CONOCO IDROCARBURI SpA.

ESSO/NORSK HYDRO/HISPANOIL.

WELL: LEONE 1.

COMPOSITE WELL LOG

AGIP - AMI
ARCHIVIO
CEDI

C3/F1

LOCATION :

Latitude : 37° 12' 17.7"N

Longitude : 13° 32' 23.3"E

ELEVATIONS :

K B Mean Sea Level : 12.8 m.

K B Sea Floor : 40.5 m.

Water Depth : 27.7 m.

Total Depth : 2681.6 m.

AGIP
ARCHIVIO POZZI
AGEO

4049 BI

Country : ITALY

Area : Sicily, Zone 'C'

Licence : CR-47-CO

Field : —

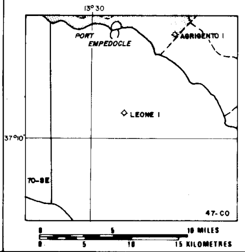
Date Spudded : Sept. 3rd 1978

T D Date : Oct. 13th 1978

Date Completed : Oct. 20th 1978

Completion Status : P & A
Dry Hole

LOCATION PLAT 1 : 250,000



CONOCO GEOLOGISTS

J. DAVIES
T. SULLIVAN
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CONOCO ENGINEERS

D. BYRD (Drilling)
V. GOODWIN (Drilling)

MUDLOG SERVICE

EXPLORATION LOGGING OVERSEAS INC.

DRILLING CONTRACTORS & RIG

READING & BATES
Drillship : "DOUGLAS CARVER"

SCHLUMBERGER LOGS

TYPE	RUN No	INTERVAL
ISF-SONIC-GR-SP	1	102-517.5 m.
ISF-SONIC-GR-SP	2	524.2-1594 m.
ISF-SONIC-GR-SP	3	1591-2676 m.
FDC-CNL-GR-CAL	1	1591-2676 m.
VELOCITY SURVEY	1	20 levels.

PLUG No	CEMENT	INTERVAL & PURPOSE
1	116 sxs Class G+2% $CaCl_2$	ABAND 2000-2050m
2	216 sxs Class G+2% $CaCl_2$	ABAND 1545-1637m
3	109 sxs Class G+2% $CaCl_2$	ABAND 507-547m
4	109sxs Class G.	ABAND 78.3-124 m

MUD TYPE	INTERVAL
Sea water	40.5 - 104m
Lo - lime	104-1226m
CMC-staflo-polymer	1226-1779m
Spersene - xP 20	1779 - T.D.

BIT SIZE	INTERVAL
26"+36"HO	40.5 - 104m.
17½"+26"UR	104-520 m.
17½"	520-1600 m.
12¼"	1600-2681.6 m.

CASING

SIZE	SHOE	TYPE & CEMENT
30"	102.4 m.	310 lb/ft 1"wall Vetco ADT conn 213 sx Class G+10% Gel +546 sx Class G+2% $CaCl_2$
20"	524.2 m.	94 lb/ft K-55 Butt csg. 237 sx Class G+1534sx+10% Gel+500 sx Class G neat.
13⅜"	1591 m.	68 lb/ft N-80 Butt csg 1900 sx Class G+10% Gel +500 sx Class G neat. + shoe sqzed with 300sx Class G neat.

WELLSITE CORE DATA

CORE No	INTERVAL	CUT	REC.	REC.%
	NO CORES WERE CUT			

CORE DATA CORRECTED TO G.R. LOG

CORE No	INTERVAL	CUT	REC.	REC.%

AUTHORS: M.H. MASON

APPROVED:

DRAFTED: B. HERAN

DATE: 8 JAN 1979

REMARKS:

MAIN LITHOLOGICAL SYMBOLS

- SHALE CLAYSTONE CLAY MUDSTONE
- SILTSTONE SILT
- SANDSTONE SAND
- CONGLOMERATE LOOSE PEBBLES
- BRECCIA
- COAL LIGNITE ETC
- LIMESTONE (UNDIFFERENTIATED)
- DOLOMITIC LIMESTONE
- DOLOMITE
- CALCAREOUS DOLOMITE
- ANHYDRITE
- HALITE
- POLYHALITE
- CARNALLITE
- LANGBEINITE
- SYLVITE
- POTASSIUM SALTS (UNDIFFERENTIATED)
- SEDIMENTARY VOLCANICS (TUFFS, AGGLOMERATES ETC.)
- IGNEOUS ROCKS (LAVAS, SILLS, DYKES, PLUTONICS ETC.)
- METAMORPHIC ROCKS
- GYPSUM

SECONDARY LITHOLOGICAL SYMBOLS

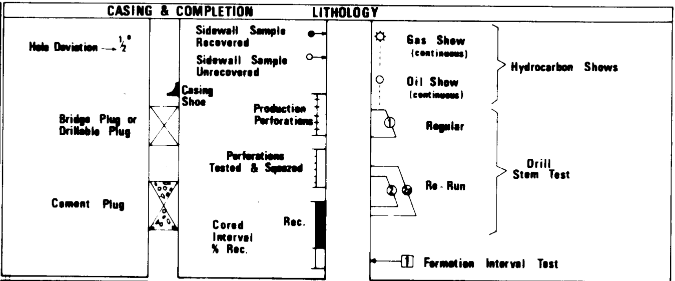
- ARGILLACEOUS
- ARENACEOUS
- RUDACEOUS
- CARBONACEOUS
- CALCAREOUS
- DOLOMITIC
- ANHYDRITIC
- CHERT
- GLAUCONITE
- PYRITIC
- IRONSTONE
- MICACEOUS
- BITUMEN
- PELLETS
- OOLITHS

