



THE GOVERNMENT OF  
THE REPUBLIC OF  
TRINIDAD AND TOBAGO

# AGENDA



WELCOME



SAFETY BRIEFING



INTRODUCTORY REMARKS



PRESENTATION



QUESTIONS



CLOSING REMARKS



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# The Ministry of Energy and Energy Affairs

## Exploration Opportunities for Trinidad and Tobago Deep Atlantic Area (TTDAA)

London, UK 2012

<http://energy.gov.tt/>





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# Overview

- Introduction to Trinidad and Tobago
- What has changed?
- Legal
- Commercial
- Introduction to TTDAA
- Speculative Model Chosen
- Studies undertaken and planned
- Analysis of Deep water Blocks



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Population - 1.3M  
Labor Force - 0.5M  
Literacy Rate - 88%

Gas utilisation > 50 yrs

Gas Production  
4.2bcf/d

Oil production > 100yrs

Current Production-  
91,000 bopd



### LOCATION

Northeast of South America  
Southernmost of Caribbean  
Total Area - 4800 sqkm





# About Us

- Discovered by Christopher Columbus in 1498
- Became a British Colony in 1802
- Mixture of races - African, East Indian, Chinese, Syrian, Lebanese
  - Celebrates 13 Holidays including Christmas, Divali, Eid-ul-Fitr





# About Us

- Climate - wet and dry season
- Temperatures from 70-93 degrees
  - Trinidad is more industrialized
  - While Tobago focuses on Tourism and other Service Industry
    - Fun-loving people
- Strong focus on education





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# Government Focus

- Sustainable development of the energy industry
  - Effective and optimal monetizing of the natural resources
  - Energy Security
  - Protection and preservation of the environment
- Rebalance oil and gas production
- Provision of a competitive framework for investment
- Provision of gas for expansion of downstream industries





# Government Focus

- Enhancing Local Content
  - Training and development of nationals
  - Enabling greater participation of nationals and national enterprises in the energy sector
- Enhancing Research and Development Capability





# What does Trinidad and Tobago Offer?

- Stable democratic government
- Well established legal traditional system
- Open and transparent decision making system
- Equitable taxation system
- Competitive fiscal incentives
- Liberalised currency system



# What does Trinidad and Tobago Offer?

- Substantial petroleum resource base
- Competitive gas pricing regime
- Strategically located in the Atlantic Basin
- Highly skilled labour force
- Well developed land and harbour infrastructure



## LEGISLATIVE FRAMEWORK



## COMPETITIVE BID PROCESS AND ORDER



# LEGISLATIVE FRAMEWORK





# GOVERNING LEGISLATION

- Petroleum Act and Regulations Chap. 62:01
  - Contractual Arrangements – Production Sharing Contract or Licences

- Petroleum Production Levy and Subsidy Act Chap. 62:02
  - Payment made by oil producers to offset subsidy of petroleum products in T&T

- Environmental Management Act (EMA) 2000
  - Responsible for the management of the environment
  - Certificate of Environmental Clearance

- Occupational, Safety and Health Act (OSHA)
  - Monitor and regulate health and safety standards within organizations



# GOVERNING LEGISLATION

## ❖ Income Tax Act Chap 75:01

➤ *Withholding Tax (Paid Directly by Contractor)*

## ❖ Petroleum Taxes Act Chap. 75:04

➤ *Petroleum Profits Tax*

➤ *Supplemental Petroleum Tax*

❖ Unemployment Levy Act (5%) AND

❖ Green Fund Levy Act (0.1% on gross sales or receipts)

## ❖ Income Tax in Aid of Industry Act Chap. 85:04

➤ *Capital Allowances*



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# PETROLEUM ACT

## SECTION 6 OF THE TRINIDAD PETROLEUM ACT :

“...subject to this Act, no person shall engage in petroleum operations on land or in a submarine area, unless he first obtains a licence as provided for in this Act or the Regulations.”



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# PETROLEUM ACT

## SECTION 6 OF THE TRINIDAD PETROLEUM ACT :

Provides For The Issue Of A Production  
Sharing Contract In Lieu Of An Exploration  
And Production (Public Petroleum Rights)  
Licence

Allows The Production Sharing Contract To  
Conflict With The Act





# TYPES OF CONTRACTS

- The following type of licences/contracts may be issued by the Minister :
  - An Exploration Licence grants the licensee the non-exclusive right to carry out exploration operations
  - An Exploration and Production Licence grants the licensee the exclusive right to explore for, produce and dispose of petroleum
  - A Production Sharing Contract grants the contractor the right to conduct petroleum operations relating to the exploration, production and disposition of petroleum within the prescribed contract area.



# COMPETITIVE BID PROCESS AND ORDER



# COMPETITIVE BIDDING PROCESS

Technical review of open acreage

Companies may indicate interest in a particular block  
(nomination process)

Review the level of interest shown by companies in the  
open acreage

Blocks identified in CBO



# COMPETITIVE BIDDING PROCESS

- A Model PSC is published on the Ministry's website
- Bidders are required to include the signed declaration on Submission of a bid
- Facilitates execution of contracts in one month's time frame specified (after acceptance of bid)





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# PREQUALIFICATION

- Any company wishing to be an operator must be pre-qualified before execution of a PSC
- Any change of operator – the new operator must be prequalified



# TIME TABLE

- Submission of Bids – July 30, 2012
- Evaluation of Bids – within 2 months of submission
- Execution of Contract – within three months of submission



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# Every bid shall be accompanied by:



A signed declaration indicating that the Model PSC has been examined and the terms agreed to (as above)



Cash flows in respect of the commercial evaluation presented in the prescribed manner



Legal identity of the bidder(s)





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# Every bid shall be accompanied by:



A technical and commercial evaluation of the block which represents the bidder's interpretation of the hydrocarbon and commercial potential of the area



A commitment to a work programme, which represents best efforts to explore the contract area based on the technical evaluation of the block



Proposals, in the form prescribed, for the sharing of petroleum produced from the contract area



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**Every bid shall be accompanied by:**



**Technical capacity, competence and experience in petroleum operations and related activities of the bidder(s)**



**Corporate and financial structure and backing of the bidder(s)**



**Such other details as the bidder may consider relevant**



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## A successful bidder shall:



Execute the PSC with the State within thirty (30) days of the notification of the successful bid



Register under the Companies Act or be incorporated thereunder



Deliver to the Minister on the effective date of the PSC, the necessary guarantees



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# Model PSC



The Model PSC and the bidder's bid proposal shall be the basis for the issue of the PSC to be entered into



Failure to execute the PSC within thirty (30) days of receipt of notification of the success of the bid may result in the non-issue of the PSC.





