

**General information**

Wellbore name	2/7-21 S
Type	EXPLORATION
Purpose	APPRAISAL
Status	SUSPENDED
Factmaps in new window	link to map
Main area	NORTH SEA
Field	EMBLA
Discovery	2/7-20 Embla
Well name	2/7-21
Seismic location	NS 210 SP 720
Production licence	018
Drilling operator	Phillips Petroleum Company Norway
Drill permit	610-L
Drilling facility	ROSS ISLE
Drilling days	203
Entered date	21.06.1989
Completed date	09.01.1990
Release date	09.01.1992
Publication date	26.05.2009
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL
Discovery wellbore	NO
1st level with HC, age	DEVONIAN
1st level with HC, formation	NO GROUP DEFINED
Kelly bushing elevation [m]	22.0
Water depth [m]	71.0
Total depth (MD) [m RKB]	5038.0
Final vertical depth (TVD) [m RKB]	4706.0
Maximum inclination [°]	44.9
Bottom hole temperature [°C]	169
Oldest penetrated age	DEVONIAN
Oldest penetrated formation	NO GROUP DEFINED
Geodetic datum	ED50
NS degrees	56° 19' 59.65" N
EW degrees	3° 14' 53.89" E
NS UTM [m]	6243335.07
EW UTM [m]	515353.32



UTM zone	31
NPDID wellbore	1394

Wellbore history

General

Well 2/7-21 S was drilled to appraise the "South Eldfisk structure", now known as the Embla Field, located in the Central Graben of the North Sea. It was the third well drilled on the structure, a pre-Cretaceous fault block forming the boundary between the Grensen Nose to the west and the Feda Graben to the east. The primary objective was to test the sandstones that tested oil in the 2/7-9 and 2/7-20 wells. It was anticipated that the proposed location would encounter reservoir quality sands similar in nature, thickness, and depth as in the 2/7-20 well. Closure of the structure is provided by normal down faulting to the North, South and West. Closure to the east is by the Lindesnes Ridge reverse fault. Vertical sealing is provided by the Early Cretaceous Shales. No shallow gas was expected in this area, and no major obstacles other than high formation pressure in the reservoir. If successful, the well was planned to constitute a second drainage point for future field development.

Operations and results

Appraisal well 2/7-21 S was drilled deviated from a three-slot template located at the 2/7-20 well to a location 1020 m to the southeast. The well was spudded on the 21st June 1989 and drilled using the semi-submersible installation Ross Isle to a Total Depth of 5039 m (4706 m TVD RKB) in rhyolitic igneous rocks of probable Early Devonian age. The well was drilled without significant problems, except for MWD failures. Shallow gas was encountered at 586.7 m but caused no problems. The well was drilled without problem using SOLTEX Actaflow water based mud down to 4232 m at the base of the Cretaceous section, where 9 5/8" casing was set. The remaining 8 1/2" and 5 7/8" hole sections in the well were drilled using Invermul oil based mud.

Oil-bearing reservoir quality sands were encountered at 4313 m. No definitive oil-water contact could be seen. The section consisted of undefined lithostratigraphy of pre-Jurassic age. It could be broadly divided into ten intervals as follows:

Interval 1, 4299.5 - 4313 m, is an uncored, relatively muddy sequence of unknown affinity.

Interval 2, 4313 - 4339 m, is a partly cored, possible alluvial fan/braid plain sequence which is probably faulted at its base.

Interval 3, 4339 - 4386 m, is a sequence of fractured and brecciated, variably silty and sandy mudstones with thin sandstones. The upper part of this was cored.

Interval 4, 4386- 4453 m, is a broadly coarsening-upward sequence consisting of mudstones with thin interbedded sandstones at its base overlain by more abundant and thicker, cleaner sandstones towards the top. This interval is uncored.

Interval 5, 4453 - 4540 m, is an interval of conglomerates and pebbly sandstones locally interbedded with finer grained sandstones and mudstones. The upper part of this interval was cored.

Interval 6, 4540 - 4577 m, consists of interbedded sandstones and basic igneous rocks, which are either extrusive or shallow intrusive in nature. Only the lower part of this interval was cored.



Interval 7, 4577 - 4638 m, is a broadly coarsening-upward sequence of which only the uppermost part was cored.

