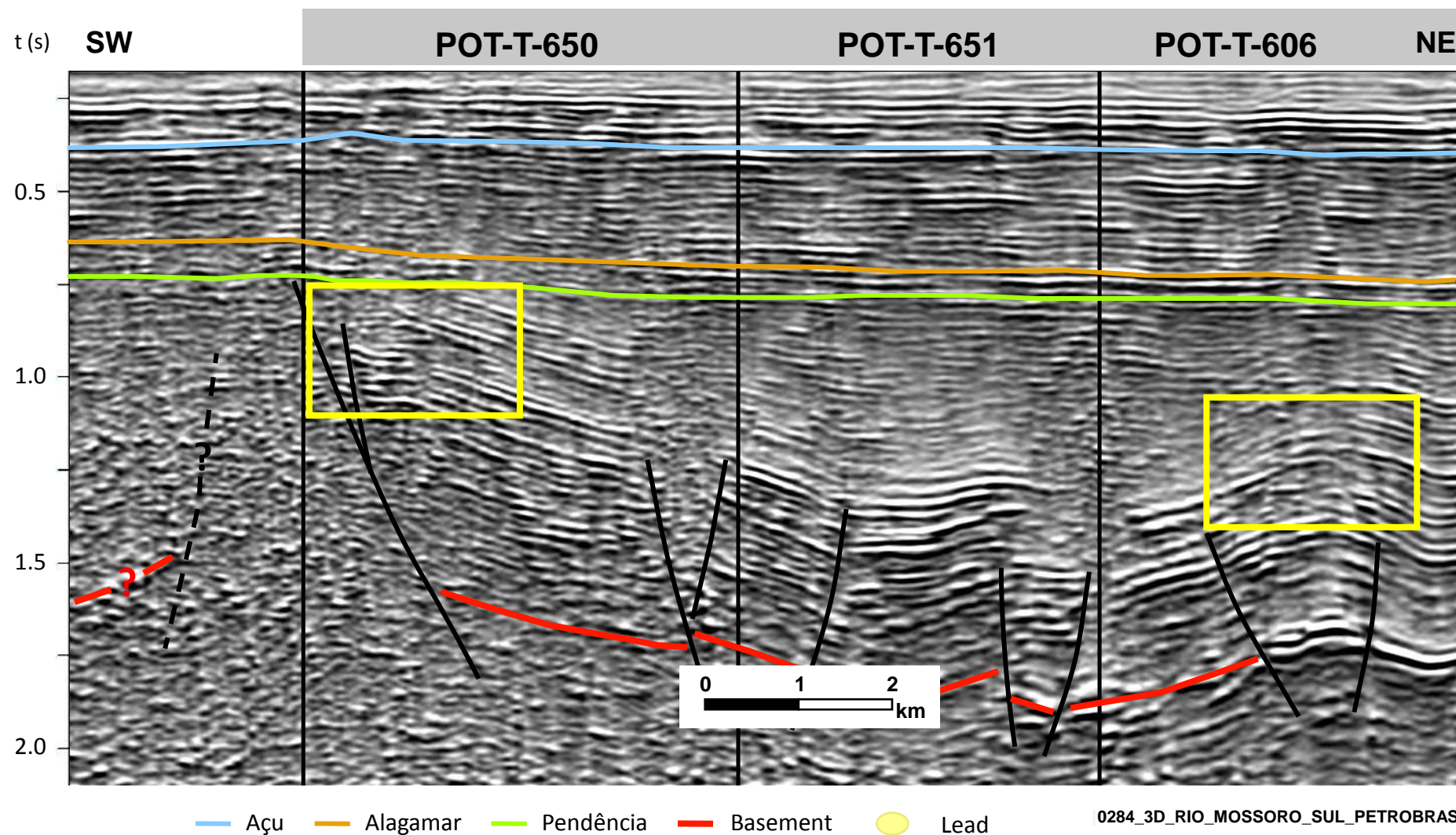




# Leads – Potiguar Basin

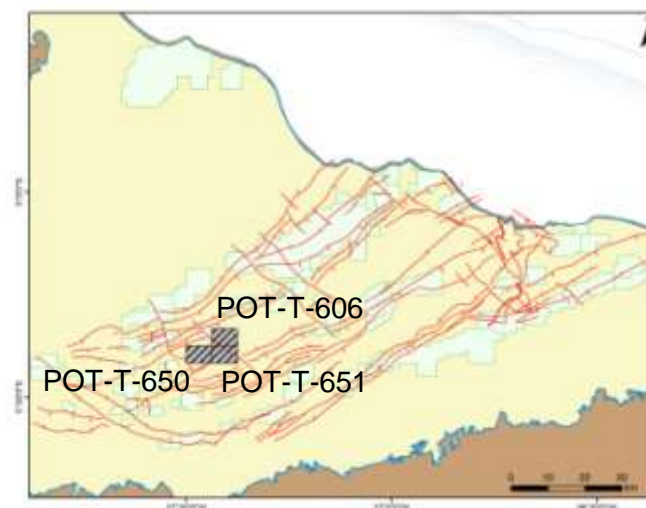
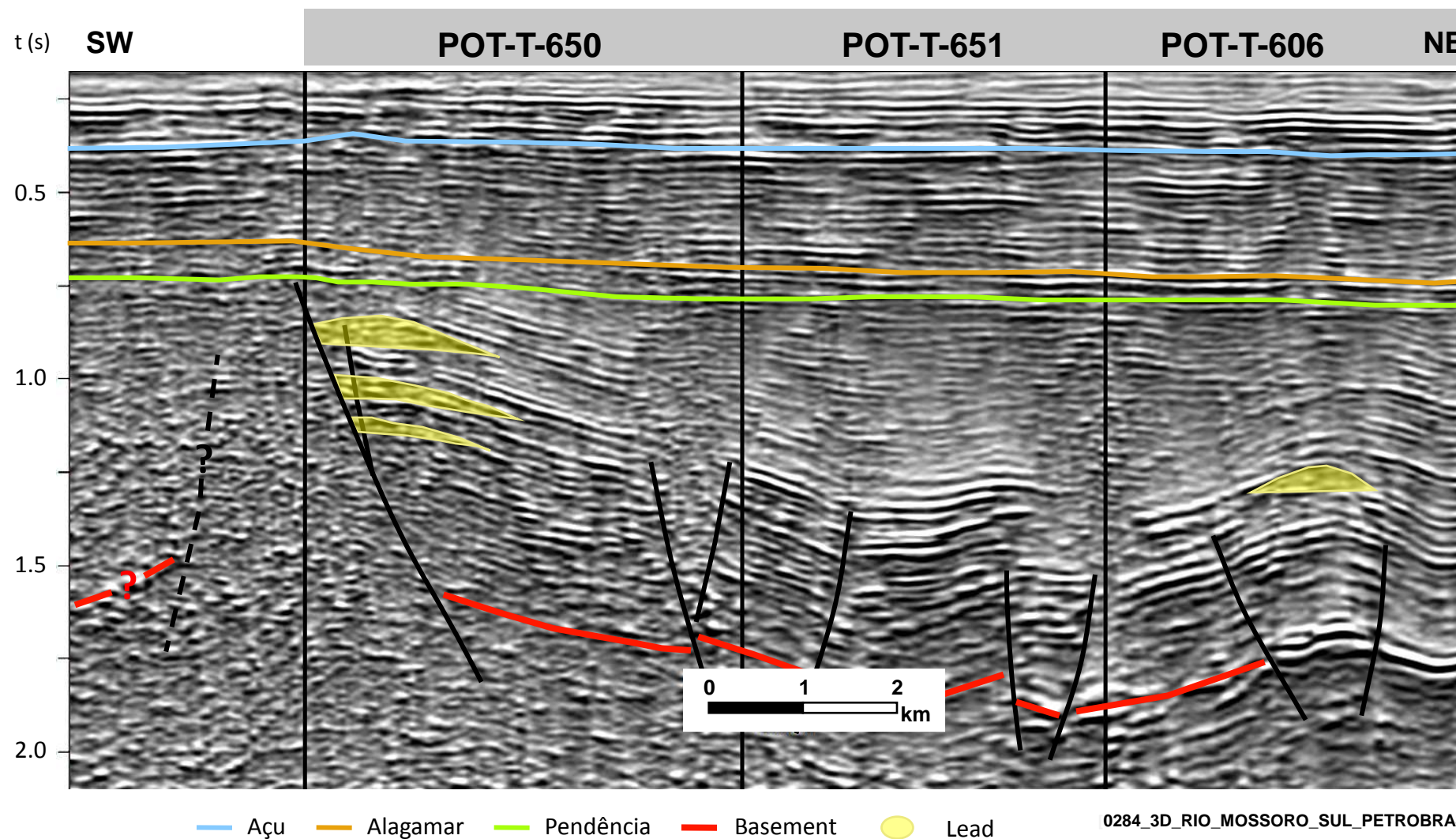


# Leads – Potiguar Basin

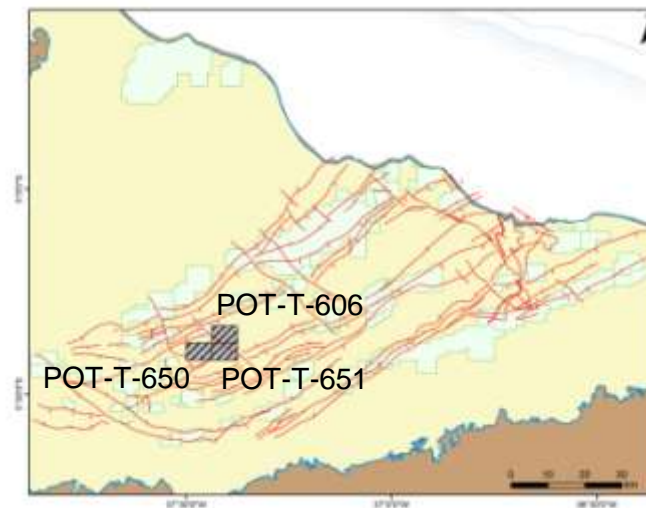
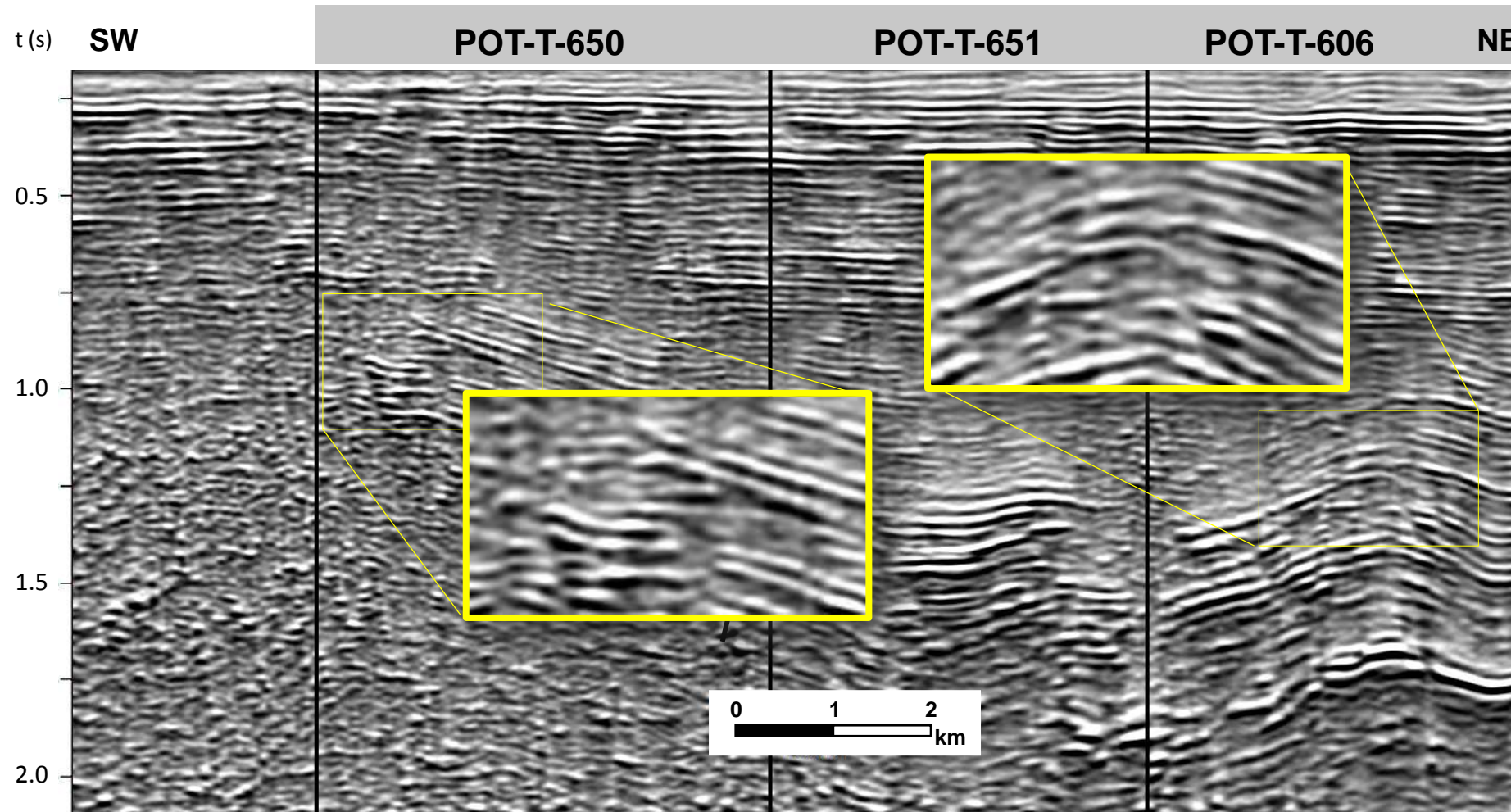




# Leads – Potiguar Basin

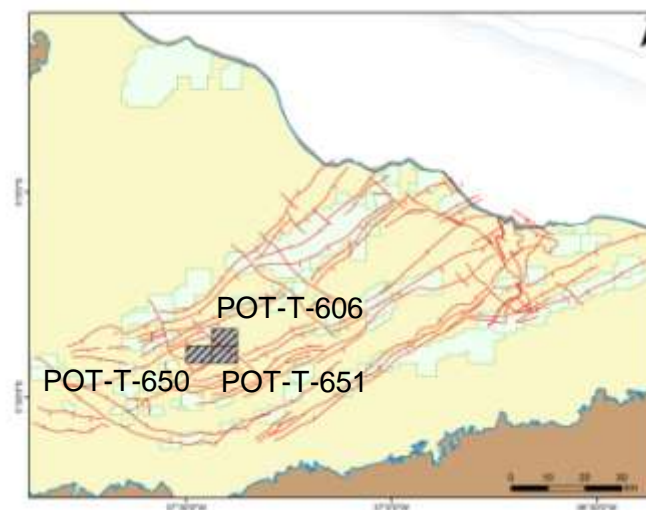
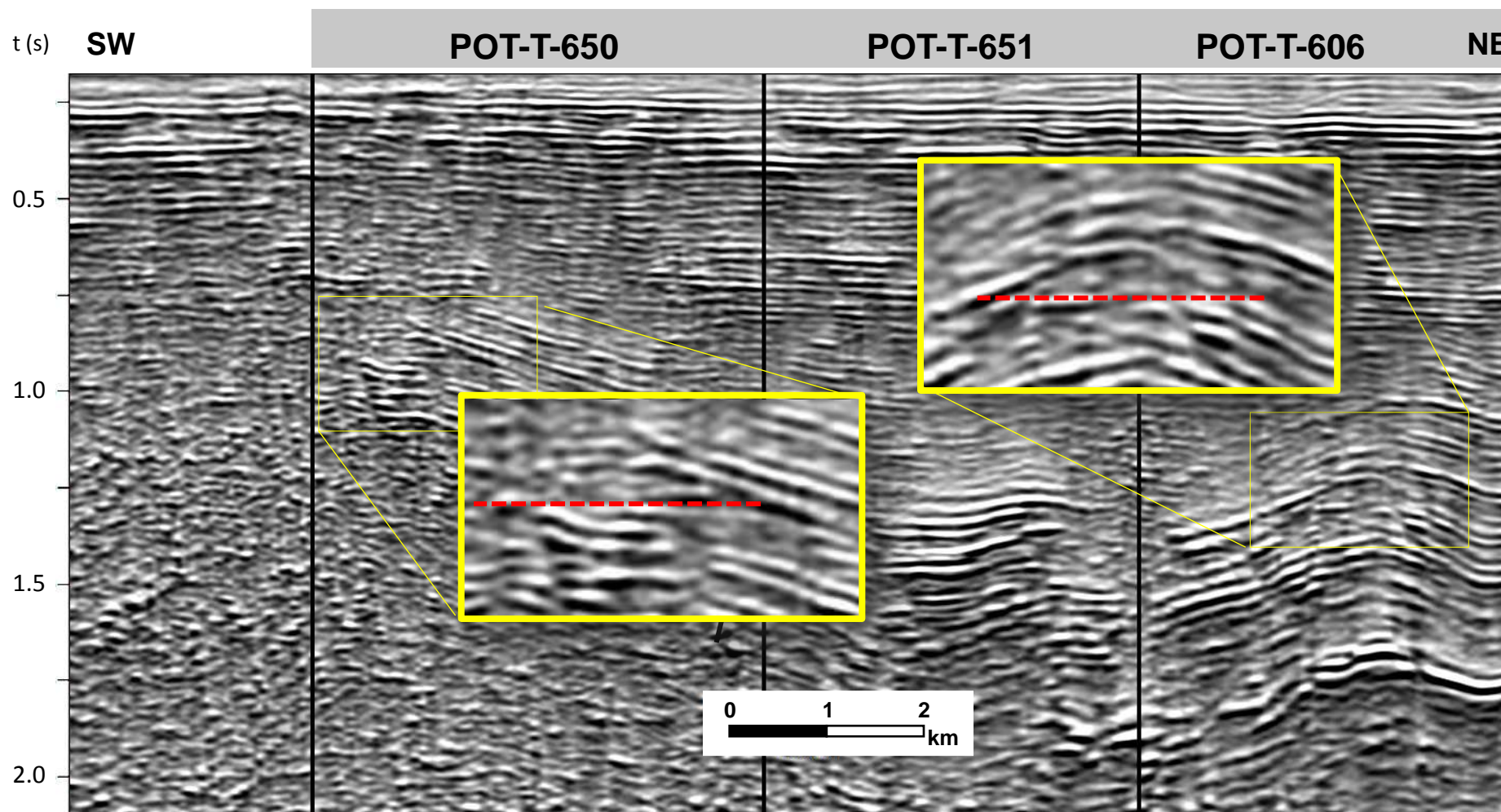


# Leads – Potiguar Basin

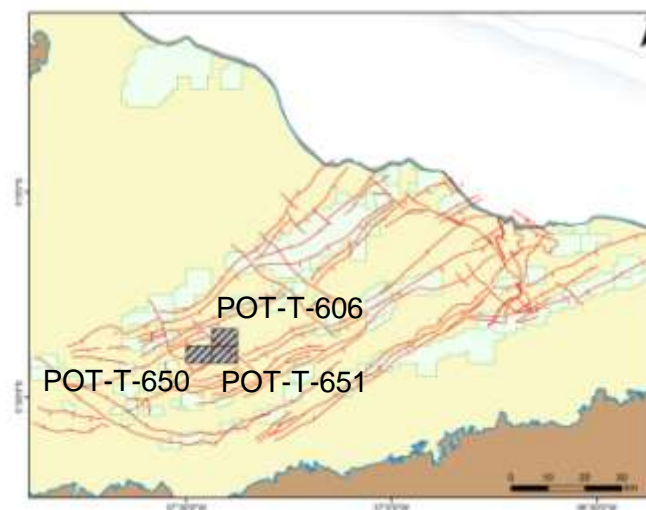
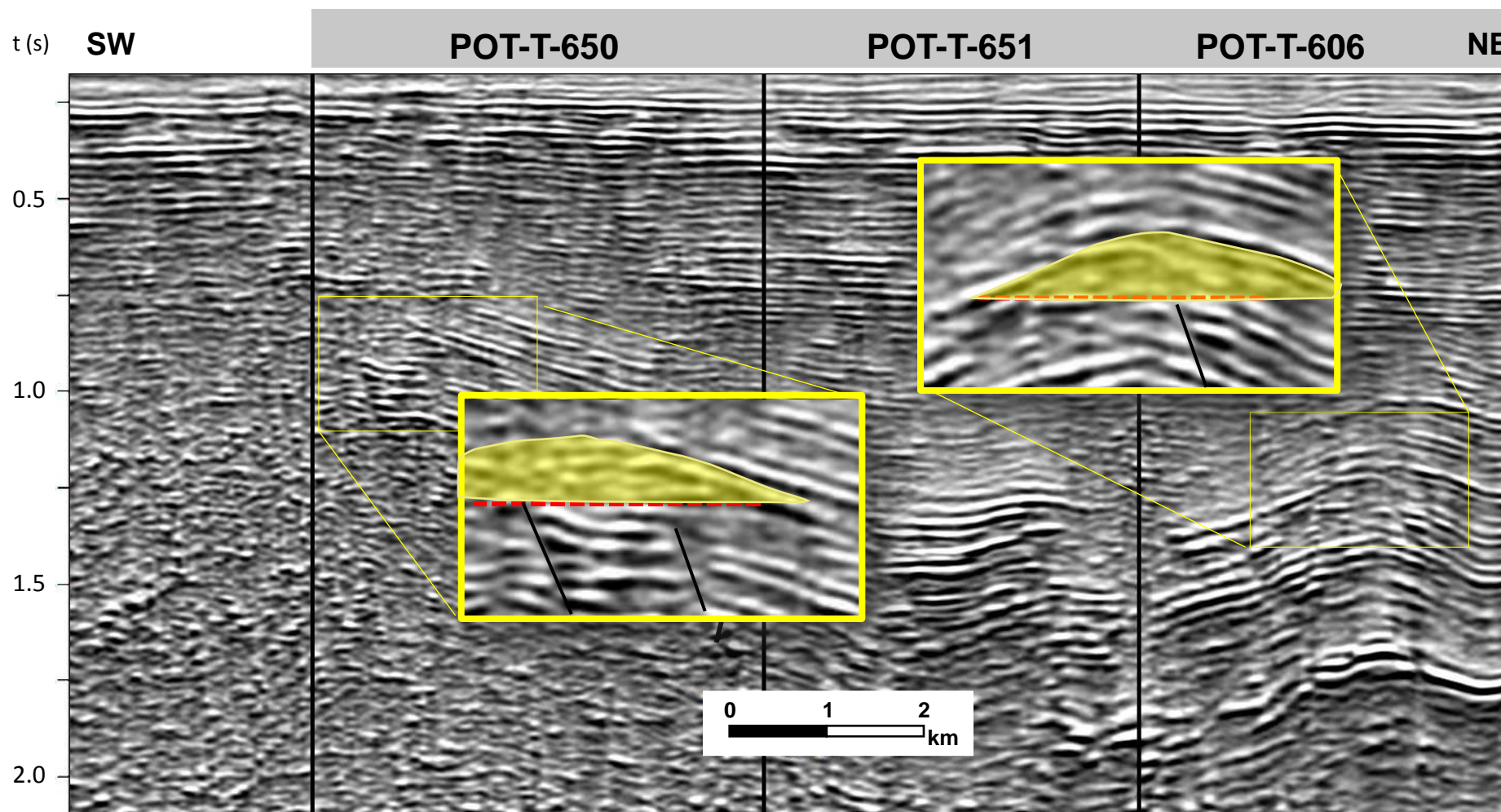




# Leads – Potiguar Basin



# Leads – Potiguar Basin





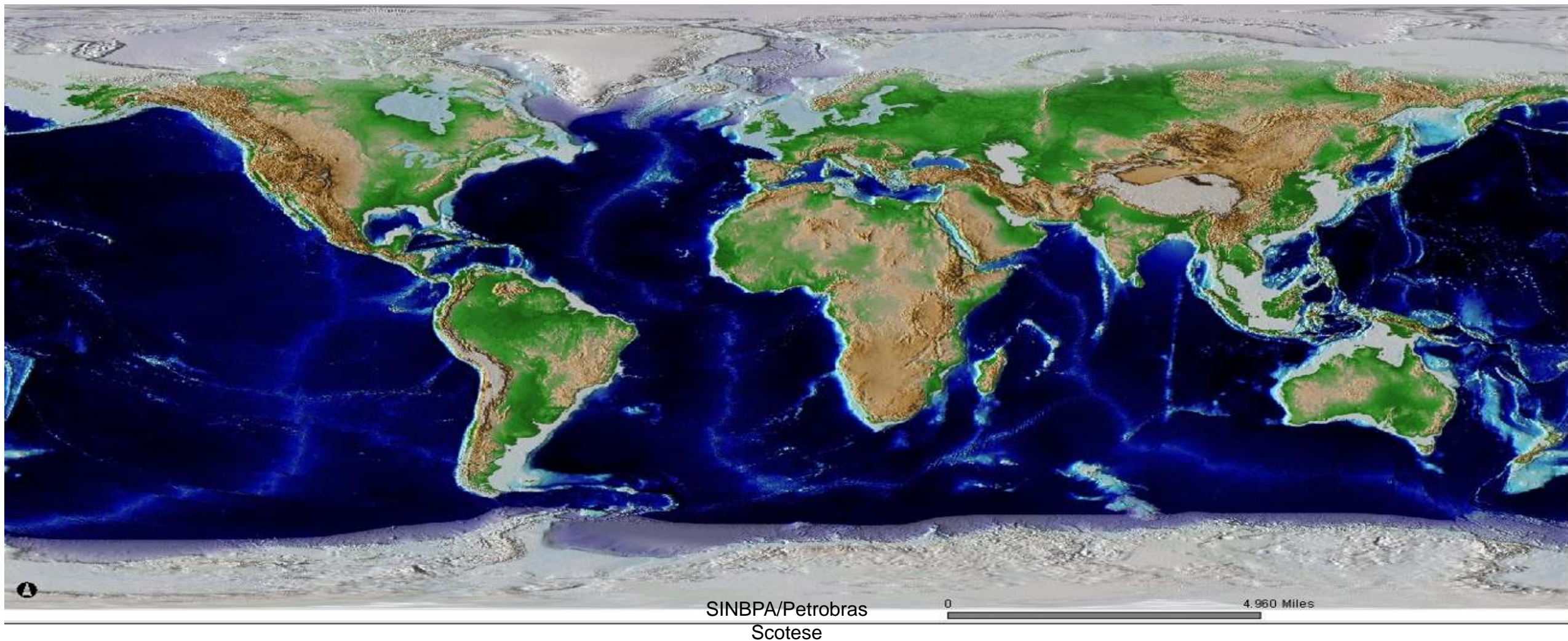


Open Acreage  
Offshore Blocks  
Geological Potential  
Equatorial Margin Basins



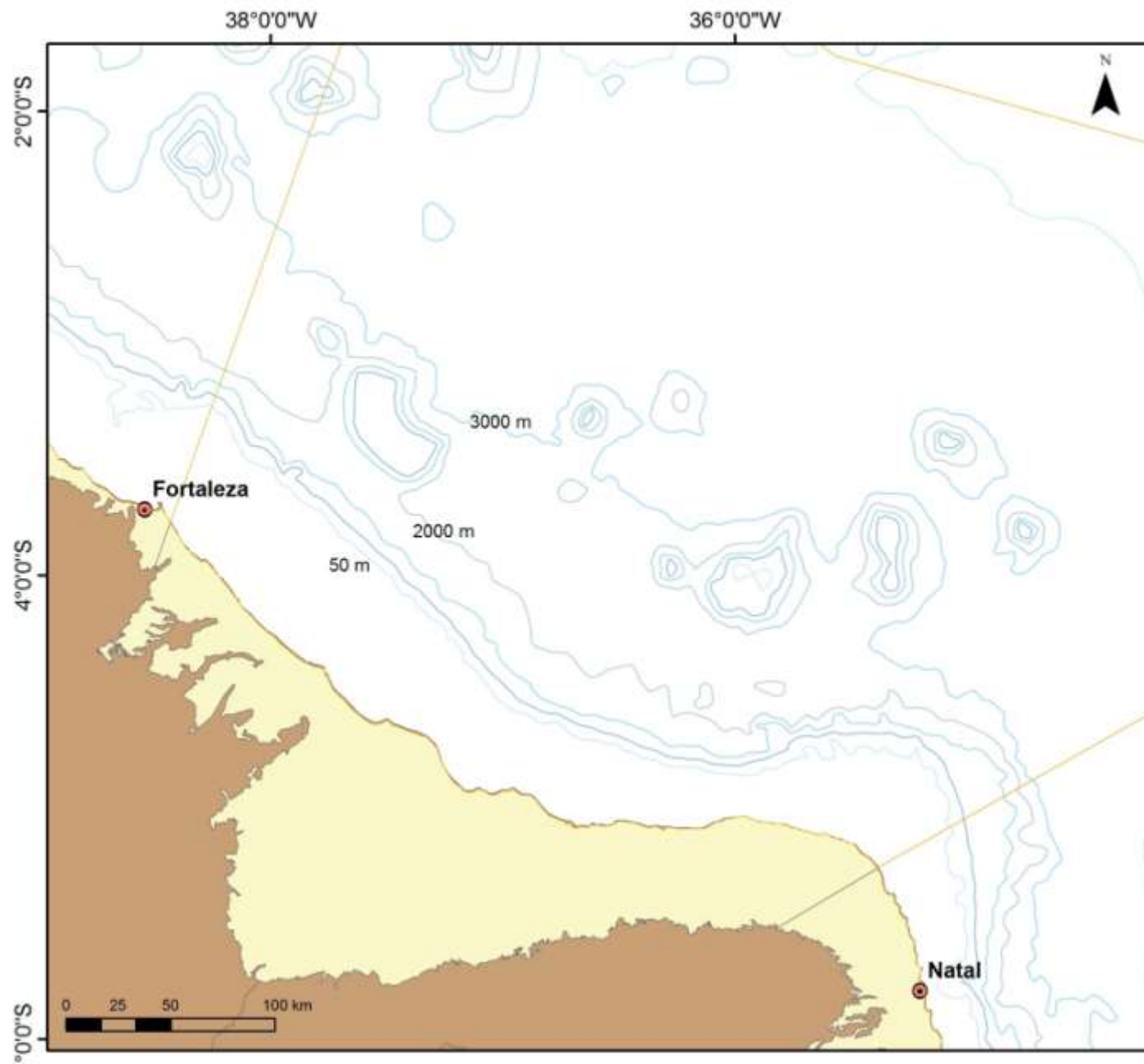


# Tectonostratigraphic Evolution

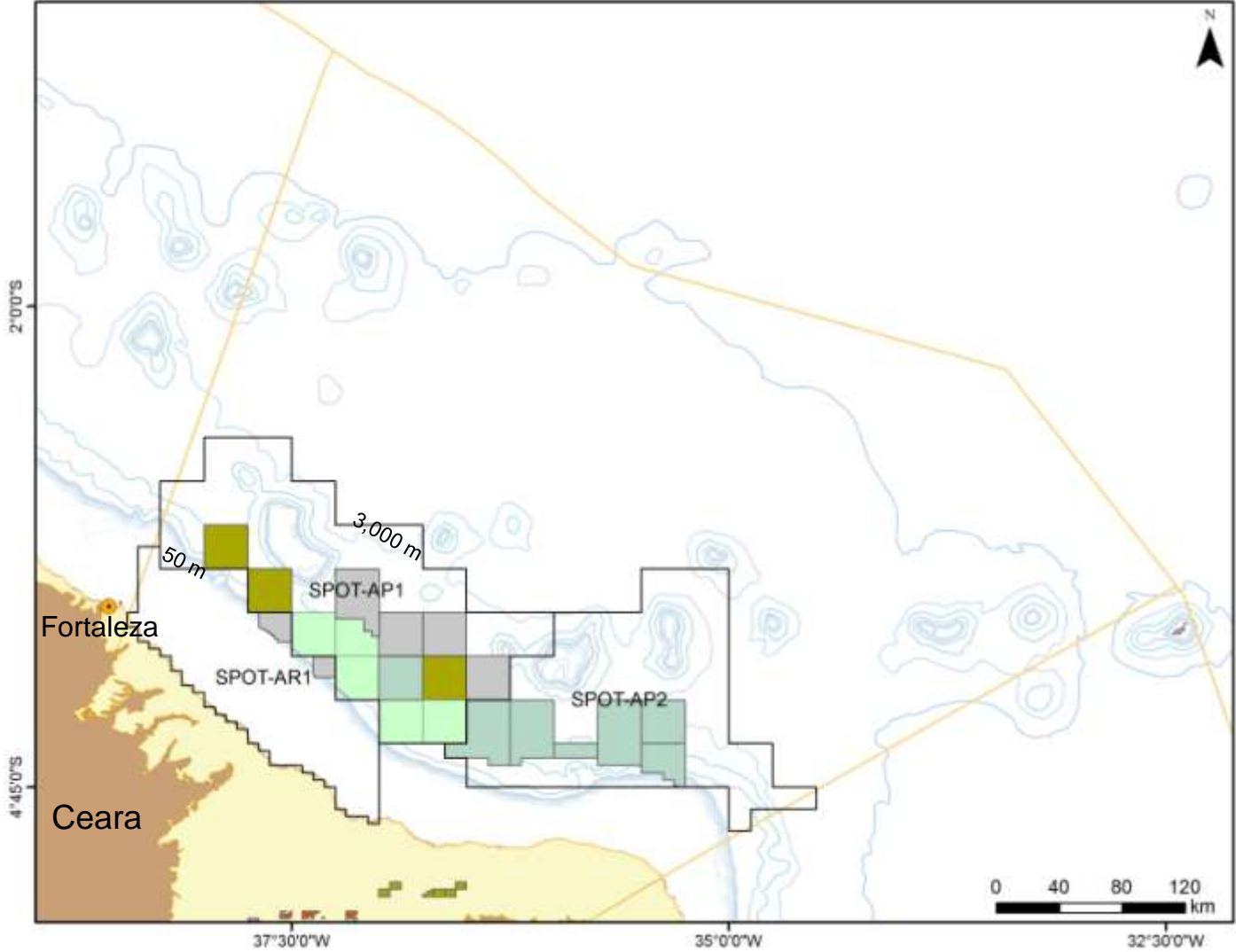




# Potiguar Basin - Offshore



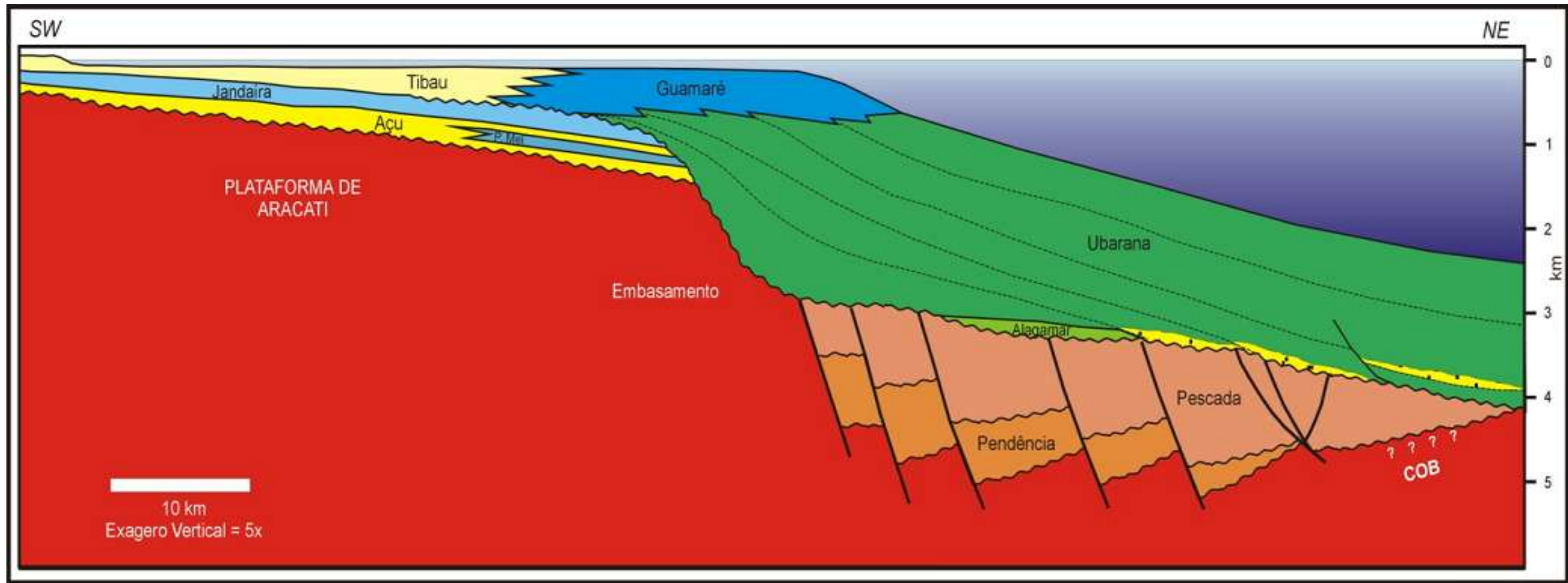
# Potiguar Basin - Offshore



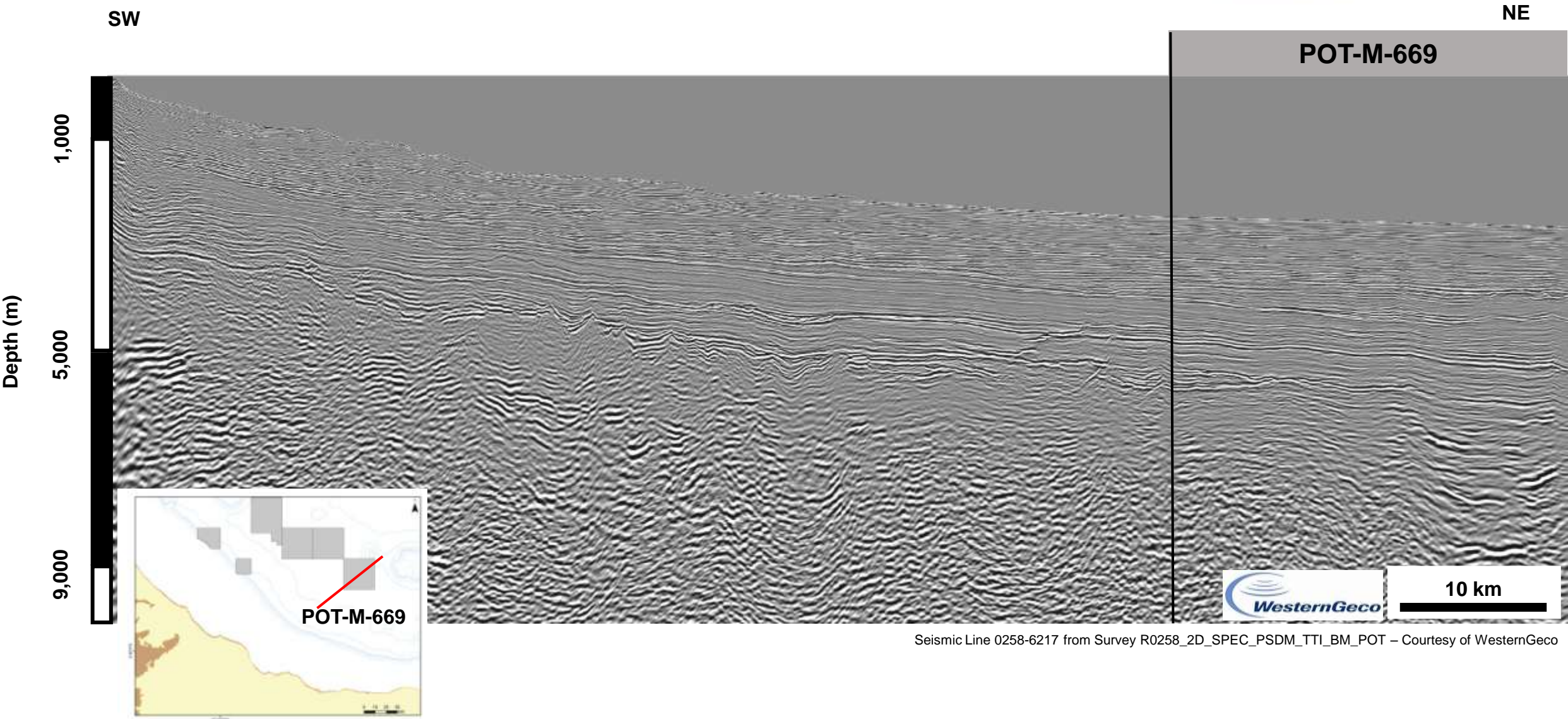
- Round 7
- Round 11
- Round 15
- Sedimentary Basin
- Basement
- Open Acreage



