



Petroleum Geology

Source Potential

Seeps and slicks

- Oil seeps in São Tomé typed to Cretaceous source (Azile/Anguile)
- Further seeps in Príncipe, of higher maturity, also Cretaceous
- Slicks observed offshore Príncipe

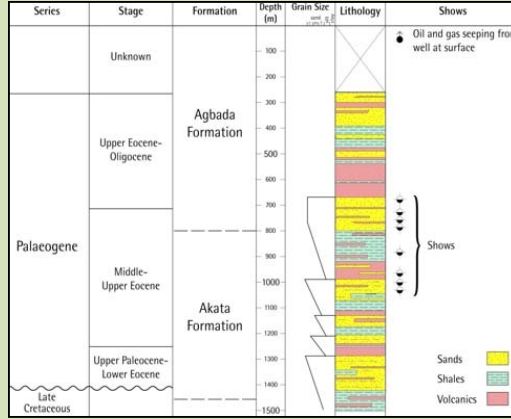
Mid to Late Cretaceous source kitchen in east

- Source rocks in Albian-Cenomanian and Turonian-Santonian as in Gabon and Equatorial Guinea

- Kitchens thins to south and west

Tertiary source kitchen in NW and below islands

- Akata Formation (main Niger delta source)



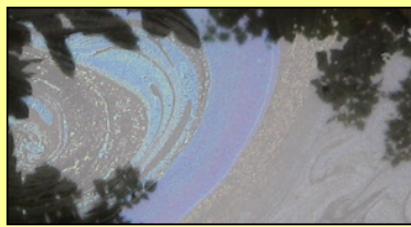
Reservoir Rocks

The extension of the Palaeogene Niger Delta-derived turbidite sands of the Agbada Formation well out into the basin and under the shallow volcanics of the islands is directly evidenced by the occurrence of coarse quartz sandstones in outcrop and in a well section on the island of São Tomé. Input of turbidite sands is also likely from the Gabon-Equatorial Guinea margin, with the main targets associated with major lowstands of Oligocene and Santonian age.

- Tertiary turbidites off Niger Delta Predominantly Oligo-Miocene reservoirs Not blocked by toe thrusts until Pliocene times
- Cretaceous-Tertiary turbidites off Ogooué Delta, Gabon and Benito Delta, Equatorial Guinea
- Major lowstands in Santonian, Maastrichtian and Oligocene
- Outcropping Quartz sandstones with seeps below volcanics on São Tomé
- No structuring on islands area until Miocene
- Potential ponding against islands post-Miocene



Gas escaping at Ubabudo-1



Oil seep at Ubabudo-1

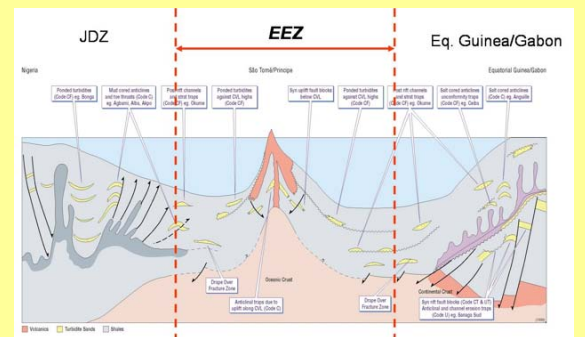
Play Fairways Offshore São Tomé and Príncipe

- Distal toe thrusts extend into the JDZ, while low relief structures, fracture zone drape and stratigraphic traps lie to the south of the toe thrust zone in the northern EEZ.
- Major Tertiary fan systems dominate in the north and northeast
- In the east, fan systems of dominantly Cretaceous age, derived from the EG and Gabon margin.
- In the south we see Cretaceous structural traps and drapes over fracture zones with sediment derived from the Gabon and EG margin.

Oil and Gas Kitchen

- Albo-Cenomanian source kitchen in SE – Source rocks are assumed to be of Albo-Cenomanian and Turonian-Santonian age for the marine areas east of the islands, as these levels are known to have sourced the northern Gabon fields and the Ceiba Field of Equatorial Guinea.
- Tertiary source kitchen in NW Akata Formation (main Niger delta source) preserved in oil window due to low gradients and diminished overburden
- High heat flow in vicinity of islands

Oil shows are seen in the Uba Budo well and oil is currently leaking to surface from the well and in several other oil seeps. This has been typed to a Late Cretaceous source.



