



The Barbados Offshore Petroleum Programme

2020 Offshore Licensing Round



BARBADOS
MINISTRY OF
Energy &
Water Resources

UTILISING OUR NATURAL RESOURCES

Presented by
Jamar White

Ministry of Energy and Water Resources - Government of Barbados

AAPG ICE 2019
Buenos Aires, Argentina

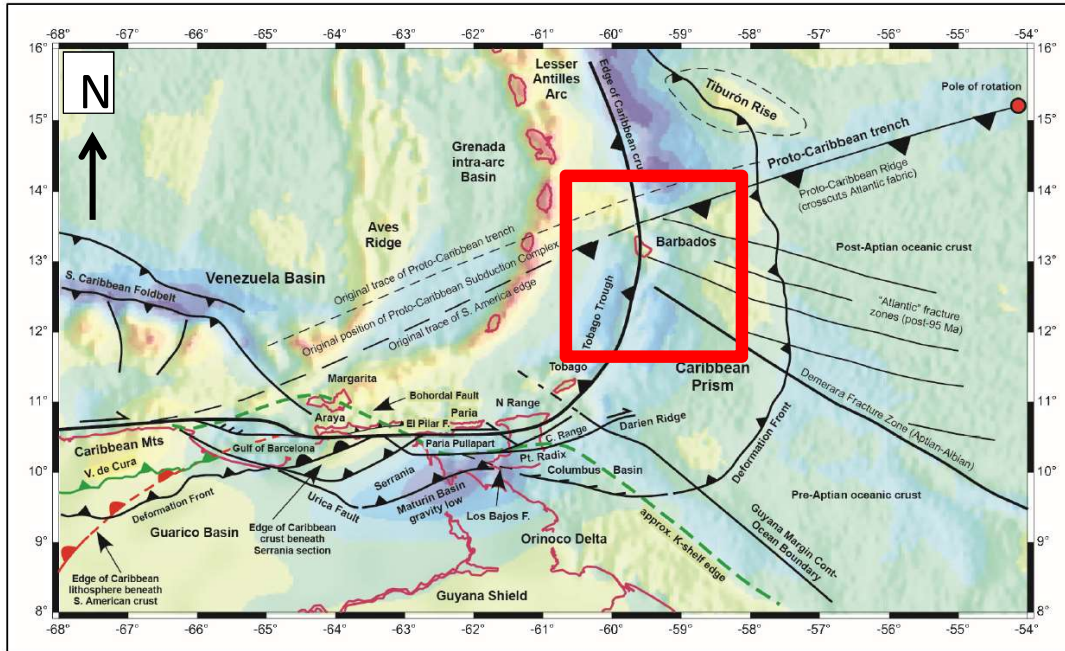
Presentation Outline

1. Tectonic and Geologic Setting
2. History of Onshore & Offshore Exploration
3. Barbados Offshore Petroleum Programme
 - 2007 Licensing Round
 - 2015 Licensing Round
4. Important Updates & Recent Developments
5. 2020 Offshore Licensing Round

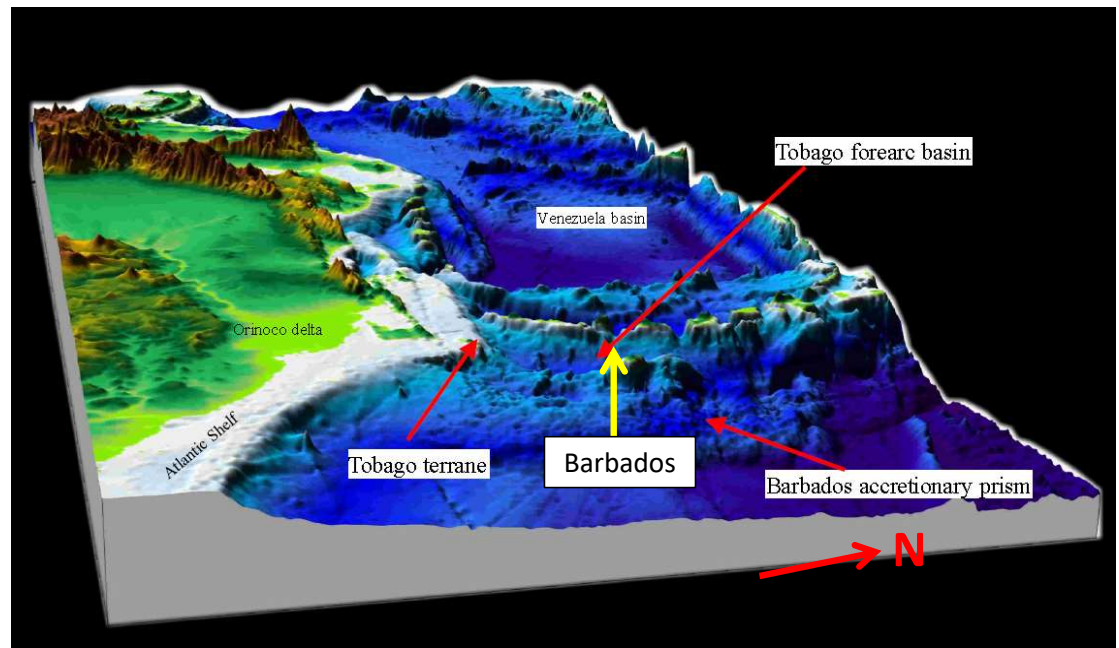


Tectonic and Geologic Setting

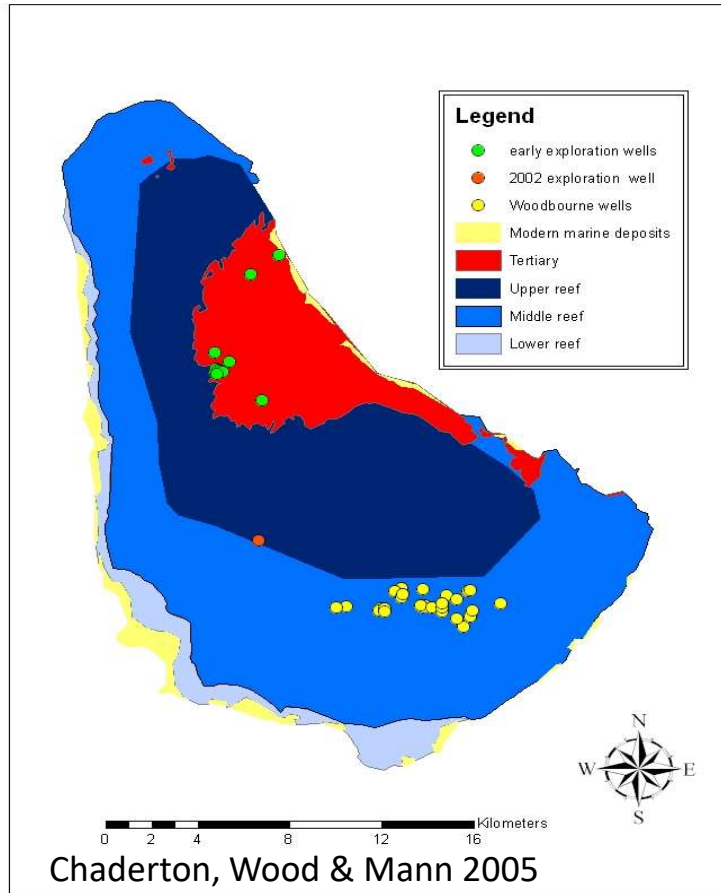
- Barbados is the most easterly island within the Lesser Antilles.
- 166 square miles or 432 square km in area.
- Convergent margin setting where the South American Plate is subducting beneath the Caribbean Plate.



- The island forms the only sub-aerially exposed section of the Barbados Accretionary Prism (300km wide by 20km thick sediment wedge).
- The Prism was formed via the off-scraping and accretion of sediment during subduction.



Early Onshore Exploration



- Commercial hydrocarbon exploration and production began in the Scotland District of Barbados during the late 1800's.
- Mining of a solid bituminous hydrocarbon known locally as 'manjak' from hand-dug pits (Eocene turbidite reservoirs).
- In the early 1900s, exploration activities expanded outside of the Scotland District in search of fluid hydrocarbons.
- This led to the discovery of the island's first commercial oil field, Woodbourne, in the south east of the island.

