

Water chemistry and stable isotope ratios of groundwaters in and around Unzen Volcano

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Water samples were obtained from springs, wells, and rivers for clarifying groundwater flow systems and origins of groundwater in and around Unzen Volcano, western Kyushu, Japan. In addition, pore waters were extracted from undisturbed boring cores for 30 depths up to 900m below ground surface. These water samples were analyzed for water chemistry, and also for hydrogen and oxygen isotopes.

The analyses indicate Shimabara City groundwaters are attributed to the precipitation brought to the middle parts of Mt. Fugendake slopes, about 4km to the west of the city. Many springs and some pore waters at different depths showed geochemical characteristics strongly suggestive of the contribution of volcanic gases, especially of volcanic CO₂.