Abstract:

The effect of various parameters affecting clay and brine reactivity such as salinity, pH, flow rate, temperature, type and valence of cations, anions, oil presence as well as the clay type and concentration on clay fine migration and flocculation is presented. Consequently, the impact on fluid flow through porous media. Moreover, the effect of salinity, temperature, pressure, type and valence of cations, anions as well as the clay type and concentration on clay swelling is also analyzed and eventually the impact of clay swelling on fluid flow through porous media. Finally, the effects of pH, salinity, oil presence as well as oil properties, type and valence of cations, anions, temperature, pressure and clay type and concentration on wettability alteration of clays and clay bearing formations were investigated too and the impact of this wettability alteration on fluid flow is discussed.