# Schematic Geological Section

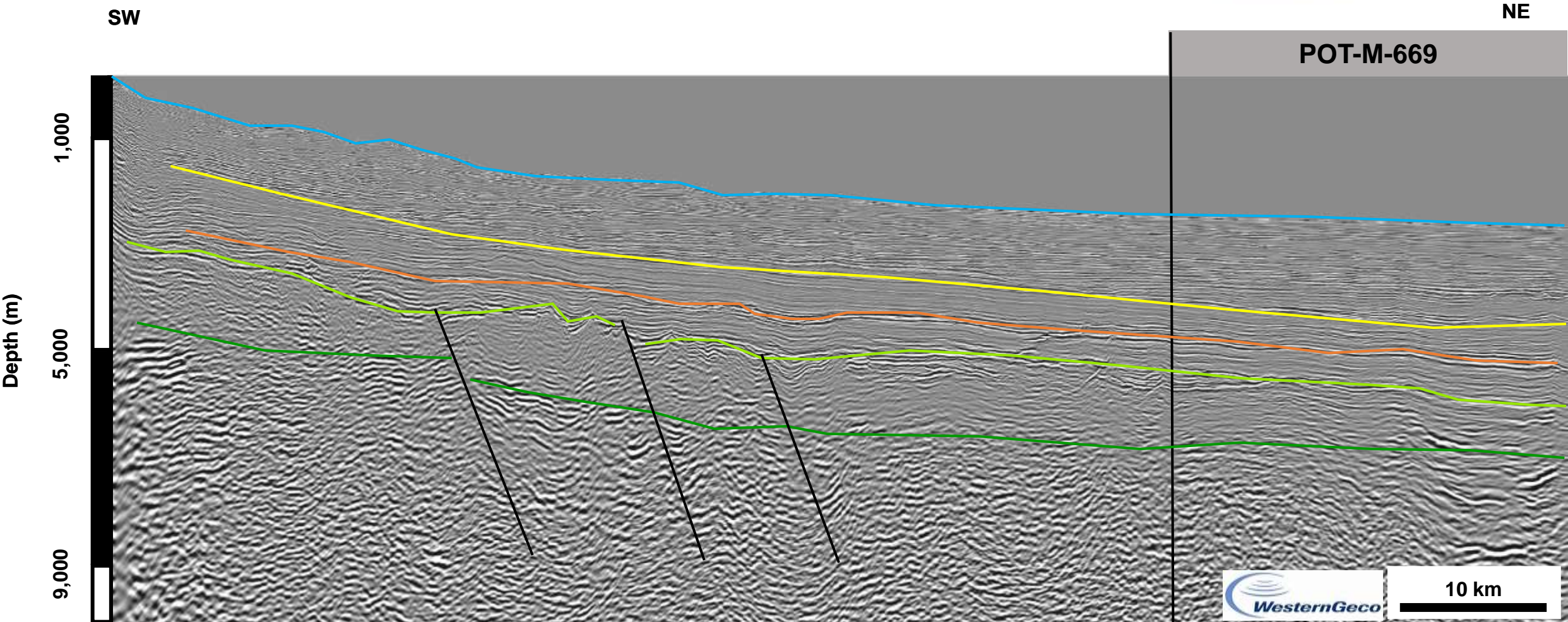


# Leads - Potiguar Basin - Offshore





# Leads - Potiguar Basin - Offshore

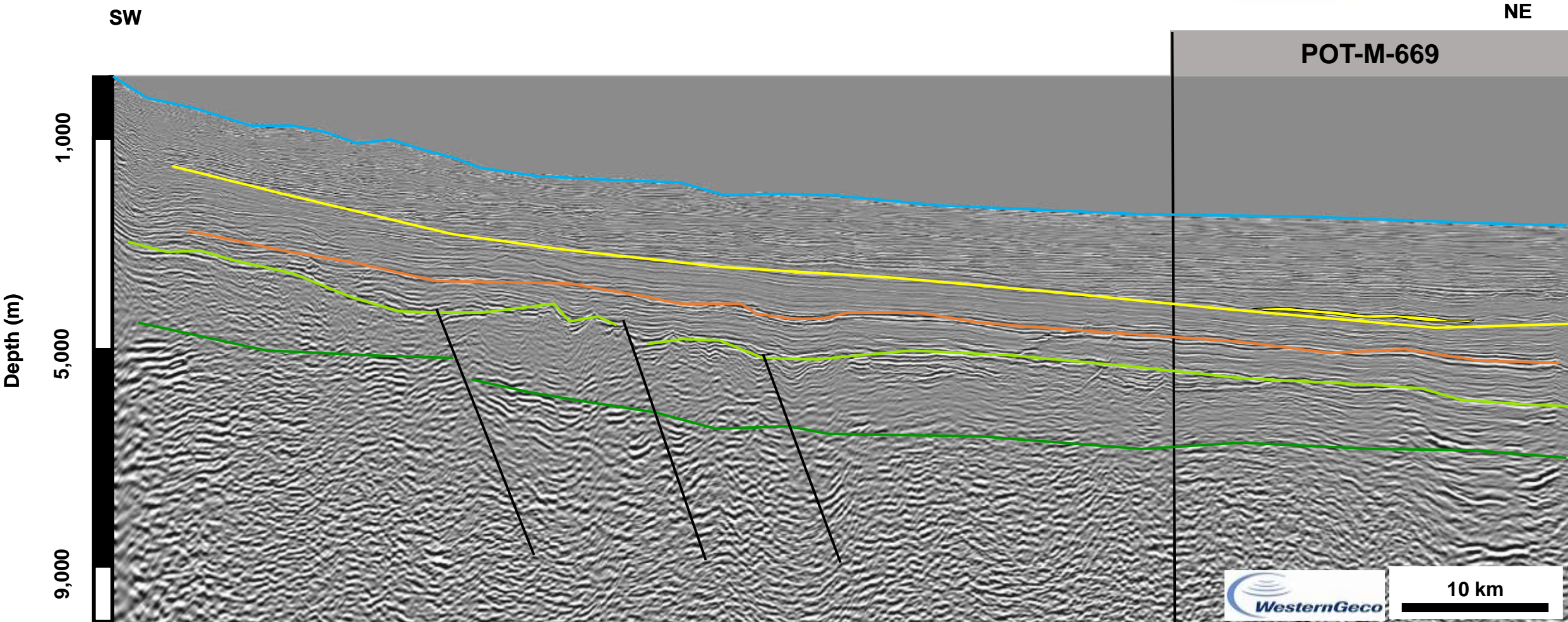


Seismic Line 0258-6217 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco

- Sea Bottom
- Top of Alagamar Fm
- Top of Quebradas Fm
- Top of Pescada Fm
- Fault
- Lower Miocene discordance



# Leads - Potiguar Basin - Offshore

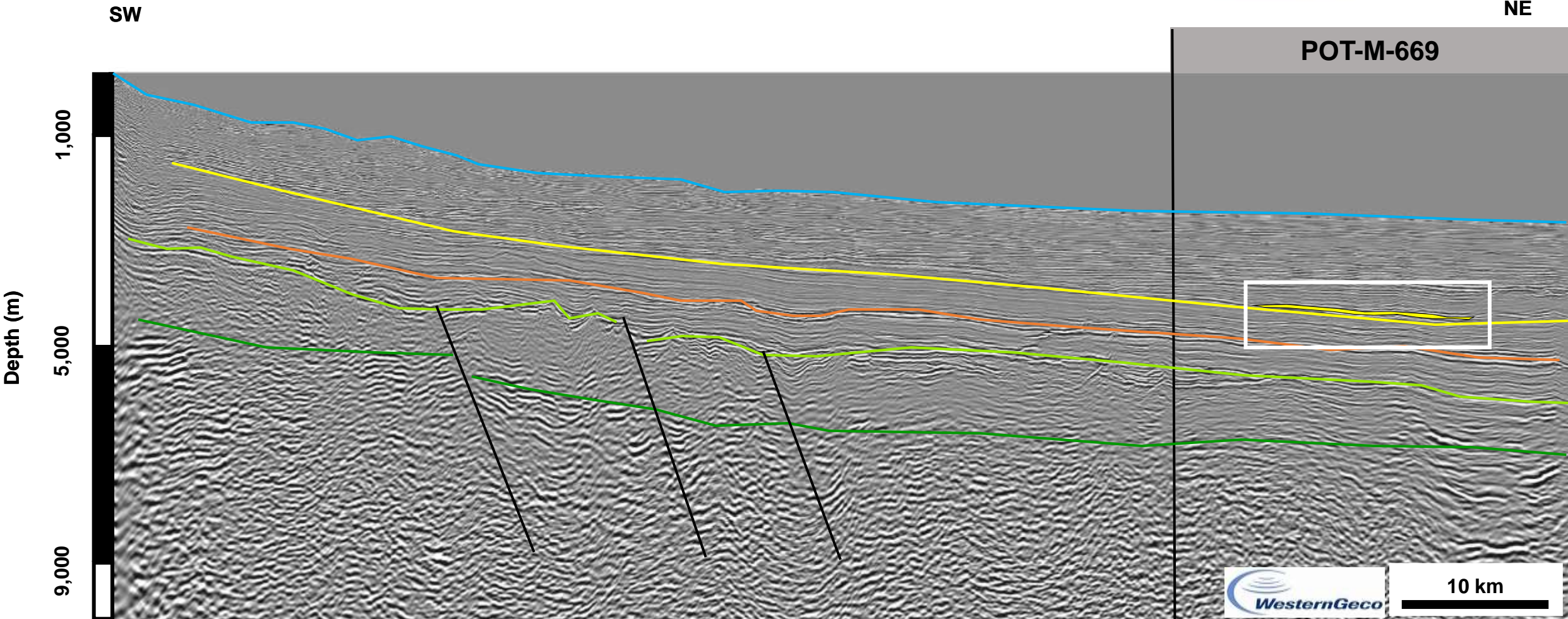


Seismic Line 0258-6217 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco

- Sea Bottom
- Top of Alagamar Fm
- Top of Quebradas Fm
- Top of Pescada Fm
- Fault
- Lead
- Lower Miocene discordance



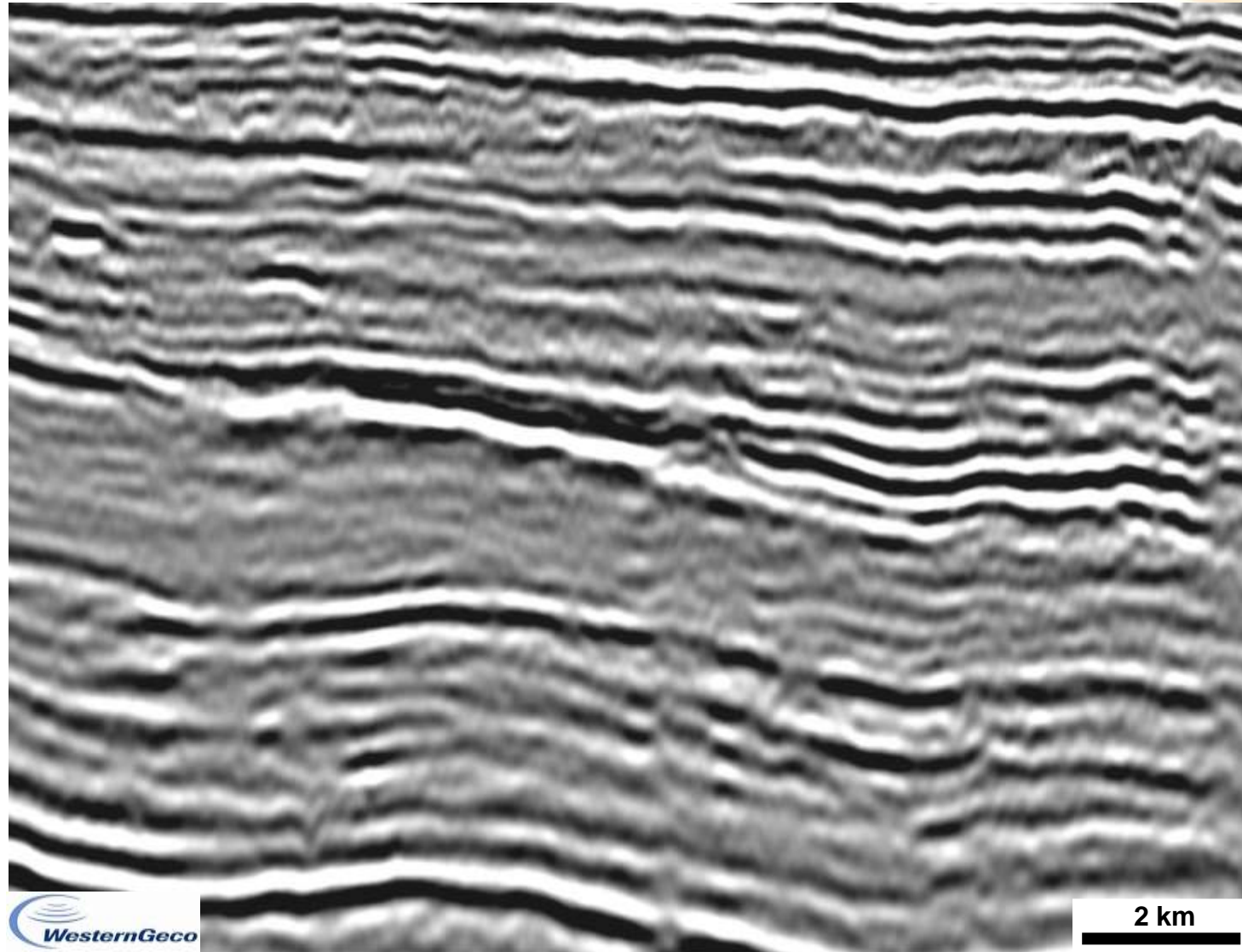
# Leads - Potiguar Basin - Offshore



Seismic Line 0258-6217 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco

- Sea Bottom
- Top of Alagamar Fm
- Top of Quebradas Fm
- Top of Pescada Fm
- Fault
- Lead
- Lower Miocene discordance

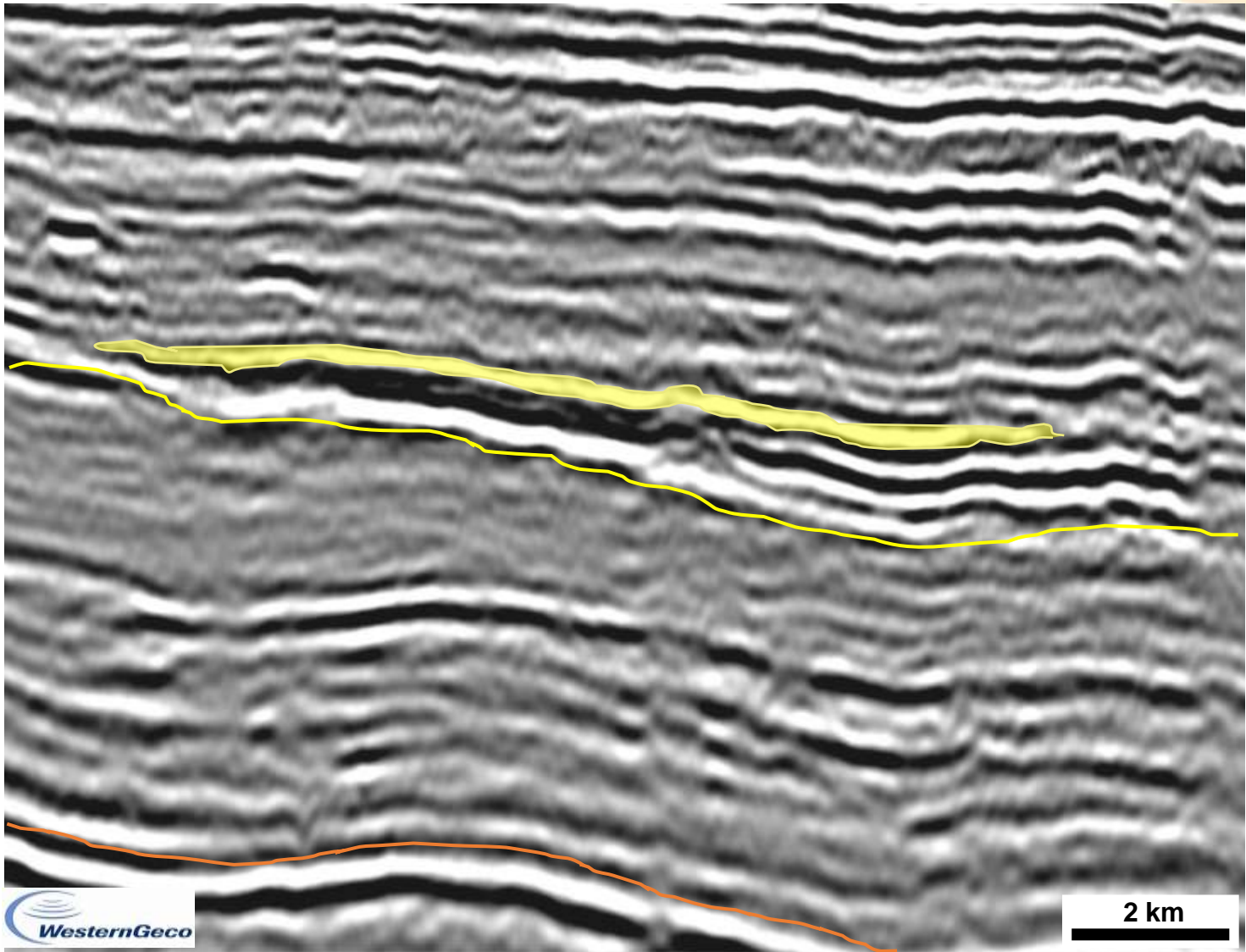
# Leads - Potiguar Basin - Offshore



Seismic Line 0258-6217 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco



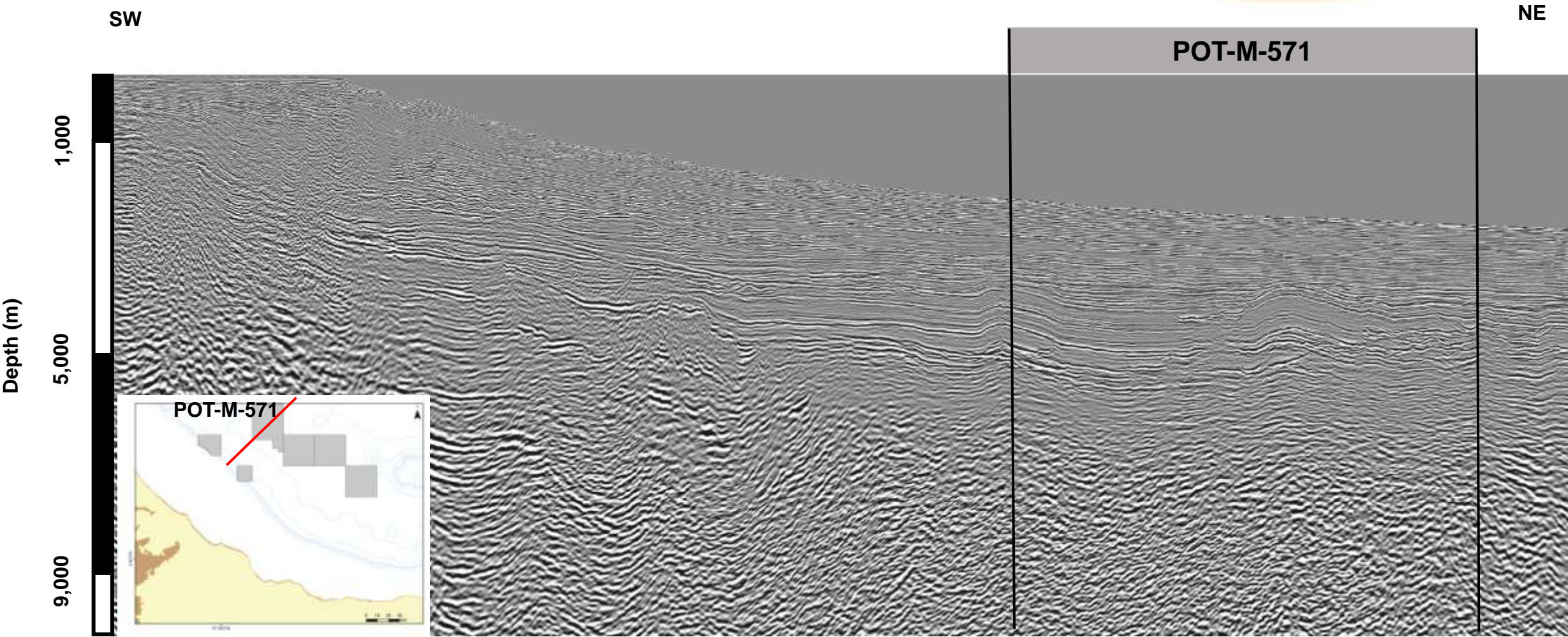
# Leads - Potiguar Basin - Offshore



Seismic Line 0258-6217 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco

Top of Quebradas Fm      Lower Miocene discordance      Lead

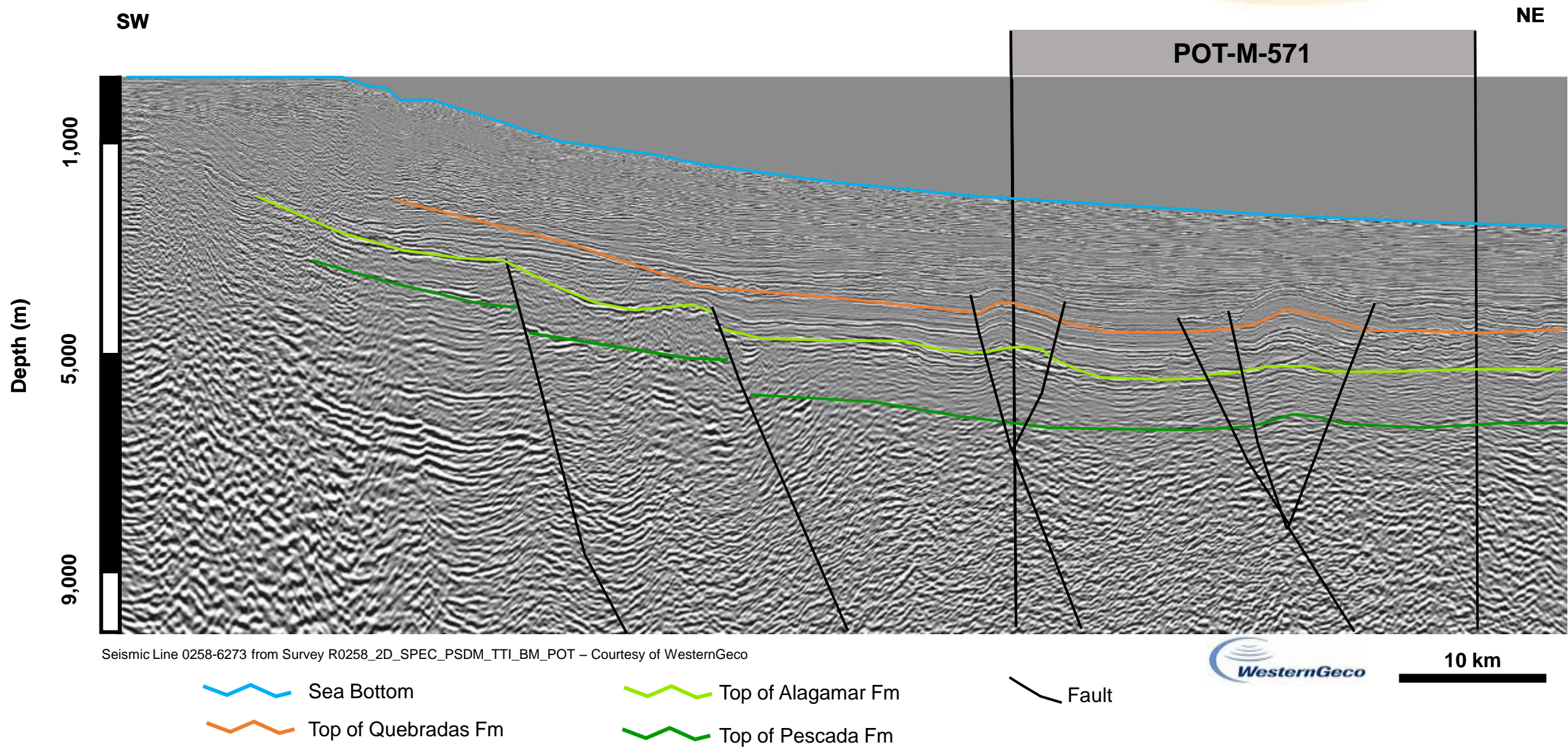
# Leads - Potiguar Basin - Offshore



Seismic Line 0258-6273 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco

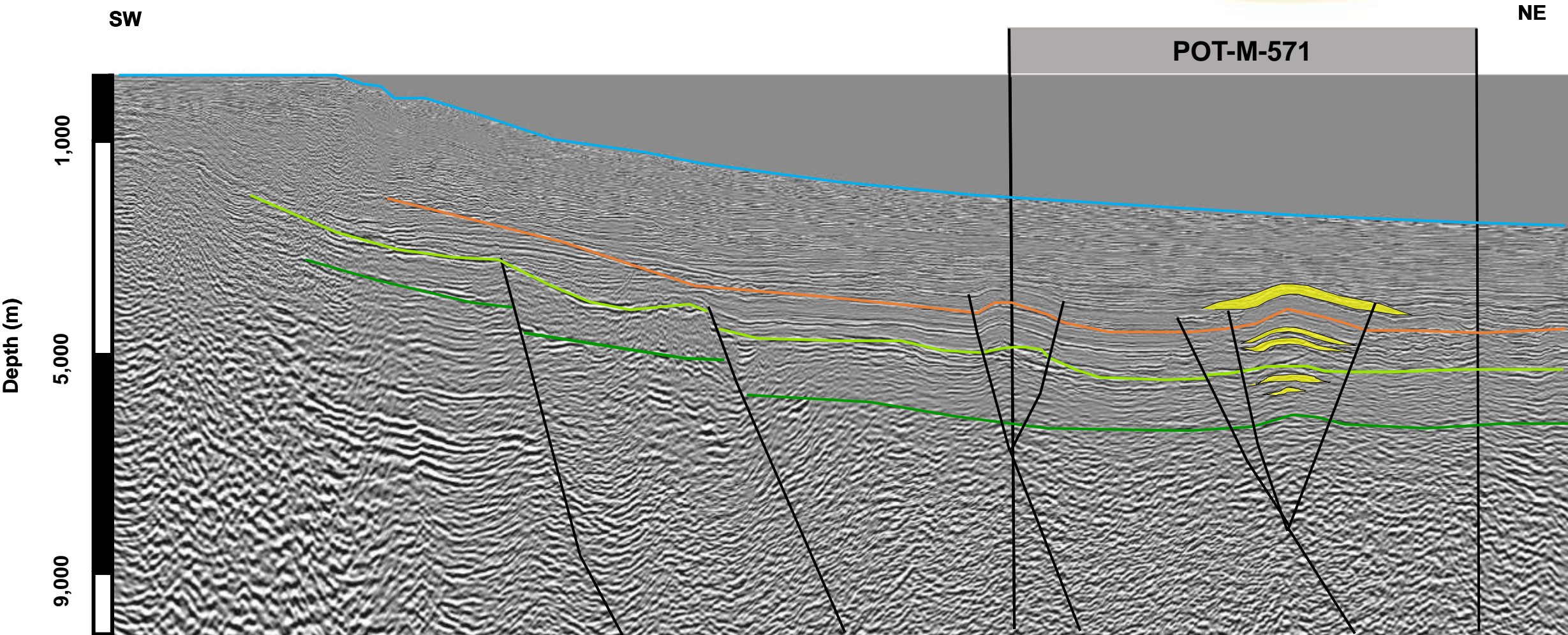


# Leads - Potiguar Basin - Offshore





# Leads - Potiguar Basin - Offshore

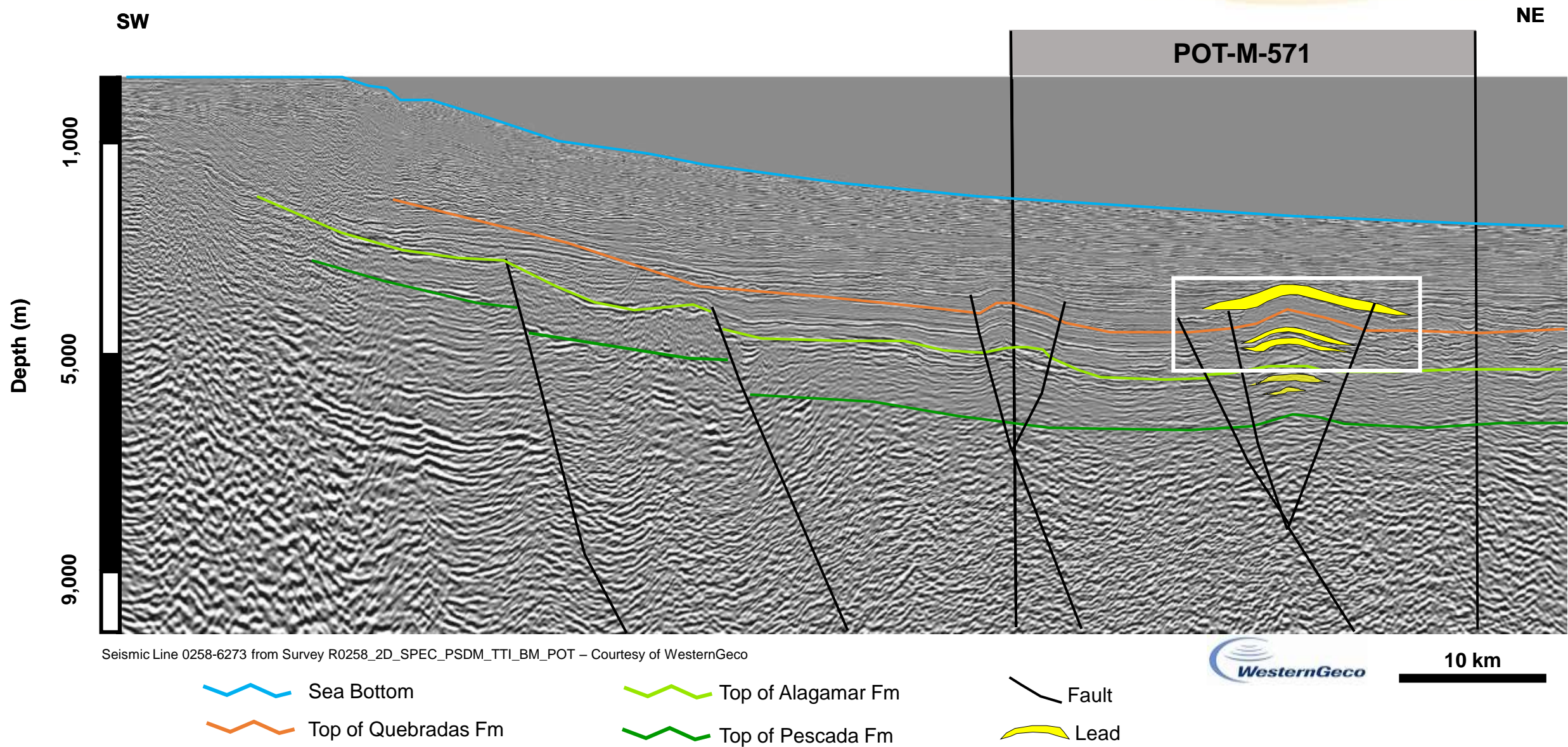


Seismic Line 0258-6273 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco

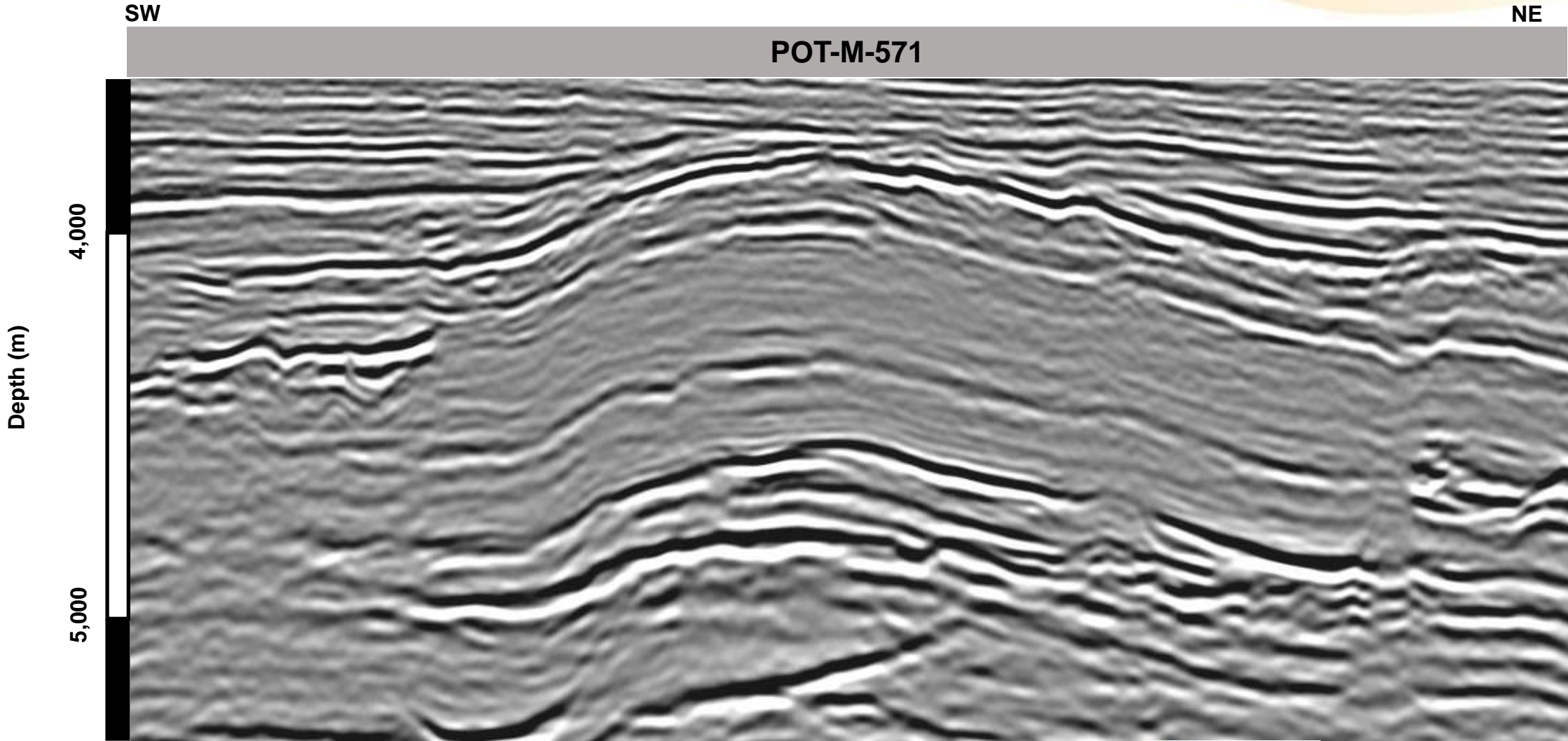
- Sea Bottom
- Top of Quebradas Fm
- Top of Alagamar Fm
- Top of Pescada Fm
- Fault
- Lead



# Leads - Potiguar Basin - Offshore



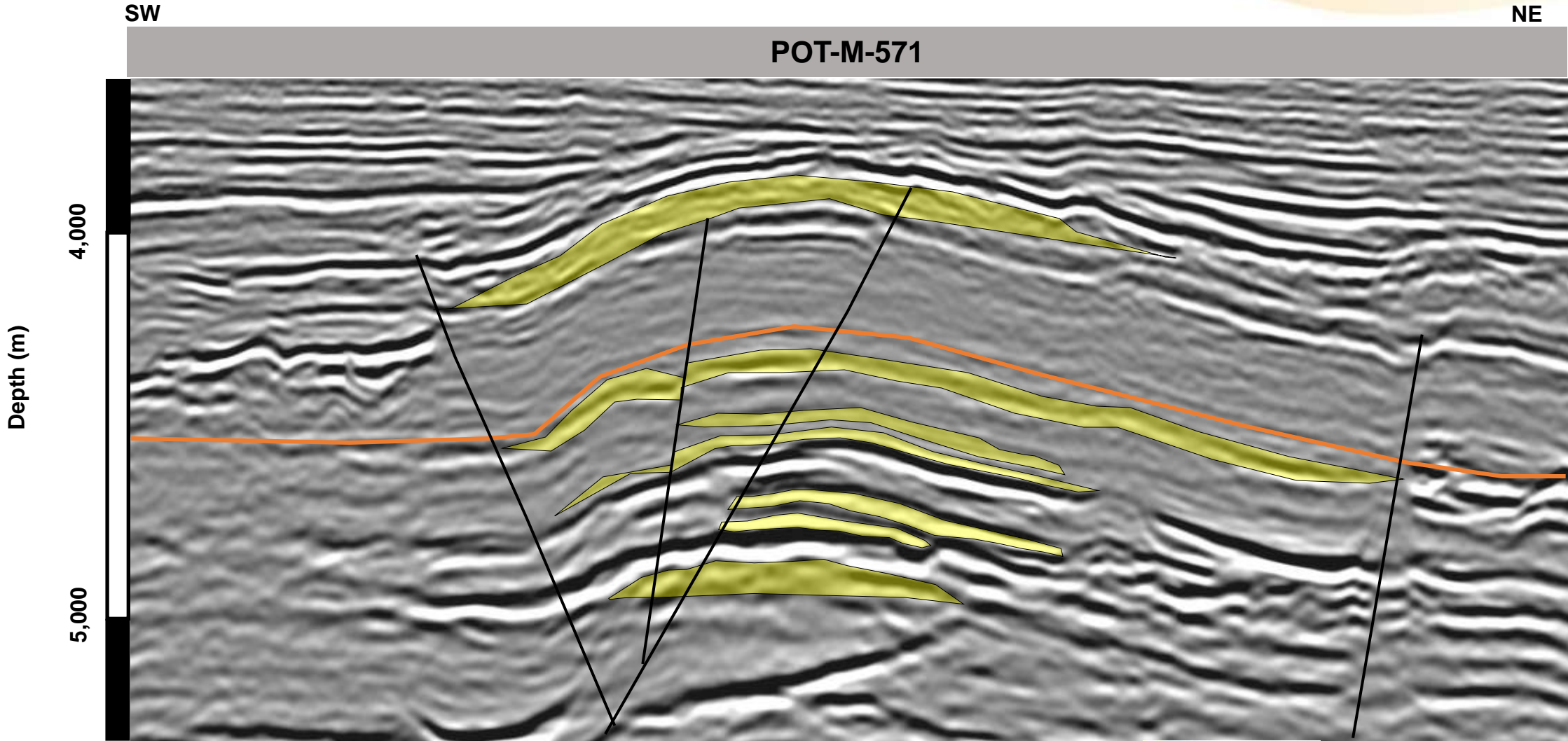
# Leads - Potiguar Basin - Offshore



Seismic Line 0258-6273 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco



# Leads - Potiguar Basin - Offshore



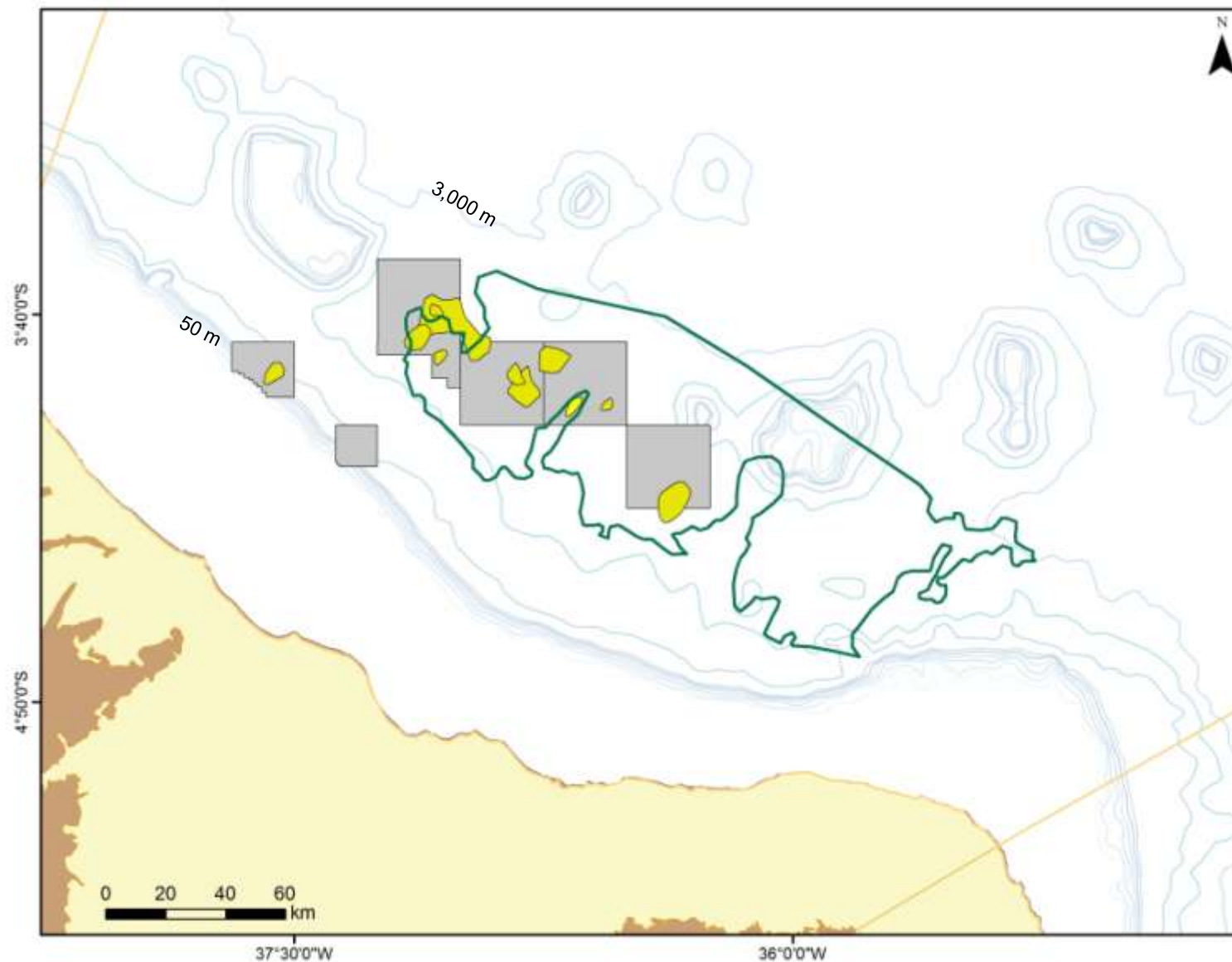
Seismic Line 0258-6273 from Survey R0258\_2D\_SPEC\_PSDM\_TTI\_BM\_POT – Courtesy of WesternGeco






