

A geological map of Iraq is overlaid on a topographic map. The geological map uses various colors and patterns to represent different geological units. The topographic map shows the terrain with brown and tan colors representing elevation. The title "GEOLOGY OF IRAQ" is centered over the map in a large, bold, black font. The map shows the Taurus mountains to the north, the Zagros mountains to the south, and the Mesopotamian plain in the center. The Persian Gulf is visible in the southeast. The geological units are color-coded: yellow for the Zagros fold belt, orange for the Mesopotamian plain, and grey for the Arabian shield. The title "GEOLOGY OF IRAQ" is centered over the map in a large, bold, black font.

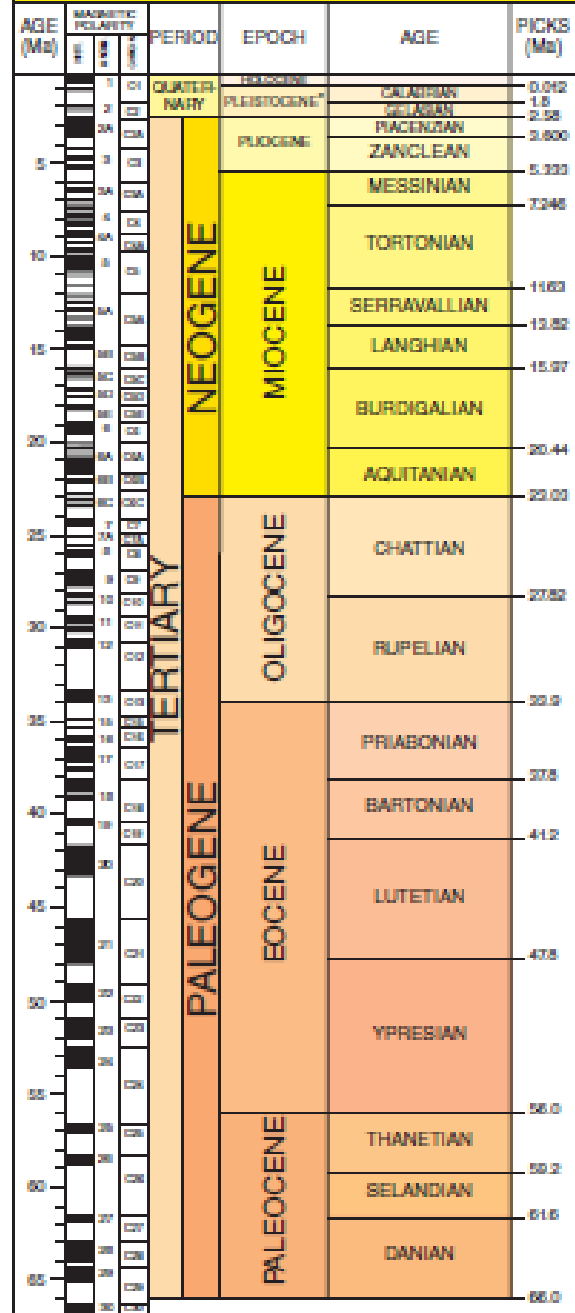
GEOLOGY OF IRAQ

CENOZOIC PERIOD IN IRAQ

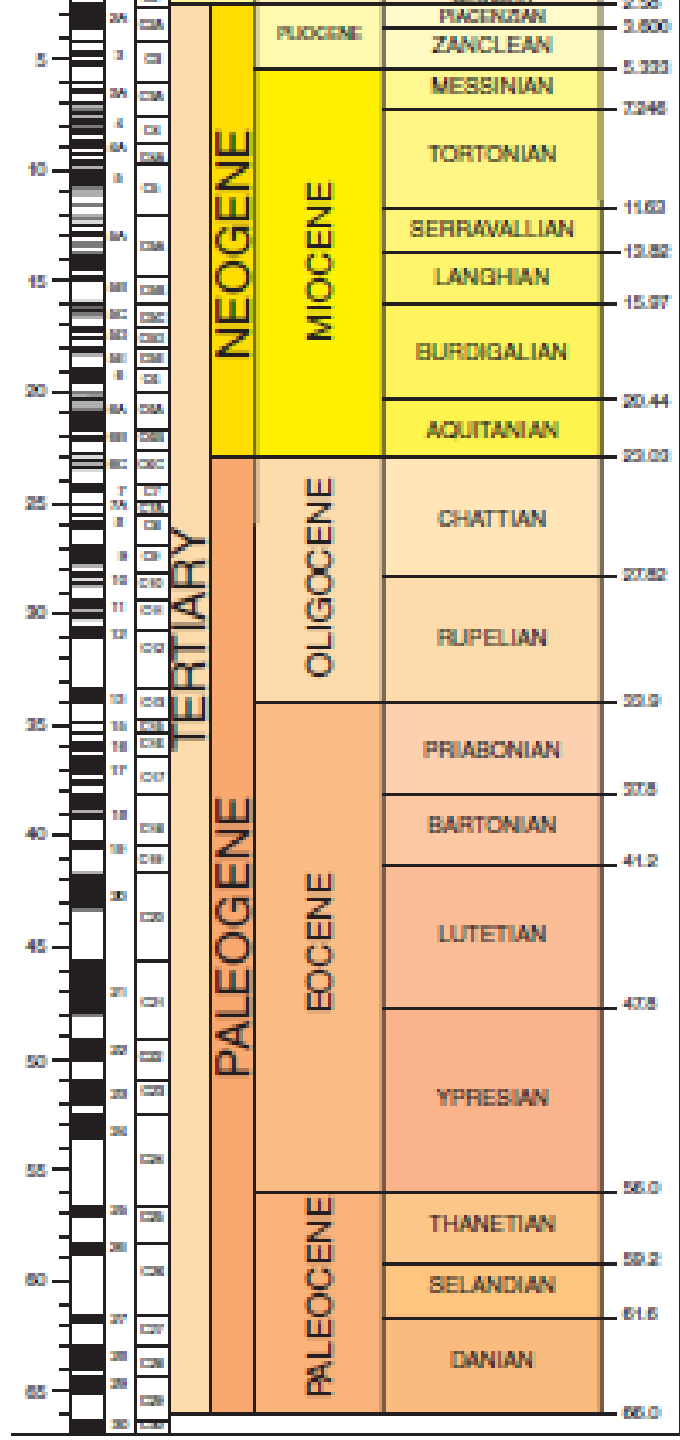
TIME, TECTONICS, STRATIGRAPHY

TIME

CENOZOIC




TERTIARY PERIOD



QUATERNARY PERIOD

CENOZOIC

AGE (Ma)	MAGNETIC POLARITY			PERIOD	EPOCH	AGE	PICKS (Ma)
	HIST	WORLD	CHRON				
	1	C1	QUATER-NARY	HOLOCENE			0.012
				PLEISTOCENE*		CALABRIAN	1.8
	2	C2				GELASIAN	2.58
				2A	C2A		PLIOCENE

Cenozoic Period Age = \sim 65.988 Ma

Early (Lower) Cenozoic (Tertiary) Age= $\sim 63.42\text{Ma}$

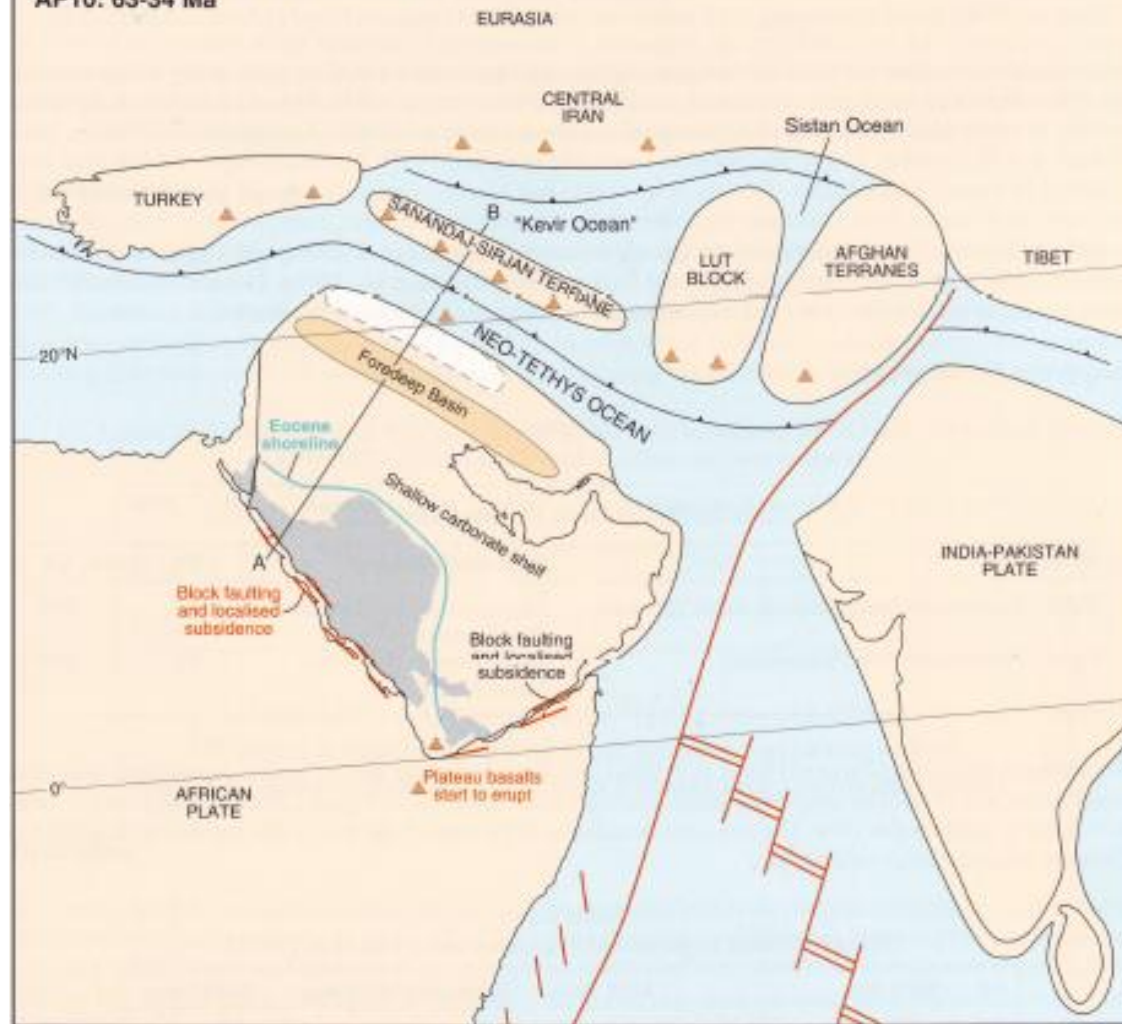
Late (Upper) Cenozoic (Quaternary) Age= $\sim 2.568\text{Ma}$

