

The relationship between the mechanism of diagenesis and rock mass properties of siliceous rock in Horonobe, Hokkaido

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The density and porosity of rock mass are fundamental parameters for the design of underground facility and for the establishment of groundwater flow analysis. Generally, these parameters of the siliceous rock may change according to the degree of the diagenesis (ex. Tada and Iijima, 1983). Therefore, it is important to understand the mechanism of the diagenesis for the estimation of the density and porosity of siliceous rock.

Japan Nuclear Cycle Development Institute (JNC) drilled eleven deep boreholes with average depth with 500 m as an investigation in Horonobe URL project. In the borehole investigation, hardness and color measurements were carried out and several observations of thin section and XRD analysis were performed on core samples. In this report, we discussed the relationship between the density and porosity distribution evaluated by well-log and the mentioned measured parameters on the cores.