

Well no : 6407/10-01

Operator : HYDRO

Coordinates : 64 13 40.66 N
07 11 29.81 EUTM coord. : 7123840 N
412273 E

Licence no : 132

Permit no : 541

Rig : POLAR PIONEER

Rig type : SEMI-SUB.

Contractor : POLAR FRONTIER DRILLING A/S

Bottom hole temperature : 0 deg.C

Elev. KB : 23 M

Spud. date : 87.05.07

Water depth : 343 M

Compl. date : 87.06.19

Total depth : 3347 M

Spud. class : WILDCAT

Form. at TD : TRIASSIC

Compl. class : P&A. DRY HOLE

Prod. form :

Seisloca : NH 8604 - 185 SP. 1180

LICENSEES

10.000000 NORSK AGIP A/S
 10.000000 DEMINEX (NORGE) A/S
 20.000000 NORSK HYDRO PRODUKSJON A.S
 10.000000 A/S NORske SHELL
 50.000000 DEN NORske STATS OLJESELSKAP A.S

CASING AND LEAK-OFF TESTS

Type	Casing diam.	Depth below KB	Hole diam.	Hole depth below KB	Lot mud eqv. g/cm ³
CONDUCTOR	30	442.0	36	590.0	.
INTERM.	13 3/8	1101.0	17 1/2	1117.0	1.93
INTERM.	9 5/8	2526.0	12 1/4	2545.0	1.91

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	2582.0 - 2610.0	27.9	99.6	MIDDLE JURASSIC
2	2748.0 - 2776.0	28.0	100.0	LOWER JURASSIC
3	2817.0 - 2845.0	28.0	100.0	LOWER JURASSIC
4	2845.0 - 2873.0	28.0	100.0	LOWER JURASSIC
5	2983.0 - 3011.0	28.0	100.0	LOWER JURASSIC

MUD PROPERTIES

Depth below KB meter	Mud weight g/cm ³	Viscosity	Mud type
376.000	1.03	0.0	WATER BASED
416.000	1.42	33.0	WATER BASED
590.000	1.03	0.0	WATER BASED
1117.000	1.20	0.0	WATER BASED
1380.000	1.60	36.0	WATER BASED
2296.000	1.42	33.0	WATER BASED
2545.000	1.60	31.0	WATER BASED

2545.000	1.45	24.0	WATER BASED
3157.000	1.50	29.0	WATER BASED
3346.000	1.42	33.0	WATER BASED

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
Cutting	1120-3348	390
Wet Samples	1120-3345	330

SHALLOW GAS

Interval below KB	REMARKS
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AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500	Div.
DIS LSS GR	1098.000 - 2537.000	X	X	
DIS LSS MSFL GR	2523.000 - 3346.000		X	
LDL CNL SGR	2523.000 - 3328.000	X	X	
CDM AP/SHDT MSD	1098.000 - 2539.000	X		
CDM AP/SHDT MSD	2523.000 - 3349.000	X		
RFT STRAIN GAUGE	2582.000 - 3305.000	X		
RFTB HP	2582.000 - 3305.000	X		
NGS	2524.000 - 3320.000	X		X
MUD	1117.000 - 3346.000			X
VELOCITY	1098.000 - 3346.000	1:1000		X
(VSP, run 2a, 800-3342m				1 stk.)
(VSP, 10cm/s. plot 1-8.				8 stk.)

SUB OPERATIONS FOR WELL: 6407/10-01

MAIN OPERATION: MOVING

Sub operation	Minutes	Hrs	% of total
TRANSIT	3180	53,0	77,94
ANCHOR	900	15,0	22,06
<i>Total</i>	4080	68,0	100,00

MAIN OPERATION: INTERRUPTION

Sub operation	Minutes	Hrs	% of total
MAINTAIN/REP	5190	86,5	85,64
FISH	810	13,5	13,37
OTHER	60	1,0	0,99
<i>Total</i>	6060	101,0	100,00

MAIN OPERATION: DRILLING

Sub operation	Minutes	Hrs	% of total
DRILL	21810	363,5	52,57
CIRC/COND	360	6,0	0,87
TRIP	9870	164,5	23,79
CASING	4320	72,0	10,41
HOLE OPEN	390	6,5	0,94
REAM	1260	21,0	3,04
BOP/WELLHEAD EQ	2070	34,5	4,99
BOP ACTIVITIES	1410	23,5	3,40
<i>Total</i>	41490	691,5	100,00