Top of Quebradas Fm      Fault      Lead

2 km

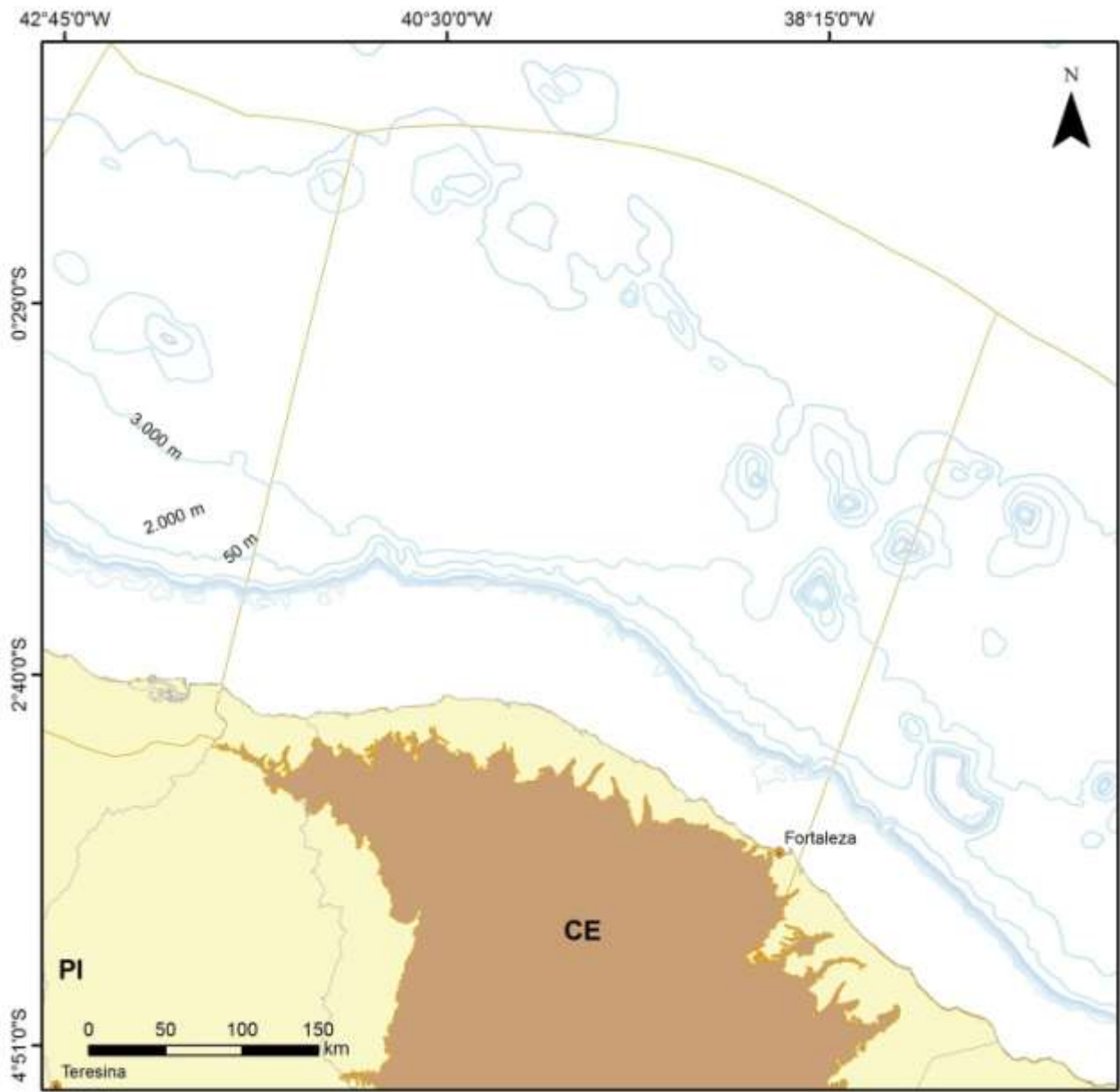
# Potiguar Basin - Offshore



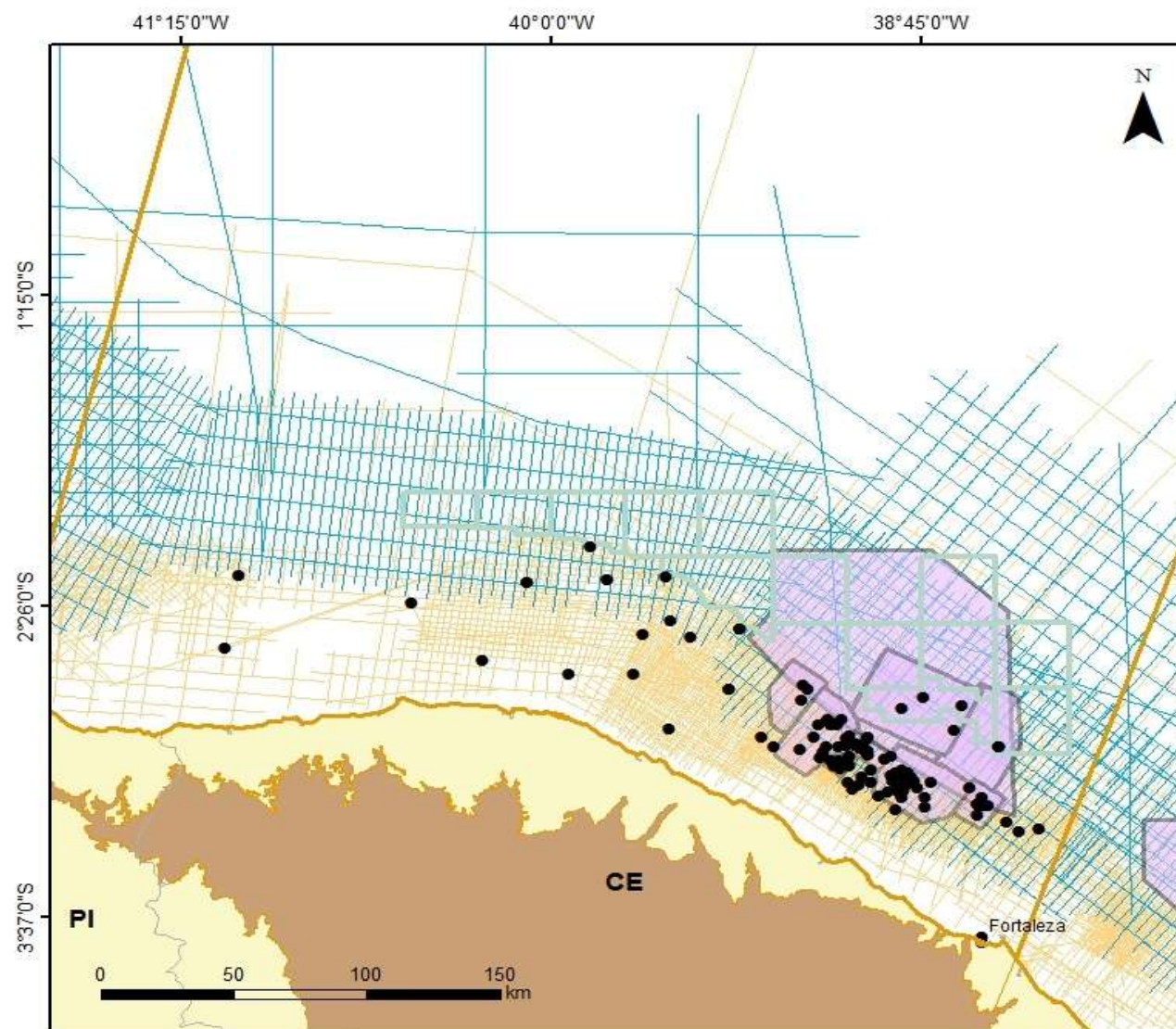
-  Oil Kitchen
-  Leads
-  Open Acreage Blocks  
Already Available



# Ceara Basin - Offshore



# Ceara Basin - Offshore

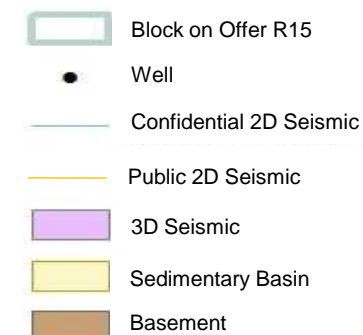


**Public 2D Seismic**

**Exclusive and non-exclusive 2D seismic**

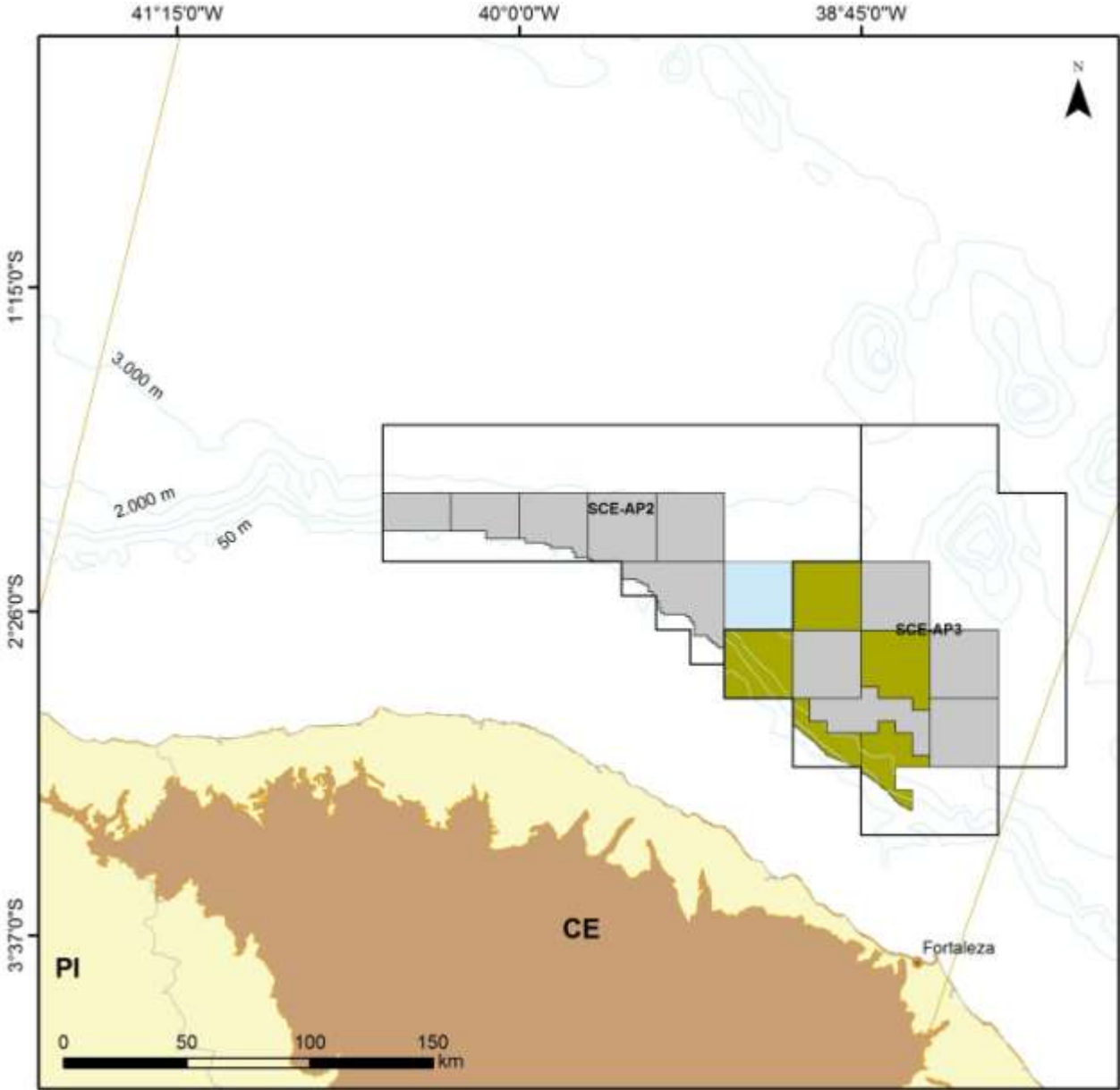
**3D post stack seismic**

**Exclusive and non-exclusive 3D seismic**





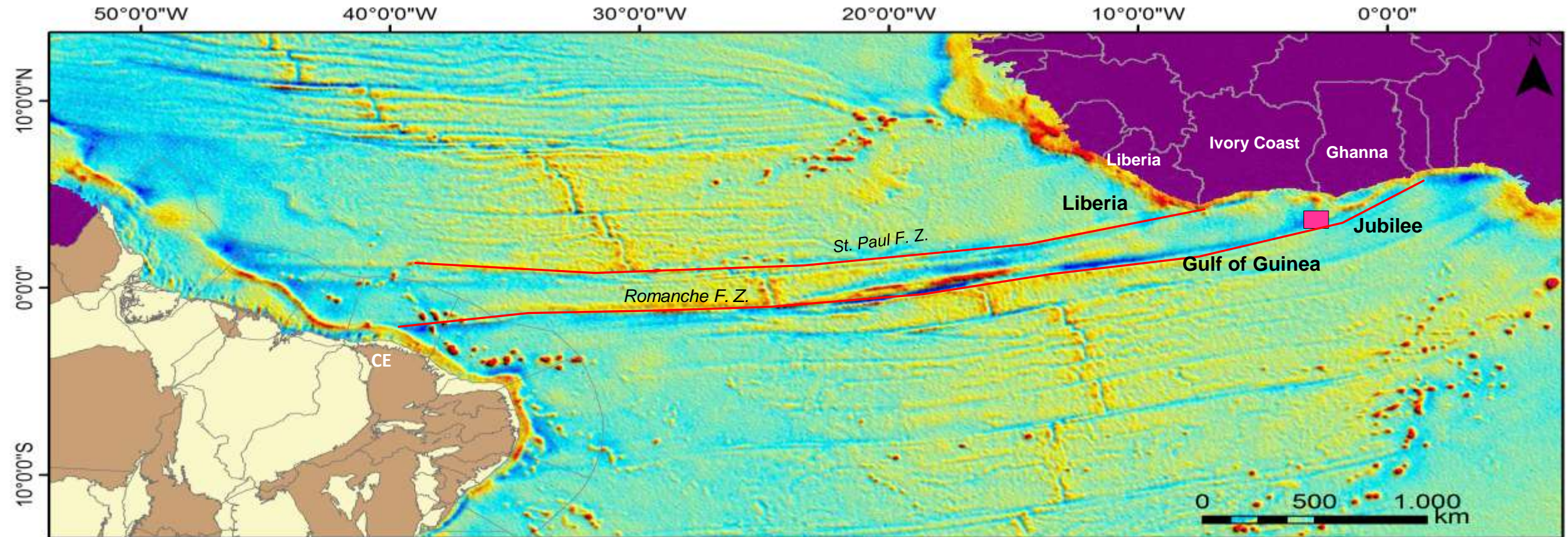
# Ceara Basin - Offshore



## 11 Blocks

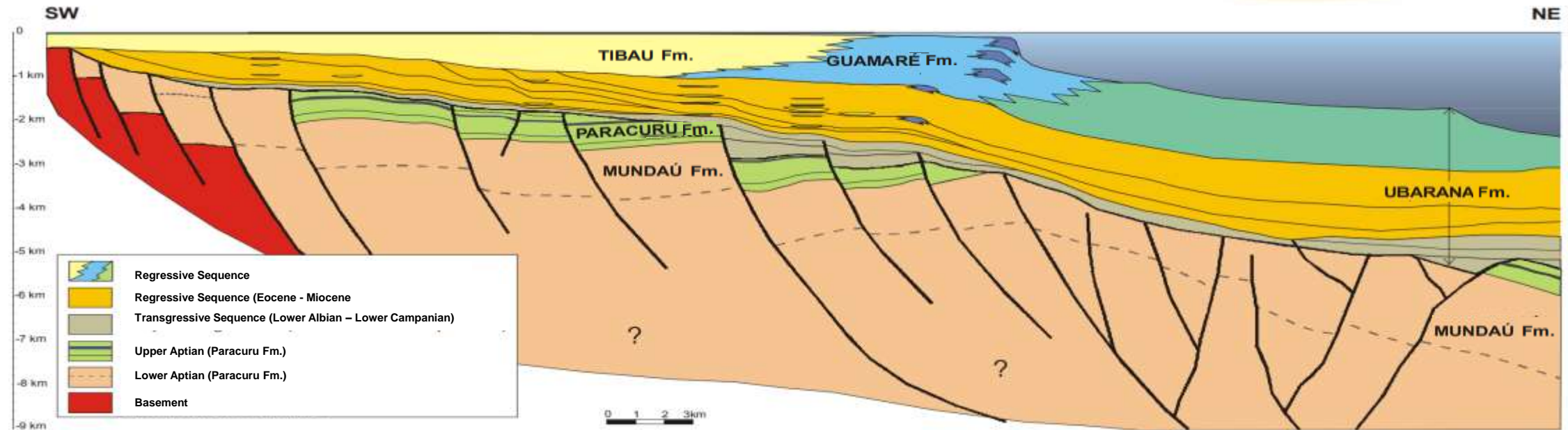
- Open Acreage Blocks  
Already Available
- Round 11
- Round 15
- Sedimentary Basin
- Basement

# Geotectonic Context

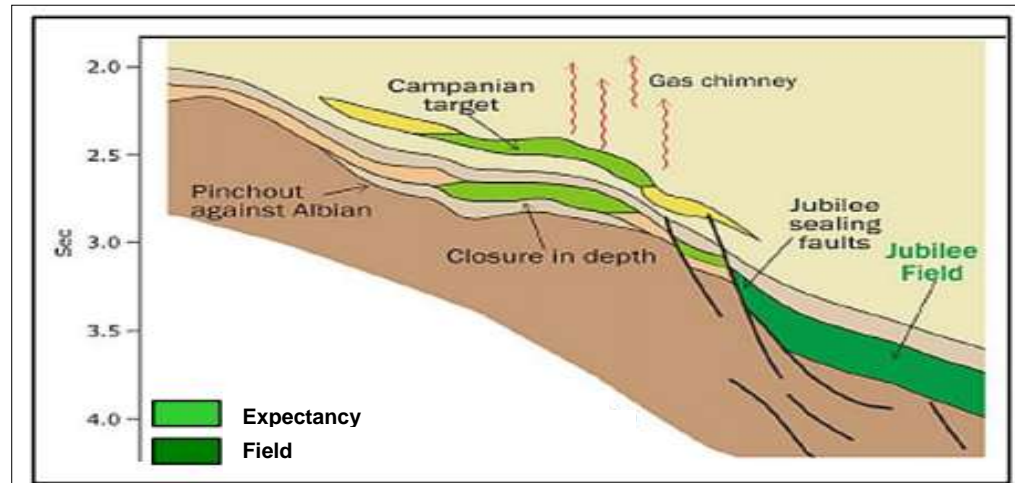




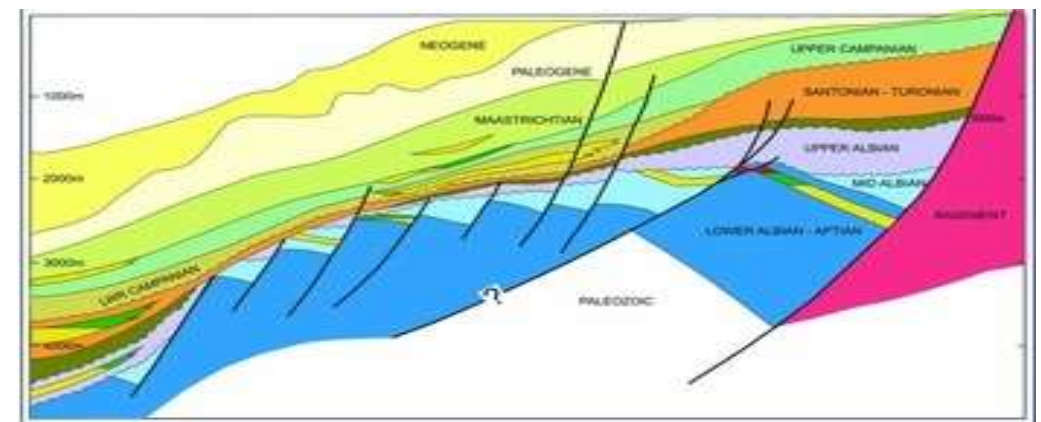
# Analogue



Morais Neto *et al.*, 2003

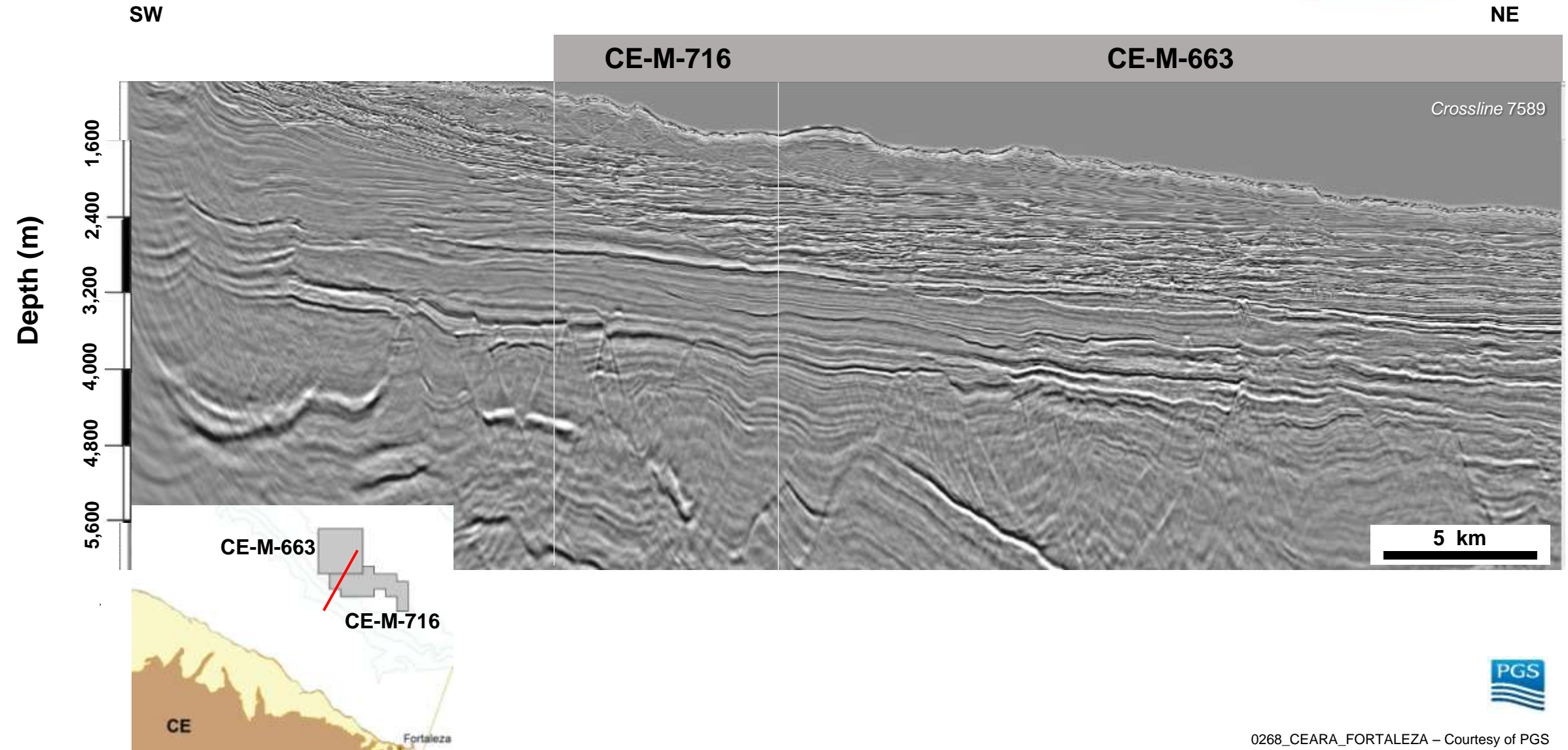


Available in : <http://www.tulloil.com>



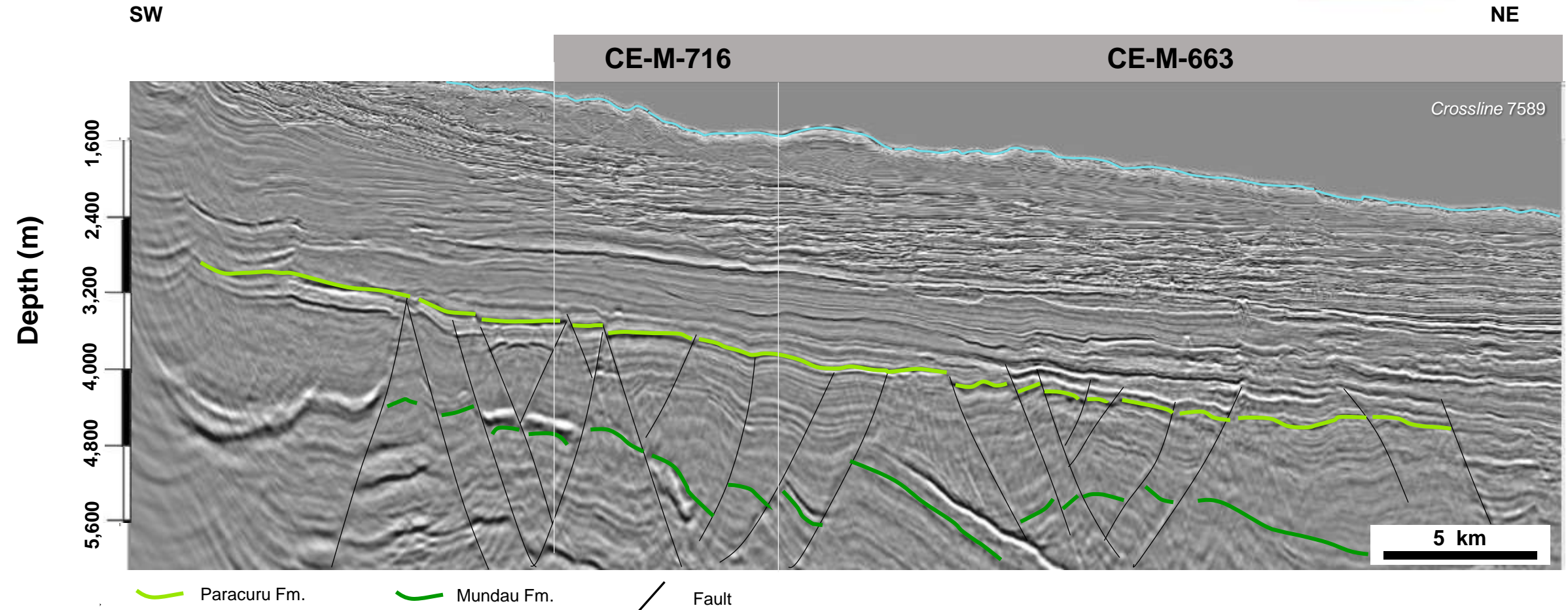
Available in : <https://www.cambridge.org/core/journals/netherlands-journal-of-geosciences/article/>