Interval 8, 4638 - 4662 m, is a partly cored interval of highly fractured and brecciated sedimentary and igneous rocks. The igneous rocks have a broadly rhyolitic nature and are similar to those which occur below 4837. It is not clear whether this represents a genuinely interstratified sequence with extrusive volcanics, whether the igneous rocks are intrusive or whether it represents a complicated fault slice.

Interval 9, 4662 - 4837 m, is a further, broadly coarsening-upward sequence which was cored in its upper part. The lower part of the interval is poorly defined because of non-operation of wire line logs. Argillaceous ditch cuttings yielded a Frasnian (lower Late Devonian) age, similar to the lowermost part of the sandstone sequence in Auk and Argyll fields.

Interval 10, 4837 - 5039 m (TD) a partly cored, thick sequence of porphyritic, very finely crystalline rhyolitic igneous rocks which are fractured and brecciated and have been extensively altered.

The basal rhyolites are most likely to be Early Devonian in age. These are overlain by Late Devonian (Frasnian) sediments. This stratigraphic pattern differs from that observed in Auk and Argyll fields (where there is a Middle Devonian limestone), but is similar to the stratigraphic pattern of the Midland Valley of Scotland. Overlying the Devonian sediments is a sequence of basic volcanics or shallow intrusives and sediments. These are most likely to represent either Latest Devonian - Early Carboniferous, or Early Permian rocks. These basic igneous rocks are highly altered and yield a mean K-Ar age of 60.7 Myr. This probably reflects a phase of hydrothermal alteration associated with Late Cretaceous -Early Tertiary inversion of the Lindesnes ridge. The overlying sedimentary package (Intervals 1-5) is most likely to be either Rotliegendes Group or Lower Carboniferous. K-Ar radiometric dating of illitic concentrates provides Late Triassic ages. This clearly rules out a Jurassic age of these rocks. Given that these concentrates represent a mixture of detrital and diagenetic illite, the radiometric date is only a minimum age.

There was a prominent oil show around 1602 m in the Miocene with a good trace of free oil in the mud and a strong petroleum odour in cuttings. Shows were seen with gas peaks through most of the section from 3228 to 4206 m in the Shetland Group. No odour or visible stain was noticed here. The pre-Jurassic sandstone from 4325 to 4337 showed a poor to fair yellow gold fluorescence, with a poor to fair dull white instant cut, followed by a slow streaming to blooming cut. There was a slight brown oil stain on quartz grains and a strong petroleum odour. There were occasional poor shows in the section from 4337 to 5039 m (TD). Some of the section displayed a trace of moderate to dull yellow fluorescence, with a very slow grey to bright white blooming, hazy cut, but no stain or odour. Samples from core eleven had distinct petroleum odour when heated. In the lower part of the section below 4877 m samples contained up to 30% black carbonaceous matter, resembling coal. This was interpreted as bitumen, based on cores ten and eleven, which consisted mostly of heavily brecciated quartzites. Later rock-eval analysis revealed up to 3.2% TOC in samples from this interval, and it is believed to represent an early emplacement of a petroleum that pre-dates the tested live oil from the well.

Eleven cores were cut within the reservoir and underlying basement sections. Although difficulties were experienced with tool sticking, a nearly complete and reliable wire line data set was acquired. A total of thirty sidewall cores were attempted, whereof fifteen were retrieved. The RFT tool was run to acquire pressure data and fluid samples. Fluid samples were taken at 4322.4 m, 4322.7 m and at 4323 m. The two first of these were contaminated with mud due to seal failure. The one from 4323 m gave a GOR of 321 Sm³/Sm³ and an oil gravity of 43 deg API.

The well was temporary abandoned on 9 January 1990, suitable for later re-entry and possible tie-back to production facilities. It is classified as an oil appraisal well

**Testing**

A well testing program was designed based on RFT, log and core data to investigate three separate sand bodies in the pre-Jurassic section.

DST #1 was designed to test the interval 4577 to 4612 m (4313.8 to 4346.8 m TVD) in the deepest unit, a poor quality sand that displayed limited but anomalous RFT results suggesting a different fluid from the higher zones. The interval produced in the order of 600 STBOPD (95.4 Sm³/day) on a 14/64" choke, but was unexpectedly accompanied by 20-25 ppm H₂S. The DST string was not rated for H₂S and the test was thus abandoned. The GOR in this test was ca 1600 SCF/STB (285 Sm³/Sm³), the oil density was 0.8 g/cm³, and the gas gravity was 0.78 (air = 1) with 5.5% CO₂. The test bottom hole temperature (BHT) measured at 4530.9 m (4271 m TVD) was 160 deg C.

