

Geologic Map of the Captain Davis Mountain Quadrangle, Santa Fe County, New Mexico

By

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May, 2001

**New Mexico Bureau of Geology and Mineral Resources
*Open-file Digital Geologic Map OF-GM 48***

Scale 1:24,000

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**GEOLOGIC MAP OF THE
CAPTAIN DAVIS MOUNTAIN 7.5-MINUTE QUADRANGLE
SANTA FE COUNTY, NEW MEXICO**

by

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INTRODUCTION

Location, land status, and terrain

The Captain Davis Mountain 7.5-minute quadrangle comprises an area of about 158 km² (61 mi²) east of the Rio Grande Valley in Santa Fe County, New Mexico. Portions of the study area are administered by the Bureau of Land Management and by the state of New Mexico, but the majority of it is privately owned, most comprising the Ortiz Mine Grant. No towns lie in the Captain Davis Mountain quadrangle and only isolated houses are present in the eastern part. The only public road, County Road 55 (Gold Mine Road), crosses the northwestern corner of the quadrangle.

Elevations range from 1,764 m (5820 ft), on Arroyo Chorro on the northern border of the quadrangle to 2,260 m (7457 ft) on Lone Mountain and 2,176 m (7180 ft) on Captain Davis Mountain. Broad, gravel-covered mesas sloping gently away from the Ortiz Mountains dominate the quadrangle's landscape. Lone Mountain and Captain Davis Mountain are outliers of the Ortiz Mountains. The southeastern part of the quadrangle is occupied by nearly flat terrain of the Estancia Basin.

Surface drainage of nearly the entire quadrangle runs north to Galisteo Creek and then westward to the Rio Grande. Drainage in the south and southeastern parts of the quadrangle is southward into the Estancia Basin.

Principal geologic and physiographic features

Ortiz Surface

The Plio-Pleistocene Tuerto Gravel caps the extensive north-, east-, and south-sloping mesas in the western half of the Captain Davis Mountain quadrangle. The Tuerto Gravel was deposited on erosion surfaces flanking the Ortiz Mountains and contains detritus derived from them. In the southwestern part of the quadrangle, the Tuerto Gravel contains clasts derived from the San Pedro Mountains as well. The constructional top of the Tuerto Gravel forms the Ortiz Surface as defined by Ogilvie (1905) and Kelley (1977).

Ortiz Mountains Intrusive Complex

Captain Davis Mountain, Lone Mountain, and the surrounding hills are outliers of the Ortiz Mountains Intrusive Complex. Captain Davis Mountain is composed of faulted masses of an andesite-porphyry laccolith and a quartz monzodiorite stock, emplaced into Cretaceous sedimentary rocks at the present level of erosion. Lone Mountain contains a plug of augite-hornblende monzonite that intruded Cretaceous sedimentary rocks and andesite-porphyry sills. Aphanitic and porphyritic dikes radiating from the Ortiz Mountains cut Cretaceous strata in the south-central part of the quadrangle.

Cerro Pelon Laccolith

Los Cabrerros Mesa, San Lazarus arroyo, and Cerro Pelon, which lies just outside the eastern edge of the Captain Davis Mountain Quadrangle, are underlain by the Cerro Pelon laccolith. Much of this 3.2 km (2 mi) by 5.5 km (3.5 mi) andesite porphyry body is exposed. Trachytic texture, the orientation of hornblende lineations, and the tear drop shape indicate that

the laccolith was emplaced from the west, perhaps from the Ortiz igneous intrusive center. This igneous body, within the Menefee Formation, cuts across a pre-existing Laramide monocline, is offset by numerous faults, and folded by the north-plunging Omera syncline which comprises the northern end of the Estancia basin.

Tijeras-Cañoncito Fault System

The Tijeras-Cañoncito Fault System is the dominant structural feature of the Captain Davis Mountain quadrangle and separates the Estancia basin on the south from the Santa Fe embayment of the Rio Grande rift on the northwest. The system bifurcates into two fault strands between Captain Davis Mountain and the Ortiz Mountains at the western margin of the quadrangle. One strand, possibly a continuation of the Gold Hill fault, continues northeast beneath the Ortiz Gravel. The second strand crosses the northwest side of Captain Davis Mountain and curves eastward in the headwaters of Cunningham Gulch. From south of Peach Spring this fault, the San Lazarus fault of Lisenbee and others (1979), continues northeast. Both faults are downthrown on the northwest. A south-plunging, right echelon fold train along the southeast side of the fault in the Charro Arroyo area suggests right slip.

