



General information

Lithostrat. unit	MANDAL FM
NPDID lithostrat. unit	101
Level	FORMATION
Lithostrat. unit, parent	TYNE GP

Level below

Lithostrat. unit

Description



Mandal Formation

Name

From a town on the south coast of Norway. It replaces the Kimmeridge Clay Formation as used by authors in the Central Graben area (e.g. Ofstad, 1983). The name was informally proposed by Hamar et. al., (1982).

Well type section

Norwegian well [7/12-3 A](#) (BP) from 3514 m to 3552 m, coord N 57°06'24.54", E 02°48'41.56" ([Fig 3.44](#)).

Well reference sections

Norwegian wells [2/1-2](#) (BP) from 3300 m to 3316m, coord N 56°57'30.76", E 03°12'32.07" ([Fig 3.33](#)), and [1/9-3 R](#) (Statoil) from 4265 m to 4319m, coord N 56°24'56.2", E 02°54'15.15" ([Fig 3.43](#)).

Thickness

In the type well 38 m and in the reference wells 16m and 54 m. The thickness usually varies between 10 m and 70 m and generally thins over structural highs.

Lithology

The formation consists of a dark grey-brown to black, slightly to non-calcareous, carbonaceous claystone becoming fissile in places. It is characterized by a very high level of radioactivity which is a function of organic carbon content. In addition it has an anomalously low velocity, a high resistivity and a low density. It may contain thin stringers of limestone/dolomite and, in some areas, sandstone (e.g. [1/9-3 R](#)).

Boundaries

The contacts of the Mandal Formation with underlying and overlying sediments are easily recognized on logs due to its high gamma ray and resistivity readings and its low velocity and density.

Distribution

The Mandal Formation is found in the Central Graben, and on the margins of the Southern Vestland Arch. The northern limit is the Jæren High.

Age

Volgian to Ryazanian.

Depositional environment

The formation was deposited in an anaerobic marine environment with high organic productivity and restricted bottom water circulation.

Remarks

See [Draupne Formation](#). **Source**

- Vollset, J. and Doré, A. G. (eds.) 1984: A revised Triassic and Jurassic lithostratigraphic nomenclature for the Norwegian North Sea. NPD-Bulletin No. 3, 53 pp.

Wellbores penetrating



Wellbore name	Wellbore completion date	Top depth [m]	Bottom depth [m]
1/3-3	24.03.1983	4043	4112
1/3-8	27.05.1997	4733	4742
1/3-9 S	31.07.1998	4119	4135
1/3-12 S	22.07.2010	5541	5556
1/6-6	08.03.1993	4846	4876
1/6-7	12.07.1992	4402	4448
1/9-3 R	30.09.1978	4265	4319
1/9-7	02.08.2003	4313	4400
2/1-2	26.02.1978	3299	3316
2/1-3	29.03.1980	3791	3820
2/1-4	03.08.1982	4004	4040
2/1-5	05.04.1983	3882	3914
2/1-6	12.08.1984	4104	4165
2/1-7	06.03.1985	3974	3996
2/1-8	23.11.1985	3880	3900
2/1-9	06.07.1991	4014	4034
2/1-9 A	08.03.1992	4068	4084
2/1-10	14.01.1992	4127	4156
2/1-12	10.02.1999	3250	3251
2/1-14 S	28.02.2009	5947	6022
2/1-16 S	13.07.2013	3434	3448
2/2-1	03.07.1982	3314	3322
2/2-2	27.08.1982	2908	2917
2/2-3	11.05.1983	3523	3527
2/2-4	07.06.1988	3308	3313
2/2-5	19.02.1992	3418	3426
2/2-6	14.05.2010	3585	3588
2/3-3	20.11.1971	2825	2850
2/3-4	24.07.1984	3005	3006
2/4-8	29.03.1972	3677	3696
2/4-11	09.04.1974	3969	3990
2/4-14	31.01.1989	4702	4729
2/4-14 R	06.04.1990	4714	4741
2/4-14 R2	14.04.1990	4702	4729
2/4-15 S	16.03.1990	4958	4962
2/4-15 SR	27.10.2003	4958	4965
2/4-16	04.11.1991	4737	4770
2/4-16 R	15.07.1992	4737	4770