TECTONICS

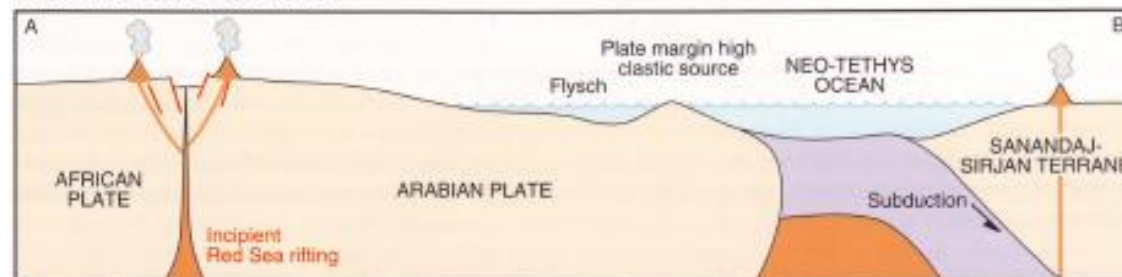
AP10: ~29 Ma

TMS AP10: Early Palaeogene to Latest Eocene (63-34 Ma)
Mild Compression and Closure of Neo-Tethys

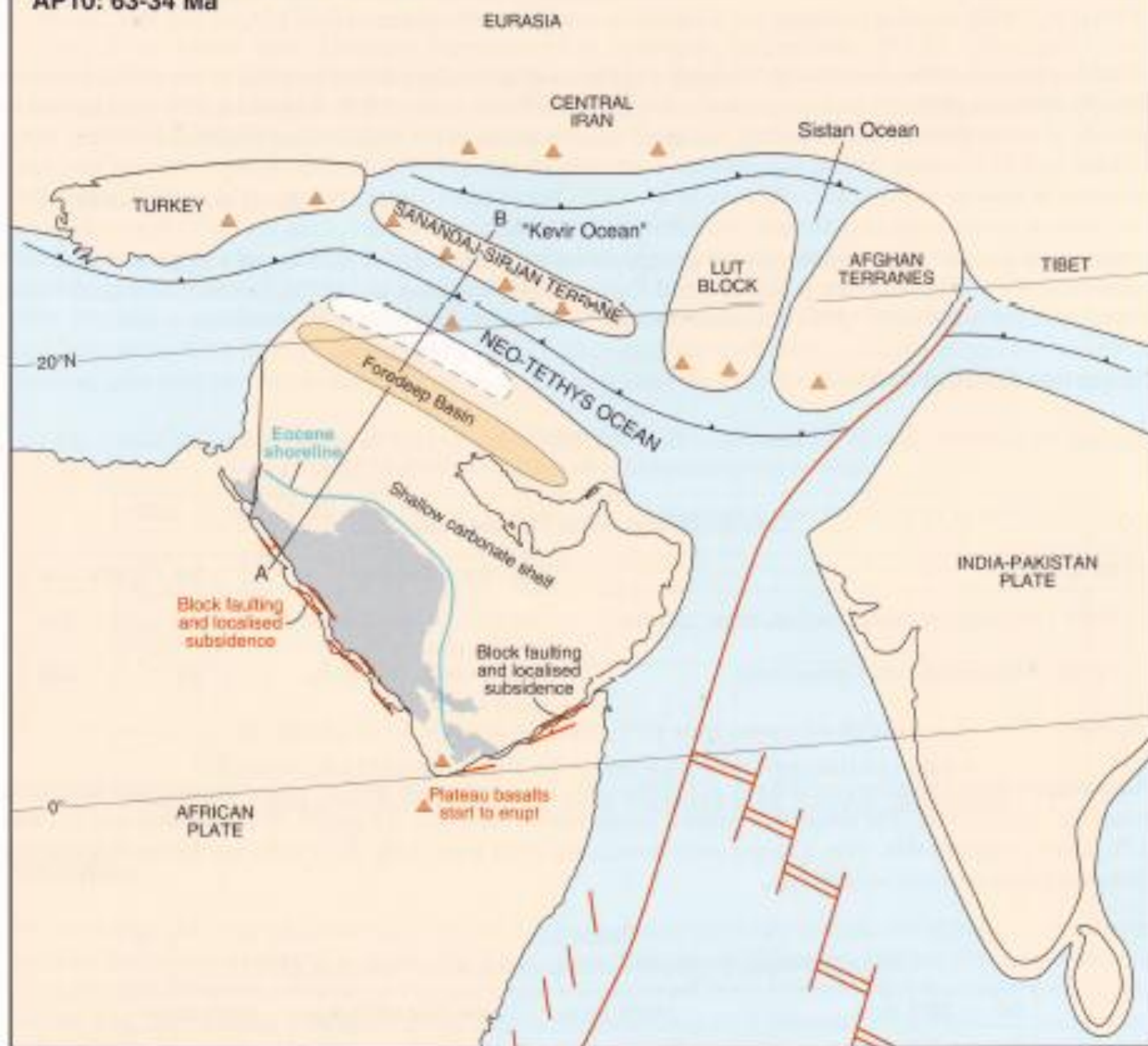
Early Cenozoic to latest Eocene
AP10: 63-34 Ma



