conoco

NORSKE CONOCO A.S.

COMPOSITE WELL LOG

Statoil, Fortum Petroleum

WELL: 6507/7-13 (PL 095)

LOCATION :

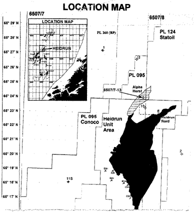
Latitude: 65° 24' 04.522"N
Longitude: 07° 19' 49.201"E

Country	:	Norway
Area	:	Norwegian Sea
Licence	:	PL 095
Field	:	Exploration
Date Spudded	:	12.12.2000
TD Date	:	28.12.2000
Date Completed	:	22.01.2001
Completion Status	:	P&A, oil discovery

ELEVATIONS :

RT- Mean Sea Level	:	23m
Water Depth	:	381m MSL
RT- Sea Floor	:	404m
Total Depth - Driller	:	2623m MD 2600m TVD SS

LOCATION MAP



GEOLOGISTS

A. Scholze (Aker Geo)
M.Tillung (Aker Geo)
C.F.Gyllenhammar (Aker Geo)
R. Ree (Aker Geo)

MUDLOG SERVICE

Sperry Sun

MWD LOGGING SERVICE

Schlumberger Anadrill

WIRELINE LOGGING SERVICE

Schlumberger Wireline

RIG

Mærsk Jutlander

ELECTROPHYSICAL LOGS

TYPE	RUN NO	INTERVAL
DSI/GPIT/NGT/EMS	1A	2577-2122 m
MDT/GR	1A	2405.6 - 2410.4 m
MDT/GR	1B	2411 - 2574 m
MDT/GR	1C	2481 - 2483.4 m
VSP	1A	2600 - 1090 m
MDT/GR	1D	2428 - 2481 m
VSP 3D	1B	1750 - 1890 m
VSP 3D	1C	1750 - 1890 m

PLUG NO	INTERVAL	PURPOSE

MUD TYPE	INTERVAL
seawater/polymer	seafloor - 1062m
KCl/polymer/Barasilc	1062 - 2623m (TD)

BIT SIZE	BIT INTERVAL
36"	468 m MD
17 1/2"	1070 m MD
12 1/4"	2128 m MD
8 1/2"	2623 m MD

CASING DETAILS

SIZE	SHOE DEPTH
30"	465.5m
13 3/8"	1062.6m
9 5/8"	2120m

WELLSITE CORE DATA

CORE NO	INTERVAL	CUT	REC	REC%	TYPE

CORE DATA CORRECTED TO GR LOG

CORE NO	INTERVAL	DEPTH SHIFT

PREPARED BY :
Jan Stenløkk, NCAS

APPROVED :
Matthew Reppert

DATE :
June 2001

REMARKS

6507/7-13 drilled to TD of 2623 m MD (2600 m TVD MSL). The well terminated in Åre Formation, dated to Upper Triassic. A planned sidetrack (6507/7-13A) for coring the reservoir in event of hydrocarbons, were successfully performed, and 3 cores were taken in the Åre Fm.

A definitive oil-water contact is not seen from resistivity data in the well due to coal, silt and shale below the oil-down-to (ODT) observed at the base of a sand at 2492.5m MD (-2469.5m TVDSS. MDT pressure data suggest an OWC may be expected near 2500m MD (-2477m TVDSS)

