

Well no : 6407/ 9-01

Operator : SHELL

Coordinates	: 64 21 56.14 N 07 47 20.86 E	UTM coord.	: 7138488 N 441548 E
Licence no	: 093	Permit no	: 422
Rig	: BORGNY DOLPHIN	Rig type	: SEMI-SUB.
Contractor	: DOLPHIN SERVICES A/S		
Bottom hole temperature	: 75 deg.C	Elev. KB	: 25 M
Spud date	: 84.06.26	Water depth	: 248 M
Compl. date	: 84.09.07	Total depth	: 2500 M
Spud class.	: WILDCAT	Age at TD	: TRIASSIC
Compl. class.	: P&A. OIL DISCOVERY		
Seis. loc.	: 729 - 408 SP. 390		

LICENSEES

20.000	BP PETR. DEV. OF NORWAY A/S
30.000	A/S NORSKE SHELL
50.000	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
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CONDUCTOR	30	383.0	36	395.0	
SURF. COND.	20	799.0	26	811.0	1.39
INTERM.	13 3/8	830.0	17 1/2	840.0	1.42
INTERM.	9 5/8	1616.0	12 1/4	1630.0	1.64
LINER	7	2484.0	8 1/2	2500.0	

CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	1631.0 - 1645.0	12.2	87.0	UPPER JURASSIC
2	1645.0 - 1663.0	16.4	91.0	UPPER JURASSIC
3	1663.0 - 1670.0	7.0	99.9	UPPER JURASSIC
4	1670.0 - 1674.0	3.9	98.0	UPPER JURASSIC
5	1674.0 - 1683.0	9.0	99.9	MIDDLE JURASSIC

MUD PROPERTIES

Depth below KB meter	Mud weighth g/cm ³	Plastic viscosity mPa.s	Mud type
811.0	1.03		WATER BASED
818.0	1.02	19.0	WATER BASED
840.0	1.10	18.0	WATER BASED
980.0	1.25	17.0	WATER BASED
1360.0	1.30	20.0	WATER BASED
1560.0	1.31	20.0	WATER BASED
1630.0	1.35	23.0	WATER BASED
1747.0	1.33	21.0	WATER BASED
2367.0	1.34	22.0	WATER BASED
2465.0	1.33	20.0	WATER BASED

DRILL STEM TEST

INTERVALS AND PRESSURES

Test no.	Interval meter	Choke size	Pressure (PSI)		
			FSIP	BTHP	WHP
1.0	1638.0 - 1632.0	50.8		2213.0	228.0

RECOVERY

Test no.	Oil Sm ³ /d	Gas M Sm ³ /d	Oil grav. g/cm ³	Gas grav. rel. air	GOR m ³ /m ³
1.0	1350		0.822	0.890	37

DRILL BIT CUTTINGS AND WET SAMPLES

SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
CUTTINGS		
WET SAMPLES	410 - 2500	360

