

On geochemical and isotopic characteristics of shallow urban groundwater in Shinagawa district, central Tokyo, Japan

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Water chemistry of shallow groundwater in the highly-populated Shinagawa district, central Tokyo, Japan, is discussed with special reference to its nitrate, sulfate and chloride concentrations. As a result of the water chemistry analysis, shallow groundwater proved to be characterized by a high nitrate, sulfate, and chloride concentrations. The enriched $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ values of nitrate and $\delta^{34}\text{S}$ values of sulfate suggest leaking sewers is a potential source of nitrate and sulfate ions in shallow groundwater.

Keywords: Tokyo, megacity, shallow groundwater, groundwater pollution, isotope, hydrochemical process