In the Ortiz Mountains, age-dating of cross-cutting igneous rocks constrains major movement (8.3 km [5.5 mi] of left-lateral stratigraphic separation) to the interval 30 Ma to 34 Ma. A hornblende andesite (Tha) dike intrudes the San Lazarus fault near Peach Spring where the normal separation is probably 1200 m (4000 ft). Koehler and Kelson (2000) found no evidence of middle- or late-Quaternary movement of the Tijeras-Cañoncito Fault System on the Captain Davis Mountain quadrangle.

Estancia Basin

The topographic and structural Estancia basin ends on the north within the quadrangle at the Tijeras-Cañoncito fault system. As noted in the previous section, the axis of the broad, north-plunging basin is the Omera syncline (the Galisteo syncline of Lisenbee [1976]). Folding of the Cretaceous section, the Paleocene Diamond Tail Formation and the Oligocene Cerro Pelon laccolith indicate that the present basin is probably related to formation of the Rio Grande rift.

Alluvium of Arroyo Chorro and tributaries

Surface drainage from much of the eastern and southern portions of the quadrangle exits northward to Rio Galisteo through the Arroyo Charro and its tributaries, Arroyo la Joya, Arroyo San Lazarus, Cunningham Gulch and an unnamed arroyo at the northern margin of the quadrangle. Isolated outcrops of the Tuerto Gravels east of these arroyos indicate that entrenchment of this drainage pattern cut through the former "Ortiz conoplain" of Ogilvie (1905). Broader valleys are formed where the bed rock is the weak Cretaceous shale or sandstone and shale of the Tertiary Diamond Tail Formation and a narrow canyon results where the streams cut through the Cerro Pelon laccolith. Narrow bands of alluvium (Qa) mark the area covered by water during seasonal runoff. Former areas of stream or downslope movement of sediment are underlain by Qca, comprised of a combination of alluvium and colluvium or by terrace deposits (Qt) formed as the valleys were down cut to changing base levels of the Rio Galisteo and, ultimately, the Rio Grande. Small alluvial fans (Qaf) are present at the headwaters of small tributaries.

MINERAL RESOURCES

Metals (Gold)

Gold was mined from 1979 to 1987 at Cunningham Hill on the Golden quadrangle, immediately to the west of the Captain Davis Mountain quadrangle. Processing of ore took place on a leach pad and recovery plant on the Captain Davis Mountain quadrangle. Mine tailings were piled at the quadrangle's western edge and have been reclaimed. Placer gold hosted by the Plio-Pleistocene Tuerto Gravel and by younger alluvium was exploited on Cunningham Mesa and nearby drainages of the Ortiz Mountains in the western part of the quadrangle in the 19th century (New Placers District). Copper-bearing skarn mineralization is developed in the Greenhorn Limestone member of the Mancos Shale on Lone Mountain.

Coal

Coal deposits, hosted by the Upper Cretaceous Menefee Formation, have been exploited at the Omera coalfield in Sec. 30, T.13N., R.9E. and Sec. 5, T.12N., R.9.E. where bituminous coal adjacent to the "Creston" hornblende monzonite dike was taken intermittently from underground workings. Between 1899 and 1924, approximately 110,000 short tons, valued at an estimated \$410,000, were mined by the Santa Fe Gold and Copper Company for use at its smelter at the San Pedro mine (New Mexico Territorial Mine Inspector, 1899-1911; New Mexico State Mine Inspector 1912-1924).

Construction Aggregate

Igneous rocks plus gravel contained in the Tuerto Gravel represent a large resource of potential construction material. Prior to reclamation, spent tailings from the Cunningham Hill Mine were used for road surfacing on Gold Mine road and other roads in the area. The tailings material is brecciated quartzite derived from the Paleocene Diamond Tail Formation.

PREVIOUS WORK

Griswold (unpublished report, 1950) described the geology and mineral potential of the Ortiz Mine Grant. Lindgren and Graton (1906) and Lindgren and others (1910) described mineral deposits in the Ortiz Mountains. Elston (1967) summarized mineral resources and production in the area. Lisenbee (1967) studied the geology of the northeastern part of the quadrangle as part of a Masters' Thesis study. Bachman (1975) mapped the Madrid 15-minute quadrangle, of which the Captain Davis quadrangle comprises the southeastern quarter.