Schematic Plate Cross-section



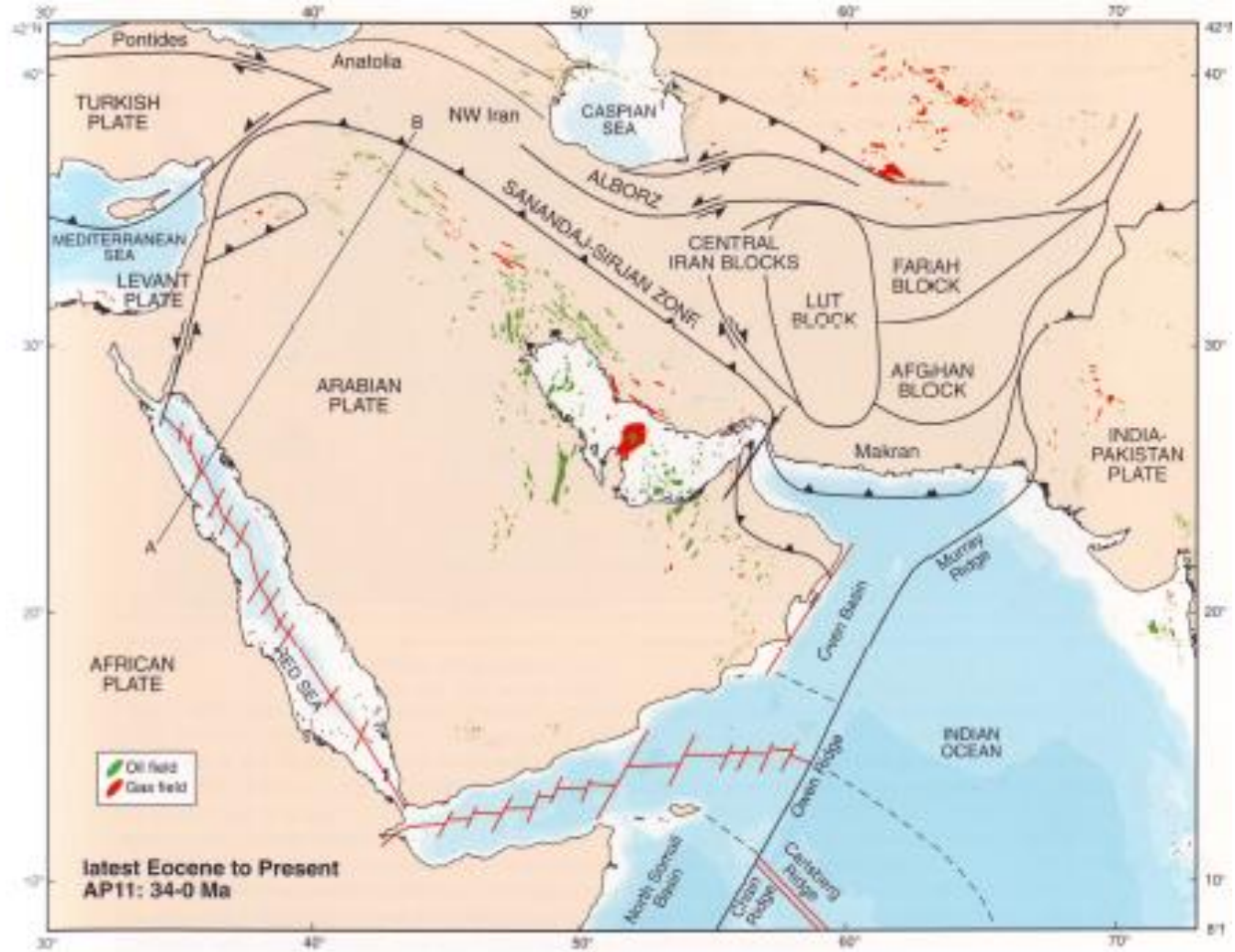
Early Cenozoic to latest Eocene
AP10: 63-34 Ma