MAIN OPERATION: FORMATION EVAL

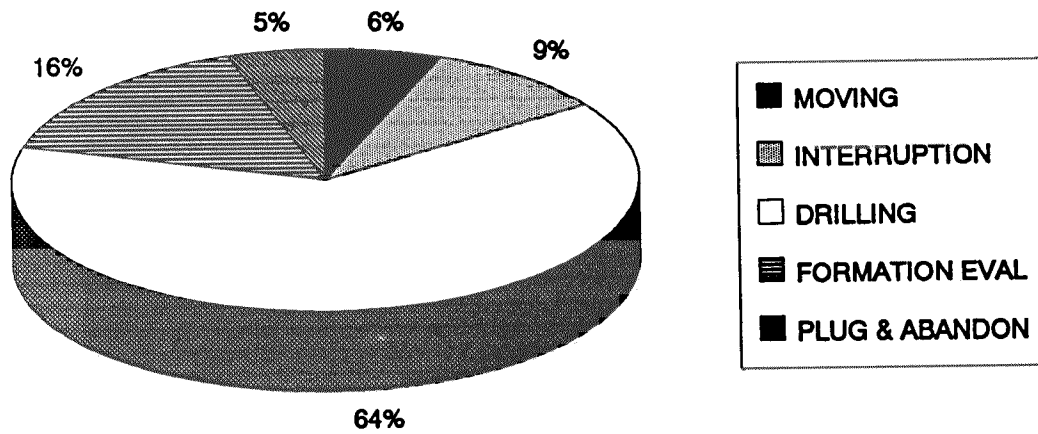
Sub operation	Minutes	Hrs	% of total
LOG	3390	56,5	33,63
CIRC/COND	210	3,5	2,08
TRIP	3120	52,0	30,95
CORE	2700	45,0	26,79
CIRC SAMPLES	390	6,5	3,87
RFT/FIT	270	4,5	2,68
<i>Total</i>	10080	168,0	100,00

MAIN OPERATION: PLUG & ABANDON

Sub operation	Minutes	Hrs	% of total
TRIP	810	13,5	26,21
CEMENT PLUG	510	8,5	16,50
MECHANICAL PLUG	240	4,0	7,77
PERFORATE	240	4,0	7,77
SQUEEZE	360	6,0	11,65
CUT	120	2,0	3,88
EQUIP RECOVERY	810	13,5	26,21
<i>Total</i>	3090	51,5	100,00