SYMBOLS FOR USE IN CARBONATE PROVINCES

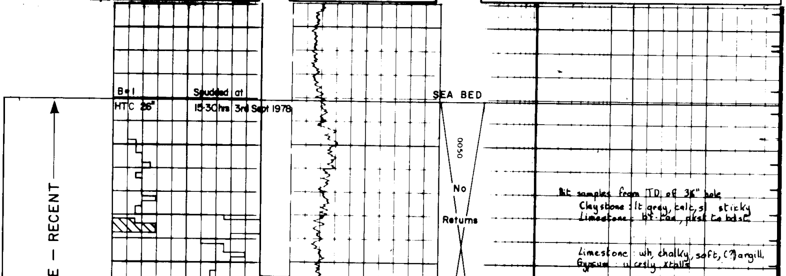
- MICRITIC LIMESTONE
- SPARITIC LIMESTONE
- LIME MUDSTONE
- WACKESTONE
- PACKSTONE
- GRAINSTONE
- BOUNDSTONE
- ONCOLITHS GRAPESTONES
- STROMATOLITHS
- LITHOCLASTS INTRACLASTS
- RECRYSTALLISED CARBONATES
  - MEDIUM COARSE
  - FINE
  - SUCROSIC

FOSSIL SYMBOLS

- AMMONITES
- BELEMNITES
- BRACHIOPODS
- BRYOZOANS
- CORALS
- CRINOID STEMS
- ECHINOID SPINES
- FORAMINIFERA
- GASTROPODS
- MICROFOSSILS
- OSTRACODS
- PELECYPODS
- SHELL FRAGMENTS
- NO PALAEONTOLOGICAL AGE DETERMINATIONS

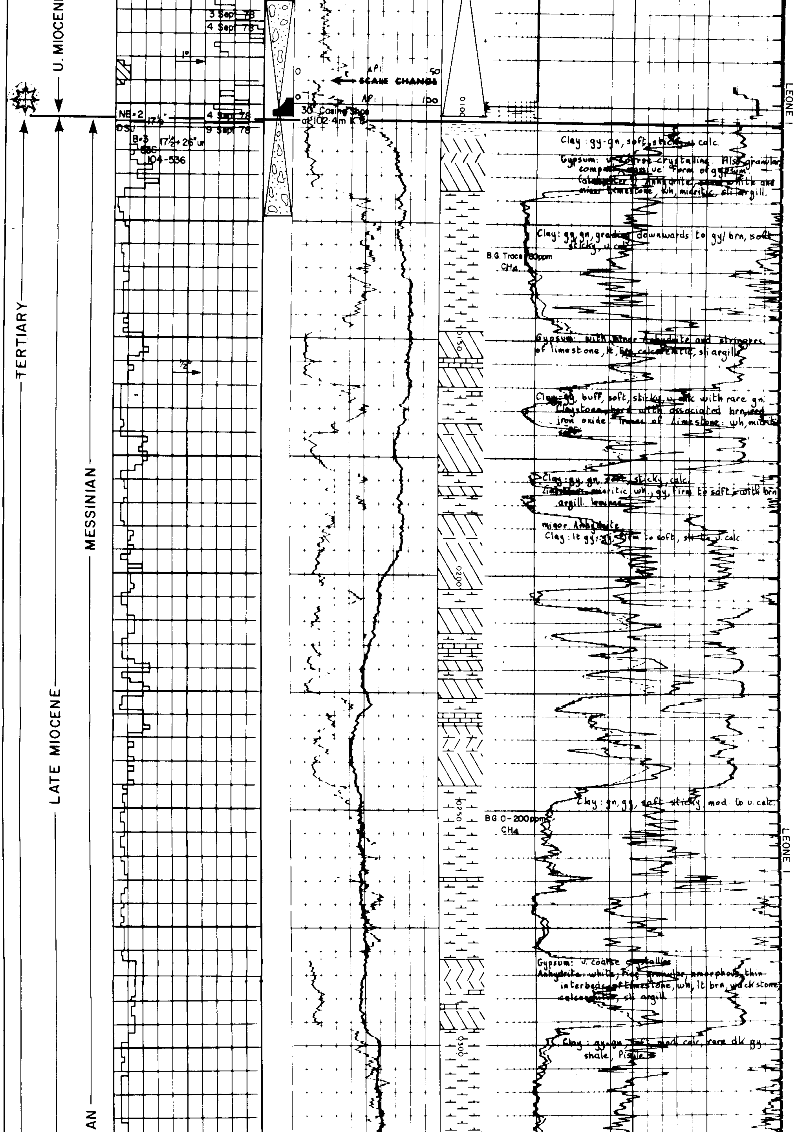


GEOLOGICAL AGE AND FORMATION	BIT & DEVIATION DATA DRILLING RATE Mins / M BITS / DEVIATIONS — DATES	SPONTANEOUS POTENTIAL MILLIVOLTS − 10 + GAMMA RAY 0 API UNITS 50 CORING & PERF INTERVALS	DEPTH SCALE 1:500	RESISTIVITY OHMS M²/M DEEP INDUCTION 0.2 R_{ILD} 20 FOCUSED RESISTIVITY (SFL) 0.2 RSFL AV 20	BOREHOLE COMPENSATED SONIC LOG INTERVAL TRANSIT TIME MICROSECONDS PER FOOT 190 90
				LITHOLOGICAL DESCRIPTION	



Bit samples from TD of 36" hole
Claystone : lt grey, calc, sl sticky
Limestone : bf-tan, pkst to bdst.

Limestone : wh, chalky, soft, (?)argill.
Gypsum : ulcstly Xtalls



Clay : gy-gn, soft, sticky, v calc.

Gypsum: v coarse crystalline. Also granular, compact, massive form of gypsum (alabaster). Anhydrite, white and minor limestone, wh, micritic, sli argill.

Clay: gy gn, grading downwards to gy/brn, soft, sticky, v calc.

Gypsum: with minor Anhydrite and stringers of limestone, lt, brn, calcarenitic, sli argill.

Clay: gy, buff, soft, sticky, v calc with rare gn. Claystone, hard with associated brn, red iron oxide. Traces of limestone: wh, micritic soft.

