



General information

Lithostrat. unit	GRID FM
NPDID lithostrat. unit	53
Level	FORMATION
Lithostrat. unit, parent	HORDALAND GP

Level below

Lithostrat. unit

Description

Grid Formation

Name

Named after a female giant in Norse mythology, who was one of the wives of Odin.

Well type section

Norwegian well [15/3-3](#) from 1840 m to 1470 m, coordinates N 58°52'31.25", E 01°46'46.24" ([Fig 5.64](#)). No cores.

Well reference sections

Norwegian well [24/12-1](#) from 1660 m to 1502 m, coordinates N 59°02'29.80", E 01°52'57.93" ([Fig 5.61](#)). No cores. Norwegian well [24/12-2](#) from 1397 m to 1282 m, coordinates N 59°12'00.75", E 01°52'53.34" ([Fig 5.65](#)). No cores.

Thickness

In wells [24/12-1](#) and [24/12-2](#) it is 158 m and 115 m, respectively.

Lithology

The formation consists of sandstones with interbeds of claystone and siltstone. The sandstones often have a massive, "blocky", appearance as illustrated by type well [15/3-3](#) ([Fig 5.64](#)). Individual sandstone beds show little, or no evidence of fining-upwards or coarsening-upwards. The sandstones are very fine to fine, sometimes medium to coarse. Sorting is generally moderate to good. Traces of mica, pyrite, glauconite and fossil fragments are common. A higher argillaceous content is found in distal areas. Well [24/12-1](#) illustrates the interfingering of thicker claystone units of the [Hordaland Group](#) with the Grid Formation ([Fig 5.61](#)). Further subdivision may be possible in the future (see Remarks).

Basal stratotype

The lower boundary shows a decrease in gamma-ray response and an increase in velocity from the [Hordaland Group](#) into the sandstones of the Grid Formation ([Fig 5.64](#)).

Characteristics of the upper boundary

The upper boundary is characterised by an increase in gamma-ray readings and a decrease in velocity from the sandstones of the Grid Formation into the clay-stones of the [Hordaland Group](#) ([Fig 5.64](#)).

Distribution



The sandstones were probably derived from the East Shetland Platform and the formation is recognised in the Viking Graben area between 58°30'N and approximately 60°30'N ([Fig 5.66](#)). A depocentre lies in Norwegian block 15/3 where the formation reaches a thickness of nearly 400 m. It thins eastwards and is not penetrated by wells on the Utsira High. It has been identified in some wells in the Oseberg area. In the Viking Graben north of 61° N, several sandstone bodies occur in the [Hordaland Group](#) at the same level, but it is uncertain whether they belong to the Grid Formation.

Age

Middle to Late Eocene, but wells [25/6-1](#) and [24/12-2](#) have given an Early Oligocene age.

Depositional environment

The formation is thought to have been deposited in an open marine environment during a regressive period. An eustatic fall in sea level in the Late Eocene is indicated by Haq et al. (1987).

Remarks

The formation comprises a series of sand bodies which interfinger with claystones. There is a considerable increase in thickness from less than 200 m north of 59° N (e.g. wells [24/12-1](#) and [24/12-2](#)) to nearly 400 m south of 59° N (e.g. well [15/3-3](#)). This is not due to a general increase in thickness, but rather to sand deposition having started earlier in the south. This could give grounds for erecting two formal units, a lower one confined to the area south of 59° N and probably of Middle Eocene age, and an upper one. In some areas the lower unit is separated from the upper one by a sequence of claystones which is referred to informally as the Belton member in the UK sector. However, lithological uniformity renders such subdivision impractical at present.

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]
15/2-1	24.02.1982	1428	1824
15/3-1 S	06.07.1975	1460	2147
15/3-2	24.01.1977	1402	1617
15/3-2	24.01.1977	1752	1775
15/3-2 R	27.11.1977	1402	1617
15/3-2 R	27.11.1977	1752	1775
15/3-3	09.08.1979	1470	2176
15/3-4	30.03.1982	1635	2258
15/3-5	13.05.1984	1596	2236
15/3-6	05.01.1999	1560	1850
15/3-6	05.01.1999	1978	2015
15/3-7	01.09.2001	1476	1850
15/3-8	11.04.2006	1448	1792
15/3-9	13.08.2010	1521	2209