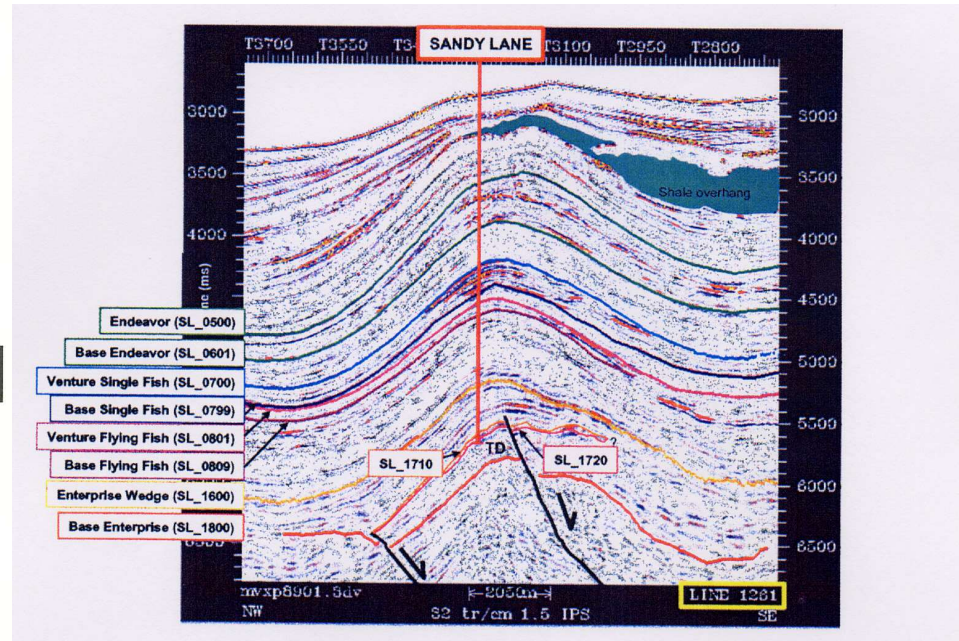
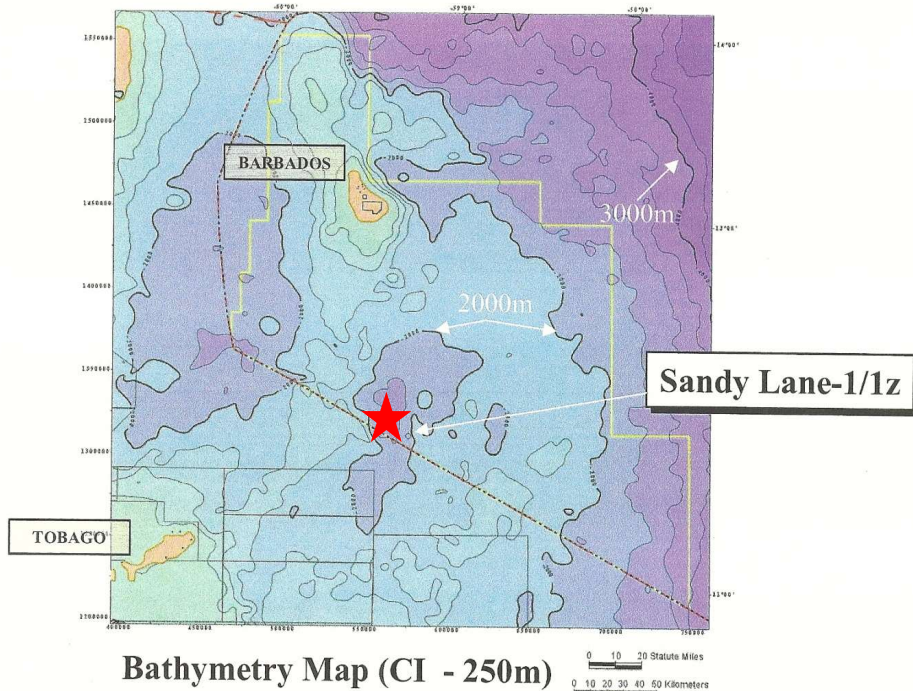


Onshore Exploration Woodbourne Oil Field



- Discovered by General Crude in the 1960's.
- Over **250** wells drilled to date. Eocene turbidite reservoir targets.
- Average oil production ~ **600 bbls** per day .
- Average gas production ~ **1.9 million** cubic feet of associated gas per day.
- Over **14 million** bbls of oil and **22.8 billion** cubic feet of gas produced.
- To date, no source rock intervals have been penetrated by onshore wells.

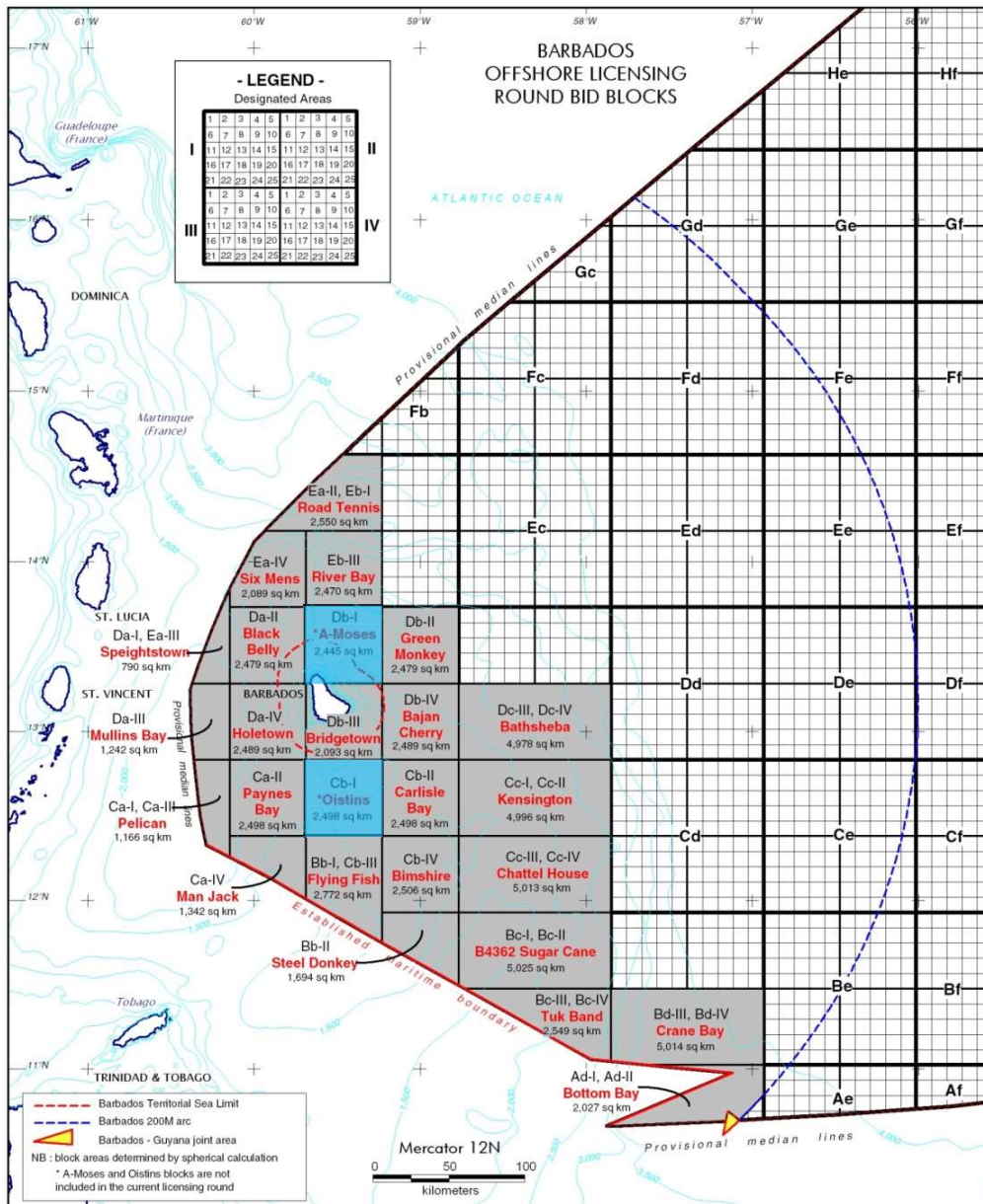
Early Offshore Exploration - Conoco



- Conoco granted an offshore oil & gas concession licence in **1996**.
- Conducted extensive geological and geophysical studies offshore Barbados.
- **Sandy Lane 1/1Z** well drilled in 2002, **130 km** south of Barbados.
- **6,975 ft** water; **15,074 ft** total well depth.
- Neogene turbidite reservoir targets: **3-way** dip closure with lateral fault seal.
- Upper Cretaceous Marine Type II Kerogen.
- Trap breached by faulting. Dry well with thermogenic gas shows.
- Proved the presence of good quality reservoir rock.
- Conoco relinquished the acreage in **2004**.