# Leads – Ceara Basin - Offshore

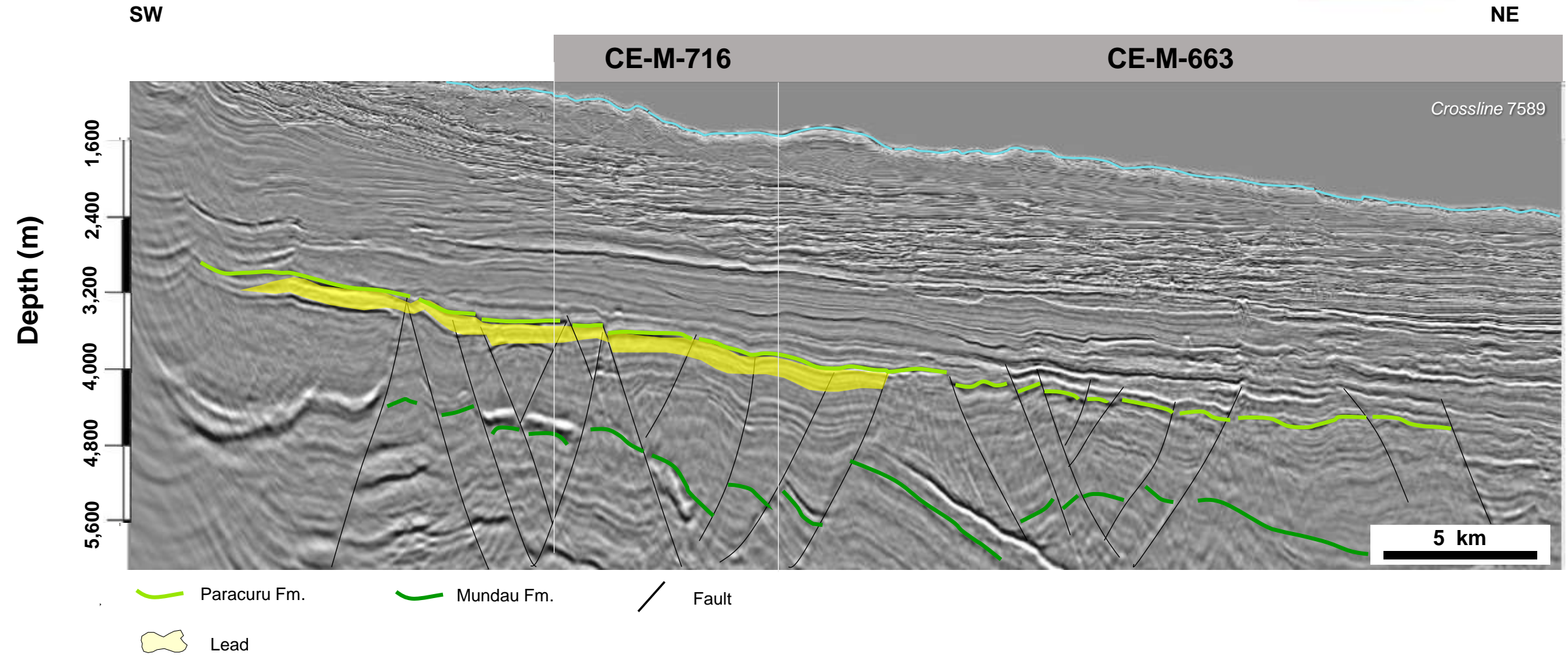




# Leads – Ceara Basin - Offshore

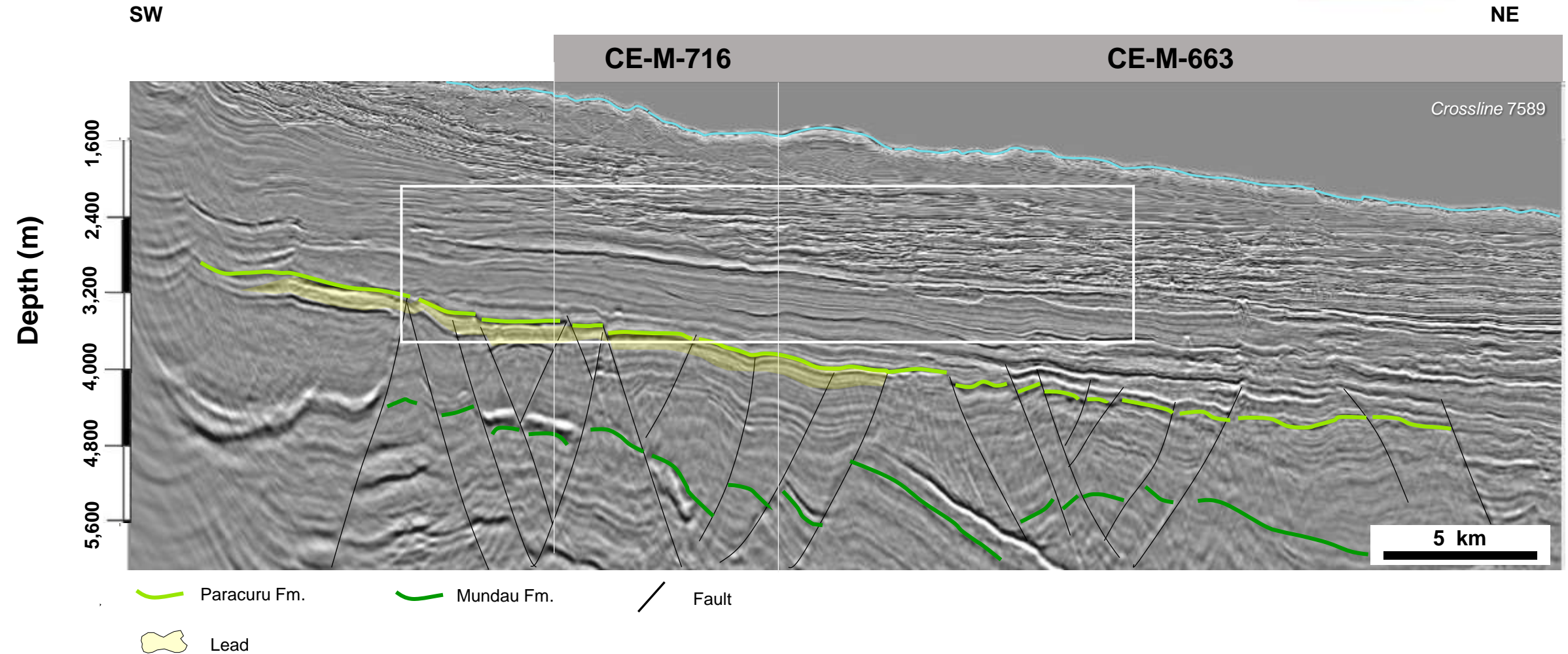


# Leads – Ceara Basin - Offshore

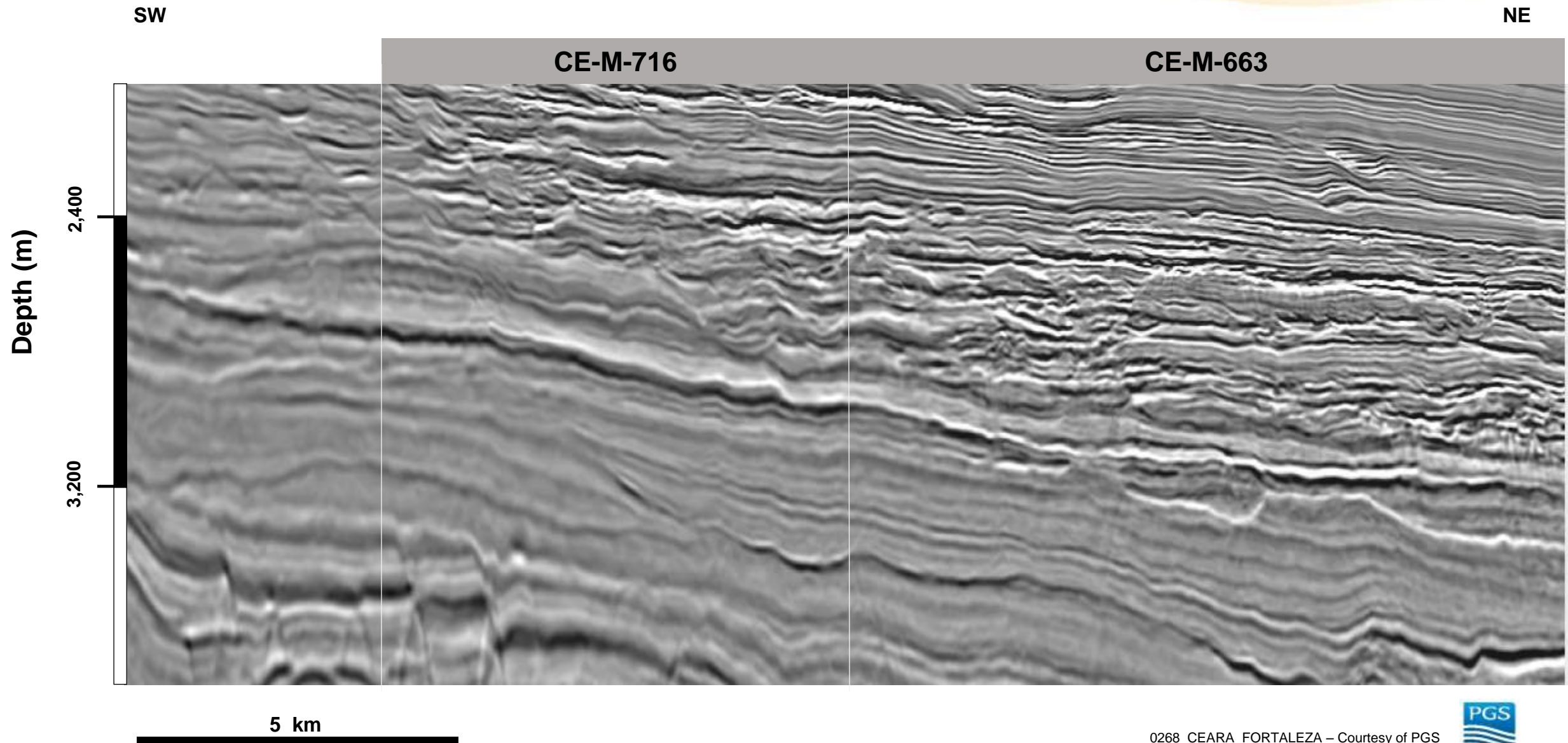




# Leads – Ceara Basin - Offshore

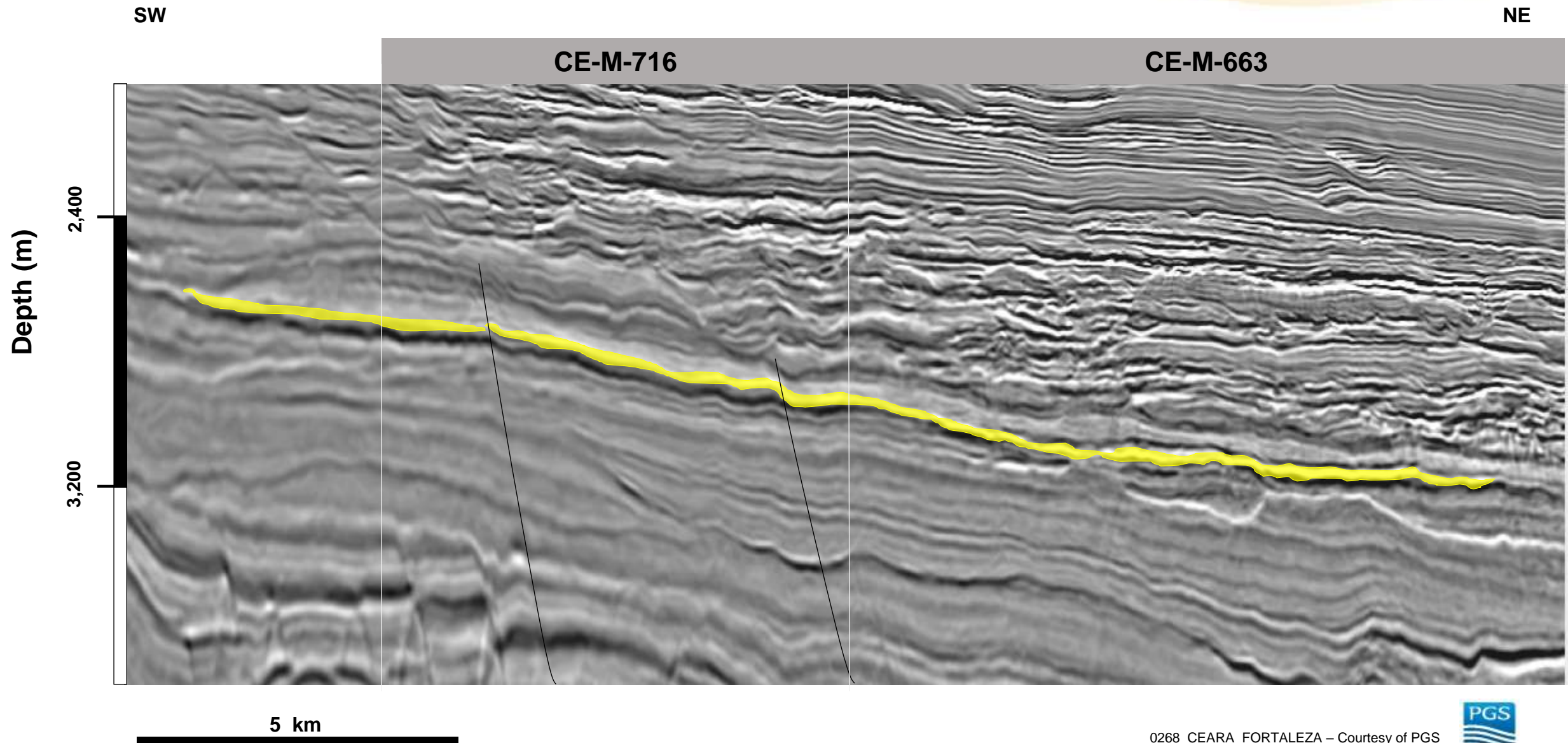


# Leads – Ceara Basin - Offshore

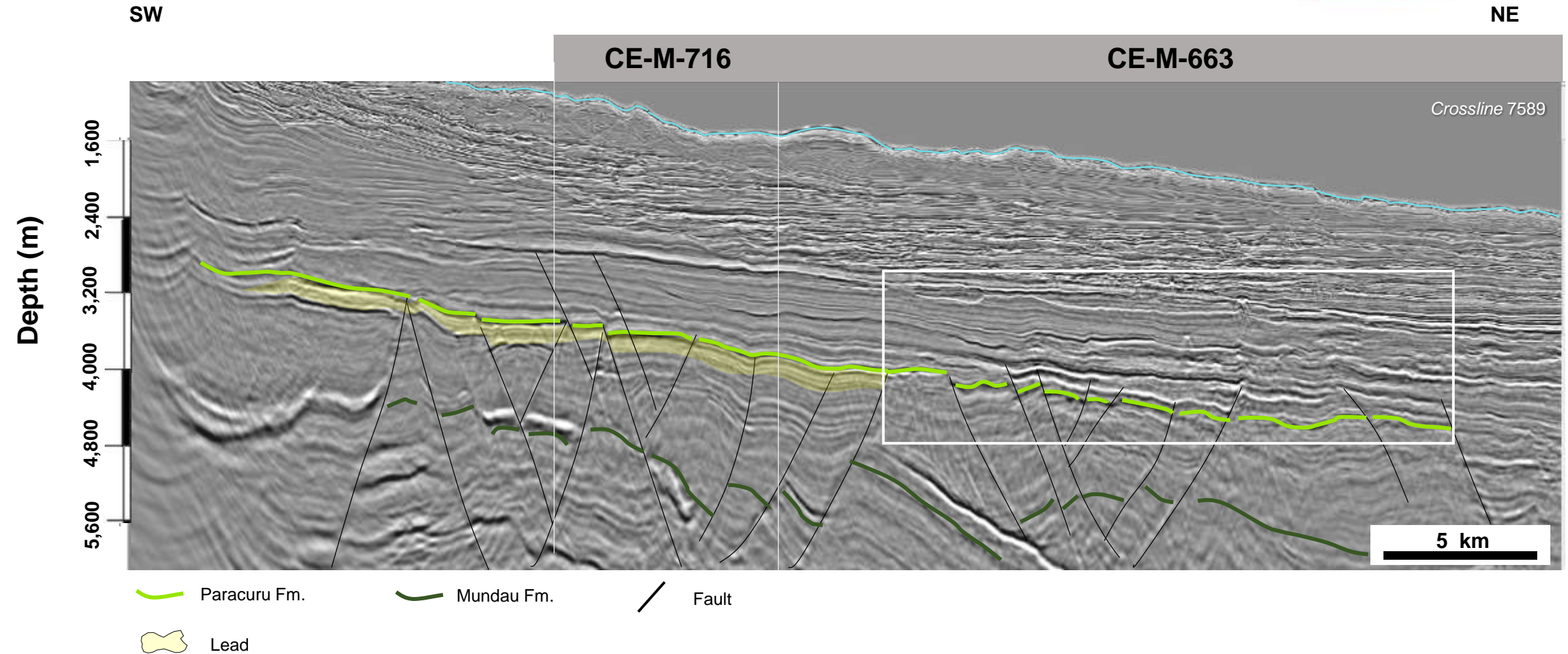




# Leads – Ceara Basin - Offshore

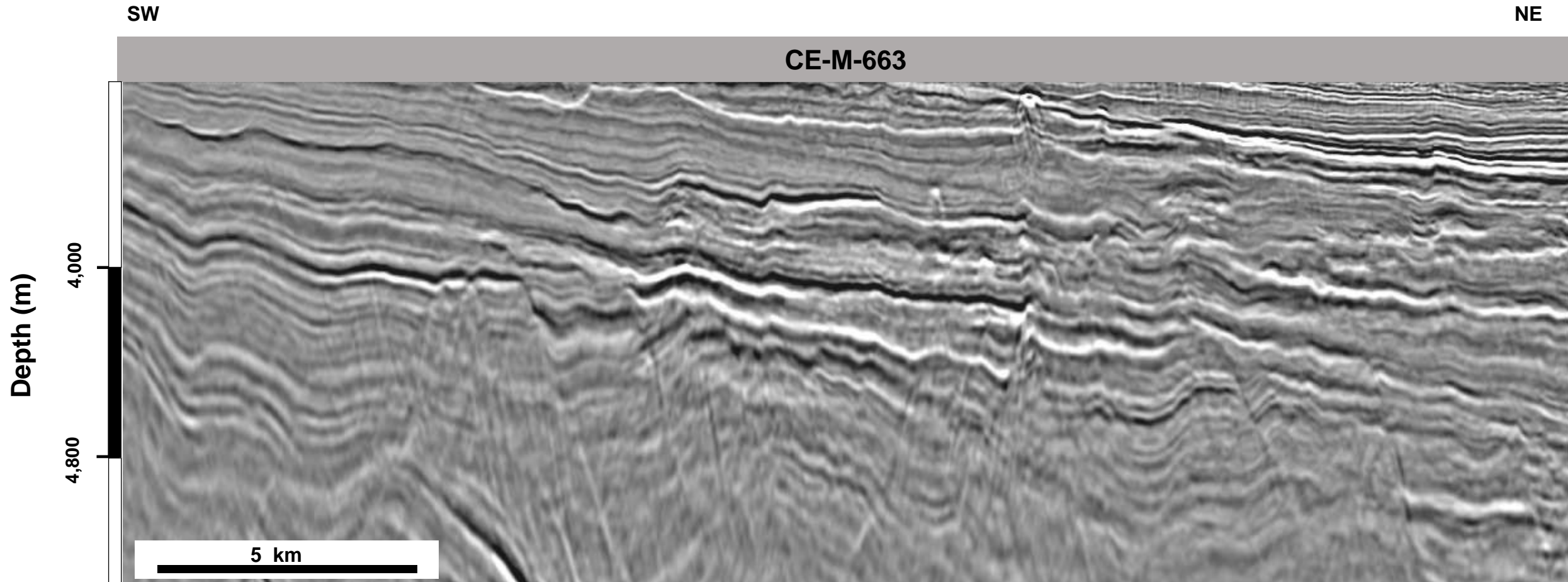


# Leads – Ceara Basin - Offshore

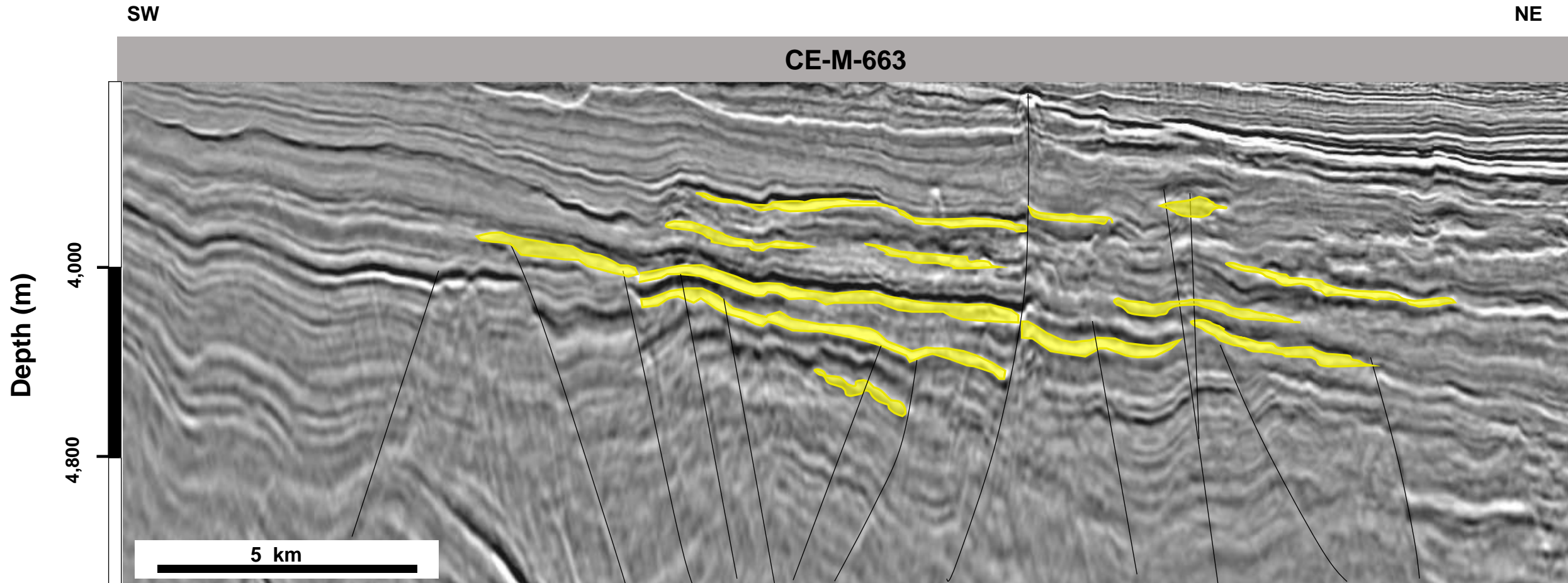




# Leads – Ceara Basin - Offshore

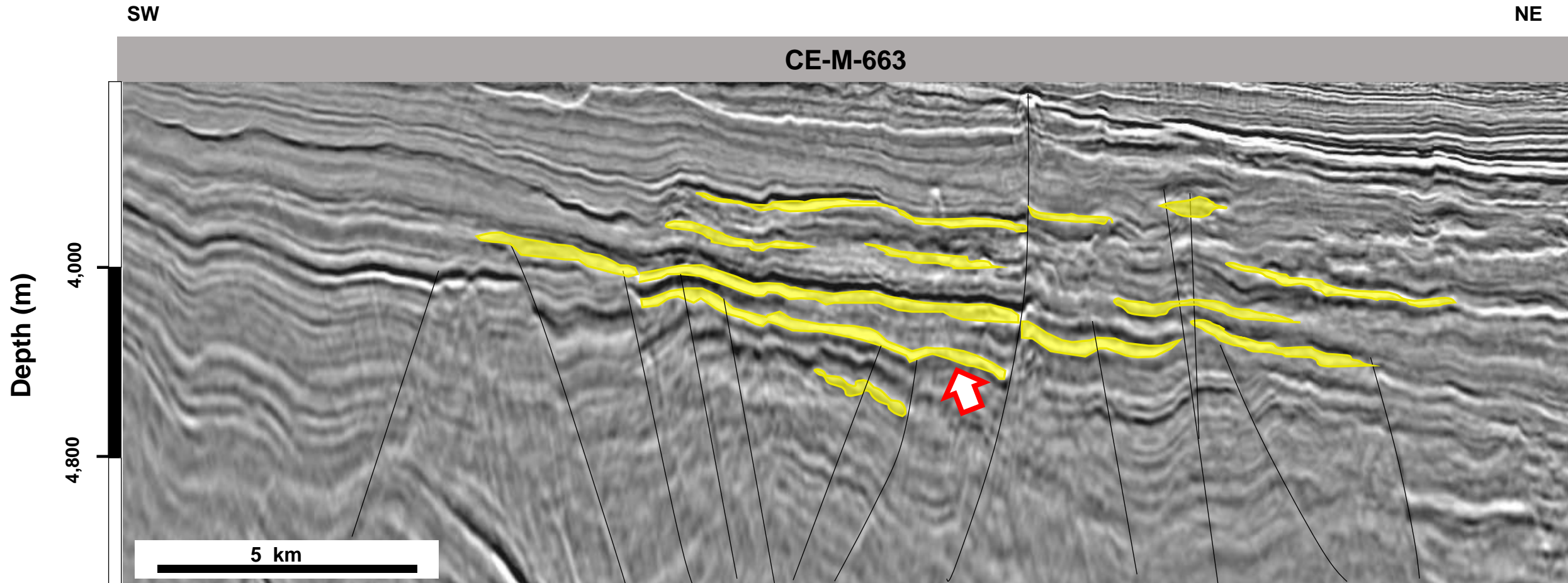


# Leads – Ceara Basin - Offshore

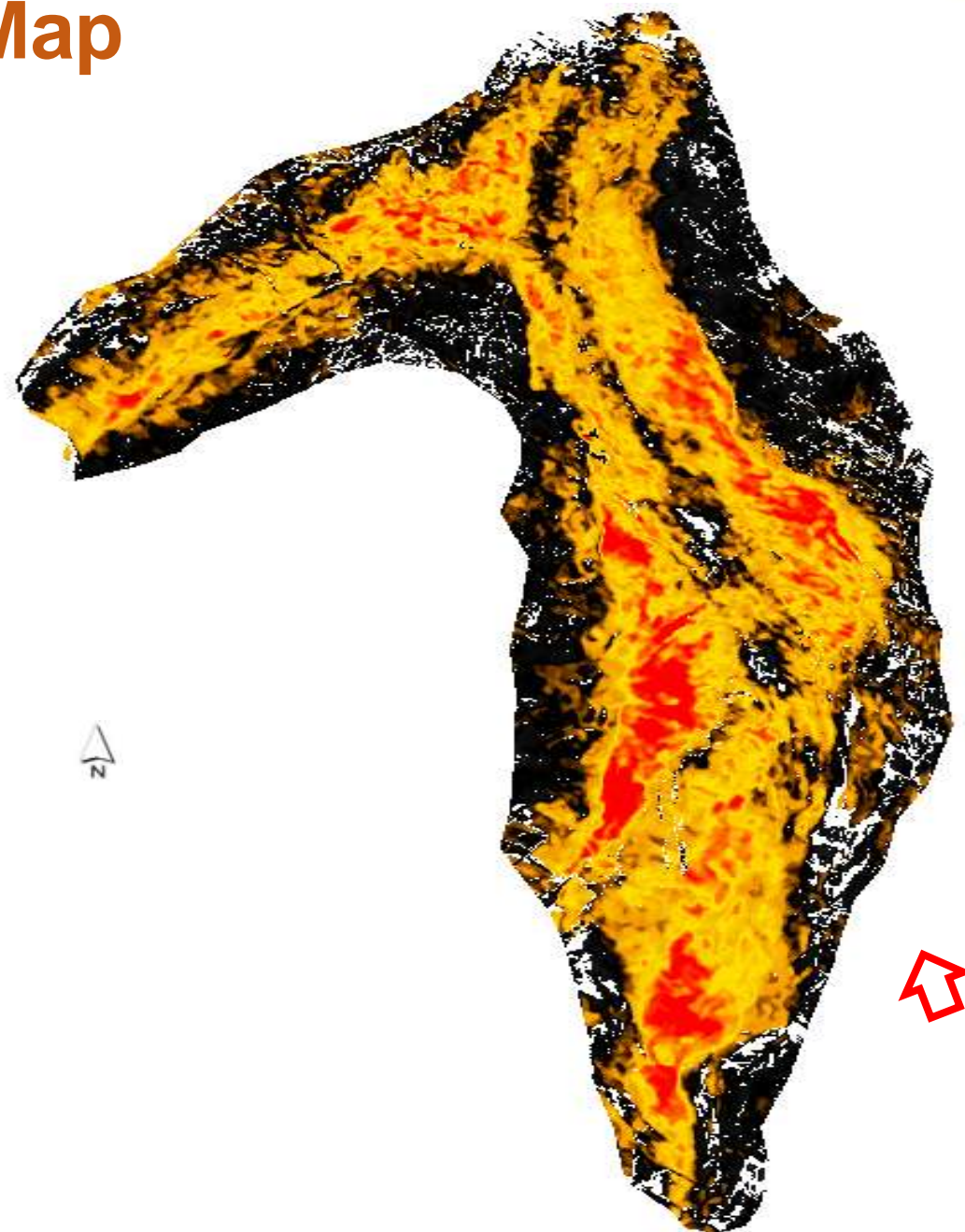




# Leads – Ceara Basin - Offshore



# Amplitude Map



Amplitude

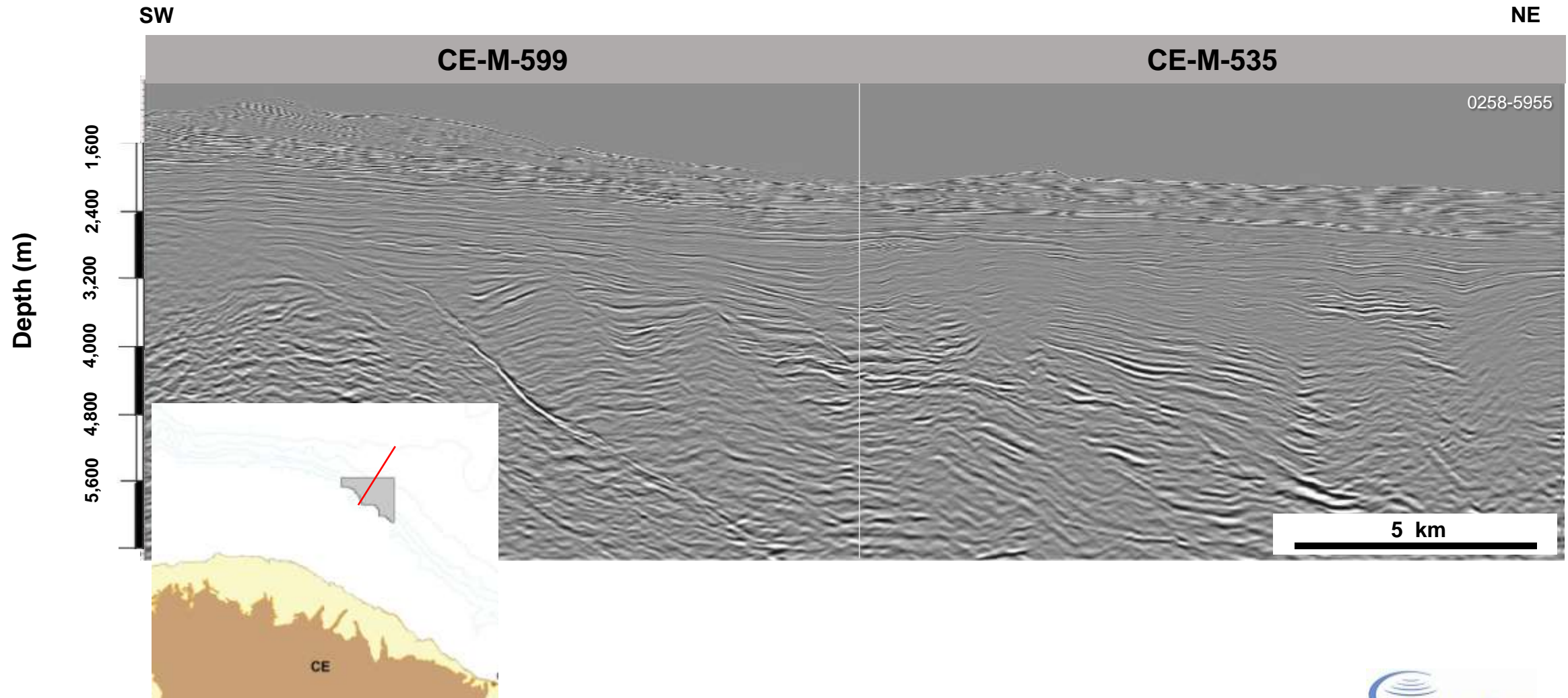
0



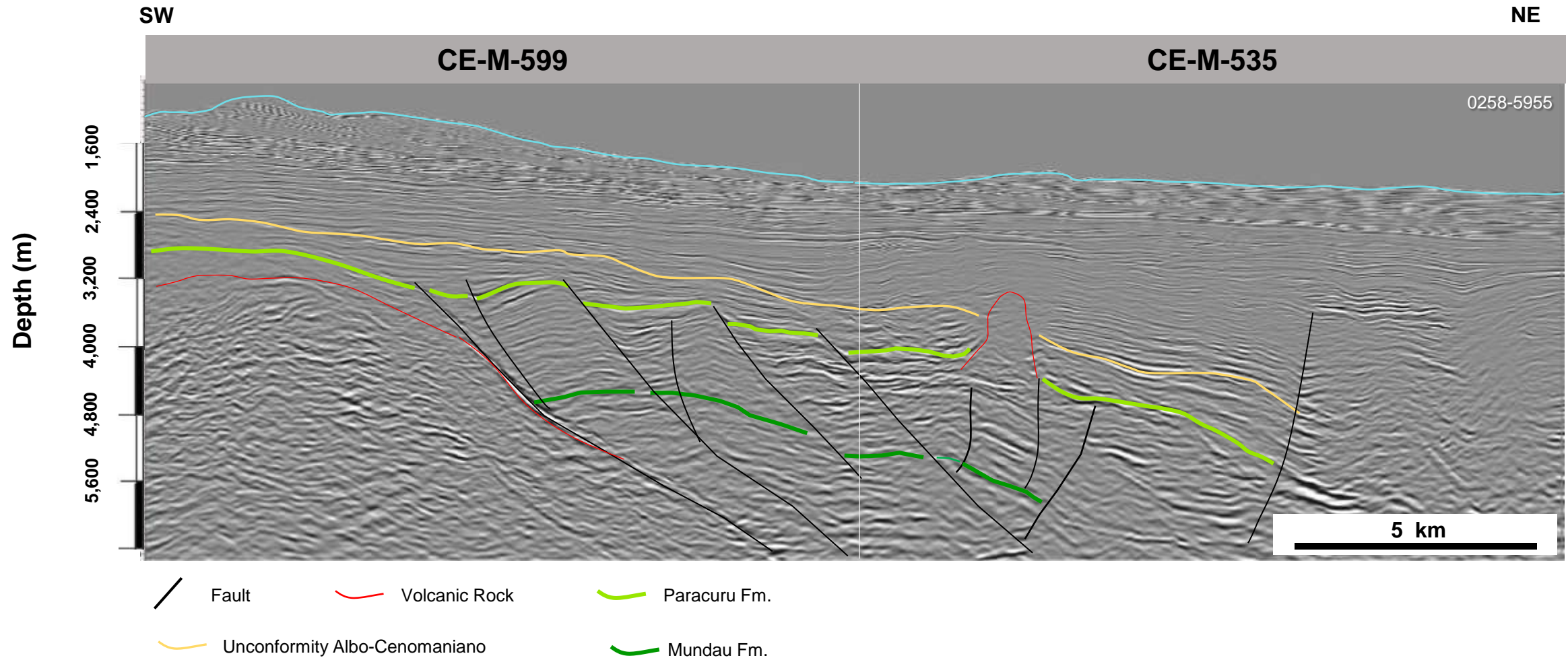
Max. Negative



# Leads – Ceara Basin - Offshore

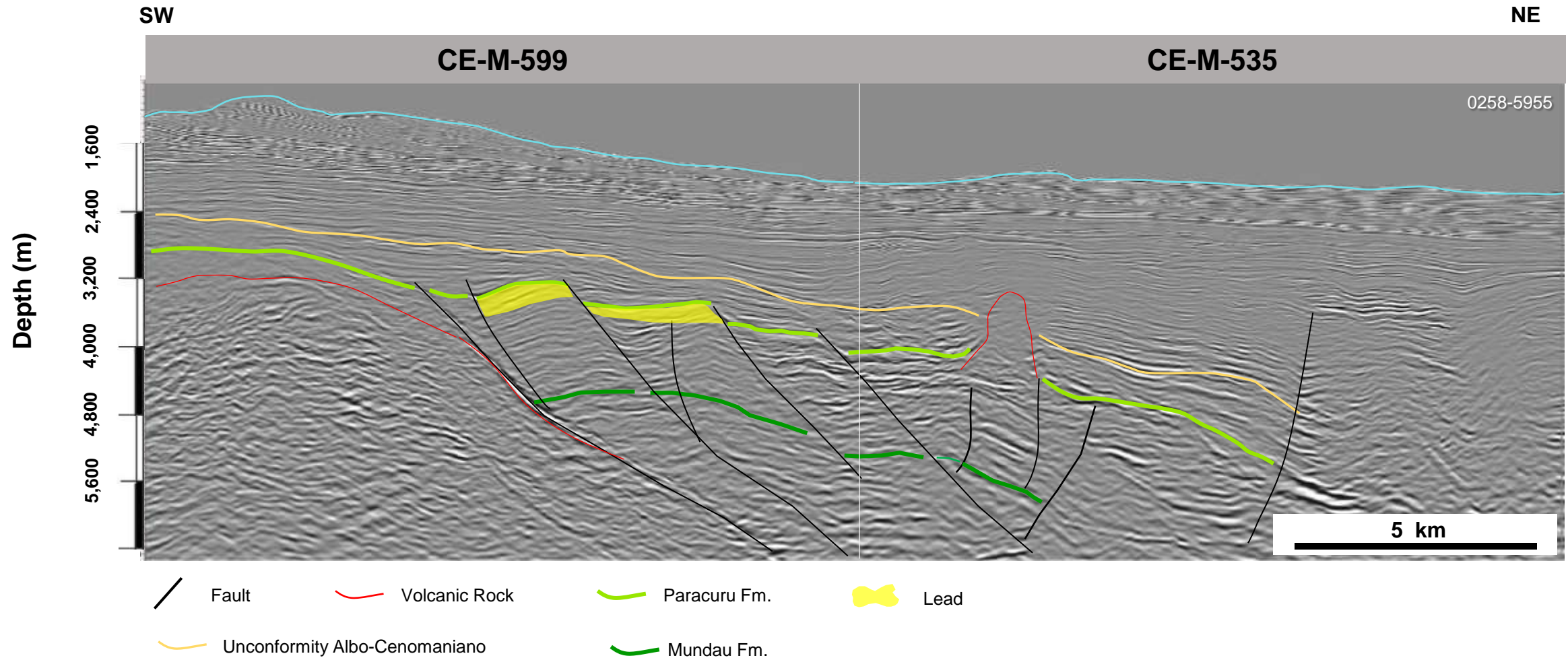


# Leads – Ceara Basin - Offshore

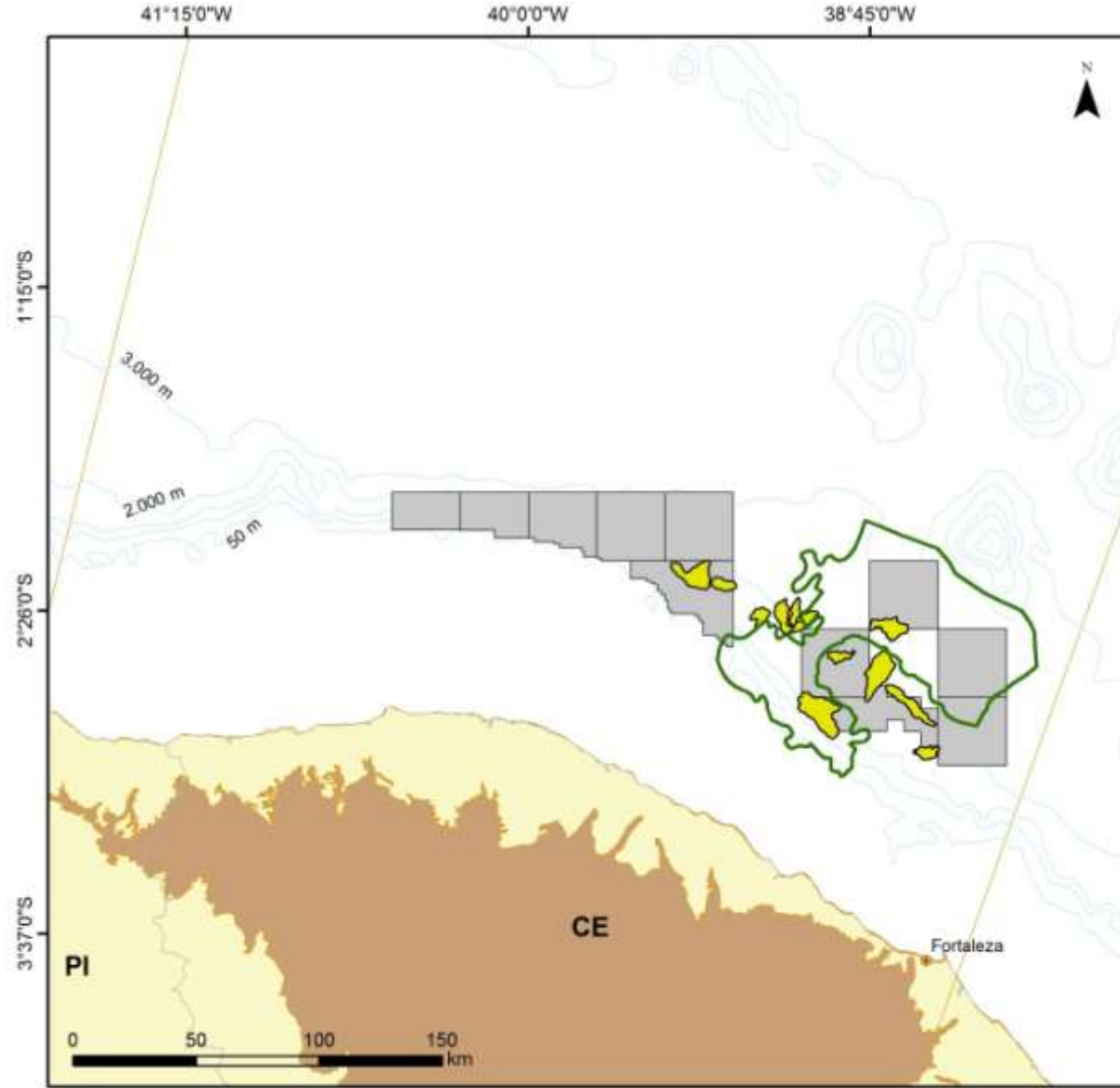




# Leads – Ceara Basin - Offshore



# Ceara Basin - Offshore






-  Oil Kitchen
-  Leads
-  Open Acreage Blocks  
Already Available





Photo by Bruno Domingos/REUTERS - Edited

# Open Acreage

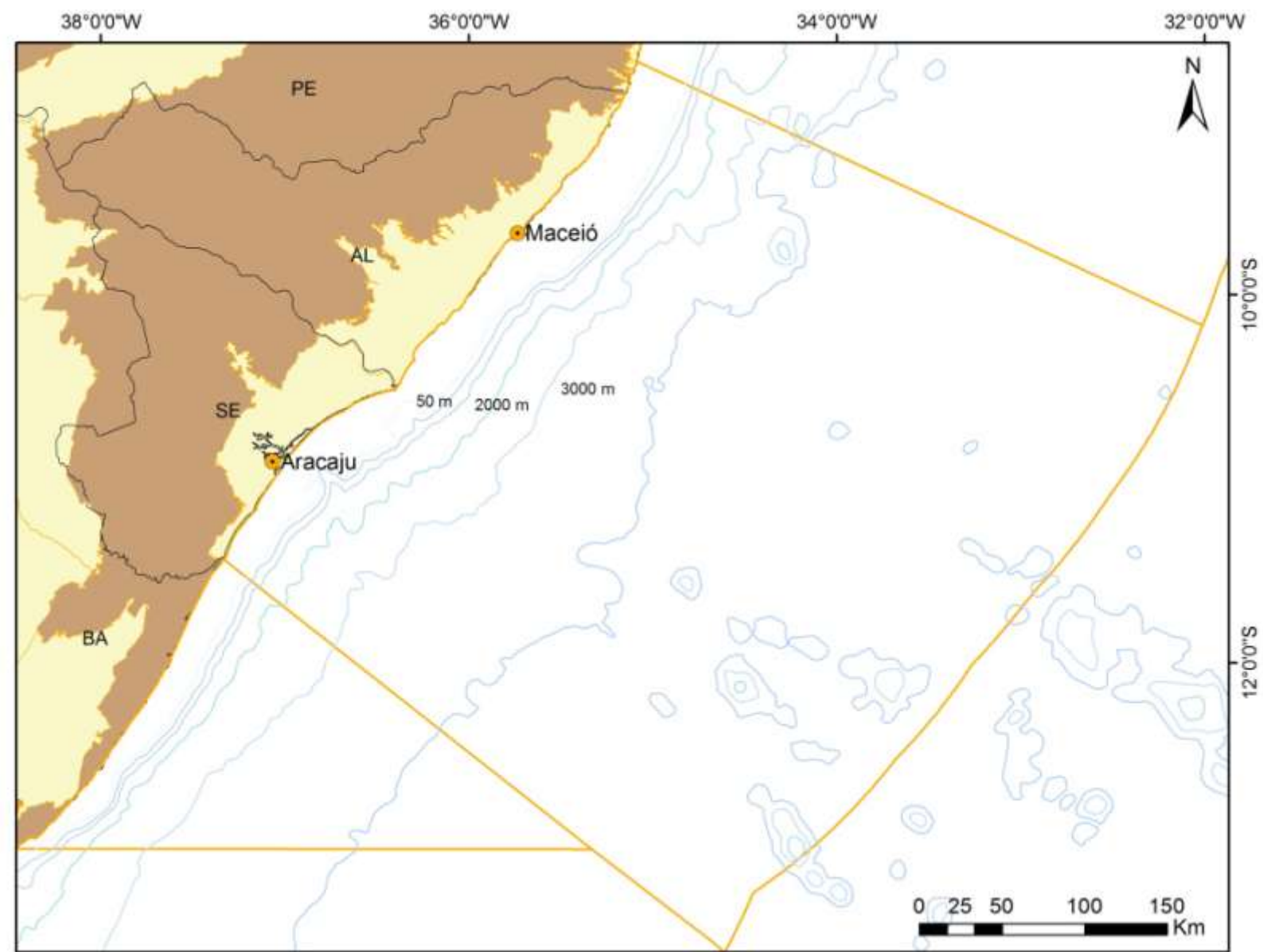
## Offshore Blocks

## Geological Potential

## Eastern Margin Basins

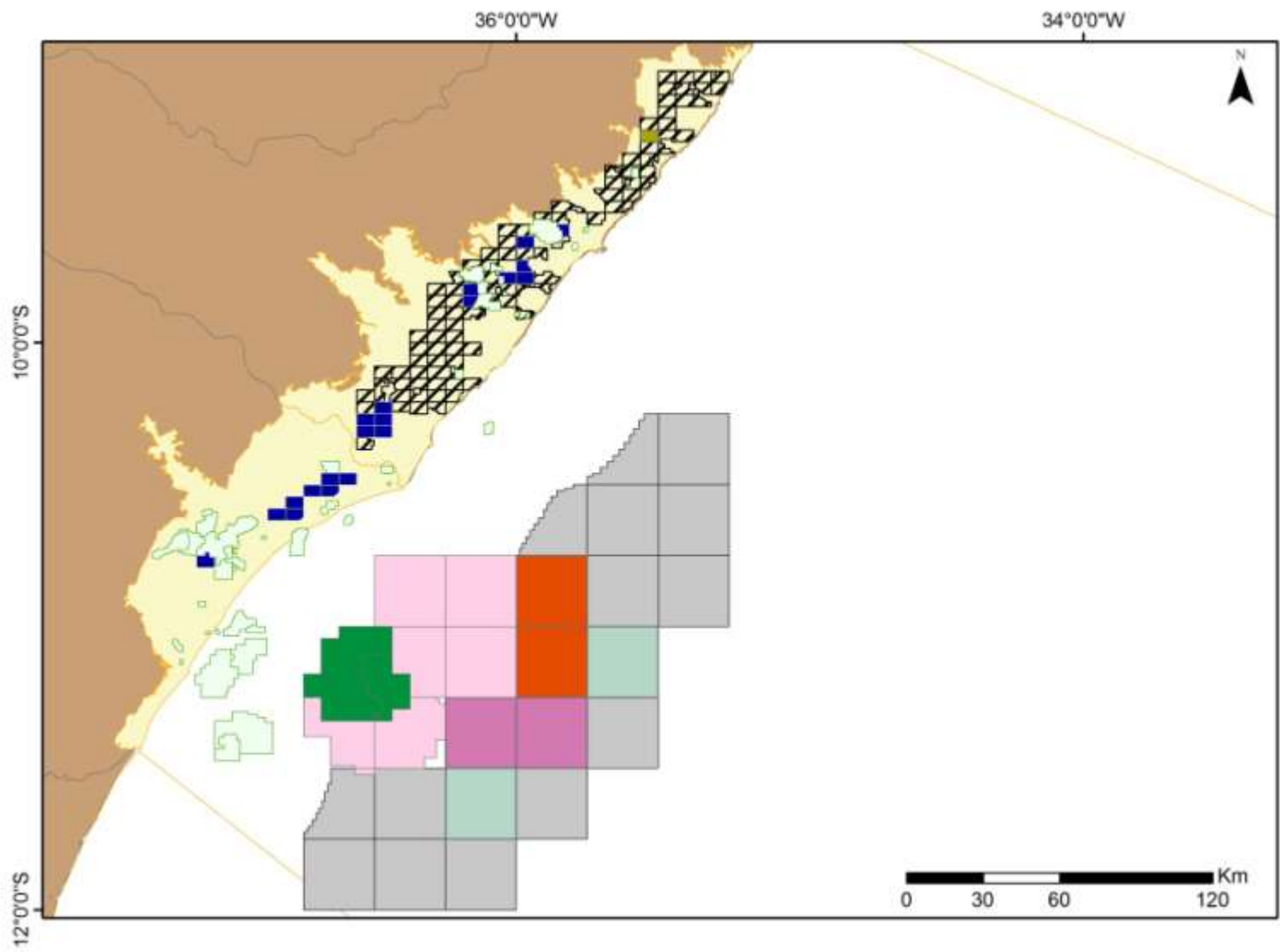


# Sergipe-Alagoas Basin



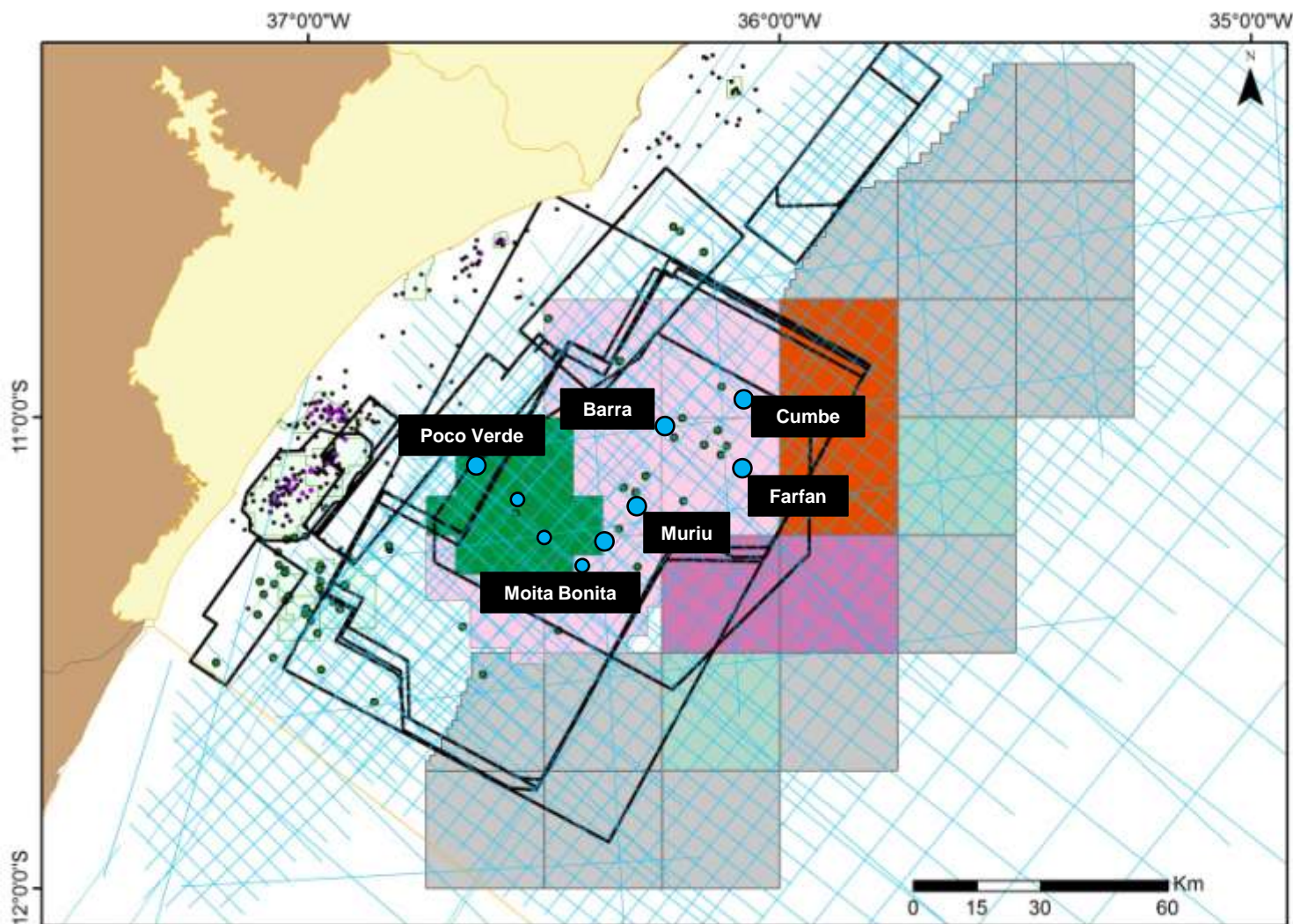


# Sergipe-Alagoas Basin



- Round 02
- Round 06
- Round 13
- Round 14
- Round 15
- Sedimentary Basin
- Basement
- Open Acreage Blocks Already Available
- Open Acreage – Public Audience