# FISCAL TERMS AND CONDITIONS OF MODEL PSC



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# Objectives of 2012 Model PSC

- Encourage greater exploration activities
- Provide for flexibility in exploration programmes
- Reduce risk to potential investors
  - Offer greater economic stability
  - Fixed financial obligations
- Build knowledge based society
- Encourage greater local content
- Allow relinquishment provisions
- Enhance decommissioning provisions (Escrow accounts)



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# Basic Features of PSC

**Conventional styled PSC for Deep Water (>1000m) with the following features**

- Ring-fenced**
- Contractor's liabilities for PPT, UL, SPT, Petroleum Levy, Oil Impost, Royalty, Green Fund Levy to be made from GORTT's Share of Profit Petroleum, with exception of the payment of Withholding Taxes and Stamp Duty**
- GORTT to make payments on behalf of Contractor**
- Gross up mechanism will apply**



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# Basic Features of PSCs

- Profit Share matrices opened
- Price and Production Bands widened
- Windfall profit feature
- Profit Shares and work programmes are biddable
- Abandonment Provision
  - Escrow Account from time of development
- Financial Obligations fixed in PSC
- Cost Recovery biddable up to maximum of 80%
- GORTT will have options for marketing its share of petroleum





# Profit Share Matrices

## Crude Oil

Price MBOPD	A	B	C	D
	< \$50.00	\$50.00 - \$75.00	\$75.00 - \$100.00	> \$100.00
	%			
< 75	X	X	X	X
75 - 100	X	X	X	X
100 - 150	X	X	X	X
150 - 200	X	X	X	X
> 200	X	X	X	X

## Natural Gas

Price MMCFD	A	B	C	D
	< \$4.00	\$4.00 - \$6.50	\$6.50 - \$9.00	> \$9.00
	%			
< 200	X	X	X	X
200 - 350	X	X	X	X
350 - 500	X	X	X	X
500 - 750	X	X	X	X
750 - 1,000	X	X	X	X
> 1,000	X	X	X	X

### Windfall Feature:

$$BR + 70\% * [(P - US\$100.00) / P] * (1 - BR)$$

Where:

BR is the base rate at Column D

P is the market price

### Windfall Feature:

$$BR + 70\% * [(P - US\$9.00) / P] * (1 - BR)$$

Where:

BR is the base rate at Column D

P is the market price

**Cost Recovery: Flexible (Up to Max 80%)**



# Financial Obligations

<b>Financial Obligations</b>	<b>Deep</b>
<b>Minimum Payment</b>	<b>US\$5.50/hectare, increasing by 50c/year of exploration and by 6% thereafter</b>
<b>Administration Charge</b>	<b>US\$300,000 incr. by 4% /yr thereafter</b>
<b>Training Contribution</b>	<b>Pre Commerciality: US\$120,000 incr by 4%/yr</b> <b>Post Commerciality: US\$150,000 incr by 4%/yr</b>
	<b>First Prod: 0.25% of Contractor's Share of Profit Petroleum</b>



# Financial Obligations (Cont'd)

<b>Financial Obligations</b>	<b>Deep</b>
<b>Research &amp; Development</b>	<b>a. Pre Commerciality: US\$120,000 incr by 4%/yr b. Post Commerciality: US\$150,000 incr by 4%/yr c. First Prod: 0.25% of Contractor's Share of Profit Petroleum</b>
<b>Scholarships</b>	<b>US\$100,000 incr. by 4% /yr thereafter</b>
<b>Technical Equipment</b>	<b>US\$300,000</b>
<b>Signature Bonuses</b>	<b>Not required (Unless a tie)</b>
<b>Production Bonuses</b>	<b>Fixed</b>



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# Production Bonuses

Petroleum production in  
Barrels per day (BOPD)

25,000  
50,000  
75,000  
100,000

Thereafter for every 50,000 BOPD  
exceeding 100,000 BOPD

Production bonus  
payments in US\$

\$1,500,000.00  
\$2,000,000.00  
\$3,000,000.00  
\$4,000,000.00


\$1,000,000.0





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In evaluating GORTT's Share of  
Profit Petroleum it should  
satisfy all tax expectations.



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# Contractor's Obligations

- **GORTT's Share of Profit Petroleum should cover:**  
(Paid by GORTT on behalf of Contractor)
  - **Petroleum Profits Tax (35% allowed for Deep)**
  - **Supplemental Petroleum Tax (On oil only. For Deep, land rates apply)**
  - **Unemployment Levy (5%)**
  - **Petroleum Production Levy (Up to 4% of Crude Income)**
  - **Royalties**
  - **Oil Impost (BOE rate stated in Order)**
  - **Green Fund Levy (0.1% not deductible for tax purposes)**

(Paid directly by Contractor)

- **Other (Research & Development, Scholarships, Training etc)**
- **Withholding Taxes**



# TECHNICAL ASPECTS



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# Trinidad and Tobago Deep Atlantic Area (TTDAA)

- Aprox area 40,000 sqkm
- Water depths between 1000 to 3500 metres.
- The area is divided into 36 blocks
- First offered by Competitive Bidding in 2006. The acreage is east of Trinidad's currently producing oil and gas fields; though different play types are expected.



# Birth of TTDA 2D



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- Memorandum of understanding between Government of the Republic of Trinidad and Tobago (GORTT) and eleven (11) multinational energy companies with Petrotrin standing in as the 12<sup>th</sup> but acting as the Project Manager on behalf of MEEA (procurement / tendering / client representation)
- Engaged in several years of prior industry interest and support especially after deepwater exploration campaign of the late 1990s. MOU finally secured in 2002 with Veritas having eventually won the tender to shoot with Robertson doing the processing
- Cost of survey including final deliverable product was calculated at US\$500,000 per participant with the mandate of putting out a “ultradeep water” Competitive Bid Round by 2006



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# Birth of TTDA 2D

- First attempt in conducting a full scale exploration and reconnaissance of the deep waters within the sovereign limits of Trinidad and Tobago marine acreage
- Touted as the “final frontier” for the hopeful discovery of a new oil and gas province
- Approximately 12,337 line km in length acquired in a 4 x 4 km grid including long regional lines







# What has changed?

## TTDAA 2006 -> 2012

### Taxation

1. Reduced Taxation terms
2. Improved Fiscal regime
3. No Signature Bonus
4. No State carry-on participation
5. Streamlined Competitive Bid Process

