

**General information**

Wellbore name	6510/2-1
Type	EXPLORATION
Purpose	WILDCAT
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORWEGIAN SEA
Well name	6510/2-1
Seismic location	SH 9601-2-409 & CDP 1316
Production licence	214
Drilling operator	A/S Norske Shell
Drill permit	901-L
Drilling facility	MÆRSK JUTLANDER
Drilling days	56
Entered date	16.08.1997
Completed date	10.10.1997
Release date	10.10.1999
Publication date	29.05.2002
Purpose - planned	WILDCAT
Reentry	NO
Content	SHOWS
Discovery wellbore	NO
Kelly bushing elevation [m]	23.0
Water depth [m]	325.0
Total depth (MD) [m RKB]	3102.0
Final vertical depth (TVD) [m RKB]	3102.0
Maximum inclination [°]	1.7
Oldest penetrated age	TRIASSIC
Oldest penetrated formation	GREY BEDS (INFORMAL)
Geodetic datum	ED50
NS degrees	65° 47' 15.6" N
EW degrees	10° 25' 51.33" E
NS UTM [m]	7297173.23
EW UTM [m]	565483.13
UTM zone	32
NPDID wellbore	3166

**Wellbore history****General**

The main objective of well 6510/2-1 was to test the hydrocarbon potential of tidal to shoreface Lower Jurassic deposits in the "Vega" prospect, a large structure fault bounded to the East and South-East by the Ylvingen fault complex. Secondary objectives were Upper Permian shallow marine sand units expected to be sealed by Upper Permian source shales and Mid-Triassic aeolian sands sealed by Triassic Evaporites.

Operations and results

The well 6510/2-1 was spudded on 16 August 1997 with the semi-submersible installation "Mærsk Jutlander" and reached a total depth of 4700 m in shales of Early Triassic age. It was drilled with seawater and bentonite with hi-vis pills from the surface to 1210 m and with BARASILC sodium silicate mud from 1210 m to 2926 m. From 2926 m to TD the Sodium silicate mud was gradually depleted to a glycol enhanced mud (GEM). At 3102 m the well was suspended and the rig taken to Kristiansund for repair due to riser tensioner difficulties. Further problems with the acoustic BOP control system caused a total 53 days delay before well 6510/2-1 R was re-entered.

Formation tops were penetrated within the prognosed range, except for the Top Permian, which was not encountered. The well found the Lower Jurassic to be developed in a more proximal facies than anticipated, possibly an intra tidal plain deposit. The sequence was predominantly shales, with interbedded coal layers and a few thin sandy intervals. Weak hydrocarbon shows were recorded intermittently in the Lower Jurassic sequence, but logs, core material and sidewall samples show the reservoir intervals to be water bearing. Sand development in the Mid Triassic objective below the evaporites was also poor with no hydrocarbon indications. The Permian was not penetrated, and the Triassic sequence was found to be much thicker than expected. The well reached a total depth of 4707 m in shales of Early Triassic age. The well TD commitment was to drill to Early Permian or 5000 m, but as there was no seismic evidence for any reflector in the remaining section, it was decided not to drill further. Two cores were cut at 1827 - 1837 m and 2126 - 2134 m in Early Jurassic, and one at 4083.5 - 4100.5 m in Middle Triassic. No fluid samples were taken. The well was plugged and abandoned as a dry well with weak shows on the 21 December 1997.

Testing

No drill stem test was performed

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1224.00	4700.00

Cuttings available for sampling?	YES
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Cores at the Norwegian Offshore Directorate



Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	1827.0	1837.2	[m]
2	2126.0	2142.3	[m]

Total core sample length [m]	26.5
Cores available for sampling?	YES

Core photos



1827-1831m



1831-1835m



1835-1837m



2126-2130m



2130-2134m



2134-2138m



2138-2142m



2142-2143m

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
1227.0	[m]	DC	GEOCH
1245.0	[m]	SWC	GEOCH
1260.0	[m]	DC	GEOCH
1275.0	[m]	SWC	GEOCH
1281.0	[m]	DC	GEOCH
1284.0	[m]	DC	GEOCH
1293.0	[m]	DC	RRI
1296.0	[m]	DC	GEOCH
1297.0	[m]	SWC	GEOCH
1308.0	[m]	DC	GEOCH
1312.0	[m]	SWC	GEOCH
1320.0	[m]	DC	GEOCH
1326.5	[m]	SWC	SWC