Barbados Offshore Petroleum Programme

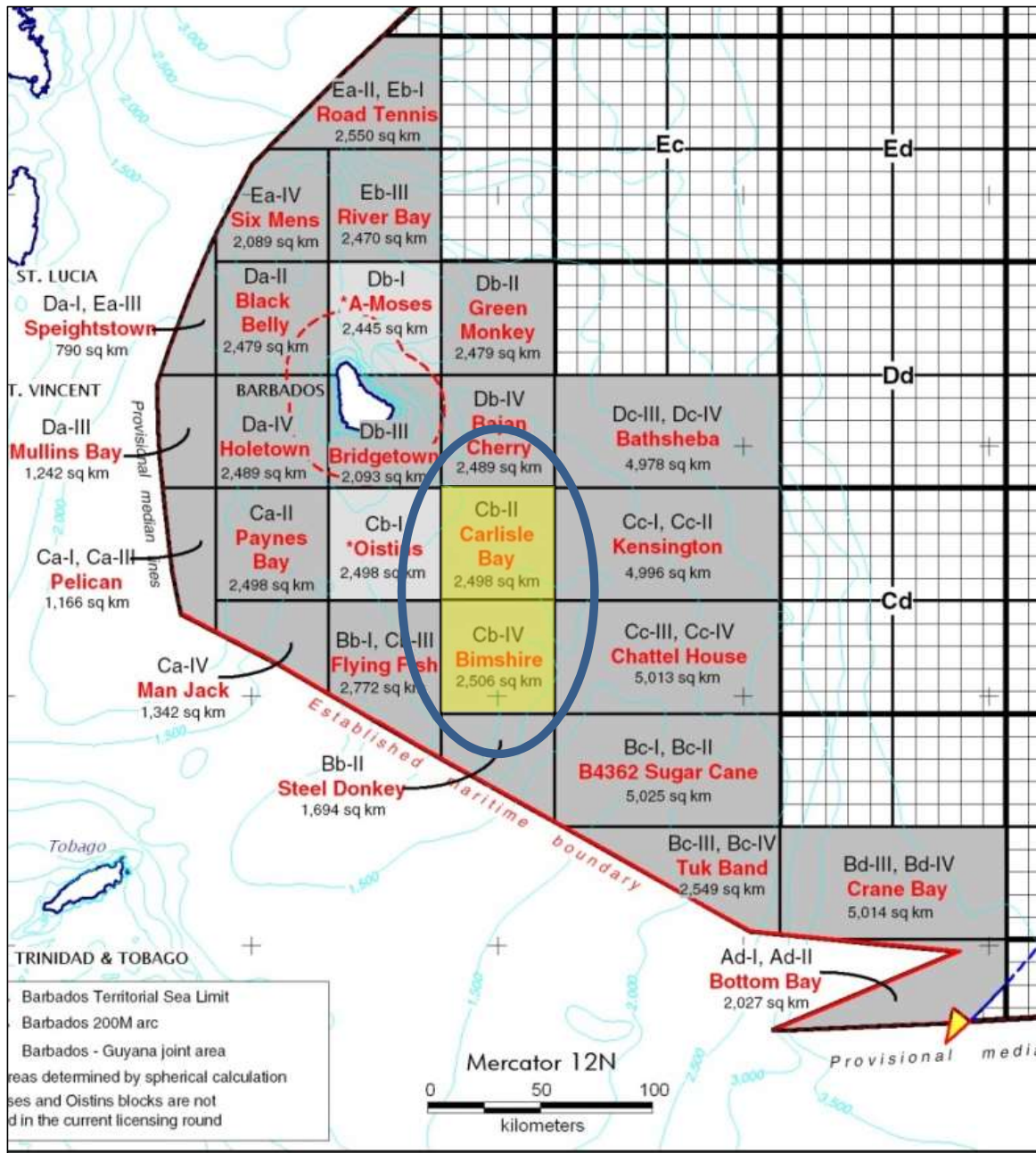
2007 Licensing Round



- Conoco's work led to the establishment of the Barbados Offshore Petroleum Programme
- Officially launched in 2007.
- Offshore acreage subdivided into **26 blocks**.
- **24 blocks** offered for bidding.
- Offshore Petroleum Legislation drafted.
- Total acreage: **70,191 km²**
- Average block size: **2,700 km²**
- **2 blocks** reserved (Oistins and A-Moses)

2007 Licensing Round

BHP Billiton Block Award



- BHP Billiton awarded the Carlisle Bay and Bimshire blocks.
- Block Size:
 Carlisle Bay: **2,498 km²**
 Bimshire: **2,506 km²**
- Located within the Barbados Trough.
- Water Depth: **1200m - 2000m.**
- Good prospectivity and good seismic coverage.

BHP

Barbados Offshore Petroleum Programme 2015 Licensing Round



Government of Barbados
Division of Energy
and Telecommunications



The Government of Barbados invites interested oil and gas companies to participate in its upcoming 2015 Offshore Petroleum Licensing Campaign, which will include seven (7) blocks located on the shelf and in deep-water areas in the Northeast Caribbean Deformed Belt.

The Campaign will be governed by the Offshore Petroleum Act Cap. 282 A, Offshore Petroleum (Taxation) Act Cap. 80, Offshore Petroleum (Amendment) Act 2012, Offshore Petroleum (Taxation) (Amendment) Act 2012 and the Offshore Petroleum Regulations 2013

For more information: energy.gov.bb/2015Licensing
Email: barbadosoffshore@energy.gov.bb

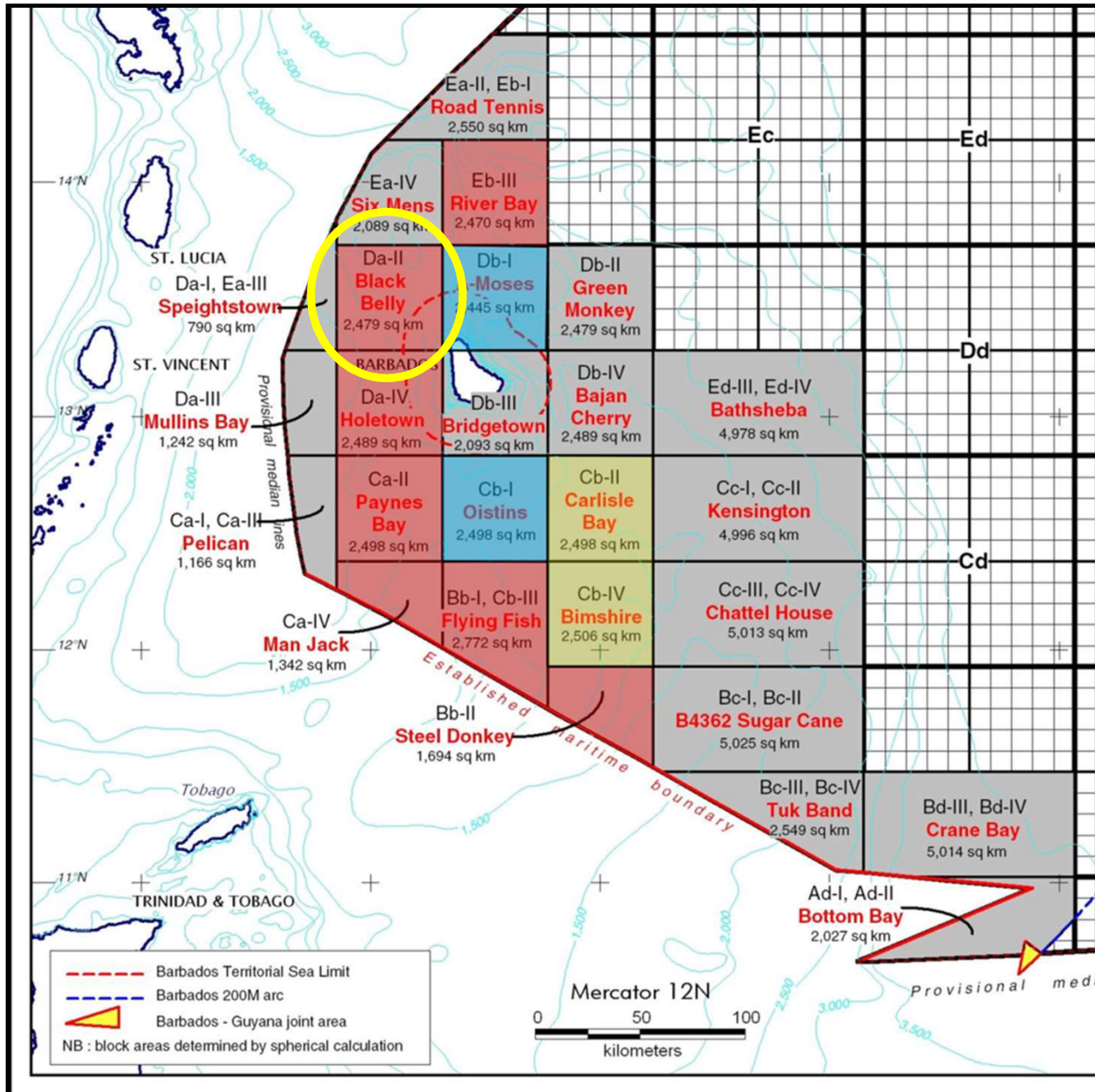


Graphic prepared for the Division of Energy and Telecommunications, Prime Minister's Office by Petroleum Specialist © 2014