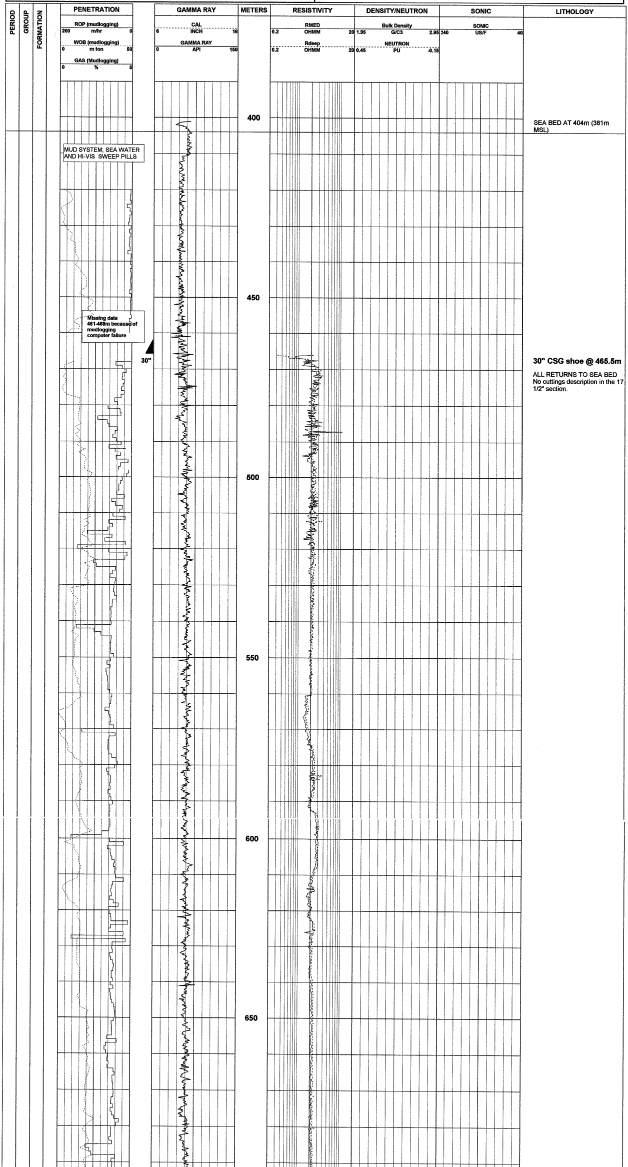
The well was permanently plugged and abandoned as an oil discovery.

MAIN LITHOLOGICAL SYMBOLS

┄	SHALE,CLAYSTONE, CLAY,MUDSTONE,		HALITE	▦	LITHOCLASTS INTRACLASTS
	SILTSTONE,SILT	P	POLYHALITE	V	SEDIMENTARY VOLCANICS (TUFFS AGGLOMERATES, ETC)
⁚	SANDSTONE,SAND	C	CARNALLITE	+	IGNEOUS (UNDIFFERENTIATED)
⁘	CONGLOMERATE LOOSE PEBBLES	L	LANGBEINITE	▨	METAMORPHIC ROCKS
▬	COAL,LIGNITE,ETC.	S	SYLVITE	▩	BASALT
▦	LIMESTONE (UNDIFFERENTIATED)	K	POTASSIUM SALTS (UNDIFFERENTIATED)	△	BRECCIA
▦	DOLOMITIC LIMESTONE		ANHYDRITE	☐	
▱	DOLOMITE	∽	MARL	☐	
▱	CALCAREOUS DOLOMITE	▦	ONCOLITHS	☐	

SECONDARY LITHOLOGICAL SYMBOLS

—	ARGILLACEOUS	☐	HALITE	△	CHERT
☐	ARENACEOUS	Ka	KAOLINITE	V	VOLCANIC
-·-	SILTY	□	PYRITIC	+	IGNEOUS (UNDIFFERENTIATED)
▬	CARBONACEOUS	Fe	IRONSTONE	☐	
☐	CALCAREOUS	M	MICACEOUS	☐	
☐	DOLOMITIC	▲	BITUMEN	☐	
☐	ANHYDRITIC	∴	PELLETS	☐	
○	RUDACEOUS	∴	OOLITHS	☐	
*	GLAUCONITE	⌣	MARLY	☐	