DST #2 was completed over the main reservoir section in the interval 4446 to 4519 m (4192.4 to 4259.6 m TVD). Up to 5000 STBOPD (794.9 Sm³/day) was produced on a 30/64" choke with a GOR of 1900 SCF/STB (338 Sm³/Sm³). The oil density was 0.816 g/cm³, and the gas gravity was 0.8 (air = 1) with 5% CO₂ and 40 ppm H₂S. The test BHT measured at 4251.4 m (4010.8 m TVD) was 153.9 deg C.

DST #3 was a commingled test over the DST #2 interval plus the interval 4308 to 4338 m (4063.6 to 4091.0 m TVD). It produced 8000 STBOPD (1271.9 Sm³/day) on a 48/64" choke with a GOR of 1850 SCF/STB (329.5 Sm³/Sm³). The oil density was 0.81 g/cm³, and the gas gravity was 0.8 (air = 1) with 5% CO₂ and 20-25 ppm H₂S. The test BHT measured at 4250.9 m (4010.3 m TVD) was 153.9 deg C.

Upon completion of the test, a PLT log was run over most of the perforated section. Results from the comingled test plus the PLT strongly indicated that killing the well with drilling mud after DST #2 had damaged the formation, and that the results of DST #3 were consequently poorer than expected.

In general, all tested fluids could be characterized as highly under-saturated volatile oil.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
1073.00	5038.00

Cuttings available for sampling?	YES
----------------------------------	-----

Cores at the Norwegian Offshore Directorate

Core sample number	Core sample - top depth	Core sample - bottom depth	Core sample depth - uom
1	14175.0	14196.0	[ft]
2	14196.0	14251.0	[ft]
3	14256.0	14378.6	[ft]
4	14621.0	14649.4	[ft]
5	14649.4	14684.4	[ft]
6	14980.0	15008.9	[ft]
7	15250.0	15299.0	[ft]



8	15299.0	15311.6	[ft]
9	15355.0	15393.1	[ft]
10	16213.0	16243.0	[ft]
11	16471.0	16531.3	[ft]

Total core sample length [m]	146.6
Cores available for sampling?	YES

Core photos

14175-14190ft



14190-14196ft



14196-14211ft



14211-14226ft



14226-14241ft



14241-14251ft



14256-14271ft



14271-14278ft



14621-14636ft



14636-14649ft



14649-14664ft



14664-14679ft



14679-14684ft

Palynological slides at the Norwegian Offshore Directorate

Sample depth	Depth unit	Sample type	Laboratory
4297.0	[m]	DC	OD
4303.0	[m]	DC	OD
4309.0	[m]	DC	OD
4315.0	[m]	DC	OD
4318.0	[m]	DC	OD
4321.0	[m]	DC	OD



4323.0	[m]	DC	OD
4324.0	[m]	DC	OD
4325.0	[m]	DC	OD
4327.0	[m]	DC	OD
4328.0	[m]	DC	OD
4328.5	[m]	DC	OD

Oil samples at the Norwegian Offshore Directorate

Test type	Bottle number	Top depth MD [m]	Bottom depth MD [m]	Fluid type	Test time	Samples available
DST	DST1	4578.40	4613.40		28.11.1989 - 00:00	YES
DST		4446.40	4518.60		10.12.1989 - 00:00	YES
DST	DST3	4308.30	4337.60		30.12.1989 - 00:00	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
93	NORDLAND GP
1599	HORDALAND GP
3065	ROGALAND GP
3065	BALDER FM
3086	SELE FM
3139	LISTA FM
3197	VÅLE FM
3231	SHETLAND GP
3231	EKOFISK FM
3318	TOR FM
3600	HOD FM
4159	BLODØKS FM
4165	HIDRA FM
4202	CROMER KNOLL GP
4202	RØDBY FM
4300	NO GROUP DEFINED



Geochemical information

Document name	Document format	Document size [MB]
1394_1	pdf	0.29
1394_2	pdf	3.45
1394_3	pdf	6.89

