terrace tread in the Rio Grande valley. The Segundo Alto surface is

deposits of yellowish-brown (10YR) pebble gravel and pebbly sand derived

from the ancestral Rio Grande. Named by Lambert (1968) for exposures

along Menaul Blvd. Gravel clasts are dominated by rounded quartzite

forms discontinuous, probably lensoidal gravel east of the inner valley

interfingers with, and is inset by younger stream alluvium (Qay). May

Moderately developed soils on overlying eastern-margin piedmont alluvium

(Qpm) suggest a middle Pleistocene age for unit. Variable thickness, ranging

Lambert (1968). May be correlative to fluvial terrace deposits Qta1 pf Smith

and Kuhle (1998), which contain the ca. 602 ka Lava Creek B ash. Thickness

alluvium, and eastern-margin piedmont alluvium. Stream-valley alluvium

typically contain poorly to well sorted, poorly to well stratified, clast- and

entrenched arroyos across the map area. Alluvium west of the inner valley of

the Rio Grande generally contains poorly to moderately sorted, moderately

piedmont alluvium contains generally poorly sorted, poorly stratified, clast-

stratified, and clast- and matrix-supported deposits derived from uplands

underlain by deposits of the Arroyo Ojito Formation. Eastern-Margin

and matrix-supported deposits having angular to subangular clasts of

western and northern slopes of the Sandia Mountains and eastern basin

01-01-03-01-00-00 — Heading 04 — S-v alluvium — Stream-valley alluvium

01-01-03-01-01-00—Unit—QHa—Youngest stream alluvium (Historic to

gray-brown, and yellowish-brown (10YR) sand, silty to clayey sand, and

grades to the Las Padillas formation (Qrp). Very weakly developed soils

exhibit no pedogenic carbonate at the surface and weak Stage I carbonate

Holocene) - (Historic to Holocene) – Unconsolidated deposits of brown, light

gravel. Underlies arroyos, inset against younger stream alluvium (Qay), and

(Historic to uppermost Pleistocene) — Stream-valley alluvium

fans may locally contain hydrocollapsible soils.

granitic, metamorphic, sandstone, and minor limestone derived from the

matrix-supported deposits associated with modern and late Pleistocene

varies, up to 70 ft (21 m). Regionally, the unit is less than 16 ft (5 m) thick.

(Quaternary)—Divided into stream-valley alluvium, western-margin

01-01-03-00-00-00—Heading03—Alluvium—Alluvium

from 10-40 ft (3 to 12 m).

01-00-00-00-00—Heading01—Cenozoic Erathem—Cenozoic Erathem

01-01-00-00-00-00—Heading02—Neogene System—Neogene System

01-01-01-00-00-Heading03—CLEAD—Colluvial, landslide, eolian, and

anthropogenic deposits (Quaternary) — Thin surficial deposits derived from

wind and mass-movement processes, or extensive areas disturbed by open-

01-01-01-01-00-00 — Unit — af — Artificial fill (Historic) - (Historic) — Dumped

Rio Grande. Locally mapped where areally extensive or geologic contacts are

fill and areas affected by human disturbances, including levees bordering the

01-01-01-02-00-00—Unit—daf—Disturbed land and artificial fill, undivided

nining or construction. Locally mapped where disturbance is areally

(Holocene to uppermost Pleistocene) - (Holocene to uppermost

(Historic) - (Historic) — Dumped fill and areas affected by open-pit aggregate

01-01-03-00-00—Unit—Qae—Eolian sand and stream alluvium, undivided

Pleistocene) — Unconsolidated to poorly consolidated, moderately to well

sorted, light reddish-brown to light-brown (7.5-10YR), fine- to medium-

relatively thin, discontinuous mantle over upland areas west of the Rio

Grande. Weakly developed soils with maximum Stage 1 carbonate

morphologic development. May locally contain hydrocollapsible soils.

grained sand and silty sand with scattered pebbles that commonly forms a

Mapped only where areally extensive or thick. Variable thickness, from 0-16

01-01-04-00-00 — Unt — Qls — Landslide debris (upper Pleistocene) - (upper

brecciated Los Duranes formation (Qrd), and minor mud deposited by mass-

Exhibits hummocky topography. Arrows indicate direction of movement.

