CLASS VI PERMEABILITY DETERMINATION
ELK HILLS A1-A2 PROJECT

Model Permeability

Static Modeling Permeability

Porosity, facies (sand and shale), and clay volume are derived from the open hole well logs. These values, that have a one-foot resolution, are upscaled into the geological model and distributed using Gaussian random function simulation (kriging). Mercury Injection Capillary Pressure (MICP) permeability and porosity data from core analysis constrains the permeability function (Figure 1). Permeability is populated in the static model with the function utilizing the upscaled porosity and clay volume as inputs. Figure 2 shoes the permeability distribution in the model.

Figure 1: Porosity and permeability data from MICP analysis for Monterey Formation sands. A permeability transform calculates permeability from log-based porosity.

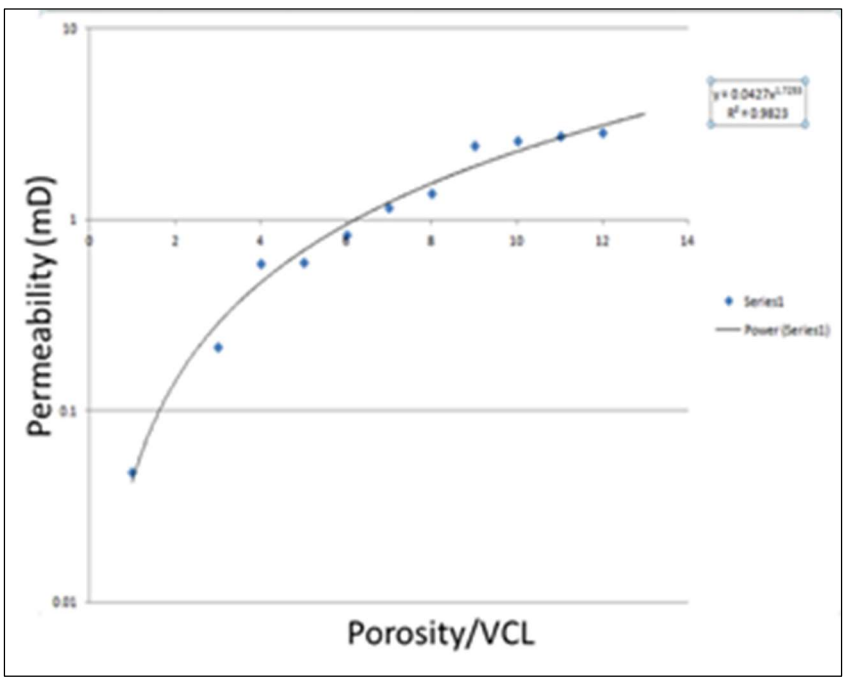
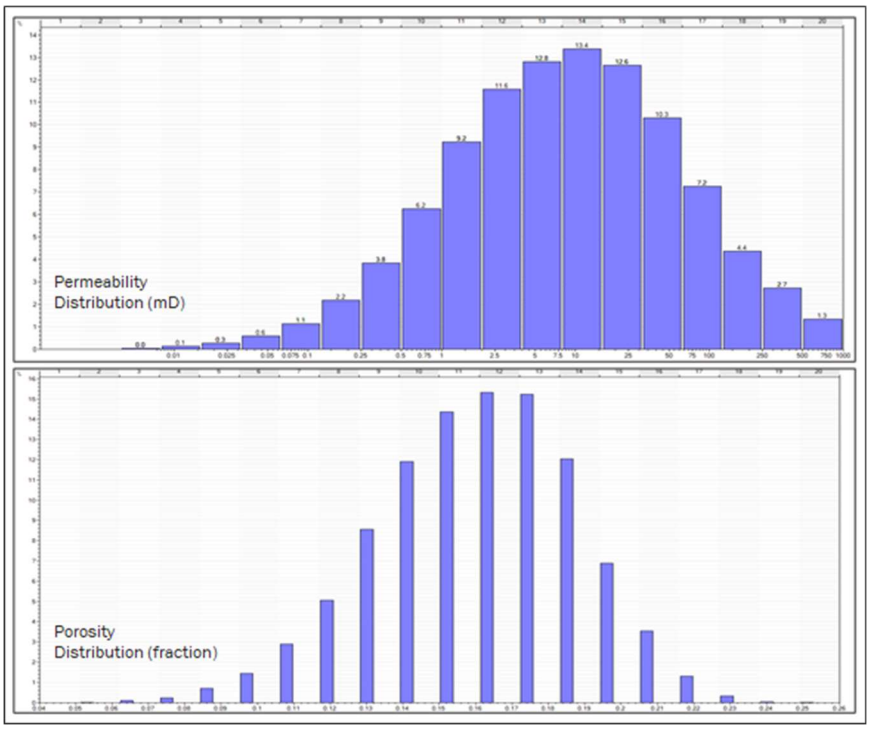
Figure 2: Monterey Formation A1-A2 sands porosity and permeability distribution in the static model.