NOTE TO 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 are based on reconnaissance field geologic mapping, compilation of published and unpublished work, and photogeologic interpretation. Locations of contacts are not surveyed, but are plotted by interpretation onto a topographic base map; therefore, the accuracy of contact locations depends on the scale of mapping and the

interpretation of the geologist. 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 structures. Site-specific conditions should be verified by detailed surface mapping or subsurface exploration. The topographic base for the published by the United States Geological Survey at a scale of 1:24,000 (one inch equals 2000 feet). Topographic and cultural changes associated with recent development may not be shown.

Mapping of this quadrangle was funded by a matching-funds grant from the 1999-2001 STATEMAP program of the U.S. Geological Survey, National Cooperative Geologic Mapping Program, to the New Mexico Bureau of Geology and Mineral Resources (Drs. Charles E. Chapin and Peter A. Scholle, Directors; Dr. Paul W. Bauer, P.I. and Geologic Mapping Program Manager). The quadrangle map has been placed on open file in order to make it available to the public as soon as possible. The map has not been reviewed according to the New Mexico Bureau of Geology and Mineral Resources standards. Revision of the map is likely because of the on-going nature of work in the region. *The report and map should not be considered final and complete until they are published by the New Mexico Bureau of Geology and Mineral Resources.*

DESCRIPTION OF MAP UNITS

CENOZOIC ERATHEM

Colluvial, eolian, and anthropogenic deposits

Thin surficial deposits derived from wind and mass-movement processes, or extensive areas disturbed by gold mining, or construction operations.

af -- artificial fill (Historic) – Dumped fill and areas affected by human disturbances. Locally mapped where areally extensive or geologic contacts are obscured.

Alluvium

Alluvium of Arroyo Chorro and tributaries

Qa – Alluvium: Cobbles, sand, silt, and clay transported by seasonal flooding or in active channels. Coarser clasts are dominated by Tertiary porphyry and skarn.

Qca -- Colluvium/alluvium: Sand, silt and clay in abandoned stream channels, flood plains, and lower valley slopes.

Qc: Colluvium: Unconsolidated sand, silt and clay deposits along upper hill slopes or broad, flat hill crests. A few meters in maximum thickness on upland areas.

Qca -- Colluvium/alluvium: Sand, silt and clay in abandoned stream channels, flood plains, and lower valley slopes.

Qaf -- Alluvial fan: Boulders, gravel, sand, silt, and clay, deposited at the point of emergence of small, perennial streams from highland areas.

Qe -- Eolian deposits: Tan to light pink, wind blown silt and clay lying on gently inclined upland areas. Much of the area has a thin deposit of this material incorporated with the soil.

Qp -- Pediment gravel: Gravel deposits derived from erosion of the Tuerto Gravels and redeposited along slopes extending outward from the Estancia Plain.

Qt --Terrace gravel: Rounded pebbles and cobbles of variable composition including, Phanerozoic chert, sandstone, Tertiary igneous clasts and skarn, in a sand or silt matrix.

Qtt – Terrace deposits of tributary drainages. May be variously correlated with terraces of Galisteo Creek. Locally includes alluvium and colluvium.

Basin-fill deposits

Santa Fe Group (upper Oligocene-lower Pleistocene)

In the Captain Davis Mountain quadrangle, the upper group of the Santa Fe Group is known as the Tuerto Gravel which caps a well-defined erosion surface flanking and sloping away from the Ortiz Mountains. The Tuerto Gravel (**QTt**) caps mesas in the western part of the Captain Davis Mountain quadrangle. Spiegel and Baldwin (1963) suggested a correlation between the Ancha Formation (the geomorphic equivalent of the Tuerto Gravel north of Galisteo Creek) and the Tuerto Gravel. Age dating of interfingering Cerros del Rio basalts Bachman and Mehnert (1978) and overlying lower Bandelier pumice (J. Winick, 1999, unpublished NM Geochronological Laboratory Internal Report, IR-78) indicates that the upper part of the Ancha Formation is between 2.8 and 1.6 Ma old Both units rest unconformably on older tilted Santa Fe Group (Stearns, 1979).