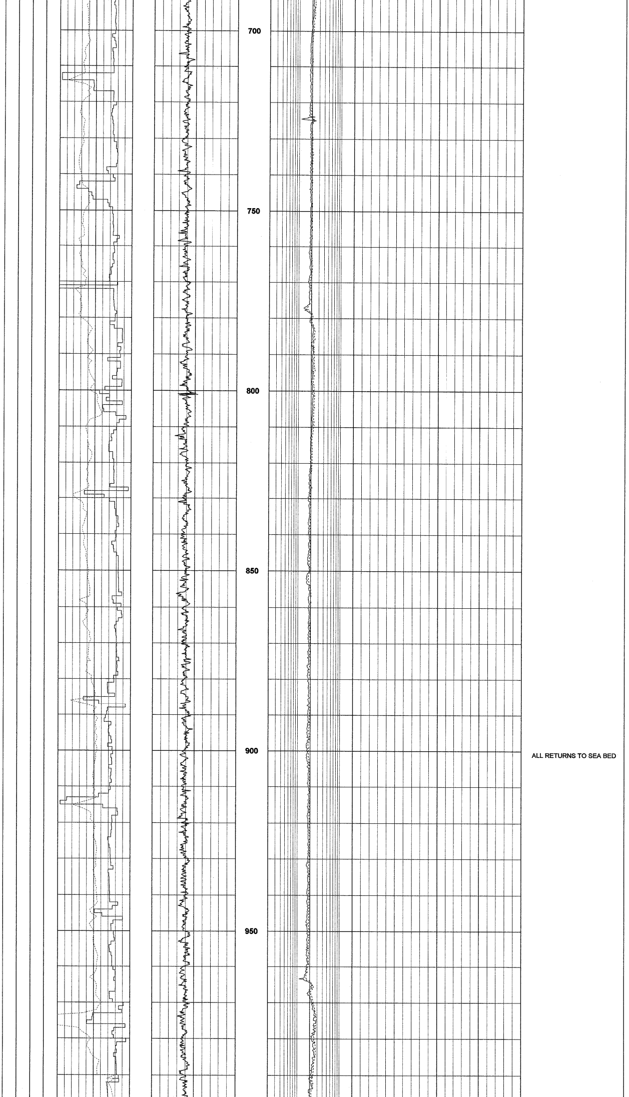
MUD SYSTEM; SEA WATER AND HI-VIS SWEEP PILLS

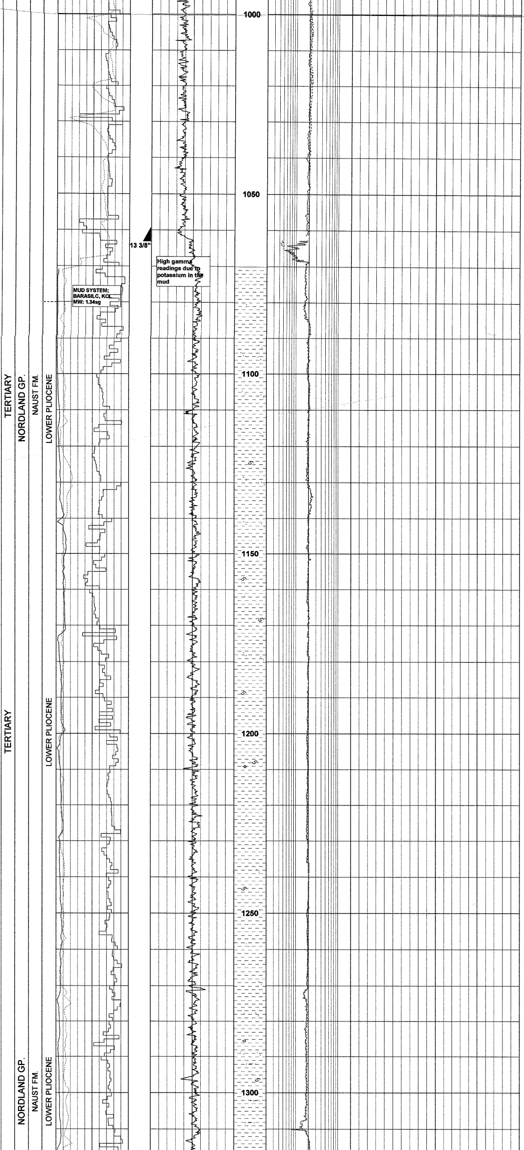
Missing data 461-468m because of mudlogging computer failure

SEA BED AT 404m (381m MSL)

30" CSG shoe @ 465.5m

ALL RETURNS TO SEA BED
No cuttings description in the 17 1/2" section.





13 3/8" CSG shoe @ 1062.5m

LOT: 1.57 sg EMW

Sampling of cuttings commenced at first returns at 1070m.