SHALLOW GAS

INTERVAL BELOW KB	REMARKS
455-468	GAS LEAKAGE BETWEEN 20" AND 30" CASING IN SAND

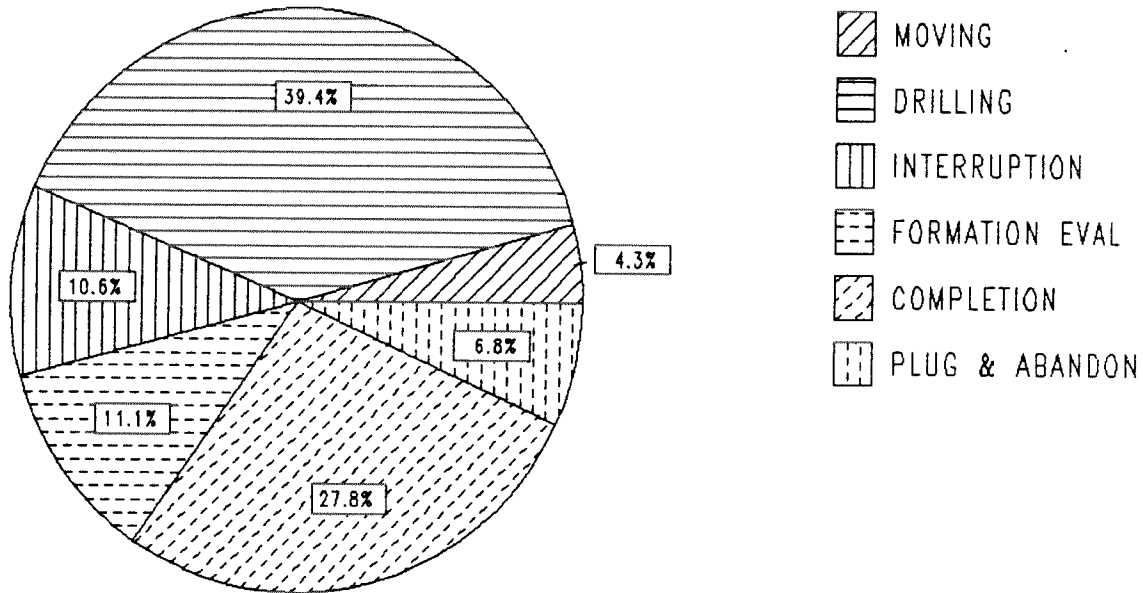
AVAILABLE LOGS

LOG TYPE	INTERVALS	1/200	1/500
ISF LSS GR	273 - 807	X	X
ISF LSS	827 - 1597	X	X
ISF LSS	1597 - 1611	X	X
ISF LSS	1613 - 2487	X	X
LDL CNL	382 - 809	X	X
LDL CNL	830 - 1611	X	X
LDL CNL	1613 - 2489	X	X
DLL MSFL	1613 - 1800	X	X
CDM	1613 - 2485	X	X
CDM AP	1616 - 2483	X	X
NGT	1568 - 2488	X	
RFT HP	1624 - 2398	1:100	
CBL VDL	389 - 1595	X	
CBL VDL	273 - 1800	X	
MUD	400 - 2500		X
VELOCITY	382 - 2477	1:1000	X

(+ Airgun Well Velocity Survey and calibr. log data, 1 stk)
 (+ Two Way Travel Time, 10 cm/s, 1 stk)
 (+ Synthetic Seismogram, Marine, 10 cm/s, 1 stk)
 (+ Synthetic Seismogram, 10 cm/s, 2 stk)
 (+ V.S.P., 10 cm/s, 7 stk)

DAILY DRILLING REPORT SYSTEM

Main operation : 6407/09-01



Total : 1872.00 HRS

Main operation	Minutes	Hours	% of total
MOVING	4845	80.75	4.3
DRILLING	44220	737.00	39.3
INTERRUPTION	11865	197.75	10.5
FORMATION EVAL	12480	208.00	11.1
COMPLETION	31260	521.00	27.8
PLUG & ABANDON	7650	127.50	6.8

MAIN OPERATION: MOVING

Sub operations	Min	% of total
ANCHOR	4845	100.00
TOTAL	4845	100.00

MAIN OPERATION: DRILLING

Sub operations	Min	% of total
BOP/WELLHEAD EQ	3270	7.39
TRIP	11730	26.53
OTHER	1950	4.41
DRILL	11880	26.87
SURVEY	2130	4.82
CIRC/COND	2310	5.22
REAM	3420	7.73
CASING	5520	12.48
WAIT	360	0.81
BOP ACTIVITIES	1650	3.73
TOTAL	44220	100.00

MAIN OPERATION: INTERRUPTION

Sub operations	Min	% of total
FISH	2280	19.22
WELL CONTROL	6720	56.64
WAIT	2445	20.61
MAINTAIN/REP	420	3.54
TOTAL	11865	100.00

MAIN OPERATION: FORMATION EVAL

Sub operations	Min	% of total
LOG	5190	41.59
TRIP	3060	24.52
CIRC/COND	810	6.49
CORE	780	6.25
OTHER	420	3.37
CIRC SAMPLES	630	5.05
RFT/FIT	1590	12.74
TOTAL	12480	100.00