Documents - older Norwegian Offshore Directorate WDSS reports and other related documents

Document name	Document format	Document size [MB]
1394_01_WDSS_General_Information	pdf	0.27
1394_02_WDSS_completion_log	pdf	0.25

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

Document name	Document format	Document size [MB]
1394_2_7_21_S_COMPLETION_REPORT	pdf	113.43

Drill stem tests (DST)

Test number	From depth MD [m]	To depth MD [m]	Choke size [mm]
1.0	4575	4610	7.9
2.1	4446	4519	11.9
2.2	4446	4519	9.9
3.1	4308	4338	11.1
3.2	4308	4338	19.0

Test number	Final shut-in pressure [MPa]	Final flow pressure [MPa]	Bottom hole pressure [MPa]	Downhole temperature [°C]
1.0				160
2.1				153
2.2				
3.1				153
3.2				153





Test number	Oil [Sm3/day]	Gas [Sm3/day]	Oil density [g/cm3]	Gas grav. rel.air	GOR [m3/m3]
1.0	107	27000	0.800	0.790	267
2.1	879	272000	0.810	0.790	312
2.2	592	211000	0.810	0.790	357
3.1	760	249000	0.810	0.810	326
3.2	1236	447000	0.800	0.760	362

Logs

Log type	Log top depth [m]	Log bottom depth [m]
CST GR	4378	4530
DIL GR	2511	4073
DIL LSS GR	1056	2523
DIL LSS GR	4223	4562
DIL SDT GR	4563	5042
DLL GR MSFL SLS	2511	4233
LDL CNL NGL	3210	4211
LDL CNL NGL BHC	4223	4563
LDL CNL NGL BHC	4563	5043
MWD - GR RES DIR	167	5043
OBDT GR	4223	4558
OBDT GR	4563	5043
RFT GR	4309	4545
RFT GR	4572	5036
RFT GR CH	4322	4322
VELOCITY	0	0

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	171.0	36	173.0	0.00	LOT
INTERM.	20	1056.0	26	1067.0	1.85	LOT
INTERM.	13 3/8	2512.0	17 1/2	2523.0	2.08	LOT
INTERM.	9 5/8	4221.0	12 1/4	4234.0	2.30	LOT
LINER	7	4557.0	8 1/2	4563.0	2.22	LOT
LINER	5	5039.0	5 7/8	5039.0	0.00	LOT

**Drilling mud**

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
128	1.02			WATER BASED	08.09.1989
128	1.02			WATER BASED	29.06.1989
174	1.02			WATER BASED	08.09.1989
174	1.02			WATER BASED	29.06.1989
319	1.02			WATER BASED	29.06.1989
319	1.02			WATER BASED	08.09.1989
351	2.12	66.0	22.0	OIL BASED	08.01.1990
351	2.12	71.0	27.3	WATER BASED	09.01.1990
351	2.12	71.0	27.3	WATER BASED	12.01.1990
764	1.02			WATER BASED	08.09.1989
764	1.02			WATER BASED	29.06.1989
1018	1.02			WATER BASED	29.06.1989
1018	1.02			WATER BASED	08.09.1989
1068	1.32			WATER BASED	08.09.1989
1068	1.16			WATER BASED	08.09.1989
1068	1.33	16.0	7.7	WATER BASED	08.09.1989
1068	1.16			WATER BASED	29.06.1989
1068	1.32			WATER BASED	29.06.1989
1068	1.32			WATER BASED	08.09.1989
1068	1.32			WATER BASED	29.06.1989
1068	1.33	16.0	7.7	WATER BASED	03.07.1989
1183	1.33	17.0	9.1	WATER BASED	03.07.1989
1183	1.33	17.0	9.1	WATER BASED	08.09.1989
1475	1.38	18.0	9.6	WATER BASED	03.07.1989
1475	1.38	18.0	9.6	WATER BASED	08.09.1989
1504	1.44	15.0	7.2	WATER BASED	08.09.1989
1504	1.44	15.0	7.2	WATER BASED	04.07.1989
1824	1.65	23.0	10.1	WATER BASED	05.07.1989
1824	1.65	23.0	10.1	WATER BASED	08.09.1989
1955	1.64	23.0	12.0	WATER BASED	08.09.1989
2024	1.64	18.0	7.7	WATER BASED	08.09.1989
2024	1.64	18.0	7.7	WATER BASED	07.07.1989
2524	1.65	33.0	21.5	WATER BASED	10.07.1989
2524	1.65	25.0	10.5	WATER BASED	10.07.1989



