



Natural Variation of Groundwater Composition in Potential CO₂ Storage Sites in Korea

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In Korea, CO₂ capture and storage projects have been prepared in various perspectives. This study is objected to develop a method of early detection for leaked CO₂ from the inland deep saline storage. Our approach is simple but direct as setting up natural variation ranges of groundwater composition including ionic components and stable isotope signatures, and identifying anomalies from the continuous and systematic monitoring data. Presently, five sedimentary basins are under consideration for CO₂ storage and detailed site characterizations are in underway. Monitoring period for this study started from Mid-2013, and sampling points were selected from three of those basins. Temporal variations are under monitoring approximately bimonthly. In this conference, authors report the 1-year monitoring results of groundwater, surface water and carbonated springs' composition and their variation including seasonal effects. Water samples cover three typical water types including deep Na-HCO₃-Cl groundwater, carbonated Ca-HCO₃ water and Na/Ca-Cl saline geothermal water. Oxygen, hydrogen and carbon of DIC isotope ratios vary in average of 0.04, 0.35, and 1.1‰ respectively.