- New Offshore Petroleum Licensing Campaign launched in March 2015.
- Interested companies invited to pre-qualify and submit licence proposals.
- Seven (7) offshore blocks on offer.
- Hybrid model of direct negotiations.



2015 Licensing Round - Repsol Block Award



- Black Belly block awarded to Repsol in 2016.
- Block Size: **2,479 km²**
- 5 km NW of Barbados.
- Straddles the Tobago Trough and the Barbados Ridge.
- Water Depth: **1000m - 2000m.**
- Good prospectivity and good seismic coverage.



REPSOL

Important Updates & Recent Developments

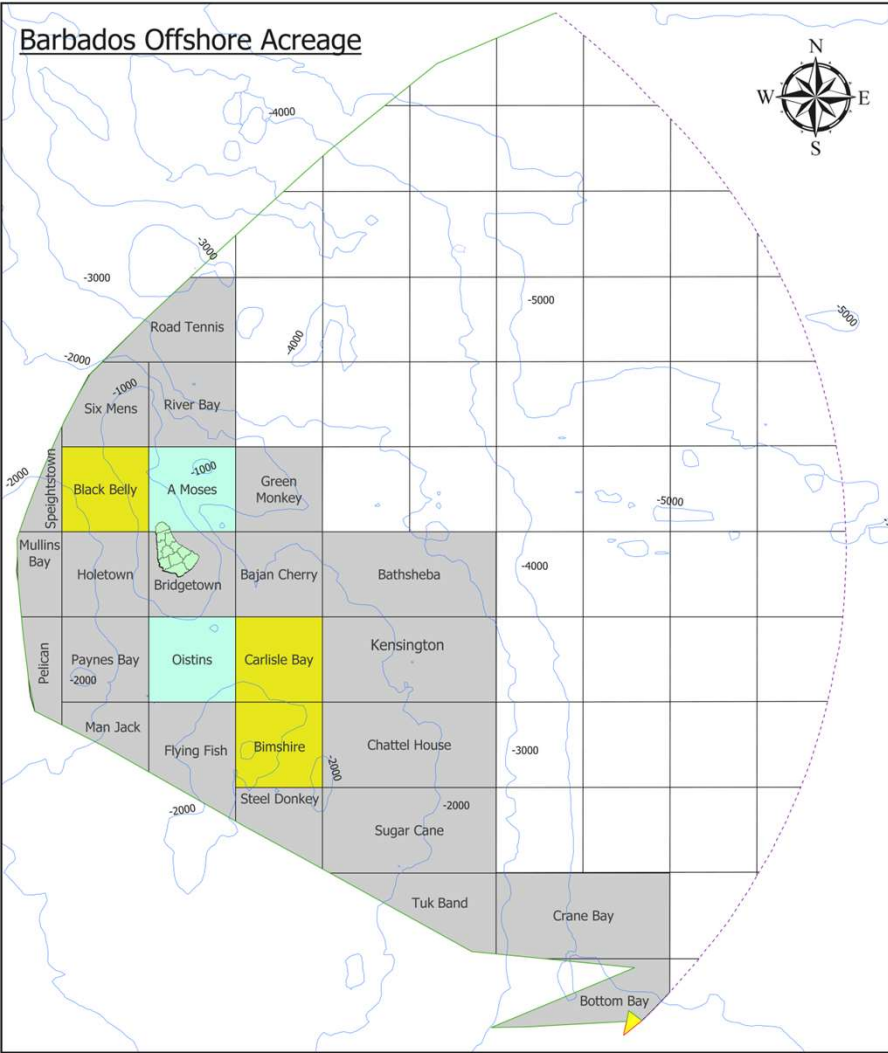


- **July 2017** - Maritime boundaries officially established with St. Lucia and St. Vincent and the Grenadines. All EEZ boundaries now established.
- **August 2017** - The Offshore Legislation was amended.
 - Reduction in relinquishment percentage from **50% to 25%**.
 - Increase in EIA submission period from 90 days to **9 months**;
 - Introduction of clauses to facilitate change of control of licences.
- **December 2018** – MultiClient Geophysical completed the CAMDI 2D seismic survey. PSTM and PSDM available **Q4 2019**.
- **April 2019** – Government of Barbados and BHP Billiton's held final consultations regarding the approval of the company's offshore EIAs. BHP set to commence offshore exploration in **Q4 2019**.
- **May 2019** - Barbados and Repsol completed the third round of discussions for the preparation of the exploration licence and EIA for the Black Belly block.

2019 Offshore Licensing Plans



Barbados Offshore Acreage



Legend

Bathymetry	Licensed Blocks
Barbados 200m Arc	Barbados Offshore Bid Blocks
Barbados	Barbados Guyana Joint Area
Reserved Blocks	

Author: Ministry of Energy & Water Resources
Coordinate System: GCS WGS 1984
Datum: WGS 1984
Date: 2019-05-15

- NEW OFFSHORE LICENSING ROUND TO BE LAUNCHED IN Q1 2020. Dates to be announced soon!!!
- Block nomination process with **21 blocks** available for selection.
- Upgraded website with easier access to key information.
- Virtual Data Room with new seismic and geological data available.
- **8 year** Exploration Licences (**3 phases** - Mandatory 1st phase and Optional 2nd & 3rd phases).
- Hybrid model of direct negotiations.

0 30 60 120 180 240 Kilometers

Hybrid Model of Direct Negotiations



- 1. Prequalification** – Public invitation to prequalify (operator or participant) based on published legal, technical, financial, environmental and local content criteria.
- 2. Successful Qualification** - Companies meeting the qualification criteria (operator) will be eligible to submit applications for offshore blocks.
- 3. Licence Application** - On receipt of a licence application for a particular block, a *“Request for Competitive Proposals”* will be published, granting other qualified companies a maximum period of 90 days to submit competing applications. (Only the name of the block will be published)
- 4. Evaluation** - At the end of the 90-day period, all applications received for the block will be assessed based on published evaluation criteria.
- 5. Award** - The applicant receiving the highest marks (2 or more applicants) and meeting the licensing criteria will be awarded the block and be invited to negotiate an exploration licence on an exclusive basis.