# SEAL Basin - Offshore



**Exclusive and non-exclusive  
2D and 3D seismic**

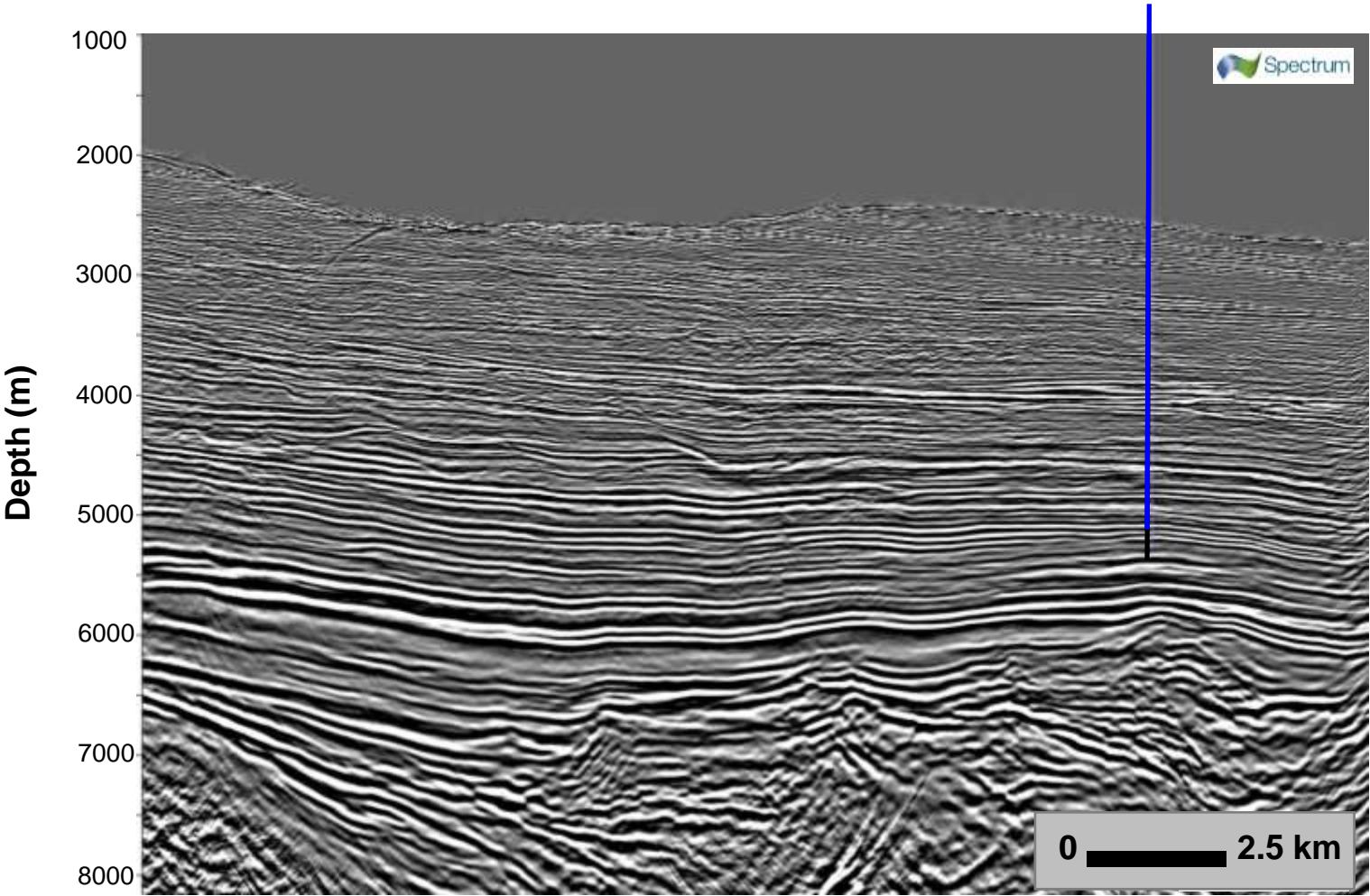
 **Open Acreage Blocks  
Already Available**



# SEAL Basin - Offshore

Survey R0257\_SEAL\_PHASE1 (PSDM) – Courtesy of Spectrum

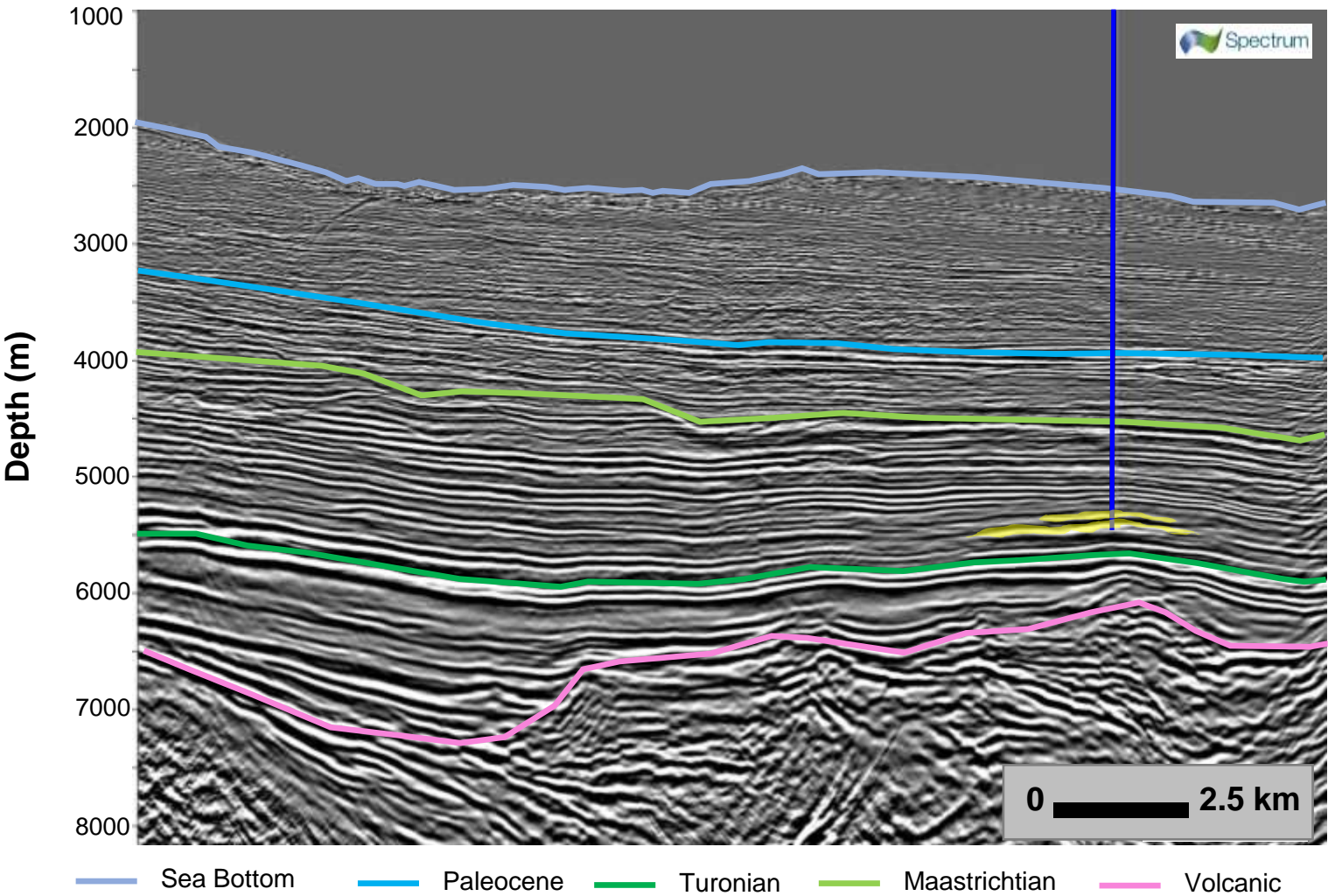
Oil Discovery



# SEAL Basin - Offshore

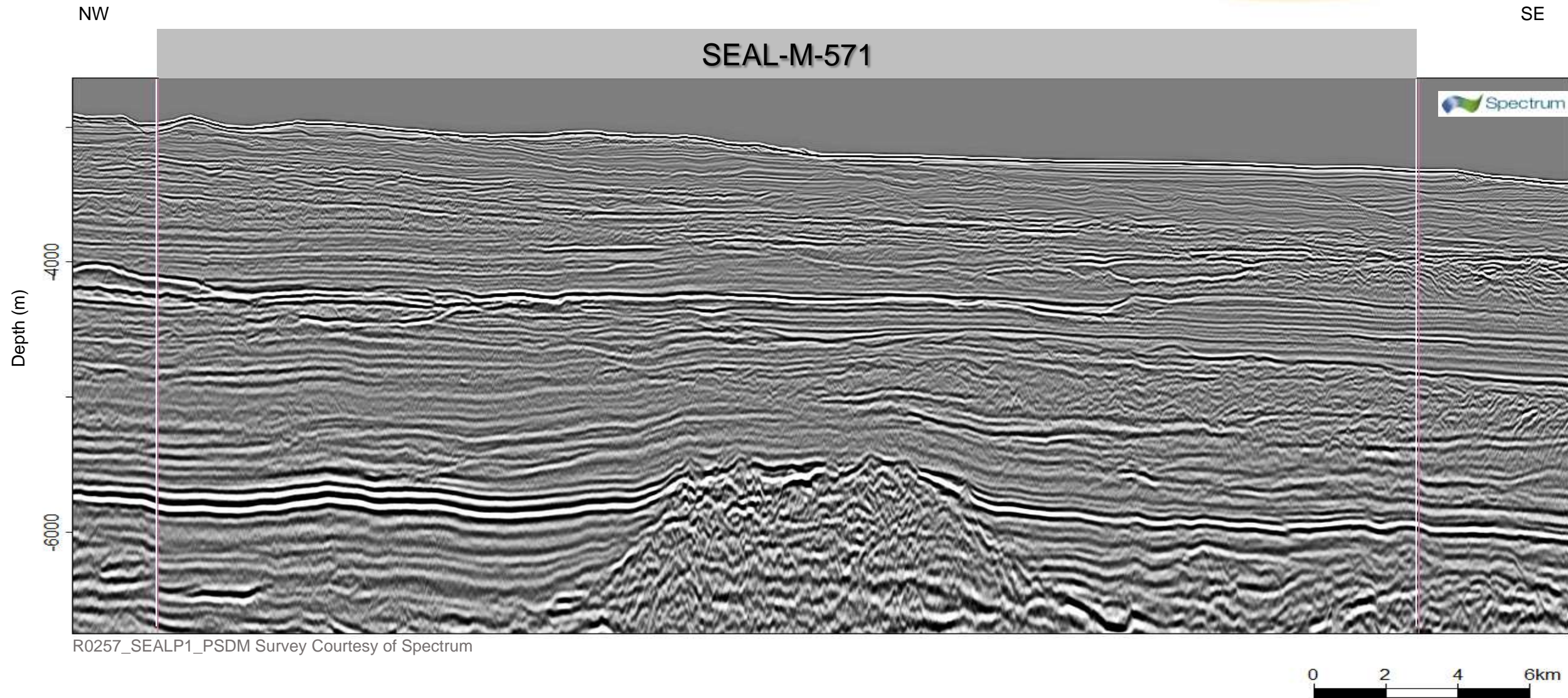
Survey R0257\_SEAL\_PHASE1 (PSDM) – Courtesy of Spectrum

## Oil Discovery



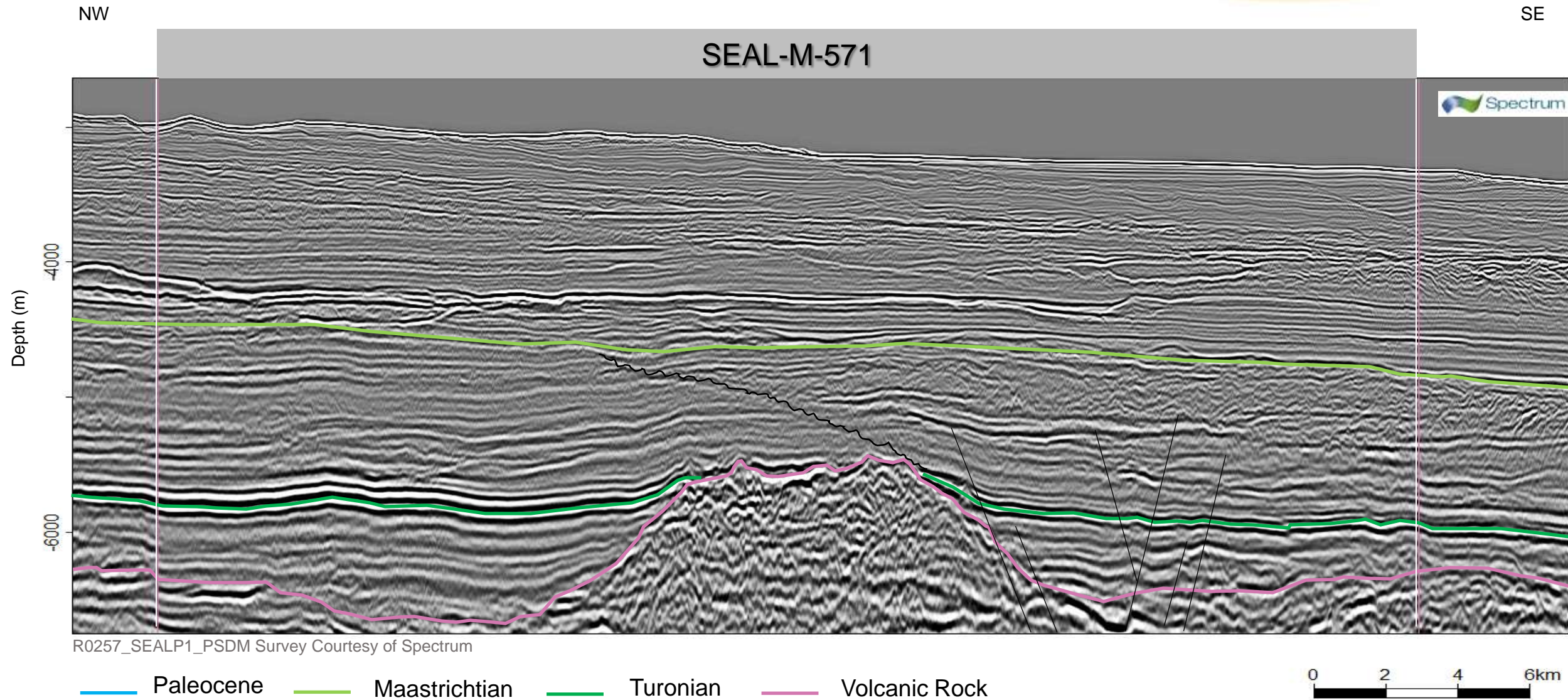


# Leads – SEAL Basin - Offshore



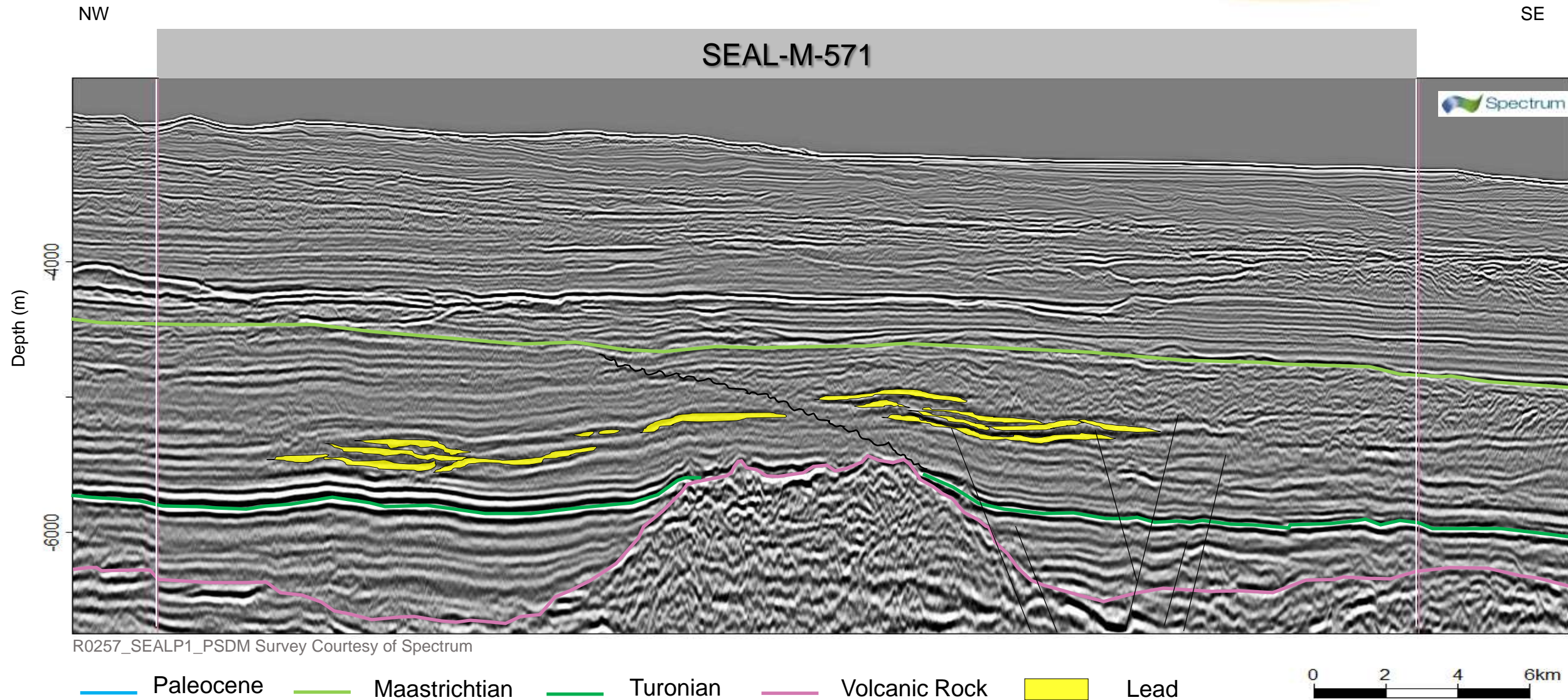


# Leads – SEAL Basin - Offshore



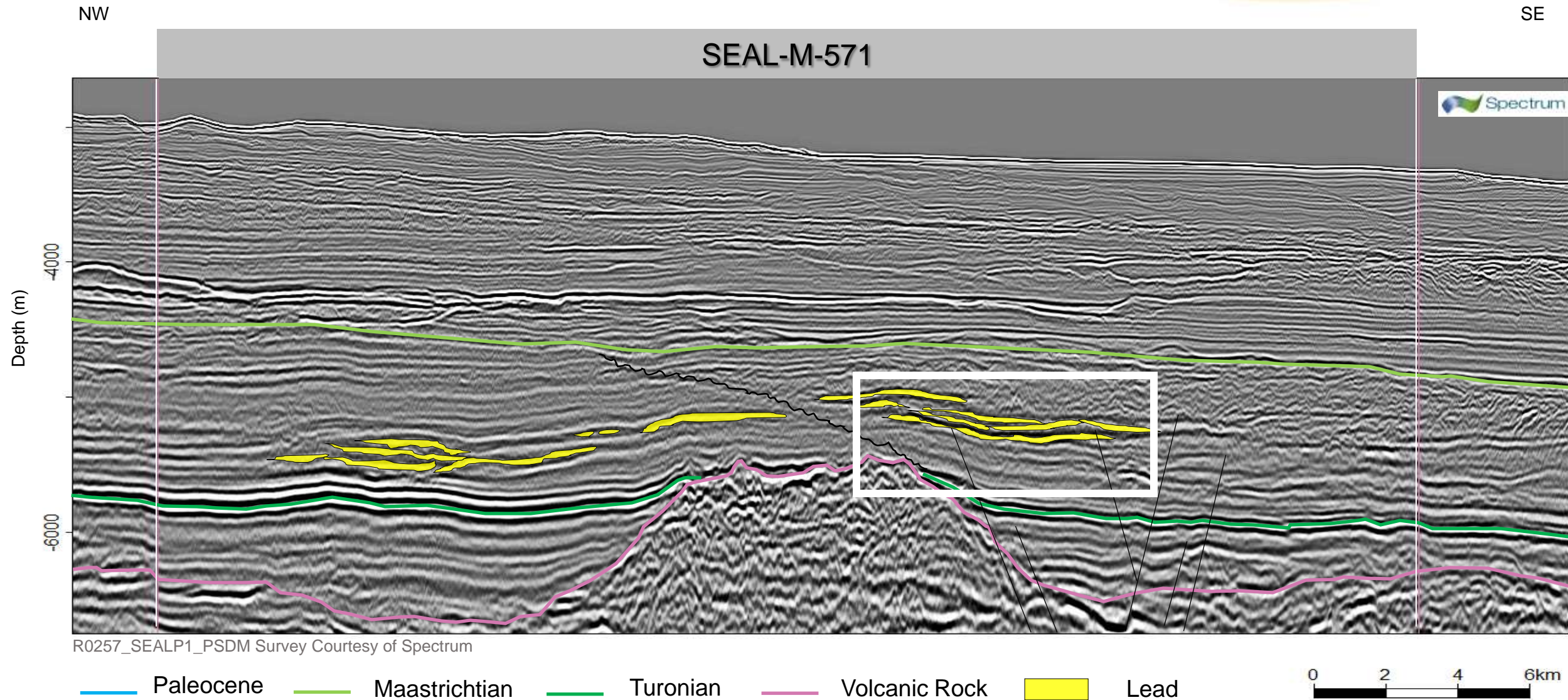


# Leads – SEAL Basin - Offshore



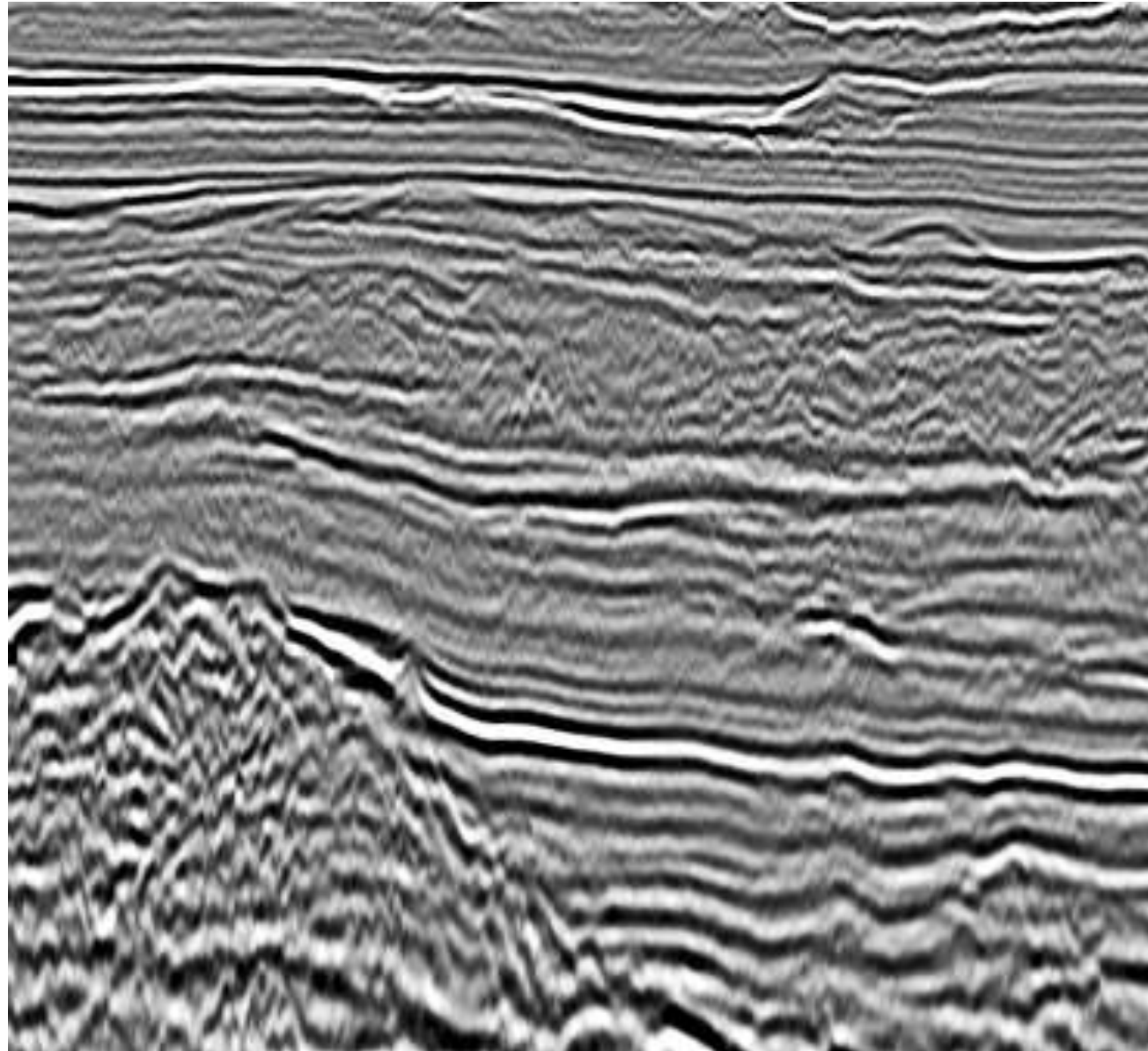


# Leads – SEAL Basin - Offshore

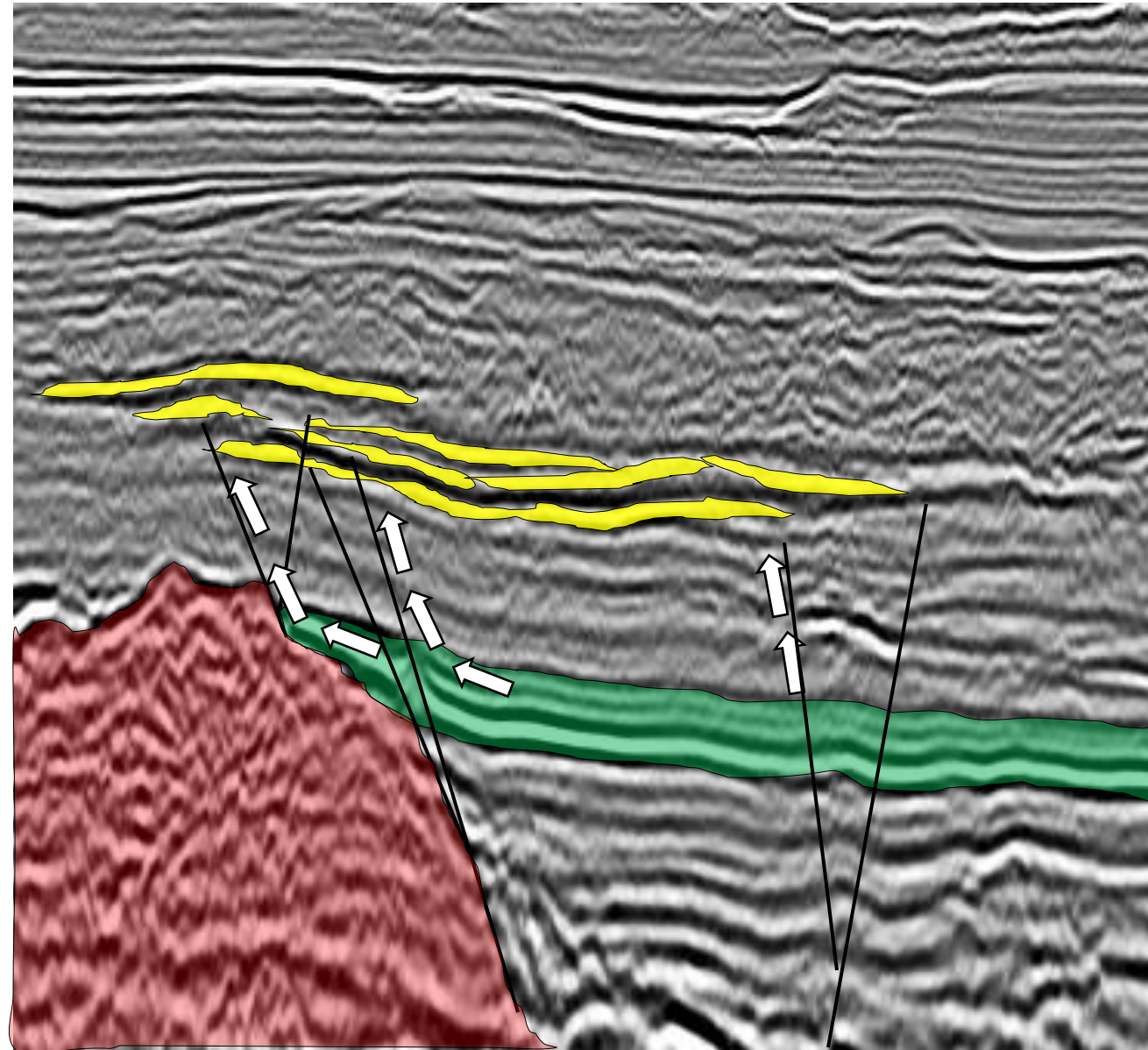









# Leads – SEAL Basin - Offshore



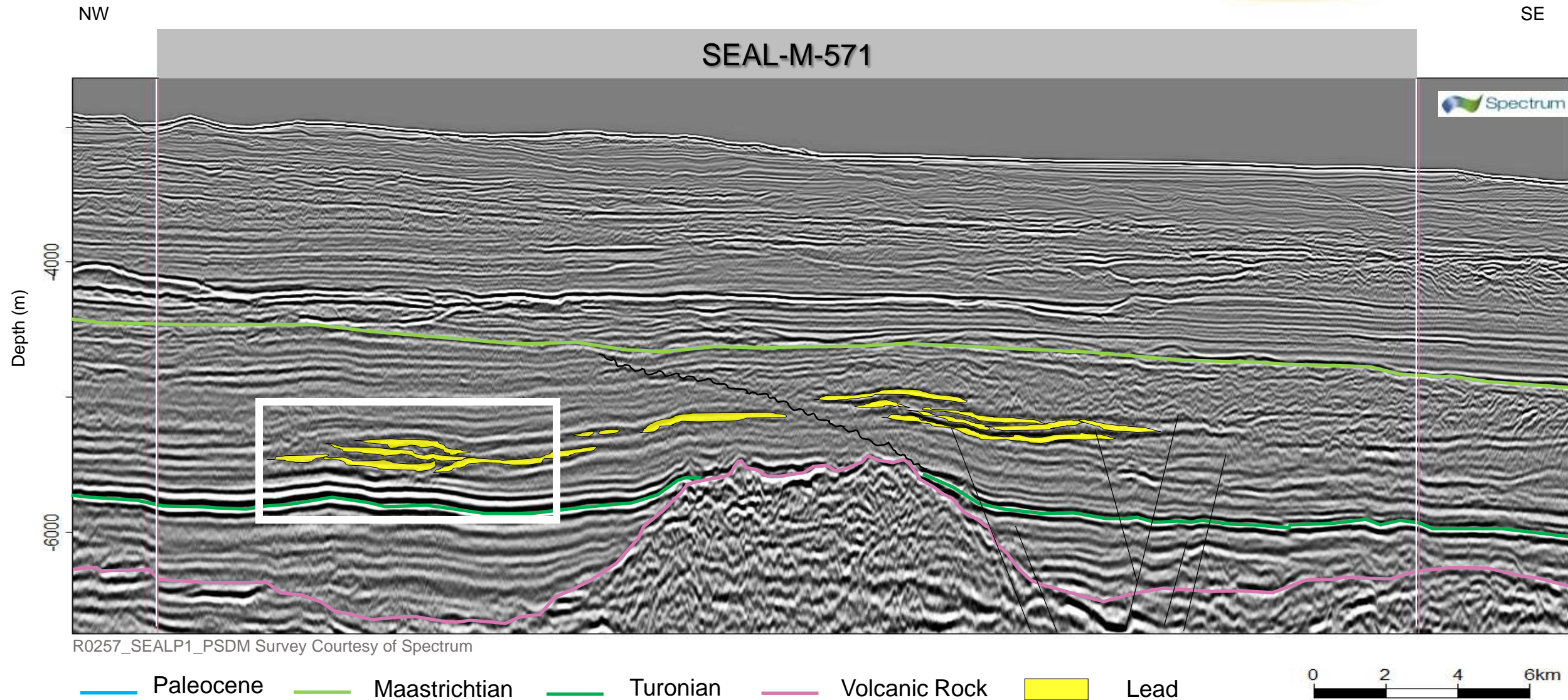
# Leads – SEAL Basin - Offshore



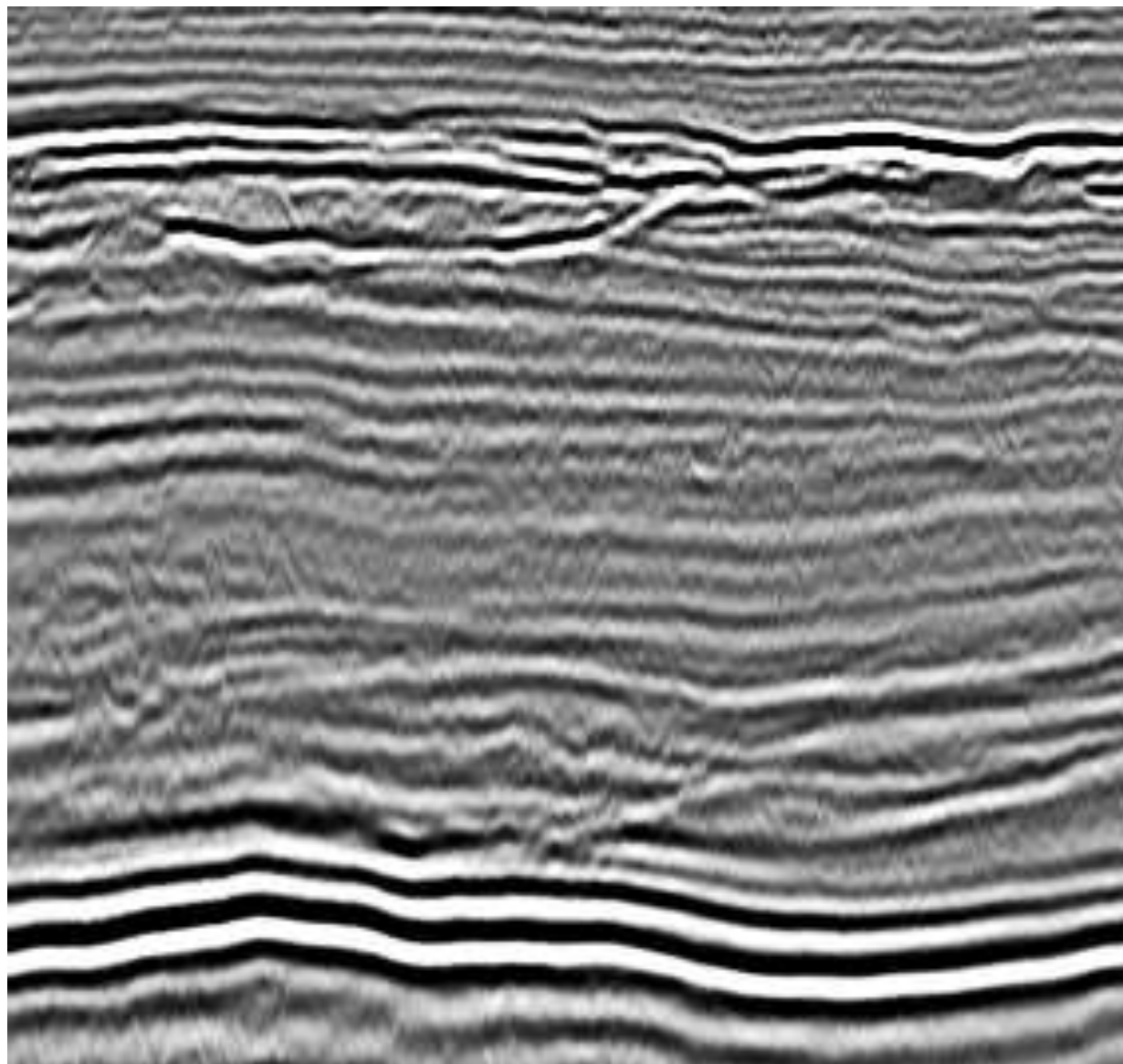
-  Sandstone Turbidites
-  Marine Source Rock
-  Faults
-  Volcanic Rocks
-  Petroleum Migration Route