01-01-05-00-00—Unit—Qca—Colluvium and alluvium, undivided

Pleistocene) — Unconsolidated to poorly consolidated, poorly sorted and

derived from a variety of mass-movement hillslope processes, including

debris flow, slope wash, shallow slump, and creep. Commonly covers slopes

stratified, fine- to coarse-grained, clast- and matrix-supported deposits

hydrocollapsible soils. Differentiated where areally extensive. Variable

01-01-06-00-00 — Unit — Qcb — Basaltic colluvium (Holocene to upper

Pleistocene) - (Holocene to upper Pleistocene) - Poorly consolidated and

boulder-sized basalt boulders that covers slopes below the mesa-capping

sorted sedimentary breccia composed of angular to subangular to pebble- to

basalt of the Albuquerque volcanoes (Qba). Variable thickness, up to 10 ft (3

01-01-02-00-00-Heading03-Alluvium of the Rio Grande-Alluvium of

and modern Rio Grande that unconformably overlie upper Santa Fe Group

deposits (commonly units QToc and QTsa). Subdivided into six informally

Pleistocene) – Unconsolidated to poorly consolidated, pale-brown (10YR),

interbeds of fine-grained sand, silt, and clay derived from the Rio Grande.

the broad inner valley floodplain near the community of Las Padillas in

fine- to coarse-grained sand and rounded gravel with subordinate lensoidal

Recognized in drillholes only and informally named for deposits underlying

southwest Albuquerque, just south of the map area. Uncomformably overlies upper Santa Fe Group deposits (QToc and QTsa) and is commonly gravelly at

the base. Underlying Santa Fe Group deposits may be locally cemented with

calcium carbonate. Probably interfingers with stream alluvium (QHa and

the Rio Grande. Surficial deposits (< 6 ft [2 m] thick) are divided into the

Qay). Deposit surface (top) comprises the modern surface of aggradation for

modern river channel, and four textural subunits based on interpretations of

soil series described and mapped by Hacker (1977). Approximately 50-80 ft

01-01-02-01-01-00—Subunit—Qrpr—Modern channel deposits (Historic) -

(Historic)—Unconsolidated sand and gravel within the active channel of the

01-01-02-01-02-00—Subunit—Qrpc—Gravelly to sandy stream and floodplain

deposits (Historic) - (Historic) - Unconsolidated coarse-grained sand and

01-01-02-01-03-00—Subunit—Qrps—Sandy stream and floodplain deposits

(Historic) - (Historic) - Unconsolidated medium-grained sand and loamy

sand. Interpreted to represent channel and floodplain deposits. Includes

01-01-02-01-04-00—Subunit—Qrpsm—Silty to sandy stream and floodplain

deposits (Historic) - (Historic) — Unconsolidated fine-grained sand, silt and

clay. Interpreted to represent fine-grained sloughs or oxbows. Includes

01-01-02-01-05-00—Subunit—Qrpm—Silty to clayey stream and floodplain

deposits (Historic) - (Historic) – Unconsolidated fine-to medium-grained

Includes Anapra, Amijo, Agua, and Gila series of Hacker (1977).

01-01-02-02-00-00 — Unit — Qra — Arenal formation (upper Pleistocene) -

yellow (10YR) sandy pebble to cobble gravel recognized along the

(upper Pleistocene) — Poorly consolidated deposits of very pale-brown to

northwestern margin of the inner valley of the Rio Grande. Informally named

herein for exposures just west of the Arenal Main Canal, where it underlies

Lambert's (1968) Primero Alto terrace surface (Stratigraphic Section EQ). The

that represents the youngest preserved fluvial terrace tread in the Rio Grande

valley. Gravel clasts are primarily rounded quartzite and volcanic rocks with

(Qrd) and discontinuously overlain by a 2-7 ft (1-2 m) thick veneer of light-

morphology (Locality 3, Machette, et al., 1997, sites 14 and 15). Basal contact

(Qrp, Rio Grande floodplain). Correlated to the Edith formation by Lambert

(1968); however, deposit is inset against the Los Duranes formation and is

topographically lower than the basal contact of the Edith formation. Thus,

this unit is interpreted to be younger than the Edith and Los Duranes

formations. Approximately 10-20 ft (3-6 m) thick.

brown eolian sand. Weakly developed soils with Stage I to II carbonate

is approximately 60 ft (18 m) above the top of the Las Padillas formation

rare pumice and granite. Rests unconformably on the Los Duranes Formation

Primero Alto geomorphic surface is a gently south-sloping terrace surface

sand, silt and clay. Interpreted to represent fine-grained floodplain deposits.

pebbly sand. Interpreted to represent channel deposits. Includes Brazito

named formations on the basis of inset relationships.

uppermost Pleistocene) - (Historic to uppermost

Rio Grande. Delineated using aerial photography.

series of Hacker (1977).

