

# Conventional Potash Mining vs Solution Mining - Geological and Technological Frame Conditions of Economic Potash Extraction

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Conventional potash mining, that means extraction by classical underground mining operation, started in 1861 in the Stassfurt area, northern Central Germany. Since then more than  $2.8 \times 10^9$  tons of sylvinitic and carnallitic ore with an total content of more than  $300 \times 10^6$  tons  $K_2O$  were extracted by this technology and hoisted through vertical shafts in Germany.

Solution mining of salt goes back to the traditional wild brining technology and has been known since the early years of the mankind. Solution mining of sylvinite is used for potash production since the end of the sixties in Saskatchewan (Canada) and since the early seventies in Utah (USA). An solution mining method for carnallitic ore was developed mid of the eighties by the *East German Potash Research Institute* and is running now as a commercial operation at Bleicherode (Thuringia, Germany).

Presently, more than 90 % of the world underground potash production comes from conventional mining. In opposite to this, the total percentage of rock salt production by solution mining is more than 70 %. This large difference in the application emphasise that efficient potash production by solution mining needs specific geological and technological frame conditions.

The paper presented will discuss different requirements of the mining techniques regarding the depth of the deposit, ore grade, thickness of the potash seam and accompanying minerals as well as the impact on the subsequent ore respectively brine processing technologies.

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