# Leads – SEAL Basin - Offshore

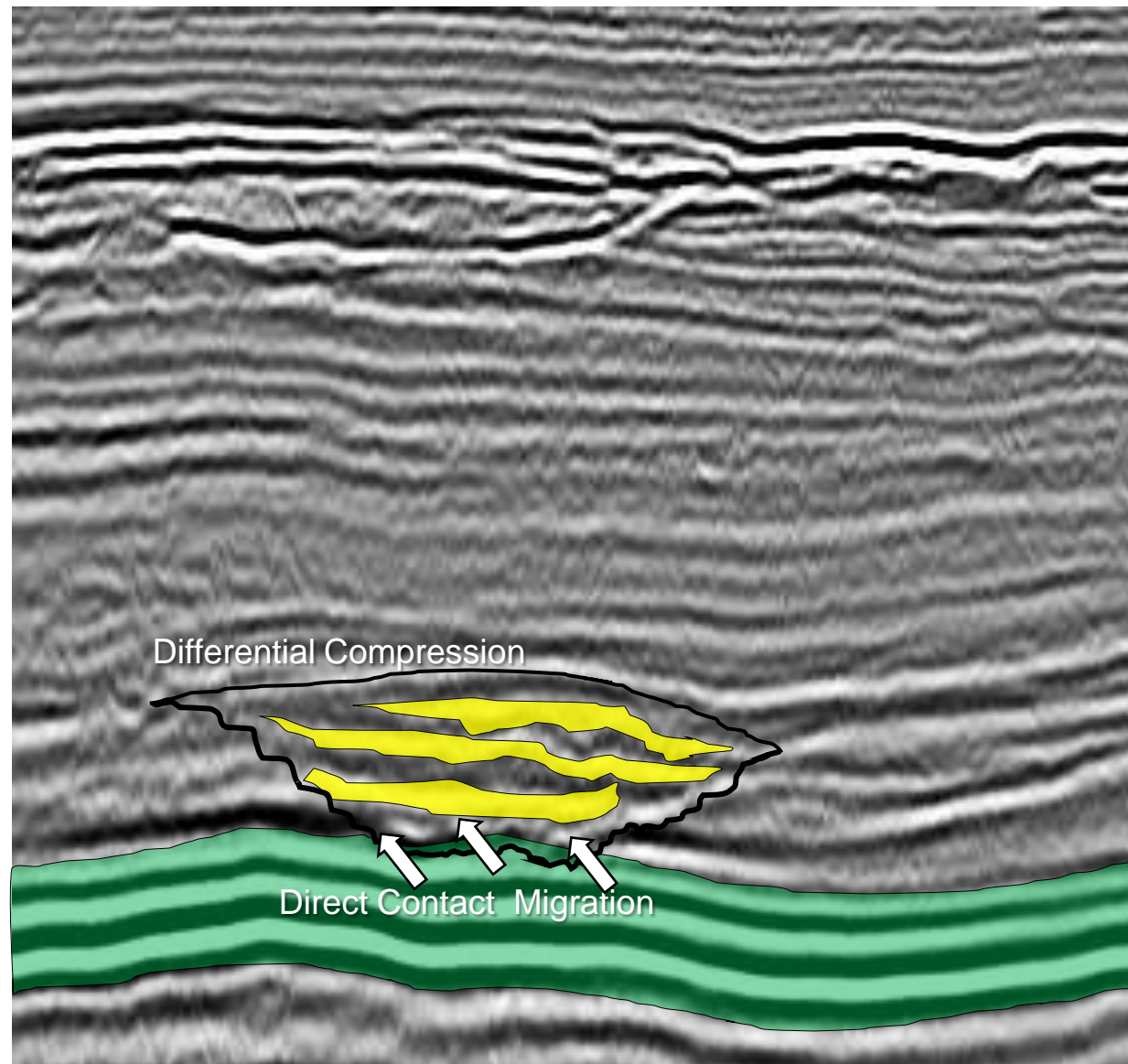





# Leads – SEAL Basin - Offshore



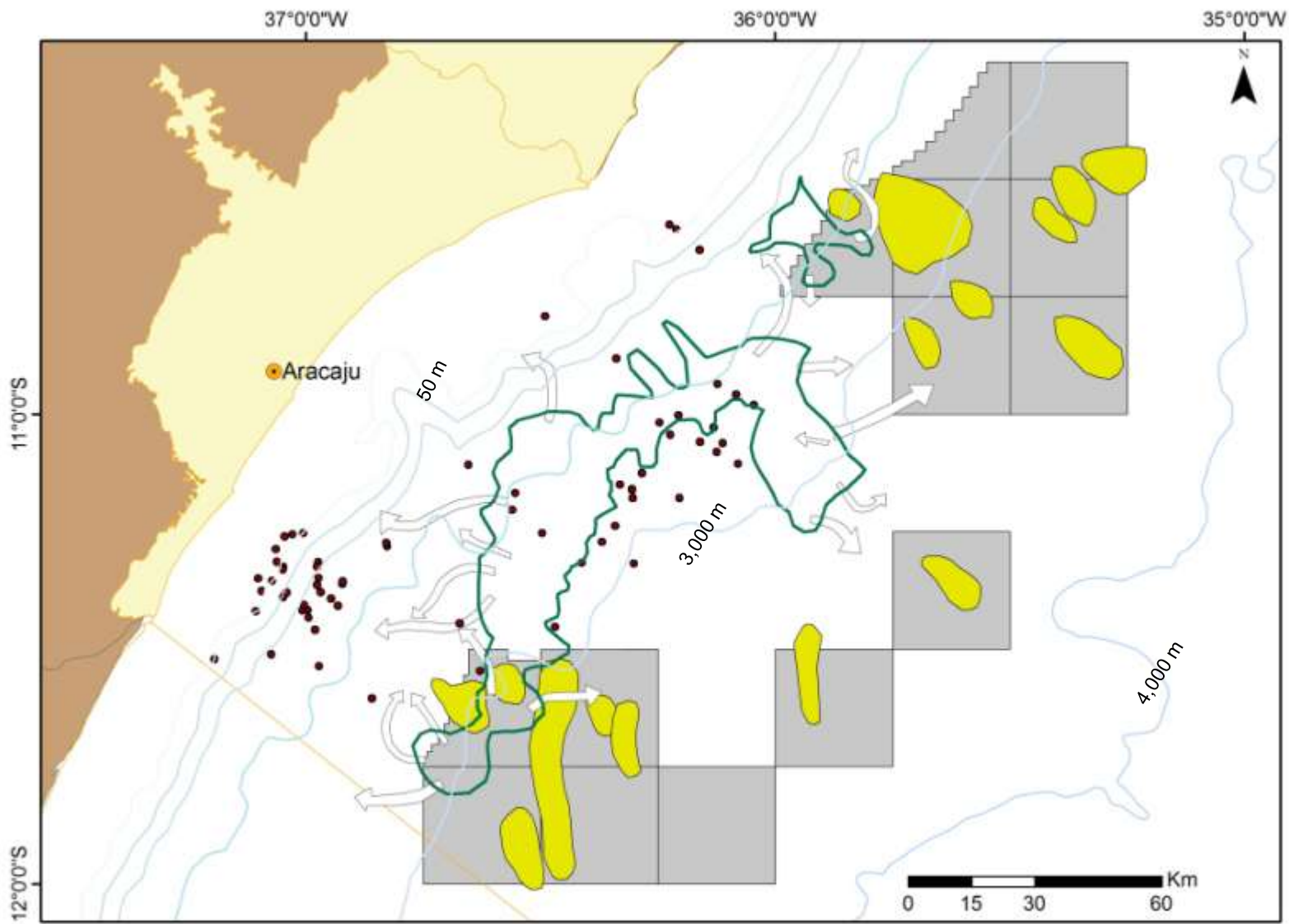


# Leads – SEAL Basin - Offshore






-  Sandstone Turbidites
-  Marine Source Rock
-  Petroleum Migration Route

# SEAL Basin - Offshore

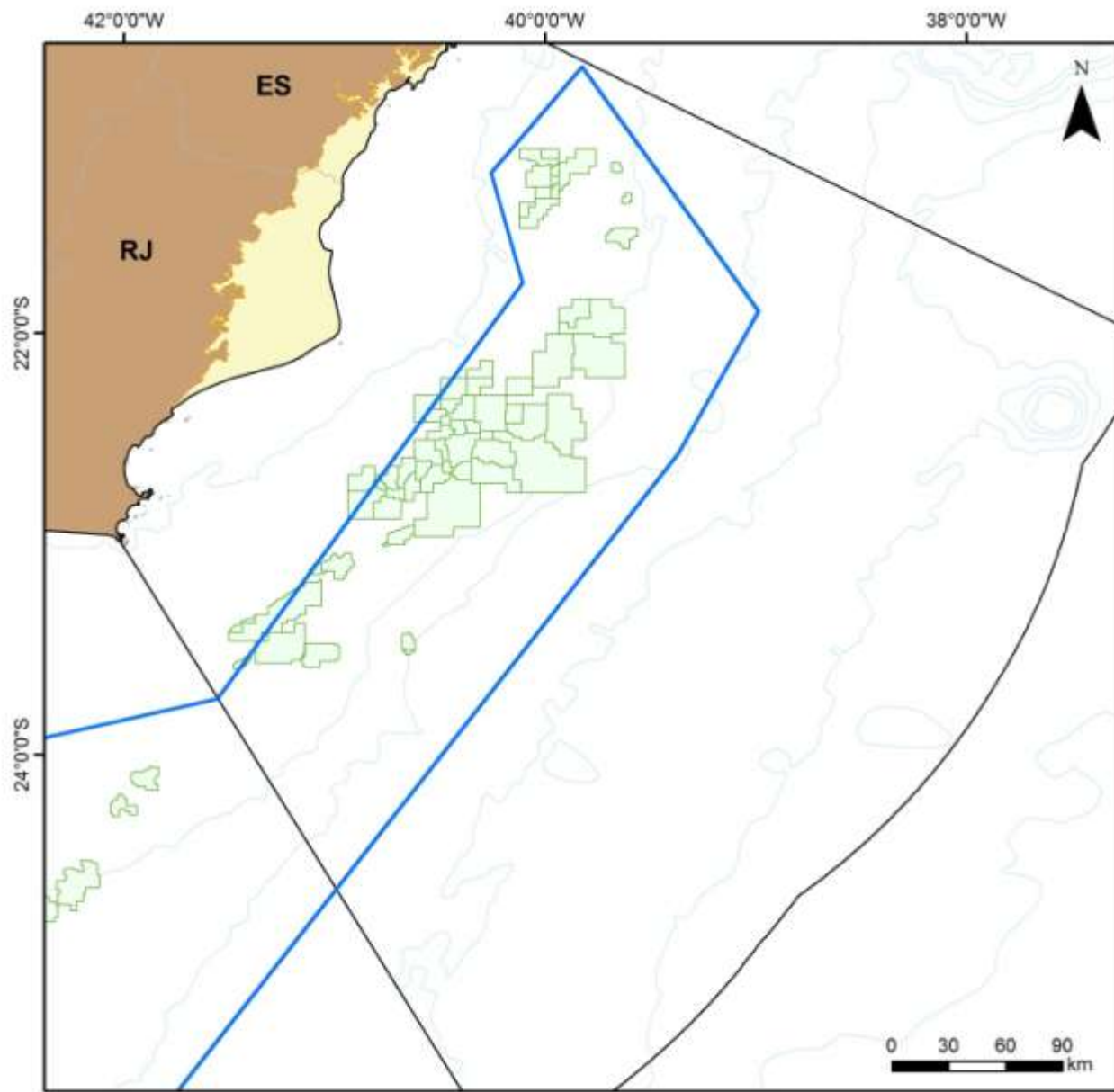


## 14 Blocks

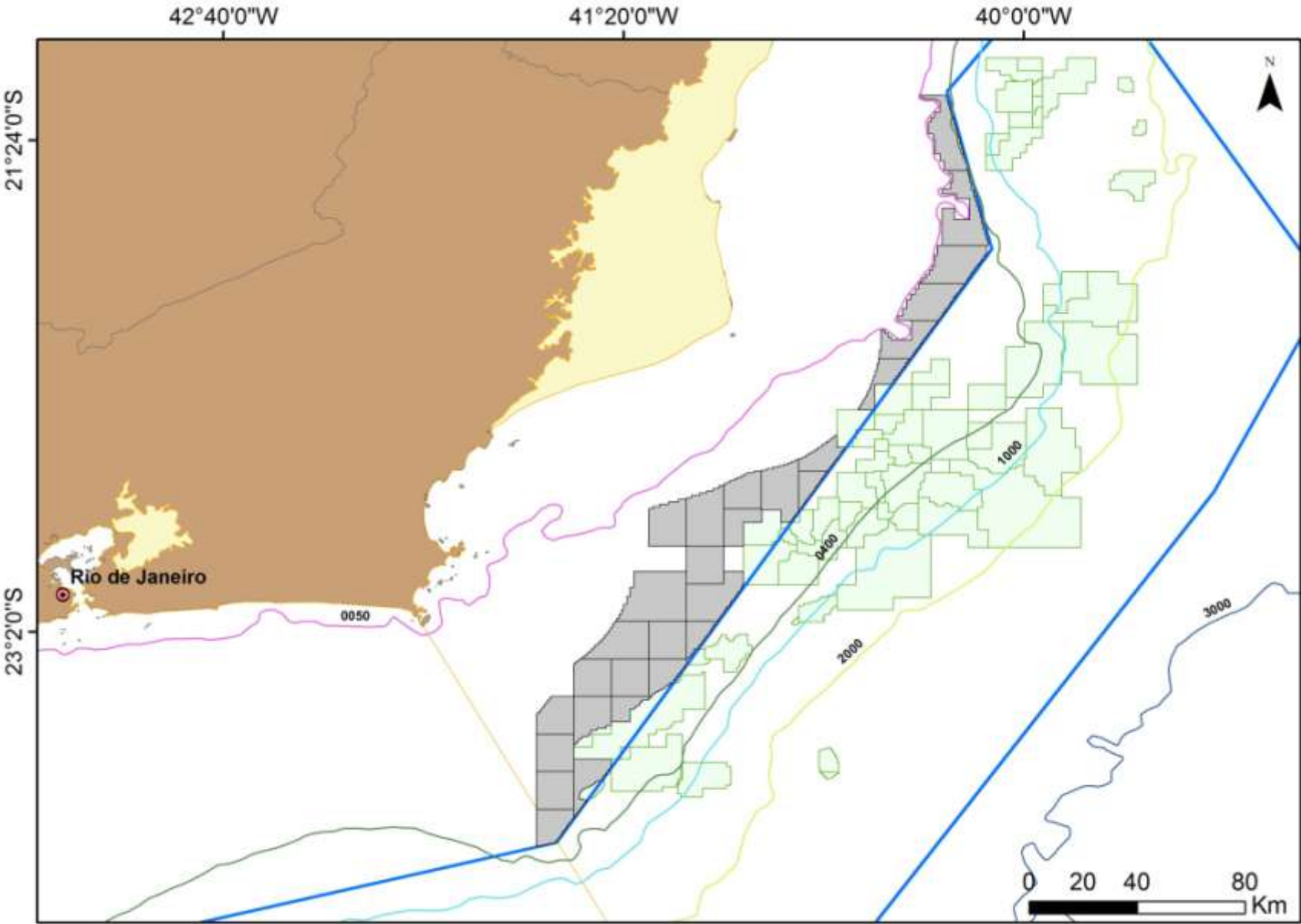
-  Open Acreage Blocks  
Already Available
-  Oil Kitchen
-  Leads



# Campos Basin - Offshore



# Campos Basin - Offshore

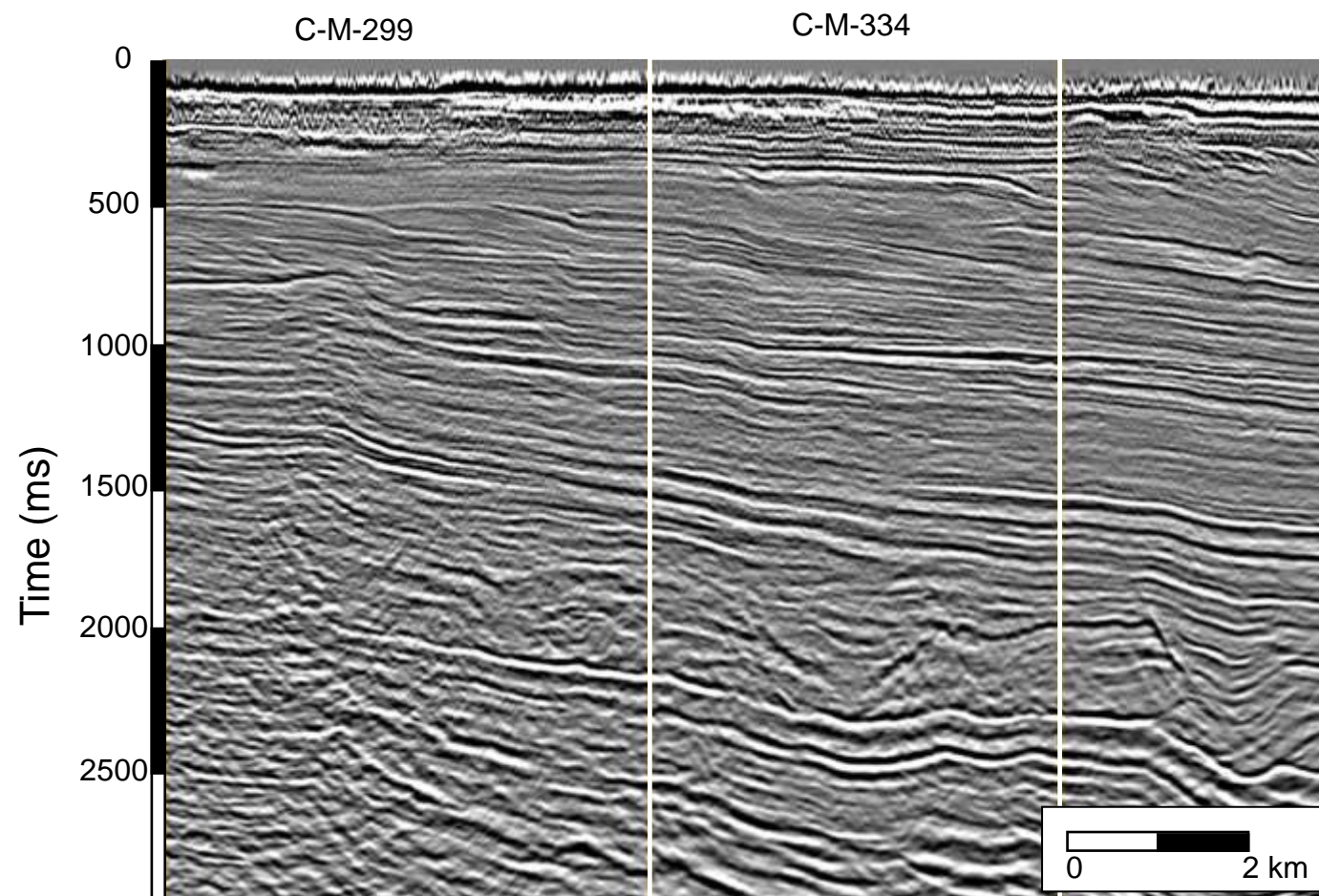
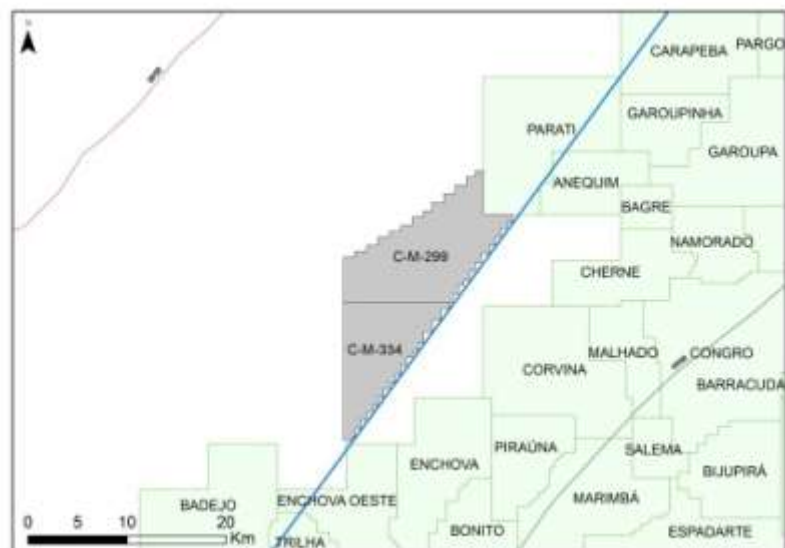


## 29 Blocks

- Open Acreage Blocks  
Already Available
- Fields
- Sedimentary Basin
- Basement
- Pre Salt Polygon

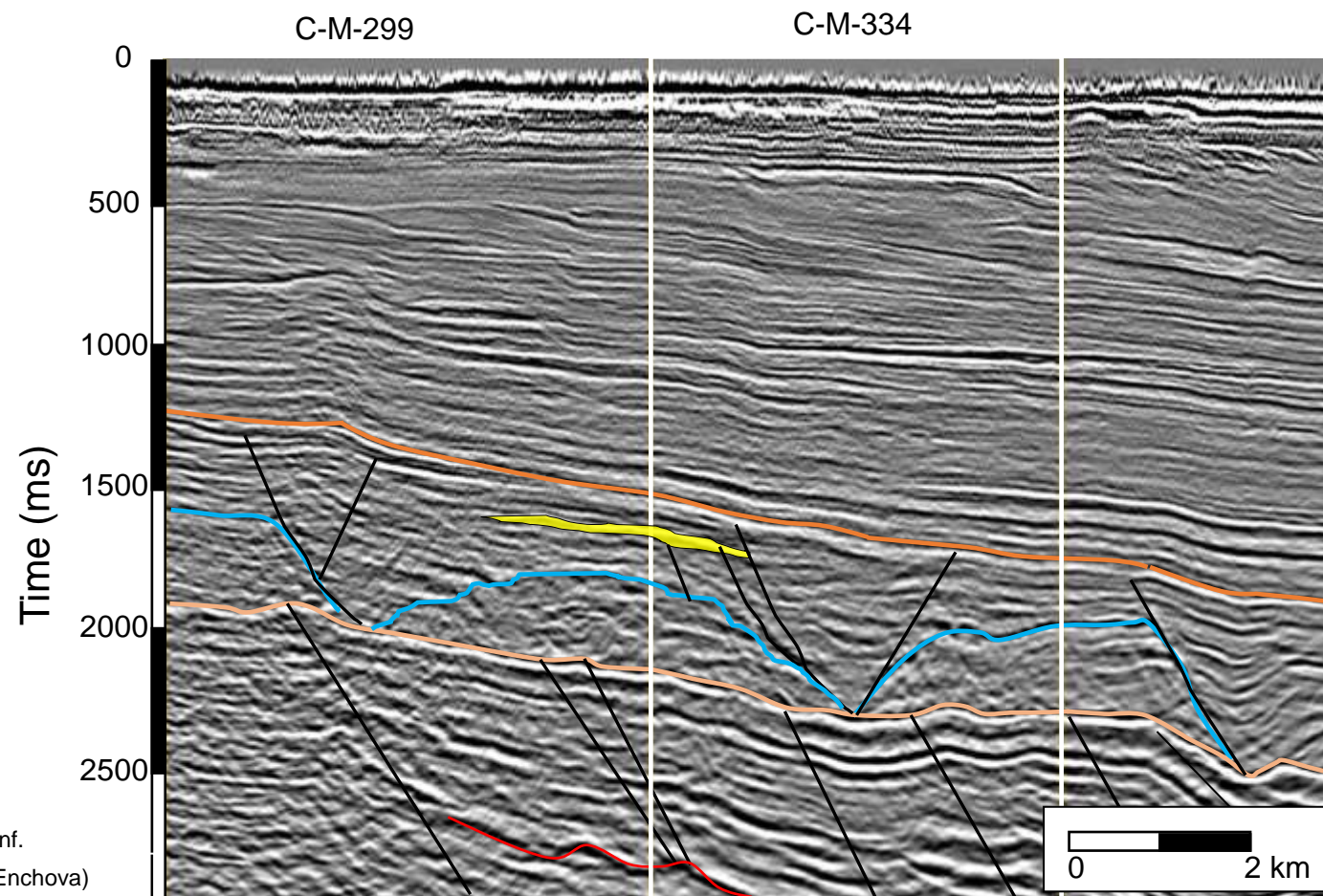
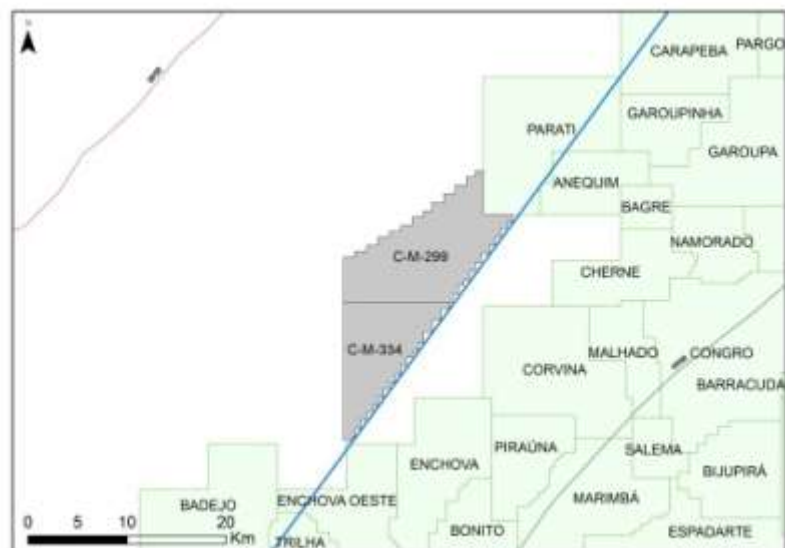


# Leads – Campos Basin - Offshore



R0264\_BM\_C\_28\_PSDM (2000)

# Leads – Campos Basin - Offshore



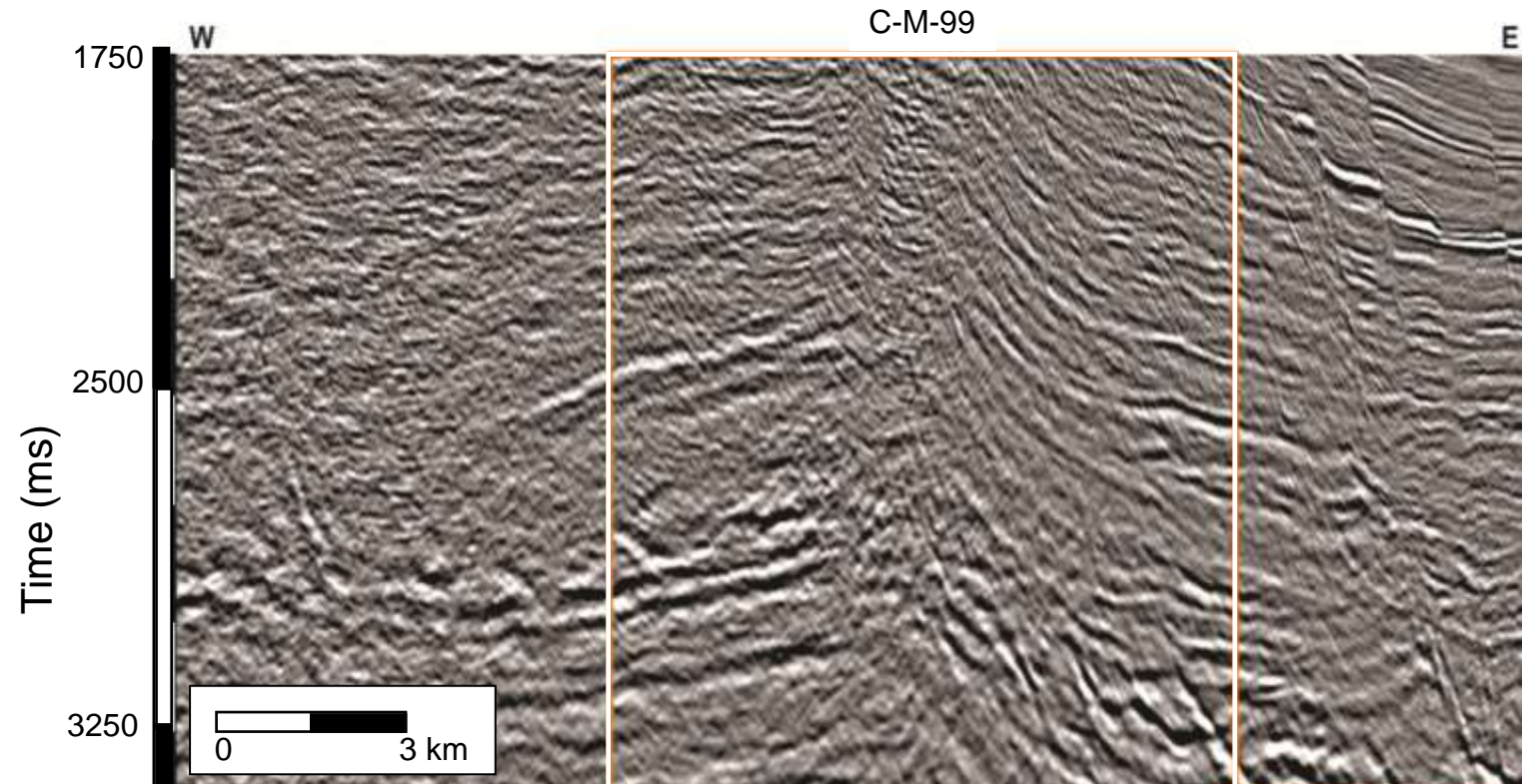
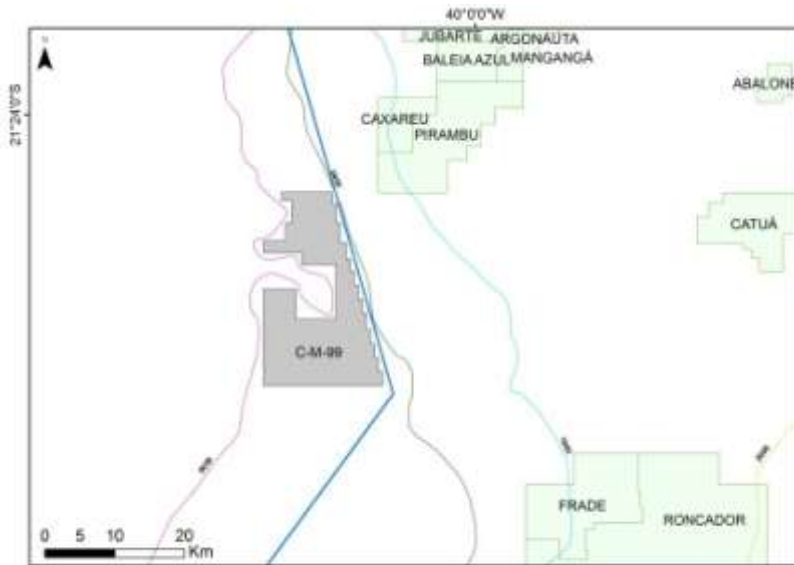
R0264\_BM\_C\_28\_PSDM (2000)

Sandstones Reservoir of  
Carapebus Fm. and  
Carbonates of Quissamã Fm.

- Top of Lower Oligocen Inf.
- Top of Carapebus Fm. (Enchova)
- Top of Quissama Fm.
- Top of Salt Equivalent
- Basement
- Fault

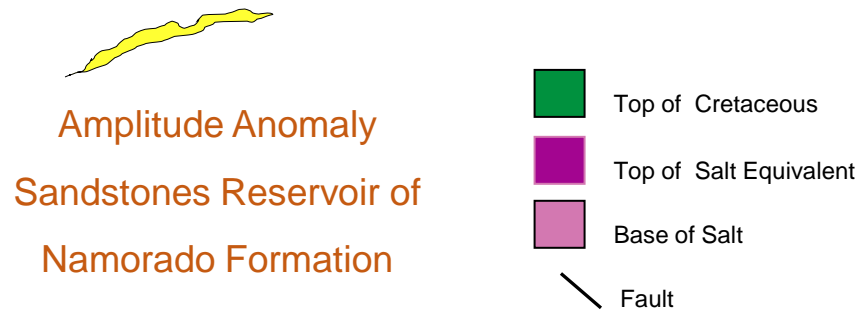
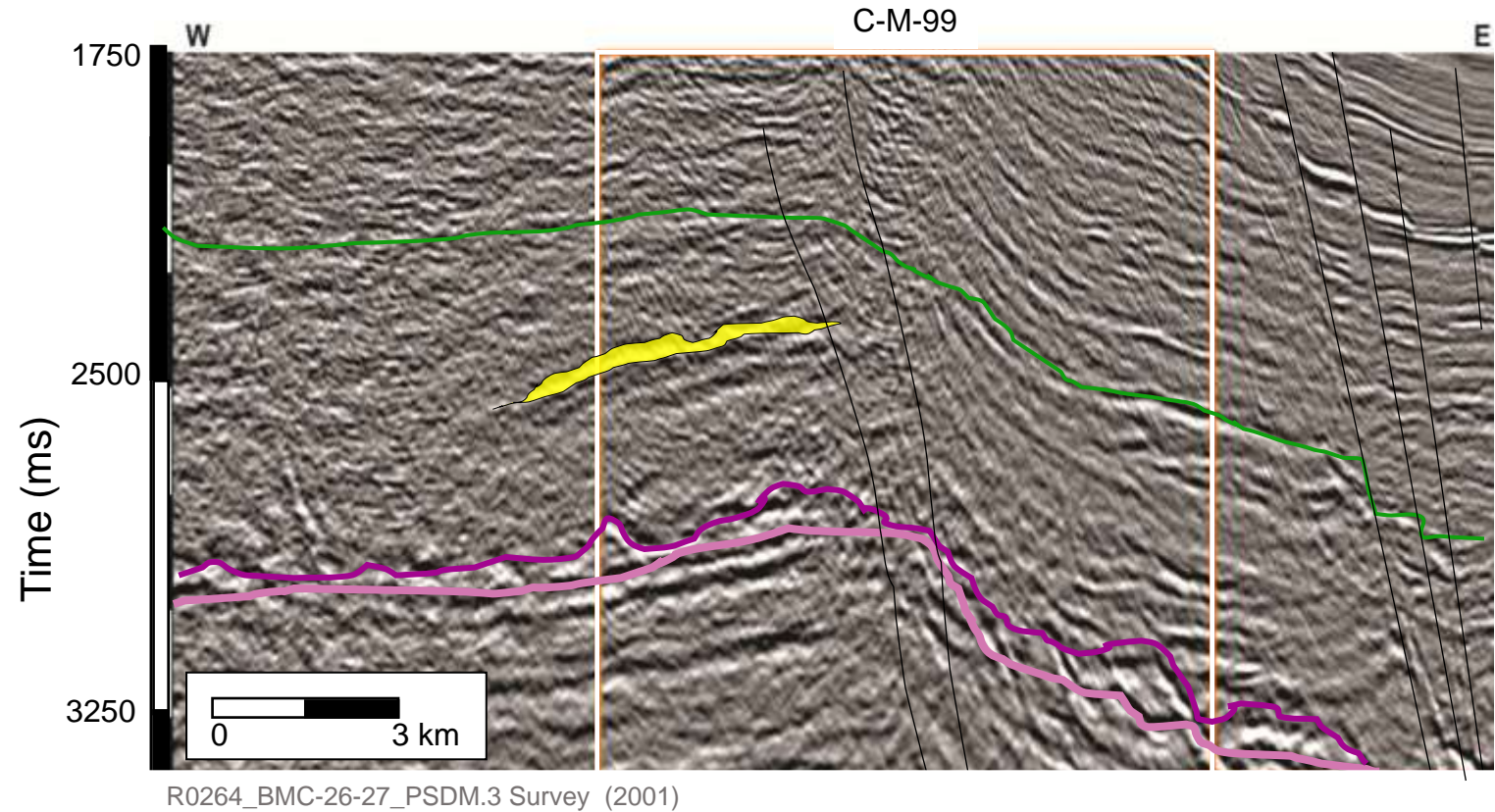
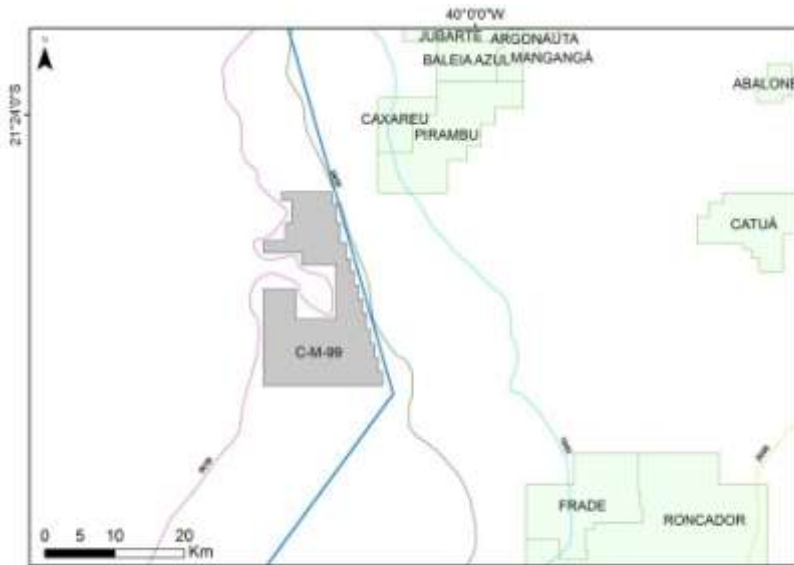


# Leads – Campos Basin - Offshore



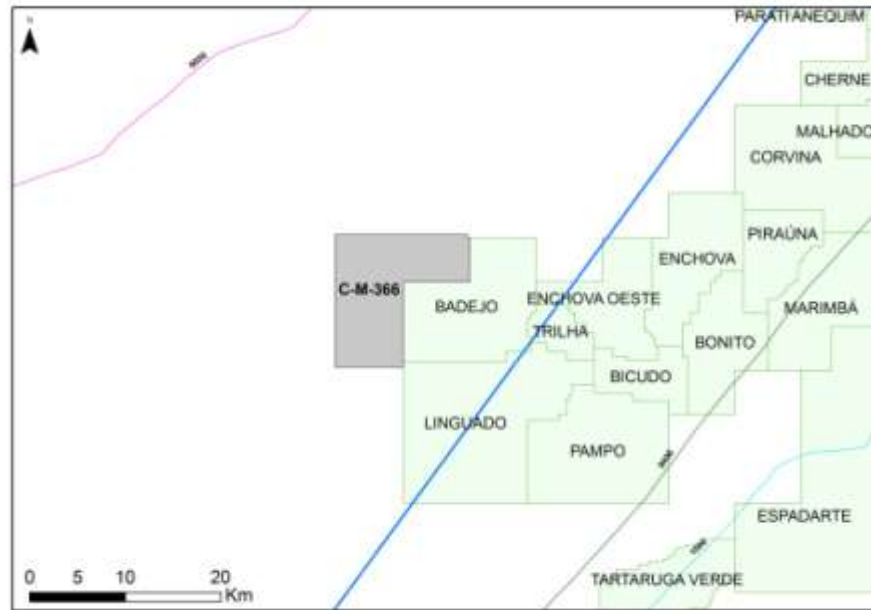
R0264\_BMC-26-27\_PSDM.3 Survey (2001)

# Leads – Campos Basin - Offshore

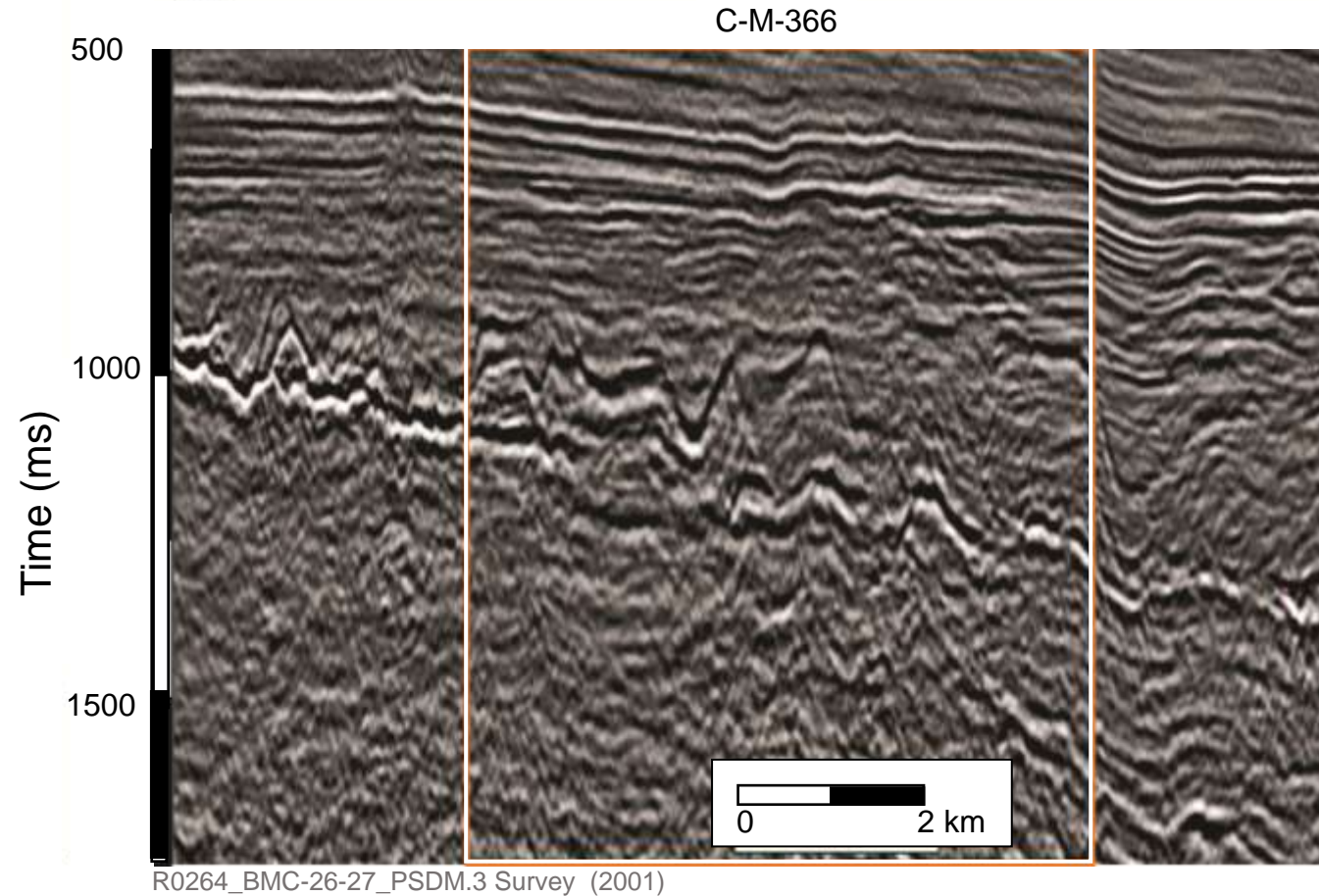




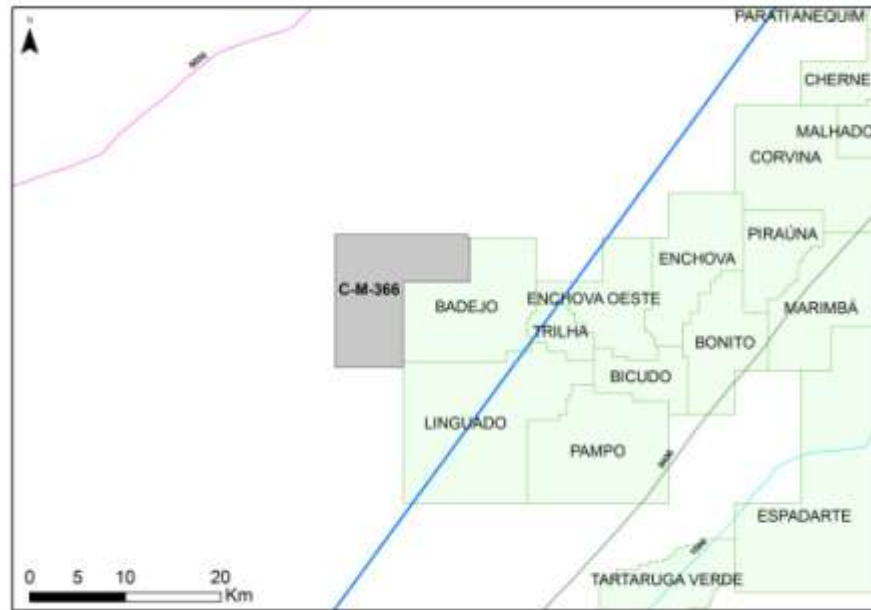
# Leads – Campos Basin - Offshore



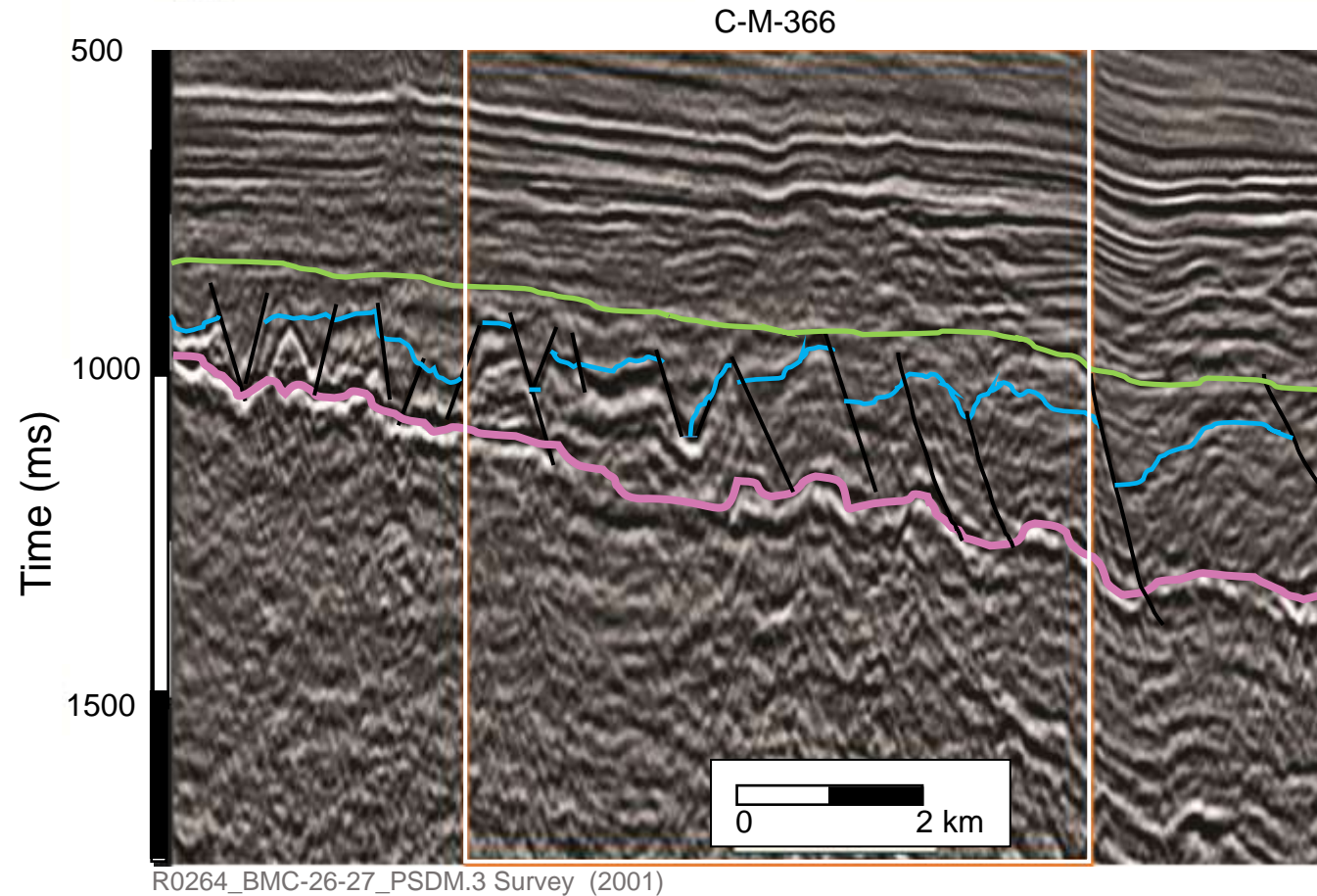
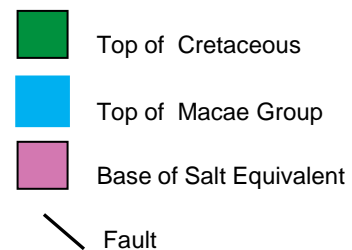
Carbonate Reservoir on  
Quissamã Fm. Similar of  
Badejo Field



