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Title of article Origin of late dolomite cement by CO_2-saturated deep basin brines: Evidence from the Ozark region, central United States

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see Geology v. 19, p. 348 - 351

Contents

2 figs. and 1 table (3 pgs.)

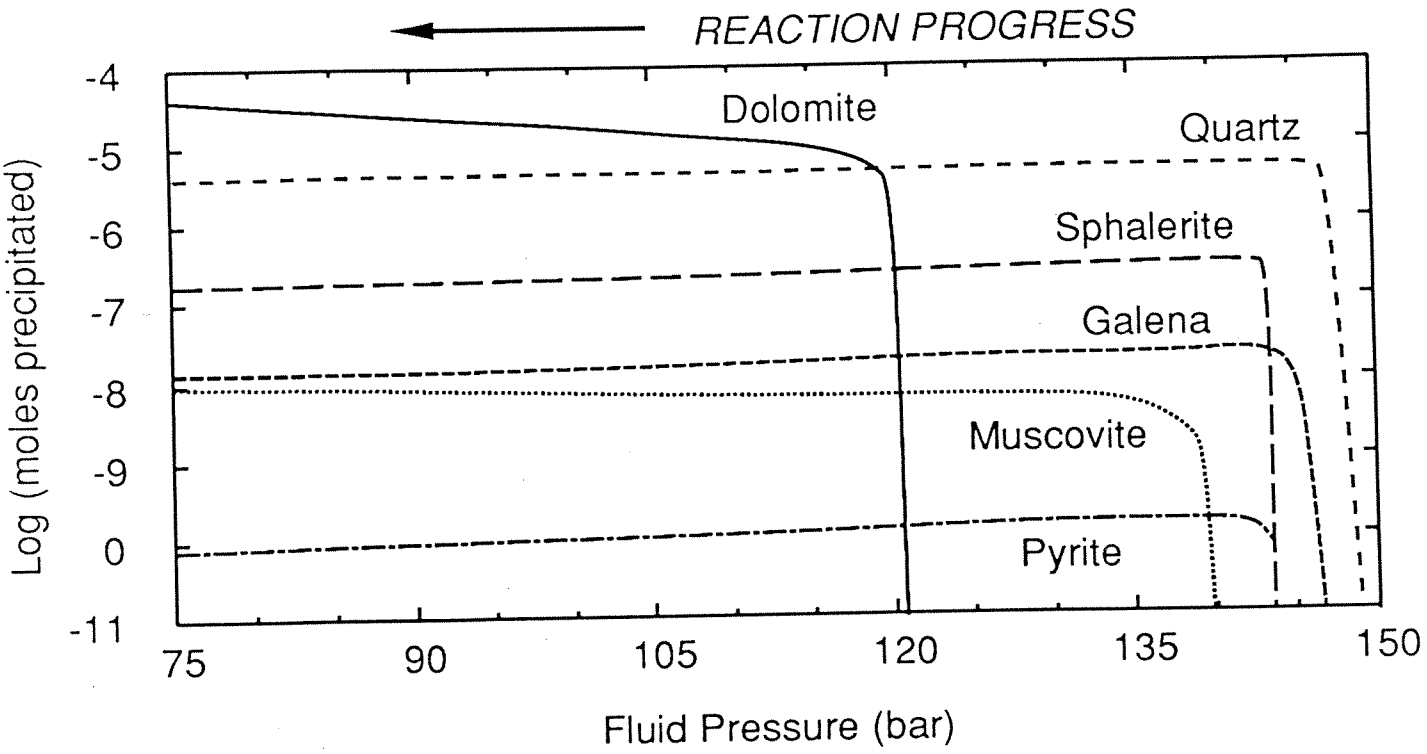

Figure 3. Log moles of minerals precipitated for each reaction step during the non isothermal boiling of reference fluid from 120 bar, 120 °C, to 75 bar, 110 °C. each reaction step is 3.75 bar and 0.5 °C.