Bid Evaluation Criteria



1. Work Programme Commitment

- Local Content Provisions;
- Geological and Geophysical assessment;
- Work Programme (2D and 3D seismic, wells, sampling, coring, G&G studies);

2. Financial Commitment

- Cumulative financial commitment;
- Signature bonus;
- Fees for Training and Coastal and Marine Environmental Research



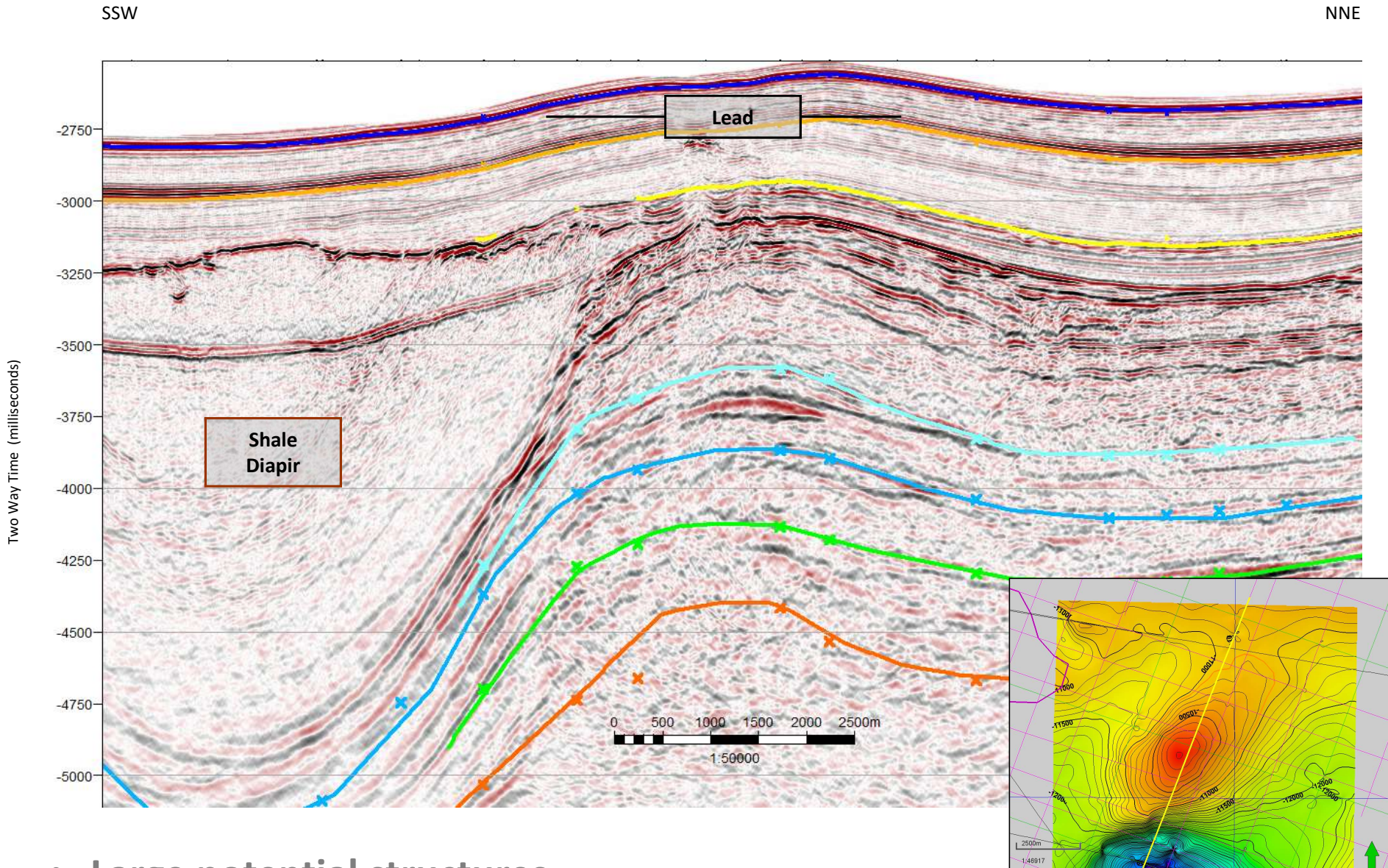
3. Health, Safety and Environment Plan

2019 Licensing - Fiscal Terms

- Royalty Tax System: **3%** royalty.
- Income Tax: **25%** of taxable income in any income year.
- Additional Profit Tax: **30%**
- Fiscal Stabilisation Clauses.
- Biddable Signature Bonus.
- Exemption from Customs Duties.
- Optional State Participation: **(10% - 20%)**.
- The property in petroleum passes to the licensee at the well head.
- Allowable deductions on exploration expenditure, interest and royalties paid, insurance premiums and other fees.
- Ring Fence around Production Licence.



Offshore Prospectivity

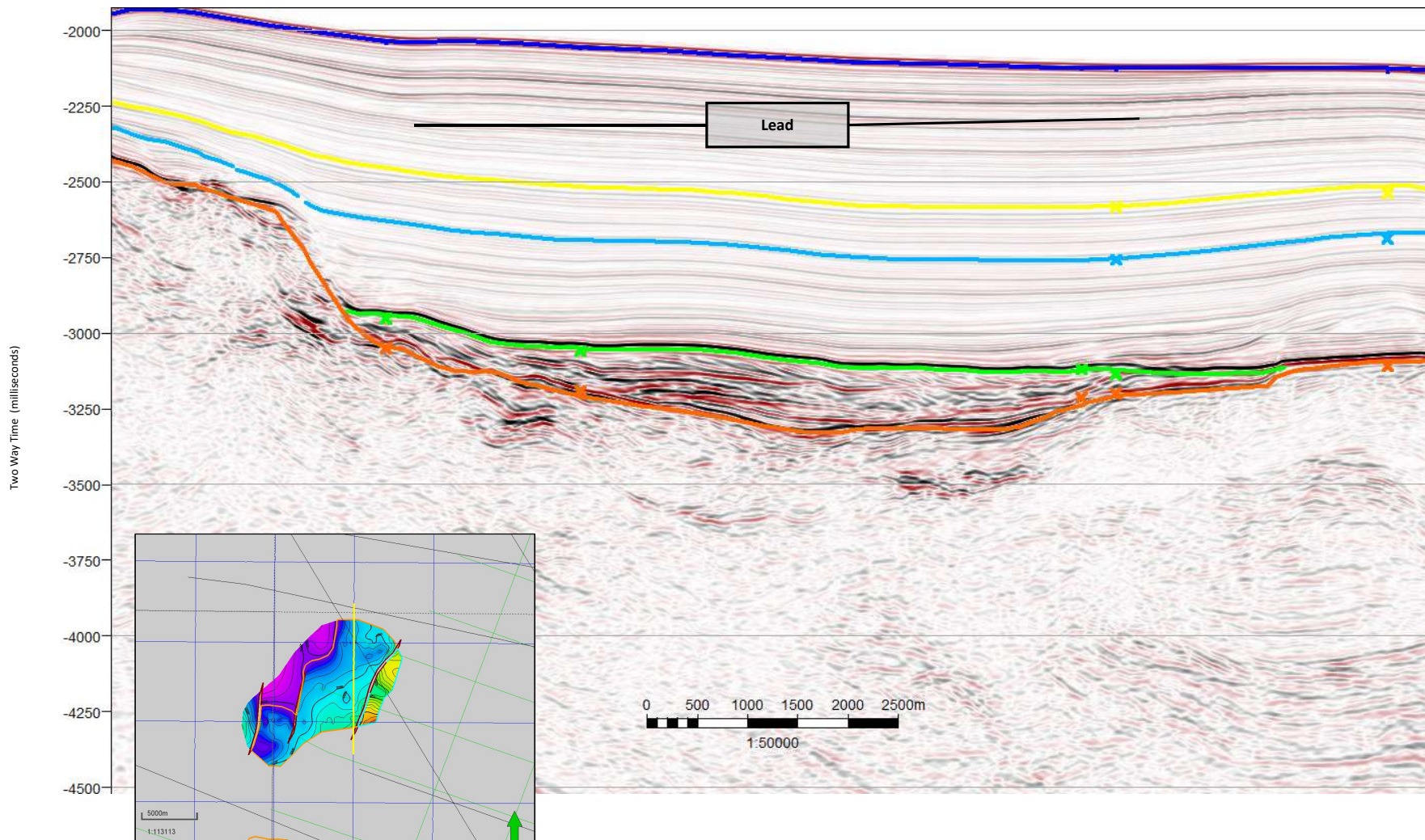


- Large potential structures.
- Stacked targets with DHI support.
- 3-way and 4-way dip closures.