2524	1.65	19.0	7.7	WATER BASED	12.07.1989
2524	1.65	26.0	10.5	WATER BASED	10.07.1989
2524	1.65	28.0	12.4	WATER BASED	11.07.1989
2524	1.65	26.0	10.5	WATER BASED	08.09.1989
2524	1.65	28.0	12.4	WATER BASED	08.09.1989
2524	1.65	19.0	7.7	WATER BASED	08.09.1989
2524	1.65	33.0	21.5	WATER BASED	08.09.1989
2524	1.65	25.0	10.5	WATER BASED	08.09.1989
2627	1.65	16.0	6.7	WATER BASED	08.09.1989
2627	1.65	16.0	6.7	WATER BASED	13.07.1989
2920	1.65	20.0	11.0	WATER BASED	14.07.1989
2920	1.65	20.0	11.0	WATER BASED	08.09.1989
3079	2.12	69.0	22.5	OIL BASED	08.01.1990
3106	1.68	19.0	10.5	WATER BASED	08.09.1989
3106	1.68	19.0	10.5	WATER BASED	18.07.1989
3206	1.70	15.0	12.4	WATER BASED	18.07.1989
3206	1.70	15.0	12.4	WATER BASED	08.09.1989
3218	1.70	20.0	12.4	WATER BASED	08.09.1989
3218	1.70	20.0	12.4	WATER BASED	18.07.1989
3284	1.73	16.0	13.9	WATER BASED	18.07.1989
3284	1.73	16.0	13.9	WATER BASED	08.09.1989
3312	1.73	17.0	10.1	WATER BASED	08.09.1989
3312	1.73	17.0	10.1	WATER BASED	19.07.1989
3359	1.73	17.0	8.6	WATER BASED	20.07.1989
3359	1.73	17.0	8.6	WATER BASED	08.09.1989
3434	1.73	16.0	10.5	WATER BASED	21.07.1989
3434	1.73	16.0	10.5	WATER BASED	08.09.1989
3442	1.73	18.0	10.1	WATER BASED	24.07.1989
3442	1.73	18.0	10.1	WATER BASED	08.09.1989
3535	1.73	18.0	10.1	WATER BASED	08.09.1989
3535	1.73	18.0	10.1	WATER BASED	24.07.1989
3661	1.73	15.0	9.6	WATER BASED	24.07.1989
3661	1.73	15.0	9.6	WATER BASED	08.09.1989
3703	1.73	20.0	12.4	WATER BASED	08.09.1989
3703	1.73	16.0	7.7	WATER BASED	08.09.1989
3703	1.73	20.0	12.4	WATER BASED	25.07.1989
3703	1.73	16.0	7.7	WATER BASED	26.07.1989
3742	1.73	15.0	7.7	WATER BASED	08.09.1989
3853	1.73	14.0	8.1	WATER BASED	08.09.1989
3867	1.75	16.0	8.6	WATER BASED	08.09.1989