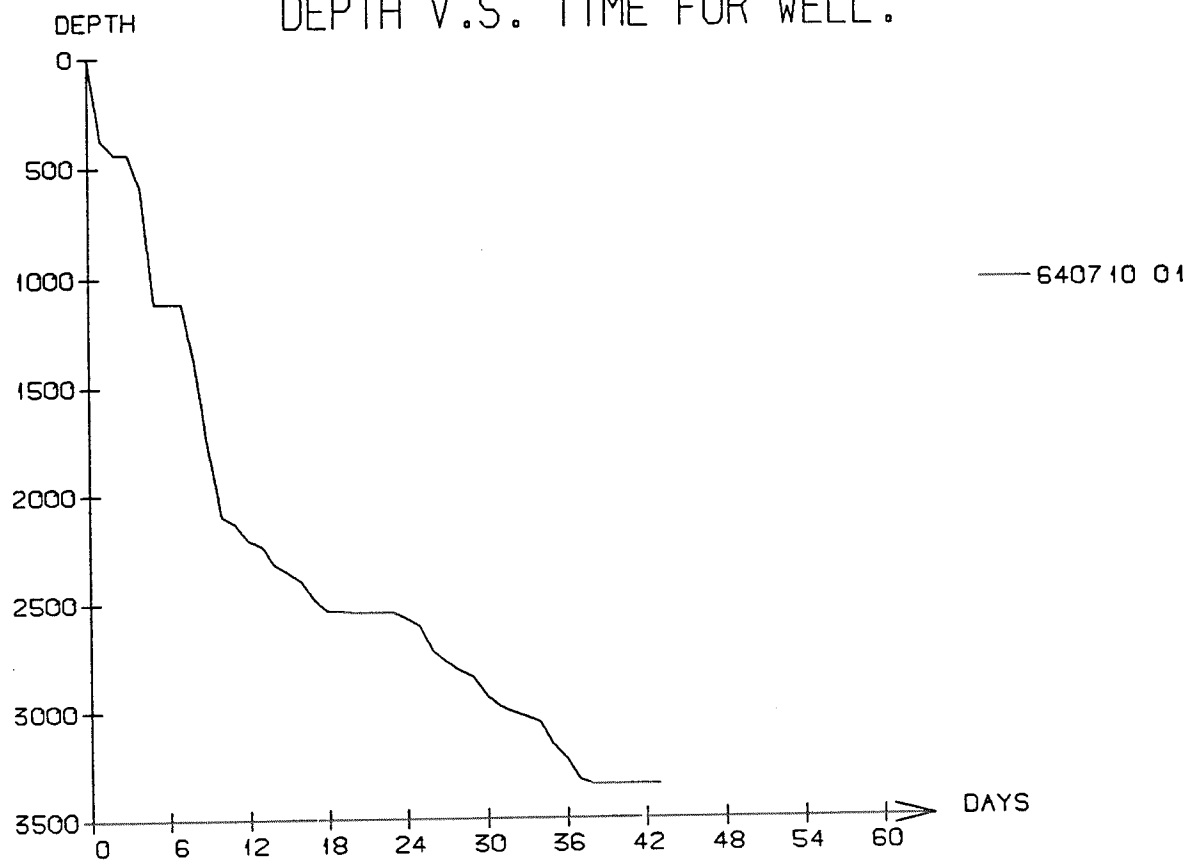
DAILY DRILLING REPORT SYSTEM

MAIN OPERATIONS FOR WELL: 6407/10-01

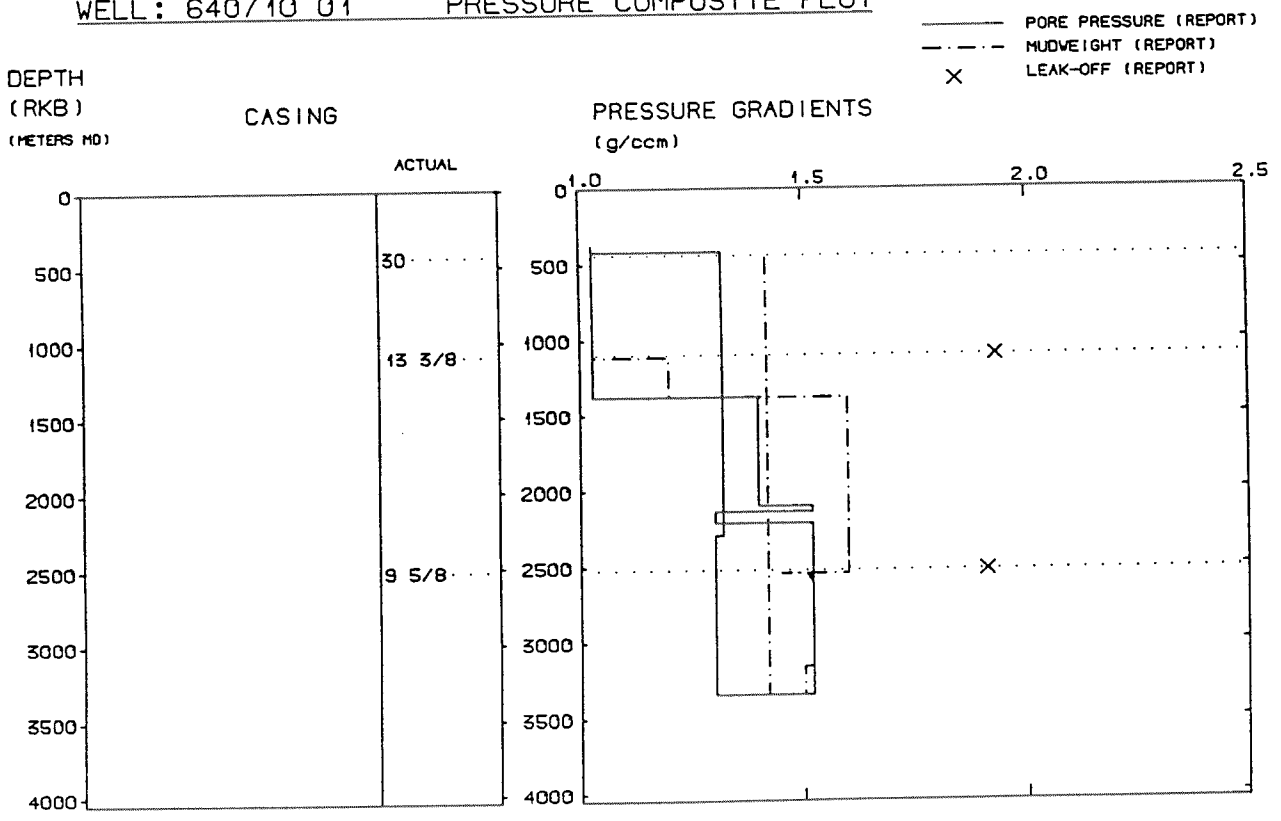


Main operation	Minutes	Hrs	% of total
MOVING	4080	68,0	6,30
INTERRUPTION	6060	101,0	9,35
DRILLING	41490	691,5	64,03
FORMATION EVAL	10080	168,0	15,56
PLUG & ABANDON	3090	51,5	4,77
<i>Total</i>	64800	1080,0	100,00

DEPTH V.S. TIME FOR WELL:



WELL: 640710 01 PRESSURE COMPOSITE PLOT



Well History 6407/10-1

GENERAL:

Block 6407/10 is situated in an oil prone part of the Halten Terrace. Well 6407/10-1 is located immediate to the south of the Njord Field in block 6407/7. Block 6407/10 is almost encompassed by the Frøya High apart from the downfaulted areas in northwest and northeast. Well 6407/10-1 is located on the B-structure, compartment BI. The B-structure is downfaulted relative to the Frøya High in south-southeast and to the A-structure in block 6407/7 to the west. The structure is dipping into a small, deep basin to the north.

The main objectives of the well were:

- test hydrocarbon potential of the Garn, Ile and Tilje Formations in the B-structure in an optimal position,
- test reservoir properties and interval thickness in the Jurassic sequence,
- test the geological model,
- calibrate the seismic interpretation and horizon identification,
- not have an updip of more than $15-30 \times 10^6 \text{ Sm}^3$ oil in place (OIP),
- penetrate the Tilje Formation within the expected depth range of the oil-water contact of the Tilje Fm. in the A-structure.

OPERATIONS:

Wildcat well 6407/10-1 was spudded 7 May 1987 by Polar Frontier Drilling semi-submersible rig Polar Pioneer and completed 19 June 1987 at a depth of 3347 m in Triassic rocks. Due to a great possibility of shallow gas, the well was drilled without a riser and logged with MWD down to 1100 m. The prognosed shallow gas levels were drilled through without problems and only small peaks on the log indicated sand with a certain gas saturation. 20" casing was skipped and 13 3/8" was set directly.

5 cores were cut in the well. They were cut in the intervals 2582 - 2610 m, 2748 - 2776 m, 2817 - 2845 m, 2845.5 - 2873.5 m and 2983 - 3011 m. The well is water-bearing with a possible small amount of gas in the upper part of Tilje Fm.

The well was plugged and abandoned as a dry hole.

TESTING:

No DST tests were performed in this well.

GEOLOGICAL TOPS

WELL: 6407/10-1

	Depth m (RKB)
<i>Nordland Group</i>	442.0
<i>Naus Fm.</i>	442.0
<i>Hordaland Group</i>	1041.0
<i>Brygge Fm.</i>	1041.0
<i>Rogaland Group</i>	1671.0
<i>Tare Fm.</i>	1671.0
<i>Tang Fm.</i>	1794.0
<i>Shetland Group</i>	1912.5
<i>Springar Fm.</i>	1912.5
<i>Nise Fm.</i>	1979.0
<i>Kvitnos Fm.</i>	2210.5
<i>Cromer Knoll Group</i>	2390.0
<i>Lange Fm.</i>	2390.0
<i>Lyr Fm.</i>	2550.0
<i>Viking Fm.</i>	2573.0
<i>Spekk Fm.</i>	2573.0
<i>Rogn Fm.</i>	2579.0
<i>Fangst Group</i>	2702.0
<i>Not Fm.</i>	2702.0
<i>Ile Fm.</i>	2802.5
<i>Båt Group</i>	2867.5
<i>Ror Fm.</i>	2867.5
<i>Tilje Fm.</i>	2974.0
<i>Åre Fm.</i>	3154.5
<i>Triassic Group</i>	3319.0
<i>Grey Beds</i>	3319.0
<i>T.D.</i>	3347.0