



Base map adopted from New Mexico State Highway Commission Planning Map of Grant County, 1964, and U.S. Geological Survey topographic quadrangle maps

EXPLANATION

QUATERNARY

- Qal** Alluvium: Gravel, sand, silt, and clay; mainly in flood plains. Yields as much as 2,200 gpm to wells along the main stream channels.
- Qab** Alluvium and basin deposits: Includes pediment, terrace, and other surficial deposits. Oldest probably contemporaneous with younger part of Gila Conglomerate. Yields as much as 1,500 gpm locally.
- Qtg** Terrace gravel: Mostly veneer deposits, some pediment gravel; generally not water bearing but locally yields as much as 300 gpm to wells along the main stream channels.
- Qb** Basalt: Locally interbedded with upper part of Gila Conglomerate. Not known to be water bearing.
- Qg** Gila Conglomerate: Conglomerate, fanglomerate, gravel, sand, silt, clay, and lake deposits. Includes locally rhyolite, basalt, tuff, and other volcanic rocks. Generally well consolidated in lower part, poorly to unconsolidated in upper part. In places monolithic, faulted and tilted; several units locally separated by angular unconformities. Yields from less than 1 gpm to 2,000 gpm depending upon degree of consolidation and locality. Yields generally are less than 20 gpm; larger yields are mostly from local poorly consolidated beds in upper part.
- Tb** Basalt and basaltic andesite flows: Upper part locally interbedded with lower part of Gila Conglomerate (Qg); lower part interbedded with rhyolite (Tr), latite (Tl), andesite (Ta), and tuffs, gravel, and sand (Ts). Locally water bearing; yields range from 1/2 to 10 gpm.
- Tr** Rhyolite and related volcanic and sedimentary rocks: Rhyolite, flow breccia, tuff, ash, domes, plugs, and ash-flow welded tuffs; includes similar rocks commonly assigned to Dault Formation. Some andesite, and tuff, basalt, agglomerates, breccias, and sandy shale. Includes similar rocks commonly assigned to the Dault Formation; interbedded locally with gravel, sand, and tuff (Ts).
- Tl** Latite and related volcanic and sedimentary rocks: Latite flows and flow breccia, pyroclastics, and small intrusive bodies; includes rhyolite, andesite, interbedded water-deposited tuffs, and similar rocks commonly assigned to the Dault Formation; locally water bearing; yields generally less than 5 gpm.
- Ta** Andesite and related volcanic and sedimentary rocks: Andesite, flow breccia, agglomerate, and tuff; includes similar rocks commonly assigned to Dault Formation. Some andesite, and tuff, basalt, agglomerates, breccias, and sandy shale. Includes similar rocks commonly assigned to the Dault Formation; interbedded locally with gravel, sand, and tuff (Ts).
- Ts** Gravel, sand, and tuff: Ts, water-deposited sediments, some welded tuffs and interbedded flow rocks, sedimentary units of the Dault Formation, and the Sugarloaf Tuff in the Cabe Mountains. Includes similar rocks commonly assigned to the Dault Formation; locally water bearing; yields generally small in upland areas but in vicinity of Apache Top and Faywood may be the aquifer yielding 200 to 500 gpm from interbedded sediments.
- Tk** Intrusive rocks: Includes such granitic rocks as quartz diorite, monzonite, and gabbro in the Silver City area; quartz monzonite and latite near Tyrone, monzonite porphyry in the Blackhawk area, rhyolite plugs and stocks near White Signal, gabbro, diorite, monzonite, and granite in Little Hatcher Mountains, and dikes and sills of various rock types in all areas of intrusive activity. Locally water bearing; yields range from 1/2 to 20 gpm.
- Tkx** Conglomerate, sandstone, fanglomerate, and shale: Wimitville Formation (lower Tertiary) of Hermon and others (1953) and the Vidon Formation (Upper Cretaceous) of Elston (1960). Locally water bearing; yields generally less than 10 gpm.
- TKg TKa TKc TKh TKi TKv** Volcanic rocks: TKa, andesite in Summit Mountains; TKh, andesite breccia in Pinos Altos Mountains; TKi, dacite in Summit Mountains; TKv, andesite and basalt flows, pyroclastic deposits, and interbedded sedimentary rocks of the Hidalgo Volcanics in the Little Hatcher Mountains and Coyote Hills; TKr, rhyolite and associated pyroclastic deposits in Summit Mountains. Yields generally less than 1/2 gpm but locally as much as 25 gpm.

CRETACEOUS

- Kb** Beartooth Quartzite in central Grant County.
- Kc** Colorado Formation in central Grant County; Corbett Sandstone (Molado Formation of Zeller, 1970) in Little Hatcher Mountains, and unnamed sandstones in Brockman and Coyote Hills.
- Kd** Howells Ridge Formation in Little Hatcher Mountains and Coyote Hills; includes U-Bar and Hell-to-Finish Formations of Zeller (1970).
- Ke** Kinghorn Shale in Little Hatcher Mountains.
- Kf** Skunk Ranch Conglomerate in Little Hatcher Mountains, arkose in South Burro Mountains; locally water bearing; occurrence in the Colorado Formation highly unpredictable; yields generally range from less than 1/10 to 15 gpm.
- Pg** Abo Formation: Red shale, mudstone, and tuff mudstone (Lower Permian). Not known to be water bearing.
- PM** Limestone and shale: Syena and Oswald Formations (Pennsylvanian) of the Magdalena Group, and Lake Valley Limestone (Lower Mississippian). Locally water bearing; yields range from less than 1 to about 180 gpm.
- Op** Percha Shale: Green to black fine shale (Upper Devonian). Generally not water bearing but locally yields as much as 1 gpm.
- SOC** Dolomite, limestone, and sandstone: Fauselman Dolomite (Silurian), Montoya Dolomite (Upper Ordovician), El Paso Limestone (Lower Ordovician), and Bliss Formation (Lower Ordovician and Upper Cambrian). Locally water bearing; yields range from less than 1 to about 250 gpm.
- pCg pCm pCc** Precambrian rocks: pCg, granite and granite-like rocks; pCm, schist, gneiss, greenstone, and phyllite; pCc, undifferentiated rocks. Locally water bearing; yields range from less than 1/10 to 15 gpm.

CONTACT

- Dashed where approximately located
- Showing upthrown (U) and downthrown (D) sides, or upper plate (T). Dashed where approximately located. Dotted where concealed.
- Axis of anticline
- Axis of syncline
- Small-capacity well
- Irrigation well
- Municipal, school, or public supply well

WELLS

- Industrial well
- Test hole for water, oil, or metal ores
- Vertical line through symbol indicates well is not in use, is dry, destroyed, or apparently abandoned
- Mine shaft in which water level was measured
- Spring
- Active gaging station
- Inactive gaging station



GEOLOGIC MAPPING CREDITS

The geology has been adopted primarily from the sources shown above; modifications by F. D. Trueger. Additional sources listed in text.

Weber and Willard 1959	Willard, Weber, and Kuelner 1961	Dane and Bachman 1965
Elston 1960	Jones, Moore, Brew and Koch 1916	Kuelner 1956
Wargo 1955	Paige 1963	Elston 1957
Hearty 1959	Hermon, Jones and Moore 1964	Liska 1964
Morrison 1965	Ballegaard 1960	
	Dane and Bachman 1965	
	Laska 1967 and Zeller 1970	
	Bromfield and Wrucke 1961	

Geologic map of Grant County, New Mexico