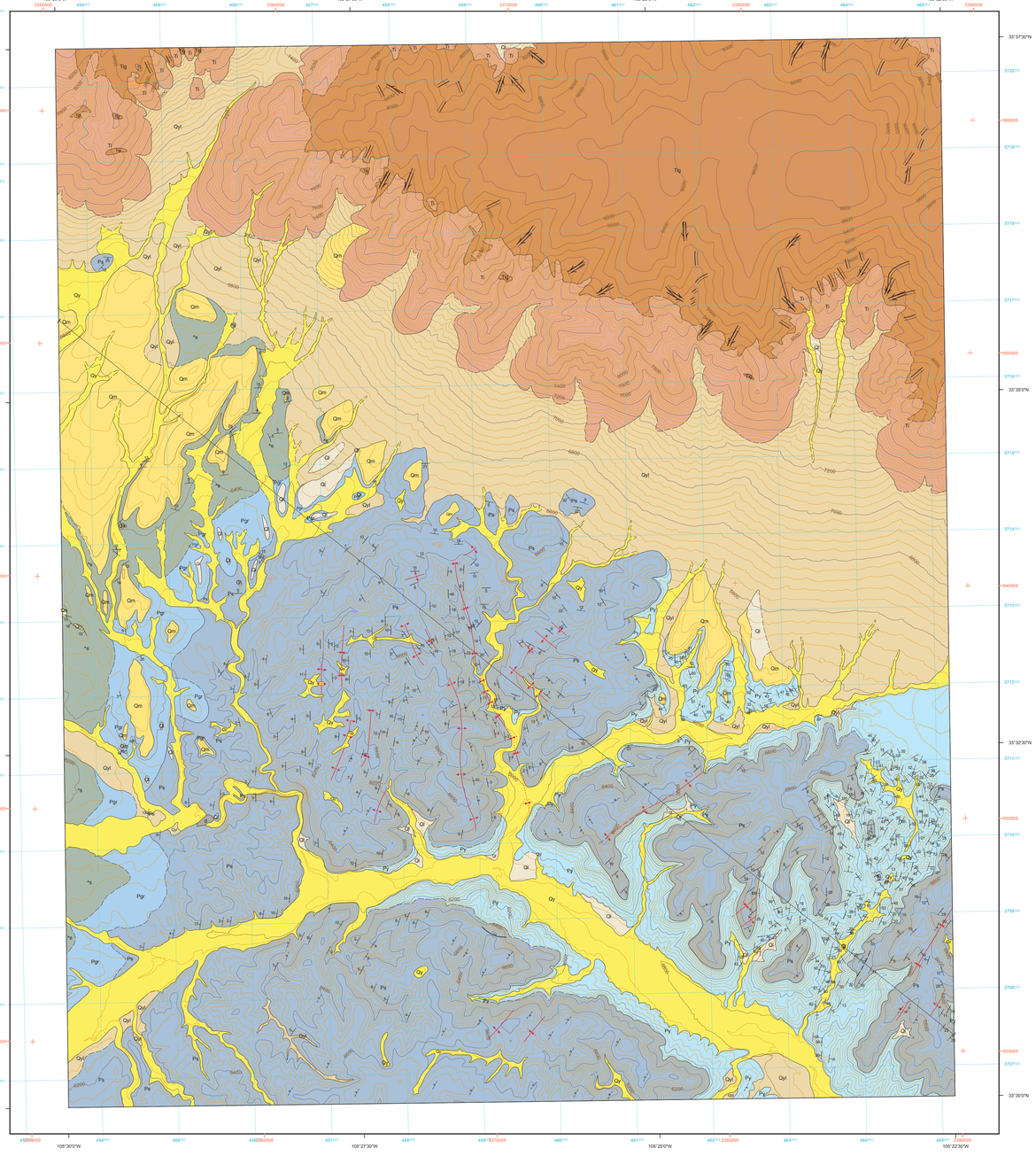
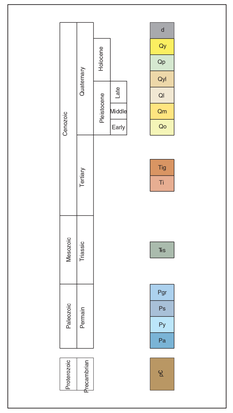
NMBGMR Open-File Geologic Map XXX
Last Modified June 2019





Explanation of Map Symbols

01.01.01 Contact—Identity and existence are certain. Location is accurate.

01.01.03 Contact—Identity and existence are certain. Location is approximate.

02.10.01 Detachment fault (sense of slip unspecified) (1st option)—Identity and existence are certain. Location is accurate. Hachures are on the upper plate.

