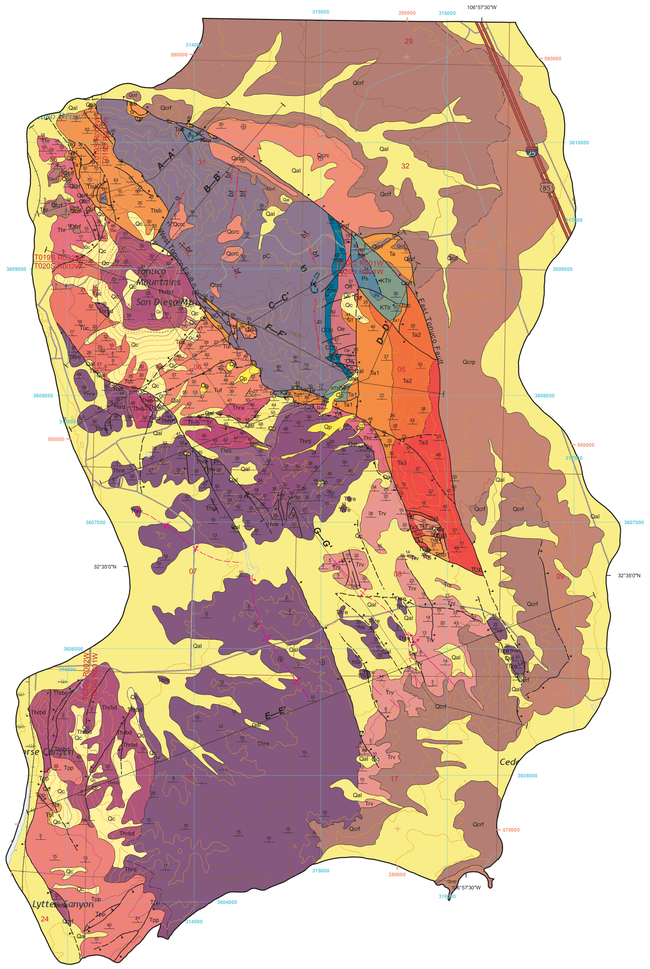
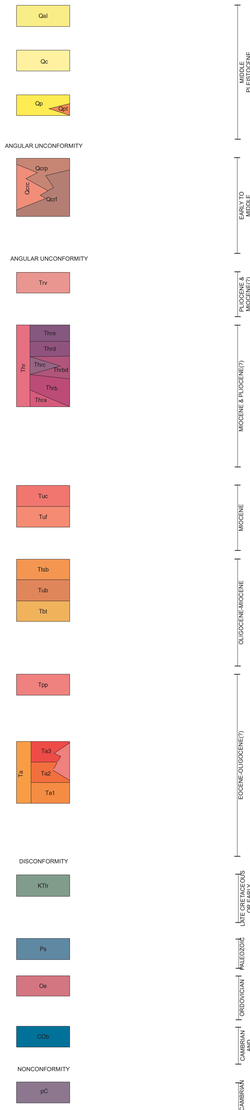


Correlation of Map Units



Description of Map

01-00-00-00-00—heading01—Alluvium—Alluvium (Middle Pleistocene to

01-01-00-00-00—unit—Qal—Qal (Middle Pleistocene to Recent)—Chiefly stream deposits of larger arroyos, sands, silts, and gravels of Rio Grande flood plain and windblown sand.

02-00-00-00-00—heading01—Colluvium—Colluvium (Middle Pleistocene to

02-01-00-00-00—unit—Qc—Qc (Middle Pleistocene to Recent)—Coarse carbonate cemented conglomerates forming veneers on slopes of San Diego Mountains and West Selden Hills.

03-00-00-00-00—heading01—Pediment gravels—Pediment gravels (Middle Pleistocene to Recent)—Pediment gravels

03-01-00-00-00—unit—Qp—Qp (Middle Pleistocene to Recent)—Coarse carbonate-cemented conglomerates forming veneers on erosion surfaces of middle to late Pleistocene age. Travertine (Qpt) occurs in old valleys and along faults.

