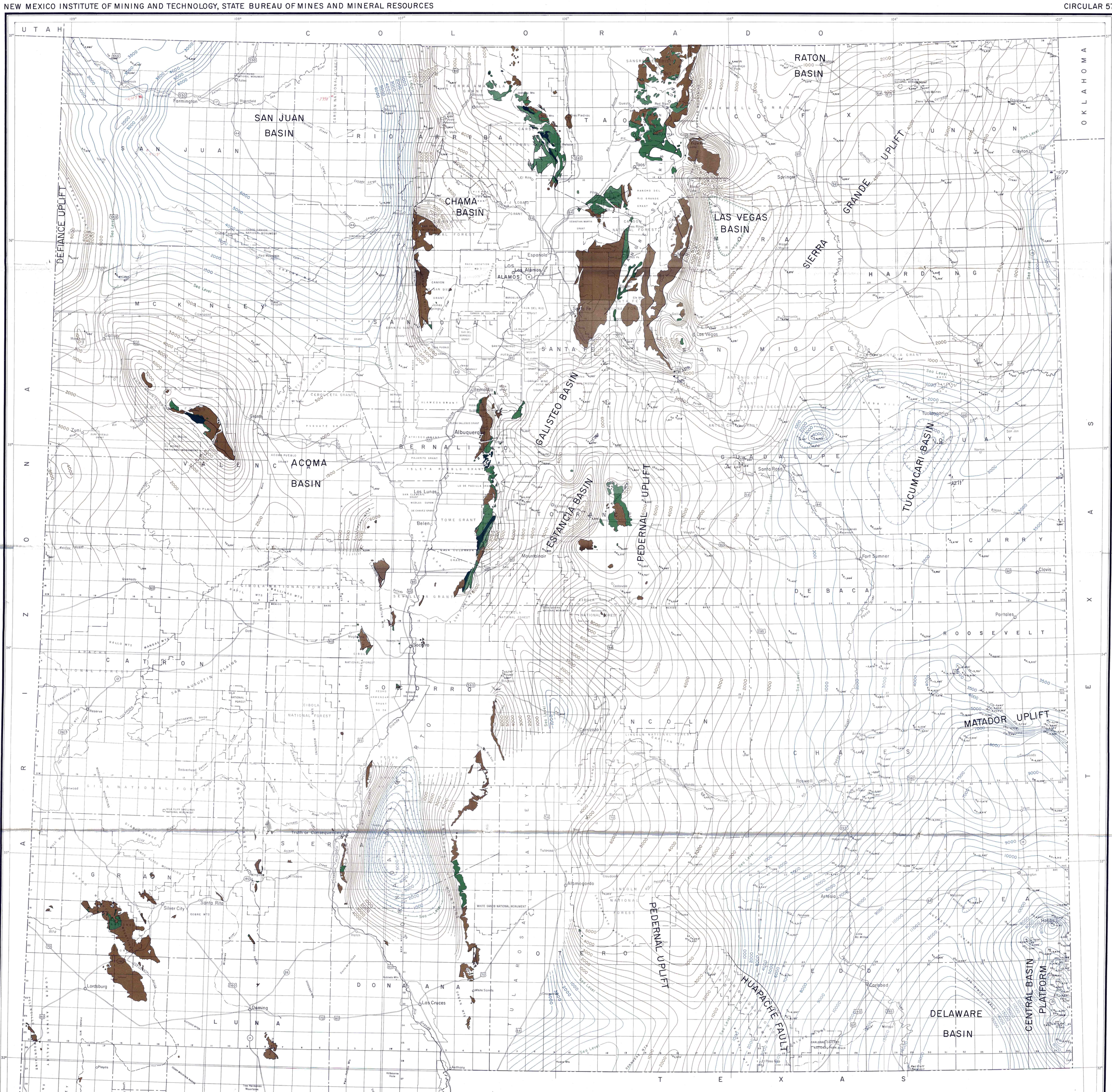

PRELIMINARY GEOLOGIC AND RELIEF MAP OF THE PRECAMBRIAN OF NEW MEXICO

by R. W. Foster[1] and T. F. Stipp[2]

[1] New Mexico Institute of Mining and Technology, State Bureau of Mines and Mineral Resources
[2] United States Geological Survey

1961

EXPLANATION

Undifferentiated Precambrian rocks
Includes large areas of granite in the Sangre Cristo Range, quartzite in the Rincon Range, and granite and schist in the Elk Mountain area. In the Ladron Mountains, Precambrian rocks consist of granite and quartzite.

Granite and related rocks
Intrudes all rocks of metamorphic series. Over most of New Mexico, represents the youngest Precambrian rocks except later diabasic dikes. Includes large exposures of gneissic granite that in parts is equivalent in age to the metamorphic series. Inclusions and roof pendants of schist and quartzite are present in almost all exposures of granite.

METAMORPHIC ROCKS
Includes all metamorphosed rocks, except large exposures of quartzite and rhyolite which are shown separately where sufficient data were available, and gneissic granite, which in part has been included with granite.

Rhyolite
Rhyolite and metarhyolite are found in the Las Pinos, Manzano, Zuni, southern San Juan, and northern Sangre de Cristo Mountains. The only known exposures in southern New Mexico are in the Sierra Cuchillo, Hillsboro-Kingston area, and San Andres Mountains.

Quartzite
Widely exposed in the Sangre de Cristo, southern San Juan, southern Manzano, and northern Pedernal Mountains. Varies considerably from highly sheared and silicified quartzite in which individual grains are megascopically indistinguishable, as in the Pedernal Mountains, to relatively unmetamorphosed quartzite, as in parts of the southern San Juan Mountains, where crossbedding, ripple marks, etc. are well preserved.

Undifferentiated metamorphic rocks
Includes a wide variety of metamorphosed sedimentary and intrusive igneous rocks. Also includes some unmetamorphosed shale, siltstone, sandstone, arkose, and graywacke in the Sacramento and southern Manzano Mountains, and in the Hillsboro-Kingston area.

Contact
Dashed where approximately located

Fault

Above sea level
Sea level
Below sea level

Contours
Interval — 500 feet. Spacing modified in some areas by additional structural controls and projected isopach data. Hachures indicate closed basins within New Mexico.

Oil tests drilled to Precambrian rocks
(Includes all wells of record drilled prior to January 1, 1960)
Showing location and index number of well, and altitude of Precambrian surface. Index numbers begin at 1 in each county.