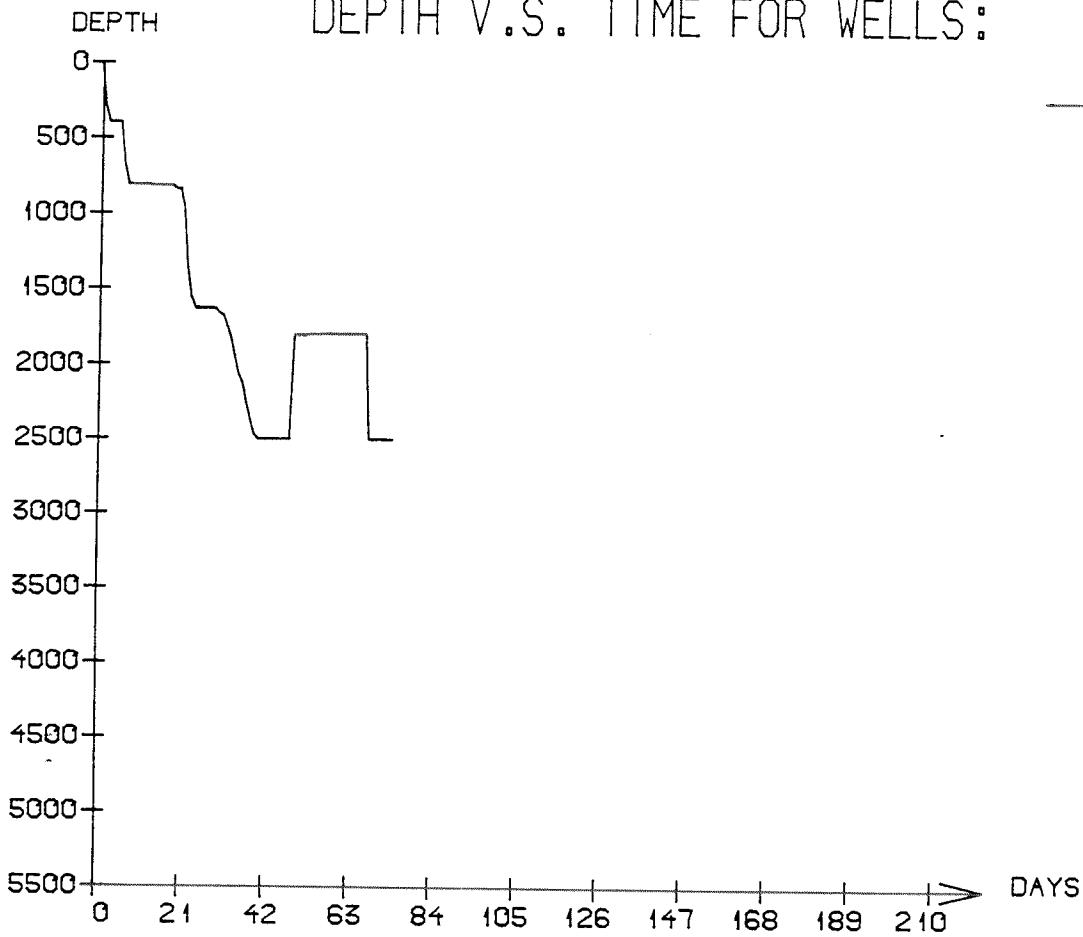
MAIN OPERATION: COMPLETION

Sub operations	Min	% of total
BOP/WELLHEAD EQ	3930	12.57
OTHER	3510	11.23
CIRC/COND	3000	9.60
WIRE LINE	5160	16.51
COMPL STRING	4830	15.45
PERFORATE	90	0.29
FLOW	8460	27.06
SAND CONTROL	1740	5.57
STIMULATE	180	0.58
WAIT	360	1.15
TOTAL	31260	100.00