Geoseismic Profile showing the location of the São Tomé and Príncipe Exclusive Economic Zone (EEZ)

Trapping Mechanisms

Toe Thrusts of Niger Delta

- Extend over JDZ to north of the area

Tertiary plays in the north

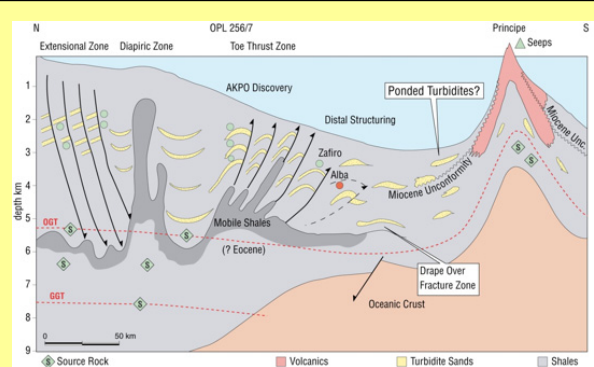
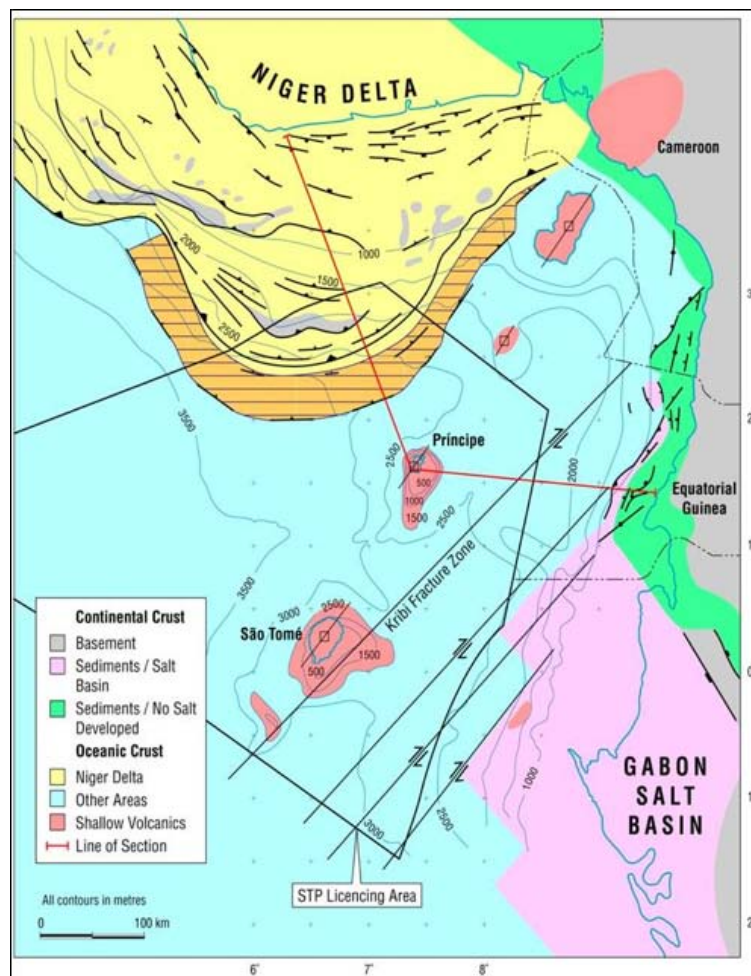
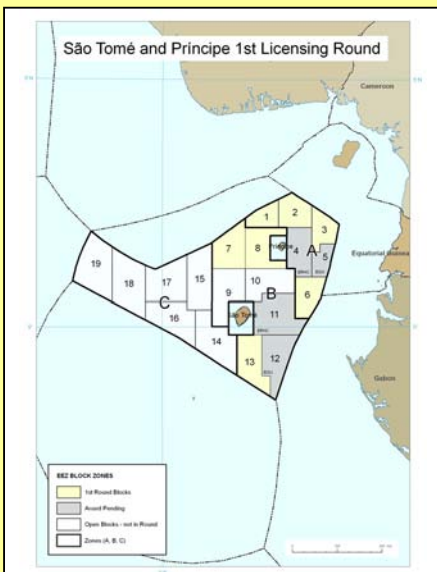
- Low relief structures
- Drape over fracture zones

Cameroon Trend of Islands

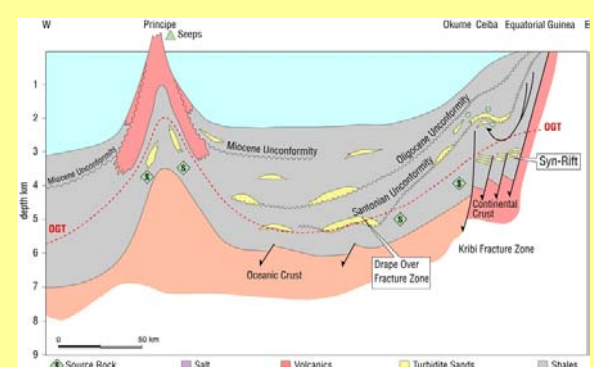
- Uplifts pre and syn-volcanism, Miocene age
- Thick sedimentary pre-volcanic succession

Stratigraphic Plays

- Niger Pro-Delta (Tertiary)
- Ogooué and Benito Pro-Deltas



Play Fairways: Nigeria to Príncipe



Play Fairways : Príncipe to Equatorial Guinea