02.10.03 Detachment fault (sense of slip unspecified) (1st option)—Identity and existence are certain. Location is approximate. Hachures are on the upper plate.

31.08 Map neatline

05.01.01 Anticline (1st option)—Identity and existence are certain. Location is accurate.

05.01.03 Anticline (1st option)—Identity and existence are certain. Location is approximate.

05.01.07 Anticline (1st option)—Identity and existence are certain. Location is concealed.

05.05.01 Syncline (1st option)—Identity and existence are certain. Location is accurate.

05.05.05 Syncline (1st option)—Identity and existence are certain. Location is inferred.

05.05.07 Syncline (1st option)—Identity and existence are certain. Location is concealed.

17.62 Rock slide, slump, block-glide landslide, rotational landslide or Toreva block—Consisting of a relatively intact mass of displaced materials.

06.02 Inclined bedding—Showing strike and dip.

06.03 Vertical bedding—Showing strike.

06.04 Overturned bedding—Showing strike and dip.

06.41 Moderately inclined (between 30° and 60°) bedding, as determined remotely or from aerial photographs—Showing approximate strike and direction of dip.

31.10 Cross section line and label

Description of Map Units

01-01-00-00-00—Unit—d—Disturbed by man—This unit was mapped only as the earthen dam in the southwest part of the Capitan Pass

02-00-00-00-00—Heading03—Cenozoic—Cenozoic—Cenozoic

02-01-00-00-00—Heading03—Quaternary—Quaternary—Quaternary

02-01-01-00-00—Unit—Qy—Holocene alluvial deposits—These deposits were mapped separately from the remainder of the Quaternary surficial deposits because they are relatively easy to identify and are important because these are areas that may be prone to flooding. They are composed of weakly-consolidated interbedded gravel, silt, and clay. They commonly form relatively flat deposits at the bottom of the wider drainages. They characteristically contain abundant dark brown, organic-and silt-rich soils at the surface. The deposits are commonly incised up to about 2-3m by the modern drainages, where vertical faces locally show older soil horizons. As mapped, this unit locally contains at least two and possibly three

02-01-02-00-00—Unit—Qp—Holocene playa deposits—Mostly weakly consolidated silt and clay. These fill depressions within the San Andres Formation in the southern part of the Capitan Peak quadrangle where they are interpreted to be sink holes that have filled sediment. The presence of small seasonal ponds within some of them suggests that water does not infiltrate within them very

02-01-03-00-00—Unit—Qyl—Holocene and Late Pleistocene alluvial deposits, undivided—Dominated by sand to boulders of fine-grained granite. As mapped, this unit contains both Late Pleistocene deposits with elevations about 3-9m (10-30 feet) above the level of the modern drainages. Holocene deposits form one or more terrace levels below the loevel of Ql deposits. The two ages are very difficult to distinguish on the broad alluvial apron on the south side of the

02-01-04-00-00—Unit—Ql—Late Pleistocene alluvial deposits—These deposits consis of poorly sorted sand, gravel, and boulders of dominantly Ti. They are poorly exposed, but commonly form terrace

02-01-05-00-00—Unit—Qm—Middle Pleistocene alluvial deposits—Composed of poorly-sorted subangular to subrounded pebbles to large boulders, the vast majority are composed of fine-grained granite (Ti). Some deposits contain a significant amound of angular to subrounded dark gray to black iron clasts (magnetite and hematite) from small pebbles up to about 40 cm across. Where Qm deposits have been significantly eroded the iron clasts locally form a lag placer. Although poorly exposed, these deposits locally contain a well developed horizon of laminar caliche. These deposits are higher in the landscape than Ql deposits and have been dissected by deeper drainages. Commonly less that 12m (40 feet) thick.