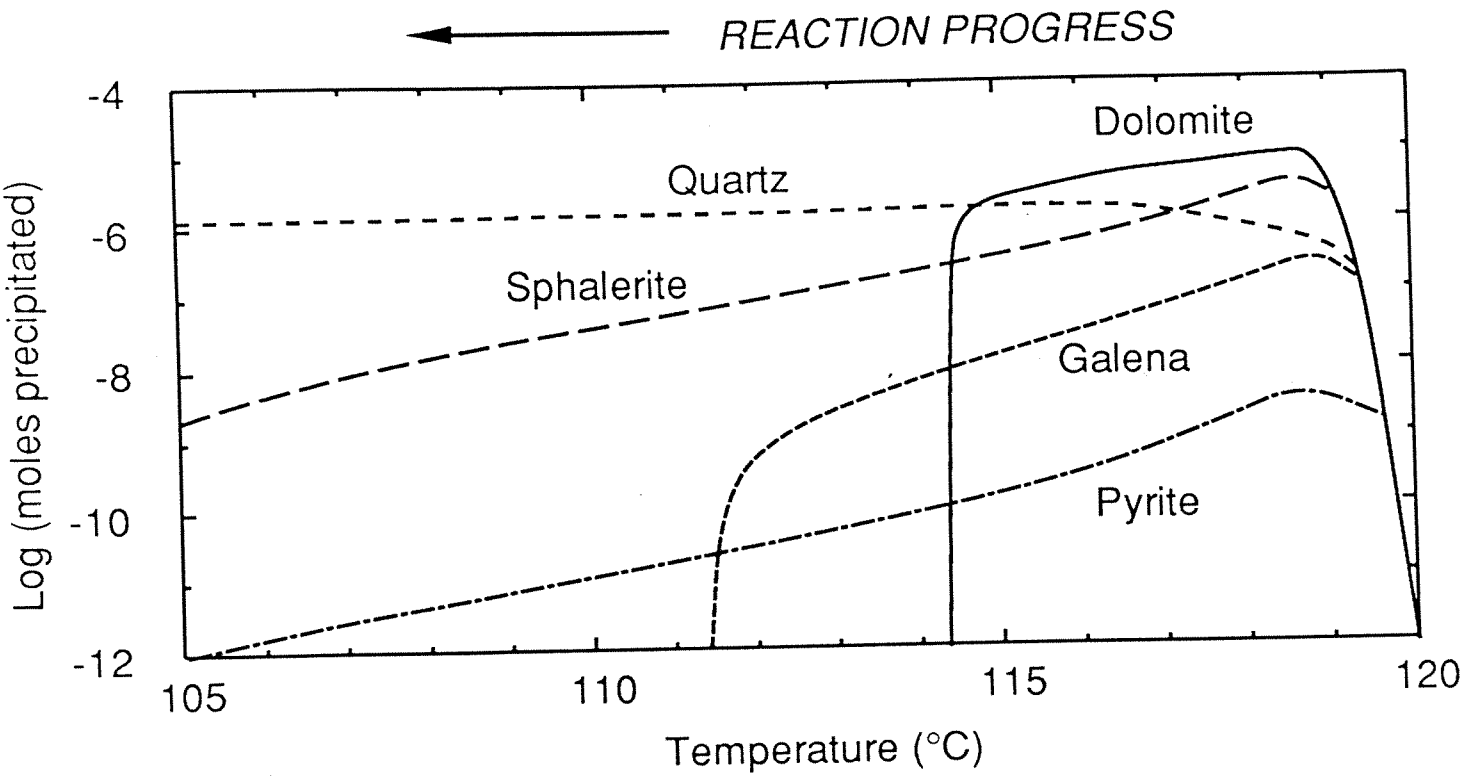

Figure 4. Log moles minerals precipitated during mixing of reference fluid at 120 °C with H_2S-rich brine at 100 °C. Each reaction step mixes 0.1 kg of each fluid.

TABLE 2. SUMMARY OF RESULTS FOR SOME DOLOMITE-FORMATION REACTION PATHS.

Reaction path*	Results†
Boil reference fluid from 148 to 75 bar	7×10^{-3} dol, 2×10^{-7} musc, 2×10^{-4} sl, 2×10^{-7} gn
Boil reference fluid from 148 to 75 bar, 120 to 110 °C	1×10^{-4} qtz, 3×10^{-7} gn, 5×10^{-6} sl, 2×10^{-9} py, 1×10^{-7} musc, 3×10^{-4} dol
Boil high-CO_2 (0.8 mol) fluid from 240 to 75 bar	3×10^{-3} dol, 5×10^{-7} musc, 9×10^{-6} sl, 6×10^{-7} gn, 6×10^{-10} py
Boil high-H_2S (0.015 mol) fluid from 150 to 75 bar	8×10^{-4} dol, 2×10^{-7} gn, 1×10^{-7} musc, 2×10^{-7} sl
Boil moderate-salinity fluid (0.8 x salinity of ref. fluid) from 119 to 75 bar	4×10^{-4} dol, 6×10^{-8} musc, 3×10^{-7} sl, 2×10^{-8} gn
Boil dilute fluid (0.2 x salinity of ref. fluid) from 64 to 40 bar	6×10^{-8} musc, 7×10^{-9} sl, 4×10^{-9} gn, 4×10^{-12} py, 4×10^{-4} dol
Boil reference fluid at 150 °C from 150 to 75 bar	6×10^{-4} dol, 2×10^{-5} sl, 1×10^{-6} gn, 2×10^{-7} musc, 6×10^{-6} anh
Mix reference fluid with H_2S-rich fluid at 100 °C	2×10^{-5} dol, 4×10^{-5} qtz, 3×10^{-7} gn, 6×10^{-6} sl, 4×10^{-9} py
Cool reference fluid from 120 °C to 100 °C	2×10^{-4} qtz, 3×10^{-7} gn, 4×10^{-6} sl, 3×10^{-9} py
React reference fluid with 60 °C limestone until calcite-saturated	7×10^{-2} dol, 7×10^{-6} qtz, 2×10^{-6} gn, 1×10^{-7} musc, 3×10^{-5} sl, 4×10^{-8} py

* Reference fluid composition given in Table 1.

† Results in total moles of minerals precipitated for each run by one kilogram of initial fluid. Minerals are listed sequentially according to their position in the precipitation sequence: dol = dolomite, qtz = quartz, sl = sphalerite, gn = galena, py = pyrite, musc = muscovite, and anh = anhydrite.