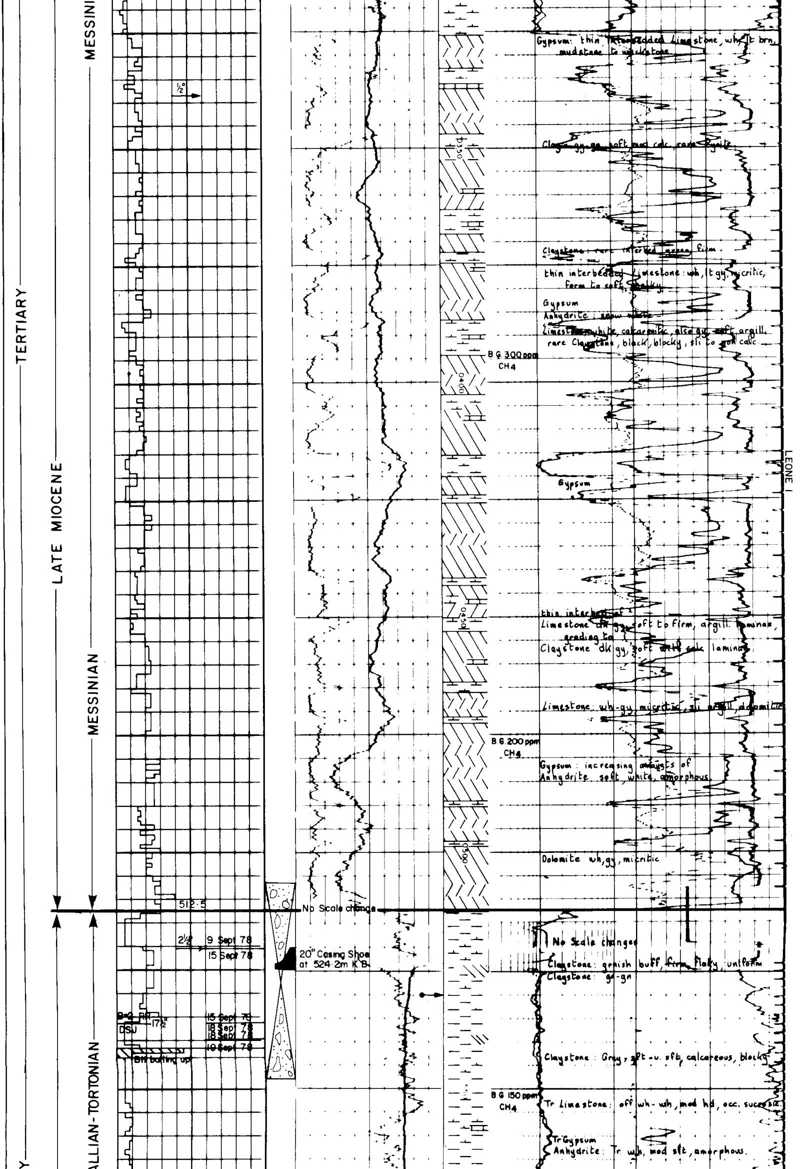
Clay: gy, gn, soft, sticky, calc.
Limestone: micritic, wh, gy, firm to soft, with brn argill. laminae

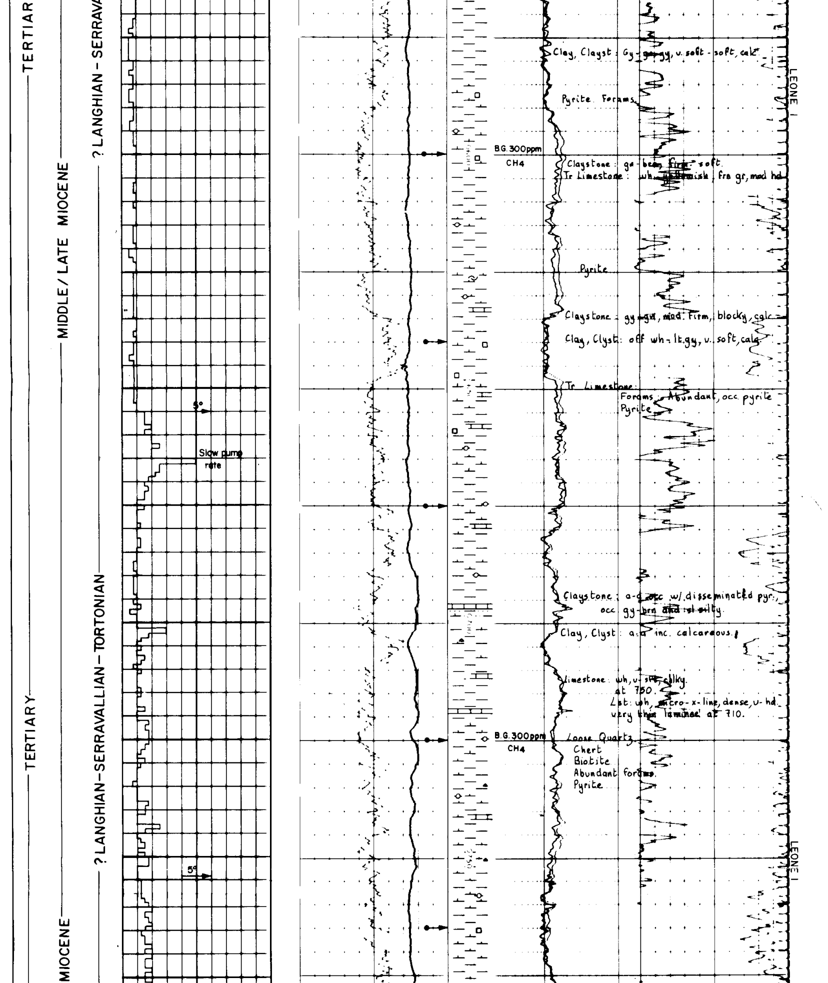
minor Anhydrite.
Clay: lt gy, gn, firm to soft, sli to v calc.