1332.0 [m]	DC	GEOCH
1347.0 [m]	DC	GEOCH
1356.0 [m]	DC	GEOCH
1365.0 [m]	DC	GEOCH
1374.0 [m]	DC	GEOCH
1386.0 [m]	DC	GEOCH
1395.0 [m]	DC	GEOCH
1407.0 [m]	DC	GEOCH
1416.0 [m]	DC	GEOCH
1421.0 [m]	DC	GEOCH
1425.0 [m]	DC	GEOCH
1428.0 [m]	DC	GEOCH
1440.0 [m]	DC	GEOCH
1458.0 [m]	DC	GEOCH
1470.0 [m]	DC	GEOCH
1482.0 [m]	DC	GEOCH
1494.0 [m]	DC	GEOCH
1506.0 [m]	DC	GEOCH
1525.0 [m]	SWC	GEOCH
1533.0 [m]	DC	GEOCH
1542.0 [m]	DC	GEOCH
1551.0 [m]	DC	GEOCH
1557.0 [m]	DC	GEOCH
1572.0 [m]	DC	GEOCH
1584.0 [m]	DC	GEOCH
1587.0 [m]	DC	GEOCH
1588.5 [m]	SWC	GEOCH
1608.0 [m]	DC	GEOCH
1620.0 [m]	DC	GEOCH
1634.5 [m]	SWC	GEOCH
1641.0 [m]	DC	GEOCH
1647.0 [m]	DC	GEOCH
1653.0 [m]	DC	GEOCH
1665.0 [m]	DC	GEOCH
1677.0 [m]	DC	GEOCH
1680.0 [m]	SWC	GEOCH
1689.0 [m]	DC	GEOCH
1698.0 [m]	DC	GEOCH
1707.0 [m]	DC	GEOCH
1715.0 [m]	SWC	GEOCH



1728.0 [m]	DC	GEOCH
1730.0 [m]	SWC	GEOCH
1731.0 [m]	DC	GEOCH
1734.0 [m]	DC	GEOCH
1740.0 [m]	DC	GEOCH
1752.0 [m]	DC	GEOCH
1764.0 [m]	DC	GEOCH
1776.0 [m]	DC	GEOCH
1788.0 [m]	DC	GEOCH
1791.0 [m]	DC	GEOCH
1797.0 [m]	DC	GEOCH
1803.0 [m]	DC	GEOCH
1805.0 [m]	SWC	GEOCH
1806.0 [m]	DC	GEOCH
1812.0 [m]	DC	GEOCH
1818.0 [m]	DC	GEOCH
1827.0 [m]	DC	GEOCH
1837.2 [m]	C	GEOCH
1839.0 [m]	DC	GEOCH
1845.0 [m]	DC	GEOCH
1847.0 [m]	SWC	GEOCH
1857.0 [m]	DC	GEOCH
1869.0 [m]	DC	GEOCH
1884.0 [m]	DC	GEOCH
1893.0 [m]	DC	GEOCH
1908.0 [m]	DC	GEOCH
1920.0 [m]	DC	GEOCH
1920.0 [m]	SWC	GEOCH
1932.0 [m]	DC	GEOCH
1944.0 [m]	DC	GEOCH
1956.0 [m]	DC	GEOCH
1968.0 [m]	DC	GEOCH
1980.0 [m]	DC	GEOCH
1992.0 [m]	DC	GEOCH
2004.0 [m]	DC	GEOCH
2006.0 [m]	SWC	GEOCH
2016.0 [m]	DC	GEOCH
2028.0 [m]	DC	GEOCH
2040.0 [m]	DC	GEOCH
2052.0 [m]	DC	GEOCH