Offshore Prospectivity

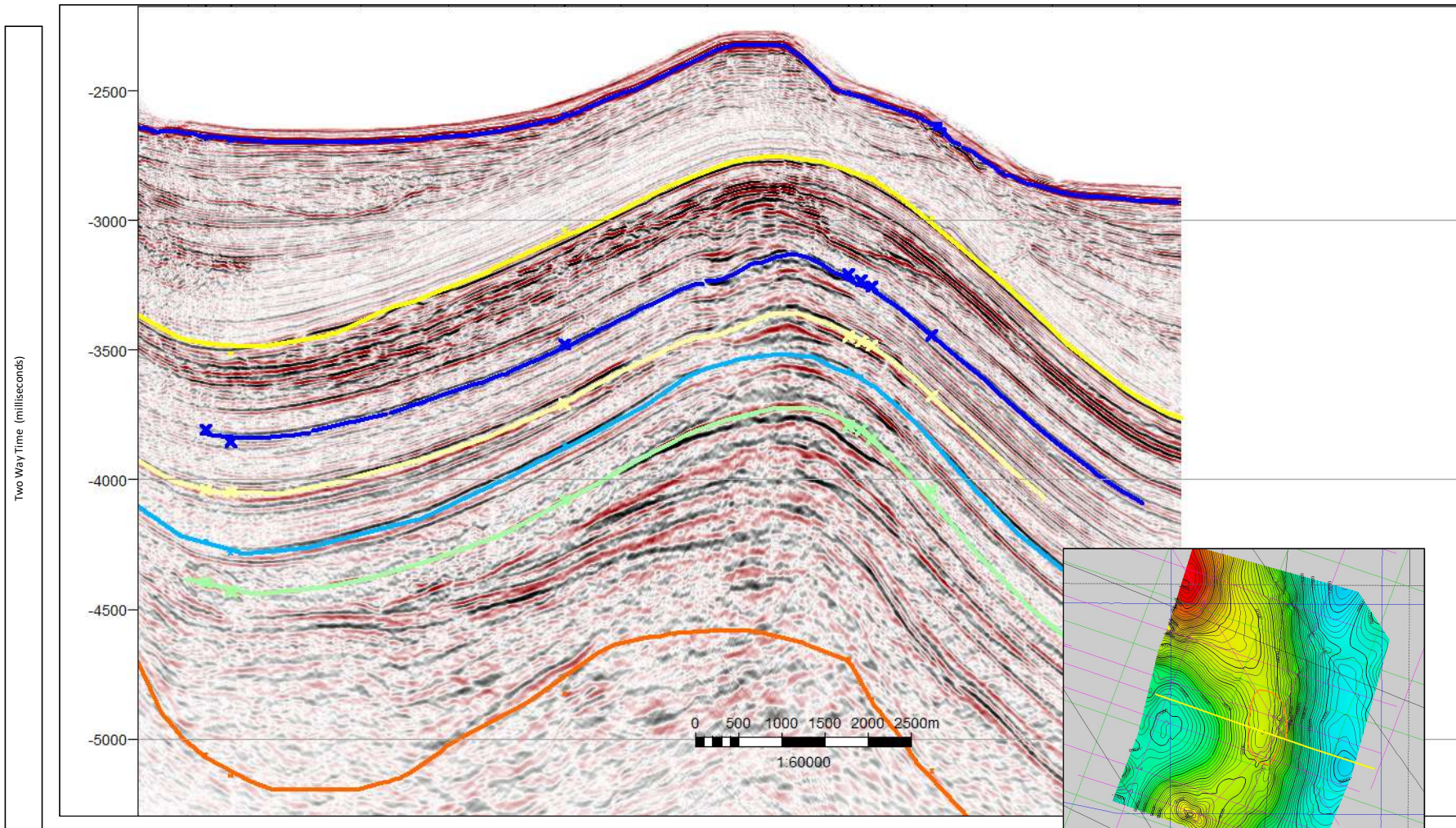


5



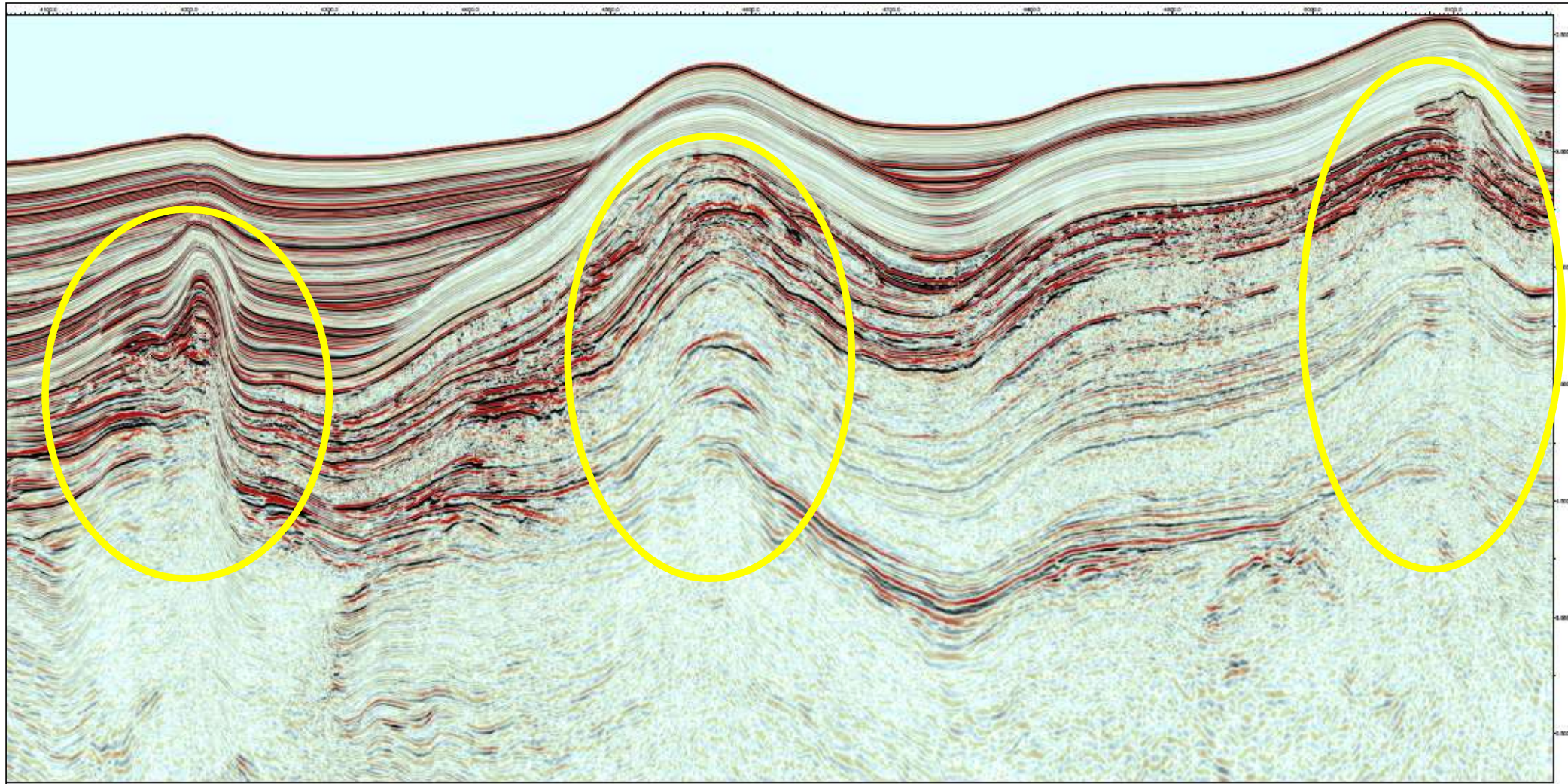
- Stratigraphic traps
- Basin Floor Fans and Pinchout traps.
- Mini-Basin Plays.
- DHI support.