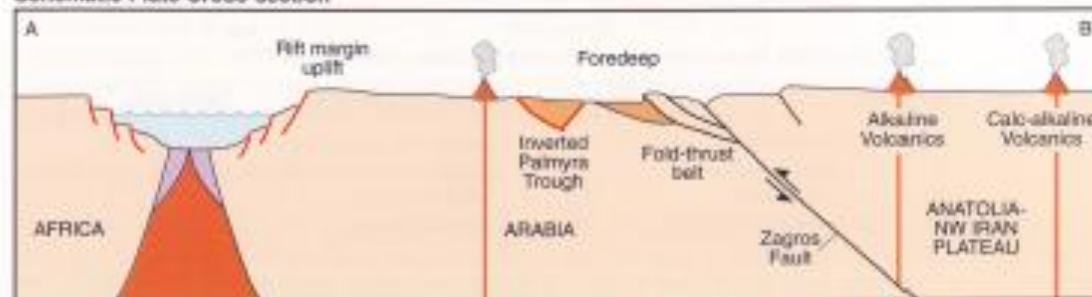
AP11: ~34 Ma

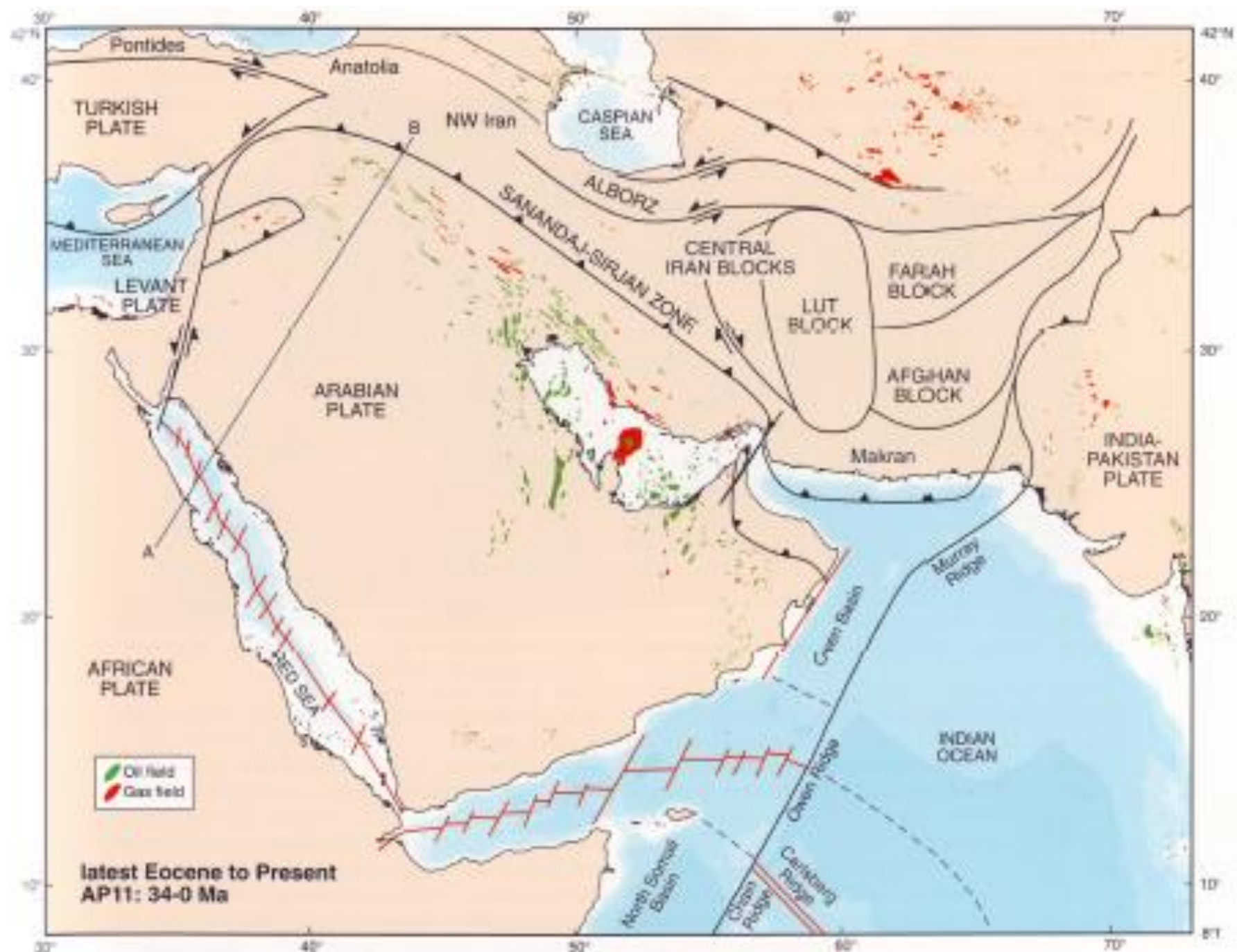
TMS AP11: Latest Eocene to Present Day (34-0 Ma)

**Western Extension (Gulf of Aden/Red Sea Spreading) and
Eastern Compression (Collision with Eurasia and Zagros Inversion)**