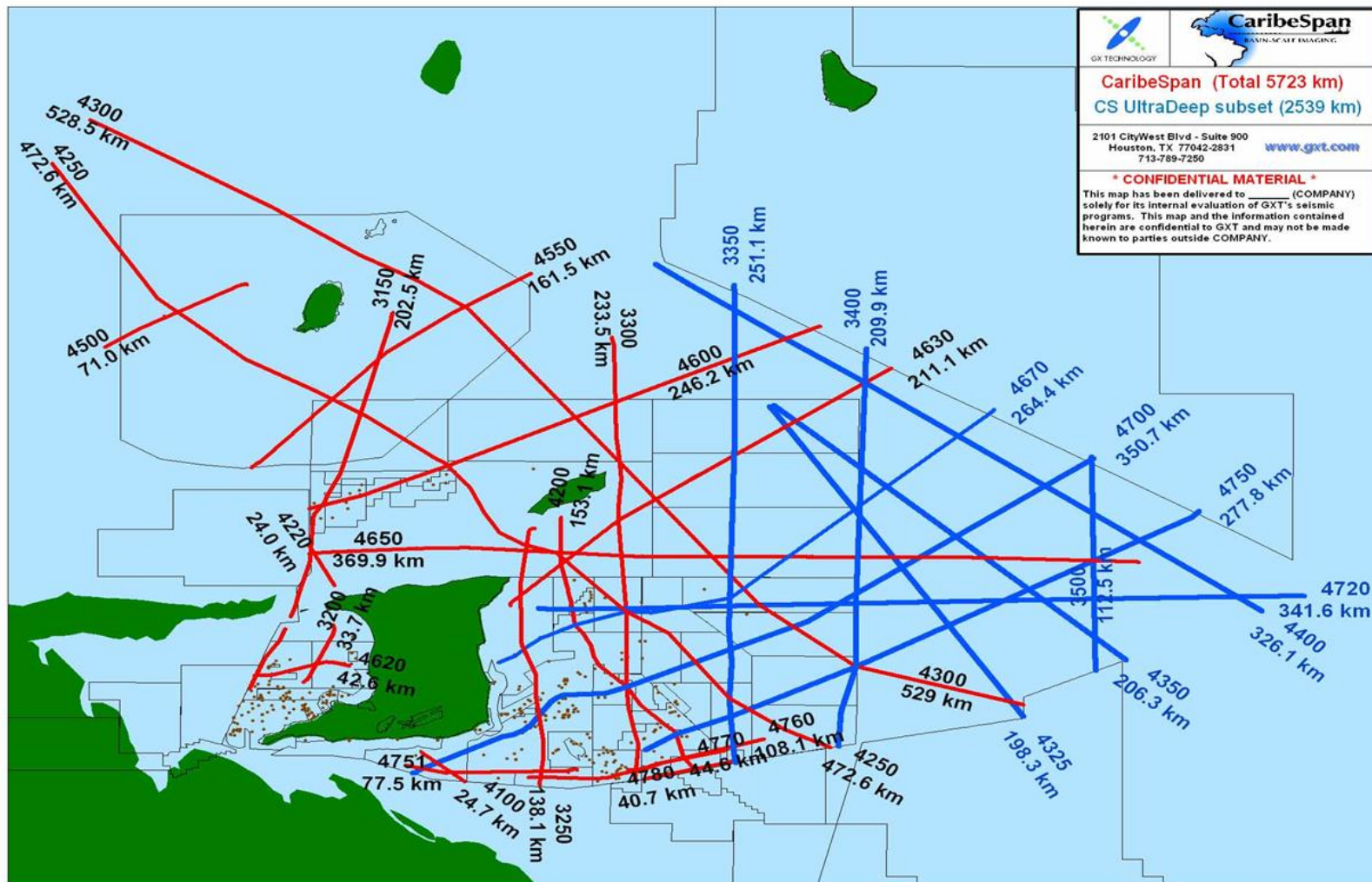
### Technical

1. Increased size of blocks (800 to 1000 sqkm)
2. Additional seismic survey (PGS 2D)
3. Reprocessing (Time and Depth) of 12,300 line km TTDAA 2D by Spectrum
4. Commissioned comprehensive Deepwater Study by DGA Consultants
5. New GXT reprocessing of Span Lines
6. New EMGS survey proposed
7. Increased Data Package Contents





# GXT Span 2D Lines 2004 (Depth Reprocessing in 2011 – Cretaceous Imaging)





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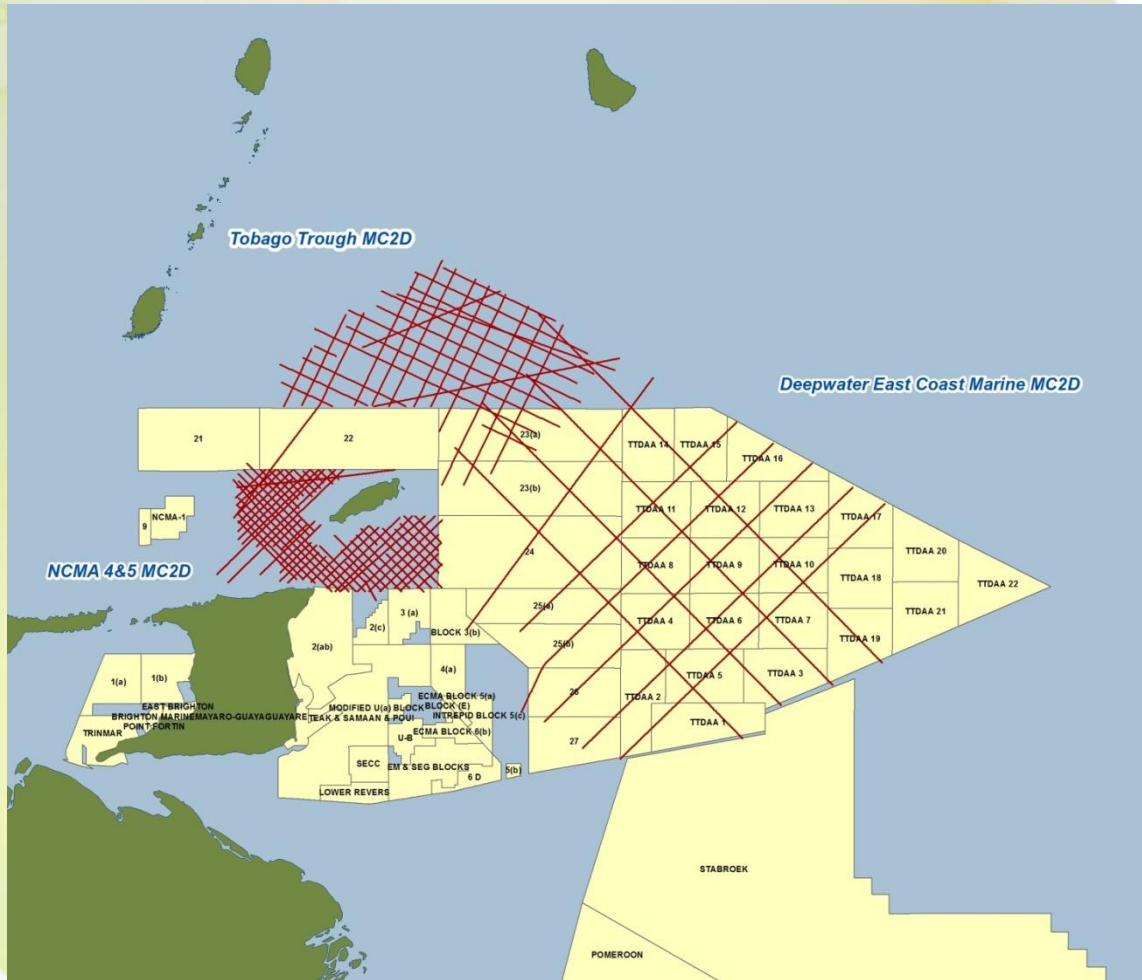
# Reprocessing Objectives

- Improved Pre-processing, to include Noise and Multiple attenuation .
- Improved velocity models, to include Lateral velocity variations in Tertiary,(mobile shale vs basement or sandstones), and focus on Imaging the Cretaceous.
- The PSDM will image deeper than the current 18km Max Depth will be 40km.
- RTM and/or Beam PSDM will be tested as possible replacement to Kirchhoff PSDM
- Create Depth/Interval Velocity Volume for the survey area



# PGS 2008 MC2D – 6834 line km

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# BioSTRATIGAPHIC ASSOCIATES TRINIDAD LIMITED