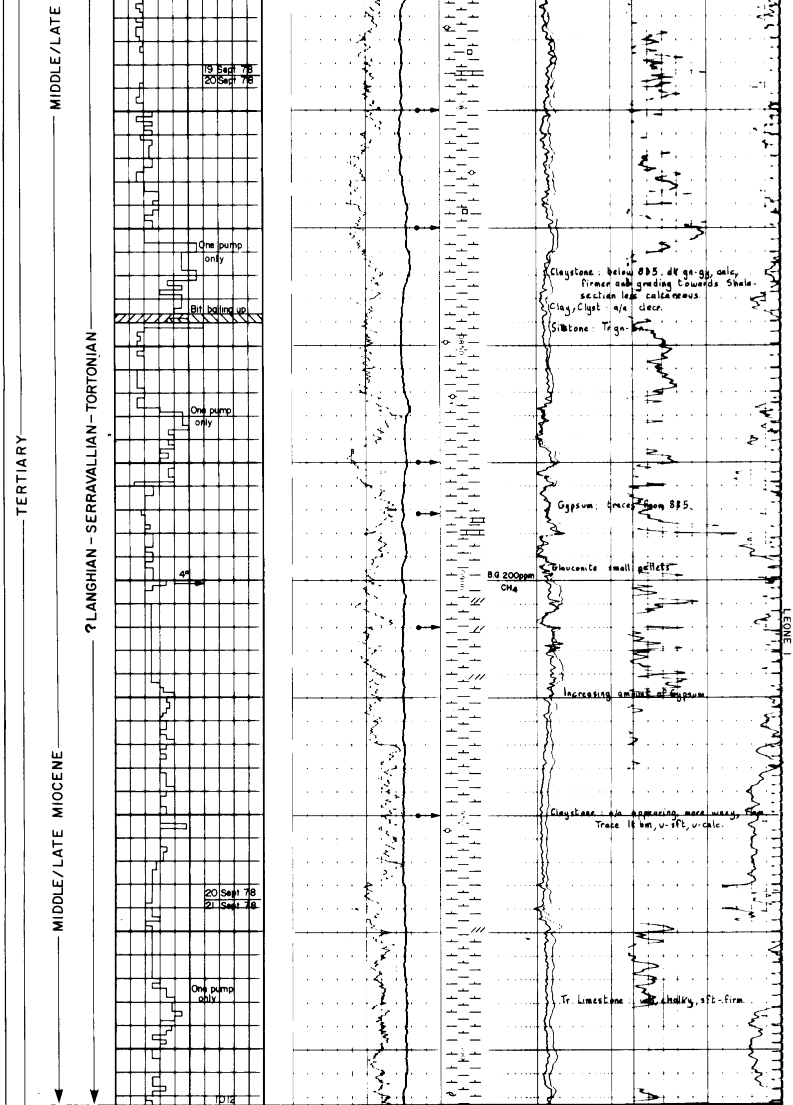
Clay: gn, gy, soft, sticky, mod. to v. calc.

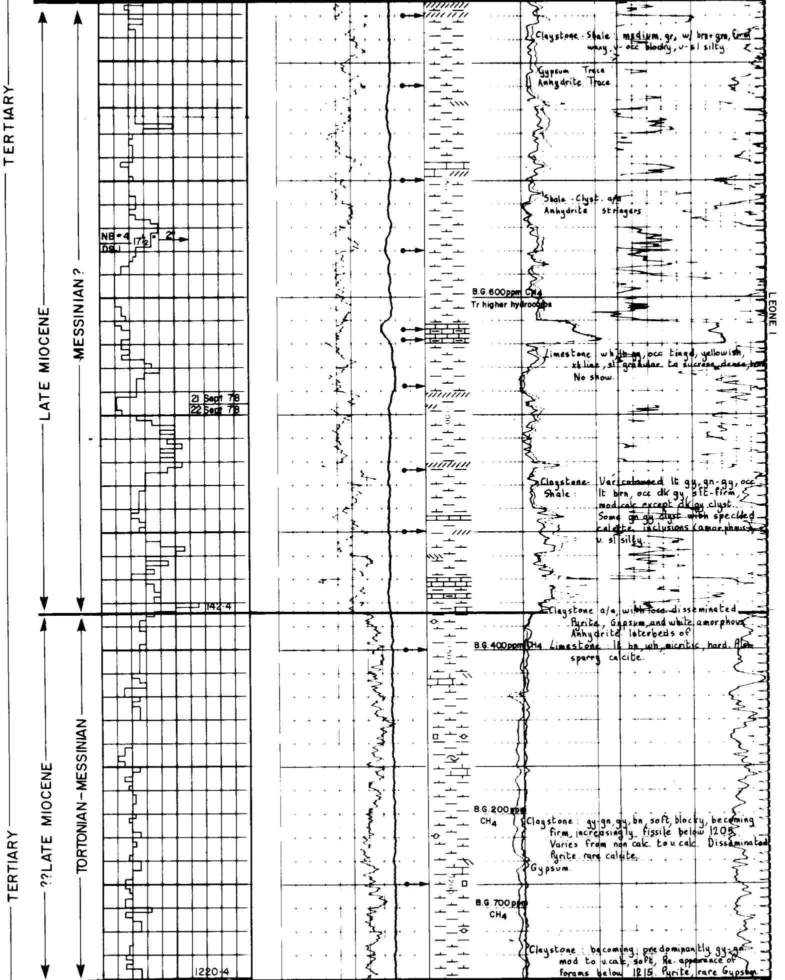
Gypsum: v. coarse crystalline
Anhydrite: white, fine granular, amorphous, thin interbeds of limestone, wh, lt brn, wackstone, calcarenitic, sli argill.

Clay: gy-gn, soft, mod calc, rare dk gy shale, Pisolites









Claystone - Shale : medium gr, w/ brn + gn, firm waxy, v- occ blocky, v- sl silty.

Gypsum Trace
Anhydrite Trace

Shale - Clyst. a/a
Anhydrite stringers

Limestone wh, lt gy, occ tinged yellowish, xtline, sl granular to sucrose, dense, hard. No show.

