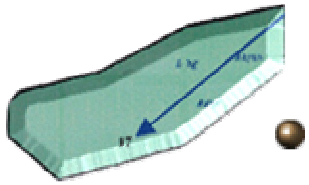
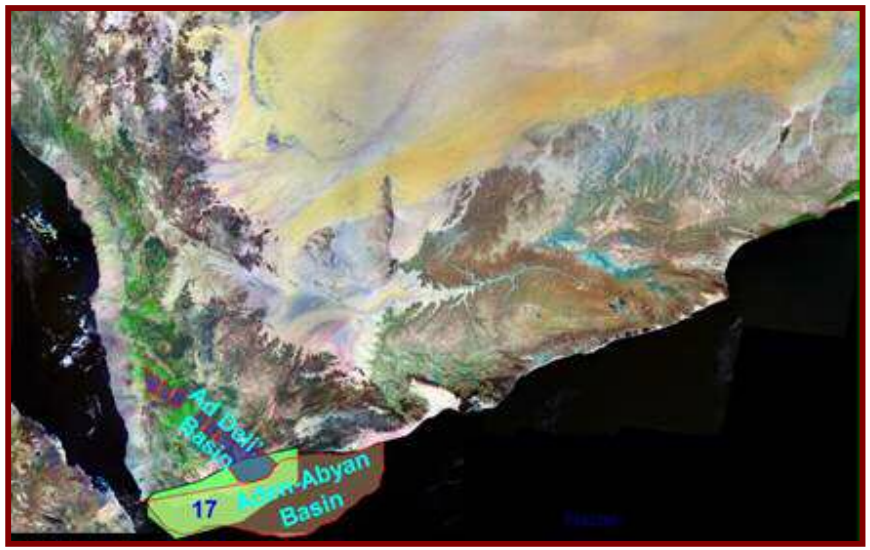
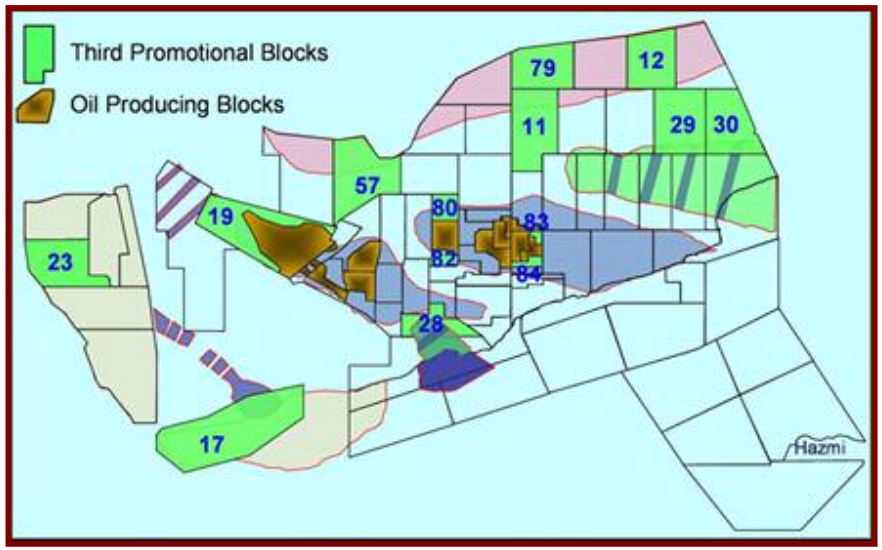
Block 17 (Aden-Abyan)