Offshore Prospectivity



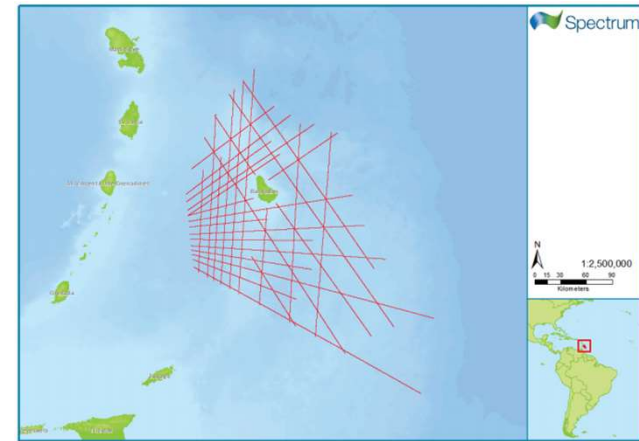
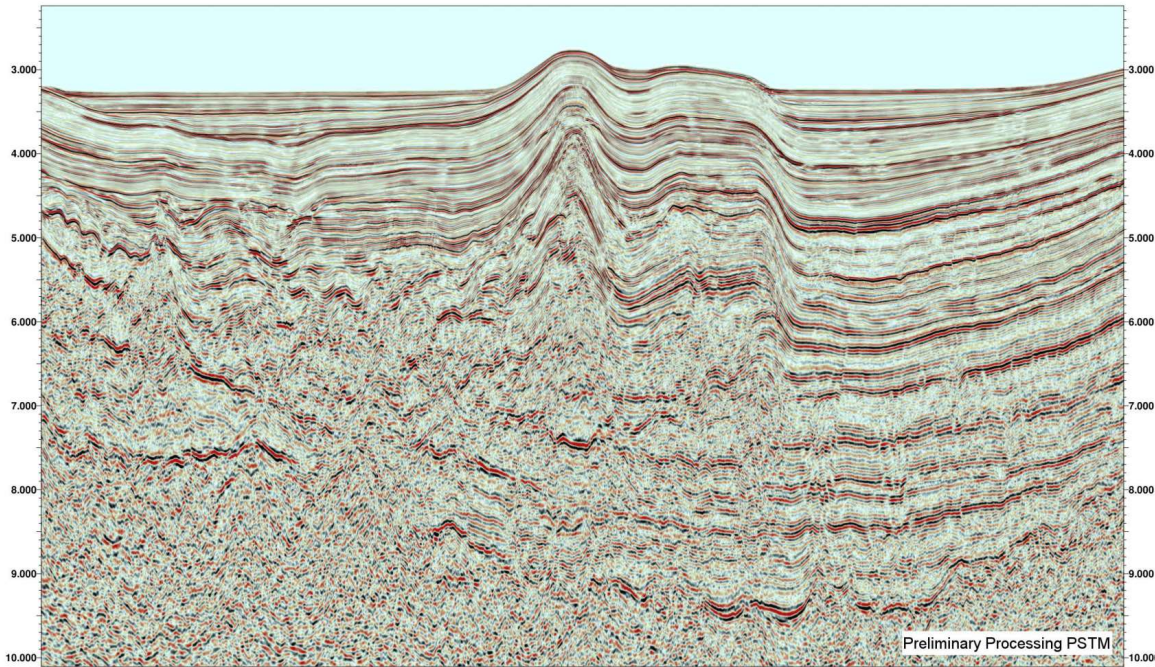
- Structural traps with 4-way dip closures.
- Large potential structures.
- Multiple Stacked targets with DHI support.

Offshore Prospectivity

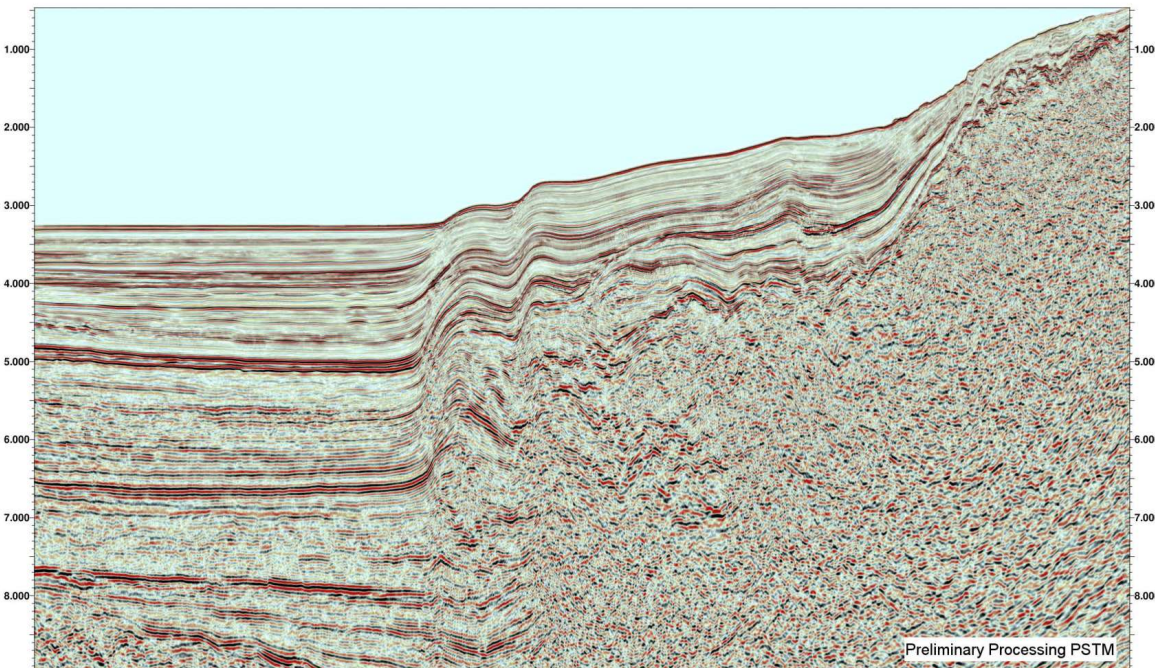


- Large potential structures.
- Structural and Stratigraphic traps.
- DHI support.
- Multiple targets at different stratigraphic levels
- Deeper Potential with 3D seismic.

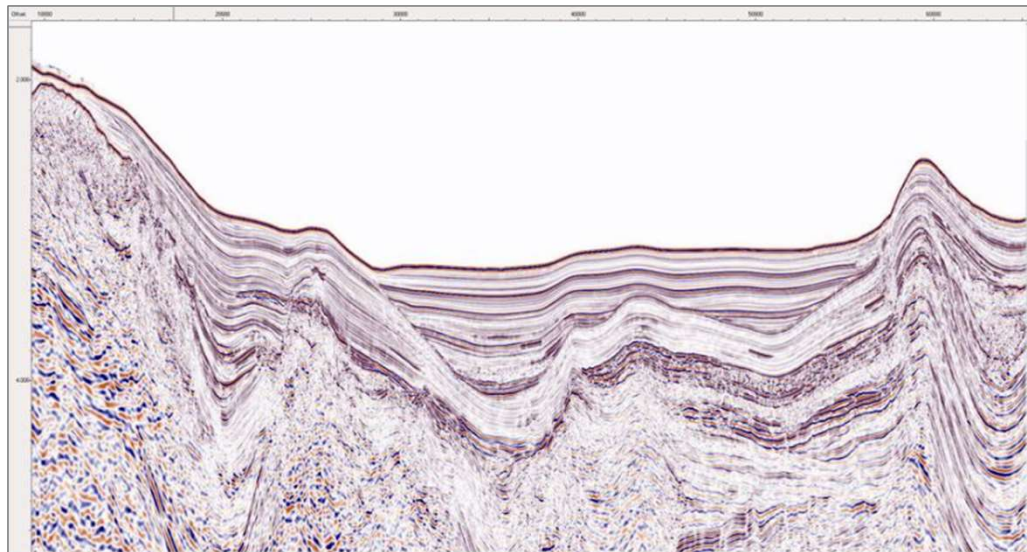
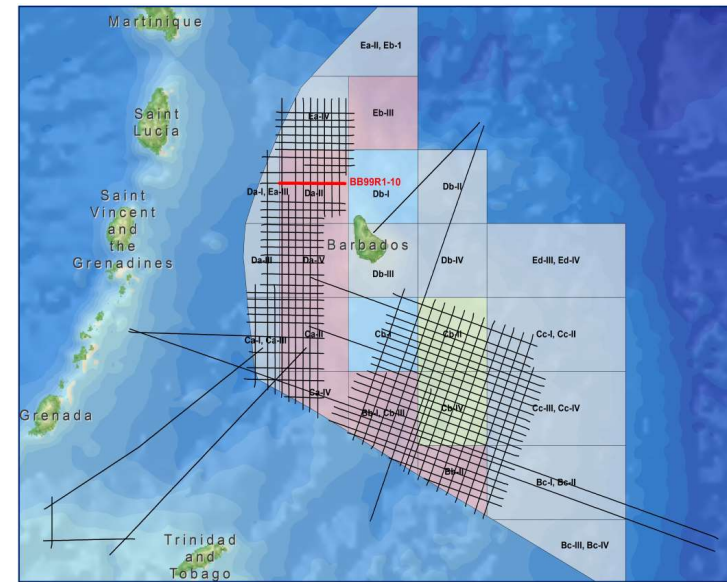
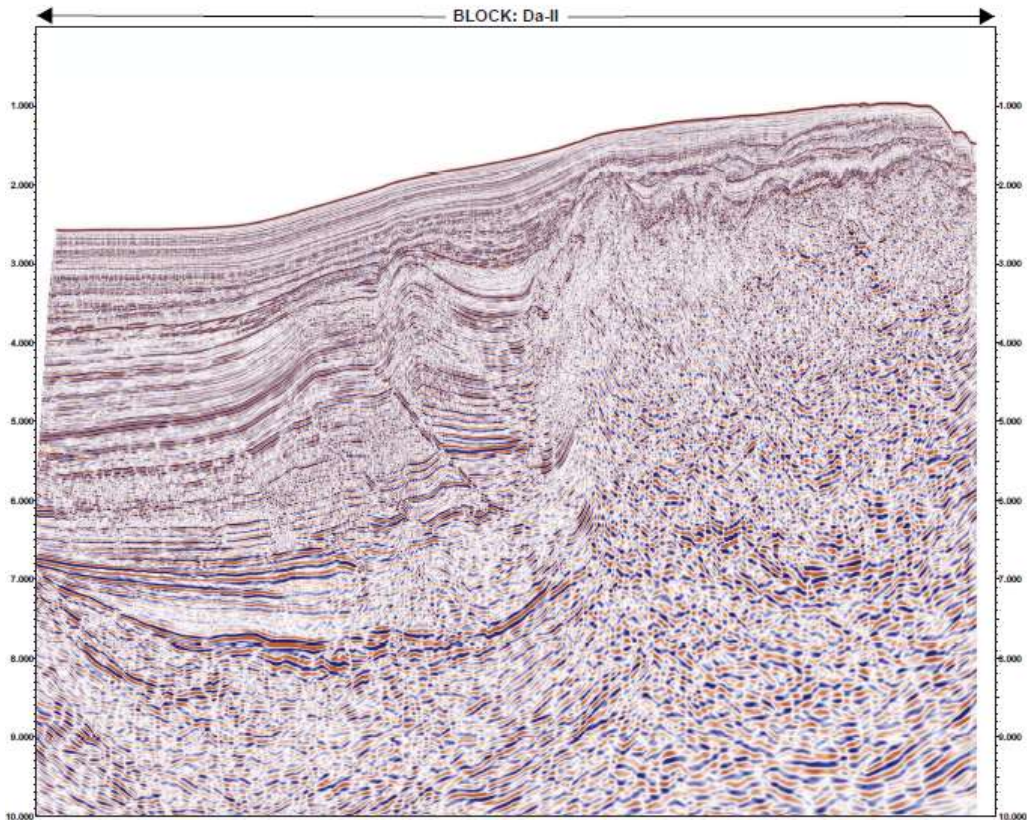
Available Data – Spectrum 2D Seismic



