General information

Wellbore name	7220/11-4 A
Type	EXPLORATION
Purpose	APPRAISAL
Status	P&A
Press release	link to press release
Factmaps in new window	link to map
Main area	BARENTS SEA
Discovery	7220/11-1 (Alta)
Well name	7220/11-4
Seismic location	Survey LN15M02. INLINE 2295. CROSSLINE 2726
Production licence	609
Drilling operator	Lundin Norway AS
Drill permit	1665-L
Drilling facility	LEIV EIRIKSSON
Drilling days	42
Entered date	18.07.2017
Completed date	28.08.2017
Plugged and abondon date	28.08.2017
Release date	28.08.2019
Publication date	28.08.2019
Purpose - planned	APPRAISAL
Reentry	NO
Content	OIL/GAS
Discovery wellbore	NO
1st level with HC, age	EARLY PERMIAN
1st level with HC, formation	ØRN FM
2nd level with HC, age	EARLY TRIASSIC
2nd level with HC, formation	UNDEFINED GP
Kelly bushing elevation [m]	25.0
Water depth [m]	401.7
Total depth (MD) [m RKB]	2392.0
Final vertical depth (TVD) [m RKB]	2052.0
Maximum inclination [°]	48.5
Oldest penetrated age	CARBONIFEROUS
Oldest penetrated formation	FALK FM
Geodetic datum	ED50
NS degrees	72° 2' 27.88'' N

EW degrees	20° 33' 7.97'' E
NS UTM [m]	8002536.65
EW UTM [m]	690843.65
UTM zone	33
NPDID wellbore	8226

Wellbore history

General

Well 7220/11-4 A is a geologic side-track to wellbore 7220/11-4 on the Alta discovery on the southern Loppa High in the Barents Sea. The primary objective was to investigate the northwards extent and hydrocarbon potential of the Ørn Formation and Permo-Triassic conglomerate encountered the main wellbore.

Operations and results

Appraisal well 7220/11-4 A was kicked off from 676 m in the main well bore on 18 July 2017. It was drilled with the semi-submersible installation Leiv Eiriksson to TD at 2392 m (2052 m TVD) m in the Carboniferous Falk Formation. Operations proceeded without significant problems. The well was drilled with Performadril mud with 2.8 - 3.6% glycol from kick-off to TD.

Top reservoir was found at 2227 m (1897.3 m TVD). It consisted of Late Permian to Early Triassic conglomerates and carbonate rocks in the Ørn formation. The reservoir quality through the oil column varied, several zones were found to have very good permeability. In common with other wells drilled on the Alta structure, the well encountered oil with a gas cap in the reservoir. Pressure data showed the same hydrocarbon contacts as observed in previous wells drilled on the discovery suggesting good communication over the Alta structure. The gas-oil contact is estimated to be at 2234.7 m (1904.6 m TVD). The free-water level is estimated at 2282.2 m (1949.4 m TVD). Minor oil shows were reported at intervals throughout the Snadd Formation, predominantly associated with thin sandstone stringers or interbeds. Continuous shows are present in the dolomites below the free water level and down to TD but getting weaker with depth.

The interval 2227.8 to 2281.54 m was cored in five cores. The three first cores had 99, 100 and 100% recoveries, respectively. Core 4 from 2276.4 to 2279.4 m had 86% recovery, while core 5 from 2279.44 to 2281.54 had 33.8% recovery. Fluid samples were taken at 2256.41 m (oil), 2266.0 m (oil), and 2302.39 m (water).

The well was permanently abandoned on 28 August 2017 as a gas and oil appraisal.

Testing

No drill stem test was performed.

Cuttings at the Norwegian Offshore Directorate

Cutting sample, top depth [m]	Cutting samples, bottom depth [m]
700.00	2392.00

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	2227.8	2252.8	[m]
2	2253.0	2262.6	[m]
3	2262.6	2276.4	[m]
4	2276.4	2279.0	[m]
5	2279.4	2280.2	[m]

Total core sample length [m]	51.7
Cores available for sampling?	YES

Lithostratigraphy

Top depth [mMD RKB]	Lithostrat. unit
427	NORDLAND GP
427	NAUST FM
500	SOTBAKKEN GP
500	TORSK FM
564	ADVENTDALEN GP
564	KOLJE FM
589	KAPP TOSCANA GP
589	SNADD FM
2165	SASSENDALEN GP
2165	KOBBE FM
2203	KLAPPMYSS FM
2218	HAVERT FM
2227	UNDEFINED GP
2252	GIPSDALEN GP
2252	ØRN FM
2323	FALK FM

Logs

Log type	Log top depth [m]	Log bottom depth [m]
ADT HRLA	1823	2282
CMR NEXT HNGS	1823	2280
FMI MSIP	426	2283
FMI MSIP	2281	2392
MDT	2224	2281
MDT	2285	2369
MSCT	2284	2384
MWD - GR PWD RES DIR	2239	2388
MWD - GR RES AC PWD DIR	628	2174
NEXT CMR PEX	2281	2392
PEX UIB	1823	2282
UBI PEX HRLA ADT HNGS	2281	2390
USIT	1500	2066

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	493.0	36	493.0	0.00	
SURF.COND.	20	657.4	26	664.0	1.30	FIT
INTERM.	9 5/8	2168.0	12 1/4	2174.0	1.38	LOT
LINER	7	2281.1	8 1/2	2281.8	0.00	
OPEN HOLE		2392.0	6	2392.0	0.00	

Drilling mud

Depth MD [m]	Mud weight [g/cm3]	Visc. [mPa.s]	Yield point [Pa]	Mud type	Date measured
426	1.05	45.0		SWEEPS	
450	1.03			Other	
453	1.50	22.0		KCL/Gem	
455	1.22	15.0		Performadril	
471	1.05	45.0		SWEEPS	
476	1.22	15.0		Performadril	
493	1.35	15.0		KCl/Polymer/GEM	
493	1.50	22.0		KCL/Gem	
519	1.22	16.0		Performadril	

531	1.23	16.0		Performadril	
531	1.22	17.0		Performadril	
588	1.18	14.0		Performadril	
590	1.35	17.0		KCl/Polymer/GEM	
620	1.17	9.0		KCl/Gem/Polymer	
648	1.39	19.0		KCl/Polymer/GEM	
658	1.17	19.0		PerformaDril	
664	1.17	19.0		Performadril	
664	1.39	19.0		KCl/Polymer/GEM	
669	1.17	19.0		Performadril	
1089	1.18	16.0		PERFORMADRIL	
1270	1.20	19.0		Performadril	
1294	1.18	20.0		PERFORMADRIL	
1452	1.17	11.0		KCl/Gem/Polymer	
1452	1.14	10.0		KCl/Gem/Polymer	
1475	1.20	19.0		Performadril	
1570	1.21	20.0		Performadril	
1788	1.14	10.0		KCl/Gem/Polymer	
1794	1.20	19.0		Performadril	
1818	1.21	22.0		PERFORMADRIL	
1830	1.17	17.0		Performadril	
1904	1.15	16.0		Performadril	
1904	1.14	16.0		Performadril	
1929	1.22	19.0		PERFORMADRIL	
1934	1.14	15.0		Performadril	
2174	1.22	22.0		PERFORMADRIL	
2174	1.23	24.0		Performadril	
2180	1.14	13.0		Performadril	
2262	1.15	10.0		Performadril	
2282	1.14	8.0		Performadril	
2282	1.13	1.0		KCl	
2392	1.23	12.0		Performadril	
2392	1.14	11.0		Performadril	