Upper Santa Fe Group (Pliocene (?) – lower Pleistocene)

QTt – Tuerto Gravels of Stearns (1953) (lower Pleistocene to upper Pliocene):

Yellowish to reddish-brown and yellowish-red moderately consolidated and caliche cemented, moderately to well stratified pebble to cobble conglomerate and pebbly to cobbly conglomeratic sandstone with scattered boulders and muddy sandstone interbeds. Matrix is fine- to very coarse-grained, very poorly sorted sandstone, and gravel clasts contain abundant subrounded to subangular clasts derived from the Ortiz Mountains (andesite porphyry and augite monzonite; black, reddish-brown, and banded hornfels; and lesser quartzite, chert, and petrified wood. Bedding in the Tuerto Gravel is subhorizontal. Thickness to 18 m (60 ft)

QTa – Santa Fe Group of the Estancia Basin

Caliche-cemented gravels and sand composed of sedimentary, igneous, skarn and hornfels clasts derived from the Ortiz Mountains and granite, schist, quartz and feldspar clasts derived from the Sangre de Cristo Mountains (in the eastern outcrops). Sub-horizontal and massively bedded.

Oligocene Epoch

Igneous Rocks

Oligocene igneous rocks in the Captain Davis Mountain quadrangle are part of the Ortiz Porphyry Belt, which extends from South Mountain northward to Los Cerrillos intrusive complex. The oldest igneous rocks in the Ortiz Porphyry Belt are quartz-bearing andesite-porphyry sills which are intruded by quartz-poor monzonite and latite stocks. Major movement on the Tijeras-Canoncito fault in the Ortiz Mountains occurred after the intrusion of the andesite porphyry sills and before the intrusion of quartz-poor stocks. Andesite porphyry (**Tap**) forms extensive masses and sills that intruded the Cretaceous Mancos Shale around Captain Davis Mountain, Lone Mountain and Mesa Verde Group strata in the central and eastern part of the

quadrangle, e.g., at Cerro Pelon. A plug of augite-hornblende+/-biotite monzonite (**Thm**) pierces sedimentary rocks and andesite-porphyry sills at Lone Mountain. A quartz monzodiorite stock (**Tqmd**), similar to a granodiorite body on the east side of Lukas Canyon in the adjacent Golden quadrangle, forms the southeastern part of Captain Davis Mountain. Aphanitic and porphyritic dikes (**Tha, Thmp**), arrayed in a radial fashion from the Cerrillos Hills and from the Ortiz Mountains, extend several miles from their respective centers. K-Ar and Ar-Ar dating of the igneous rocks of the Ortiz Mountains shows the andesite porphyry to be about 34 Ma old. Quartz-poor stocks yielded ages ranging from 31 to 33 Ma.

Tap – Andesite porphyry: Grayish green to gray on fresh surfaces, fine-to medium grained, porphyritic. Phenocrysts of plagioclase, lesser hornblende, and rare quartz make up 40 to 60 percent of the rock. The groundmass is gray and aphanitic. Phenocrysts are subhedral andesine (about 75 percent), from 0.5 mm to 2 mm, black, euhedral hornblende (0.6mm - 5 mm) and clear, highly resorbed quartz (less than one percent). Plagioclase, orthoclase, quartz, and trace allanite, zircon, and rutile form the groundmass. Hornblende-rich (augite-cored?) xenoliths, two to 10 cm in diameter, are common (Coles, 1990). Forms laccoliths, e.g., the Cerro Pelon laccolith, sills, dikes, and irregular masses. Visible thermal metamorphism of the enclosing sedimentary rocks is generally less than 10 cm wide.

NOTE: This is Tsp on the adjacent Ojo Hedionda quadrangle. Perhaps that should be changed on the Ojo Hedionda quadrangle to Tap to match across the common boundary.

Thm – Augite-hornblende+/-biotite monzonite: Fine to medium grained. Holocrystalline. Magnetic studies indicate that small outcropping bodies on flanks of Lone Mountain may be apophyses of larger stock. Similar to large intrusive body that holds up the central mass of the Ortiz Mountains (Maynard, 1995; 2000; in prep.).

Tl and Ttl – Feldspar-porphyry latite and trachytic latite: Gray to tan, with tabular euhedral orthoclase phenocrysts up to 1.0 cm long in light gray groundmass, commonly with trachytic texture. Forms dikes on the southeastern part of Captain Davis Mountain.

Tha – Hornblende andesite: Light gray, aphanitic porphyritic dike. Phenocrysts of feldspar and highly altered hornblende comprise a few percent of the rock. Dikes to 4 m (13 ft) width weather to low ridges.

Thmp – Hornblende monzonite: Dark purple-brown, aphanitic porphyritic dike. Phenocrysts of pyroxene and feldspar. Dikes to 7 m (23 ft) width stand as bold walls along much of their lengths.