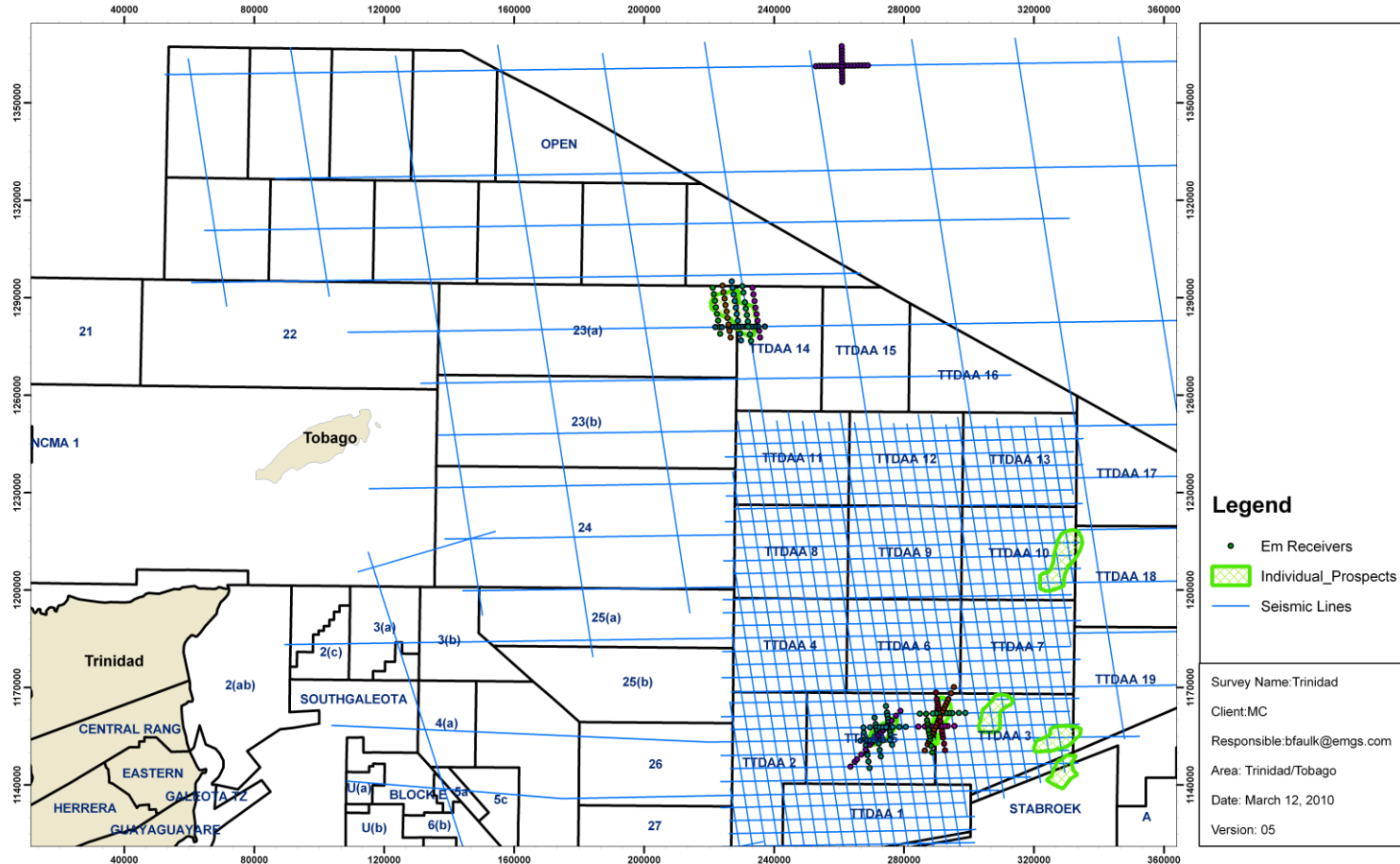
The focus of this study is to provide an integrated biostratigraphic database on the Late Neogene sequences that can be utilised for sequence stratigraphic interpretation, shelf to deep water well correlation, and environmental modelling and tie to the deep water seismic grid



# Planned EM Deep Water Survey



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# Dynamic Global Advisors

## Trinidad Joint Study Team Phase I Report

A New Look at Eastern Deepwater Trinidad;  
Seismic Interpretation & Exploration Potential

Available from DGA

## Trinidad Joint Study Team Phase II Report

Basin to Leads – Risks and Reserves:  
Exploration Potential of the Trinidad & Tobago Deep Atlantic  
Area

Available from MEEA





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# Dynamic Global Advisors

- The results of the technical studies have established play concepts, analogues with other basins, identifying leads and potential hydrocarbon reserves
- Used extensive Columbus Basin Wells
- Seismic included GXT Span Lines and TTDAAs 2D
- Interpretation, Modeling, Volumetrics and Risking was done. All outputs and deliverables included



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# Spectrum TTDA 2D Reprocessing 2010 - Why Reprocess?

- To vastly improve the subsurface quality of the 2002 Trinidad and Tobago Deep Atlantic (TTDAA) 2D Survey data in the Deepwater Acreage
- Further de-risking Trinidad and Tobago Deep Water potential with respect to the new 2010 Deep Water Competitive Bid Round
- Represents the future of the energy industry
- Encourage deepwater participation inclusive of the eleven companies of the original programme

