

ABSTRACT

Hydrocarbon Occurrences Within the La Popa Basin: Potential Source Rocks, Thermal Maturation, and Hydrocarbon Migration Along the La Popa Salt Weld, La Popa Basin, NE Mexico

by

Samuel Mark Hudson

Dr. Andrew Hanson, Examination Committee Chair
Assistant Professor of Geoscience
University of Nevada, Las Vegas

New geochemical data indicate the presence of hydrocarbons along the La Popa salt weld, reinforcing the idea that salt welds significantly affect the migration pathways of hydrocarbons. Geochemical testing of samples collected along the length of the weld indicate that at least some of this material is not *in situ*, but has migrated to its current location along the weld. Distribution of migrated hydrocarbons along the weld is not uniform, and occurs where upturned lithologies and appreciable amounts of remnant salt are present.

Biomarkers within samples collected along the weld suggest a clay-rich source rock for the hydrocarbons. None of the potential source rocks sampled yielded results indicative of a good source rock, but the Parras Shale and Potrerillos Formation are most similar to the migrated material based on biomarker analysis. Basin modeling suggests that all basin lithologies are within the early to late gas generation window.