02-01-06-00-00—Unit—Qo—Early Pleistocene alluvial deposits—This unit forms only two small terraces on the far west side of the Capitan Pass quadrangle where they reside about 60m (200 feet) above the modern drainage. They are comprised of far-traveled sand to small boulders composed of brown quartz sandstone, gray limestone, chert, andesite (or monzonite/syenite) and a darker-gray platy

02-02-00-00-00—Heading03—Tertiary—Tertiary—Tertiary

02-02-01-00-00—Unit—Tig—Fine-grained granite—Areas subjected to periglacial activity. This unit contains the areas of the Capitan pluton that were subjected to glacial or periglacial processes. There is almost intact outcrop, yet nearly all of the surface rubble is composed of fine-grained granite. As mapped, this unit also contains talus and rock glacier deposits which contain material that has moved down-slope. Since it was not practical with the time available to distinguish the different types of slope deposits, it made sense to

02-02-02-00-00—Unit—Ti—Fine-grained granite—Overall the mineralogy of this rock is very bland and non-descript. The rock is characteristically fine-grained and tan-colored, exhibiting phenocrysts of subhedral to euhedral K-feldspar up to about 4 mm across, and anhedral muscovite and/or biotite from 1-2 mm across. The rock commonly weathers a light rusty tan color and commonly exhibits either a smooth or slightly granular texture. Commonly

04-00-00-00-00—Heading02—Mesozoic—Mesozoic—Mesozoic

04-01-00-00-00—Heading03—Triassic—Triassic —Triassic

04-01-00-00-00—Unit—TRs—Santa Rosa Sandstone —Sandstone, siltstone, and minor conglomerate. The lower parts of this unit are dominated by pale-yellow quartz sandstone and interbedded calcarenite and calcilutites. Limy sandstone beds are commonly fragmental and are composed of subrounded sand-size to small pebble-size (1.5 cm) fragments of tan to gray fine-grained limestone. Cross-bedding is common in sets, tens of centimeters thick, that show erosinal bases. Even pebbly beds are cross-bedded and locally show erosional bases and rip-up clasts of sandstone. Locally, the yellow-sandstone beds contain chert-pebble conglomerate beds up to 1-2m thick that form chert lags down-slope. The upper parts (as exposed) are composed of conglomerate containing angular to subrounded pebbles to boulders (1m) of dark-brown medium-to-coarse-grained sandstone, gray limestone, and a variety of felsic-intrusive rock that is darker gray and more platy than is Ti. All exposures are very poor and most exposures form gentle slopes

05-00-00-00-00—Heading02—Paleozoic—Paleozoic—Paleozoic

05-01-00-00-00—Heading03—Permian—Permian—Permian

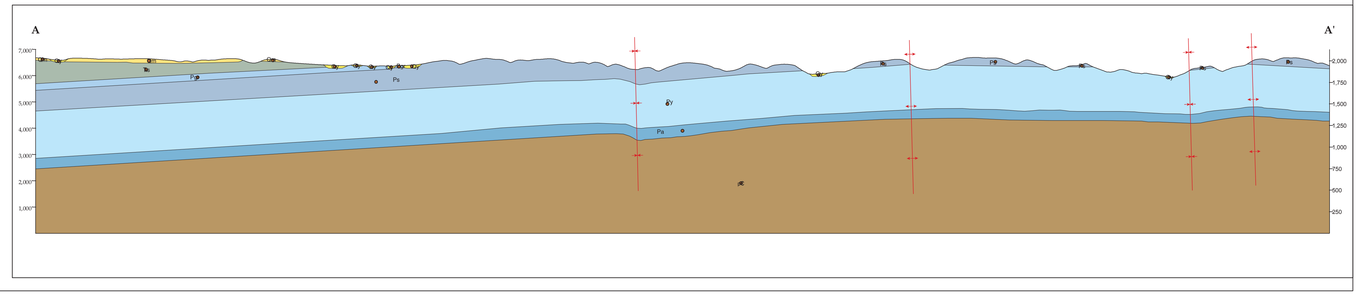
05-01-00-00-00—Unit—Pgr—Grayburg Formation—Red siltstone, fine-grained sandstone, and minor gypsum. This unit is characteristically dominated by rusty-red quartz siltstone and fine-grained sandstone. Since exposure is poor, it was distinguished from the overlying Santa Rosa Sandstone mostly on the basis of color.