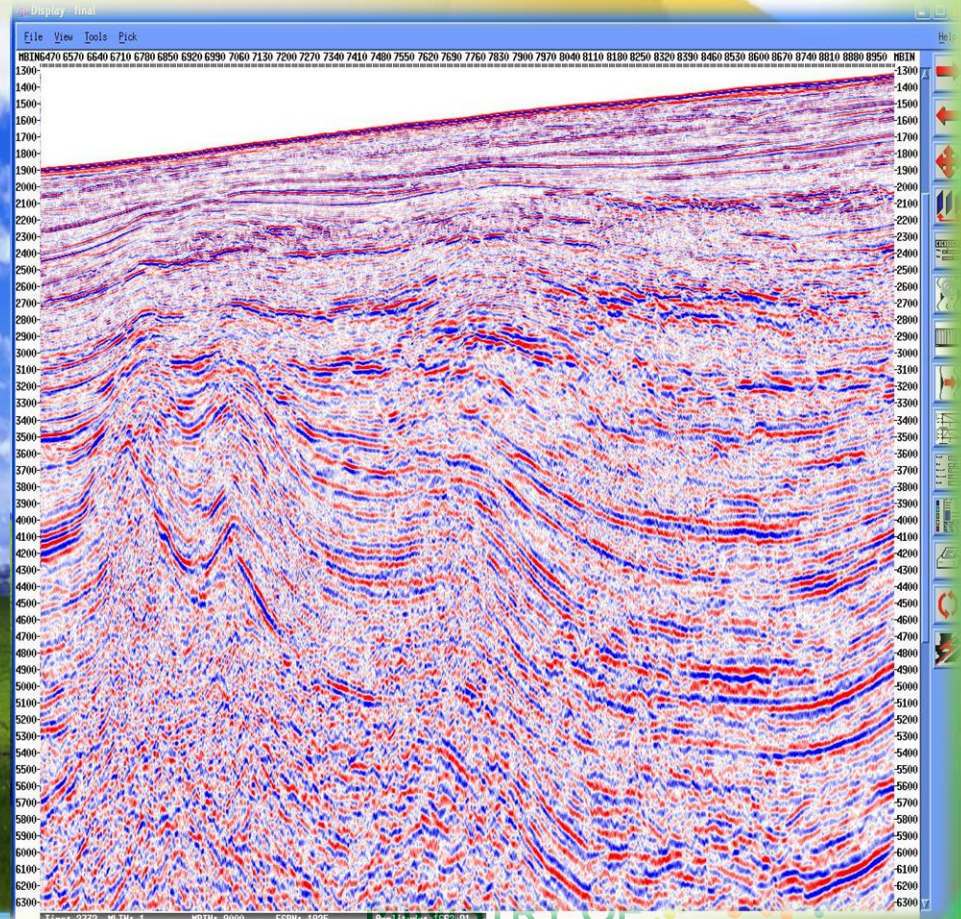
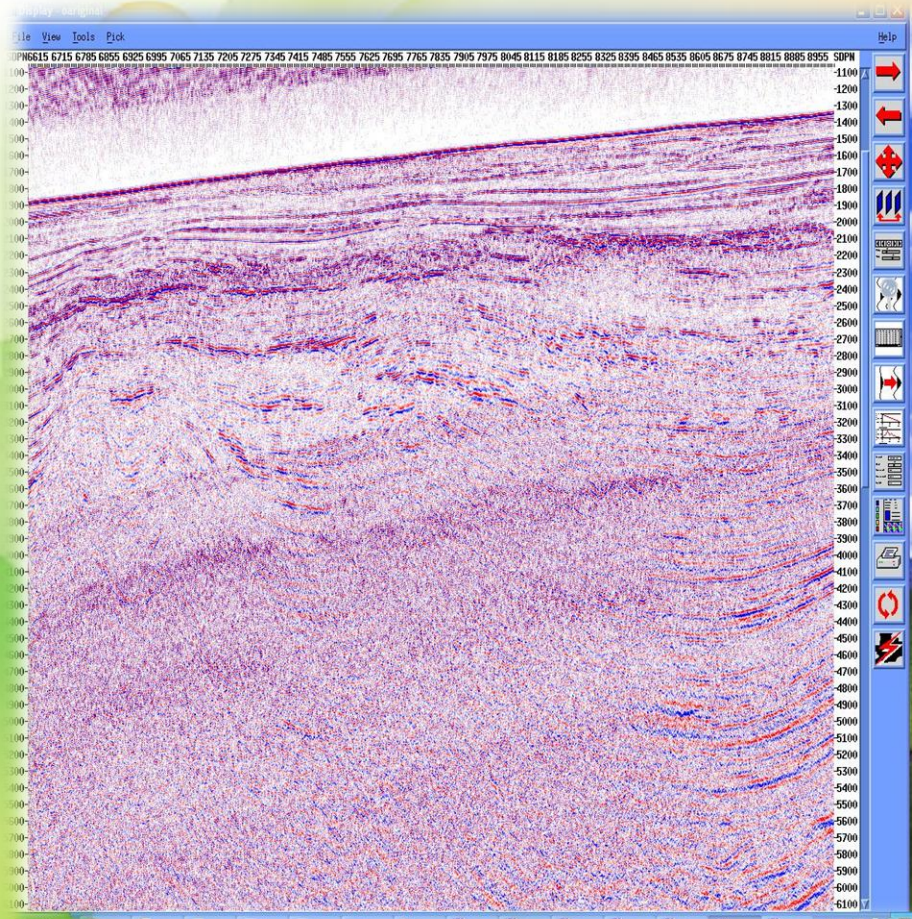




# Original vs Final Migration



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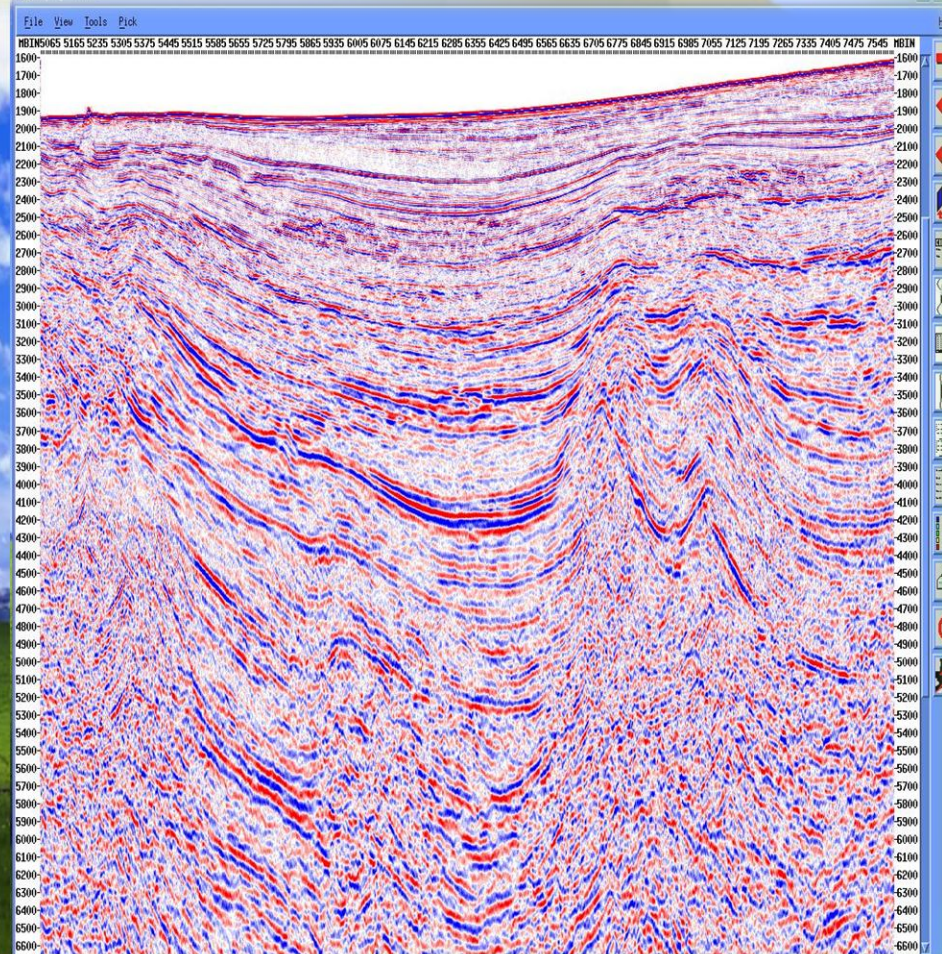
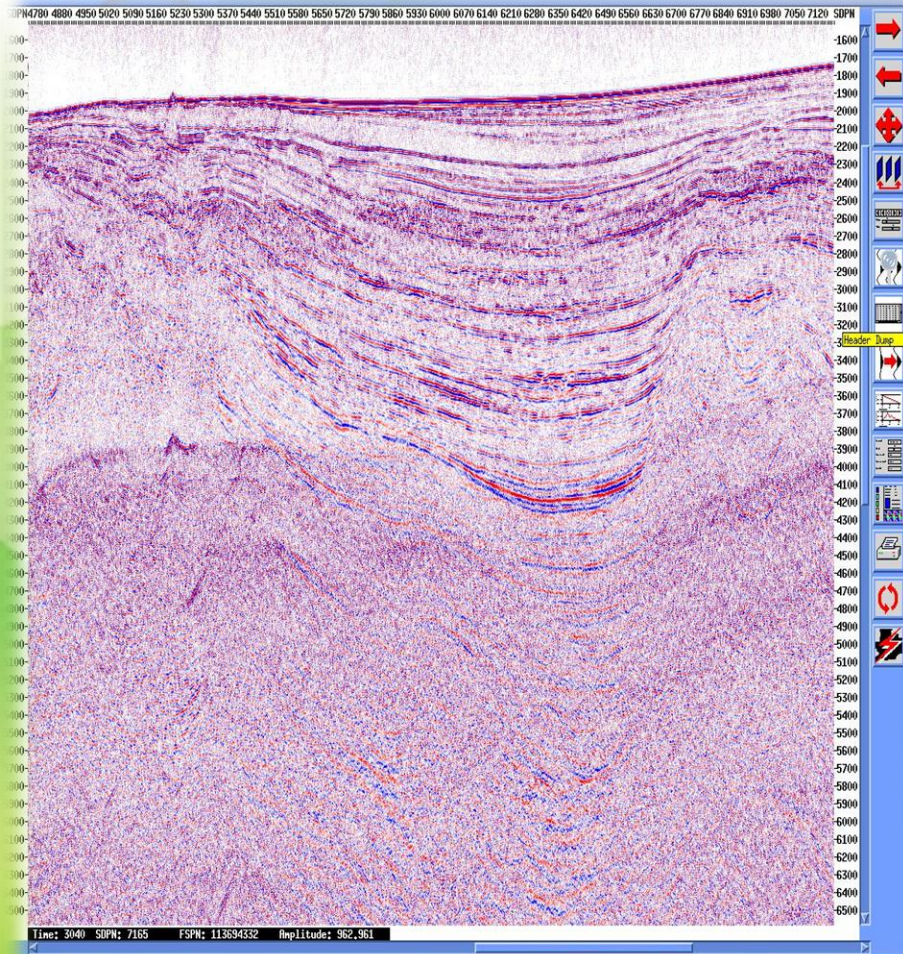