Vinton series of Hacker (1977).

Glendale and Gila series of Hacker (1977).

the Rio Grande (Quaternary)—Fluvial deposits derived from the ancestral

underlain by Los Duranes Formation (Qrd). May locally contain

movement processes along steep hillslopes underlain by the Los Duranes Fm.

Pleistocene)—Poorly to well consolidated and very poorly sorted, sand,

(Neogene) — Neogene system (Tertiary & Quaternary)

(Cenozoic) — Cenozoic

pit aggregate mining or construction

extensive or geologic contacts are obscured.

Variable thickness, ranging up to 30 ft (9 m).

thickness, up to 10 ft (3 m).

(Holocene to upper Pleistocene) - (Holocene to upper

stream alluvium (Qay). Gravel clasts are predominantly subangular metamorphic and porphyritic granite with rare subrounded limestone. Slightly dissected deposit surface possesses well developed, construction barand-swale topography on interfluves. Weakly developed soils exhibit Stage II to III+ carbonate morphology and minor to moderate clay film development. Correlative to geomorphic surfaces Q6-Q7 of Connell (1995, 1996). Variable thickness, ranging up to 60 ft (18 m).

NMBGMR Open-File Geologic Map 17

Last Modified July 2021

where deposits contain gravel clasts of sandstone, gneiss, limestone, granite, and greenstone derived from Tijeras Canyon

Group (Neogene)—Upper Santa Fe Group 01-01-04-01-00-00 — Heading 04 — Wb-m deposits — Western basin-margin

01-01-02-05-00-00 — Unit — Qre — Edith formation (middle Pleistocene) -(lower Pliocene to low Pleistocene) - (lower Pliocene to low (middle Pleistocene)—Poorly to moderately consolidated, locally cemented Pleistocene) — Light-red to strong-brown and yellowish-gray (2.5-5YR), deposits of pale-brown to yellowish-brown (10YR) gravel, sand and sandy clay derived from the ancestral Rio Grande. Named by Lambert (1968) for exposures east of Edith Boulevard. Gravel clasts contain abundant rounded clasts are dominated by subangular to subrounded red granite, gray quartzite and volcanic rocks with minor granite, metamorphic sandstone, and rare welded Bandelier Tuff. Unconformably overlies upper Santa Fe quartzite, basalt, and Pedernal chert. Drillhole data indicates that unit Group deposits (QToc and QTsa), and is unconformably overlain by easternmargin piedmont alluvium (Qpm) and younger stream alluvium (Qay). Basal contact is approximately 80 ft (24 m) above the top of the Las Padillas (107 m) thick beneath map area. formation (Qrp, Rio Grande floodplain). Gravel pits yielded late to middle Pleistocene Rancholabrean fossils (Lambert, 1968; Lucas et al., 1988).

01-01-02-06-00-00—Unit—Qrl—Lomatas Negras formation (middle Pleistocene) - (middle Pleistocene) - Moderately consolidated and weakly cemented sandy pebble to cobble gravel primarily composed of subrounded to rounded quartzite, volcanic rocks, granite, minor basalt, and rare Bandelier Tuff. Discontinuously exposed and recognized as a lag of rounded quartzitebearing gravel. Base is not exposed in map area. The top is approximately 215-320 (65-97 m) above the top of the Las Padillas formation (Qrp, Rio be correlative to the Arroyo Ojito Formation. Thus, this member is Grande floodplain). Informally named for discontinuous exposures along Arroyo de las Lomatas Negras (Loma Machette quadrangle) where a buttress unconformity with the underlying Santa Fe Group is locally exposed. Unconformably overlain by older western-margin alluvium (Qao) and the basalt of the Albuquerque volcanoes (Qba). Correlative to unit Qu(?)g of

Rio Grande and undivided western basin margin(?) fluvial deposits) (Neogene) — Fluvial deposits (ancestral Rio Grande and undivided western basin margin(?) fluvial deposits)