Claystone

Clst: m gry - m dk gry, sft, sbblky - amor, non - sli calc, spk Mic/Rk Frag, gen vf - f sdy, gen slty grad arg Sltst

Sd: clr, occ mky wh, pk, Qtz Gr, f - crs, occ v crs, pred f - m, mod - pr srtd, ang - sbrndd, lse. Probably washed out of claystone

Tr: Rk Frag, Shl Frag, Mica

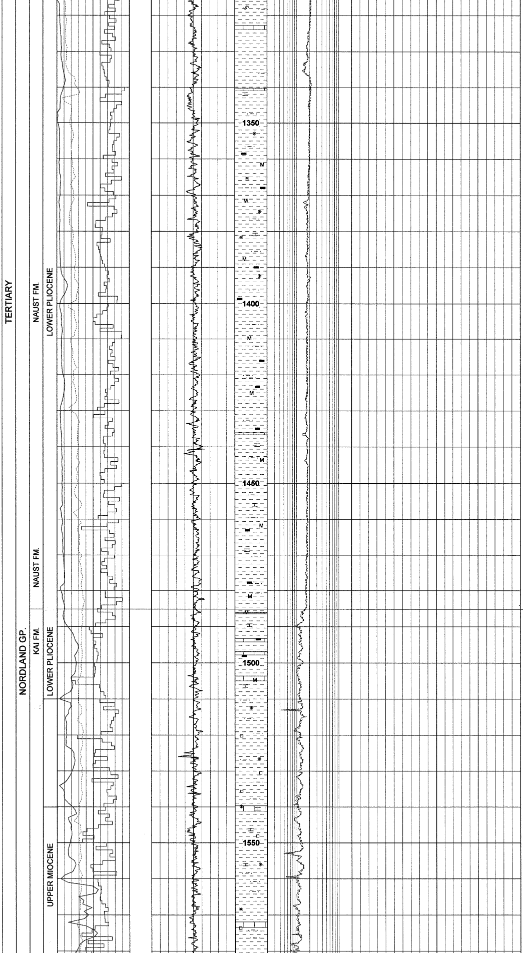
Nordland Group, Naust Formation

Clst: m gry-m dk gry, sft, sbblky-amor, slty & sdy, occ grad Sltst, non-occ sli calc

R: Foram

SD: clr-occ mky wh Qtz Gr, f-crs, r v crs, pr srt, ang-sbrndd

Tr Rk Frag, Shl Frag, Mica, Pyr Nod



Tr Ls: wh, frm, bblky, microxln

Tr C/Lig Frag, Pyr Nod, Glauc, Rk Frag, Mica

Clst: dom m gry-m lt gry, sft, sbblky, v slty & sdy, sli calc

Gd Tr Sd :trnsl-clr Qtz G, occ op mky wh, f-m, sbang-sbrndd

Ls: trnsl wh, mod hd, brit, xln. Also Tr wh, frm, sdy, aren Ls

Tr: Shl Frag, Lig/C, Mica, Glauc, Rk Frag

Clst: m lt gry, sft, amor, sli micromica, slty, sli calc, Tr carb spk

Clst: m dk gry-m gry, sft, sbblky, slty, sli calc, sli micromic, Tr carb spk

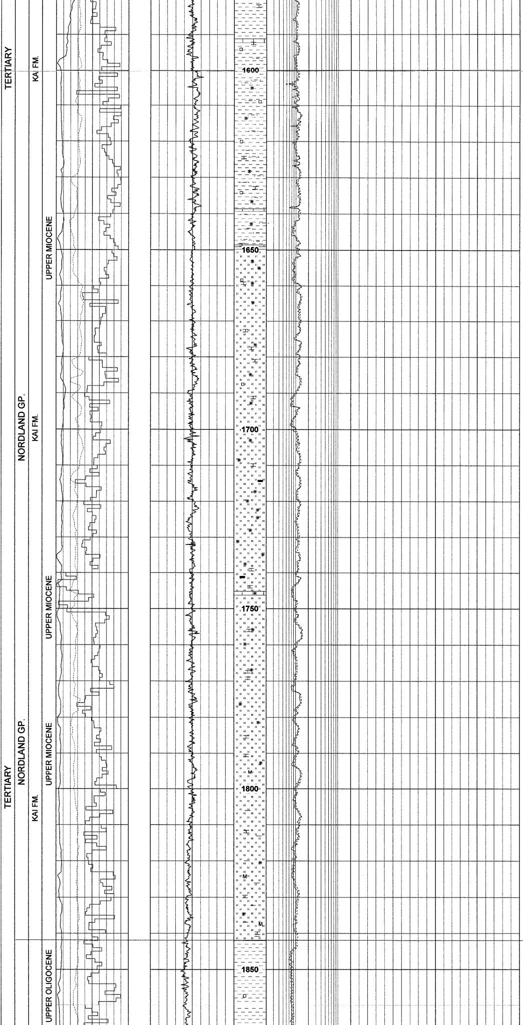
Tr Sd: trnsl -clr Qtz Gr, m- crs, occ f, ang-sbrndd