# Leads – Campos Basin - Offshore

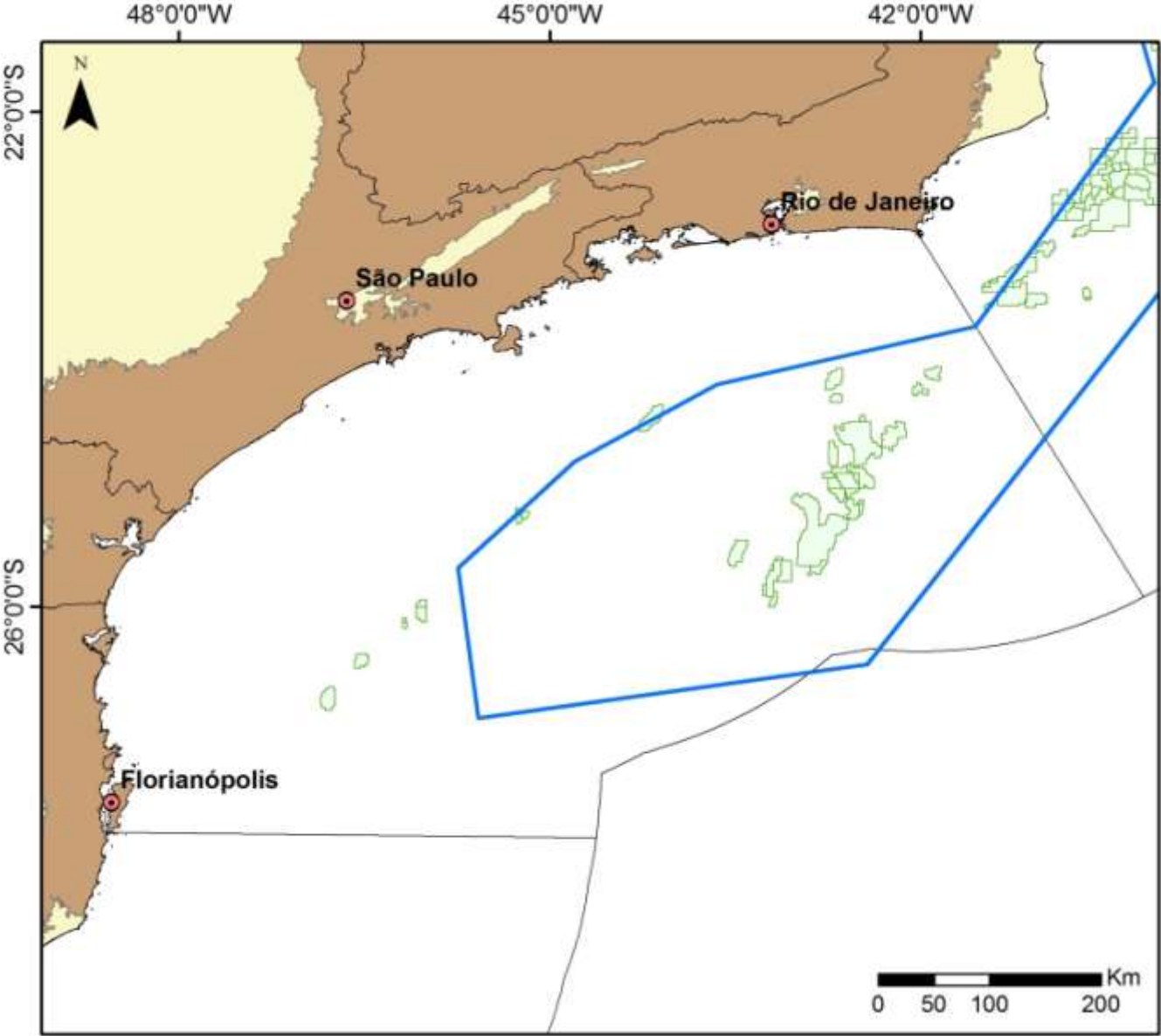


Carbonate Reservoir on  
Quissamã Fm. Similar of  
Badejo Field

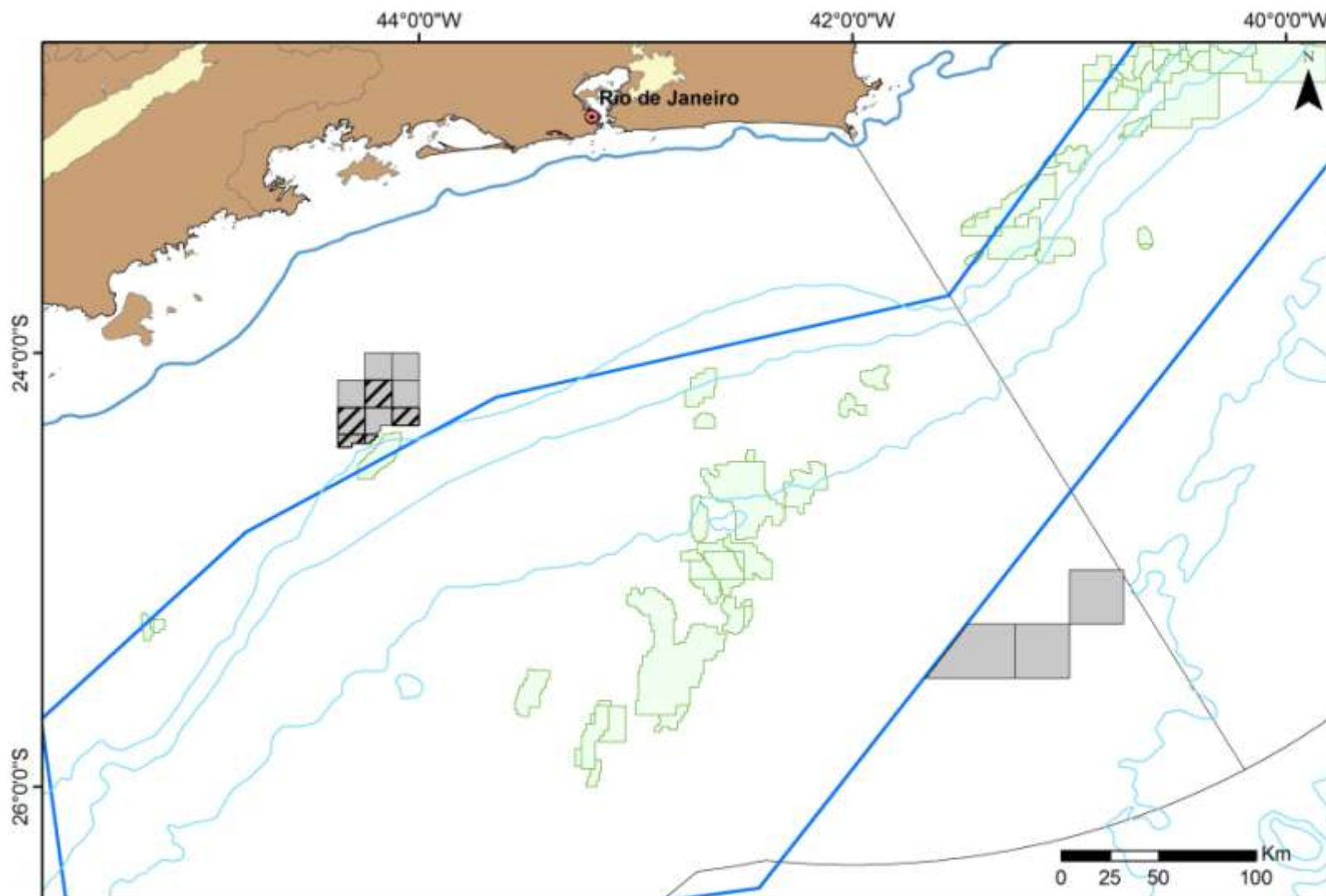




# Santos Basin - Offshore



# Santos Basin - Offshore



## 13 Blocks

Open Acreage Blocks  
Already Available

Open Acreage Blocks  
Public Audience

Fields

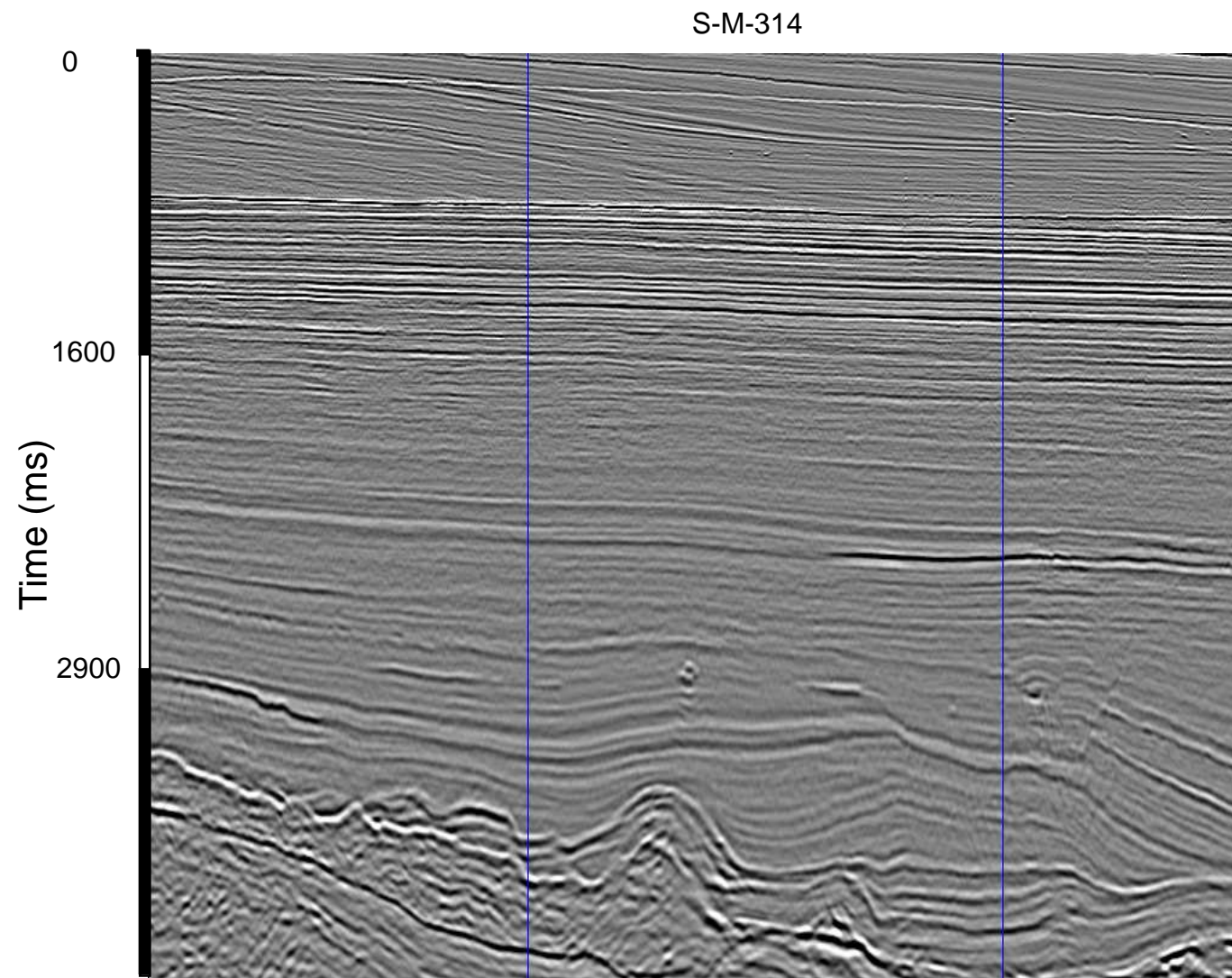
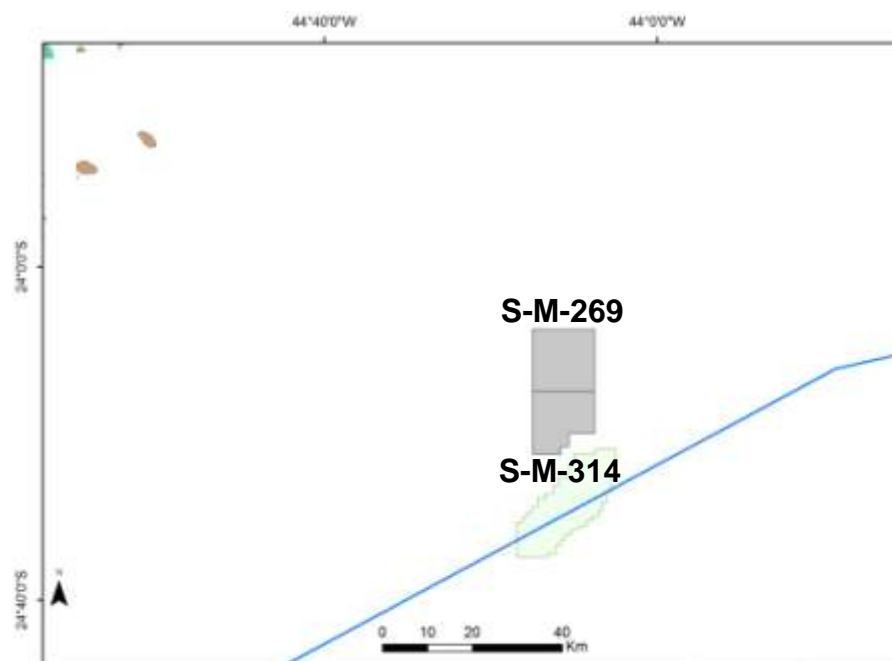
Sedimentary Basin

Basement

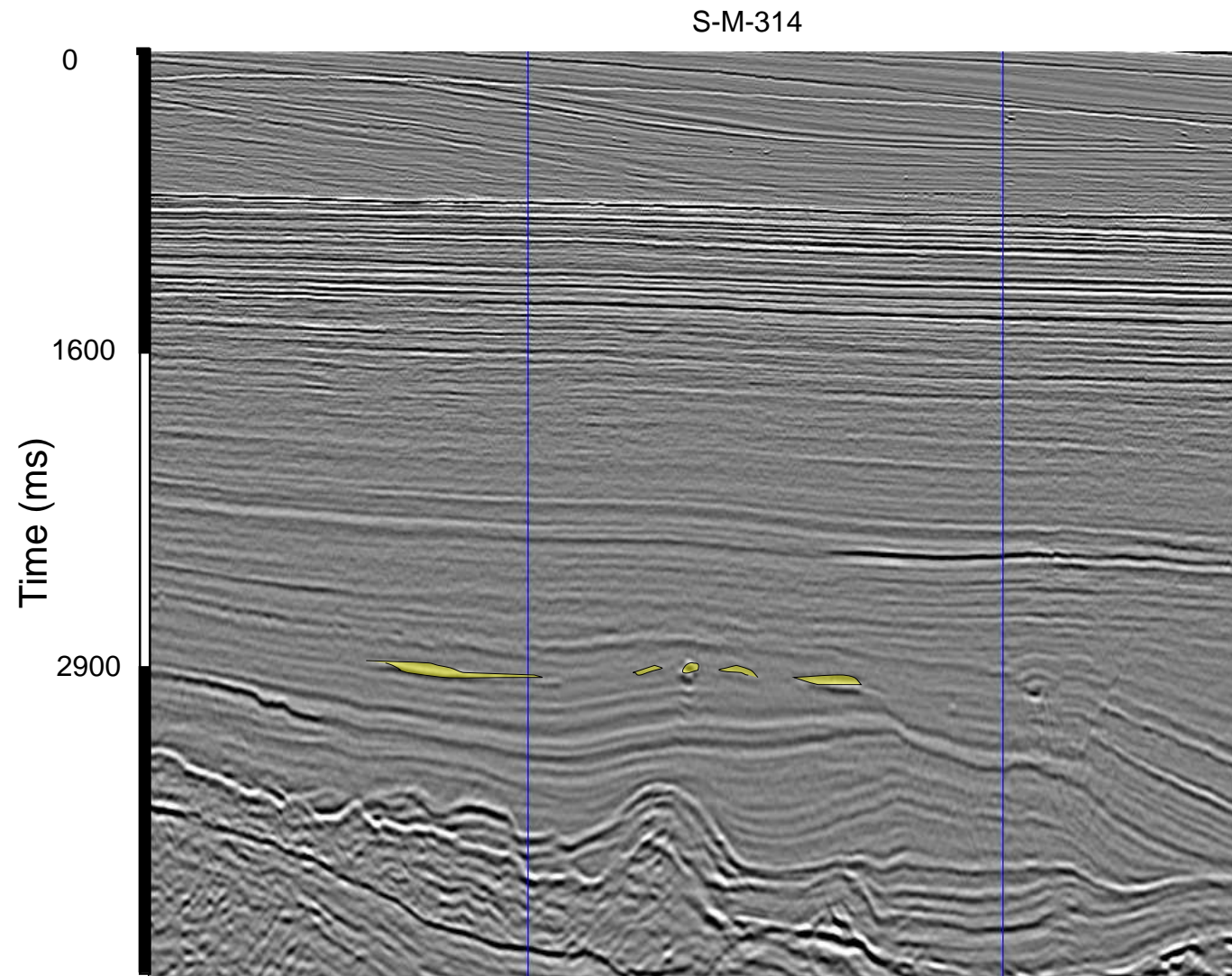
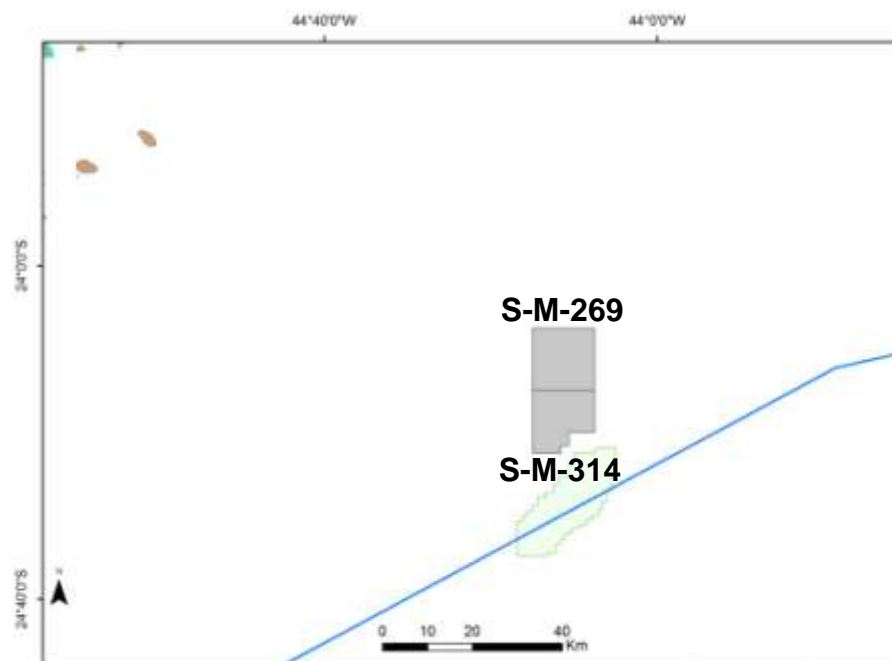
Pre Salt Polygon



# Leads – Santos Basin - Offshore

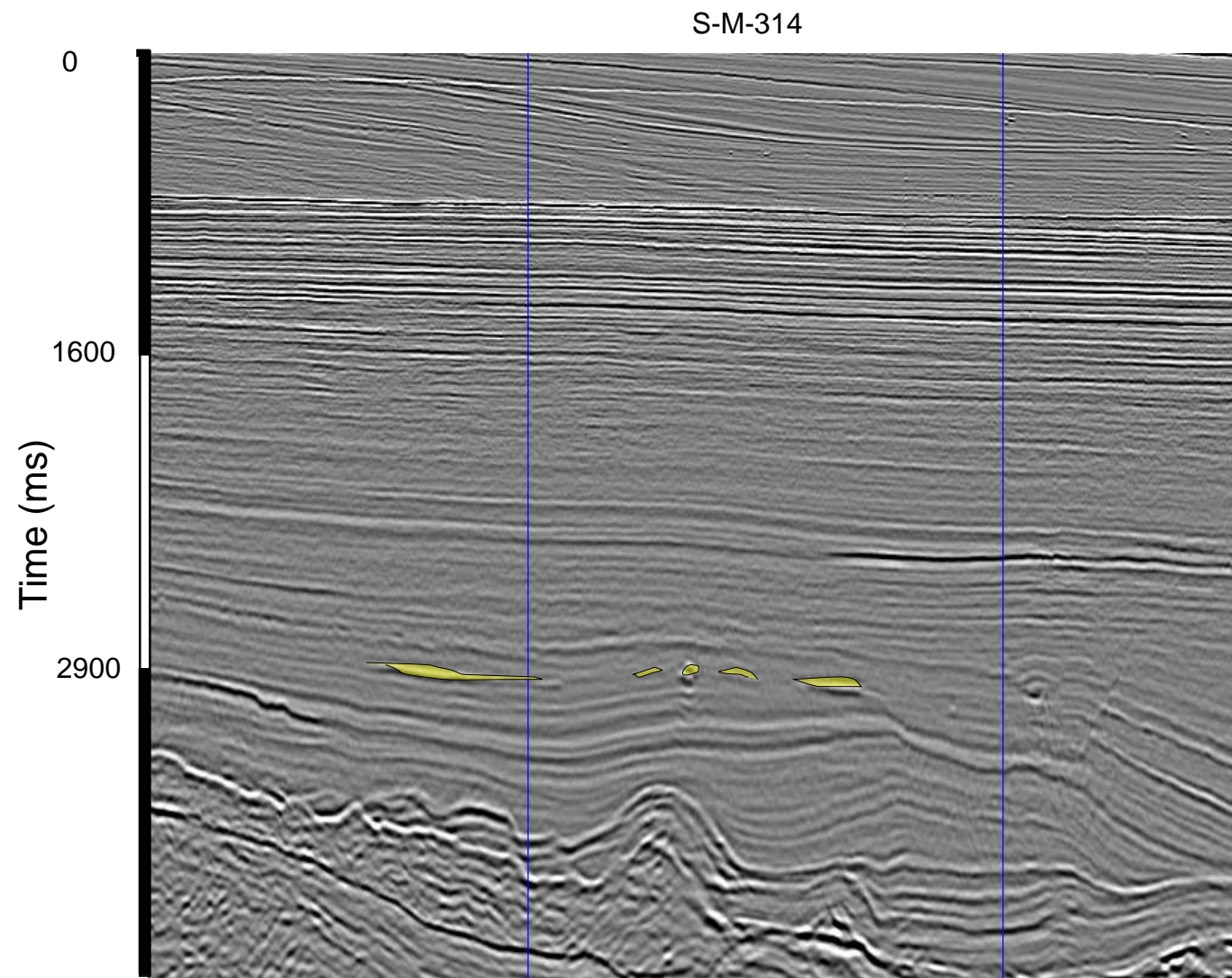
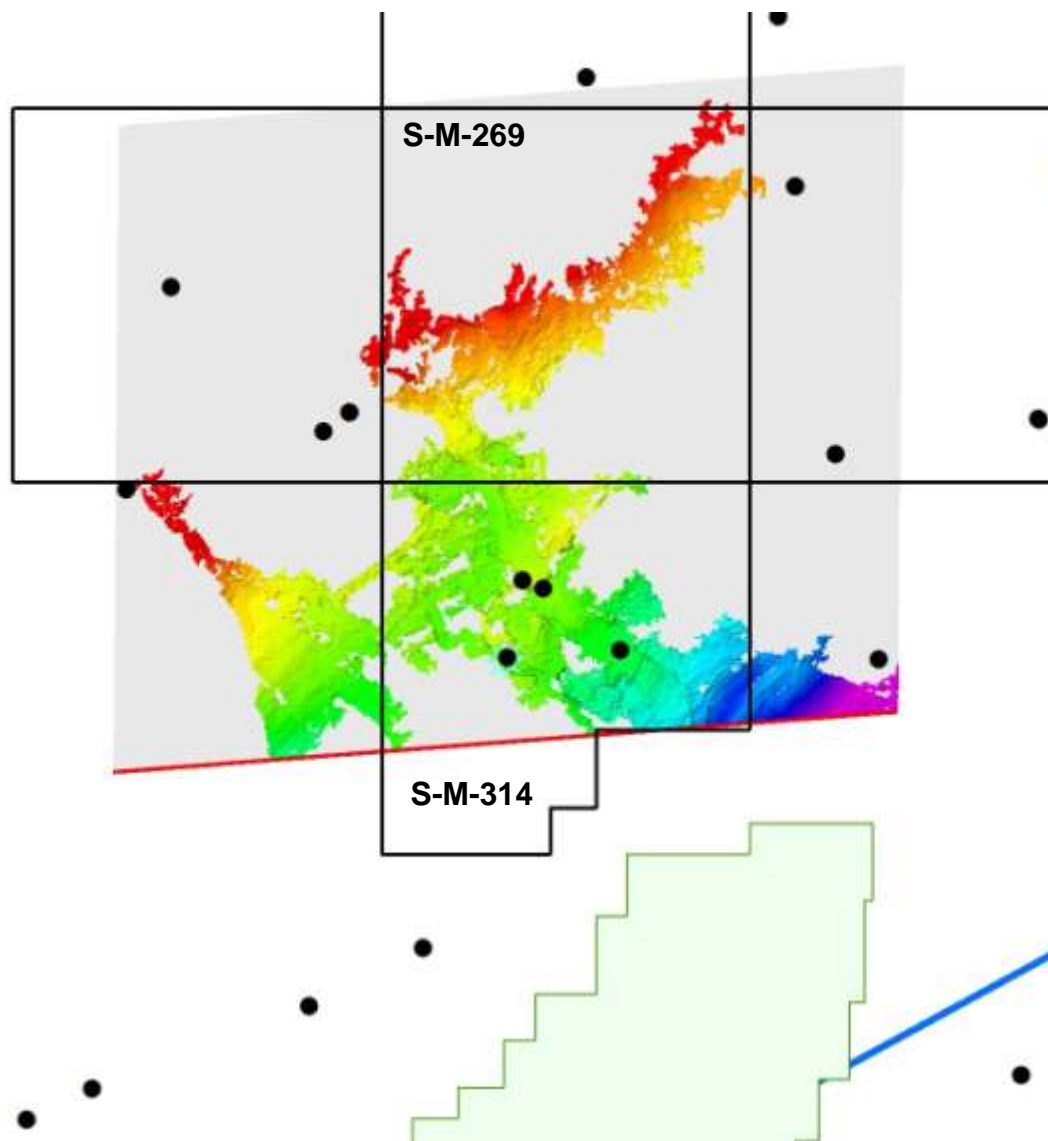


# Leads – Santos Basin - Offshore

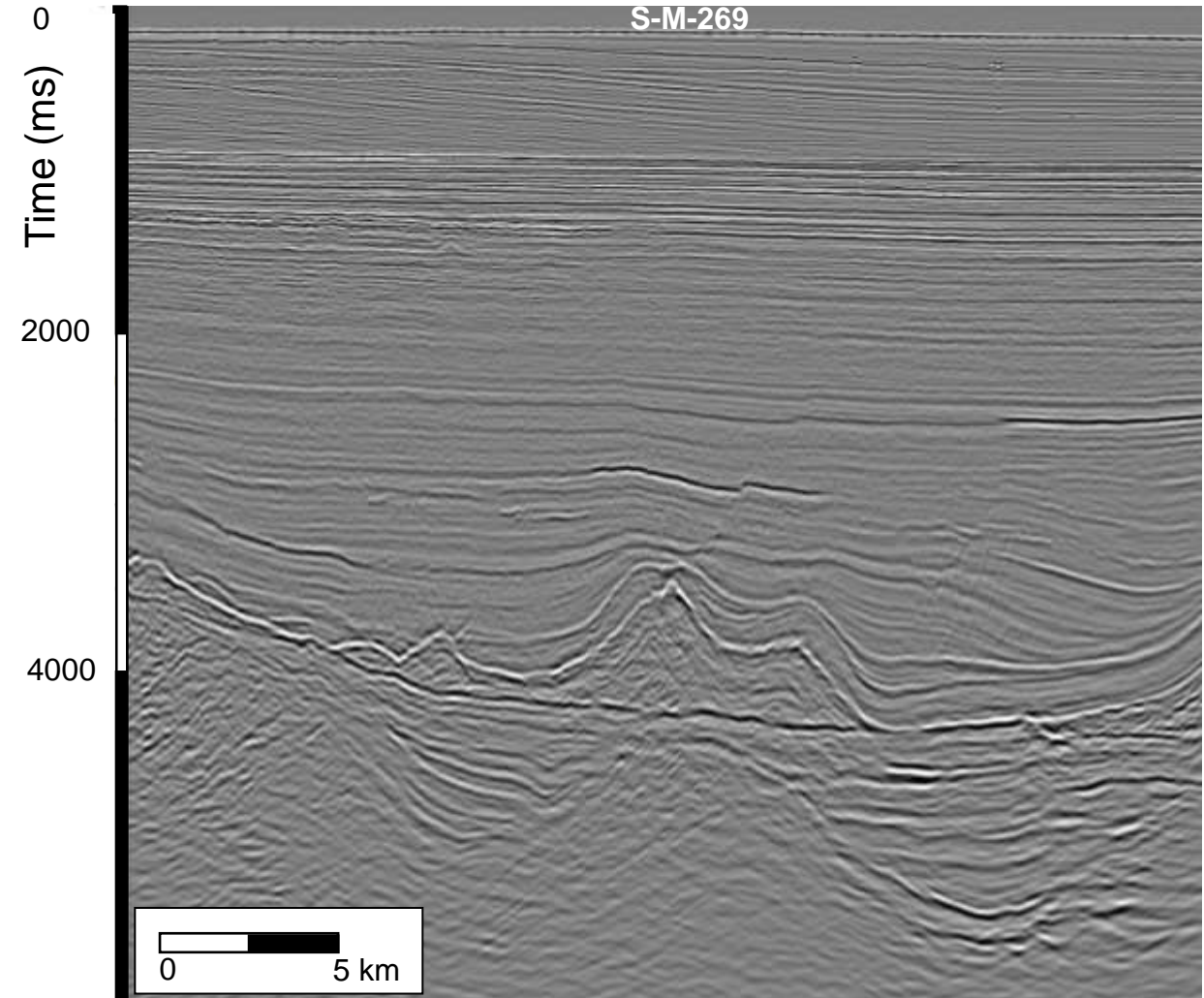
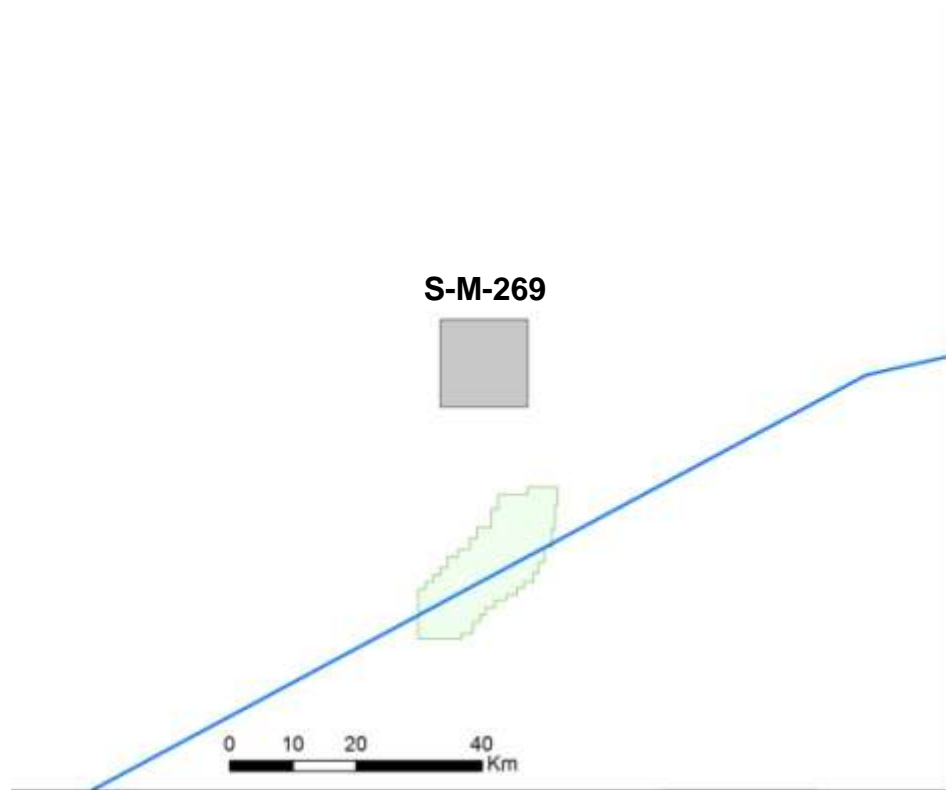




# Leads – Santos Basin - Offshore



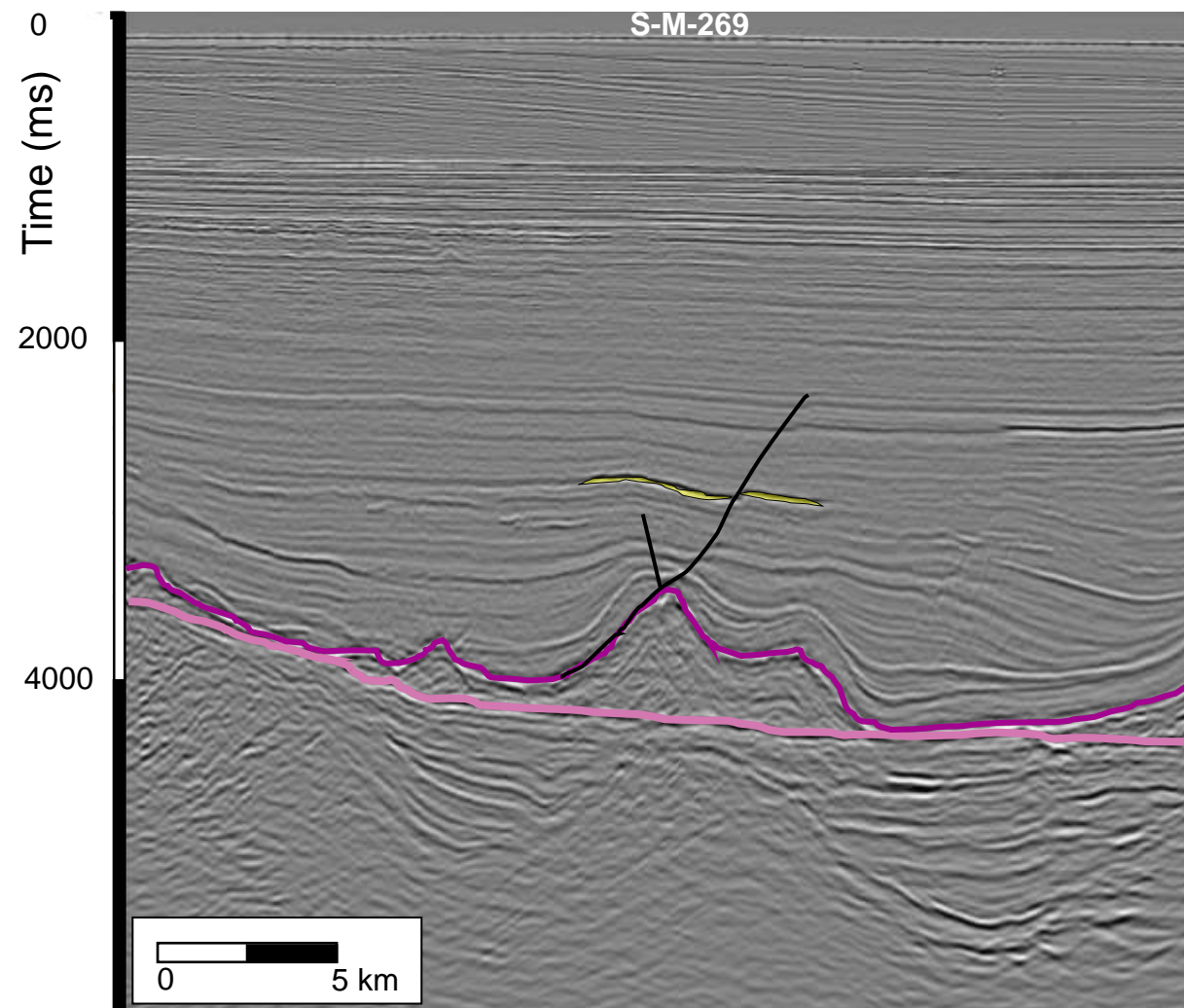
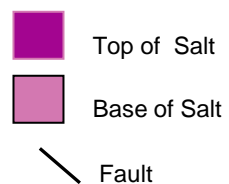
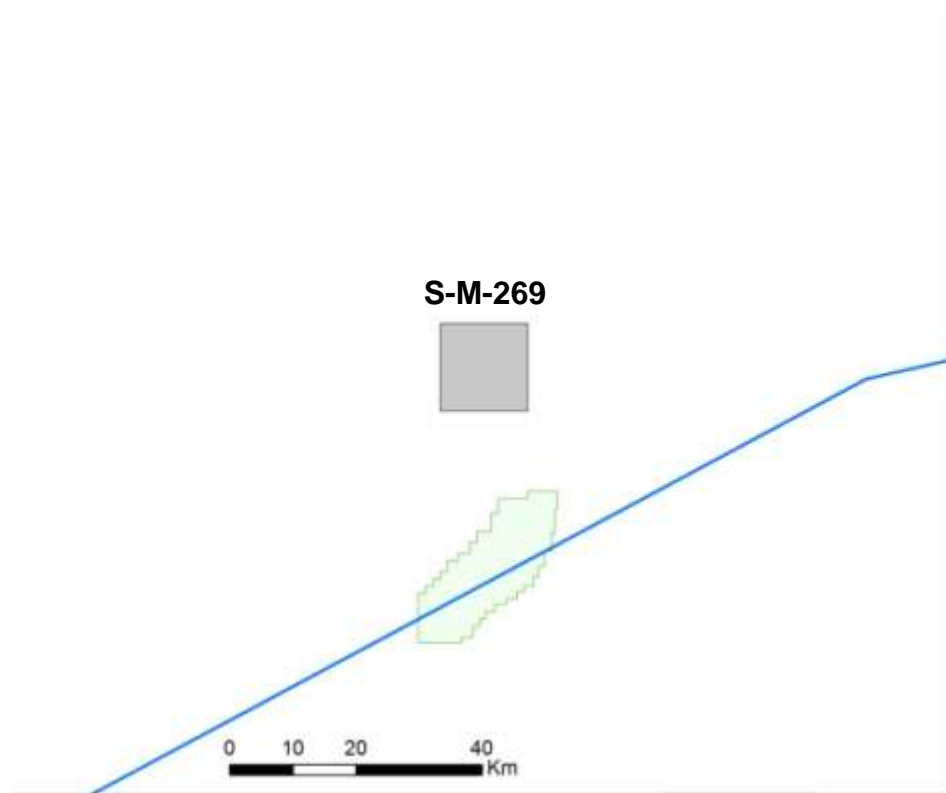
# Leads – Santos Basin - Offshore