- Over **8,000 km** of re-processed long offset 2D seismic data.
- PSTM and PSDM data available.
- Good coverage over the available blocks.
- Potential for comprehensive prospect and play analysis.



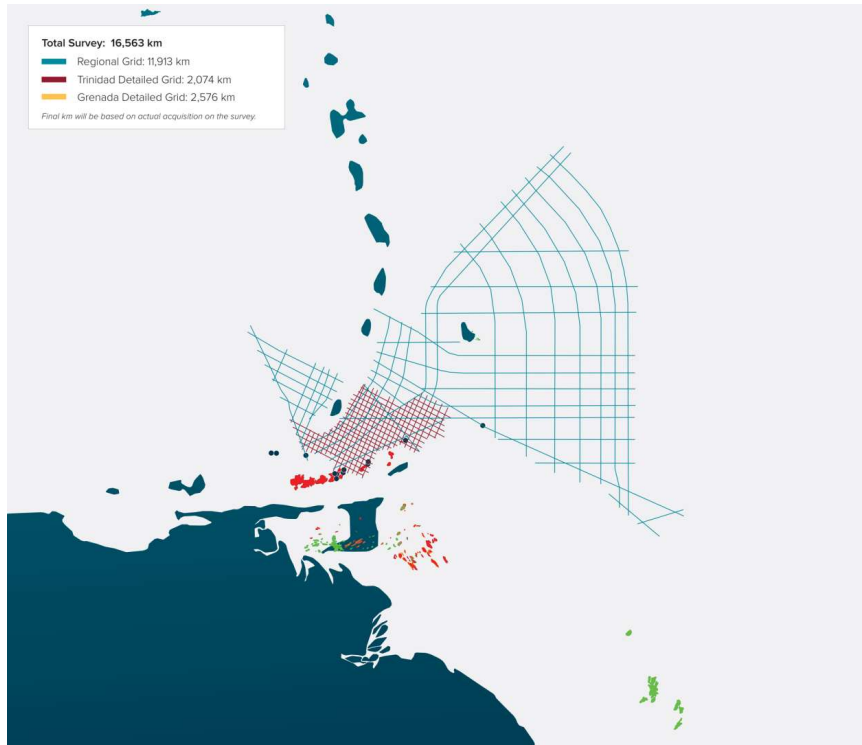
Available Data – ION 2D Seismic



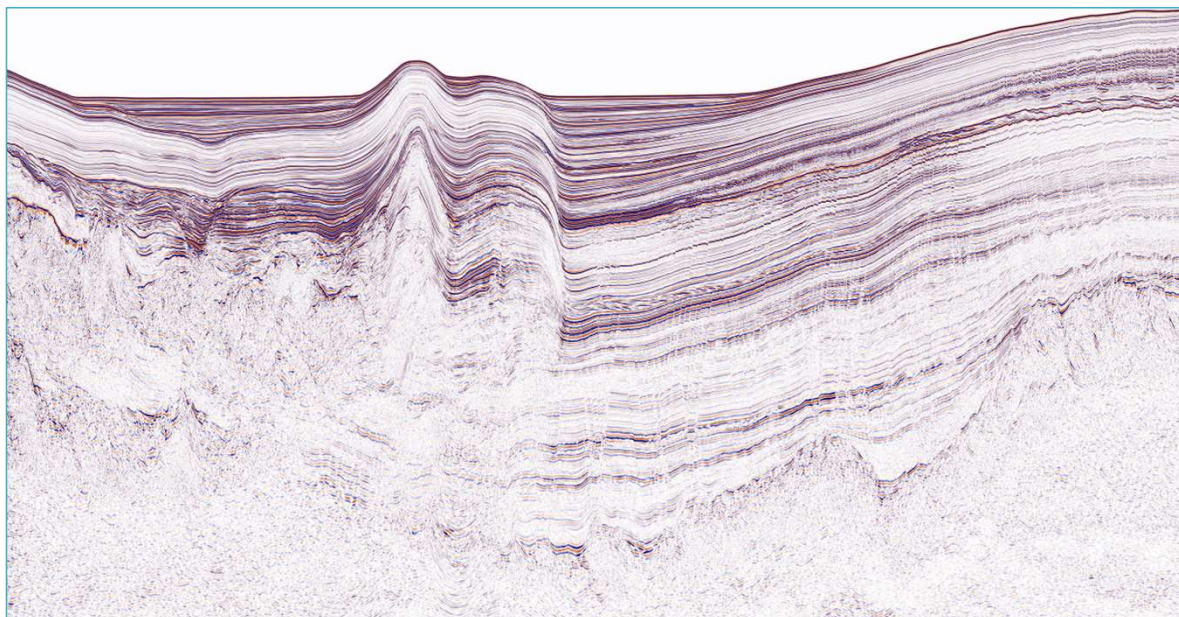
- Over **9,000 km** of re-processed legacy Conoco 2D seismic data.
- PSTM and PSDM data available.
- Explore possible deep sediments and new play ideas.
- Improved resolution at depth.



Available Data – MultiClient Geophysical 2D



- Over **6,000 km** of long offset 2D seismic acquired in 2013.
- Caribbean Atlantic Margin Deep Imaging (CAMDI) seismic survey - **16,563 km** of 2D seismic data acquired in 2019.
- Pre-stack time, pre-stack depth, gravity and magnetic data available in Q4 2019.
- Regional evaluation and prospect mapping.



A Geox Company
**MultiClient
Geophysical**



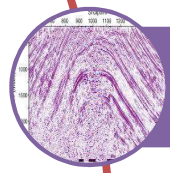
Why Barbados?



Underexplored Acreage with Untapped Potential



Excellent Prospectivity



Large Structures with DHI Support



Proven Onshore Petroleum System



Stable Government



Strong Legal, Fiscal and Regulatory Framework



Great Place to Live and Work!!



The Gem of the Caribbean

Exploration opportunities in Barbados

August 2019 | Emily Smith Llinás



Contact Information

AAPG International Pavilion: Booth # 12

Website: www.energy.gov.bb

Mr. Jamar White – Director of Natural Resources

Tel: (246) 535-2507

Ministry of Energy and Water Resources

Government of Barbados

Trinity Business Centre

Country Road

St. Michael

Barbados.



UTILISING OUR NATURAL RESOURCES



Special Thanks



THANK YOU!

