

An Investigation into CO₂-Brine-Cement-Reservoir Rock Interactions for Wellbore Integrity in CO₂ Geological Storage

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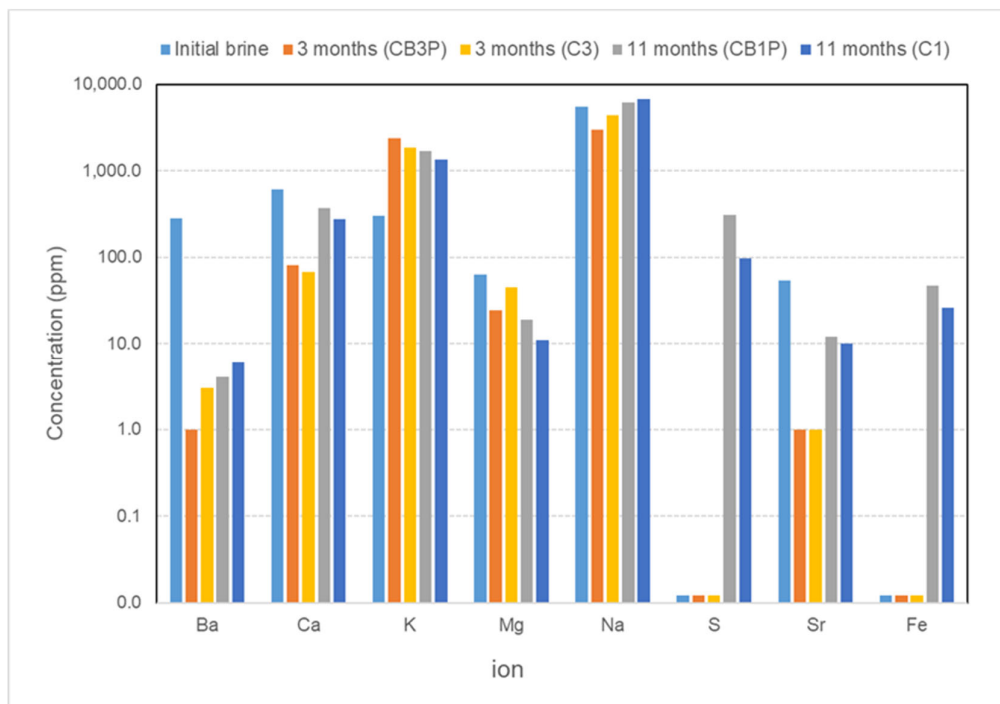


Figure S1. Concentration of ions present in the brine at initial conditions, after CO₂ injection for 3 months (for samples CB1P and C3) and 11 months (for samples CB3P and C1).