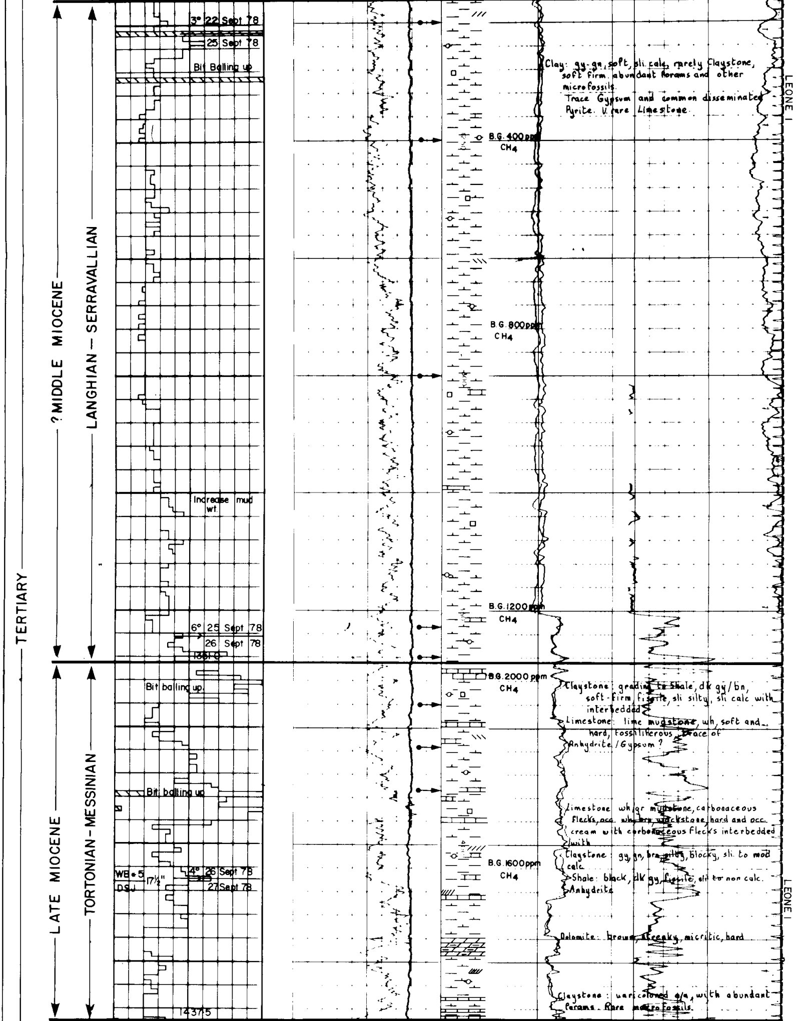
Claystone - Shale : Varicoloured lt gy, gn-gy, occ lt brn, occ dk gy, sft-firm, mod calc except dk gy clyst. Some gn gy clyst with speckled calcite inclusions (amorphous), v. sl silty.

Claystone a/a, with trace disseminated Pyrite, Gypsum and white amorphous Anhydrite. Interbeds of Limestone : lt bn, wh, micritic, hard. Also sparry calcite.

Claystone : gy-gn, gy, bn, soft, blocky, becoming firm, increasingly fissile below 1205. Varies from non calc. to v. calc. Dissaminated Pyrite rare calcite.

Gypsum.

Claystone : becoming predominantly gy-gn. mod to v. calc, soft, Re-apperance of forams below 1215. Pyrite, rare Gypsum.



Clay: gy-gn, soft, sli calc, rarely Claystone, soft firm abundant forams and other microfossils. Trace Gypsum and common disseminated Pyrite. V. rare Limestone.

Claystone: grading to Shale, dk gy/bn, soft-firm, fissile, sli silty, sli calc with interbedded

Limestone: lime mudstone, wh, soft and hard, fossiliferous. Trace of Anhydrite/Gypsum?

Limestone wh/or mudstone, carbonaceous flecks, occ. wh, brn, wackstone hard and occ. cream with carbonaceous flecks interbedded with

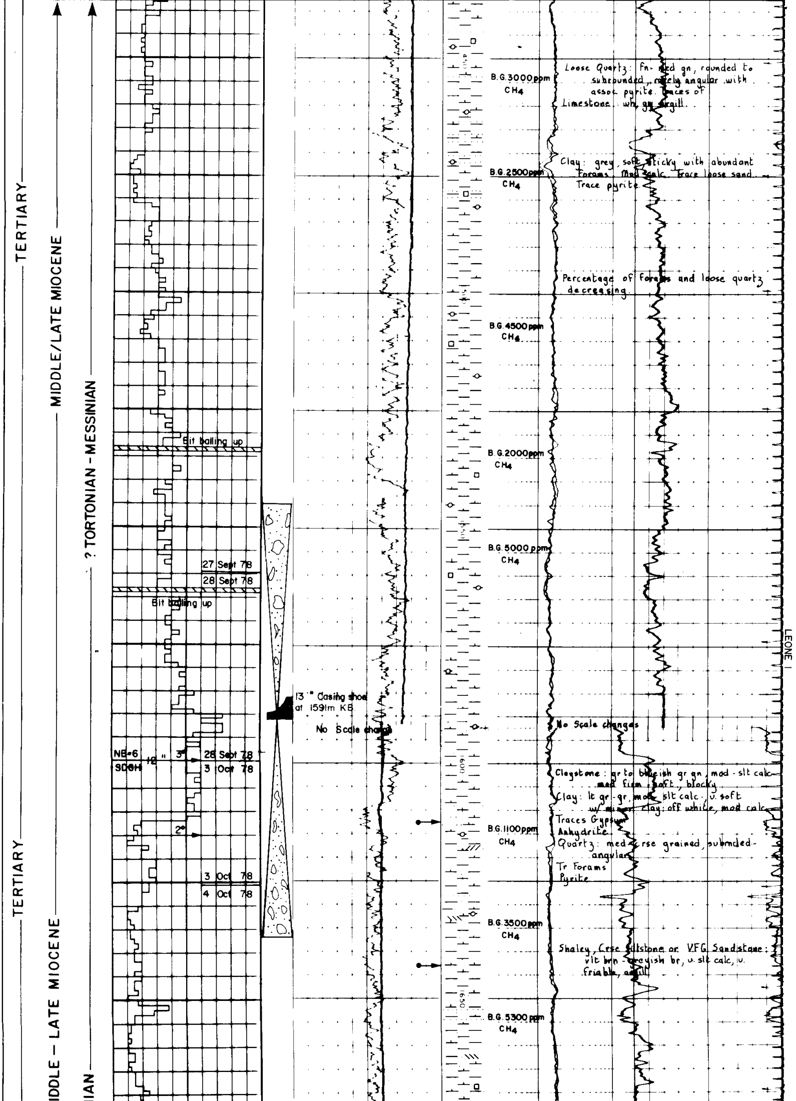
Claystone: gy, gn, brn silty, blocky, sli. to mod calc

Shale: black, dk gy, fissile, sli to non calc.

