

Supporting information

Pore-scale analysis of residual oil in a reservoir sandstone and its dependence on water flood salinity, oil composition and local mineralogy

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Table 1 Mineral composition of the reservoir sandstone from XRD.

Mineral	%
Quartz	33.0
Alkali Feldspar	16.1
Plagioclase	7.0
Muscovite/Illite	9.8
Mixed layer clays	0.2
Kaolinite	27.4
Chlorite	0.4
Calcite	0.0
Dolomite/Ankerite	0.6
Siderite	4.8
Pyrite	0.6

Table 2 Modal mineralogy of each cross-section taken from the 5 mm diameter mini-plugs of reservoir sandstone analyzed by QEMSCAN.

Mini-plug	A_slice1	A_slice2	A_slice3	B
Mineral	Area%	Area%	Area%	Area%
Quartz	50.2	50.1	49.8	52.2
K Feldspar	13.7	13.7	13.9	13.9
Plagioclase	4.6	3.8	4.5	3.7
Muscovite/Illite	5.2	5.7	5.2	4.5
Biotite	0.0	0.0	0.0	0.1
Kaolinite	15.1	16.5	15.6	16.1
Chlorite	2.2	1.8	2.1	1.6
Siderite	5.4	4.4	5.1	4.1
Ankerite	0.6	0.5	0.7	0.6
Garnet	0.1	0.2	0.3	0.3
Zircon	0.1	0.1	0.1	0.1
Rutile	1.2	1.6	1.5	1.4
Fe Oxides Spinel	0.8	0.6	0.7	0.5
Pyrite	0.1	0.0	0.1	0.4
Apatite	0.4	0.4	0.1	0.3
Unclassified	0.4	0.6	0.4	0.5
Total	100.0	100.0	100.0	100.0

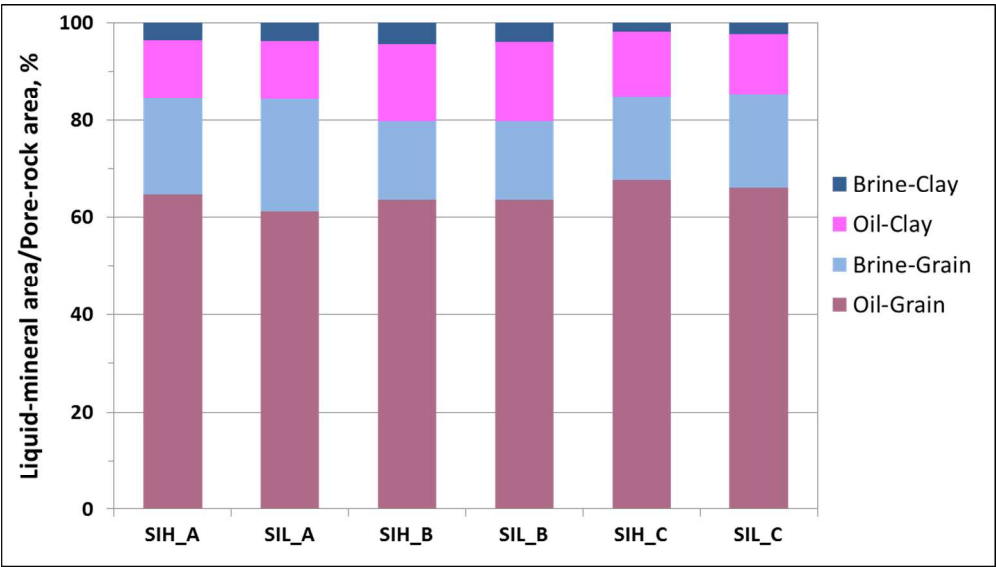


Figure 1. Interfacial area of liquid (oil and brine) contacting grain and clay aggregate, relative to total pore-rock area, for the three mini-plugs A-C after SIH and SIL.