15/3-11	09.08.2018	1639	2252
15/3-12 S	20.01.2020	1726	2254
15/5-3	07.12.1980	1774	2055
15/5-5	05.10.1995	1479	1807
15/5-6	16.07.1997	1539	1839
15/5-7	07.09.2008	1732	2110
15/5-7 A	13.10.2008	1732	2110
15/6-2 R	01.08.1974	1746	2112
15/6-3	19.12.1974	1792	2142
15/6-4	16.08.1976	1718	2174
15/6-5	29.11.1977	1891	2239
15/6-6	09.06.1982	1917	1971
15/6-7	08.06.1993	1836	2108
15/6-8 A	18.04.1997	1811	2086
15/6-8 S	05.04.1997	1811	2037
15/6-9 A	13.06.2007	1857	2020
15/6-9 B	23.07.2007	1857	2020
15/6-9 S	27.05.2007	1857	2020
15/6-10	06.04.2009	1746	2059
15/6-11 A	13.03.2011	1748	2109
15/6-11 S	19.12.2010	1748	2110
15/6-12	09.02.2011	1715	2191
15/6-13	15.05.2015	1725	1988
15/6-13 A	03.06.2015	1725	1988
15/6-13 B	29.06.2015	1725	1988
15/6-15	02.06.2019	1812	2035
15/6-16 S	28.06.2019	1635	1979
15/8-1	07.01.1982	1926	2225
15/8-2	21.10.2011	1898	2312
15/9-1	30.05.1977	1808	2131
15/9-10	07.11.1981	2049	2079
15/9-19 A	09.11.1997	2778	2802
15/9-19 B	02.02.1998	2782	2832
15/9-19 S	31.01.1993	3008	3240
15/9-19 SR	29.04.1993	3008	3240
15/9-19 SR2	25.07.1997	3011	3243
15/9-21 S	23.05.1998	2447	2481
15/9-22	13.03.2006	1975	2236
15/12-1	06.09.1975	2256	2277
15/12-3	22.12.1980	2076	2106
15/12-11 S	19.05.1997	2270	2309



15/12-18 S	07.11.2007	2250	2274
15/12-23	29.05.2010	1212	1283
15/12-23 A	18.07.2010	1212	1279
16/1-1	10.12.1967	1854	1942
16/1-2	07.08.1976	1660	1730
16/1-3	27.09.1982	1610	1760
16/1-3	27.09.1982	1834	1893
16/1-4	13.04.1993	1539	1556
16/1-4	13.04.1993	1584	1626
16/1-5	21.11.1998	1617	1733
16/1-5 A	06.12.1998	1652	1798
16/1-6 A	21.06.2003	1530	1553
16/1-6 A	21.06.2003	1629	1638
16/1-6 A	21.06.2003	1742	1757
16/1-6 S	07.06.2003	1490	1550
16/1-6 S	07.06.2003	1597	1602
16/1-6 S	07.06.2003	1672	1685
16/1-7	28.05.2004	1631	1723
16/1-7	28.05.2004	1782	1820
16/1-7	28.05.2004	1862	1922
16/1-8	13.11.2007	1556	1713
16/1-8 R	10.10.2009	1556	1713
16/1-9	22.04.2008	1598	1632
16/1-9	22.04.2008	1693	1793
16/1-10	05.02.2009	1494	1734
16/1-11	26.04.2010	1609	1738
16/1-11 A	09.05.2010	1609	1738
16/1-12	08.09.2009	1633	1661
16/1-13	21.01.2010	1467	1764
16/1-14	30.11.2010	1607	1798
16/1-15	05.04.2011	1553	1642
16/1-15 A	13.05.2011	1598	1729
16/1-16	07.12.2012	1633	1731
16/1-16 A	01.01.2013	1633	1731
16/1-18	14.05.2014	1588	1646
16/1-19 S	25.10.2013	1501	1727
16/1-20 A	21.10.2013	1772	1937
16/1-21 A	20.04.2015	1811	2094
16/1-21 S	03.03.2015	1664	1730
16/1-21 S	03.03.2015	1759	1808
16/1-22 A	04.06.2015	1623	1835



