

Geochemical controls on CO₂ interactions with deep subsurface shales: Implications for geologic carbon sequestration

Shikha Sharma^{1}, Vikas Agrawal¹, Steven McGrath¹, J. Alexandra Hakala², Christina Lopano²
Angela Goodman²*

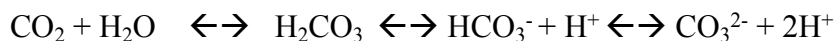
¹ West Virginia University Department of Geology & Geography, 330 Brooks Hall, 98 Beechurst Ave.
Morgantown, WV 26506, USA

² National Energy Technology Laboratory Research and Innovation Center, 626 Cochran's Mill Road,
Pittsburgh, PA 15236, USA

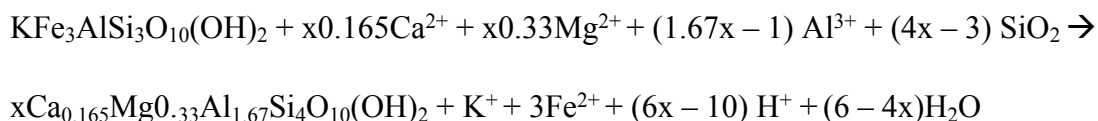
*Corresponding Author : E-mail: shikha.sharma@mail.wvu.edu Phone: 304-293-6717

Supplementary Information:

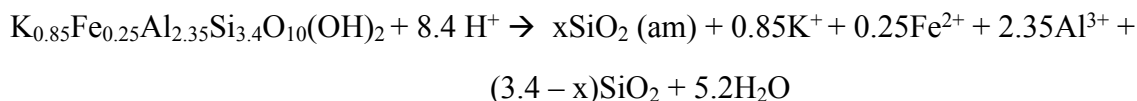
- 1) CO₂ solubility (Anderson et al., 2005)



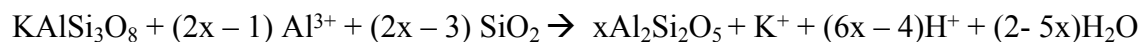
- 2) Incongruent dissolution of annite and its alteration to Montmorillonite (Carroll et al., 2013)



- 3) Incongruent dissolution of illite and its alteration to chalcedony (Carroll et al., 2013)



- 4) Incongruent dissolution of microcline and its alteration to kaolinite (Carroll et al., 2013)



x is a distinct parameter for each reaction 2 to 4.

5) Carbonation of chlorite coupled with calcite dissolution and dolomite precipitation
(Balashov et al., 2015)

