



# **LIBERIA 'S OFFSHORE BLOCKS AWARDS AND BIDS**

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## Introduction

- Liberia's potential oil and gas sector is expected to become an engine of economic growth and social development as we approach the second decade of the 21<sup>st</sup> century.
- The National Oil Company of Liberia (NOCAL) must therefore redefine itself and mobilize both partnerships and resources to become a competitive oil company.



# History Of Petroleum Exploration In Liberia

- Petroleum Exploration activities in Liberia began in the 1940's with 2D seismic activities and stopped in 1972 for some years.
- Between 1970 and 1972, four (4) wells were drilled in Liberia.
- Reactivated in 1980 with AMOCO Liberia Exploration Company awarded four (4) offshore permits in 1983 for petroleum exploration.
- Between 1983 and 1984, AMOCO shot extensive seismic and drilled three (3) exploratory wells offshore.



## Petroleum Exploration

- Prepared the Model Production Sharing Contract (PSC) used as a basis for negotiation of Petroleum Agreements.
- In 2000, contracted TGS-NOPEC, a geophysical company based in Houston, Texas, to conduct a non-exclusive 2-D (two dimensional) seismic survey.
- Based on the TGS-NOPEC 2D seismic data, offshore Liberia was divided into seventeen (17) Offshore Blocks.
- Conducted Bid Rounds for the Licensing of the 17 Blocks.



## Petroleum Exploration

- ☐ Chevron is expected to commence drilling in the first quarter of 2012 in block LB 12
- ☐ Anadarko has drilled a well ("Montserrat-1") in fulfillment of their first exploration period for block LB15 and is expected to commence drilling during the first quarter of 2012.
- ✓ Montserrat-1 is located some 55 km Southwest of Monrovia in water depth of about 1706m. It was drilled to a total depth of 5400 m
- ✓ The result indicated a non commercial discovery of a net pay of 8 meters



## Petroleum Exploration (Cont.)

- ☐ African Petroleum performed one of its well (Apalis-1) commitment during the third quarter of 2011 in block LB9.
- ✓ Apalis -1 was spudded on August 7, 2011 in water depth of about 983 m. The well reached a TD of 3665 m.
- ✓ Apalis-1 result indicated an active petroleum system
- ☐ African Petroleum is concluding the drilling of another well (Narina-1) presently in block LB9. The drilling program started in early January 2012.
- ✓ Narina-1 Well results are being reported as a significant discovery in Liberia Block LB-09 Offshore.





## BID ROUNDS

- ◆ NOCAL has launched three major bid rounds
- ◆ **First Bidding Process (March – April 2004)** We have:
  - ✓ Repsol, a Spanish company, was awarded blocks LB-16, and LB-17.
  - ✓ Oranto Petroleum Limited, a Nigerian company was awarded blocks LB-11 and LB-12.
  - ✓ African Petroleum formerly European Hydrocarbon (subsidiaries of Regal Petroleum plc), a U. K. company awarded blocks LB-8 and LB-9;
  - ✓ Broadway Hydrocarbon plc, a U.K. registered company, block LB-13;
  - ✓ Woodside, an Australian registered company, block LB-15; and
- ◆ **During the 2<sup>nd</sup> Bid Round (November – December 2007):**
  - ✓ Anadarko, an American Company was awarded Block LB-10,
  - ✓ Oranto, a Nigerian Company was awarded block LB-14.
  - ✓ Hong Kong Tong Tai Petroleum International, a Chinese Company was awarded blocks LB-6 and LB-7. THIS AGREEMENT IS YET TO BE RATIFIED.
- ◆ **Third Bid Round** - Opened In November 2009 And Ended In February 2010 for the remaining five (5) vacant offshore blocks. bid round was not conclusive.
- ◆ **Upcoming Bid Round: Anticipated 2<sup>nd</sup> Quarter, 2012**