3937	1.75	16.0	9.1	WATER BASED	08.09.1989
3937	1.75	16.0	9.1	WATER BASED	31.07.1989
4008	1.75	19.0	12.0	WATER BASED	08.09.1989
4031	1.75	19.0	7.7	WATER BASED	08.09.1989
4054	2.12	65.0	21.5	OIL BASED	08.01.1990
4067	1.75	18.0	9.1	WATER BASED	08.09.1989
4067	1.75	18.0	9.1	WATER BASED	02.08.1989
4076	1.75	15.0	7.7	WATER BASED	03.08.1989
4076	1.75	15.0	7.7	WATER BASED	08.09.1989
4103	1.75	19.0	9.6	WATER BASED	08.09.1989
4103	1.75	19.0	9.6	WATER BASED	04.08.1989
4112	1.75	16.0	7.2	WATER BASED	07.08.1989
4112	1.76	16.0	9.1	WATER BASED	07.08.1989
4112	1.75	16.0	7.2	WATER BASED	08.09.1989
4112	1.76	16.0	9.1	WATER BASED	08.09.1989
4143	1.75	19.0	9.1	WATER BASED	08.09.1989
4143	1.75	19.0	9.1	WATER BASED	07.08.1989
4154	1.75	18.0	13.4	WATER BASED	08.08.1989
4154	1.75	18.0	13.4	WATER BASED	08.09.1989
4179	1.75	18.0	9.6	WATER BASED	09.08.1989
4179	1.75	18.0	9.6	WATER BASED	08.09.1989
4212	1.75	15.0	10.5	WATER BASED	08.09.1989
4212	1.75	15.0	10.5	WATER BASED	10.08.1989
4234	1.77	16.0	10.1	WATER BASED	11.08.1989
4234	1.79	18.0	10.1	WATER BASED	15.08.1989
4234	1.81	21.0	8.1	WATER BASED	15.08.1989
4234	1.81	21.0	8.6	WATER BASED	15.08.1989
4234	1.81	21.0	9.1	WATER BASED	15.08.1989
4234	1.81	21.0	9.6	WATER BASED	16.08.1989
4234	1.88	30.0	4.8	OIL BASED	17.08.1989
4234	1.77	16.0	10.1	WATER BASED	08.09.1989
4234	1.79	18.0	10.1	WATER BASED	08.09.1989
4234	1.81	21.0	8.1	WATER BASED	08.09.1989
4234	1.81	21.0	9.1	WATER BASED	08.09.1989
4234	1.81	21.0	9.6	WATER BASED	08.09.1989
4234	1.88	30.0	4.8	OIL BASED	08.09.1989
4234	1.81	21.0	8.6	WATER BASED	08.09.1989
4237	2.04	40.0	7.2	WATER BASED	08.09.1989
4237	2.04	40.0	7.2	WATER BASED	22.08.1989
4311	2.10	44.0	7.7	OIL BASED	08.09.1989



4311	2.12	55.0	6.7	OIL BASED	08.09.1989
4321	2.10	37.0	7.7	OIL BASED	08.09.1989
4321	2.10	40.0	5.7	OIL BASED	08.09.1989
4321	2.10	40.0	5.7	OIL BASED	22.08.1989
4327	2.10	41.0	6.2	OIL BASED	08.09.1989
4339	2.10	41.0	6.2	OIL BASED	08.09.1989
4339	2.10	41.0	6.2	OIL BASED	24.08.1989
4339	2.10	41.0	6.2	OIL BASED	24.08.1989
4345	2.10	36.0	7.2	OIL BASED	25.08.1989
4345	2.10	36.0	7.2	OIL BASED	08.09.1989
4352	2.10	40.0	6.7	OIL BASED	08.09.1989
4352	2.10	40.0	6.7	OIL BASED	28.08.1989
4364	2.10	33.0	6.7	OIL BASED	28.08.1989
4364	2.10	33.0	6.7	OIL BASED	08.09.1989
4375	2.10	35.0	7.7	OIL BASED	28.08.1989
4375	2.10	35.0	7.7	OIL BASED	08.09.1989
4386	2.10	36.0	6.2	OIL BASED	08.09.1989
4387	2.10	36.0	6.2	OIL BASED	29.08.1989
4418	2.10	36.0	6.2	OIL BASED	08.09.1989
4451	2.09	34.0	7.7	OIL BASED	08.09.1989
4451	2.09	34.0	7.7	OIL BASED	31.08.1989
4457	2.09	35.0	7.2	OIL BASED	01.09.1989
4457	2.09	35.0	7.2	OIL BASED	08.09.1989
4469	2.09	36.0	6.2	OIL BASED	08.09.1989
4469	2.09	36.0	6.2	OIL BASED	04.09.1989
4477	2.09	31.0	5.7	OIL BASED	04.09.1989
4477	2.09	31.0	5.7	OIL BASED	08.09.1989
4487	2.10	38.0	6.2	OIL BASED	04.09.1989
4487	2.10	38.0	6.2	OIL BASED	08.09.1989
4526	2.10	46.0	13.4	OIL BASED	06.12.1989
4526	2.10	48.0	13.9	OIL BASED	06.12.1989
4526	2.10	52.0	15.3	OIL BASED	07.12.1989
4526	2.10	54.0	14.8	OIL BASED	08.12.1989
4526	2.10	55.0	15.8	OIL BASED	11.12.1989
4526	2.10	45.0	14.4	OIL BASED	11.12.1989
4526	2.10	52.0	15.3	OIL BASED	12.12.1989
4526	2.10	52.0	15.8	OIL BASED	13.12.1989
4526	2.10	53.0	13.4	OIL BASED	14.12.1989
4526	2.10	52.0	14.4	OIL BASED	15.12.1989
4526	2.10	60.0	19.2	OIL BASED	18.12.1989