Schematic Plate Cross-section





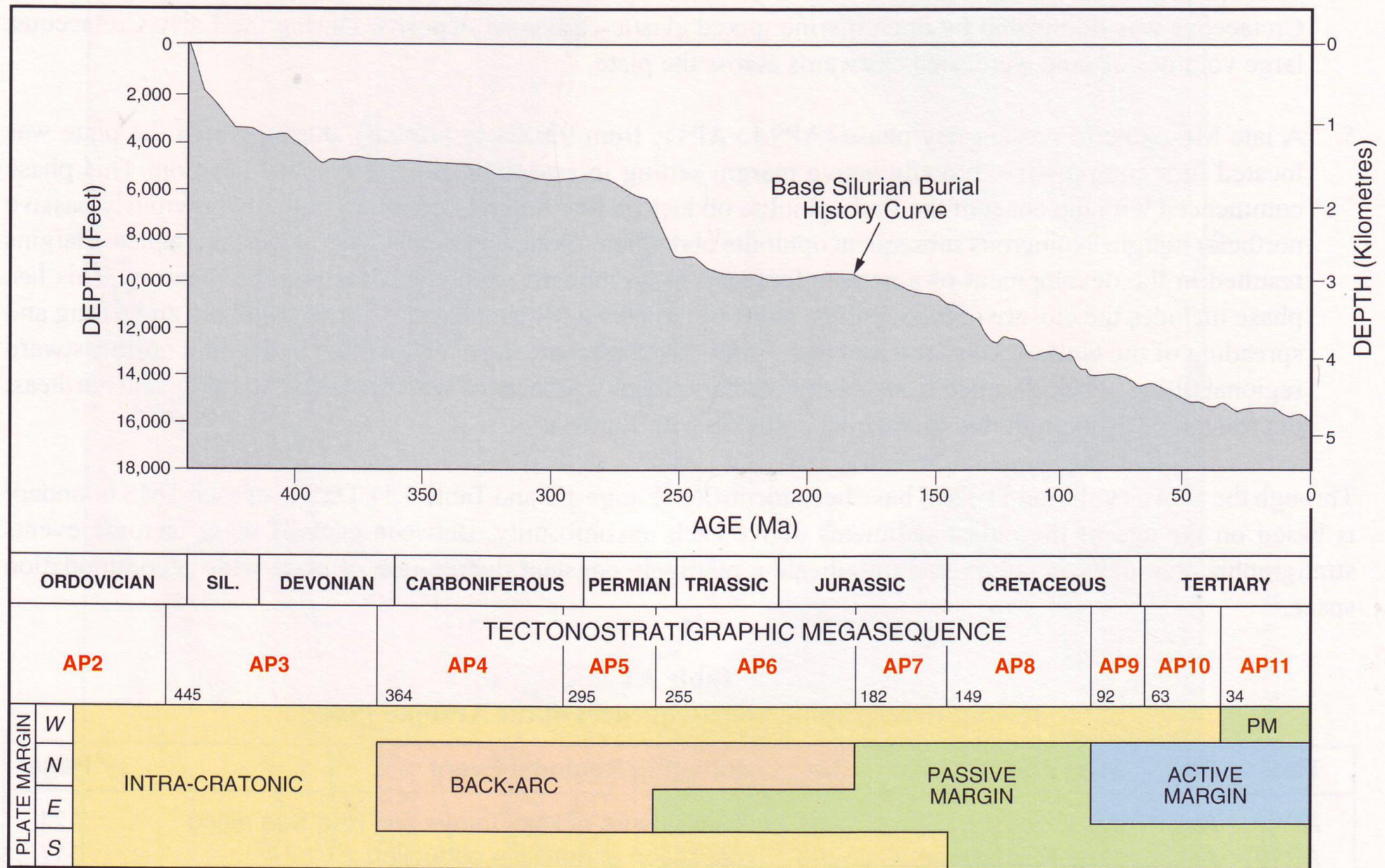


Figure 3.2: Generalised geohistory curve in the Gulf basin showing the subsidence history of the northeast part of the Arabian Plate (modified from Bishop, 1995). Note: no Hercynian (mid-Carboniferous) nor mid-Cretaceous uplift shown.

Case Study

STRATIGRAPHY

	Age	Fm.
	Surface	
1.	Holocene	Hammar
2.	Plio-Pleistocene	Mahmudiya
3.	Tortonian	Dibdiba
4.	Oligocene/ Mio pliocene	Zahra
5.	Tortonian - Placenzian	Upper Bakhtiari (Bai Hassan)
6.	Tortonian - Messinian	Lower Bakhtiari (Mukdadiya)
7.	Serravalian - Tortonian	Upper Fars (Injana)
8.	Serravalian	Lower Fars (Fatha)
9.	Langhian	Jeribe
10.	Late Oligocene	Anah
11.	Oligocene	Bajawan
12.	Upper Oligocene	Azkand
13.	Late Oligocene	Baba
14.	Late Oligocene	Ibrahim
15.	Early Oligocene	Shurau
16.	Oligocene	Sheikh Alas
17.	Oligocene	Tarjil
18.	Early Oligocene	Palani
19.	Danian - Thanetian	Kolosh
20.	Ypresian	Khurmala
21.	Ypresian	Singar
22.	Lutetian - Priabonian	Jadala
23.	Langhian	Dhiban
24.	Burdigalian	Ghar
25.	Upper Eocene	Mugur Member
26.	Middle Eocene	Damlouk Member
27.	Ypresian - Lutetian	Ratga
28.	Aquitania - Burdigalian	Serkagni
29.	Aquitania - Burdigalian	Euphrates
30.	Oligocene	Kikuk Group
31.	Ypresian - Priabonian	Dammam
32.	Ypresian	Avanah
33.	Barrtonian	Pila Spi
34.	Ypresian	Gercus
35.	Ypresian	Rus (Jill)

36.	Danian -Thanetian	Umm Er Duma
37.	Danian - Ypresian	AALUI
38.	Danian -Thanetian	Akashat
39.	Late Mastrachtian	Digma

	Lithology	Fm.
	Surface	
1.	Clay & Sand	Hammar
2.	Gravel, Sand & Claystone	Mahmudiya
3.	Sand & Gravel	Dibdiba
4.	Limestone	Zahra
5.	Sand, Clay and Gravel	Upper Bakhtiari (Bai Hassan)
6.	Sand & Gravel	Lower Bakhtiari (Mukdadiya)
7.	Sand & Gravel	Upper Fars (Injana)
8.	Marel, and or limestone & Anhydrite	Lower Fars (Fatha)
9.	Limestone	Jeribe
10.	Limestone	Anah
11.	Limestone	Bajawan
12.	Dolomite & Limestone	Azkand
13.	Dolomite & Limestone	Baba
14.	Marly Limestone	Ibrahim
15.	Limestone	Shurau
16.	Dolomite & Limestone	Sheikh Alas
17.	Dolomite & Limestone	Tarjil
18.	Dolomite & Limestone	Palani
19.	Sillisclastic	Kolosh
20.	Dolomite & Limestone	Khurmala
21.	Limestone	Singar
22.	Limestone	Jadala
23.	Evaporite	Dhiban
24.	Sand, Gravel, & Sandstone	Ghar
25.	Carbonate / Phosphatic Rocks	Mugur Member