2064.0	[m]	DC	GEOCH
2075.0	[m]	DC	GEOCH
2079.0	[m]	DC	GEOCH
2082.0	[m]	DC	GEOCH
2085.0	[m]	DC	GEOCH
2094.0	[m]	DC	GEOCH
2094.5	[m]	SWC	GEOCH
2106.0	[m]	DC	GEOCH
2112.0	[m]	DC	GEOCH
2121.0	[m]	DC	GEOCH
2135.0	[m]	C	GEOCH
2137.0	[m]	C	GEOCH
2154.0	[m]	DC	GEOCH
2166.0	[m]	DC	GEOCH
2178.0	[m]	DC	GEOCH
2190.0	[m]	DC	GEOCH
2193.0	[m]	DC	GEOCH
2196.0	[m]	DC	GEOCH
2202.0	[m]	SWC	GEOCH
2202.0	[m]	DC	GEOCH
2208.0	[m]	DC	GEOCH
2215.0	[m]	DC	GEOCH
2226.0	[m]	DC	GEOCH
2244.0	[m]	DC	GEOCH
2256.5	[m]	SWC	GEOCH
2262.0	[m]	DC	GEOCH
2277.0	[m]	DC	GEOCH
2292.0	[m]	DC	GEOCH
2316.0	[m]	DC	GEOCH
2328.0	[m]	DC	GEOCH
2340.0	[m]	DC	GEOCH
2370.0	[m]	DC	GEOCH
2403.0	[m]	DC	GEOCH
2451.0	[m]	DC	GEOCH
2463.0	[m]	DC	GEOCH
2478.0	[m]	DC	GEOCH
2490.0	[m]	DC	GEOCH
2550.0	[m]	DC	GEOCH
2604.0	[m]	DC	GEOCH
2652.0	[m]	DC	GEOCH



2676.0	[m]	DC	GEOCH
2700.0	[m]	DC	GEOCH
2712.0	[m]	DC	GEOCH
2727.0	[m]	DC	GEOCH
2739.0	[m]	DC	GEOCH
2754.0	[m]	DC	GEOCH
2772.0	[m]	DC	GEOCH
2796.0	[m]	DC	GEOCH
2799.0	[m]	DC	GEOCH
2808.0	[m]	DC	GEOCH
3036.0	[m]	DC	GEOCH
3066.0	[m]	DC	GEOCH
3081.0	[m]	DC	GEOCH
3429.0	[m]	DC	GEOCH
3441.0	[m]	DC	GEOCH
3453.0	[m]	DC	GEOCH
3477.0	[m]	DC	GEOCH
3489.0	[m]	DC	GEOCH
3519.0	[m]	DC	GEOCH
3546.0	[m]	DC	GEOCH
3684.0	[m]	DC	GEOCH
3696.0	[m]	DC	GEOCH
3807.0	[m]	DC	GEOCH
3831.0	[m]	DC	GEOCH
3849.0	[m]	DC	GEOCH
4035.0	[m]	DC	GEOCH
4068.0	[m]	DC	GEOCH
4087.5	[m]	C	GEOCH
4090.5	[m]	C	GEOCH
4096.0	[m]	C	GEOCH
4100.5	[m]	C	GEOCH
4113.0	[m]	DC	GEOCH
4170.0	[m]	DC	GEOCH
4182.0	[m]	DC	GEOCH
4188.0	[m]	DC	GEOCH
4194.0	[m]	DC	GEOCH
4203.0	[m]	DC	GEOCH
4212.0	[m]	DC	GEOCH
4224.0	[m]	DC	GEOCH
4227.0	[m]	DC	GEOCH



4239.0 [m]	DC	GEOCH
4251.0 [m]	DC	GEOCH
4260.0 [m]	DC	GEOCH
4269.0 [m]	DC	GEOCH
4278.0 [m]	DC	GEOCH
4287.0 [m]	DC	GEOCH
4296.0 [m]	DC	GEOCH
4299.0 [m]	DC	GEOCH
4311.0 [m]	DC	GEOCH
4320.0 [m]	DC	GEOCH
4329.0 [m]	DC	GEOCH
4338.0 [m]	DC	GEOCH
4347.0 [m]	DC	GEOCH
4356.0 [m]	DC	GEOCH
4365.0 [m]	DC	GEOCH
4377.0 [m]	DC	GEOCH
4383.0 [m]	DC	GEOCH
4398.0 [m]	DC	GEOCH
4407.0 [m]	DC	GEOCH
4416.0 [m]	DC	GEOCH
4425.0 [m]	DC	GEOCH
4434.0 [m]	DC	GEOCH
4443.0 [m]	DC	GEOCH
4452.0 [m]	DC	GEOCH
4461.0 [m]	DC	GEOCH
4470.0 [m]	DC	GEOCH
4482.0 [m]	DC	GEOCH
4491.0 [m]	DC	GEOCH
4500.0 [m]	DC	GEOCH
4509.0 [m]	DC	GEOCH
4518.0 [m]	DC	GEOCH
4527.0 [m]	DC	GEOCH
4536.0 [m]	DC	GEOCH
4548.0 [m]	DC	GEOCH
4557.0 [m]	DC	GEOCH
4566.0 [m]	DC	GEOCH
4584.0 [m]	DC	GEOCH
4593.0 [m]	DC	GEOCH
4602.0 [m]	DC	GEOCH
4611.0 [m]	DC	GEOCH