01-01-04-02-01-00—Unit—QTsa—Fluvial deposits (lower Pleistocene to Pliocene) - (lower Pleistocene to Pliocene) – Moderately consolidated and cemented, very pale-brown to yellowish-brown (10YR) sand and gravel deposited by the ancestral Rio Grande. Clasts are predominantly rounded quartzite and volcanic rocks with subordinate granite and basalt. Interfingers with Ceja Member (QToc) deposits to the west. Base not exposed but interpreted to be at least 3,500 ft (1,070 m) thick in drillholes. Locally subdivided into an upper pumiceous axial-fluvial deposit (QTsau) along southeastern portion of map area.

01-01-04-02-01-01—Subunit—QTsau—Upper pumice-bearing fluvial unit (lower Pleistocene to upper Pliocene) - (lower Pleistocene to upper Pliocene) – Very pale-brown to yellowish-brown (10YR), pumiceous sand and pebbly to cobbly sand deposits by the ancestral Rio Grande. Clasts in are dominated by pumice, quartzite and volcanic clasts with minor chert, granite, and metamorphic rocks. Subordinate clasts include rounded quartzite and volcanic rocks. Medium- to coarse-grained, euhedral, bipyramidal quartz grains are locally abundant. Subhorizontally to cross stratified. Minor silty sand beds are discontinuous and range in color from light brown to grayish green. At the mouth of Tijeras Arroyo (Stratigraphic Section TA), unit contains early Pleistocene Irvingtonian "Aged" mammal fossils (Lucas and others, 1993) and clasts of the ca. 1.61 Ma lower Bandelier Tuff (Lambert, 1968; W.C. McIntosh, 1996, personal communication). Stratigraphically correlative strata exposed in Hell Canyon Wash (Love et al.,1996) contain rounded clasts of the ca. 1.2 Ma upper Bandelier Tuff, inset by middle

morphology at depth. Forms extensive valley border alluvial fans along the margins of the inner valley of the Rio Grande. These valley border alluvial 01-01-03-01-01-00—Unit—Qay—Younger stream alluvium (Holocene to uppermost Pleistocene) - (Holocene to uppermost Pleistocene) - Poorly of the Sierra Ladrones Formation (Machette, 1978) described along the consolidated deposits of pale-brown to light-brown (7.5-10YR) sand to sandy clay loam and gravel. Inset against eastern-margin piedmont (Qpm) and western-margin alluvium (Qam) and grades to the Arenal formation (Qra). Surface is slightly dissected and possesses weakly developed soils with Stage II carbonate morphology and typically covered by thin veneer of eolian sand. Commonly forms laterally extensive valley border alluvial fans along the western margin of the inner valley of the Rio Grande. These valley border alluvial fans may locally contain hydrocollapsible soils. Correlative to to mark the end of Santa Fe Group deposition and the initiation of geomorphic surface Q8 of Connell (1995, 1996). Variable thickness, up to 20 ft

01-01-03-01-01-Subunit—QHat—Youngest stream alluvium (Historic to Holocene) - (Historic to Holocene) – Subdivided into alluvium of Tijeras Arroyo (QHat), containing gravel beds comprised of sandstone, gneiss, limestone and granite derived from Tijeras Canyon. A charcoal sample taken at 8.5 ft (2.6 m) below deposit surface at mouth of Tijeras Arroyo (Locality 1) yields a radiocarbon date of 4,500±140 yr BP (Beta Analytic Lab No. 109129). Correlative to geomorphic surfaces Q8-Q9 of Connell (1995, 1996). Variable thickness, ranging up to 70 ft (22 m).

01-01-03-02-00-00—Heading04—W-m alluvium—Western-margin alluvium

01-01-03-02-01-00 — Unit — Qam — Middle western-margin alluvium, geomorphic surfaces Q6-Q7 of Connell (1995, 1996). Variable thickness, up to

40 ft (12 m).

approximately 145 ft (44m) above the top of the Las Padillas formation (Qrp, Rio Grande floodplain). Contains interbeds of subangular to subrounded red granite and rounded chert, indicating that the unit comprises interbedded fluvial deposits of the ancestral Rio Grande and western-margin alluvium. Locally covered by a thin discontinuous veneer eolian sand. Unconformably