Anhydrite

Dolomite: brown, streaky, micritic, hard

Claystone: varicolored a/a, with abundant forams. Rare macrofossils.



Loose Quartz: fn- med gn, rounded to subrounded, rarely angular with assoc. pyrite. Traces of Limestone. wh, gy argill.

Clay: grey, soft sticky with abundant Forams. Mod calc. Trace loose sand. Trace pyrite.

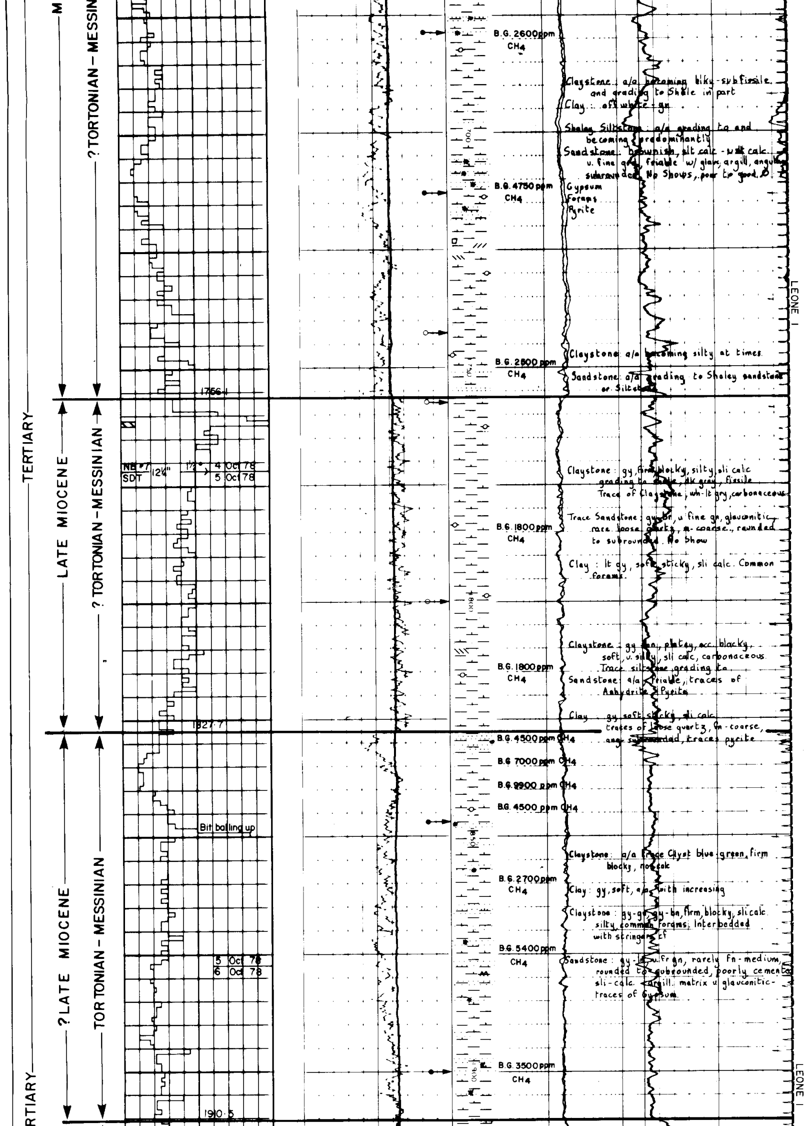
Percentage of Forams and loose quartz decreasing.

Claystone: gr to blueish gr gn, mod - slt calc med firm. soft, blocky

Clay: lt gr - gr, mod slt calc - v. soft w/ minor clay: off white, mod calc

Traces Gypsum
Anhydrite
Quartz: med - crse grained, subrnded - angular
Tr Forams
Pyrite

Shaley, Crse Siltstone or VFG Sandstone: vlt brn - greyish br, v. slt calc, v. friable, argill



Claystone: a/a becoming blky-subfissile and grading to Shale in part

Clay: off white-gn

Shaley Siltstone: a/a grading to and becoming predominantly

Sandstone: brownish, slt calc - v slt calc. v. fine gn, friable w/ glau, argill, angular-subrounded. No Shows, poor to good Ø

Gypsum

Forams

Pyrite

Claystone a/a becoming silty at times.

Sandstone a/a grading to Shaley sandstone or Siltstone

Claystone: gy, firm blocky, silty, sli calc grading to shale, dk grey, fissile. Trace of Claystone, wh-lt gry, carbonaceous

Trace Sandstone: gy-br, u fine gn, glauconitic, rare loose quartz, m-coarse, rounded to subrounded. No Show

Clay: lt gy, soft, sticky, sli calc. Common forams.