Tqmd – Quartz monzodiorite: Forms the eastern part of Captain Davis Mountain. Needs added description of mineralogy and texture. Can you contact Steve Maynard (in Albuquerque, I think) and see if he can provide that? I didn't map in this area.

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Eocene Epoch

Tg – Galisteo Formation: Divided into two formations.

Tgl – Lower unit - Alternating pink to red colored beds of arkosic sandstone, siltstone, and mudstone with conglomerate lenses comprised of rounded pebbles of Precambrian granite and schist and Paleozoic sedimentary. Thickness approximately 1,060 m (3,500 ft).

Paleocene Epoch

Tdt – Diamond Tail Formation: Variegated sandstone, conglomerate, mudstone and local limestone beds. Sandstone beds are massive, friable, usually cross bedded and composed of medium- to coarse-grained, subrounded, poorly sorted quartz and lesser chert. Kaolin, limonite, or calcite commonly constitute the matrix. Colors are tan, brown, orange, pink, red and white. Mudstones are gray to red in color and poorly exposed. A thin, basal conglomeratic zone containing rounded, highly polished chert pebbles is commonly present. Maximum thickness approximately 90 m (300 ft). Overlies the Mesaverde Group and Mancos Group with angular unconformity and is overlain disconformably by the Galisteo Formation. The Diamond Tail Formation of Lucas and others (1997) is the basal portion of the Galisteo Formation of Stearns (1943) and Lucas (1982). The Diamond Tail Formation was deposited in alluvial channels and broad floodplains in a northeast-trending Laramide basin.

MESOZOIC ERATHEM

Upper Cretaceous

Mesa Verde Group: divided into 2 formations. The thickness decreases northward due to a regional erosional surface.

Kmf – Menefee Formation: Sandstone, carbonaceous shale, claystone and coal both of which were formerly mined in the southeast part of the quadrangle. Thickness 0-85 m (0-280 ft). Pebble-sized siderite concretions in basal portion of section.

Kpl – Point Lookout Sandstone: Dark brown to olive, fine- to medium- grained, massive bedded sandstone and fossiliferous brown mudstone containing calcite-cemented concretions. Interbedded thin gray shale. Thickness ranges from 0-121 m (0-400 ft) beneath angular unconformity. The lower contact with the upper Mancos shale is gradational.

Km -- Mancos Group: (Thicknesses from the Ojo Hedionda Quadrangle)

Kn – Niobrara Formation: Comprised of two shale and one sandstone and sandy-shale sections. Thickness of the entire section cannot be determined directly, but probably exceeds 450 m (1,500 ft).

Kn1 and Kn2 – Shale is medium-gray calcareous and weathers olive-brown. Poorly exposed, mostly in arroyos. The uppermost shale section (Kn2) contains abundant concretions and ammonites and is gradational to the Point Lookout Sandstone.

Kns1 - Sandstone member: Light yellowish gray, even bedded, fine-grained sandstone and interbedded shale. The base lies approximately 90 m (300 ft) above lower contact of formation. Thickness approximately 100 m (330 ft).

Kc - Carlisle Shale: Dark gray to black, laminated shale. Weathers to yellow-brown color. Poorly exposed. Thickness approximately 91 m (300 ft).

Kcj - Juana Lopez Member: Brown-gray platy, fossiliferous, arenaceous, crystalline limestone and calcareous gray shale and gray shale. Limestone is commonly composed of needle-like fragments of *Inoceramus* shells. Ratio of carbonate to sand varies greatly along strike. Thickness 6 m (20 ft).

Kcs -Semilla Sandstone Member: Fine- to very-fine grained, grayish-yellow to brownish-yellow, fining upward, bioturbated, cross-bedded sandstone. Thickness less than 5 m (17 feet).

Kg -Greenhorn Limestone: Alternating beds of dark gray argillaceous micrite and medium- to dark-gray calcareous shale. Beds are usually less than 0.5 m (1.5 ft) thick. Weathers light-gray and forms a low ridge. Imprints of *Inoceramus labiatus* are common as are foraminifera. Thickness 15 m (50 ft).

Kd -- Dakota Formation: undivided on the Captain Davis Mountain quadrangle. Tan to orange-brown, fine- to medium-grained quartz arenite and carbonaceous shale. Sandstone is commonly bioturbated. Gray shale and highly carbonaceous black shale are interbedded with thin lenses of tan sandstone, commonly containing fragments of coal. Thickness is 29 m (96 ft) in Hub Mesa in the adjacent (east) Ojo Hedionda Quadrangle.