Kai Formation 1485m (1462m MSL)

Tr: Lig/C, Mica

Clst: m gry, sft, sbblky-amor, slty, calc, sli micromic, Tr carb spk

Tr Ls: wh, frm, blky, microxln



Clst: v slty & mod calc, else a.a.

Clst: slty & sdy, com grad Sltst, m gry-m dk gry, amor-sbblky, sft, calc, sli micromic

Tr Glauc
Tr Ls: wh, frm, blky, microxln
Gd Tr Sd: trsnl-clr Qtz Gr, med-crs, ang-sbang, occ sbrndd, sbspher

Clst grad Sltst a.a. but com glauc

Tr: Sd, Pyr Nod, Shl Frag

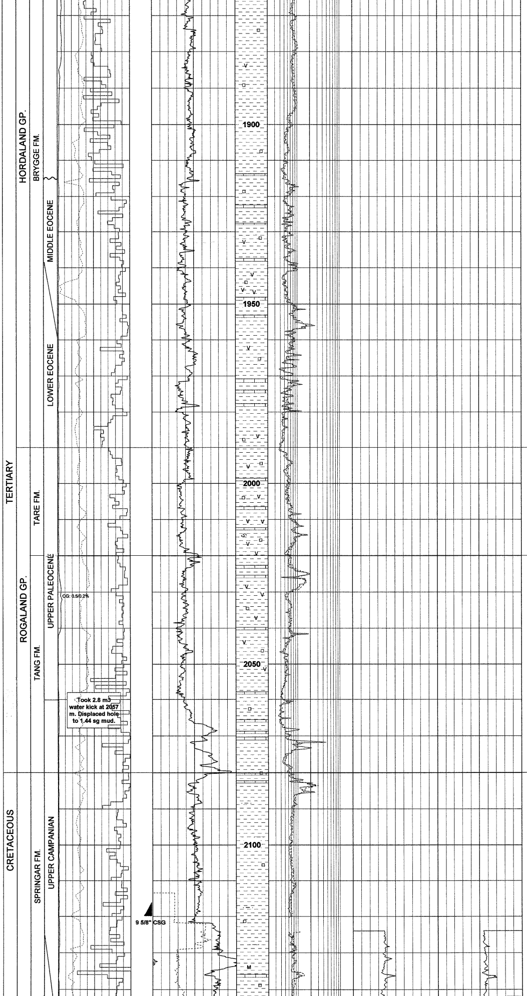
Sltst/Clst: com sdy & glauc when Sltst

Sltst: occ grad Clst, m gry-m dk gry, sft, sbblky, com Glauc, mod calc, sli micromic

Clst: brnsh gry - olv gry, sft - frm, sbblky, non calc, micropyr, micromic

Clst: v slty grad Sltst, m gry, brnsh gry, sft, sbblky, calc, micromic

Hordaland Group, Brygge Formation 1842m (1819m MSL)



Tr Sd: lse clr - trnsl Qtz, vf - m, sbang - sbrndd, pit

Tr: Pyr Nod

Tr Dol Ls: yelsh wh, lt brn, frm - hd, sbblky - blky

Tr Volc: glas, trnsl, pa yelsh brn - lt brn, hd, ang, Splin, spk micropyr & sml incl

Tr Ls: wh - lt gry, pa yelsh brn, frm - mod hd, blky, sli arg

Tr: Pyr Nod, Dol

Clst: occ sli tf, else a.a.