4526	2.10	58.0	15.3	OIL BASED	18.12.1989
4526	2.12	60.0	17.7	OIL BASED	19.12.1989
4526	2.12	63.0	16.8	OIL BASED	20.12.1989
4526	2.12	53.0	14.4	OIL BASED	21.12.1989
4526	2.12	50.0	14.4	OIL BASED	22.12.1989
4526	2.12	51.0	14.4	OIL BASED	27.12.1989
4526	2.12	50.0	13.4	OIL BASED	27.12.1989
4526	2.12	55.0	13.9	OIL BASED	27.12.1989
4526	2.12	51.0	12.4	OIL BASED	27.12.1989
4526	2.12	52.0	19.2	OIL BASED	29.12.1989
4526	2.12	52.0	19.2	OIL BASED	02.01.1990
4526	2.12	57.0	16.8	OIL BASED	02.01.1990
4526	2.12	53.0	13.9	OIL BASED	02.01.1990
4526	2.12	43.0	11.5	OIL BASED	02.01.1990
4526	2.12	52.0	19.2	OIL BASED	03.01.1990
4526	2.12	53.0	13.9	OIL BASED	03.01.1990
4526	2.12	43.0	11.5	OIL BASED	03.01.1990
4526	2.12	61.0	20.6	OIL BASED	04.01.1990
4526	2.13	58.0	19.2	OIL BASED	05.01.1990
4526	2.10	54.0	15.3	OIL BASED	11.12.1989
4526	2.12	58.0	15.3	OIL BASED	18.12.1989
4526	2.12	51.0	12.4	OIL BASED	27.12.1989
4526	2.12	51.0	19.6	OIL BASED	28.12.1989
4526	2.12	57.0	16.8	OIL BASED	03.01.1990
4532	2.10	55.0	14.4	OIL BASED	04.12.1989
4532	2.10	50.0	12.4	OIL BASED	04.12.1989
4532	2.11	59.0	14.8	OIL BASED	04.12.1989
4551	2.11	38.0	6.7	OIL BASED	05.09.1989
4551	2.11	38.0	6.7	OIL BASED	08.09.1989
4559	2.11	36.0	7.2	OIL BASED	08.09.1989
4559	2.12	38.0	6.7	OIL BASED	08.09.1989
4559	2.12	37.0	6.7	OIL BASED	08.09.1989
4559	2.12	37.0	6.7	OIL BASED	11.09.1989
4559	2.12	35.0	6.7	OIL BASED	11.09.1989
4559	2.12	37.0	6.7	OIL BASED	11.09.1989
4559	2.12	47.0	7.7	OIL BASED	12.09.1989
4559	2.12	44.0	7.2	OIL BASED	13.09.1989
4559	2.11	36.0	7.2	OIL BASED	06.09.1989
4559	2.12	38.0	6.7	OIL BASED	07.09.1989
4563	2.12	42.0	7.7	OIL BASED	18.09.1989



