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SALTWATER DOMES IN FRESHWATER BEARING COASTAL AQUIFERS OF EAST FRISIA --- RELICS OF INTRUDED SEAWATER OR UPWARD MOVING SALINE DEEP GROUNDWATER ?

RESUME

1) The salt-water dome of Simonswolde is situated some kilometres inland from the borderline of salt-fresh water in an area where the hydraulic gradient of the ground water is in practice very low.

2) The distribution of the salt-water dome is limited in space with a North-South direction. The involved catchment is much bigger and has an East-West direction (without any areal "coning-effect").

3) The salt-water dome is located in an area which is highly disturbed due to tectonic movements in relation to domes of rock salt in the neighbourhood. These structural disturbances have been investigated by seismic methods.

4) The salt-water dome exists prior to the ground-water withdrawal from the nearby situated waterworks of Simonswalde.

5) In the area of the salt-water dome the geothermal gradient is lower than in the surroundings. An upward movement of the deeper situated salt water is possible by convection.

6) In the centre of the salt-water dome the saline water is the NaCl-type. The Li-concentration and the pH-values are higher than those of the intruded sea water.