Claystone: gy brn, platey, occ blocky, soft, v. silty, sli calc, carbonaceous. Trace siltstone grading to

Sandstone: a/a, friable, traces of Anhydrite & Pyrite

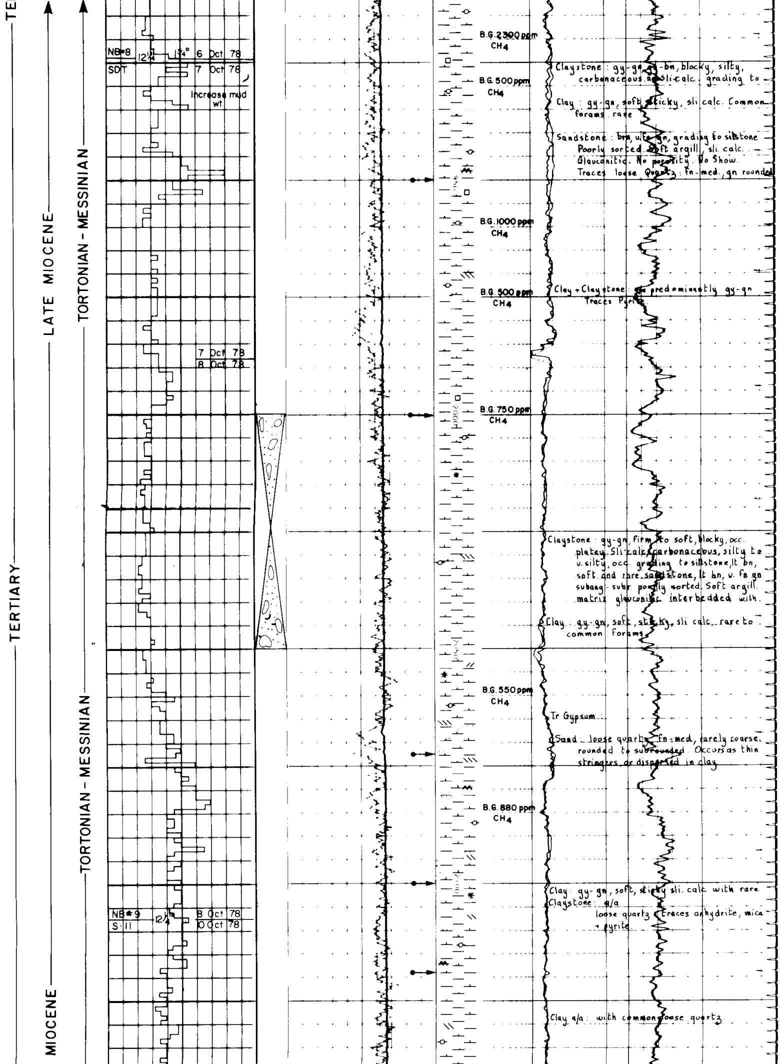
Clay: gy soft sticky, sli calc. traces of loose quartz, fn-coarse, ang-subrounded, traces pyrite

Claystone: a/a trace Clyst blue green, firm blocky, no calc

Clay: gy, soft, a/a with increasing

Claystone: gy-gn, gy-bn, firm, blocky, sli calc silty, common forams. Interbedded with stringers cf

Sandstone: gy-lt u. fr gn, rarely fn-medium, rounded to subrounded, poorly cemented sli-calc. argill. matrix u glauconitic- traces of Gypsum.



Claystone : gy-gn, gn-bn, blocky, silty, carbonaceous, sli-calc. grading to

Clay : gy-gn, soft, sticky, sli calc. Common forams. rare

Sandstone : bn, v.fn-gn, grading to siltstone Poorly sorted. Soft argill, sli calc. Glauconitic. No porosity. No Show. Traces loose Quartz : fn-med, gn rounded

Clay + Claystone : gn predominantly gy-gn Traces Pyrite.

Claystone : gy-gn, firm to soft, blocky, occ. platey. Sli calc, carbonaceous, silty to v.silty, occ. grading to siltstone, lt bn, soft and rare sandstone, lt bn, v. fn gn subang - subr poorly sorted. Soft argill. matrix glauconitic interbedded with.

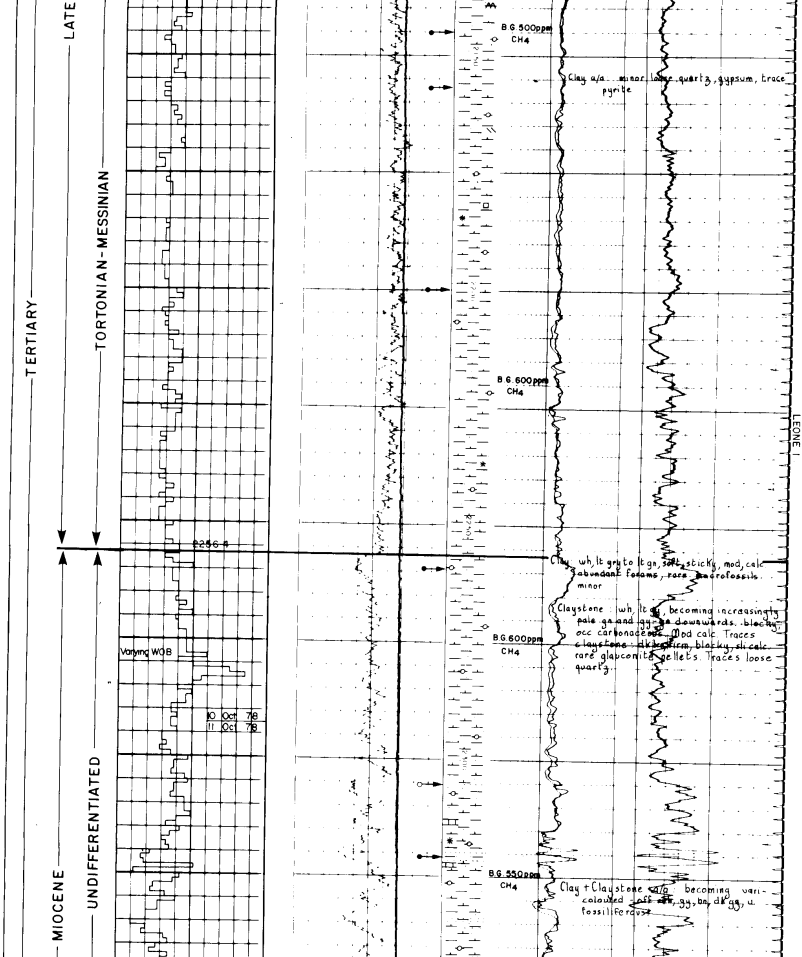
Clay : gy-gn, soft, sticky, sli calc, rare to common forams.

Tr Gypsum.