4563	2.12	44.0	5.7	OIL BASED	18.09.1989
4563	2.12	46.0	7.2	OIL BASED	18.09.1989
4564	2.12	43.0	5.7	OIL BASED	19.09.1989
4564	2.11	41.0	6.2	OIL BASED	20.09.1989
4564	2.12	39.0	7.2	OIL BASED	25.09.1989
4564	2.12	44.0	7.2	OIL BASED	25.09.1989
4564	2.12	34.0	5.7	OIL BASED	25.09.1989
4564	2.13	42.0	6.7	OIL BASED	25.09.1989
4564	2.12	43.0	7.2	OIL BASED	26.09.1989
4564	2.12	41.0	7.7	OIL BASED	27.09.1989
4564	2.12	41.0	7.2	OIL BASED	28.09.1989
4564	2.12	42.0	7.2	OIL BASED	29.09.1989
4564	2.11	55.0	9.6	OIL BASED	03.10.1989
4564	2.12	50.0	9.6	OIL BASED	05.10.1989
4564	2.12	42.0	6.7	OIL BASED	25.09.1989
4564	2.11	52.0	11.0	OIL BASED	04.10.1989
4566	2.09	47.0	7.7	OIL BASED	06.10.1989
4575	2.09	39.0	5.3	OIL BASED	09.10.1989
4578	2.09	47.0	6.7	OIL BASED	09.10.1989
4583	2.04	40.0	6.7	OIL BASED	09.10.1989
4616	2.06	38.0	5.7	OIL BASED	10.10.1989
4616	2.06	38.0	7.7	OIL BASED	11.10.1989
4629	2.06	36.0	5.3	OIL BASED	12.10.1989
4648	2.06	42.0	9.1	OIL BASED	13.10.1989
4666	2.06	43.0	9.1	OIL BASED	16.10.1989
4680	2.06	43.0	9.6	OIL BASED	16.10.1989
4680	2.06	48.0	9.1	OIL BASED	16.10.1989
4710	2.06	51.0	12.0	OIL BASED	17.10.1989
4722	2.06	50.0	10.1	OIL BASED	18.10.1989
4735	2.06	50.0	9.6	OIL BASED	19.10.1989
4760	2.06	46.0	9.1	OIL BASED	24.10.1989
4784	2.06	43.0	9.6	OIL BASED	24.10.1989
4807	2.06	44.0	6.2	OIL BASED	24.10.1989
4823	2.06	43.0	9.1	OIL BASED	24.10.1989
4862	2.06	42.0	8.1	OIL BASED	25.10.1989
4865	2.06	42.0	11.0	OIL BASED	27.10.1989
4887	2.06	41.0	11.5	OIL BASED	27.10.1989
4896	2.06	43.0	10.5	OIL BASED	31.10.1989
4930	2.06	39.0	10.1	OIL BASED	31.10.1989
4942	2.06	35.0	8.1	OIL BASED	01.11.1989



4968	2.06	35.0	9.6	OIL BASED	01.11.1989
4986	2.06	35.0	9.6	OIL BASED	02.11.1989
5011	2.06	35.0	10.1	OIL BASED	03.11.1989
5013	2.06	37.0	9.1	OIL BASED	07.11.1989
5020	2.06	35.0	10.1	OIL BASED	07.11.1989
5039	2.09	37.0	10.1	OIL BASED	07.11.1989
5039	2.10	37.0	9.6	OIL BASED	09.11.1989
5039	2.09	37.0	9.6	OIL BASED	10.11.1989
5039	2.09	35.0	8.6	OIL BASED	13.11.1989
5039	2.09	35.0	9.6	OIL BASED	13.11.1989
5039	2.10	58.0	15.3	OIL BASED	14.11.1989
5039	2.10	54.0	15.3	OIL BASED	15.11.1989
5039	2.11	56.0	15.3	OIL BASED	17.11.1989
5039	2.12	57.0	14.8	OIL BASED	20.11.1989
5039	2.10	55.0	15.3	OIL BASED	20.11.1989
5039	2.12	56.0	16.3	OIL BASED	20.11.1989
5039	2.10	55.0	15.8	OIL BASED	21.11.1989
5039	2.11	47.0	13.9	OIL BASED	22.11.1989
5039	2.10	48.0	13.4	OIL BASED	23.11.1989
5039	2.10	49.0	12.9	WATER BASED	24.11.1989
5039	2.10	57.0	14.8	OIL BASED	27.11.1989
5039	2.10	51.0	13.4	OIL BASED	27.11.1989
5039	2.10	57.0	15.3	OIL BASED	28.11.1989
5039	2.11	55.0	13.4	OIL BASED	29.11.1989
5039	2.10	64.0	14.4	OIL BASED	30.11.1989
5039	2.10	54.0	12.4	OIL BASED	01.12.1989
5039	2.09	37.0	10.1	OIL BASED	07.11.1989
5039	2.09	36.0	9.1	OIL BASED	08.11.1989
5039	2.09	37.0	10.1	OIL BASED	13.11.1989
5039	2.12	54.0	12.9	OIL BASED	27.11.1989

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]
1394 Formation pressure (Formasjonstrykk)	pdf	0.22