Sd: lse clr Qtz, vf - m, sbang - sbrndd

Rogaland Group, Tare Formation 1990 m (1967 m TVD MSL)

Clst: tf, gn gry - dk gn gry, m bl gry - m gry, sft - frm, sbblky, non - sli calc, dk - wh spk, micropyr

Ls: wh - lt gn gry, frm, blky, arg

Tr : Marl, Sd, Pyr Nod

Tang Formation 2020 m (1997 m MSL)

Clst: gn gry - dk gn gry, brn blk - brn gry, frm, blky, frm, non calc, micropyr

Ls: wh - lt gry, lt gn gry, frm - mod hd, blky, arg

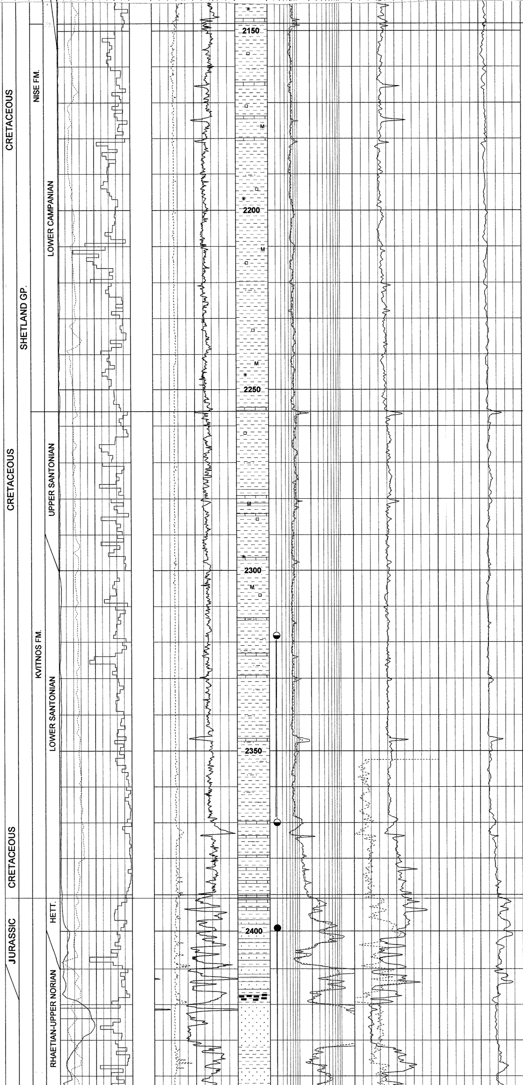
Tr: Pyr Nod

Shetland Group, Springar Formation 2080m (2057m MSL)

Clst: gry, frm, blky, sbfis, slty, non calc

Tr: Ls, Pyr Nod, Glauc, Shl Frag

9 5/8" CSG. at 2120 m
LOT: 1.89 g/cc EMW



Nise Fm. 2146m (2123m m MSL)

Clst: gry - dk gry, sft - frm, blky, slty, non calc, blk spk

Mrl: gry - lt gry, frm, blky, v calc, grad Ls

Tr: Pyr Nod, Glauc, Sd

Ls: off wh, frm

Clst: gry - m gry, sli gn gry, frm, v slty, vf sdy, non calc - slily calc, blk spk,slily Glauc
Tr Sst: lt gry, frm, vf, v slty grad Sltst

Clst: m dk gry - olv gry, occ dk gn gry, frm, sbblky, non calc, sli micropyr, sli micromic, sil microcarb
Ls: gry, hd, amorph, arg, blk spk

Kvitnos Fm. 2256m (2233m TVD MSL)

Ls: lt gry, frm - mod hd, sbblky - blky, arg

Clst: m dk gry - olv gry, frm, sbblky, slily calc - calc, micropyr, sli micromic, sli micocarb
Ls: wh - lt gry, occ lt brn, frm - hd, sbblky - blky, com arg, microxln I.P.

Tr Sd: clr - wh Qtz, f - crs, sbang - rndd,
Tr Pyr Nod, Glauc

Clst: sli - non calc, else a.a.

