Cooperative studies of earthquake liquefaction and groundwater contamination

Exploration Geophysics R.G.
Quaternary Basin R.G. Geophysics R.G. (Institute of Geology and Geoinformation)

【Outline】

Three different research groups of the Geological Survey of Japan, AIST, jointly carried out investigations related to the earthquake liquefaction, and groundwater contamination that occurred during the East Japan great earthquake disaster.

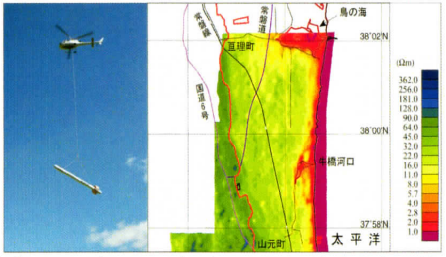
【Details】

The Exploration Research Group of the Institute of Geo-Resources and Environment, Quaternary Basin and Geophysics Research Groups of the Institute of Geology and Geoinformation jointly carried out various field investigations of liquefaction and groundwater contamination in cooperation with local governments. In the lower part of the Tone River basin, we performed trench excavation and boring surveys, geophysical investigations, and cone penetrometer tests. In the southern part of the Sendai plain, we mapped possible groundwater contamination due to tsunami flooding by conducting an electromagnetic survey using a helicopter-borne sensor. We also carried out more detailed geoelectrical investigations and boring surveys.

【Application of research results】

Our results will be reported to the associated local governments for use as basic data in their restoration and revival plans.

Truck-mounted ground-penetrating radar system for the detection of soft ground zones.



Helicopter-borne electromagnetic exploration system (left) and resistivity map at 140 kHz (right) in the southern Sendai plain. The red line is the limit of the tsunami inundation.

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