# Original vs Final Migration



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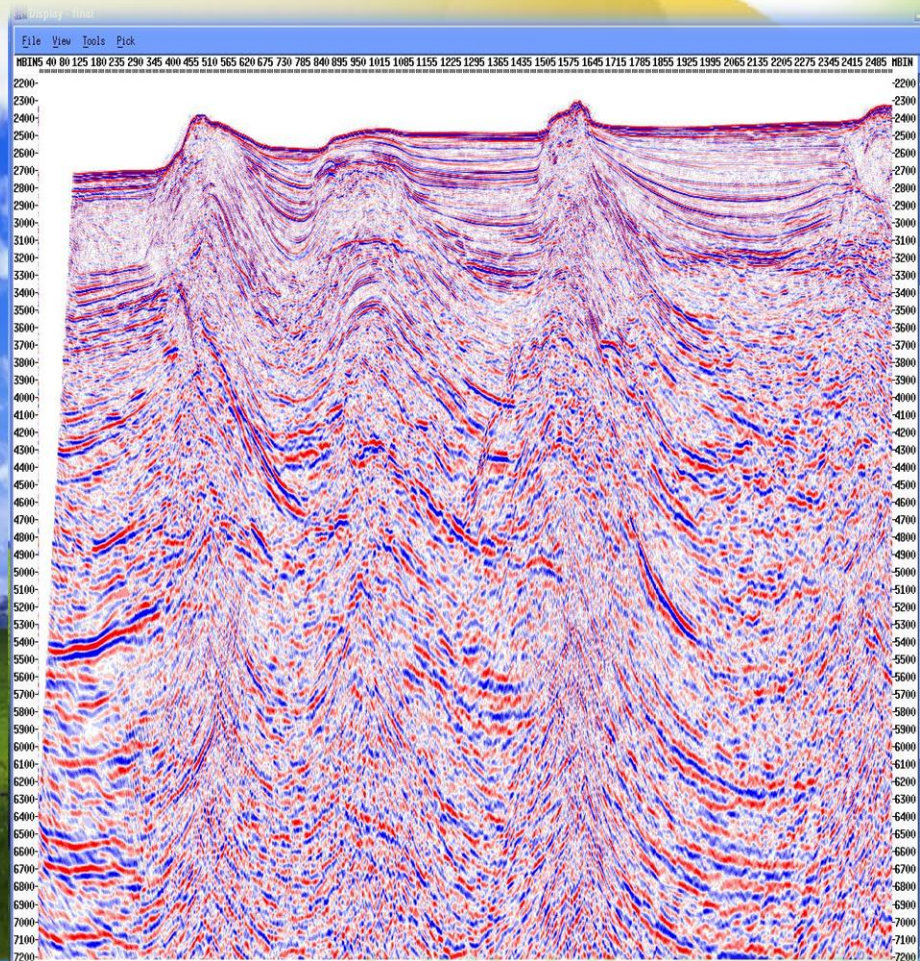
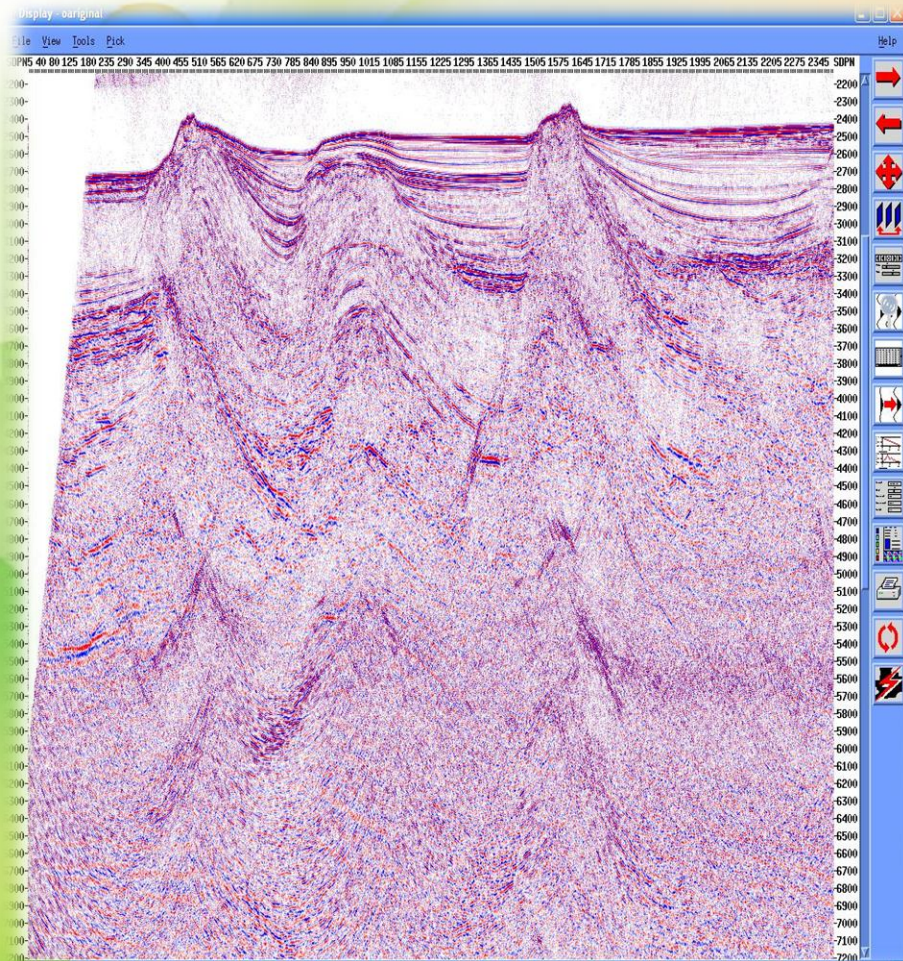






