SOUTHERN ESPAÑOLA BASIN, NEW MEXICO

GEOLOGIC UNITS INTERPRETED TO DIRECTLY UNDERLIE THE SANTA FE GROUP, SOUTHERN ESPAÑOLA BASIN, NEW MEXICO

By
V.J.S. Grauch1/ Jeffrey D. Phillips2/ Daniel J. Koning3/ Peggy S. Johnson1/ and Viki Bankey4

ADDITIONAL ACKNOWLEDGMENTS

J.D. Phillips designed and modified magnetic depth-estimation techniques specifically for this study (section "Profile Models"). D.J. Koning provided extensive guidance on geologic information, much of which is derived from his own mapping (sections "Geologic Setting" and "Other Data"). Viki Bankey compiled and rectified inconsistencies in gravity data available as of 2006 (section "Gravity Data") and helped construct two-dimensional geophysical models (section "Profile Models"). Additional independent constraints are in large part from unpublished sources (most recently from 2008) that are not publically available. Constraints for some regional interpretations are based in part on unpublished interpretations by S.A. Minor, V.J.S. Grauch, B.D. Rodriguez, R.A. Thompson, and D.A. Sawyer.

REFERENCES CITED


Other types of geophysical interpretations and well data (section "Other Data" and appendix 4). Interpreted thicknesses for the pre-Mesozoic strata are constrained by geophysical interpretation. Additional constraints are from outcrops of Mesozoic sedimentary rocks, undivided (plate 6) and the Galisteo and Diamond Tail Formations, undivided (fig. 3, this publication). Other types of geophysical interpretations are useful in constraining interpretations. One particularly useful tool is the MINEQUEST ITOCHEM tool that integrates magnetic and gravity data for the purpose of interpreting units on a regional scale (section "Gravity Data"). These interpretations build on earlier work by Grauch and Bankey (2003) and Phillips and Grauch (2004) but expanded to include additional constraints. Interpreted thicknesses are shown in plate 2 and were digitized from the geophysical interpretation maps in sections "Geologic Setting" and "Other Data." Geophysical interpretations from a three-dimensional model are depicted as colors representing inferred bedrock lithology. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data. Constraints on the thickness of pre-Mesozoic strata are in large part from interpretations by Viki Bankey and are based on gravity and magnetic data.