4620.0	[m]	DC	GEOCH
4632.0	[m]	DC	GEOCH
4644.0	[m]	DC	GEOCH
4652.0	[m]	SWC	GEOCH
4656.0	[m]	DC	GEOCH
4665.3	[m]	SWC	GEOCH
4668.0	[m]	DC	GEOCH
4670.2	[m]	SWC	GEOCH
4674.0	[m]	DC	GEOCH
4677.0	[m]	DC	GEOCH
4686.0	[m]	DC	GEOCH
4695.0	[m]	DC	GEOCH
4700.0	[m]	DC	GEOCH

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
348	NORDLAND GP
348	NAUST FM
441	MOLO FM
480	HORDALAND GP
480	BRYGGE FM
593	ROGALAND GP
593	TARE FM
655	TANG FM
727	SHETLAND GP
848	CROMER KNOLL GP
1013	NO FORMAL NAME
1160	UNDEFINED GP
1292	VIKING GP
1292	SPEKK FM
1319	MELKE FM
1543	FANGST GP
1543	GARN FM
1654	NOT FM
1688	ILE FM
1722	BÅT GP
1722	ROR FM
1823	TILJE FM



1945	ÅRE FM
2236	GREY BEDS (INFORMAL)

Geochemical information

Document name	Document format	Document size [MB]
3166_1	pdf	0.94

Documents - reported by the production licence (period for duty of secrecy expired)

Document name	Document format	Document size [MB]
3166_6510_2_1_COMPLETION_DRILLING_REPORT	pdf	74.35
3166_6510_2_1_COMPLETION_GEOLOGICAL_REPORT	pdf	110.64
3166_6510_2_1_COMPLETION_LOG	pdf	5.64

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CST GR	427	593
CST GR	1245	2907
DLL MSFL LDL CNL GR	1210	2921
FMI DSI NGT	1210	2921
MDT GR	1535	2898
MWD LWD CDR	421	2921
NGT DLL MSFL AS LDL CNL	421	813
VSP GR	400	2915

Casing and leak-off tests

Casing type	Casing diam. [inch]	Casing depth [m]	Hole diam. [inch]	Hole depth [m]	LOT/FIT mud eqv. [g/cm3]	Formation test type
CONDUCTOR	30	421.0	36	422.0	0.00	LOT
INTERM.	20	1210.0	26	1212.0	1.67	LOT
INTERM.	9 5/8	3102.0	12 1/4	3102.0	1.95	LOT



**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
480	0.00	1.0		SPUD MUD	
651	0.00	1.0		SPUD MUD	
857	0.00	1.0		SPUD MUD	
1214	0.00	9.0		BARASILC/GEM	
1214	0.00	1.0		SPUD MUD	
1214	0.00	10.0		KCL	
1223	0.00	15.0		BARASILC/GEM	
1255	0.00	9.0		BARASILC/GEM	
1577	0.00	13.0		BARASILC/GEM	
1776	0.00	13.0		BARASILC/GEM	
1806	0.00	14.0		BARASILC/GEM	
1837	0.00	13.0		BARASILC/GEM	
1917	0.00	12.0		BARASILC/GEM	
2079	0.00	13.0		BARASILC/GEM	
2126	0.00	13.0		BARASILC/GEM	
2190	0.00	14.0		BARASILC/GEM	
2420	0.00	13.0		BARASILC/GEM	
2665	0.00	15.0		BARASILC/GEM	
2791	0.00	11.0		BARASILC/GEM	
2926	0.00	15.0		BARASILC/GEM	
2971	0.00	14.0		BARASILC/GEM	
3029	0.00	14.0		BARASILC/GEM	
3029	0.00	14.0		BARASILC/GEM	
3033	0.00	14.0		BARASILC/GEM	
3070	0.00	20.0		BARASILC/GEM	
3102	0.00	21.0		BARASILC/GEM	

Pressure plots

The pore pressure data is sourced from well logs if no other source is specified. In some wells where pore pressure logs do not exist, information from Drill stem tests and kicks have been used. The data has been reported to the NPD, and further processed and quality controlled by IHS Markit.





Document name	Document format	Document size [MB]
3166 Formation pressure (Formasjonstrykk)	pdf	0.29

