

Well no : 2/ 1-04 Operator : BP

Coordinates : 56 54 39.82 N UTM coord. : 6307628 N  
 03 04 2.25 E 504097 E

Licence no : 019 Permit no : 322

Rig : ALADDIN

Contractor : JEBSEN OFFSHORE DRILLING

Bottom hole temperature : 110 deg.C Elev. KB : 25 M

Spud. date : 82.04.12 Water depth : 66 M

Compl. date : 82.08.03 Total depth : 4525 M

Spud. class : APPRAISAL Form. at TD : PERMIAN

Compl. class : P&A. OIL DISCOVERY. Prod. form :

Seisloca : BP 80 - 019 - 31A SP 1353

#### LICENSEES

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26,625 BP PETROLEUM DEVELOPMENT OF NORWAY A/S  
 19,375 CONOCO NORWAY INC.  
 4,000 A/S PELICAN & CO K/S  
 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
CONDUCTOR	30	165,0	36	172,0	
SURF.COND.	18 5/8	625,0	24	633,0	
INTERM.	13 3/8	1997,0	17 1/2	2006,0	1,88
INTERM.	9 5/8	3785,0	12 1/4	3793,0	2,11
LINER	7	4210,0	8 1/2	4525,0	

#### CONVENTIONAL CORES

Core no.	Intervals cored meters	Recovery		Series
		M	%	
1	4041.2 - 4068.9	27.7	100.0	L.JURASSIC
2	4068.9 - 4087.6	18.7	100.0	L.JURASSIC
3	4087.6 - 4106.3	18.7	100.0	L.JURASSIC
4	4106.3 - 4124.8	18.5	100.0	L.JURASSIC
5	4124.8 - 4143.2	18.4	100.0	L.JURASSIC

DRILL STEM TEST									
TEST NO	DEPTH BELOW KB	CHOKE SIZE mm	RECOVERY					PRESS. (psi)	
			OIL Sm3 /d	GAS M Sm3 /d	OIL GRAV. g/cm3	GAS GRAV. rel. air	GOR m3/m3	FFP	WHP
			1	4120 - 4129		52.9	WATER		
2	4101 - 4117	6.35	181.5	20.2	0.816	0.758	112	5642	1772
3	4061 - 4087	3.18	99.2	11.4	0.823	0.750	115	6596	2757

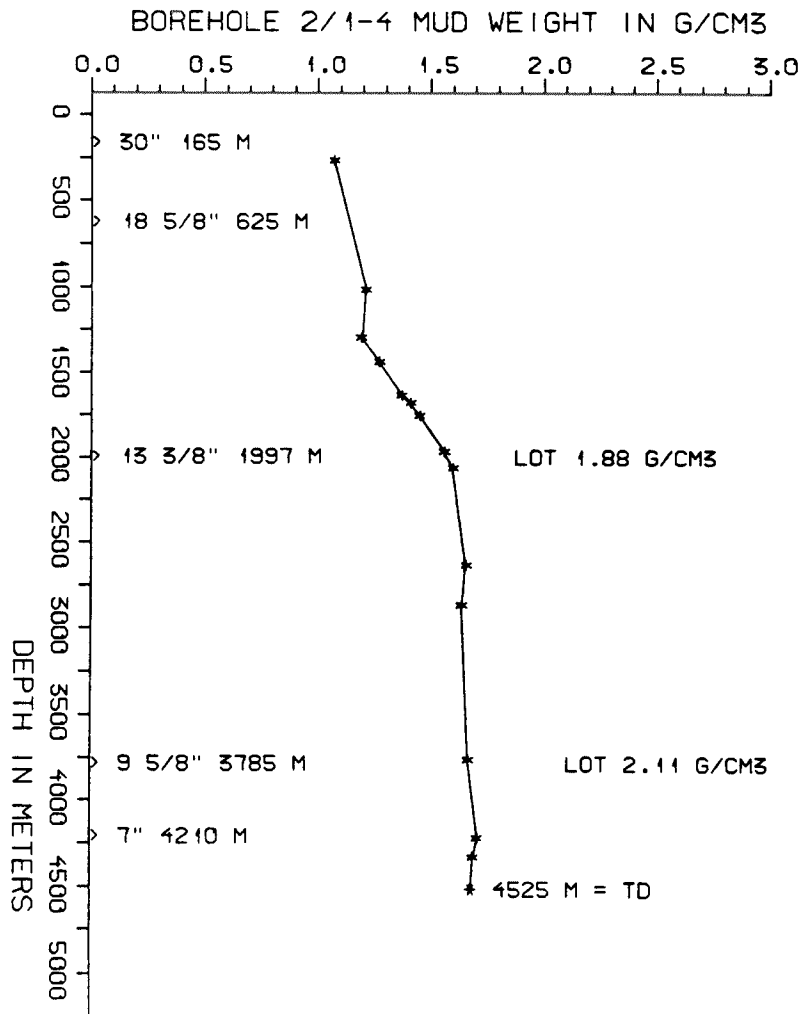
AVAILABLE LOGS			
LOG TYPE	INTERVALS	1/200	1/500
ISF SONIC GR	91 - 629	x	x
ISF SONIC MSFL	625 - 2005	x	x
ISF SONIC MSFL	1997 - 3797	x	x
ISF SONIC	3750 - 4196	x	x
ISF SONIC MSFL	3900 - 4510	x	x
LDL CNL	3786 - 4196	x	x
LDL CNL	3990 - 4512	x	x
DLL MSFL	3990 - 4193	x	x
CDM	3786 - 4500	x	
CDM AP	3785 - 4512	x	x
GEODIP	3990 - 4160	1:40	
CALIPER	3785 - 4500	x	
RFT	3786 - 4196	x	
RFT	4043 - 4355	x	
TEMPERATURE	70 - 601	x	x
TEMPERATURE	100 - 2102	x	x
CBL	3490 - 4172	x	x
MUD	172 - 4525		x
VELOCITY (S.C.L.)	91 - 4510		x

