The Bergermeer gas storage is an underground natural gas storage in the Alkmaar region north of Amsterdam in the Netherlands. With a storage capacity of 4.1 BCM of gas it is one of the largest gas storages in Europe.

The gas storage has been developed in the Bergermeer gas field, discovered in 1969 by Amoco's well BGM-1. The Bergermeer gas field, containing high calorific gas, was operated for a period of 35 years starting from June 1971 until the end of 2006. The field has a GIIP of 16.8 BCM, of which 15.8 BCM has been produced historically.

The structure is a tilted horst block, with top and side seals of Zechstein evaporites. During the historic production period only very limited aquifer movement has been observed.

The reservoir is developed in the Slochteren Sandstone of Rotliegend Permian age, which has a total thickness of 215 m, and consists mainly of aeolian sandstones with excellent reservoir properties (porosity 20 – 24 %, permeability 100 – 5000 mD). Towards the base more fluviatile sandstones are present with somewhat lower reservoir quality.

During the Permian, the Bergermeer area was in a position sufficiently away from the lacustrine/evaporitic center of the Southern Permian Basin (SPB) towards the north, therefore no Ameland or Ten Boer Claystone is present in the stratigraphy.

In this part of the SPB, “erg” (sand desert) conditions persisted till the sudden incursion of seawater, causing the start of the Zechstein deposits. Due to the incoming seawater, the top of the reservoir has been reworked, while deteriorating the reservoir quality. This reworked, more cemented, part of the Rotliegend is locally known as “Weissliegend”.

The gas storage has been developed by drilling 14 new wells: 4 horizontal wells and 10 vertical/slanted wells. The old wells will be abandoned. To drill the depleted reservoir safely, special drilling techniques (“Managed Pressure Drilling”, MPD) were applied. To prevent fracturing the reservoir, the horizontal wells had to be drilled initially in the Weissliegend part of the reservoir and the other wells vertically through the Weissliegend and Rotliegend. To prevent mud losses over the reservoir, pore throat blocking material (“Baracarb”) was added to the mud. In the first vertical and horizontal well the Baracarb proved to be successful and together with the formation being much stronger than anticipated, it was decided to drill the remainder of the wells without MPD and to drill the vertical wells slanted and the horizontal wells into the Rotliegend.

Most wells have been completed with 7” Poromax sand control screens. To prevent screen erosion by sand particles, swell packers were installed at the flow unit boundaries in the reservoir. To locate these boundaries, permeability logs were made immediately after TD’ing the well by transforming the LWD logs using a core derived poroperm relationship.

End February 2015 all wells were drilled and completed. Early April 2015 the gas storage Bergermeer will be ready to start the summer 2015 injection cycle.