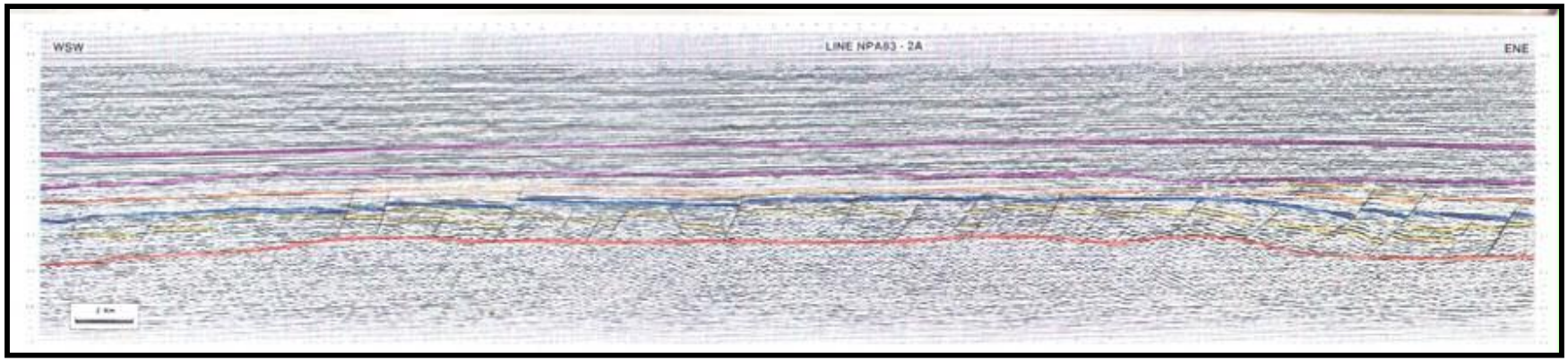
- The Aden-Abyan Block (17) occupies an area of 19385 km2 of the Aden-Abyan Basin on the southern coast of Yemen and centered around the Aden city.
- Block (17) lies on the onshore and offshore area. It is bordered on:
  - The northby out crops (Tertiary trapps, Mesozoic series, Precambrian basement.
  - The south by the ocean crust.
  - The east and west by a seaward development of Tertiary trapps.
- Offshore, the interest area is above the continental slope with a shallow bathymetry (<50m), deepening downwards (>1000m).



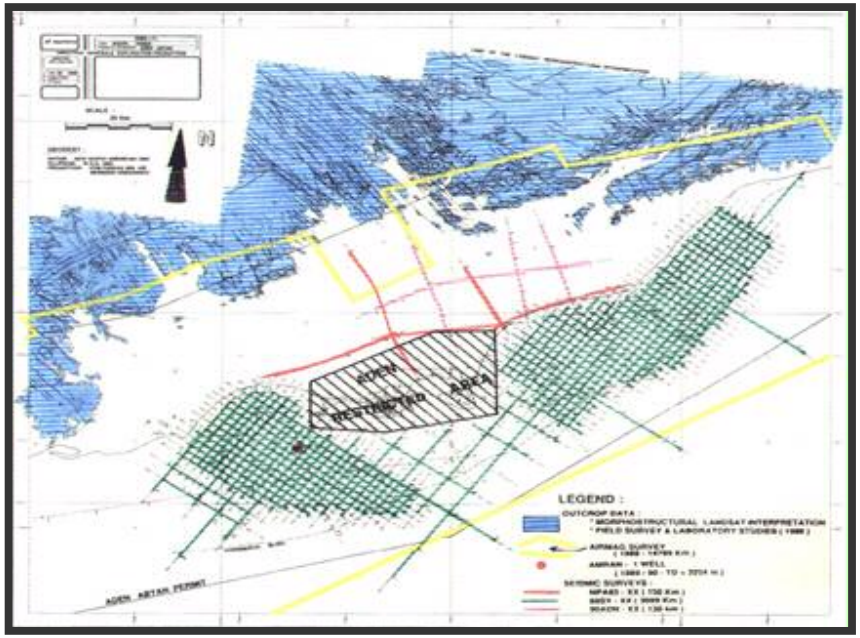




Area (Km^2)	:	19,385
Province	:	Aden / Abyan
Basin	:	Aden - Abyan
Wells	:	1
Seismic	:	7667 Km 2D



Seismic Section in Aden - Abyan Basin



Previous Work Map

PREVIOUS EXPLORATION ACTIVITIES

Company	Period	Activities
PED	1983-1984	Geophysical (offshore, onshore 2D seismic)
Elf	1987-1990	Geophysical (offshore, onshore 2D seismic) Drilling 1 well.