01-01-04-00-00-Heading03-Upper Santa Fe Group - Upper Santa Fe

deposits (Arroyo Ojito Formation) (Neogene) — Western basin-margin deposits (Arroyo Ojito Formation)

01-01-04-01-02-00 — Unit — QToc — Arroyo Ojito Formation, Ceja Member moderately consolidated slightly cemented, slightly tiled, stratified sandstone and pebbly sandstone with minor siltsone and claystone interbeds. Gravel intermediate (dacitic) volcanic rocks, brownish-yellow polished chert, white

01-01-04-01-03-00 — Unit — Toa — Arroyo Ojito Formation, Atrisco member (Pliocene) - (Pliocene) - Cross section only. Moderately to well consolidated, locally cemented succession of yellowish-brown to yellowish-red (2.5-10YR), fine-grained silty sandstone and mudstone (Allen et al., 1998b). Informally named for a laterally extensive marker unit recognized in subsurface by an interval of high electrical conductivity (low electrical resistivity) on borehole geophysical logs beneath the Town of Atrisco Grant (Connell et al., 1998). Marks the base of an upward-coarsening megasequence in overlying upper Santa Fe Group deposits (QTsa, and QTsau). Fine-grained and difficult to determine provenance; however, the lateral continuity of unit, as interpreted from geophysical correlations (Connell et al., 1998), suggest that his unit may indicates that unit is approximately 280-330 ft (85-100 m) thick beneath the

Ceja Member (QToc). Interfingers with piedmont deposits of the upper Santa Fe Group, east of the map area. May be correlative with axial-stream deposits southern margin of the Albuquerque Basin. Top is defined by the Sunport surface (Lambert, 1968), which forms a broad low-relief, basin-floor surface underlain by a moderately to strongly developed soils exhibiting Stage III+ to locally weak Stage IV carbonate morphology (Locality 2, Machette, et al., 1997, site 16). The Sunport surface is about 390 ft (118 m) above the top of the Las Padillas formation (Qrp) and is about 430 ft (130 m) below the Llano de Albuquerque surface of Machette (1985). The Sunport surface is interpreted Quaternary incision by the Rio Grande, and thus, may be correlative to the Las Huertas geomorphic surface to the north (see Connell et al., 1995). High

(Quaternary) — Western-margin alluvium

undivided (upper to middle Pleistocene) - (upper to middle Pleistocene)—Poorly consolidated deposits of light to strong brown and very pale-brown to light gray (7.5-10YR) sand gravel. Gravel is primarily composed of red granite, chert, basalt, and minor gray dacitic volcanic rocks recycled from the Ceja Member (QToc). Locally stratified and slightly cemented with calcium carbonate. Inset by younger stream alluvium (Qay) and the Los Furanes formation (Qrd). Soil development is variable and possess Stage II to III carbonate morphology. Delineated west of the Rio Grande. Correlative to eastern-margin piedmont alluvium (Qpm) and

overlies the Ceja Member (QToc) and inset by the Arenal formation (Qra). 01-01-03-04-01-00—Subunit—Qpmt—Middle eastern-margin piedmont Drill-hole data indicates that the basal contact is inset approximately 75 ft (23 alluvium (upper to middle Pleistocene) - (upper to middle m) below the base of the Edith formation (Qre). Correlative deposits to the Pleistocene) – Subdivided into Tijeras Canyon piedmont subunit (Qpmt) north bury the basalt of the middle Pleistocene basalt of the Albuquerque volcanoes (Qba). Approximately 165-170 ft (50-52 m) thick in map area. 01-01-02-04-00-00 — Unit — Qrm — Menaul formation (upper to upper-middle Pleistocene) - (upper to upper-middle Pleistocene) — Poorly consolidated

pebbles that are generally smaller in size than pebbles and cobbles in the 01-01-04-01-01-00—Unit—QTo—Arroyo Ojito Formation, undivided (lower Edith formation (Qre). Exposed in northeast corner of map area where it Pliocene to lower Pleistocene) - (lower Pliocene to lower Pleistocene) - Cross section only. Sandstone and conglomerate derived from the western basin escarpment of the Rio Grande. The basal contact is approximately 90 ft (27 m) margin. Gravel clasts typically contain red granite, white quartzite, above the top of the Las Padillas formation (Qrp, Rio Grande floodplain), brownish-yellow chert, angular, variegated black and white chalcedony and chert (correlated to the Pedernal chert of Church and Hack, 1939), basalt, and represent lenses of fluvial gravel associated with the Los Duranes formation sandstone. Divided into two members in map area. (Qrd) east of the Rio Grande. Thickness is generally less than 10 ft (3 m).

