



LES PÔLES DE COMPÉTITIVITÉ
Éco technologies



Assessing the potential impacts of CO2 leakage on fresh groundwater: from experiments to predictive models

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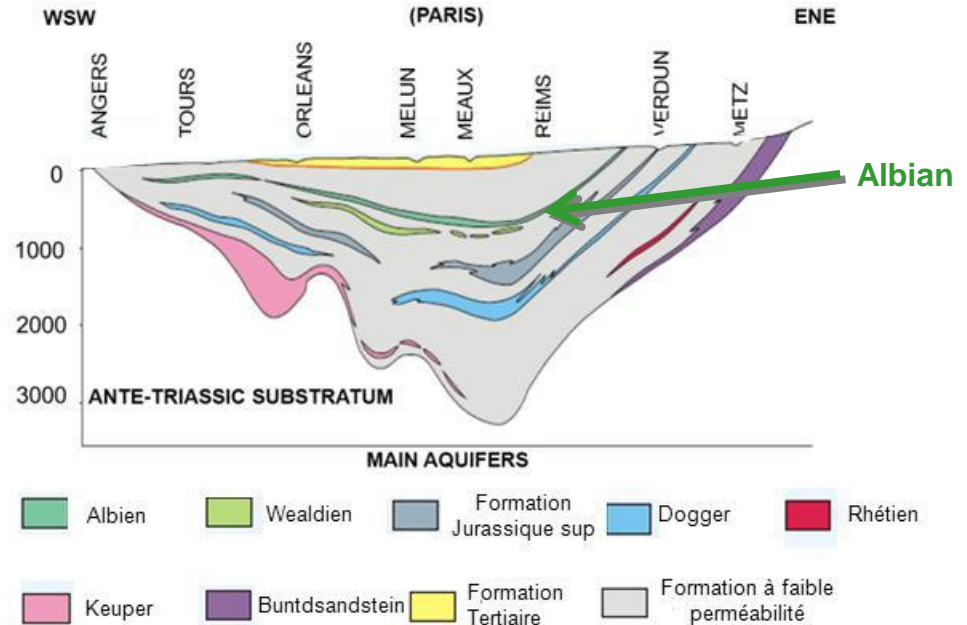
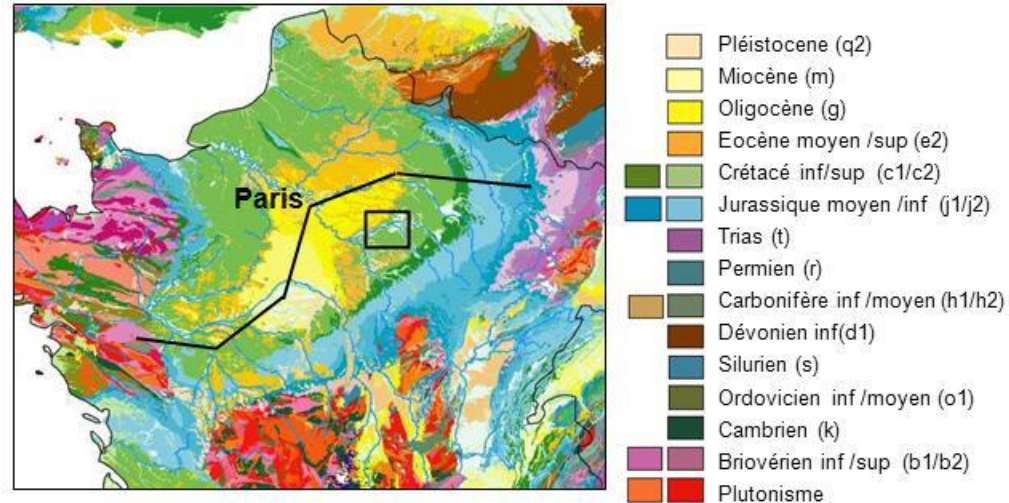


HYDRO INVEST



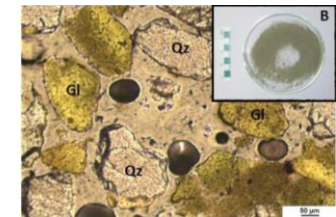
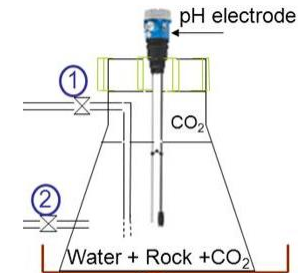
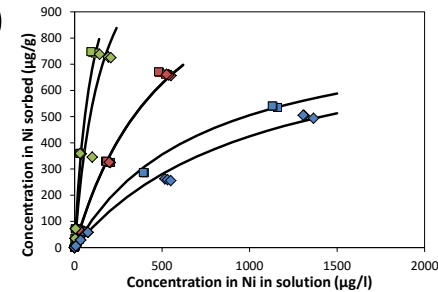
CIPRES Project

- > French national project dedicated to **assess potential impacts of CO₂ leak on GW quality**
- > **Characterization of the geochemical reactivity**
 - Trace element mobilization
 - Spatial and temporal distribution of potential impacts
- **Case study: Albian aquifer**
 - Strategic reserve for DW supply
 - Multilayered aquifer with a specific layer : green sand
 - Glauconite (Fe-rich phyllosilicate) with high surface properties



Experimental studies on the albian green sand

- Batch reactor (Humez et al. 2012)
- Isotherms on glauconite (Barsotti et al. 2014)
- Geochemical model (PHREEQC)



Reactive transport model

- 3D reactive transport model (ToughReact)
- Simulation (100 yrs): CO₂ leak at the bottom 3 rates :
0.001 kg/s (27 t) to 0.1 kg/s (2720 t) during 1 yr and natural release (99 yr.)
- Monitoring plan assessment