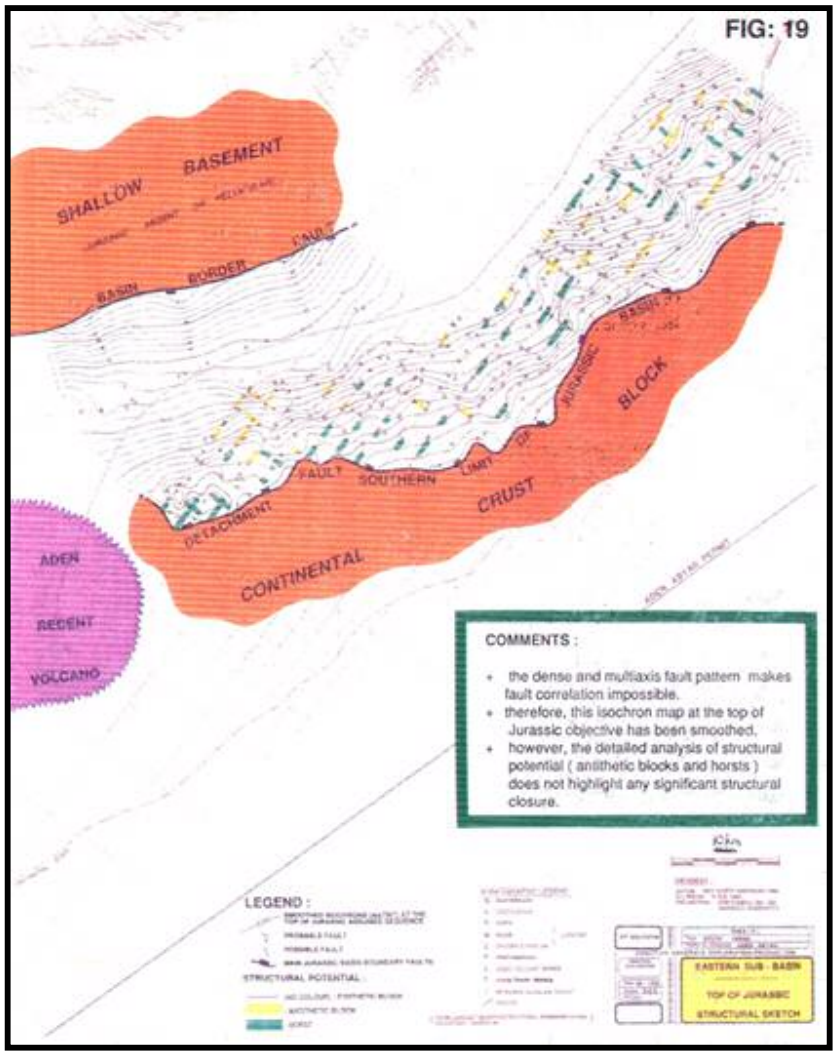
DRILLED WELLS

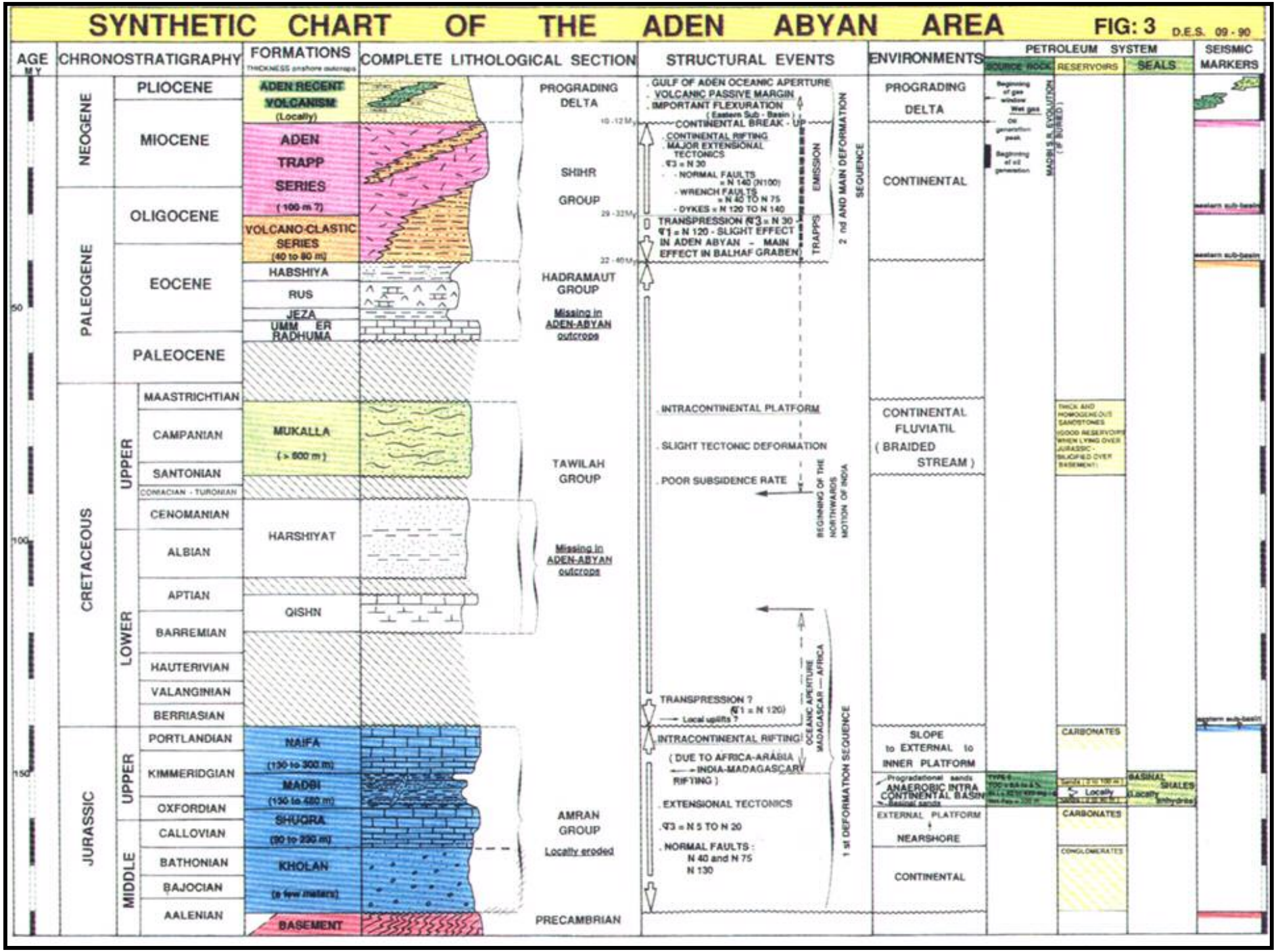
WELL NAME	COMPANY	DATE	TD TD FM	SHOWS STATUS
Amran#1	ELF	1989-1990	3254 m Oligocene	No shows P & A

The structural style of the Aden-Abyan is poorly studied.
The geophysical data and field observations indicate that:

1) The area is subdivided into two sub-basins, separated by nearly N-S transfer zone.
2) The sedimentary sequences within the basin are buried in the southward monoclinal form.
3) faults trending northwest and northeast break the sedimentary cover.
4) Basalt dikes and sills of the Aden Trap Series were found in several places within the sedimentary cover of the basin.
5) The presence of excellent source rocks in Madbi Shales.
6) The presence of two sandy reservoirs within Madbi (Lam Formation?, which are oil producing in Block S1 located to the north of Block 17).
7) The presence of a possible narrow and shallow half-graben.

Re-interpretation of seismic data may give some ideas about the basin.




