

An evaluation of saltwater-freshwater boundary on a coast area by geophysical prospecting method.

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Evaluation of saltwater-freshwater boundary is a main task of ground water utility or the field investigation for nuclear waste deposit site.

We applied geophysical prospecting method to this issue.

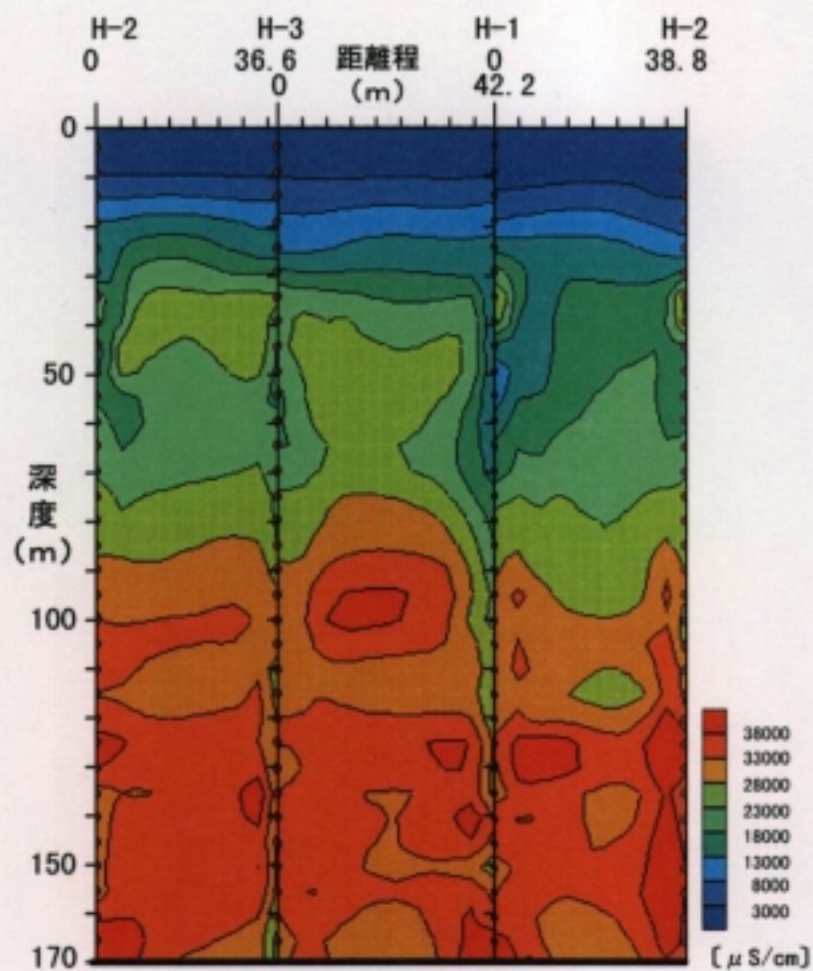
For getting conductivity of pore water, we applied next formula,

$C_f = a \cdot C_w \cdot P_m + c_m$ Cf: conductivity of formation, Cw: conductivity of pore filled water, P: porosity, Cm: conductivity of matrix, a, m: constant

This technique can estimate 2-dimensional water salinity distribution from a result of resistivity tomography and interpolated well logging data.

Formation conductivity consists of pore water conductivity, porosity, and conductivity of matrix (Shale). Therefore, if we can get formation conductivity, porosity and matrix conductivity, we can estimate pore water conductivity for evaluation of water salinity distribution.

In this field, three boreholes are drilled at three corners of a triangle. The depth of the boreholes is 200m and the distance between boreholes is about 40m. Mud stone formation is located at deeper than 30m and sand covered them up to surface. The result shows good agreement with previous research, such as laboratory test of extracted pore-water and submarine spring investigation.



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