SPECIAL ASPECTS OF CENOZOIC HISTORY OF SOUTHERN IDAHO AND THEIR GEOTHERMAL IMPLICATIONS

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Regional plate tectonics of the Pacific basin are directly related to these features in southern Idaho: basin development, four major geothermal belts, over 200 hot springs and wells, and a large left lateral rift that coincides generally with the present Snake River course.

The Snake River rift is indicated by 16 different lines of evidence of which are offset geologic features, each with a displacement of proximately 50 miles. The regional setting, along with local rifti Cenozoic volcanism, graben development, thermal waters, much faulti good reservoir conditions, and abundant surface water and ground wa supplies makes southern Idaho an ideal region for geothermal explor Fish, mollusk and plant fossils, plus stratigraphic and structural relation, enables reconstruction of eight chronological events in C zoic history, including: an early Tertiary basin, the Snake River ben, two major shifts in the Snake River course, a long period of composite volcanism, late Cenozoic rifting, and great Pleistocene u Calcareous oolites appear to be fair indexes to geothermal anomalie southern Idaho.

CORNER CANYON TURTLEBACK, CEDAR POINT THRUST AND PALEOZOIC STRATIGRAPHY OF THE TRAVERSE RANGE, UTAH

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The Traverse Range, which separates Salt Lake and Utah valleys, is divided into two topographic salients by the Jordan Narrows. These two salients have contrasting structural origins. The east salient is a large Late Tertiary gravity block which slid off the Little Cottonwood stock of the Wasatch Range. Movement along the east-wes Deer Creek pull-apart fault has exposed the prominent Corner Canyon turtleback surface on the stock. Outcrops in the east salient are Permian Park City limestone and Clinker sandstone, and Pennsylvania Bingham Mine Formation. Tertiary latite flows, which unconformably overlie the Paleozoic rocks, are partly confined to a northwest-trending graben. The west salient is in part a structural continua of the Oquirrh Range. Oquirrh limestones overthrust Manning Canyon shales on the Laramide Cedar Point thrust at the southeast corner o the range. Northwest-trending normal faults in Oak Springs Hollow, Tickville Gulch, and Beef Hollow offset the Paleozoic and Tertiary rocks. Jordan Narrows gap is probably a graben. Pennsylvanian out crops are the West Canyon Limestone and the Butterfield Peaks Formation. Based on lithology and poorly preserved Pseudoschwageri sp., outcrops in Wood Hollow probably are Wolfcampian Clinker sand-stone. Other investigators, however, have mapped these outcrops as Upper Pennsylvanian Bingham Mine Formation.

DOUBLY GRADED VOLCANICLASTIC TURBIDITE DEPOSIT FROM EAST OREGON-WESTERN IDAHO

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The pre-Tertiary rocks exposed along part of the Snake River in western Idaho and eastern Oregon at Pittsburg L ing are dominantly volcaniclastic with minor sedimentary epiclastic components.

In this area a sequence of 20 or more doubly graded, alt nating light and dark strata crop out. The strata consi of sand-sized particles with each bed between 4.5 and 6. thick. Thin sections show lithic and mineral fragments separated by interstitial glass. Graded layering of the total outcrop and individual beds occur with the fragmen becoming finer vertically. Neither a coarse or massive nor a clay- or silt- sized fraction was observed suggesti