03-02-00-00-00—unit—Qpt—Travertine (Middle Pleistocene to Recent)—Occurs in old valleys and along faults

04-00-00-00-00—heading01—Camp Rice Formation—Camp Rice Formation (Early to Middle Pleistocene)—Camp Rice Formation

04-01-00-00-00—unit—Qcrf—Qcrf (Early to Middle Pleistocene)—Consists of lower river-deposited yellow to gray sand stone and conglomerate of early to middle Pleistocene age

04-02-00-00-00—unit—Qcrp—Qcrp (Early to Middle Pleistocene)—Intertonguing piedmont-slope and basin-floor deposits with multiple paleosols

04-03-00-00-00—unit—Qcrc—Qcrc (Early to Middle Pleistocene)—Thin conglomerate beds, derived from San Diego Mountain. Intertongue with both facies (Qcrf & Qcrp)

05-00-00-00-00—heading01—Rincan Valley Formation—Rincan Valley Formation (Pliocene & Miocene(?))—Rincan Valley Formation

05-01-00-00-00—unit—Trv—Trv (Pliocene & Miocene(?))—Pink gypsiferous claystone, siltstone, and minor conglomerate in lower 350 feet that form extensive badlands. Grades into poorly sorted, reddish-brown conglomerate and conglomeratic sandstone in upper 180 feet.

06-00-00-00-00—heading01—Hayner Ranch Formation—Hayner Ranch Formation (Miocene & Pliocene(?))—Hayner Ranch Formation

06-01-00-00-00—unit—Thr—Thr (Miocene & Pliocene(?))—Pebble-cobble conglomerate, conglomeratic sandstone, siltstone, and claystone sequence divisible into five members on the basis of grain size and color variations.

06-01-01-00-00—subunit—Thra—Thra (Miocene & Pliocene(?))—Light-gray to buff siltstone, claystone, and conglomerate that pinches out southward.

06-01-02-00-00—subunit—Thrb—Thrb (Miocene & Pliocene(?))—Red to Orange conglomerate and conglomeratic sandstone member.

06-01-03-00-00—subunit—Thrd—Thrd (Miocene & Pliocene(?))—Red to Orange conglomerate and conglomeratic sandstone member; continuous with Thrb where the medial Thrc member is not present.

06-01-04-00-00—subunit—Thrc—Thrc (Miocene & Pliocene(?))—Light-gray to light-tan siltstone, claystone, and conglomerate that pinches out southward.

06-01-05-00-00—subunit—Thre—Thre (Miocene & Pliocene(?))—Tan to yellow-brown conglomerate and conglomeratic sandstone member.

06-01-06-00-00—subunit—Thrbd—Thrbd (Miocene & Pliocene(?))—A coarse, red boulder conglomerate derived from flowbanded rhyolite and Uvas Basalt.

07-00-00-00-00—heading01—Unnamed transitional unit—Unnamed transitional unit (Miocene)—Unnamed transitional unit

07-01-00-00-00—unit—Tuc—Tuc (Miocene)—An upper grayish-red conglomerate, conglomeratic sandstone, and mudstone sequences.

07-02-00-00-00—unit—Tuf—Tuf (Miocene)—Underlain red siltstone, mudstone, shale, and minor andesite-latite-welded tuff sandstone and cobble conglomerate.

08-00-00-00-00—heading01—Thurman Formation—Thurman Formation (Oligocene - Miocene)—Thurman Formation

08-01-00-00-00—unit—Ttsb—Ttsb (Oligocene - Miocene)—Consists mainly of about 700 feet of alternating pale-purple rhyolite sedimentary breccia channel deposits and red mudstone in graded units averaging 30 feet thick which probably are correlative with thin similar strata in the Thurman Formation of the Rincon Hills

08-02-00-00-00—unit—Tub—Tub (Oligocene - Miocene)—Uvas basaltic andesite dikes; similar rocks dated at 26 m.y. in Selden Canyon.

08-03-00-00-00—unit—Tbt—Tbt (Oligocene - Miocene)—Bell Top Formation; tan ash-flow tuff that occurs as small faulted blocks in the northern Selden Hills; similar flows at base of Thurman Formation in Rincon Hills dated at 34 m.y.