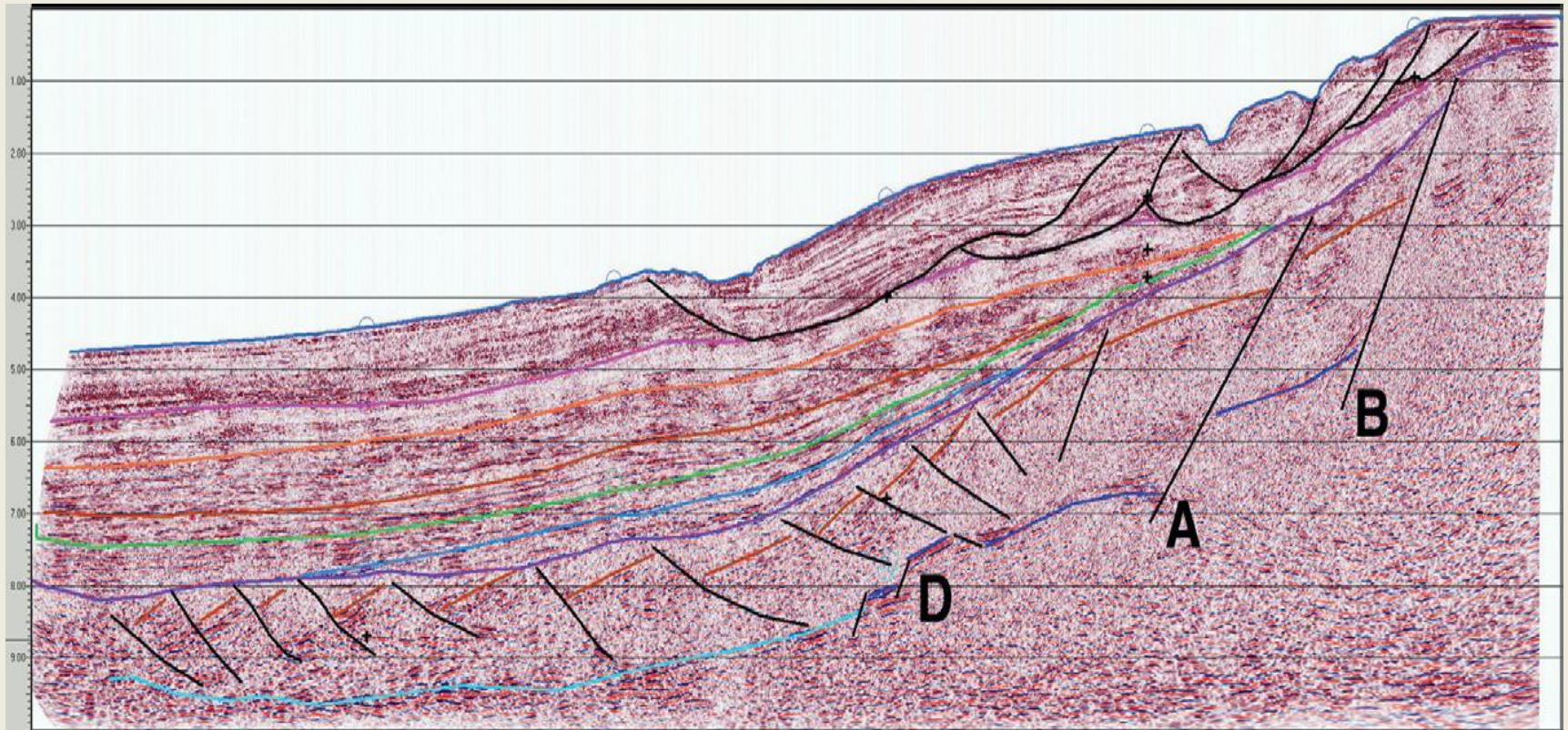


## Non Exclusive Geophysical Data in Liberia

- There is a large database of non-exclusive geophysical data available for use in the evaluation of the prospectivity of offshore Liberia.
- These data have been acquired between the years 2000 and 2010.
- 2D seismic data: 24,773 km
- 2D gravity and magnetic data: 24,408 km
- 3D seismic data: 18,345 km<sup>2</sup>
- Well data
- Interpretation report