16/1-22 B	14.06.2015	1621	1826
16/1-22 S	27.05.2015	1627	2084
16/1-23 S	25.08.2015	1621	1750
16/1-24	16.03.2015	1666	1747
16/1-25 S	26.12.2015	1704	1788
16/1-26 A	24.04.2016	2368	2560
16/1-26 S	14.04.2016	2368	2560
16/1-27	11.04.2017	1562	1836
16/1-28 S	23.08.2018	1626	1704
16/1-29 S	03.06.2018	1419	1561
16/1-30 A	19.07.2019	1440	1550
16/1-30 S	01.07.2019	1442	1453
16/1-31 S	10.05.2019	1604	1649
16/1-33 S	05.08.2020	1599	1695
16/1-34 A	15.09.2021	1692	1743
16/1-34 S	31.07.2021	1693	1786
16/1-35 S	28.02.2023	1676	1827
16/2-3	28.09.2007	1251	1267
16/2-4	15.12.2007	1243	1325
16/2-5	13.05.2009	1192	1242
16/2-5	13.05.2009	1287	1305
16/2-9 S	24.09.2011	1197	1241
16/2-20 A	16.02.2014	1690	1729
16/4-2	29.07.1990	1913	2001
16/4-3	24.12.2000	1823	1880
16/4-4	23.03.2007	1897	1925
16/4-7	21.08.2013	1859	1893
16/4-9 S	16.08.2015	1663	1670
16/4-9 S	16.08.2015	1705	1708
16/4-10	07.03.2016	1880	2059
16/4-12	08.10.2021	1665	1716
16/4-13 S	10.04.2021	1702	1759
16/7-10	13.09.2011	1951	2002
24/6-1	25.08.1985	1263	1295
24/6-2	08.07.1998	1183	1279
24/6-4	02.06.2003	1148	1301
24/9-1	03.07.1976	1131	1264
24/9-1	03.07.1976	1358	1420
24/9-3	15.04.1981	1201	1400
24/9-4	17.06.1991	1067	1243
24/9-4	17.06.1991	1332	1371



24/9-5	26.01.1994	1203	1255
24/9-5	26.01.1994	1294	1309
24/9-6	07.03.1994	1158	1271
24/9-6	07.03.1994	1323	1350
24/9-7	25.03.2004	1149	1268
24/9-7	25.03.2004	1305	1329
24/9-7 A	29.03.2004	1149	1268
24/9-7 A	29.03.2004	1305	1329
24/9-7 B	02.04.2004	1151	1293
24/9-7 B	02.04.2004	1327	1342
24/9-7 C	11.04.2004	1152	1320
24/9-7 C	11.04.2004	1371	1379
24/9-7 C	11.04.2004	1407	1432
24/9-8	04.09.2007	1230	1422
24/9-9 A	15.10.2009	1124	1420
24/9-9 B	25.10.2009	1121	1472
24/9-9 S	07.10.2009	1117	1382
24/9-10 A	20.02.2011	1248	2514
24/9-10 S	02.02.2011	1248	2063
24/9-11 S	13.06.2017	1093	1295
24/9-12 A	25.02.2018	1120	1316
24/9-12 S	08.02.2018	1120	1316
24/9-13	16.07.2019	1104	1325
24/9-13 A	29.07.2019	1104	1462
24/9-14 A	13.03.2019	1128	1441
24/9-14 S	22.02.2019	1028	1441
24/9-15 A	24.04.2019	1318	1737
24/9-15 S	18.04.2019	1318	1737
24/12-1	09.04.1978	1502	1660
24/12-1 R	14.08.1978	1502	1660
24/12-2	21.01.1982	1282	1397
24/12-3 S	29.07.1996	1373	1648
24/12-4	14.09.2001	1211	1415
24/12-5 S	21.12.2007	1316	1540
24/12-6 S	20.12.2010	1356	1682
25/1-11 A	14.05.2010	1509	1519
25/1-11 R	26.04.2010	1479	1486
25/2-1	21.09.1973	1424	1442
25/2-4	20.10.1975	1213	1250
25/2-6	15.11.1977	1403	1491
25/2-8	01.08.1984	1015	1125