09-00-00-00-00—heading01—Palm Park Formation—Palm Park Formation (Eocene-Oligocene(?))—Palm Park Formation

09-01-00-00-00—unit—Tpp—Tpp (Eocene-Oligocene(?))—Andesite-lattice boulder conglomerates, various andesite-latite sandstones, siltstones, mudstones, and tuffs that are greenish, light-gray, red, and light-purple; include a 100-foot thick non porphyritic andesite flow exposed in Lyten Canyon. It is not known whether the Palm Park Formation overlies or is equivalent to part or all of the andesite volcanic and sedimentary sequence.

10-00-00-00-00—heading01—Andesite volcanic—Andesite volcanic and sedimentary sequence (Eocene - Oligocene(?))—Andesite volcanic and sedimentary sequence

10-01-00-00-00—unit—Ta—Ta (Eocene-Oligocene(?))—Equivalent in part ot the Orejon Andesite in the Organ Mountains. Separated into three members on the basis of vertical changes in lithology and color.

10-01-01-00-00—subunit—Ta1—Ta1 (Eocene-Oligocene(?))—Light-gray, massive laharic(?) tuff breccias, tuffs, lapilli tuffs, andesite-latite pebble to boulder conglomerate, and volcanic-derived sandstone.

10-01-02-00-00—subunit—Ta2—Ta2 (Eocene-Oligocene(?))—Volcanic-derived red and purple siltstone, mudstone, and sandstone with few thick channel conglomerates; interbedded laharic(?) tuff breccias in upper 100 feet.

10-01-03-00-00—subunit—Ta3—Ta3 (Eocene-Oligocene(?))—light-grayish-blue to purpe andesite porphyry, and laharic tuff breccias in massive beds; 40 feet of mixed cobble conglomerate at base.

11-00-00-00-00—heading01—Love Ranch Formation—Love Ranch Formation (Late Cretaceous or Early Tertiary)—Love Ranch Formation

11-01-00-00-00—unit—KTlr—KTlr (Late Cretaceous or Early Tertiary)—Reddish-gray boulder conglomerate derived entirely from El Paso Limestone, Bliss Sandstone, and Precambrian granite; contains minor red shale and 5-foot-thick astracode-bearing limestone.

12-00-00-00-00—heading01—Silicified Paleozoic limestone—Silicified Paleozoic limestone (Paleozoic)—Silicified Paleozoic limestone

12-01-00-00-00—unit—Ps—Ps (Paleozoic)—Silicifed Paleozoic

13-00-00-00-00—heading01—El Paso Group—El Paso Group (Ordovician)—El Paso Group

13-01-00-00-00—unit—Oe—Oe (Ordovician)—Thin-to medium-bedded, gray, fossiliferous limestone with a mottle appearance due to numerous thin siliceous and argillaceous streaks, flukes, and bands.

14-00-00-00-00—heading01—Bliss Sandstone—Bliss Sandstone (Cambrian and Ordovician)—Bliss Sandstone

14-01-00-00-00—unit—COb—COb (Cambrian and Ordovician)—Tan quartzite and dark-brown hematitic and glauconitic thin-bedded sandstone.

15-00-00-00-00—heading01—Precambrian Rocks—Precambrian Rocks

15-01-00-00-00—unit—pC—pC (Precambrian)—Granite, granitic gneiss, biotite schist, migmatites, and diabase and pegmatite dikes.

Explanation of Map

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

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

01.01.07 Contact—Identity and existence are certain. Location is concealed.

02.01.01 Fault (generic; vertical, subvertical, or high-angle; or unknown or unspecified orientation or sense of slip)—Identity and existence are certain. Location is accurate.

02.02.01 Normal fault—Identity and existence are certain. Location is accurate. Ball and bar on downthrown block.

02.02.03 Normal fault—Identity and existence are certain. Location is approximate. Ball and bar on downthrown block.

02.02.09 Low-angle normal fault—Identity and existence are certain. Location is accurate. Half-circles on downthrown block.

02.02.11 Low-angle normal fault—Identity and existence are certain. Location is approximate. Half-circles on downthrown block.

02.08.01 Thrust fault (1st option)—Identity and existence are certain. Location is accurate. Sawteeth on upper (tectonically higher) plate.

19.01.01 Vein, veinlet, or mineralized stringer—Identity and existence are certain. Location is accurate. Quartz and Barite-Fluorite veins

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.