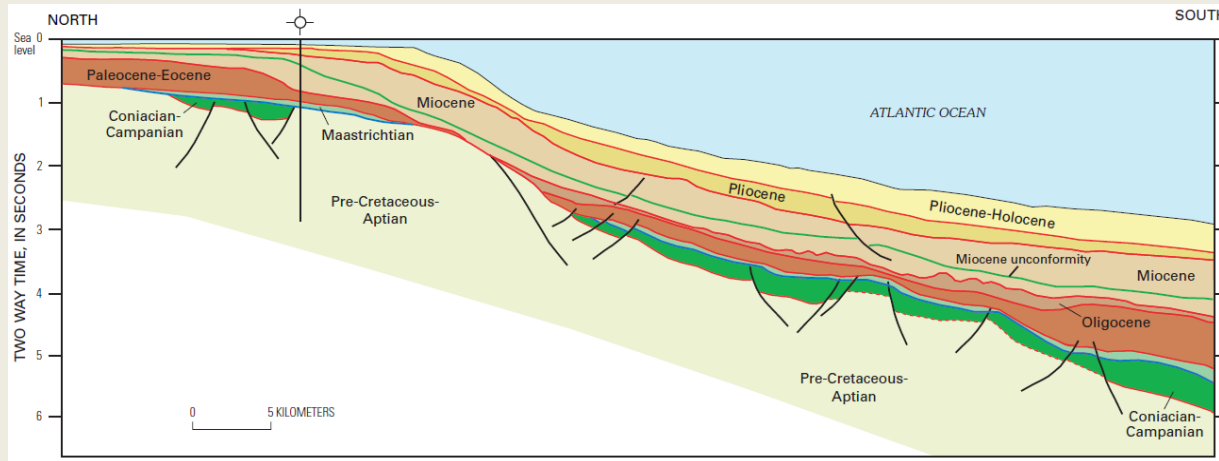
## DIP LINE THROUGH LIBERIA BASIN



*Faults A and B have significant strike-slip as well as dip-slip components. D is a deep reflector. The basin is characterized by complex fault system.*

## Prospectivity of the Liberia Basin

A typical petroleum system of the Liberia Basin.



### Source Rocks

- ✓ Early cretaceous-Lacustrine Saptian/Albian
- ✓ Mid Cretaceous- Turonian Marine shale

### Reservoirs

- ✓ Albian clastics (fluvio-deltaic)
- ✓ Cenomanian Marine sandstone and/or carbonates
- ✓ Santonian slope fan and ponded sands



# Prospectivity of the Liberia basin .....

A typical petroleum system of the Liberia Basin.