SYNTHETIC CHART OF THE ADEN ABYAN AREA
FIG: 3
D.E.S. 09 - 90
AGE M.Y.
CHRONOSTRATIGRAPHY
FORMATIONS
COMPLETE LITHOLOGICAL SECTION
STRUCTURAL EVENTS
ENVIRONMENTS
PETROLEUM SYSTEM
SOURCE ROCK
RESERVOIRS
SEALS
SEISMIC MARKERS
NEOGENE
PALEOGENE
CRETACEOUS
JURASSIC
PLIOCENE
MIOCENE
OLIGOCENE
EOCENE
PALEOCENE
MAASTRICHTIAN
CAMPANIAN
SANTONIAN
CONIACIAN - TURONIAN
CENOMANIAN
ALBIAN
APTIAN
BARREMIAN
HAUTERIVIAN
VALANGINIAN
BERRIASIAN
PORTLANDIAN
KIMMERIDGIAN
OXFORDIAN
CALLOVIAN
BATHONIAN
BAJOCIAN
AALENIAN
UPPER
LOWER
MIDDLE
ADEN RECENT VOLCANISM (Locally)
ADEN TRAPP SERIES (100 m ?)
VOLCANO-CLASTIC SERIES (40 to 80 m)
HABSHIYA
RUS
JEZA
UMM ER RADHUMA
MUKALLA (> 600 m)
HARSHIYAT
QISHN
NAIFA (130 to 300 m)
MADBI (150 to 480 m)
SHUQRA (90 to 230 m)
KHOLAN (a few meters)
BASEMENT
PROGRADING DELTA
SHIHR GROUP
HADRAMAUT GROUP
Missing in ADEN-ABYAN outcrops
TAWILAH GROUP
AMRAN GROUP
Locally eroded
PRECAMBRIAN
. GULF OF ADEN OCEANIC APERTURE
. VOLCANIC PASSIVE MARGIN
. IMPORTANT FLEXURATION (Eastern Sub - Basin)
CONTINENTAL BREAK - UP
. CONTINENTAL RIFTING
. MAJOR EXTENSIONAL TECTONICS
. σ3 = N 30
- NORMAL FAULTS = N 140 (N100)
- WRENCH FAULTS = N 40 TO N 75
- DYKES = N 120 TO N 140
EMISSION TRAPPS
TRANSPRESSION (σ3 = N 30 σ1 = N 120 - SLIGHT EFFECT IN ADEN ABYAN - MAIN EFFECT IN BALHAF GRABEN)
2 nd AND MAIN DEFORMATION SEQUENCE
. INTRACONTINENTAL PLATFORM
. SLIGHT TECTONIC DEFORMATION
. POOR SUBSIDENCE RATE
BEGINNING OF THE NORTHWARDS MOTION OF INDIA
TRANSPRESSION ? (σ1 = N 120)
Local uplifts ?
OCEANIC APERTURE MADAGASCAR — AFRICA
INTRACONTINENTAL RIFTING (DUE TO AFRICA-ARABIA — INDIA-MADAGASCARY RIFTING)
. EXTENSIONAL TECTONICS
. σ3 = N 5 TO N 20
. NORMAL FAULTS : N 40 and N 75 N 130
1 st DEFORMATION SEQUENCE
PROGRADING DELTA
CONTINENTAL
CONTINENTAL FLUVIATIL (BRAIDED STREAM)
SLOPE to EXTERNAL to INNER PLATFORM
ANAEROBIC INTRA CONTINENTAL BASIN
EXTERNAL PLATFORM NEARSHORE
CONTINENTAL
CARBONATES
SHALES
CARBONATES
CONGLOMERATES
MADBI S.R. EVOLUTION (if BURIED)
50
100
150

PETROLEUM SYSTEM

SOURCE ROCKS

- The Jurassic Madbi Formation shales are the main source rock in the region.

RESERVOIR - SEAL

- Numerous sand/carbonaceous reservoirs are encountered in outcrops (and in somalian Zeila-3 well):
  - Lower Madbi basinal sands
  - Upper Madbi marine prograding sands
- Potential reservoirs could be developed in the Jurassic and Upper Cretaceous, Kohlan, Shuqra, Naifa, and Mukalla Formations, sealing potential is expected in the Madbi Formations.