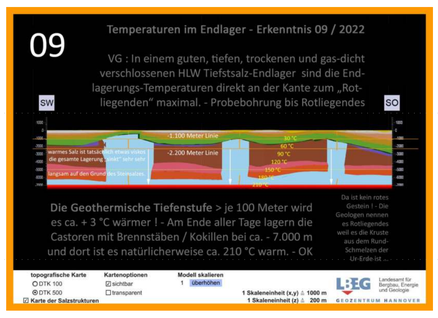
Engineering-geological criteria depth/temperature for HLW repository

"Compressed" scale 1:10 - real bore diameter - but the depth is divided by 10

The view of the construc-tion planner on the technical possible options in the 3 host rock types checked for final HLW disposal

Rocksalt DBHD DE	Claystone Bure & CH	Solid Rock	Geothermal Deep-Step in North-German Basin app. + 3,3 °C / 100 m depth
underground water-tables	**un-deep - therefore wet - and no gas-tight closing possible**	Finnland	
Sedi-ments	The sediment overlay of app. 1.000 meters is always required !!!		
Rock Salt	**Closing - Height** 300 meter gas-tight Just put salt in, the mountain pressure does rocksalt again		- 1.000 m + 33 °C
	Storage Space 6,3 Mio. Mini-HLW Containers 1kg Inv.		
	Working temperature in the final storage shaft approx. 20 °C because: **- Water cooling system** 16 x - 5,4 °C Water+G. **- Air cooling system** 4x + 10 °C all year		- 2.000 m + 66 °C
	Max Building-Depth : - because decay heat - because cooling machines are limited	Max. - 2.200 Meters !? could be less, if it is not the Geology "bei Beverstedt" - BGE ? The architect wants a good Start Temperature	
	Maximum depth app. - 900 meters - because Thermal-Boundry of Claystone Geology is at app. + 70° to + 90 °C - and notice : HLW develops its own decay heat		- 3.000 m + 99 °C
	Swiss nagra wants to build such a shitty, non-repository like this in the upper Rhine graben - only meters away from DE borders, where all water run into river Rhine. Close borders to Switzerland - set up battle tanks on the German side, - that is blackmail - the Swiss want to store into the DBHD final storage facility - perfidious blackmail ! - Stop nagras non-repository	Such a drill is NOT state of technology and science in 2023 Nobody can do a hole with explosive propulsion to a depth of -5,000 meters down. Would take ages and there is no ventilation technology available	- 4.000 m + 132 °C
Rock Salt		Bitumen would be viscous enough at a temperature of 150 °C to seal a hole - closure height at least 1,200 m **But much unknown fissures in rockstone.**	nobody not possible - 5.000 m + 165 °C
EWG Einschluss-Wirksamer-Gebirgsbereich			- 6.000 m + 198 °C
and finally the complete storage reached final postion after app 45.000 years GDF DONE			- 7.000 m + 231 °C
Rock Salt volcanic crust - 8.000 m + 264 °C			- 8.000 m + 264 °C
approximate depth-horizon of the hard volcanic crust simplified salt-clay geology near Beverstedt Germany			- 9.000 m + 297 °C

+ 400 °C Temperature-Boundry Grenz-Temperatur Stand AG
for HLW containers - steel becomes weak quickly at + 728°C

in Rocksalt	in Clay Stone	in Solid Rock	Plan-Author :
works perfect offers :	**NO safe GDF possible !!!** with todays knowledge & technology	always fissured ! was once liquid	Dipl. - Ing. V. Goebel
LONGTERM SAFETY	~~900 meter~~	Only by blasting **Not buildable**	12 y. planning the HLW GDF
1.100 - 7.800 m		3.800 - 6.090 m	05.11.2022

https://www.ing-goebel.de

This is by knowledge and active construction work over 12 years by a German Engineer in Architecture and master of metal industry

DBHD 2.0.1 plan has to be verified by a Comsol FE calculation including the viscosity of rocksalt. Statics & Thermodynamics