Sand : loose quartz fn-med, rarely coarse. rounded to subrounded. Occurs as thin stringers or dispersed in clay.

Clay : gy-gn, soft, sticky sli. calc with rare
Claystone : a/a
loose quartz, traces anhydrite, mica + pyrite.

Clay a/a : with common loose quartz.

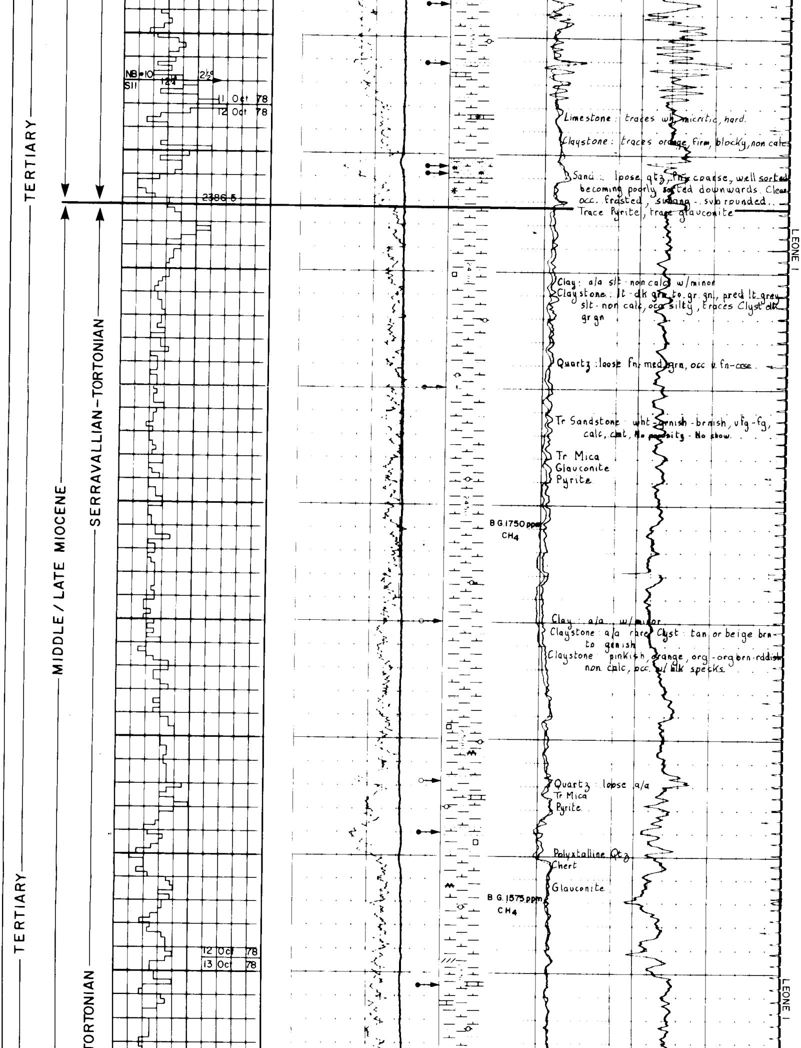


Clay a/a. minor loose quartz, gypsum, trace pyrite

Clay: wh, lt gry to lt gn, soft, sticky, mod, calc abundant forams, rare macrofossils. minor

Claystone: wh, lt gy, becoming increasingly pale gn and gy-gn downwards. blocky, occ carbonaceous. Mod calc. Traces claystone: dk bn, firm, blocky, sli calc. rare glauconite pellets. Traces loose quartz.

Clay + Claystone a/a: becoming varicoloured - off [illegible], gy, bn, dk gg, u fossiliferous.



Limestone : traces wh, micritic, hard.

Claystone : traces orange, firm, blocky, non calc.

Sand : loose qtz, fn-coarse, well sorted becoming poorly sorted downwards. Clear occ. frosted, subang - sub rounded. Trace Pyrite, trace glauconite

Clay: a/a slt - non calc w/minor
Claystone : lt - dk grn to gr. gn, pred lt grey slt - non calc, occ silty, traces Clyst dk gr gn

Quartz : loose fn-med grn, occ v. fn-crse.

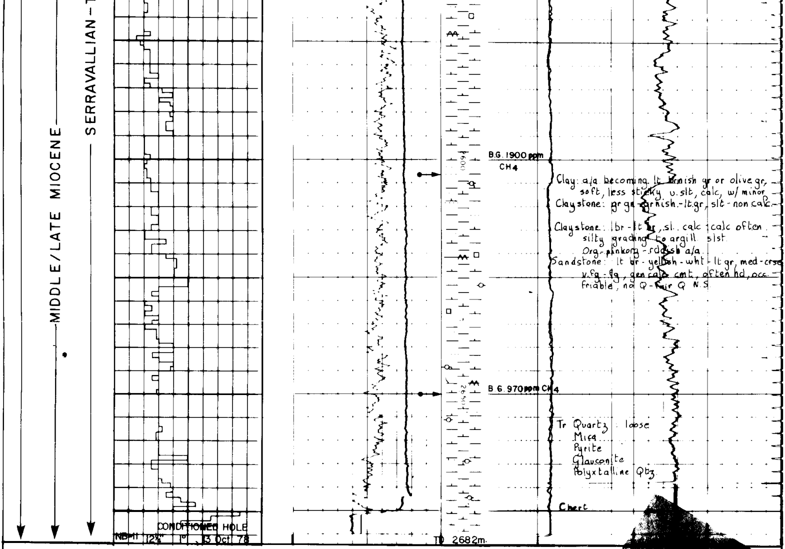
Tr Sandstone wht-grnish-brnish, vfg-fg, calc, cmt, No porosity - No show.

Tr Mica
Glauconite
Pyrite

Clay a/a w/minor
Claystone a/a rare Clyst tan or beige brn - to grnish
Claystone pinkish, orange, org-org brn-rddish non calc, occ. w/ blk specks.

Quartz loose a/a
Tr Mica
Pyrite

Polyxtalline Qtz
Chert
Glauconite



CONOCO IDROCARBURI SPA

LEONE - I