0282\_BM\_S\_14



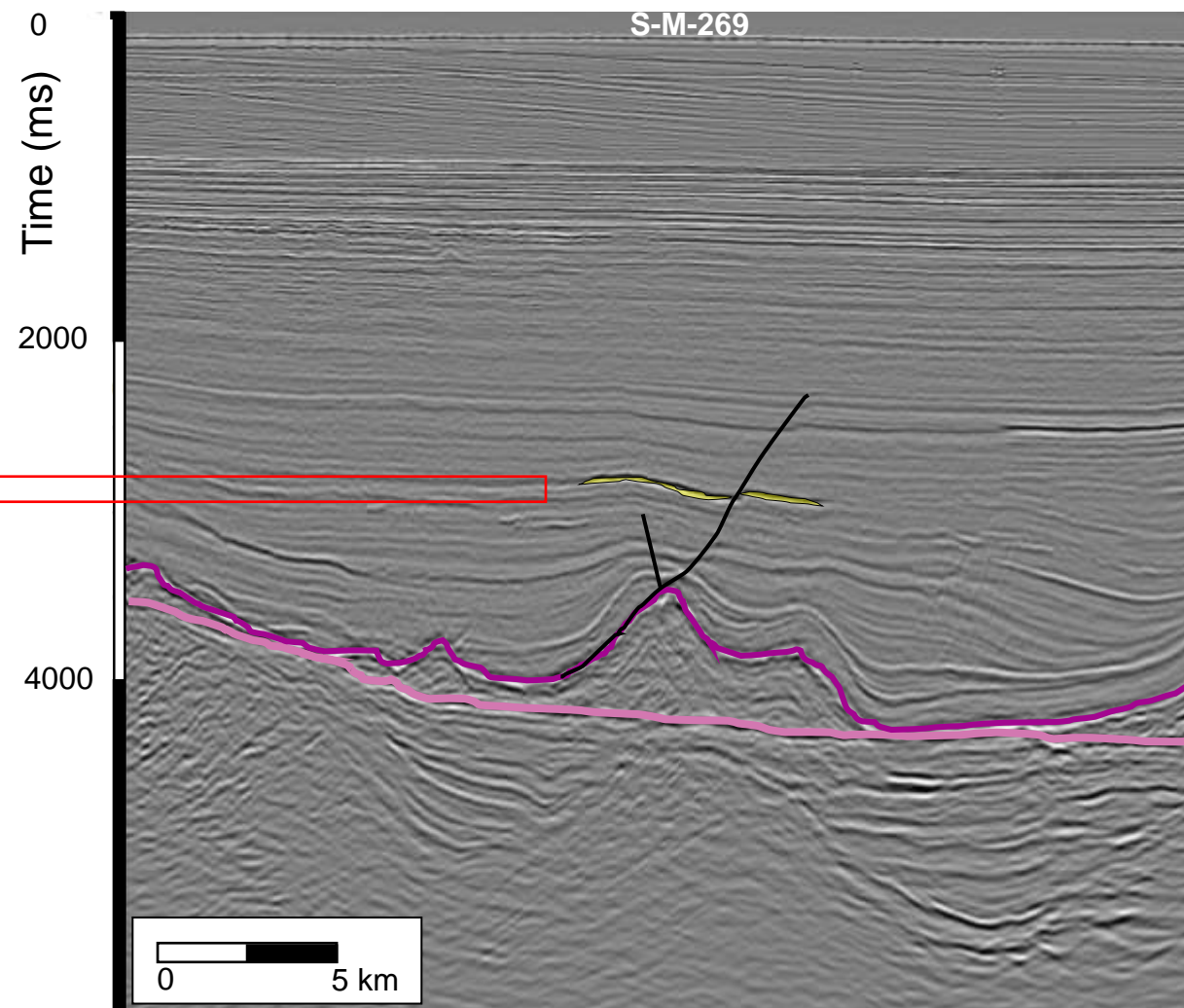
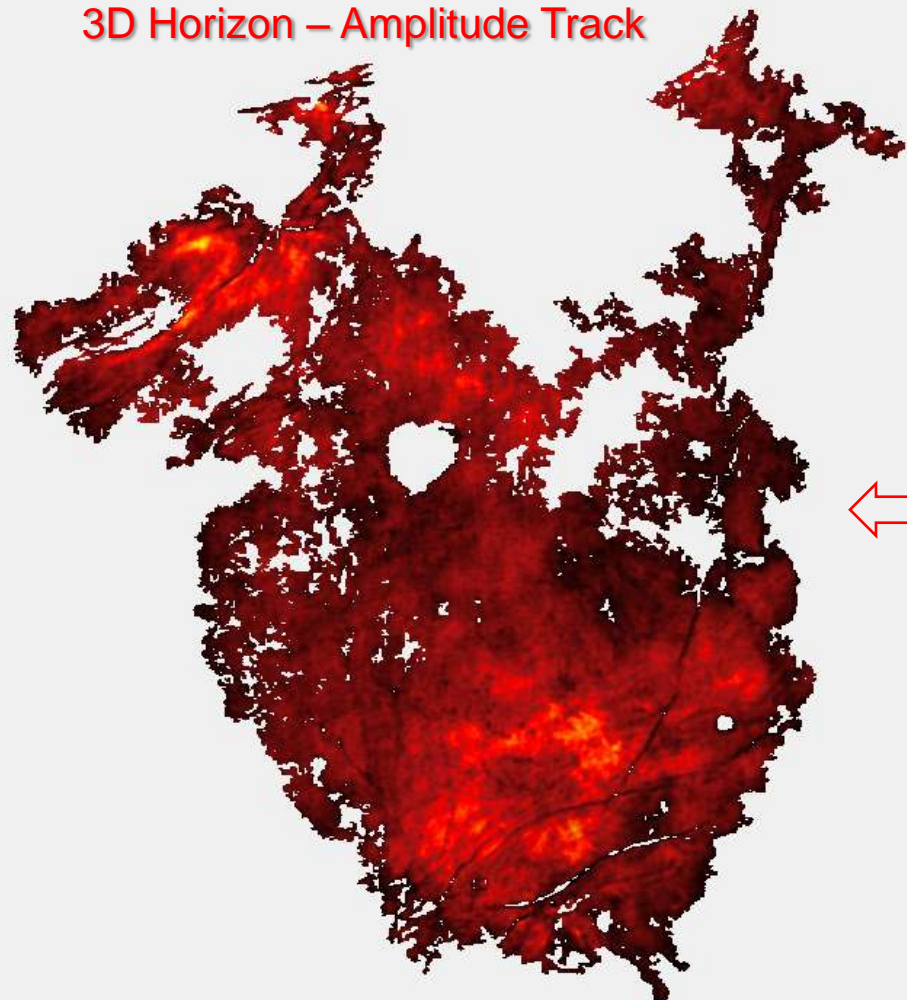
# Leads – Santos Basin - Offshore



0282\_BM\_S\_14

# Leads – Santos Basin - Offshore

3D Horizon – Amplitude Track

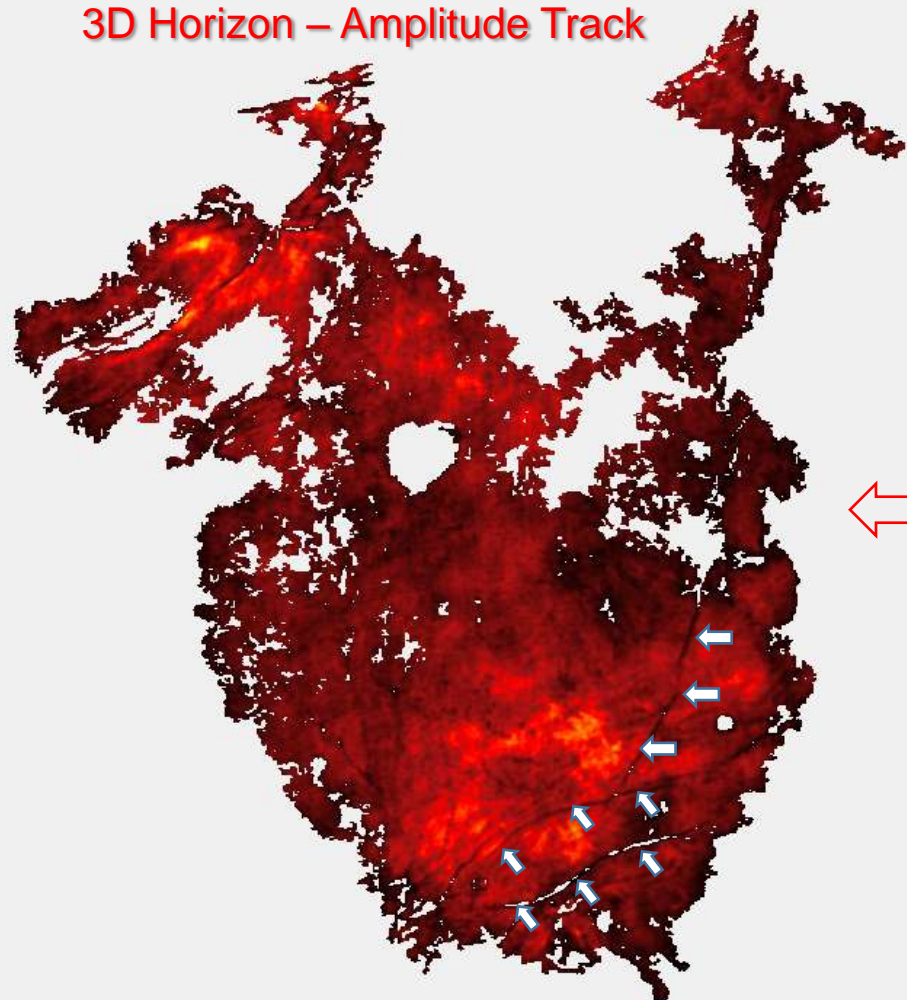


0282\_BM\_S\_14

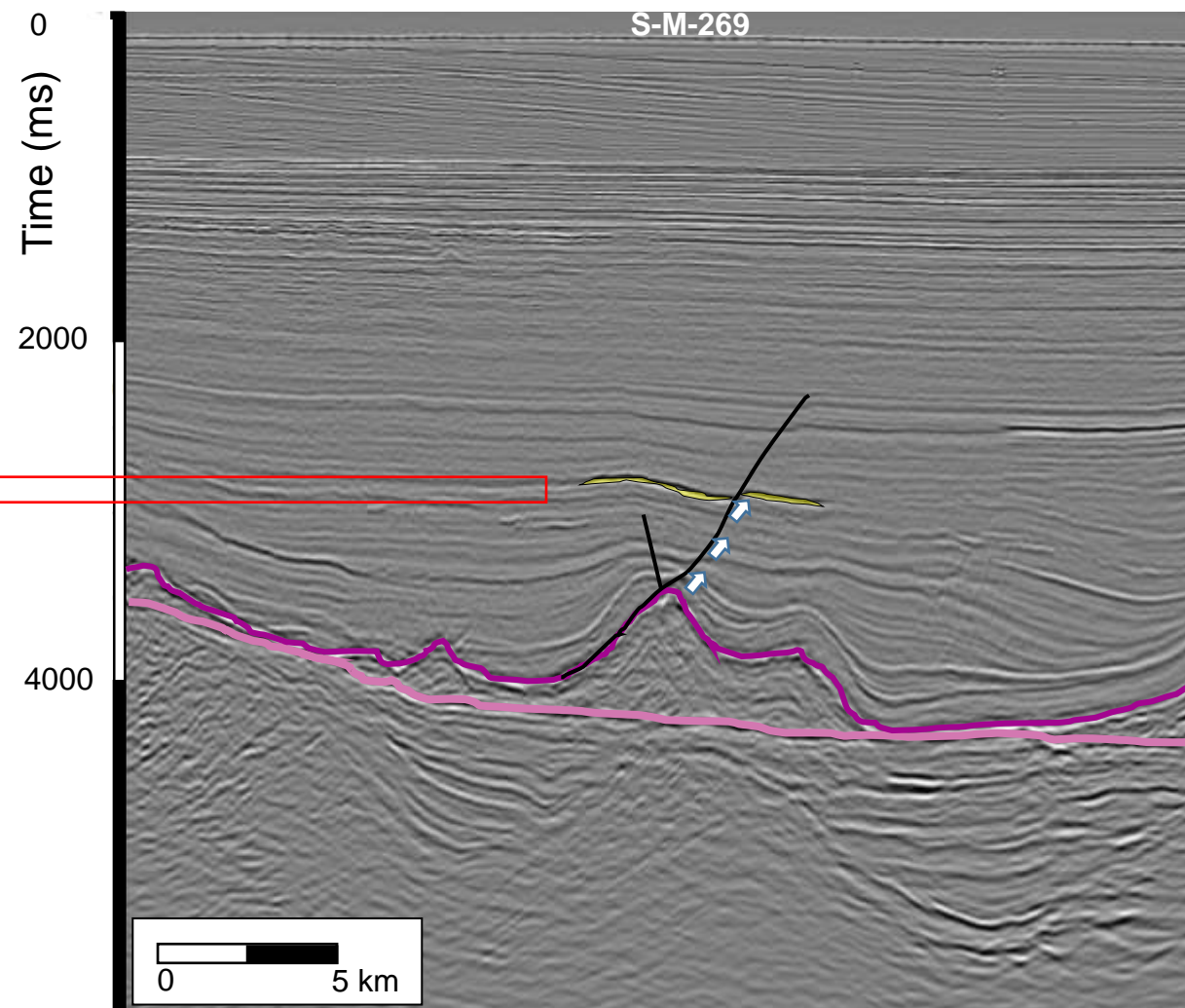


# Leads – Santos Basin - Offshore

3D Horizon – Amplitude Track



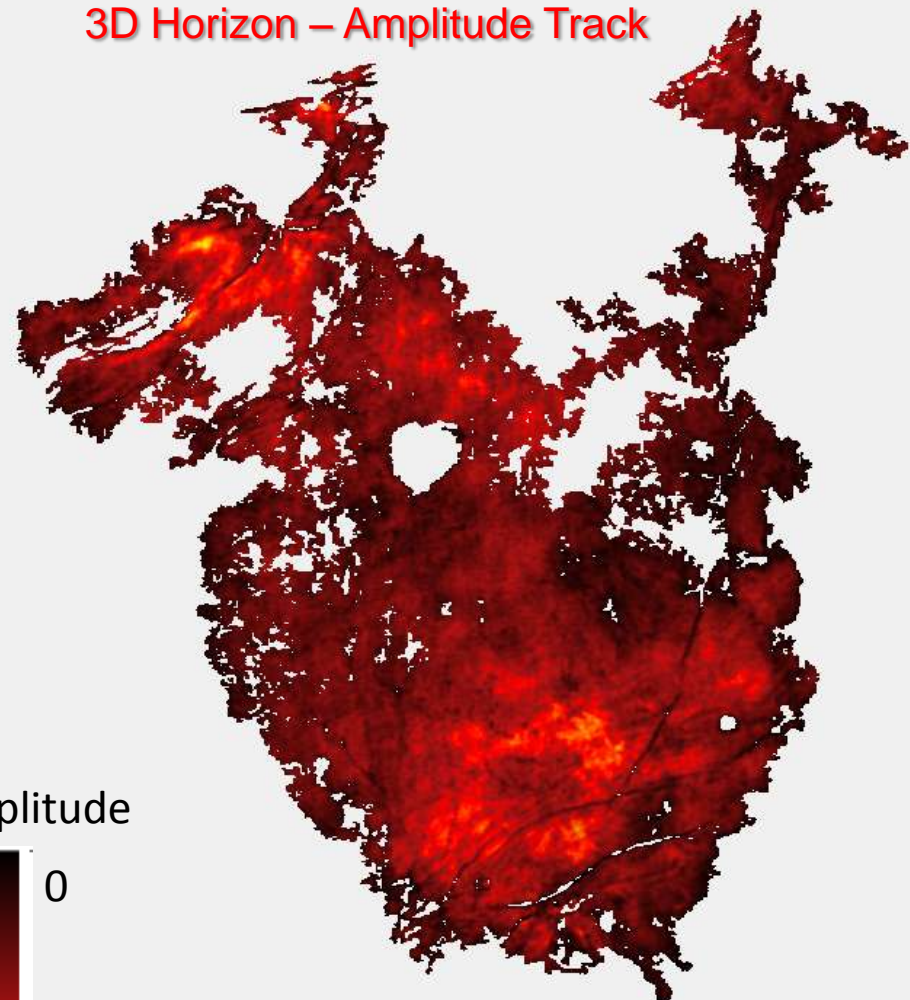
Lead – Turbidite  
Petroleum Migration Route



0282\_BM\_S\_14

# Leads – Santos Basin - Offshore

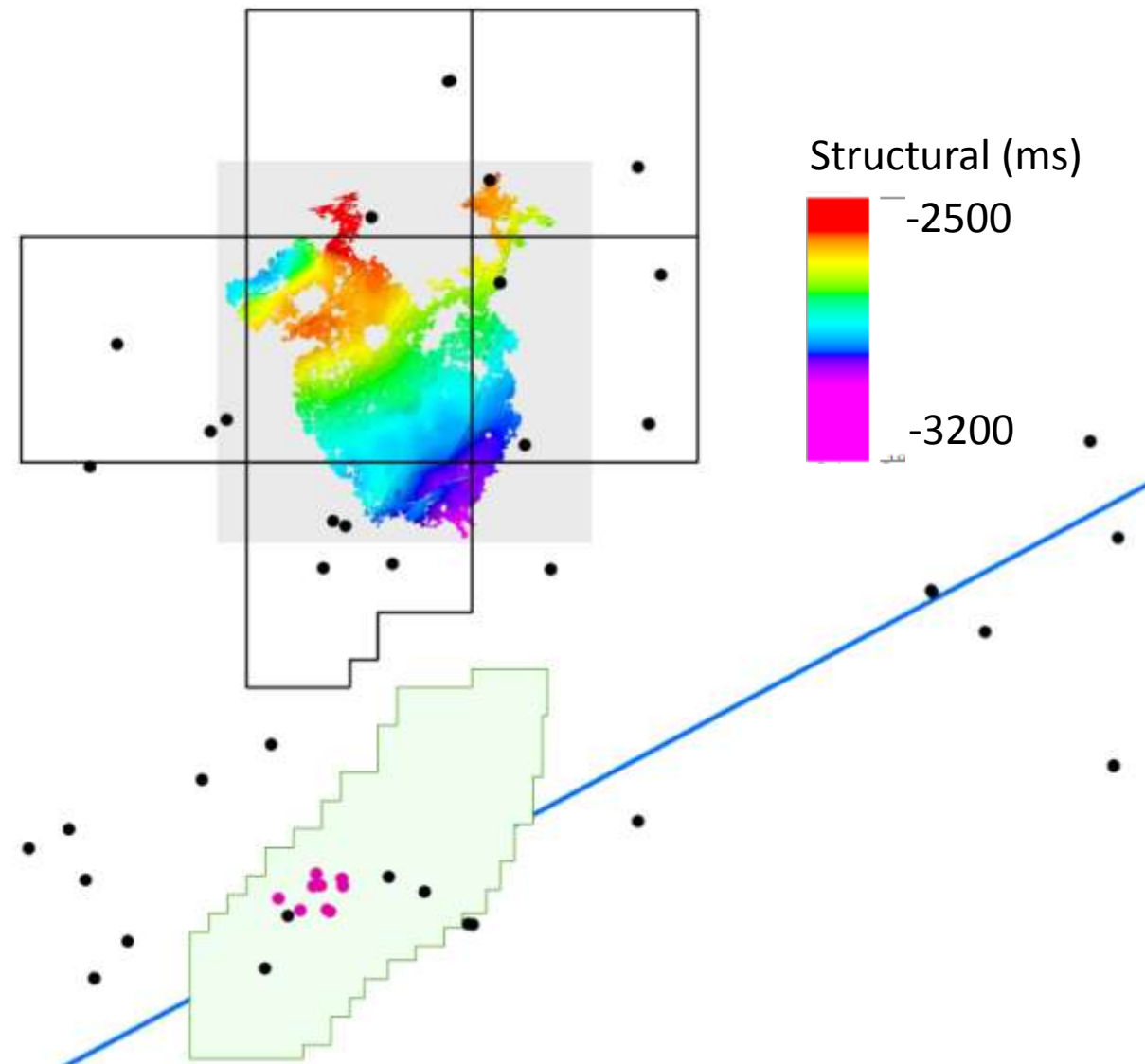
3D Horizon – Amplitude Track



Amplitude

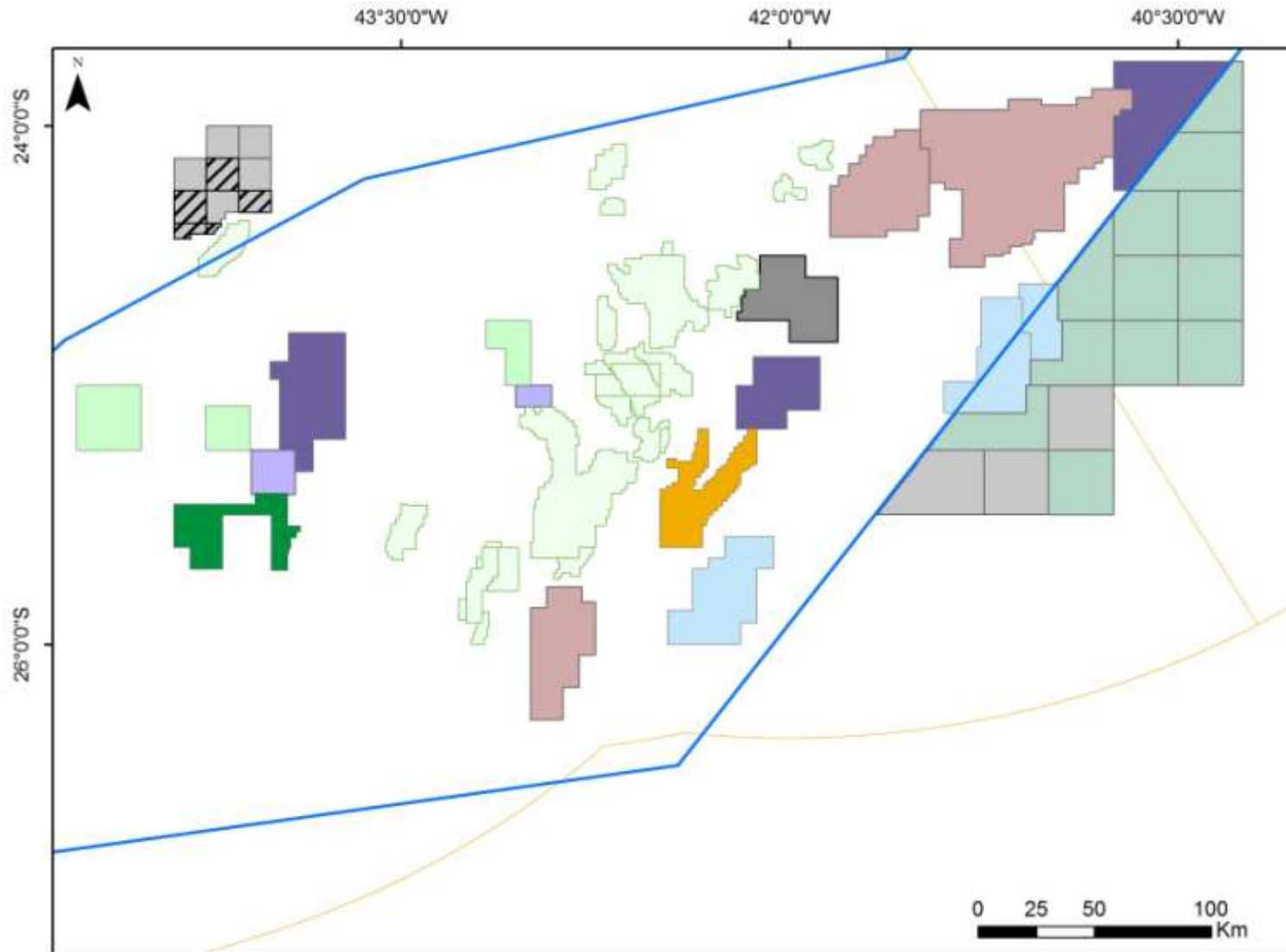


Max Neg



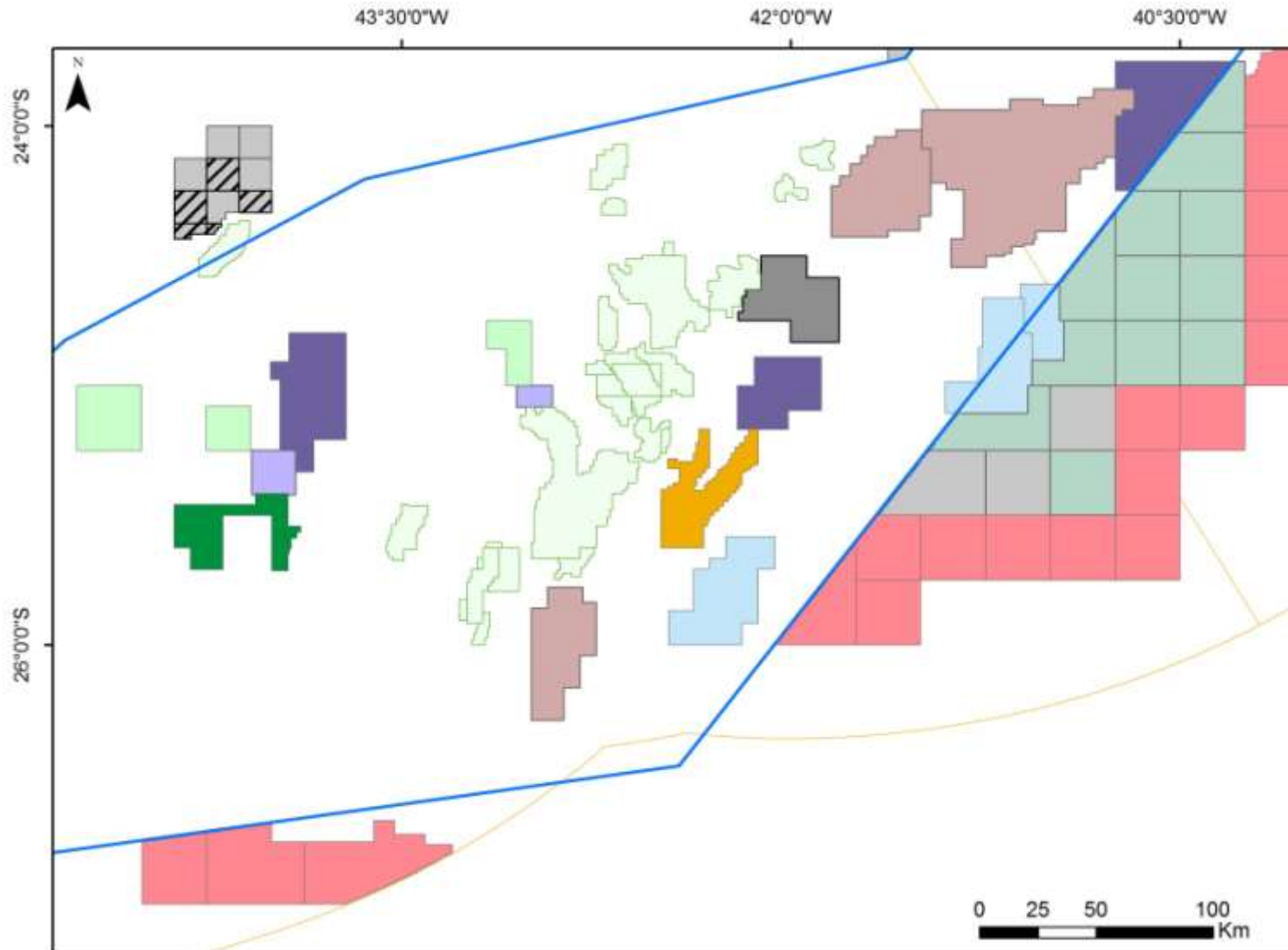


# Leads – Santos Basin - Offshore

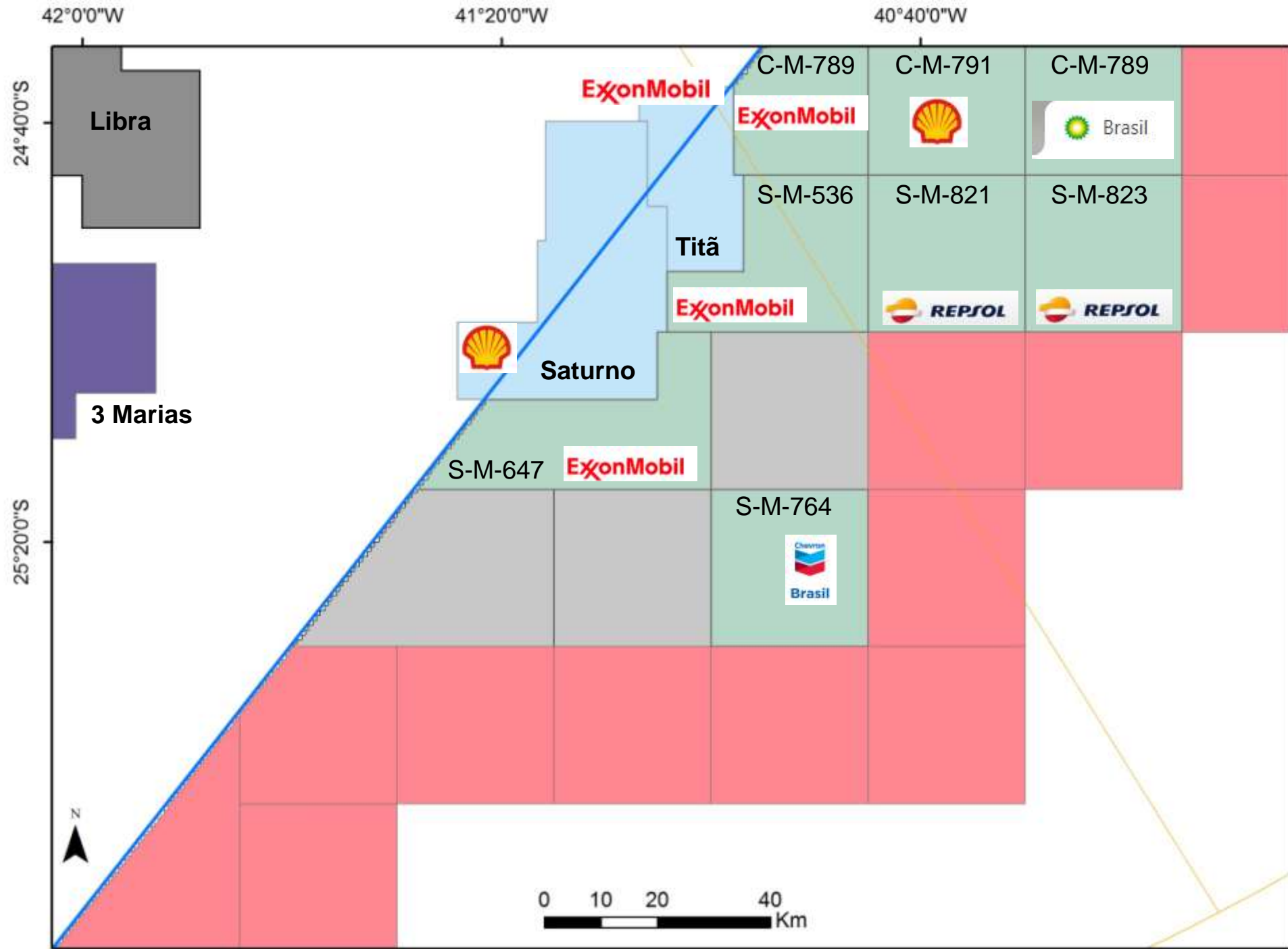


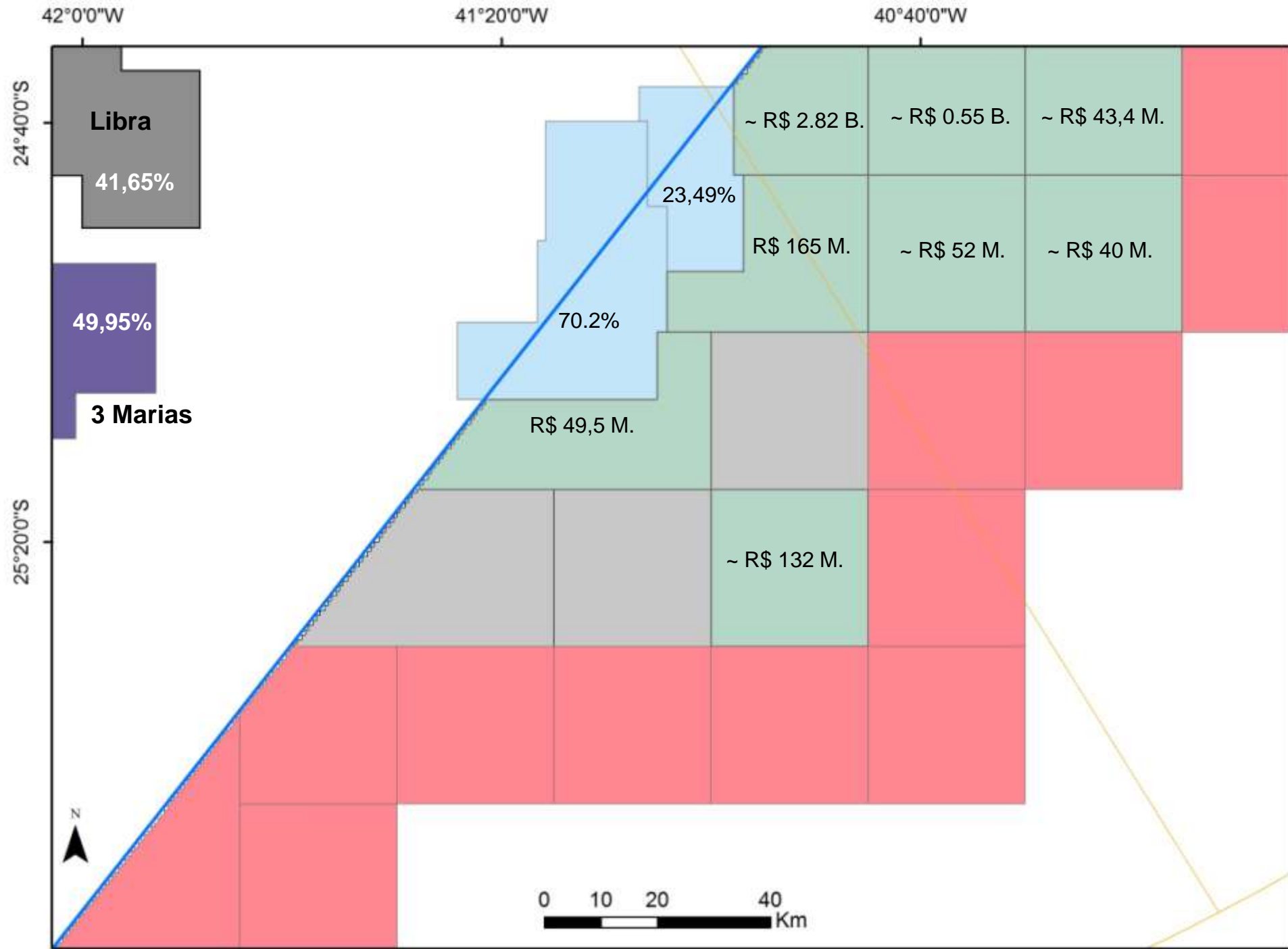
- Open Acreage Blocks Already Available
- Open Acreage – Public Audience
- Production Share - Round 05
- Concession - Round 15
- Sedimentary Basin
- Basement

# Leads – Santos Basin - Offshore

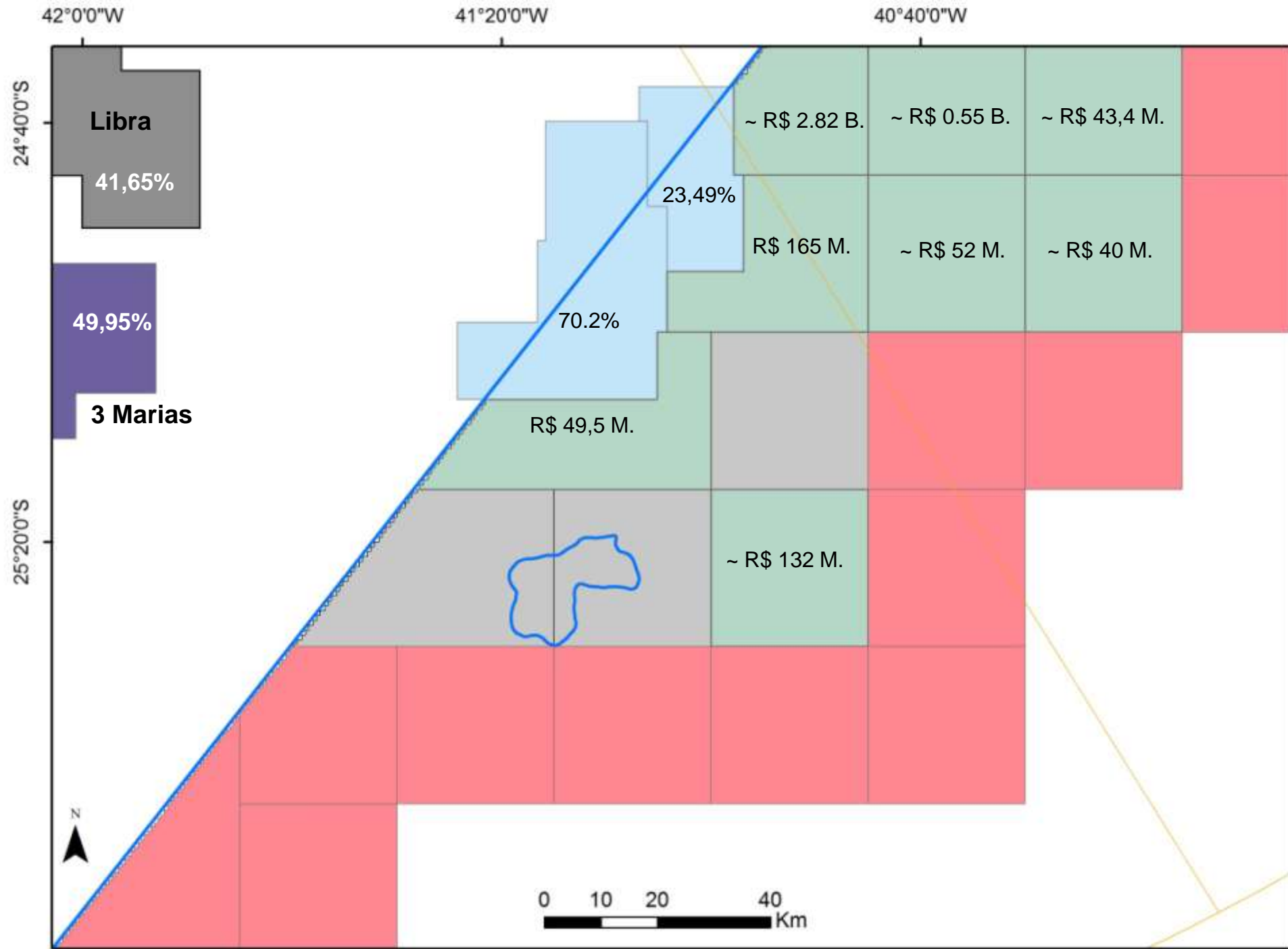












# Conclusions

Brazil has highly promising oil prospectivity and wide diversity of plays.

ANP is starting the open acreage process which will allow companies to have more flexibility to orchestrate deals with the Brazilian government and access to almost 2,000 blocks (~800,000 km<sup>2</sup>).



# Conclusions

There are already 616 blocks available, that are well disseminated in different sedimentary environments.

Onshore there are opportunities to discover significant volumes of gas in the Paleozoic Giants Basins, as well as potential for discoveries of new petroleum fields in the mature basins.

# Conclusions

Offshore there are opportunities to discover significant volumes of petroleum in a variety of plays ranging from continental and rift reservoirs to even turbidites of marine environments.

Potiguar, Ceará and Sergipe-Alagoas were very attractive in the last regular bid rounds, and the ANP geologists recently mapped new very promising opportunities on the blocks available on Permanent Offer.





# Conclusions

On Campos Basin there are 29 blocks bordering the western edge of the Pre Salt Polygon, this region is where sands has passed and supplied the turbidites of the giant fields of the basin, many of this sandtones were deposited in this region.

In addition there are opportunities observed in albian carbonates.



# Conclusions

On Santos basin there are 10 blocks close to Mexilhao field. On this region we mapped new opportunities in Cretaceous turbidites. The other 3 blocks are in deep waters, where we mapped a relevant structure in the Pre Salt Play, adjacent to exploratory blocks recently bidded.



# Conclusions

It aims to make the Oil sector more dynamic and to increase exploration and production activities in the Country.

Beyond these, there will be new bidding rounds under concession and production sharing in 2019 and ANP has just released sector's schedule for 2020 and 2021.