Boundary Condition

A volume multiplier of 100,000 was applied to grid cells at the edge of the model to represent an infinite open boundary constant pressure condition as recommended by CMG-GEM (Nghiem et al., 2009). This is a reasonable assumption given that the target injection formations are correlatively extensive at different well locations in the SEM to account for the pressure plume propagation during injection simulations. The model's lower boundary is the base of the Wilcox 2 or top of the Midway group. While this surface is expected to have some topographical features, in general, it is assumed to dip to the south. Six injection wells were used toward the center of the model so that the CO_2 plume and pressure buildup would be far from the computational model boundary (7.5 mi × 8 mi) and the model would be able to capture the multiphase flow phenomena.