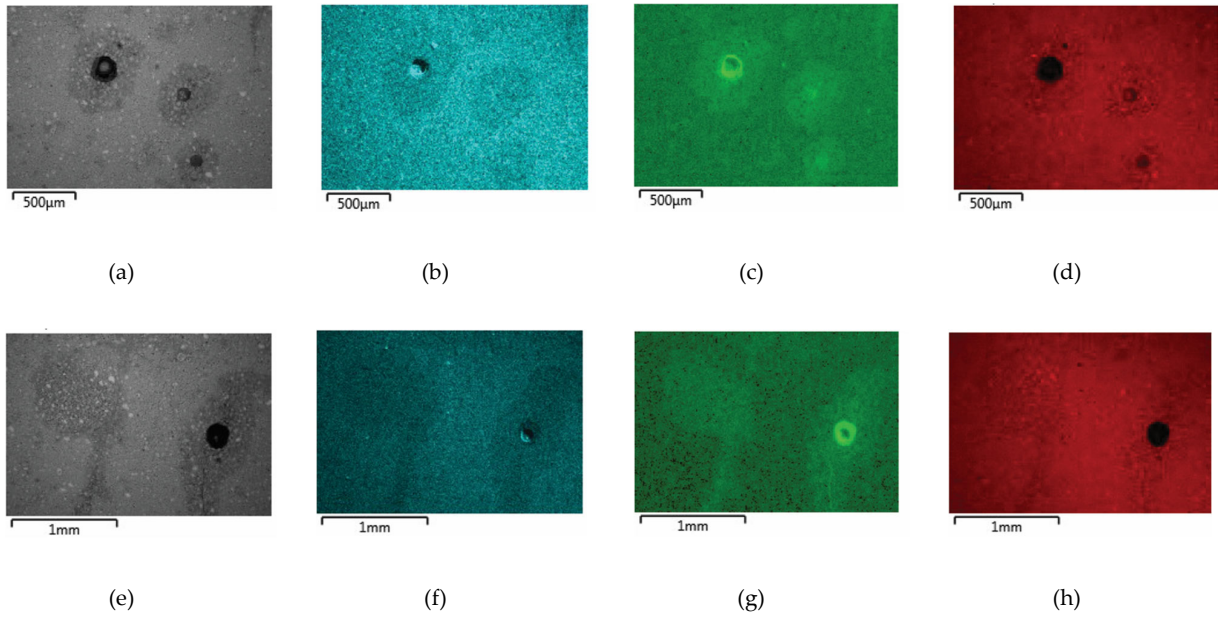


Figure S2. Top left corner of CB1P after exposure to CO₂-rich brine for 11 months (a) and (e) BSE images, and (b) to (d) and (f) to (h) EDX elemental maps of areas in (a) and (e). (b) and (f) oxygen, (c) and (g) carbon, (d) and (h) calcium.

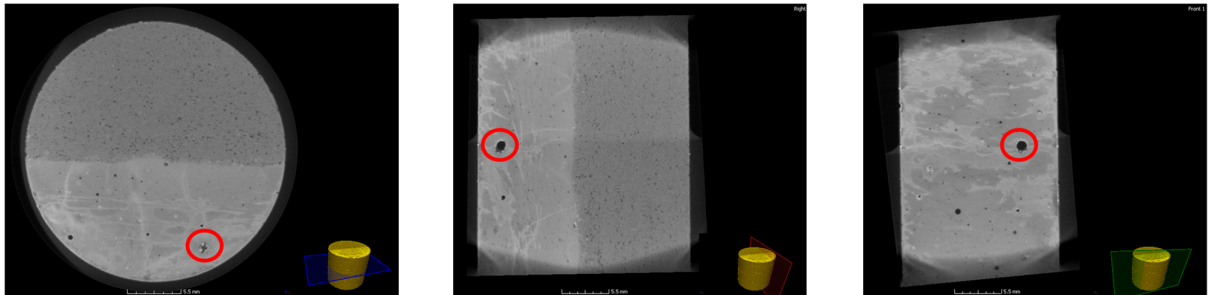


Figure S3. CB1P composite sample after 11 months exposure to CO₂-rich brine; precipitation in the void spaces in the red circle where the access of solution was possible through several fractures.

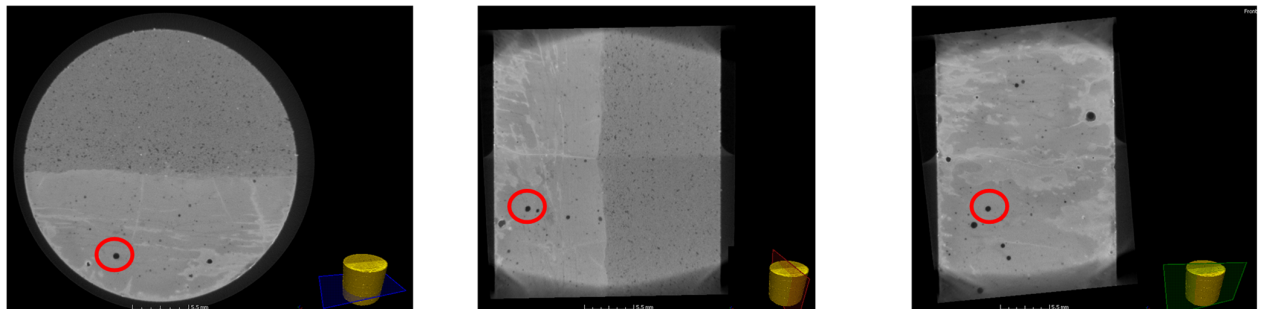


Figure S4. CB1P composite sample after 11 months exposure to CO₂-rich brine, no significant precipitation in the voids, which are not connected to the fractures.