2/4-18 R	10.07.1994	4716	4772
2/4-21	24.05.2012	4768	4795
2/4-21 A	24.07.2012	4769	4797
2/4-22 S	22.02.2015	4419	4430
2/5-7	24.02.1984	4108	4120
2/5-12	22.02.2002	3700	3703
2/6-1	30.05.1969	3102	3217
2/6-2	25.05.1980	4118	4149
2/6-3	25.02.1983	3391	3427
2/7-1	11.12.1970	3707	3730
2/7-2	02.03.1971	3862	3875
2/7-3	11.10.1972	3342	3414
2/7-9	10.04.1974	4076	4311
2/7-15	02.06.1980	3584	3606
2/7-19	02.02.1981	4586	4590
2/7-19 R	14.03.1990	4583	4587
2/7-20	25.06.1988	4060	4061
2/7-20 R	01.11.1991	4057	4058
2/7-22	15.10.1990	4452	4470
2/7-23 S	21.11.1990	4408	4412
2/7-24	13.04.1991	3195	3317
2/7-25 S	31.03.1991	4711	4828
2/7-26 S	13.09.1991	4299	4302
2/7-29	06.01.1994	4363	4391
2/7-31	09.06.1999	4437	4439
2/8-3	03.09.1972	3537	3594
2/8-12 S	27.04.1989	4000	4042
2/8-14	22.01.1991	3189	3257
2/9-2	04.09.1979	3653	3755
2/9-6 S	15.02.2021	3890	4175
2/10-1 S	23.04.1976	4265	4271
2/10-2	25.04.1993	3882	3905
2/11-1	03.10.1969	3555	3728
2/11-7	06.09.1986	3773	3814
2/11-8	11.07.1991	4265	4268
2/11-12 A	07.03.2019	3140	3390
2/12-2 S	14.09.1990	4325	4355
3/4-1	26.02.1994	2718	2726
3/4-2 S	31.08.2012	2911	2920
3/5-1	28.06.1978	2734	2795
3/5-2	20.08.1978	3144	3170



3/7-3	31.08.1981	3432	3506
3/8-1	29.12.2010	3286	3305
7/1-2 S	08.05.2008	2848	2919
7/4-1	21.08.1993	2970	2991
7/4-2	13.03.2008	3288	3336
7/7-2	25.04.1992	3240	3282
7/7-3	04.07.1993	3413	3440
7/8-1	05.02.1969	3201	3219
7/8-3	12.12.1983	3639	3675
7/8-4	20.02.1985	3817	3826
7/8-5 S	03.06.2006	3832	3871
7/9-1	29.05.1971	2453	2487
7/11-5	10.06.1982	4024	4057
7/11-6	20.10.1982	4008	4036
7/11-7	25.12.1983	4405	4448
7/11-7 R	08.10.1984	4405	4448
7/11-9	09.03.1986	4027	4093
7/11-10 S	10.09.1990	4268	4311
7/11-11 S	10.06.2007	4274	4348
7/11-12 A	31.12.2011	5301	5321
7/11-12 S	16.07.2011	5059	5082
7/11-13	03.11.2012	3680	3697
7/11-14 S	31.10.2021	3992	4005
7/12-2	23.09.1976	3262	3306
7/12-3 A	06.09.1977	3514	3560
7/12-4	12.12.1977	3350	3365
7/12-5	07.06.1981	3731	3763
7/12-6	24.07.1981	3292	3332
7/12-7	26.07.1988	3662	3699
7/12-8	23.12.1988	3640	3663
7/12-9	14.05.1990	3632	3652
7/12-10	29.08.1991	3538	3564
7/12-11	06.11.1991	3728	3753
7/12-12 S	17.03.1996	5902	5927
7/12-13 S	18.05.2012	4034	4070
8/10-3	06.10.2010	3077	3090
8/10-4 A	18.12.2011	3278	3334
8/10-4 S	27.10.2011	2887	2905
8/10-5 A	24.05.2014	2332	2364
8/10-5 S	04.03.2014	2649	2671
8/10-6 S	16.07.2014	1985	2020



8/10-7 S	04.01.2019	2879	2905
16/10-5	27.11.2012	2831	2929

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
2/1-4	03.08.1982	4
2/1-6	12.08.1984	38
2/1-8	23.11.1985	2
2/1-9	06.07.1991	15
2/7-25 S	31.03.1991	17
2/7-26 S	13.09.1991	3
2/9-6 S	15.02.2021	73
7/4-1	21.08.1993	9
7/7-2	25.04.1992	5
7/8-4	20.02.1985	1