## Traps

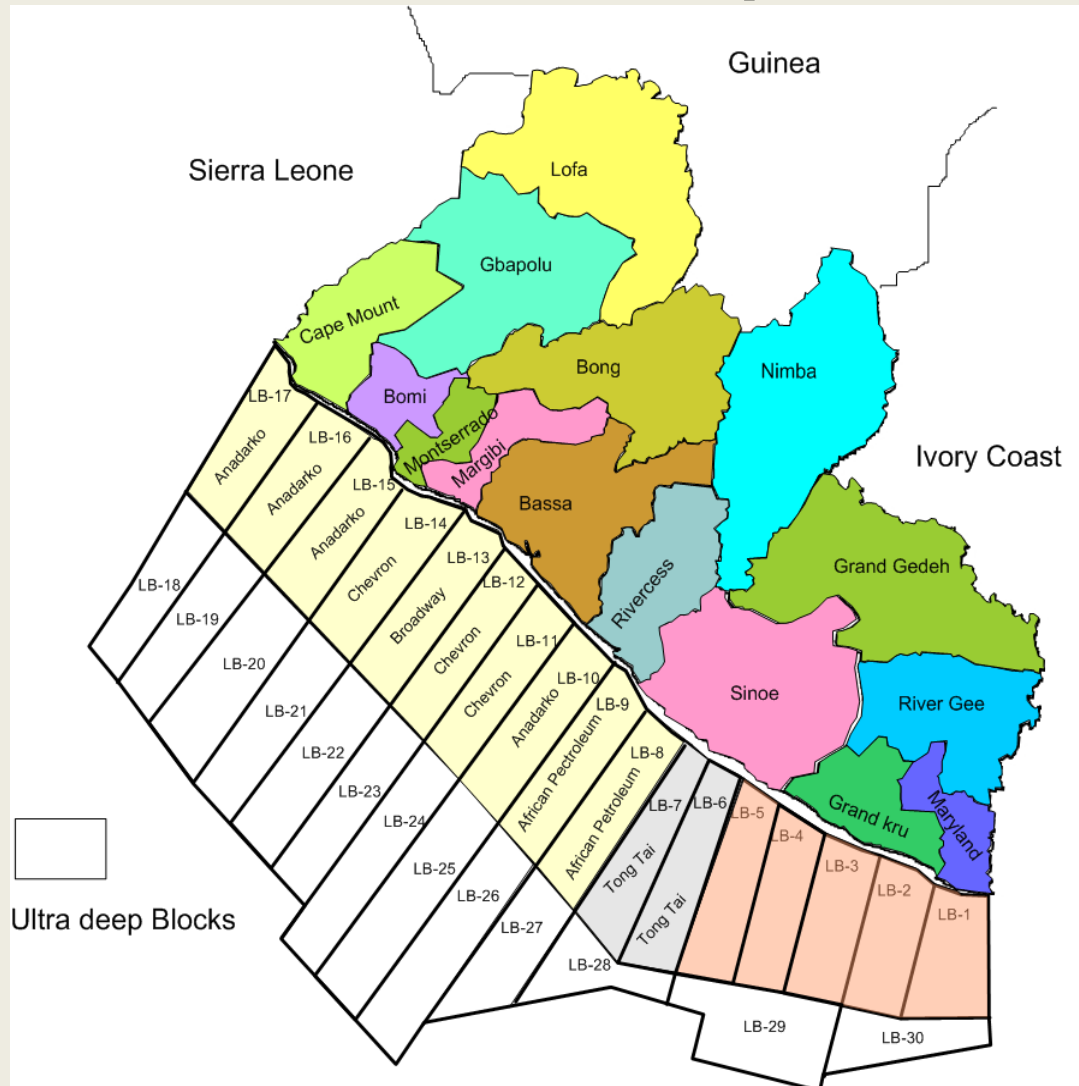
- ✓ Albian rotated faults and syn-transform structures
- ✓ Late Albian/cenomanian stratigraphic and structures
- ✓ Campanian and maastrichtian channel and fan complex
- ✓ Pinchout and post transform anticline trap

## Seal

- ✓ Intrabedded deltaic shales ,deepwater shales



## Liberia Offshore Ultra-Deep water Blocks





## Status Of Near Shore Block Ownership

- Ten blocks have contractual agreements(LB8-LB17).
- Two blocks (LB6 & LB7) are under contract negotiation.
- Five blocks in the Harper basin have been through a third bid round.  
No awards have been made.
- One block, previously awarded, (LB13) is under negotiation



## Ultra Deep Water Offshore Blocks

- In 2009 NOCAL acquired original 2D seismic data over the ultra deep water of offshore Liberia through an agreement with TGS-NOPEC.
- This data expands 2D seismic coverage out to water depths of 4500m.
- From this data an additional thirteen (13) offshore blocks (LB18-LB30) have been outlined.
- These 13 offshore blocks will be available for licensing in the second quarter of 2012





## Vision And Mission Statements

- **Vision:**

*Aspiring to achieve the technical competence to explore and find oil in Liberia and develop its own exploration, development and production capabilities in a safe environment.*

- **Mission:**

*Developing Liberia's Hydrocarbon Potentials for national self-sufficiency and sustainable development.*



## Values

- **Openness:** open and information sharing environment
- **Cooperation:** exchange information and ideas through cooperative work
- **Humbleness:** recognizing that what you have always requires improvement
- **Truth:** delivering accurate and precise information
- **Dedication:** pursue tasks to the end
- **Competition:** the kind that promotes the work spirit and enthusiasm



THANK YOU for  
YOUR TIME