25/2-10 S	19.03.1986	1732	1740
25/2-10 SR	22.09.1987	1736	1744
25/2-12	12.11.1988	1210	1255
25/2-12	12.11.1988	1427	1440
25/2-12 A	06.04.1989	1210	1255
25/2-12 A	06.04.1989	1427	2042
25/2-14	30.03.1991	1348	1425
25/4-1	09.12.1972	1317	1330
25/4-2	06.12.1973	1125	1200
25/4-3	22.11.1974	1285	1363
25/4-5	26.03.1981	1343	1372
25/4-5	26.03.1981	993	1090
25/4-6 S	24.08.1991	1272	1362
25/4-6 SR	14.09.2003	1281	1371
25/4-7	17.04.2003	1216	1320
25/4-8	22.06.2003	1219	1305
25/4-10 A	28.11.2009	1274	1387
25/4-10 S	10.11.2009	1331	1527
25/4-13 A	09.10.2018	1284	1325
25/4-13 S	28.09.2018	1229	1328
25/5-1	01.08.1987	1287	1345
25/5-1 A	16.09.1987	1287	1345
25/5-2	04.07.1989	1388	1448
25/5-3	26.03.1990	1357	1373
25/5-4	07.03.1991	1357	1387
25/5-5	23.11.1995	1420	1433
25/5-7	23.10.2010	1243	1314
25/5-7	23.10.2010	1314	1407
25/5-9	25.02.2014	1293	2036
25/6-1	03.02.1986	1373	1395
25/6-2	29.05.1992	1640	1682
25/6-6 S	22.04.2019	1700	1711
25/7-3	28.08.1995	1236	1299
25/7-5	30.08.1997	1184	1324
25/7-6	14.10.2000	1203	1305
25/8-4	11.08.1992	1385	1390
25/8-5 S	22.09.1994	1247	1303
25/8-5 SR	03.08.1997	1247	1303
25/8-6	27.06.1995	1185	1310
25/8-7	12.08.1995	1484	1504
25/8-8 A	11.10.1995	1291	1310



25/8-8 B	24.10.1995	1313	1336
25/8-8 S	24.09.1995	1318	1333
25/8-9	28.01.1997	1301	1345
25/8-9 A	14.02.1997	1292	1355
25/8-11	02.12.1997	1129	1138
25/8-12 A	19.06.1999	1155	1166
25/8-12 S	09.06.1999	1150	1159
25/8-16 A	23.05.2009	1227	1948
25/8-16 S	13.05.2009	1224	1973
25/8-17	29.10.2009	1224	1322
25/8-17 A	15.11.2009	1221	1320
25/8-19 A	19.03.2020	1123	1153
25/8-19 S	30.12.2019	1128	1154
25/8-20 B	28.05.2021	1185	1215
25/8-20 C	13.06.2021	1190	1277
25/8-20 S	10.05.2021	1197	1226
25/8-21 S	20.06.2021	1021	1065
25/9-3	20.09.2009	1286	1303
25/9-4	27.02.2014	1322	1336
25/9-4	27.02.2014	1575	1606
25/10-3	13.09.1970	1401	1410
25/10-4	18.01.1981	1418	1487
25/10-4 R	13.06.1981	1418	1487
25/10-5	17.07.1981	1399	1443
25/10-6 S	22.03.1996	1456	1472
25/10-6 S	22.03.1996	1491	1530
25/10-7 S	08.06.1996	1526	1538
25/10-7 S	08.06.1996	1553	1632
25/10-8	07.04.1997	1551	1613
25/10-8 A	27.04.1997	1737	1810
25/10-9	27.07.2009	1504	1593
25/10-10	02.04.2010	1505	1518
25/10-11	10.08.2011	1487	2136
25/10-12 S	18.01.2015	1597	1612
25/10-13 S	19.06.2015	1452	1470
25/10-14 S	17.01.2016	1540	1896
25/10-15 S	02.08.2016	1564	1635
25/10-16 A	09.08.2018	2221	2472
25/10-16 B	18.08.2018	2221	2472
25/10-16 C	26.08.2018	2221	2472
25/10-16 S	30.07.2018	1602	1802