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# Original vs Final Migration



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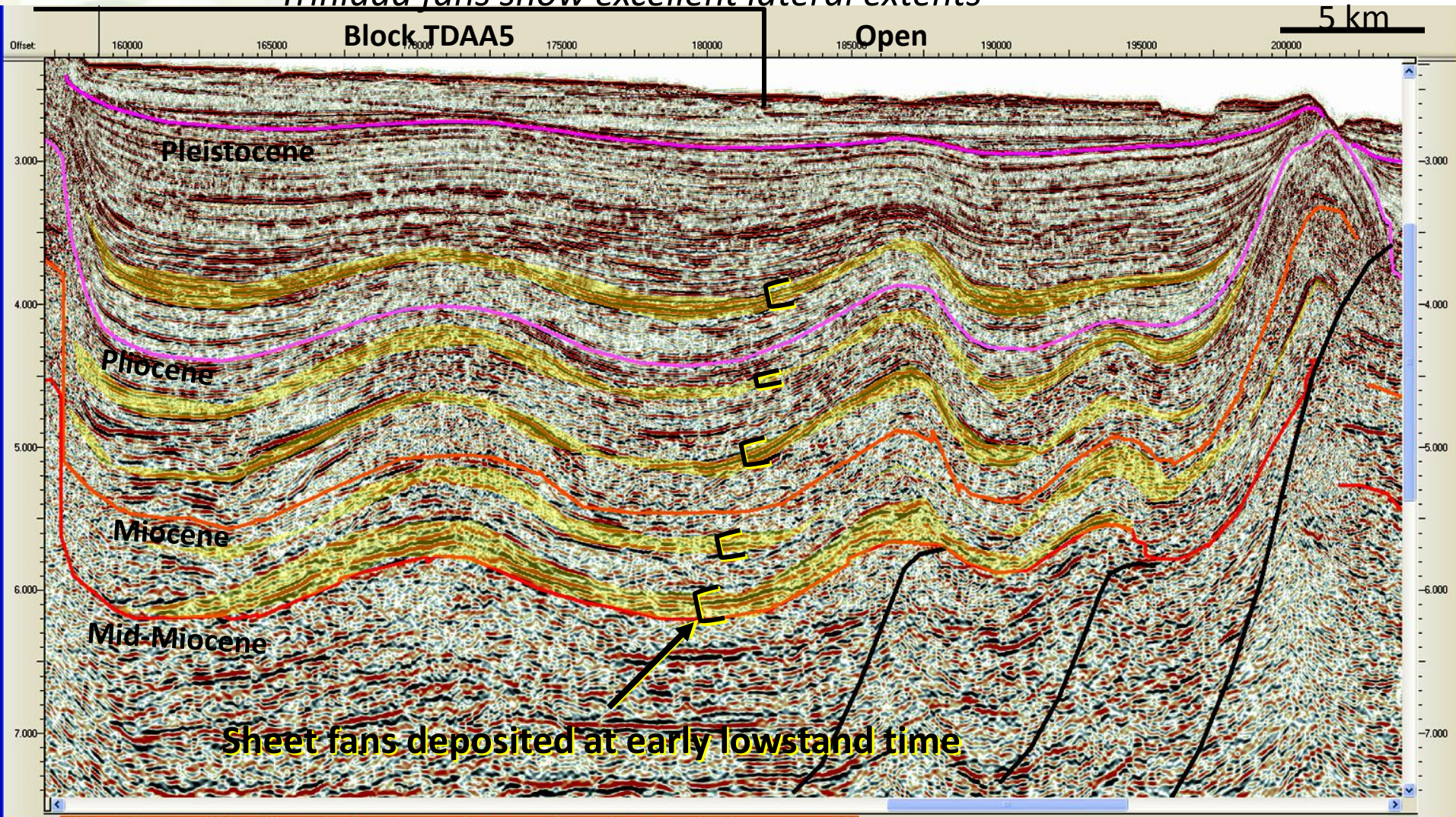
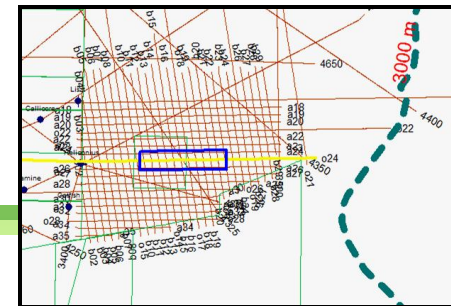




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# Sheet Fans Provide Multiple Reservoir/Seal Targets