05-02-00-00-00—Unit—Ps—San Andres Formation—Medium-to thick-bedded dolomite and limestone. Dolomite beds are typically light-gray-colored, whereas limestone beds are commonly darker gray. Many beds contain sand-sized broken fossil debris surrounded by a matrix composed of micrite and more commonly microspar. Some beds contain faint, parallel laminae parallel to bedding. Other beds are massive and appear bioturbated. Orange-weathering chert is minor but widespread and is composed of granular microcrystalline quartz. The chert commonly forms irregularly shaped masses up to several tens of centimeters across that is both discordant and concordant to bedding. Common larger fossils include coiled gastropods up to about 5 cm across and less abundant nautiloids up to about 10 cm. Smaller recognizable fossils include crinoid stem segments, disarticulated brachiopods (commonly up to 2 cm and replaced by chert), and sparse fussilinids. The carbonate beds are interbedded with well sorted, fine-to medium-grained quartz sandstone from 1-10 m thick, which probably represent intertonguing Glorieta Sandstone. Maximum thickness of the San

05-04-00-00-00—Unit—Py—Yeso Formation—Interbedded fine-grained quartz sandstone, siltstone, dolomite, and bedded gypsum. Siltstone is commonly rusty-red and pale-yellow. Dolomite beds are locally fossiliferous and contain silicified-brachiopod and crinoid gragments, abundant coiled gastropods, aminoids, and possibly other cephalopods. Dolomite beds locally contain moldic porosity with some pores still filled with gypsum. Gypsum beds are typically sub-horizontally banded and are locally thicker than 10 m. Exposures are poor and typically mantled by regolith. The thickness obtained from the log of the Muñoz Canyon AAN Fed. No. 1 well is 513 m

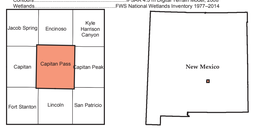
05-05-00-00-00—Unit—Pa—Abo Formation (in cross-section only)—Shown only in the cross-section. The thickness obtained from the log of the Muñoz Canyon AAN Fed. No. 1 well is 112 m (370

06-01-00-00-00—Unit—¤—Precambrian—(Cross section only)



Base map from U.S. Geological Survey 1981.
North American Datum of 1927 (NAD27)
Projection and 1,000-meter grid: Universal Transverse Mercator, Zone 13S, shown in blue.
10,000-foot ticks: New Mexico Coordinate System of 1983 (Central zone), shown in red.

Roads.....U.S. Census Bureau, 2015-2016
Names.....GNIS, 2016
Hydrography.....National Hydrography Dataset, 2014
Contours.....IFSAR 4.5 m Digital Terrain Model, 2008
Wetlands.....FWS National Wetlands Inventory 1977–2014



1:24,000

1 0.5 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 0.5 0 1 Kilometer

Contour Interval 40 Feet
National Geodetic Vertical Datum 1929

Quadrangle Location

New Mexico Bureau of Geology and Mineral Resources
New Mexico Tech
801 Leroy Place
Socorro, New Mexico
87801-4796

[575] 835-5490

This and other STATEMAP quadrangles are available for free download in both PDF and ArcGIS formats at:

http://geoinfo.nmt.edu

Digital layout and cartography by the NMBGMR Map Production Group:
Phil L. Miller, Amy L. Dunn, and Katherine J. Sauer

New Mexico Bureau of Geology and Mineral Resources
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Geologic Map of the Capitan Pass 7.5-Minute Quadrangle, Lincoln County, New Mexico

June 2010

by
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Comments to Map Users

A geologic map displays information on the distribution, nature, orientation, and age relationships of rock and deposits and the occurrence of structural features. Geologic and fault contacts are irregular surfaces that form boundaries between different types or ages of units. Data depicted on this geologic quadrangle map may be based on any of the following: reconnaissance field geologic mapping, compilation of published and unpublished work, and photogeologic interpretation. Locations of contacts are not surveyed, but are plotted by interpretation of the position of a given contact onto a topographic base map; therefore, the accuracy of contact locations depends on the scale of mapping and the interpretation of the geologist(s). Any enlargement of this map could cause misunderstanding in the detail of mapping and may result in erroneous interpretations. Site-specific conditions should be verified by detailed surface mapping or subsurface exploration. Topographic and cultural changes may not be shown due to recent development.

Cross sections are constructed based upon the interpretations of the author made from geologic mapping, and available geophysical, and subsurface (drillhole) data. Cross sections should be used as an aid to understanding the general geologic framework of the map area, and not be the sole source of information for use in locating or designing wells, buildings, roads, or other man-made structures.

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