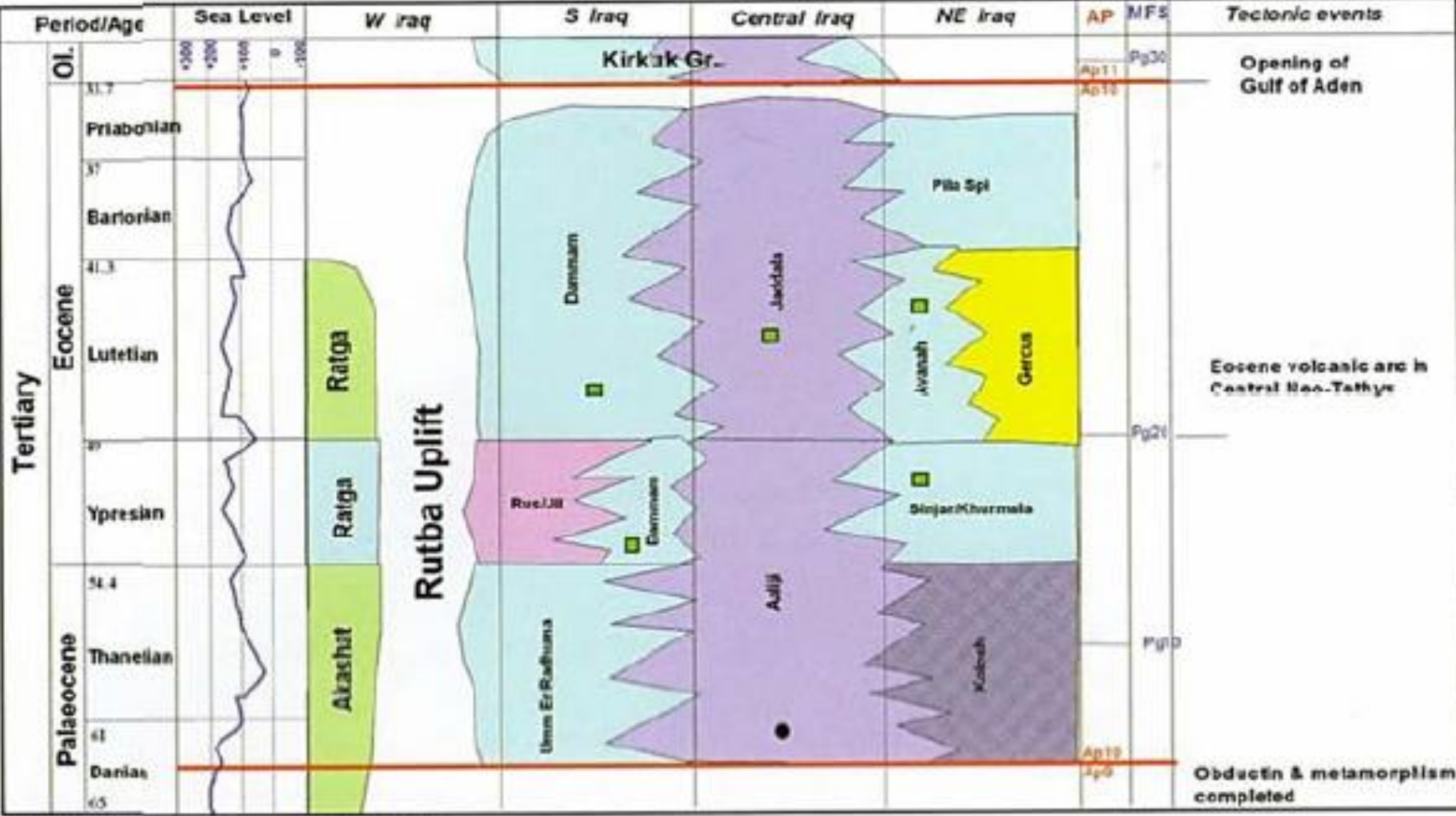
26.	Carbonate / Phosphatic Rocks	Damlouk Member
27.	Phosphatic Rocks	Ratga
28.	Limestone	Serkagni
29.	Limestone	Euphrates
30.	Limestone /Evaporite	Kikuk Group
31.	Dolomite & Limestone	Dammam
32.	Limestone	Avanah
33.	Limestone	Pila Spi
34.	Limestone	Gercus
35.	Red Claystone & Sandstone	Rus (Jill)
36.	Dolomite & Limestone	Umm Er Duma
37.	Limestone	AALIJI
38.	Phosphatic Rocks	Akashat
39.	Phosphatic Rocks	Digma

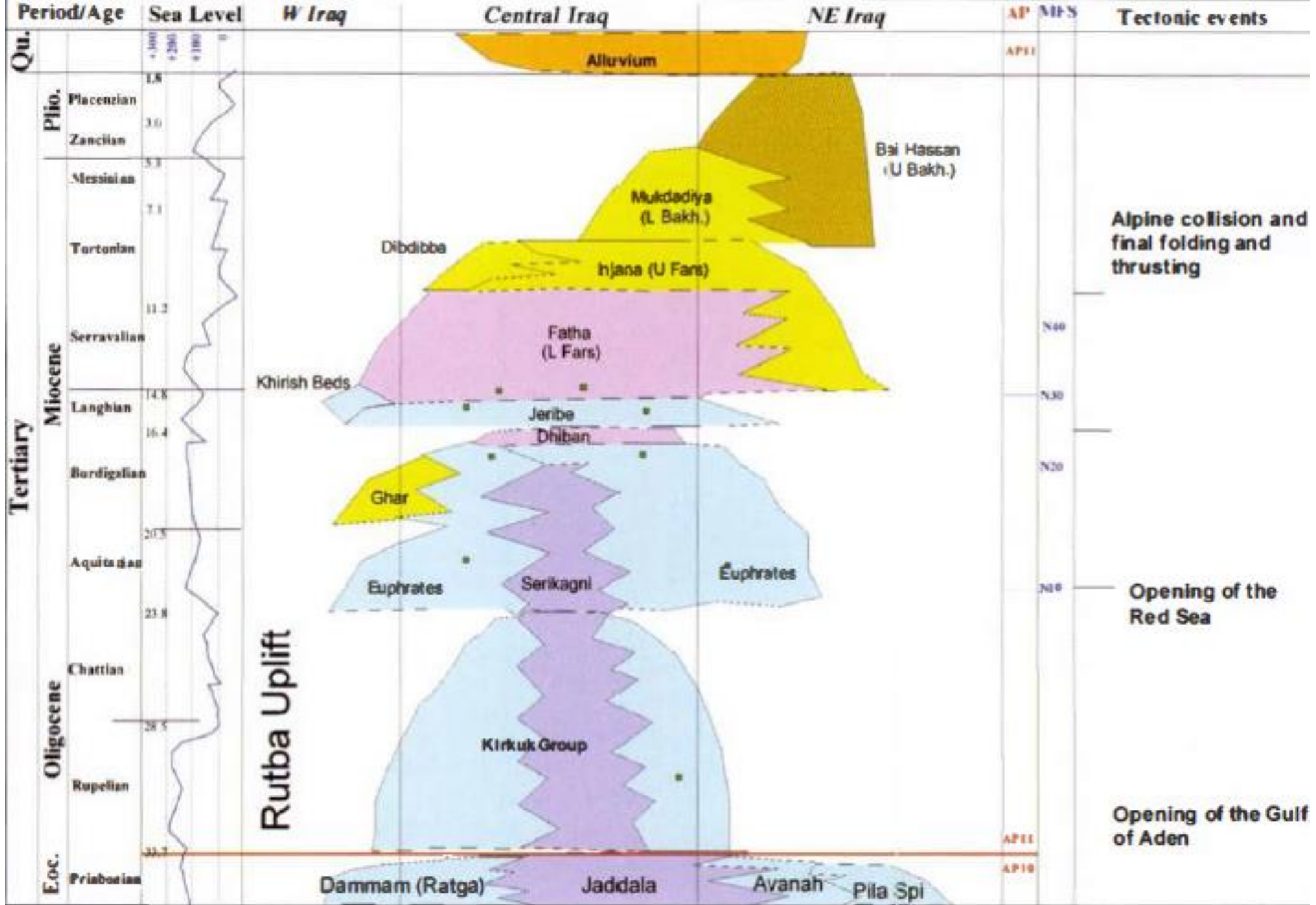
	Env.	Fm.
	Surface	
1.	Fluvio - deltaic	Hammar
2.		Mahmudiya
3.	Alluvial Fans of the Stable Shelf	Dibdiba
4.	Fluvio-lacustrine/karst fill	Zahra
5.	Fluvial	Upper Bakhtiari (Bai Hassan)
6.	Fluvial	Lower Bakhtiari (Mukdadiya)
7.	Fluvial	Upper Fars (Injana)
8.	Lagoon	Lower Fars (Fatha)
9.	Inner shelf & Shoals	Jeribe
10.	Reef	Anah
11.	Reef - Backreef	Bajawan
12.	Reef	Azkand
13.	Reef	Baba
14.	Basinal	Ibrahim
15.	Reef	Shurau
16.	Reef / Forereef	Sheikh Alas
17.	Basinal	Tarjil
18.	Basinal	Palani
19.	Outer shelf - basinal	Kolosh
20.	Restricted Shallow basin (Lagoonal)	Khurmala
21.	Shallow water reef /forereef /Lagoonal	Singar
22.	Outer shelf - Basinal	Jadala
23.	Lagoonal	Dhiban
24.	Marginal Marine /Deltaic	Ghar
25.	Deep Inner shelf - Inner shelf	Mugur Member

