

# **OVERBURDEN CONVEYOR BRIDGE DUMPS OF OPEN-CAST LIGNITE MINING - FABRIC AND PETROGRAPHICAL COMPOSITION OF ARTIFICIAL SEDIMENTARY DEPOSITS WITH REGARD TO WATER TABLE REBOUND**

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One serious effect of open-cast lignite mining is the completely changed subsurface. With regard to the water table rebound after stopping the mine's dewatering system and the prediction of sediment/water reactions, the sediment distribution of the 3x5kmx50m extending overburden dumps have to be explored. This was carried out as a combined geophysical well logging and core analysis and shows the following results: Within main vertical units of x10m thickness, layers are arranged as inclined beds. These elements, created by particle sorting processes form alternating cohesive/non-cohesive bedding, x1m thick. The enrichment of fine clastics in inclined beds, will act as hydraulic barrier, affecting the future flow capacity of groundwater. Except of the material subdivision of the dump, large scale sections of differing sediment compactness can be observed. The resulting shift of geochemical sections and the vertical permeability profile will affect the groundwater interface dump/ natural hydrogeological profile. The found correlation of lignite-, with sulfur- and fineclastics content means a reappearance of geogenetic texture-mineral paragenesis in the overburden dumps and as an important information it improves well log analysis in the new area of application of inclined beds with low consolidated sediments. Based on these findings, the reorganisation of overburden sediment constituents, relevant to groundwater-reaction and groundwater-transmission of dumps can be determined with an optimised exploration program.