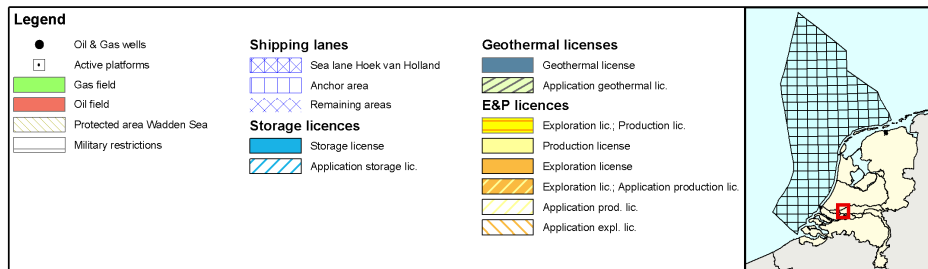
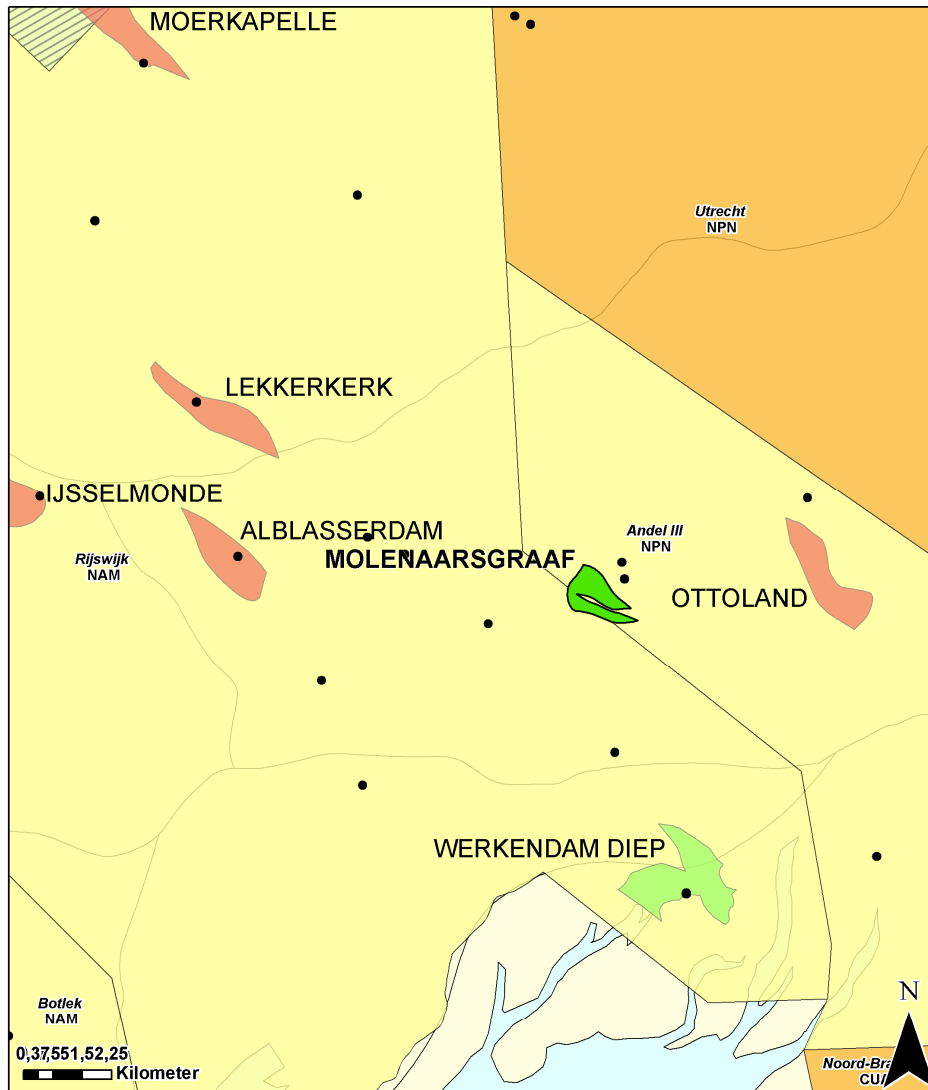




Fact sheet Molenaarsgraaf

Stranded fields - Q4 2009



Location map of the Molenaarsgraaf gas field

General information

The Molenaarsgraaf gas field was discovered in 1985 by NAM by well Molenaarsgraaf-02-sidetrack2. The field contains gas in the Main Buntsandstein Subgroup (RBM). The gas is trapped in a tilted horst block structure below the shales of the Keuper and Muschelkalk Formations. The field is tested at several reservoir levels in de Buntsandstein Formation. Complete results of RFT's are available on the composite well log.