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

05.05.03 Syncline (1st option)—Identity and existence are certain. Location is approximate.

02.11.09 Inclined fault (2nd option)—Showing dip value and direction.

06.01 Horizontal

06.02 Inclined bedding—Showing strike and dip.

06.03 Vertical bedding—Showing strike.

06.04 Overturned bedding—Showing strike and dip.

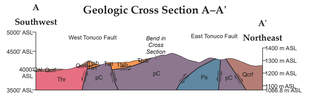
08.01.02 Inclined generic (origin not known or not specified) foliation—Showing strike and dip.

08.02.03 Inclined flow banding, lamination, layering, or foliation in igneous rock—Showing strike and dip.

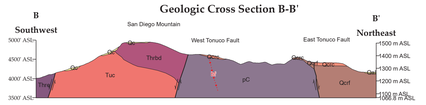
19.03.04 Open pit, quarry, or glory hole

31.10 Cross section line and label

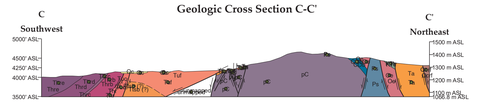
Geologic Cross Section A–A'



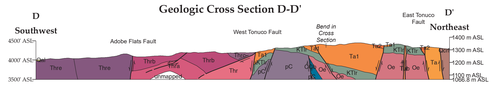
Geologic Cross Section B-B'



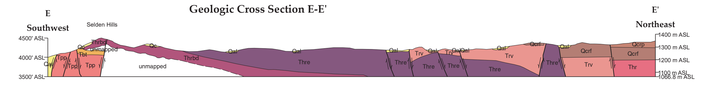
Geologic Cross Section C-C'



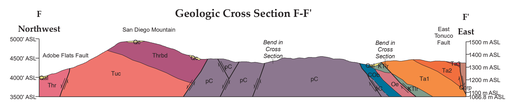
Geologic Cross Section D-D'



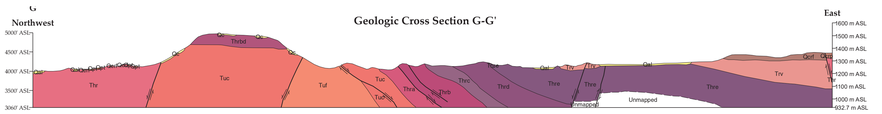
Geologic Cross Section E-E'



Geologic Cross Section F-F'

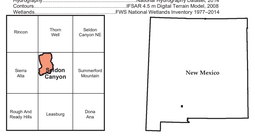


Geologic Cross Section G-G'



Base map from U.S. Geological Survey 2017.
North American Datum of 1927 (NAD27)
Universal Transverse Mercator, Zone 13S, shown in blue.
10,000-foot ticks: New Mexico Coordinate System of 1927 (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



Quadrangle Location

1:16,350

1 0 0.5 1 Mile
1000 0 1000 2000 3000 4000 5000 6000 7000 Feet
1 0.5 0 1 Kilometer

Contour Interval 20 Feet
National Geodetic Vertical Datum 1929

New Mexico Bureau of Geology and Mineral Resources
Bulletin 97

Mapping of this quadrangle was funded by the New Mexico Bureau of Geology and Mineral Resources, (*Dr. Nelia W. Dunbar, Director and State Geologist*; Dr. J. Michael Timmons, *Assoc. Director for Mapping Programs*).

Geologic Map of the San Diego Mountain Area, Doña Ana County, New Mexico

1971

by

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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, Ann D. Knight, and Justine L. Nicolette

This draft geologic map is preliminary and will undergo revision. It was produced from either scans of hand-drafted originals or from digitally drafted original maps and figures using a wide variety of software, and is currently in cartographic production. It is being distributed in this draft form as part of the bureau's Open-file map series (OFGM), due to high demand for current geologic map data in these areas where STATEMAP quadrangles are located, and it is the bureau's policy to disseminate geologic data to the public as soon as possible.

After this map has undergone review, editing, and final cartographic production adhering to bureau map standards, it will be released in our Geologic Map (GM) series. This final version will receive a new GM number and will supercede this preliminary open-file geologic map.

DRAFT

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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