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(54) Title: MODIFIED BLACK OIL MODEL FOR CALCULATING MIXING OF DIFFERENT FLUIDS IN A COMMON SURFACE NETWORK

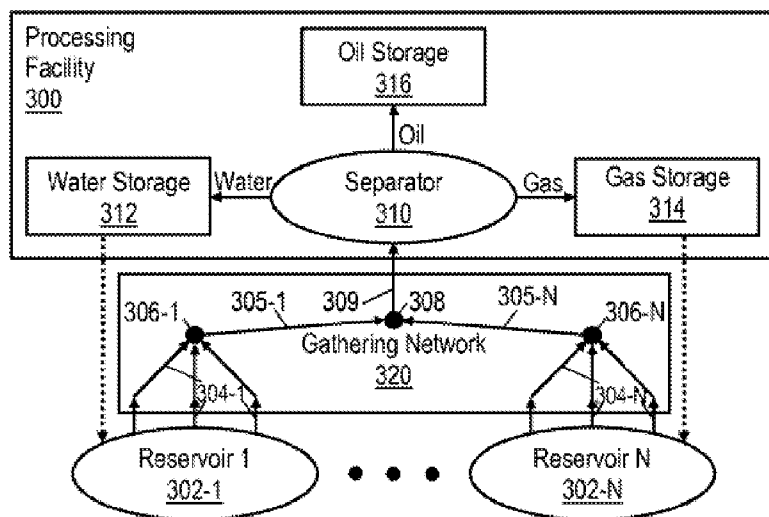


FIG. 3

(57) Abstract: System and methods of simulating fluid production in a multi-reservoir system with a common surface network are provided. Black oil data is matched with a common equation of state (EOS) model for each of a plurality of reservoirs. The black oil data representing fluids within each reservoir. At least one multi-dimensional black oil table representing a mix of the fluid components to be produced from each of the plurality of reservoirs via the common surface network is generated based on the EOS model that matches the one or more black oil tables for each reservoir. Properties of the fluids in the mix during a simulation of fluid production from the plurality of reservoirs are calculated based on the generated multi-dimensional black oil table for each reservoir.