

3D Basin and Petroleum Systems Modeling of the Piceance Basin, Colorado, USA

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ABSTRACT

In this study, we construct a three dimensional basin and petroleum system model for the Piceance Basin to study its evolution and corresponding source rock maturation history. From Late Cretaceous to Present day, the study area went through multiple geodynamic processes, transitioned from a marine depositional basin into a subaerial basin that experienced many thousands of feet of uplift and associated erosion. An integrated approach and multiple data sets were used to construct a model that was used to investigate sequential basin burial, compaction, uplift, and erosion. The source rock maturation history, impacted by the complicated basin geological history, was also investigated.