Shows: (in silty Clst from 2320m) Tr yel-wh dir Fluor, slw strmg bl-wh cut, yel-wh Res ring upon evap

Båt Group, Åre Formation 2391 m (2368mTVD MSL)

2407 - 2417m: Sandstone interbedded with claystone, limestone and coal

Sst: lse Sd, trnsp Qtz, m-vf, pred m, wl srtd, sbang, occ sbrndd, no vis cmt.
Shows: brt patchy yel Fluor

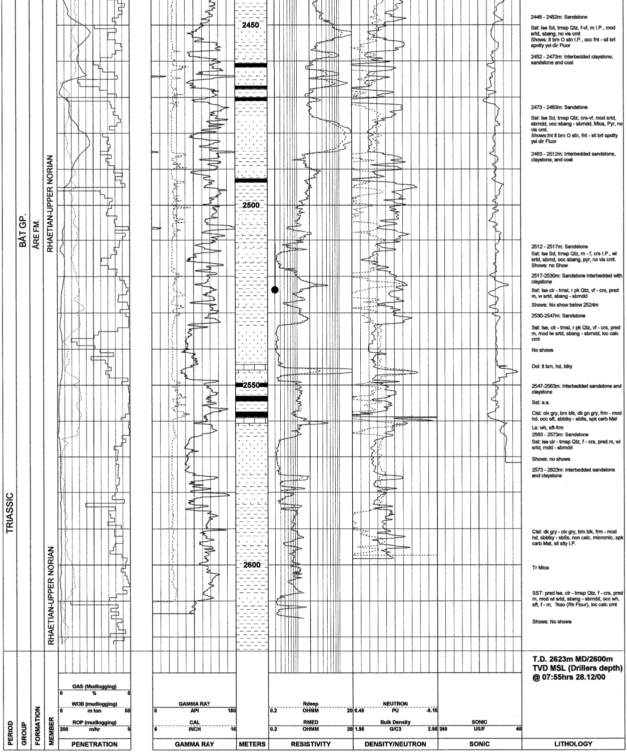
2417 - 2429m: Sandstone

Sst: lse Sd, trnsp Qtz, m-vf, pred m, wl srtd, sbrnd, occ sbang, no vis cmt, no vis oil stain

Shows: brt patchy yel dir Fluor

2429 - 2448m: Limestone and marl

Ls: off-wh, frm-hd, blky
Mrl: m gry-gry, hd, blky



2448 - 2452m: Sandstone

Sst: lse Sd, trnsp Qtz, f-vf, m I.P., mod srtd, sbang, no vis cmt
Shows: lt brn O stn I.P., occ fnt - sli brt spotty yel dir Fluor

2452 - 2473m: Interbedded claystone, sandstone and coal

2473 - 2483m: Sandstone

Sst: lse Sd, trnsp Qtz, crs-vf, mod srtd, sbrndd, occ sbang - sbrndd, Mica, Pyr, no vis cmt.
Shows:fnt lt brn O stn, fnt - sli brt spotty yel dir Fluor

2483 - 2512m: Interbedded sandstone, claystone, and coal

2512 - 2517m: Sandstone
Sst: lse Sd, trnsp Qtz, m - f, crs I.P., wl srtd, sbrnd, occ sbang, pyr, no vis cmt.
Shows: no Show

2517-2530m: Sandstone interbedded with claystone

Sst: lse clr - trnsl, r pk Qtz, vf - crs, pred m, w srtd, sbang - sbrndd

Shows: No show below 2524m

2530-2547m: Sandstone

Sst: lse, clr - trnsl, r pk Qtz, vf - crs, pred m, mod lw srtd, sbang - sbrndd, loc calc cmt

No shows

Dol: lt brn, hd, blky

2547-2563m: Interbedded sandstone and claystone

Sst: a.a.

Clst: olv gry, brn blk, dk gn gry, frm - mod hd, occ sft, sbblky - sbfis, spk carb Mat

Ls: wh, sft-frm
2563 - 2573m: Sandstone
Sst: lse clr - trnsp Qtz, f - crs, pred m, wl srtd, rndd - sbrndd

Shows: no shows

2573 - 2623m: Interbedded sandstone and claystone

Clst: dk gry - olv gry, brn blk, frm - mod hd, sbblky - sbfis, non calc, micromic, spk carb Mat, sli slty I.P.