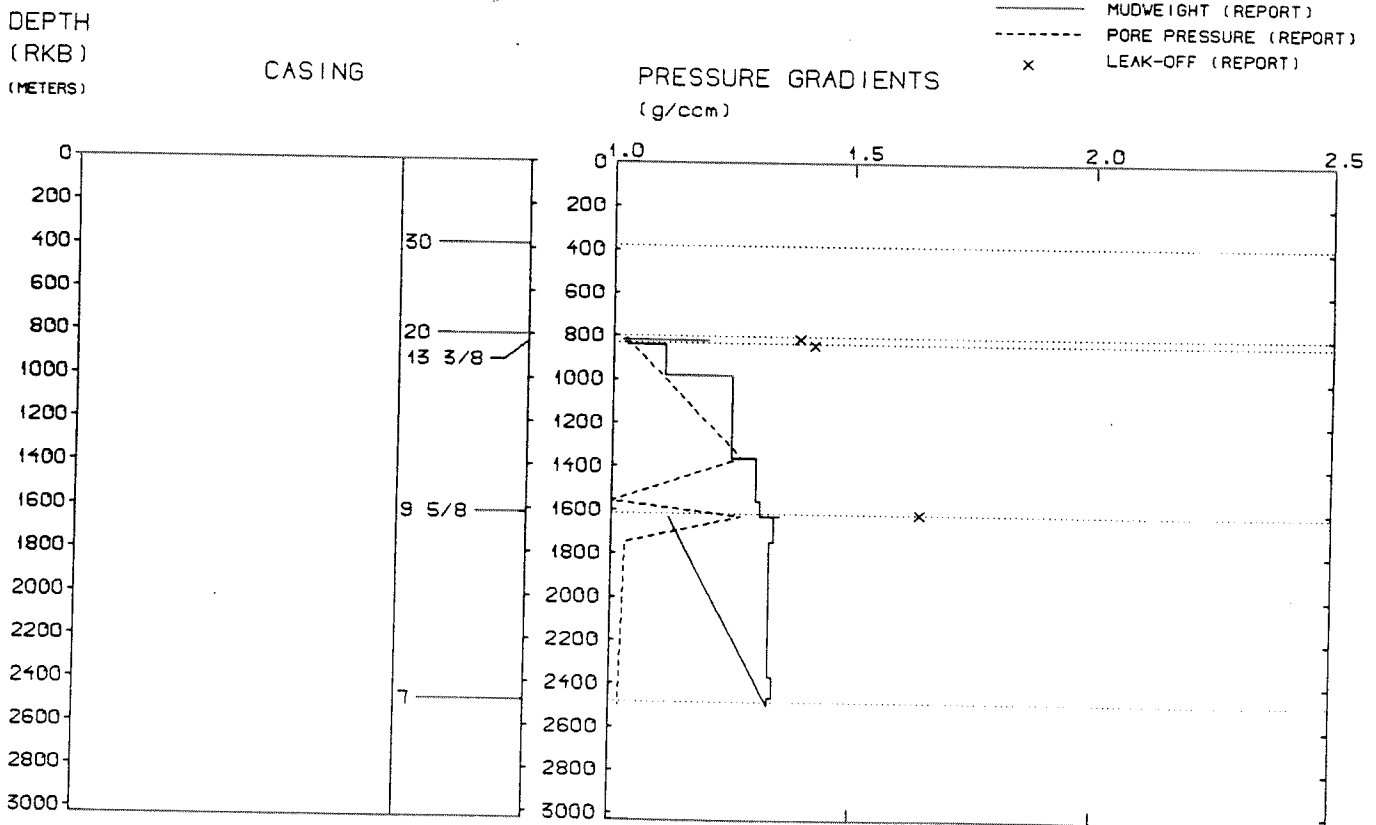
MAIN OPERATION: PLUG & ABANDON

Sub operations	Min	% of total
TRIP	2490	32.55
CIRC/COND	270	3.53
CEMENT PLUG	420	5.49
WAIT	150	1.96
MECHANICAL PLUG	510	6.67
PERFORATE	810	10.59
CUT	240	3.14
EQUIP RECOVERY	1050	13.73
OTHER	1560	20.39
SQUEEZE	150	1.96
TOTAL	7650	100.00

DEPTH V.S. TIME FOR WELLS:



WELL: 640709 01 PRESSURE COMPOSITE PLOT



WELL HISTORY - 6407/9-1

GENERAL:

The primary objective of the wildcat 6407/9-1 was evaluation of possible reservoirs of Lower to Middle Jurassic age. Secondary objectives were evaluation of deeper reservoirs of Lower Jurassic to Upper Triassic age. The well encountered hydrocarbons in the Upper Jurassic sandstones.

OPERATIONS:

The well was spudded 26.06.84 by the semi-submersible rig Borgny Dolphin. Five cores were cut from the Upper Jurassic into the Middle Jurassic.

Due to high deviation in the 36" hole section, the well was re-spudded. Junk was fished out of the hole before and after performing a leak off test below the 20" casing shoe. Gas bubbles were observed around the BOP stack, the 20" casing was perforated and several cement squeeze jobs were performed. The 13 3/8" casing was run just below the 20" casing. Some technical problems occurred while drilling the 12 1/4" hole. Some tight spots occurred in the two lowermost hole sections. The bottom hole assembly got stuck at 2027 m, and was successfully freed. The well was drilled using water based mud.

TESTING:

One drill stem test was performed in the Upper Jurassic sandstones. The test produced oil.

GEOLOGICAL TOPS

WELL: 6407/ 9-01

Depth m (RKB)

<i>Nordland Group</i>	<i>273.000</i>
<i>Hordaland Group</i>	<i>762.000</i>
<i>Rogaland Group</i>	<i>1340.000</i>
<i>Tare Fm</i>	<i>1340.000</i>
<i>Tang Fm</i>	<i>1377.000</i>
<i>Shetland Group</i>	<i>1533.000</i>
<i>Cromer Knoll Group</i>	<i>1563.000</i>
<i>Viking Group</i>	<i>1612.000</i>
<i>Spekk Fm</i>	<i>1612.000</i>
<i>Rogn Fm</i>	<i>1621.000</i>
<i>Spekk Fm</i>	<i>1670.000</i>
<i>Fangst Group</i>	<i>1673.000</i>
<i>Garn Fm</i>	<i>1673.000</i>
<i>Not Fm</i>	<i>1746.000</i>
<i>Båt Group</i>	<i>1783.000</i>
<i>Ror Fm</i>	<i>1783.000</i>
<i>Tilje Fm</i>	<i>1968.000</i>
<i>Åre Fm</i>	<i>2073.000</i>
<i>TD =</i>	<i>2500.000</i>