NOTE: Rocks ranging from Jurassic through Precambrian ages are not exposed in the Captain Davis Mountain quadrangle, but are depicted in the cross sections. Thicknesses and descriptions are from: 1) a log of the Trans-Ocean, McKee #1 well in the adjacent Galisteo quadrangle approximately 2 km NE of the Captain Davis Mountain Quadrangle; 2) exposures of the Jurassic section on Hub Mesa in the Ojo Hedionda Quadrangle approximately 10 km (6 mi) to the east; and 3)

Booth (1977), from the Lamy to Canoncito area, and Bachman (1979). Some units combined in cross sections.

Upper Jurassic

Jm - Morrison Formation: Variegated shale, tan and light red-brown sandstone and lenses of tan and white pebble conglomerate. Sandstone is fine grained, subangular to subrounded quartz and minor chert and feldspar. Bedding is platy to massive and cross beds are common. Green, gray and maroon mudstone and interbedded tan sandstone are common in the upper portion of the section although a persistent, white kaolin-bearing sandstone underlies the upper contact. Thickness approximately 150 m (500 feet). Includes the Middle Jurassic Summerville Formation.

Middle Jurassic

San Raphael Group

Jt - Todilto Formation: Light grayish-brown limestone: laminated and crenulated with fetid odor on fresh surface. Overlain by thin bedded, dark-gray limestone containing red jasper nodules. Thickness is 8 m (26 ft) along south side of Hub Mesa. West of the Captain Davis Mountain Quadrangle the formation contains a gypsum member. An unknown thickness of the gypsum member may be present in the subsurface of the Captain Davis Mountain Quadrangle.

Je - Entrada Formation: Consists of upper white and lower brownish-pink units of cross-bedded, quartz arenite. Extremely friable, but weathers to bold cliff. Thickness 32 m (107 ft) along south side of Hub Mesa.

Triassic

Chinle Group ((Dockum Group??))

TRc – Chinle Group undifferentiated: Red-orange, dark brown, purplish gray and green, thick bedded mudstone, buff to dark red brown, cross bedded sandstone and limestone pebble conglomerate. Thickness is probably on the order of 150 m (500 ft). *Alvis – includes Agua Zarca (and Moenkopi)?*

Permian

Pb - Bernal Formation: Yellowish gray to reddish purple sandstone and siltstone and brown limestone pebble conglomerate. 15-33 m (50 to 110 ft) thick.

Psa - San Andres Limestone: Medium to light gray, fine grained, fetid limestone and interbedded calcareous sandstone. 4.5 to 12 m (16 to 40 ft).

Pg - Glorieta Sandstone: Medium to light gray, medium to fine grained, well sorted sandstone. 20 to 33 m (65 to 110 ft).

Py - Yeso Formation: Medium reddish brown to red mudstone, siltstone, fine grained sandstone and pale greenish purple limestone. 21 m to 42 m (70 to 140 ft).

Psc - Sangre de Cristo Formation: Medium brown to dark reddish brown mudstone and buff to dark brown, conglomeratic arkose. 91 to 910 m (300 to 3,000 ft) thick in the Canoncito area north of Lamy along Tijeras-Canoncito accommodation zone.

Pennsylvanian

IPm - Madera Formation: Gray to light brown, thick bedded limestone, gray to brown calcareous sandstone and buff and dark brown fossiliferous arkose. 248 m (820 ft).

Mississippian

Ms - Sandia Formation: Buff to brown sandstone, interbedded gray shale and argillaceous limestone. 48 m (160 ft).

Mt - Terrero Formation: Buff to dark brown, thick bedded, coarse grained limestone breccia in calcareous arkose matrix. 9 m (30 ft).

PROTEROZOIC EON

pCgm – granite and mica schist.

SYMBOLS

Dip and strike of bedding. In areas of Qa or Qca symbols indicates isolated outcrops in arroyos.

Dip and strike of flow foliation in igneous rocks

Bearing and plunge direction of hornblende lineation in igneous rocks

Dip of fault or dike

Contact: dashed where inferred, dotted where covered

Fault: dashed where inferred, dotted where covered

Plunging anticline

Plunging syncline

Anticlinal flexure

Synclinal flexure

Line of cross section

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