- *Trinidad fans show excellent lateral extents*





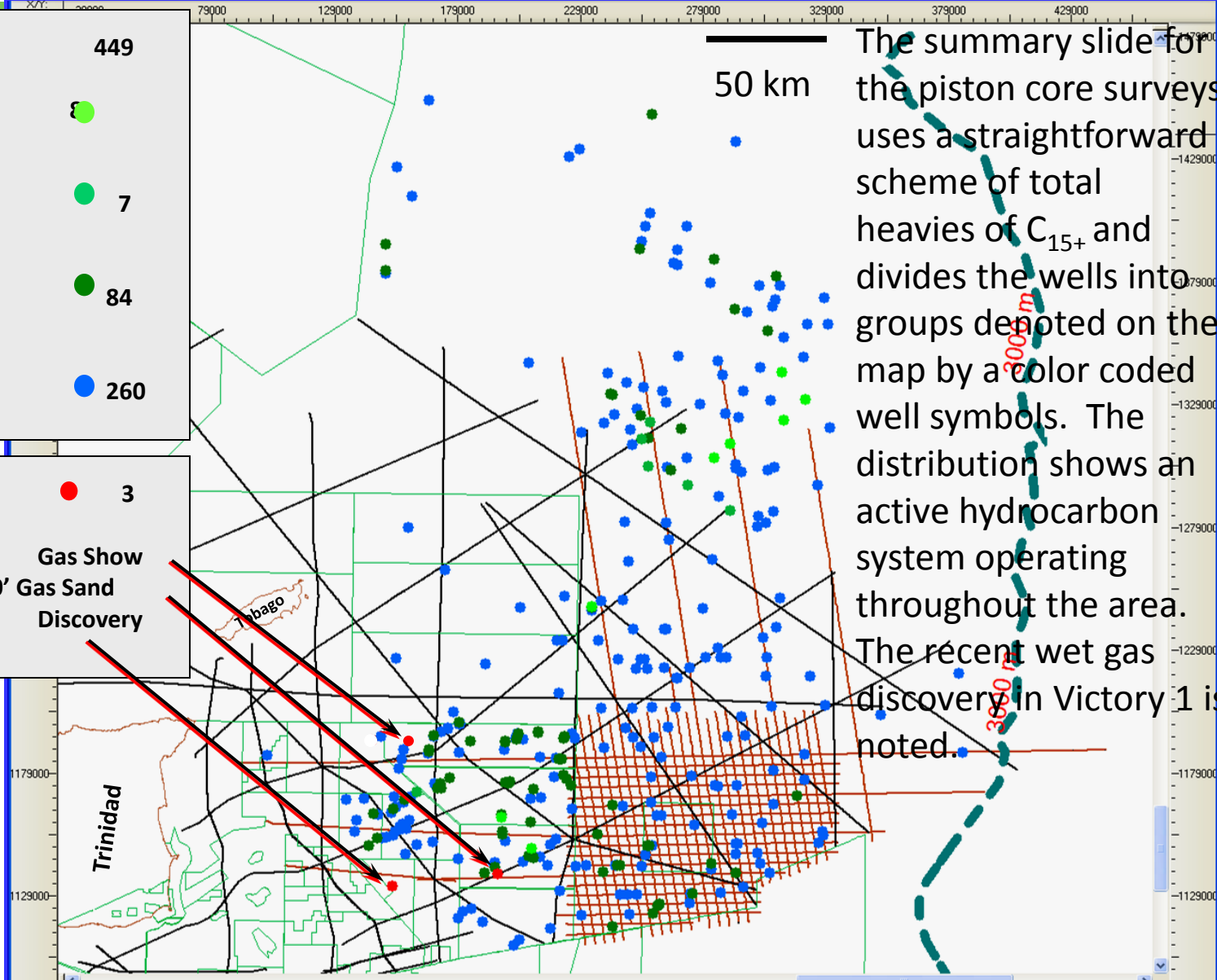


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# Trinidad Piston Cores Show Live Oil and an Active Hydrocarbon System

Total Piston Cores	449
Cores with Live Oil Shows	8
Cores with C15+ Heavies GT 10000 units	7
Cores with C15+ Heavies GT 1000-LT 10000 units	84
Cores with C15+ Heavies LT 1000 units	260

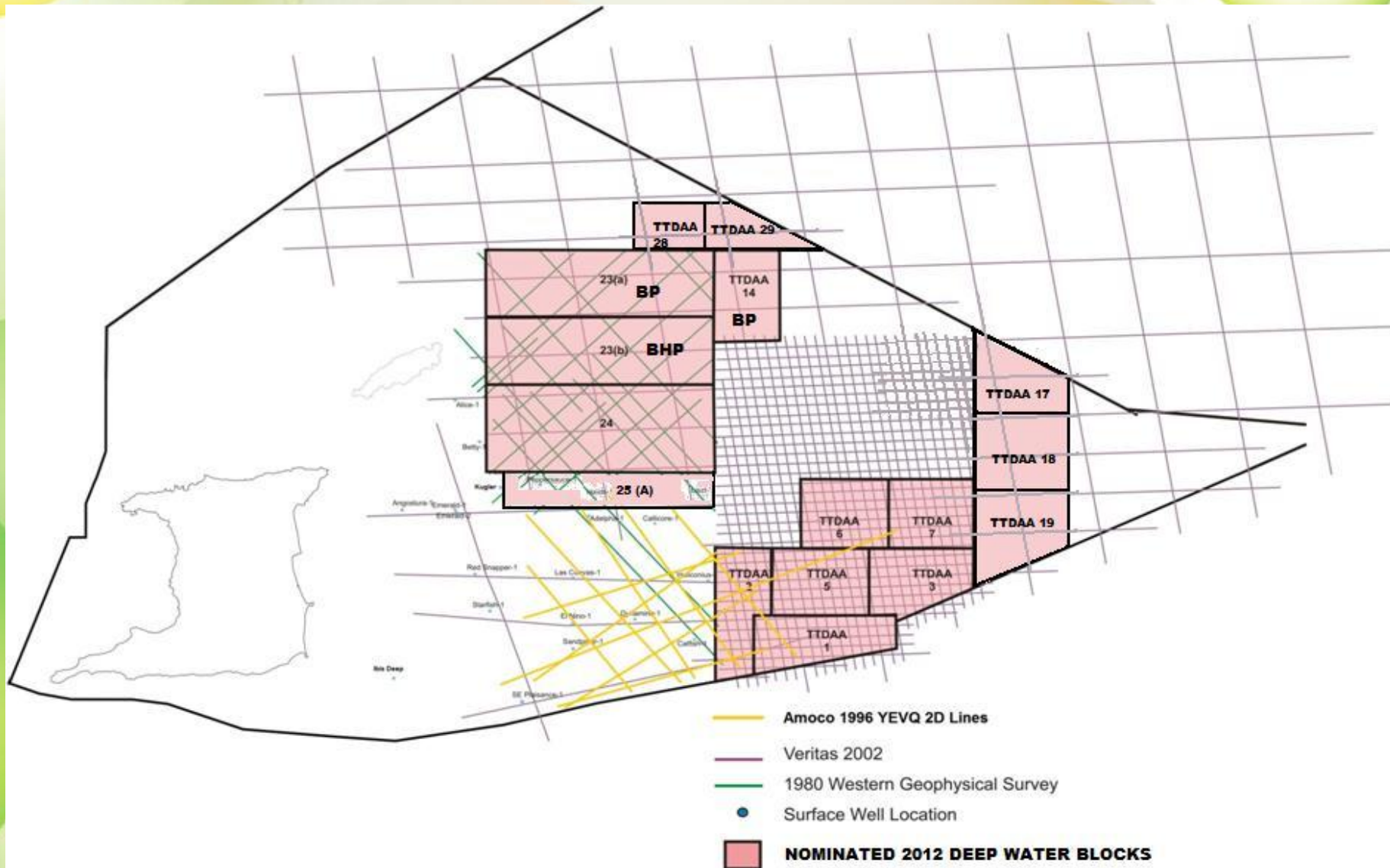
Gas Shows / Discoveries	3
Pepper Sauce 1	Gas Show 30' Gas Sand Discovery
Dynamine 1	
Victory 1	



The summary slide for the piston core surveys uses a straightforward scheme of total heavies of C<sub>15+</sub> and divides the wells into groups denoted on the map by a color coded well symbols. The distribution shows an active hydrocarbon system operating throughout the area. The recent wet gas discovery in Victory 1 is noted.



# Comprehensive Data Package





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# New 2012 Deep Water Round

- The 2012 Bid Round
  - Opening – March 2012
  - Closing – July 2012
- A maximum of six blocks will be offered – based mainly on your nomination
- Terms and Conditions but will be announced soon





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# Data Viewing Room

The Data Room is located at Level 23 of the offices of the Ministry of Energy and Energy Affairs, International Waterfront Centre, Tower C, Port of Spain and viewing can be arranged between 8am to 4pm by appointment ([see contacts below](#)).

The Data Room can comfortably accommodate about four individuals, although there is no restriction on the numbers at any one time. It is equipped with a dual monitor workstation running Landmark's Seisworks and Stratworks software and this can be used to examine available well and seismic surveys. The quantity and quality of data will vary by acreage and is determined by several factors including past exploration, proximity to producing blocks and legal data requirements. Every effort will be made to ensure that a representative and current dataset is available for viewing.



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**THANK YOU**





# QUESTIONS & ANSWERS