



General information

Lithostrat. unit	SOLDOGG FM
NPDID lithostrat. unit	153
Level	FORMATION
Lithostrat. unit, parent	BILLEFJORDEN GP

Level below

Lithostrat. unit

Description

Soldogg Formation

Name

From the Norwegian name for the plant Sundew (*Drósera* spp.).

Definition

The type section is defined as the interval from 2503.0 m to 2350.5 m in well [7128/4-1](#) on the Finnmark Platform ([Fig 9.8](#); Table 9.1), approximating to the base of the “Viséan sandstone unit” of Ehrenberg et al. (1998a). One core, 27.47 m long, was taken from the upper part of the formation ([Fig 9.11](#)) in this well. The transition from the underlying basement metasediments into the basal beds of the Soldogg Formation is defined by lower GR readings.

Reference sections

Reference sections are defined as the interval from 2533.5 m to 2358 m in well [7128/6-1](#) and from 515.5 m to 501.8 m in IKU shallow core 7029/03-U-01 ([Fig 9.9](#), [9.12](#)); Table 9.1). Both reference sections are located on the Finnmark Platform. It appears that Ehrenberg et al. (1998a, [Fig 9.4](#)) placed the base of their “Viséan sandstone unit” in [7128/6-1](#) at the transition from basement wash conglomeratic sandstones to cleaner interbedded sandstones, siltstones and interbedded fines at 2488.5 m. In [7128/6-1](#) and 7029/03-U-1, the transition from basement to the basal Soldogg Formation conglomerates is represented by a marked erosional unconformity.

Thickness

The formation is 152.5 m thick in the type well, 175.5 m in well [7128/6-1](#) and approximately the lowermost 13 m are represented by shallow core 7029/03-U-01 ([Fig 9.12](#)).

Lithology

Sandstones and conglomeratic sandstones with thin beds and laminae of carbonaceous siltstones, shales and coal dominate the formation. The cored interval in well [7128/4-1](#) (core 4) consists of cross-bedded and laminated sandstones and siltstones with three coal beds, each less than 1 m thick ([Fig 9.8](#), [9.13](#)). Coal beds occur most abundantly in the upper part of the formation in this well, but are not as abundant as in the overlying [Tettegras Formation](#). Petrographic examination of sidewall cores and cuttings from well [7128/6-1](#) shows a dominance of medium- to coarse-grained quartzose sandstones similar to those observed in well [7128/4-1](#). Shallow core 7029/03-U-01 is dominated by fining-upward units of conglomerates and laminated and trough cross-bedded sandstones ([Fig 9.14](#), [9.15](#)). Siltstones are rare in this core.



Lateral extent and variation

The Soldogg Formation is only known from the type- and reference wells in the eastern Finnmark Platform. Seismic mapping around the well locations indicates a thickness range of 100-200 m, reflecting deposition prior to or in the early stages of main rifting (c.f. Steel & Worsley 1984; Ehrenberg et al. 1998a). The Soldogg Formation becomes difficult to identify seismically eastward and westward on the Finnmark Platform and northward toward the margins of the Nordkapp Basin. It thins, possibly due to erosional truncation south and southeast of the type well. In 7029/03-U-01 it is capped by an almost 1 m thick calcrete horizon, implying prolonged subaerial exposure and non-deposition in this area during deposition of the [Tettegras Formation](#).

Age

Based on palynological data, the basal Soldogg Formation is no older than the middle Viséan TC Miospore Zone in well [7128/4-1](#) (Geochem Group 1994). The rest of the formation in this well is assigned to the NM Miospore Zone in terms of the NW European Miospore zonation of Clayton et al. (1977). Simon-Robertson (1992) assigned the interval assigned herein to the Soldogg Formation in well [7128/6-1](#) to the upper part of the TC and the NM Miospore zones and a similar age range is given for the formation in 7029/03-U-01 (Bugge et al. 1995).

Depositional environments

The sandstones encountered in well 7029/03-U-01 are interpreted as braided river deposits (Bugge et al. 1995). The sediments in core 4 from well [7128/4-1](#) are interpreted as representing various environments within a floodplain-dominated environment, including bar units, channel floor and crevasse splay deposits. They formed four general fining-upward rhythms of which two are characterised by the formation of coal beds at the top. According to log data, the cored sections are very similar to the uncored intervals and Ehrenberg et al. (1998a) suggested that the entire interval was deposited in an alluvial fan to braided river system, fining up into floodplain-dominated environments.

Correlation

As described above, a general correlation to the [Billefjorden Group](#) on Spitsbergen can be made, although no more detailed correlation at the formation level is appropriate.

Source

- Larssen, G. B., Elvebakk, G., Henriksen, L. B., Kristensen, S. E., Nilsson, I., Samuelsen, T. J., Svånå, T. A., Stemmerik, L. and Worsley, D. 2002: Upper Palaeozoic lithostratigraphy of the Southern Norwegian Barents Sea. NPD-Bulletin No. 9, 69 pp.

Wellbores penetrating

Wellbore name	Wellbore completion date	Top depth [m]	Bottom depth [m]
7128/4-1	26.02.1994	2351	2503
7128/6-1	08.11.1991	2358	2534
7130/4-1	08.01.2016	2996	3184

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
7128/4-1	26.02.1994	27