(Geogram Synthetic Seismogram, nor. pol.,  
10-20 cm/s, 4stk)

MUD PROPERTIES			
DEPTH BELOW KB m	WEIGHT g/cm3	FUNNEL VISC. sec	FILTRATE LOSS cm3
200	1.04	30	
950	1.18	43	
1230	1.16	38	
1370	1.24	41	
1570	1.34	55	
1610	1.38	55	
1690	1.42	55	
1900	1.53	43	
2000	1.57	43	
2570	1.63	55	
2800	1.61	52	
3700	1.64	42	
4160	1.68	54	
4270	1.66	56	

DRILL BIT CUTTINGS AND WET SAMPLES		
SAMPLE TYPE	INTERVAL BELOW KB	NUMBER OF SAMPLES
CUTTINGS	180 - 4296	665
WET SAMPLES	180 - 4513	1000

SHALLOW GAS	
DEPTH INTERVAL m KB	REMARKS
645 660	POSSIBLE SMALL GASCHARGED SAND



## WELL HISTORY - 2/1-4

### GENERAL :

The wildcat 2/1-4 was drilled to appraise the discovery made by the 2/1-3 well in 1980 (see Well Data Summary Sheets Vol. 11). The main target was a Early Jurassic sandstone. The Ula and Sleipner formations were secondary targets. The main target proved oil bearing. Both secondary targets were water saturated.

### OPERATIONS :

"Aladdin" spudded the well on 12.04.82. The hole was drilled to 171 m and the 30" conductor was set. Were unable to enter the hole and after pulling the conductor and waiting on weather. The rig was moved and and the hole respudded 18 m away. This hole was also drilled to 171 m but had to be abandoned due to junk in the hole. The 36" section was completed on the third attempt. Operations went forth in both the 36" and 26" sections without further incident. Gumbo caused problems in the top of the 17 1/2" section. 5 cores were taken in the 8 1/2" section.

### TESTING :

Three DST's were carried out in the Late Jurassic sandstone in this well. DST no. 1 consisted of an initial flow and build up of 6 and 90 minutes respectively. The main flow period lasted 216 minutes but it was uncertain whether the well was actually flowing. After a build-up period of 133 minutes the well was re-opened for 2024 minutes - produced apprxm. 1 BBL of oil and no formation water. The final build-up period lasted 889 minutes. The well was perforated in three intervals during DST no. 2. Initial flow and build up lasted 5 and 72 minutes respectively. The well was then flowed for 2016 minutes although plugging did occur after 516 minutes leading to an unplanned shut-in of 18 minutes during this flow period. The main build-up lasted 1738 minutes. After a 7 minutes flow and a 61 minutes build-up DST no. 3 was flowed for a total of 1860 minutes before being shut in for 1425 minutes. Six single phase oil samples were collected at the wellhead during DST no. 3. One RFT sample was taken at 4113.9 m.

# GEOLOGICAL TOPS

WELL: 2/1-4

	Depth m (RKB)
Nordland Group	91 m
Hordaland Group	1715 m
Rogaland Group	2910 m
Balder Fm	2910 m
Sele Fm	2932 m
Montrose Group	2944 m
Forties Fm	2944 m
Rogaland Group	3000 m
Lista Fm	3000 m
Montrose Group	3049 m
Maureen Equ	3049 m
Chalk Group	3075 m
Ekofisk Fm	3075 m
Tor Fm	3174 m
Hod Fm	3623 m
Plenus Marl Fm	3710 m
Hidra Fm	3723 m
Cromer Knoll Group	3741 m
Rødby Fm	3741 m
Valhall Fm	3807 m
Tyne Group	4004 m
Mandal Fm	4004 m
Farsund Fm	4137 m
Haugesund Fm	4163 m
Vestlands Group	4251 m
Ula Fm	4251 m
Sleipner Fm	4262 m
Gassum Fm	4295 m
Triassic Group	4346 m
Skagerrak Fm	4346 m
Zechstein Group	4485 m
	<u>TD = 4525 m</u>