General information

Lithostrat. unit	AGAT FM
NPDID lithostrat. unit	2
Level	FORMATION
Lithostrat. unit, parent	CROMER KNOLL GP

Level below

Lithostrat. unit

Description

Agat Formation

Name

Named after the gas-condensate Agat Discovery in Norwegian block 35/3.

Well type section

Norwegian well 35/3-4 from 3589 m to 3345 m, coordinates N 61°51'54.54", E 03°52'26.99" (Fig 5.19), 95 m of cores, mainly from the lower half of the formation.

Well reference section

Norwegian well 35/3-5 from 3620 m to 3219 m, coordinates N 61°47'46.71",E 03°54'44.01" (Fig 5.20). 65 m of cores from the upper part of the formation.

Thickness

In the type well the gross thickness of the formation is 244 m, and in the reference well 401 m. The gross thickness varies in that range in the wells in block 35/3.

Lithology

In the type well the formation consists of white to light grey, fine- to medium-grained, moderately to well-sorted sandstones alternating with grey claystones. The sandstones are usually micaceous and glauconitic and sometimes contain small amounts of pyrite. The sandstones in the type well are carbonate- and silica-cemented in zones. In the reference well, the upper part of the formation consists of medium- and coarse-grained to pebbly sandstones and conglomerates alternating with dark grey claystones. The conglomerates are both matrix- and grain-supported. The claystones are often found as 0.5-5 m thick layers between the sandstones. They are dark grey, usually calcareous and contain varying amounts of siltstone. They may occasionally pass into light grey, micaceous, calcareous and glauconitic siltstones.

Basal stratotype

The lower boundary is defined where sandstones become the dominant lithology and is placed at the base of the first marked coarsening-upwards sandstone unit or distinct sand body. On logs it shows as an upward reduction in gamma-ray response (Fig 5.19) and (Fig 5.20) and most often an increase in velocity (Fig 5.20).

Characteristics of the upper boundary

The upper boundary is placed at the top of the upper sandstone layer. This boundary is especially distinct on the gamma-ray log since the overlying sediments are dominated by calcareous shales with a low sandstone content. The overlying sediments are

represented either by the Rødby Formation (well 35/3-1 and 35/3-2), or by the Svarte Formation (well 35/3-4 and 35/3-5),(Fig 5.19). (Fig 5.20).

Distribution

The formation is encountered in the area around the Måløy Fault Blocks in Norwegian blocks 35/3-36/1 (Fig 5.21) and is expected to be present along the western boundary of the Fennoscandian Shield. It is assumed to pass into shales towards the west (Fig 5.21).

Age

Aptian-Albian (possibly Early Cenomanian).

Depositional environment

Marine environment influenced by gravity flows of sediment.

Source

- Isaksen, D. and Tonstad, K. (eds.) 1989: A revised Cretaceous and Tertiary lithostratigraphic nomenclature for the Norwegian North Sea. NPD-Bulletin No. 5, 59 pp.

Wellbores penetrating

Wellbore name	Wellbore completion date	Top depth [m]	Bottom depth [m]
35/3-1	26.10.1976	3805	4020
35/3-2	26.10.1980	3528	3722
35/3-4	06.06.1981	3345	3583
35/3-5	31.03.1982	3219	3510
35/3-6	02.04.2002	2955	2958
35/3-7 S	01.10.2009	3596	3998
35/6-2 S	04.04.2009	3015	3391
35/9-3	11.11.1997	2658	2703
35/9-5	07.02.2010	2975	3114
35/9-16 A	25.04.2022	2871	2992
35/9-16 S	06.04.2022	2626	2718
36/1-1	14.06.1975	1218	1358
36/1-2	27.10.1975	2815	2865
36/1-3	25.03.2019	2564	2766
36/7-3	06.01.2002	2555	2632
36/7-4	26.09.2016	2428	2554
6204/10-1	23.11.1995	2564	2670
6204/11-2	28.12.1997	2700	2730
6205/3-1	11.02.1990	3179	3780
6205/3-1 R	30.11.1990	3179	3780

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
35/3-2	26.10.1980	59
35/3-4	06.06.1981	97
35/3-5	31.03.1982	65
35/3-7 S	01.10.2009	51
35/9-3	11.11.1997	39
35/9-16 A	25.04.2022	55
35/9-16 S	06.04.2022	51
36/7-4	26.09.2016	117