

Distribution of arsenic in the groundwaters and hosted Osaka Group sediments in the southern Osaka Prefecture

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Arsenic and related chemical compositions were analyzed for the groundwaters and hosted sediments in order to estimate the arsenic polluted groundwaters in the Quaternary Osaka Group formation. The arsenic, 11 ppb at the maximum, was detected in the summer and autumn, while not or depleted in the winter. The concentrations of O₂, NO₃⁻, SO₄²⁻ and Fe²⁺ indicate more oxidized condition in the summer for the deep wells (>50m) and in the winter for the shallow wells (<10m).

Arsenic contents in the hosted sediments range from 10 ~30 ppm. The higher arsenic contents are observed in the more reduced sediments, especially marine clay layers. The primary phase of arsenic would be sulfide minerals, which is decomposed by oxidation to supply arsenic into the coexisting groundwaters.