25/10-17 S	10.02.2023	1632	1751
25/11-6	01.10.1978	1462	1471
25/11-11	18.03.1981	1218	1245
25/11-13	29.05.1981	1442	1452
25/11-15	25.12.1991	1491	1506
25/11-16	24.07.1992	1521	1562
25/11-18	24.10.1994	1437	1464
25/11-24	29.03.2007	1530	1534
25/11-25 A	10.03.2008	1637	1665
25/11-25 S	15.02.2008	1648	1656
25/11-28	25.09.2015	1520	1648
25/11-29 S	13.05.2019	1588	1601
26/4-1	17.07.1987	1682	1733
29/3-1	15.09.1986	1580	1598
29/6-1	09.05.1982	1320	1520
29/9-1	24.02.1984	1303	1399
30/2-4 S	09.08.2008	1595	1717
30/3-1	07.09.1979	1661	1682
30/3-1 R	26.04.1982	1635	1679
30/3-4	12.06.1985	1350	1361
30/3-4	12.06.1985	1453	1518
30/3-4 R	18.11.2001	1352	1363
30/3-4 R	18.11.2001	1455	1520
30/3-9	01.07.2000	1613	1641
30/3-10 S	29.04.2009	1650	1690
30/3-11 S	09.09.2022	1353	1627
30/4-1	14.05.1979	1648	1700
30/5-1	29.07.1972	1704	1763
30/5-2	21.12.1996	1487	1632
30/6-28 S	29.03.2012	1342	1448
30/7-3	25.10.1976	1994	2018
30/7-3	25.10.1976	2062	2099
30/7-7	01.07.1979	2126	2130
30/8-1 S	01.03.1995	1417	1498
30/8-1 SR	01.03.1996	1417	1498
30/8-2	14.01.1996	1485	1757
30/8-3	05.01.1998	1538	1558
30/9-12	09.05.1991	1350	1380
30/9-12 A	04.06.1991	1353	1385
30/9-12 AR	11.07.2002	1357	1389
30/9-13 S	11.10.1991	1160	1417



30/9-13 S	11.10.1991	1515	1535
30/9-13 S	11.10.1991	1684	1703
30/9-13 SR	17.07.2002	1164	1421
30/9-13 SR	17.07.2002	1519	1539
30/9-13 SR	17.07.2002	1688	1707
30/9-14	14.05.1993	1443	1478
30/9-14	14.05.1993	1538	1571
30/9-18	11.04.1995	1417	1522
30/9-19	22.10.1998	1257	1380
30/9-19 A	21.12.1998	1257	2119
30/9-20 S	11.02.2002	1579	1613
30/9-21 A	15.06.2008	1687	1758
30/9-21 S	30.04.2008	1656	1727
30/9-24	17.10.2009	1345	1559
30/9-25	20.09.2013	1439	2069
30/11-1	14.03.1975	1465	1953
30/11-5	09.01.1997	1750	1757
30/11-5	09.01.1997	1785	1850
30/11-9 A	08.01.2014	1429	1481
30/11-9 S	13.11.2013	1443	1480
30/11-10	26.12.2014	1755	1837
30/11-11 A	07.04.2016	1532	1634
30/11-11 S	19.03.2016	1530	1583
30/11-12 A	20.05.2016	1459	1462
30/11-12 S	04.05.2016	1464	1467
30/11-13	06.06.2016	1458	1475
30/11-14	06.07.2016	1335	1479
30/11-14 B	23.07.2016	1335	1479
33/9-22 S	17.09.2017	1352	1373
34/2-5 S	31.03.2018	1553	1573
34/7-27	07.10.1998	1258	1294
35/3-7 S	01.10.2009	909	1038
35/7-1 S	15.08.2011	1514	1780
35/8-5 S	20.07.2003	854	1100
35/8-6 A	14.05.2016	1247	1442
35/8-6 S	22.04.2016	1247	1442
35/9-5	07.02.2010	670	860
35/9-6 S	07.12.2010	790	989
35/9-7	14.04.2012	1081	1108
35/9-8	11.04.2013	1074	1108
35/9-10 A	16.01.2014	1095	1112



35/9-10 S	26.11.2013	1102	1181
35/9-11 A	21.05.2014	834	965
35/9-11 S	15.04.2014	834	965
35/9-12 S	26.12.2014	854	1000
35/10-1	16.01.1992	1203	1252
35/10-2	22.08.1996	1258	1874
35/10-3	14.07.1999	1247	1269
35/12-6 A	30.06.2018	895	950
6204/10-1	23.11.1995	685	710

Wellbores with cores

Wellbore name	Wellbore completion date	Core length [m]
15/3-4	30.03.1982	5
16/1-1	10.12.1967	10
16/1-4	13.04.1993	25
16/1-23 S	25.08.2015	9
16/4-2	29.07.1990	6