26.	Deep Inner shelf - Inner shelf	Damlouk Member
27.	Phosphatic inner shelf	Ratga
28.	Basinal	Serkagni
29.	Carbonate inner shelf	Euphrates
30.	Backreef/reef/forereef/basinal	Kikuk Group
31.	Inner shelf /Lagoons / Shoal	Dammam
32.	Shoal / Lagoonal	Avanah
33.	Shallow Lagoon	Pila Spi
34.	Fluvial - Fluviomarine	Gercus
35.	Lagoonal/Sabkha	Rus (Jill)
36.	Supratidal - Sabkha	Umm Er Duma
37.	off-shore / open marine	AALLJI
38.	Phosphatic inner shelf	Akashat
39.	Inner - Outer shelf	Digma

		Fm.
	Surface	
1.		Hammar
2.		Mahmudiya
3.		Dibdiba
4.	Aquifer	Zahra
5.		Upper Bakhtiari (Bai Hassan)
6.	Aquifer	Lower Bakhtiari (Mukdadiya)
7.	Aquifer	Upper Fars (Injana)
8.	Oil Reservoir / Aquifer	Lower Fars (Fatha)
9.	Oil Reservoir	Jeribe
10.		Anah
11.		Bajawan
12.		Azkand
13.		Baba
14.		Ibrahim
15.		Shurau
16.		Sheikh Alas
17.		Tarjil
18.		Palani
19.		Kolosh
20.		Khurmala
21.		Singar
22.		Jadala
23.		Dhiban
24.	Aquifer	Ghar
25.		Mugur Member

26.		Damlouk Member
27.	Aquifer	Ratga
28.		Serkagni
29.	Oil Reservoir / Aquifer	Euphrates
30.	Oil Reservoir / Aquifer	Kikuk Group
31.	Aquifer	Dammam
32.		Avanah
33.		Pila Spi
34.		Gercus
35.	Aquifer	Rus (Jill)
36.	Water Aquifer	Umm Er Duma
37.		AALIJI
38.	Aquifer	Akashat
39.	Aquifer	Digma





■ Reservoir

GEOLOGIC AGE		STRATIGRAPHIC UNIT	LITHOLOGY	MEGA - SEQUENCES
TERTIARY	PLIOCENE	Bakhtiari		AP 11
	MIOCENE	Lower Fars		
	OLIGOCENE	Palani / Kirkuk Group		
	EOCENE	Jaddala		
	PALEOCENE	Aaliji		
		Shiranish		

- 1- Emm Er Duma Formation
- 2-Aaliji Formation
- 3- Rus Formation
- 4- Damam Formation
- 5- Gar Formation
- 6- Jadala Formation
- 7- Palani Formation
- 8- Kirkuk Group (mahir thesis)
- 9- Lower Fars Formation
- 10-Upper Fars Formation
- 11- Kolosh Formation
- 12- Gercus Formation
- 13- Dibdiba Formation
- 14- Hammar Formation
- 15- Jeribe Formation

Cenozoic Period Age = ~ 65.988 Ma
(15) Formations = ~ 65.988 Ma

Questions

الواجب

رسم مقطع طباقى
لتكوينات العصر
الحديث في جنوب
العراق.

**Draw a stratigraphic section of the Cenozoic formations of
Iraq**