Tr Mica

SST: pred lse, clr - trnsp Qtz, f - crs, pred m, mod wl srtd, sbang - sbrndd, occ wh, sft, f - m, ?kao (Rk Flour), loc calc cmt

Shows: No shows

T.D. 2623m MD/2600m TVD MSL (Drillers depth) @ 07:55hrs 28.12/00

Pressure Data Well 6507/7-13

No	Actual depth mMD	m TVD SS	Formation Pressure (bars)	Hydrostatic Pressure (bars)	MOB. MD/cp	Comments	Pore Pressure g/cc
1	2404.8	2381.8	254.26	342.00	194	excellent	1.08
2	2405.7	2382.7	254.35	342.00	44.2	excellent	1.08
3	2407.0	2384.0	254.50	342.20	206	excellent	1.08
4	2408.0	2385.0	254.70	342.40	9.5	good	1.08
5	2410.5	2387.5	254.62	342.77	696.2	excellent	1.08
6	2411.5	2388.5		342.90	0.1	tight	
7	2411.0	2388.0	254.69	342.85	3136.3	excellent	1.08
8	2413.5	2390.5		343.20	1.9	tight	
9	2413.0	2390.0		343.13	3.5	tight	
10	2414.8	2391.8	255.00	343.39	1294.8	excellent	1.08
11	2415.8	2392.8	255.08	343.50	3181.6	excellent	1.08
12	2420.0	2397.0	255.38	344.10	1763	excellent	1.08
13	2422.0	2399.0	255.54	344.38	5414.9	excellent	1.08
14	2423.0	2400.0	255.61	344.50	16525	excellent	1.08
15	2425.0	2402.0	255.77	344.70	8004	excellent	1.08
16	2427.0	2404.0	255.93	345.05	32930	excellent	1.08
17	2429.0	2406.0	256.09	345.40	3285	excellent	1.08
18	2431.0	2408.0	256.25	345.60	14826	excellent	1.08
19	2437.5	2414.5		346.54	0.9	tight	
20	2439.5	2416.5	256.97	346.80	416	excellent	1.07
21	2440.5	2417.5		346.94		no seal	

22	2441.5	2418.5		347.08		no seal	
23	2450.0	2427.0		348.30	13.8	lost seal	
24	2451.0	2428.0	257.87	348.41	382.4	excellent	1.07
25	2452.0	2429.0	257.90	348.54	189.7	excellent	1.07
26	2453.0	2430.0	258.03	348.90	138.6	excellent	1.07
27	2457.5	2434.5	258.40	349.30	104.06	excellent	1.07
28	2463.5	2440.5	258.94	350.18	1187.4	excellent	1.07
29	2465.5	2442.5	259.12	350.46	1028.9	excellent	1.07
30	2466.0	2443.0	259.14	350.50	413	excellent	1.07
31	2467.0	2444.0	259.22	350.66	6089	excellent	1.07
32	2474.0	2451.0		351.60		tight	
33	2477.0	2454.0	259.89	352.07	455.2	excellent	1.07
34	2479.0	2456.0	259.95	352.52	2849.7	excellent	1.07
35	2481.0	2458.0	260.09	352.61	894.1	excellent	1.07
36	2483.0	2460.0	260.25	352.87	1161	excellent	1.07
37	2491.0	2468.0	260.93	354.00	233.4	excellent	1.07
38	2492.5	2469.5		354.22		tight	
39	2494.5	2471.5		354.50		no seal	
40	2507.2	2484.2		356.30		tight	
41	2508.0	2485.0		356.41		tight	
42	2522.0	2499.0		358.40		tight	
43	2535.0	2512.0	265.09	360.20	1326.8	excellent	1.07
44	2538.0	2515.0	265.40	360.70	579.9	excellent	1.07
45	2540.0	2517.0	265.59	361.00	72617.5	excellent	1.07
46	2546.0	2523.0		361.80	0.7	tight	
47	2548.0	2525.0	266.40	362.15	4379.7	excellent	1.07
48	2566.0	2543.0	268.22	364.70	1189.9	excellent	1.07
49	2569.0	2546.0	268.51	365.20	5092.9	excellent	1.07
50	2571.0	2548.0	268.73	365.50	1337.6	excellent	1.07
51	2574.0	2551.0	269.02	365.93	46341.7	excellent	1.07