The gas field is situated in the western part of the Roer Valley Graben, close to the West Netherlands Basin in the northeast. The field is located partly in the Rijswijk concession and partly in the Andel III concession.

Regional information on the geology, including sedimentology and the structural configuration, of the area is available in map sheet VIII Amsterdam-Gorinchem and map sheet XIII Breda-Valkenswaard.

Sequence of events

Date	Event
03-01-1955	NAM production license Rijswijk
20-03-1957	Extension Rijswijk license (16650 ha to 206500 ha)
20-02-1983	NAM exploration license Andel
22-01-1986	Spud date Molenaarsgraaf-02-S2
07-02-1986	RFT's 1498.8 - 2688.4 m ah
02-05-1986	RFT sample 2685.2 m ah (RBM Buntsandstein)
02-05-1986	RFT sample 2688.4 m ah (RBM Buntsandstein)
27-04-1986	TD reached 3287.0 m ah
01-01-1993	NAM exploration license Andel expired for license Andel II
10-06-2006	Split up Andel II in Andel III and Andel IV
10-06-2006	NAM exploration license Andel III
10-06-2006	Transfer exploration license Andel III to NP Netherlands and NAM
21-07-2006	Transfer exploration license Andel III to Northern Petroleum Nederland, DYAS, NAM...
18-11-2008	Northern Petroleum Nederland, DYAS, NAM... production license Andel III

Reservoir data

Geological unit RGD & NOGEP (1993)	Top m ah	Base m ah	Net m ah	Porosity %
Main Buntsandstein Subgroup RBM			0 - 10	0 - 10

Plug data

Depth m	Porosity %	Hor. Permeability	Density g/cm ³	Formation factor
2685.1	4.5	-1	2.681	149.4
2686.1	3.5	-1	2.692	207.4
2686.4	7.3	-1	2.653	138
2686.7	4.5	-1	2.67	224.1
2687	4.1	-1	2.667	256
2687.3	2.2	-1	2.72	411.5
2687.6	3.2	-1	2.702	222.6
2687.9	3.9	-1	2.684	222
2688.2	2.5	-1	2.702	331.5
2688.5	4.7	-1	2.678	217.9

Productivity

Test depth	Date	Reservoir pressure bar
RFT 2685.0 m-RT (RBM)	29-04-1986	269.5
RFT 2754.0 m-RT (RBM)	29-04-1986	273.2
RFT 2787.0 m-RT (RBM)	29-04-1986	277.6
RFT 2741.1 m-RT (RBM)	30-04-1986	271.9
RFT 2768.3 m-RT (RBM)	30-04-1986	279.4
RFT 2787.0 m-RT (RBM)	30-04-1986	277.1
RFT 2682.5 m-RT (RBM)	02-05-1986	267.3
RFT 2685.4 m-RT (RBM)	02-05-1986	269.2
RFT 2688.3 m-RT (RBM)	02-05-1986	269.9

Well status

The well status of MOL-02-S2 is plugged and abandoned.

Infrastructure

The nearest production facility is located approximately twenty kilometers to the west.

Public References

TNO-NITG 2002. Geological Atlas of the Deep subsurface of the Netherlands. Map sheet VII: Noordwijk-Rotterdam, Map sheet VIII: Amsterdam Gorinchem. Utrecht.

TNO-NITG 2001. Geological Atlas of the Deep subsurface of the Netherlands. Map sheet XIII: Breda-Valkenswaard, Map sheet XIV: Oss-Roermond. Utrecht.

RGD & NOGEPa 1993, Stratigraphic nomenclature of the Netherlands, Mededelingen Rijks Geologische Dienst, Nr. 50

NAM 1986: Composite well log; [MOL-02-S2](#). *On open file*

For more information stranded Oil&Gas fields in the Netherlands:

<http://www.nlog.nl/nl/reserves/reserves/stranded.html>

For released Well data and Seismic data contact DINOloket:

<http://www.dinoloket.nl>

For geological maps of the deep subsurface of the Netherlands:

http://www.nlog.nl/nl/pubs/maps/geologic_maps/NCP1.html

Liability

Facts and figures supplied on this fact sheet have been compiled carefully. Great care has been taken to ensure correct coverage of all information. TNO and the Ministry of Economic Affairs do not accept any liability for any direct or indirect damage of any kind ensuing from the use of information published on this sheet.