> conformably overlies the Atrisco member (Toa). Provisionally correlated to Kelley's (1977) Ceja Member. Subsurface data suggests unit is about 350 ft

01-01-04-02-00-00—Heading04—Fluvial deposits—Fluvial deposits (ancestral

Pleistocene Lomatas Negras formation (Qrl); indicating that unit QTsau is between ca. 0.6 and 1.2 Ma. Conformably overlies and interfingers with the

estimated hydraulic conductivity where saturated. Approximately 210 ft (65 m) thick at Tijeras Arroyo.

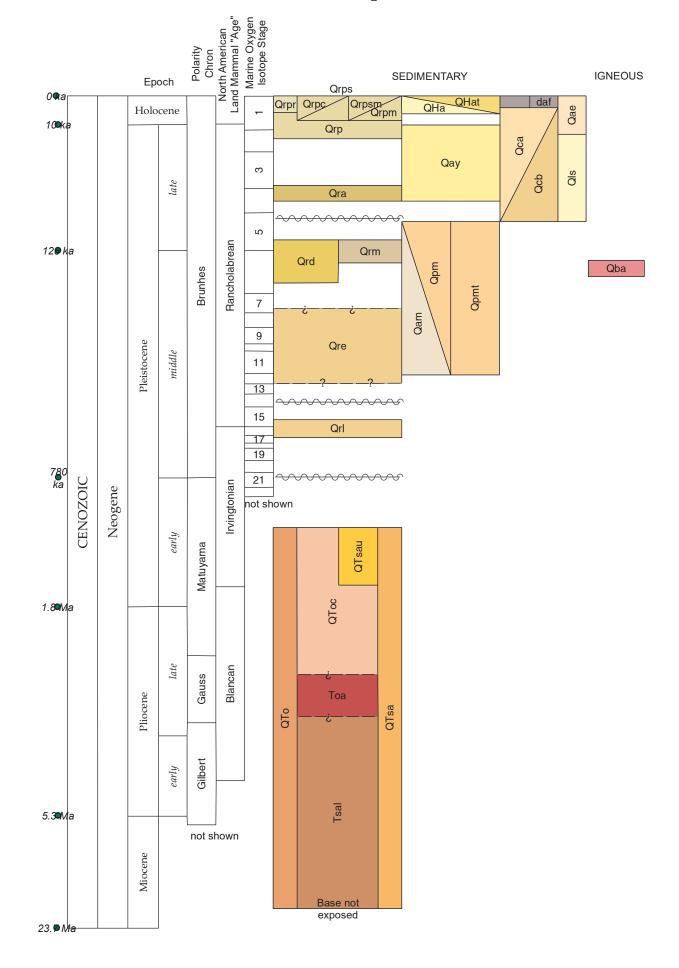
01-01-04-02-02-00 — Unit — Tsal — Lower fluvial deposits (Pliocene to upper Miocene) - (Pliocene to upper Miocene) - Cross section only. Fine- to coarsegrained sandstone with interbedded compact clay and rare scattered pebbly sandstone interbeds. Regional borehole geophysical log correlations (Connell et al., 1998) suggests that unit pinches out to the east into piedmont deposits of the upper Santa Fe Group. May be correlative to piedmont-slope and alluvial fan deposits of the Sierra Ladrones Formation (Machette, 1978) exposed at the southern margin of the Albuquerque Basin. May include undivided western basin-margin deposits of the Arroyo Ojito Formation (QTa). Base not exposed, but regional thickness is estimated to be greater than 2,000 ft (610 M) thick drillholes.

01-01-04-03-00-00—Heading04—Volcanic rocks—Volcanic rocks (Quaternary) — Volcanic rocks

01-01-04-03-01-00 — Unit — Qba — Basalt of the Albuquerque volanoes (uppermiddle Pleistocene) - (upper-middle Pleistocene) - Olivine basalt with dominantly pahoehoe texture derived from five cinder cones to the west in the adjacent La Mesita Negra SE quadrangle (Kelley and Kudo, 1978). Commonly vesicular with subordinate fine- to medium-grained olivine and plagioclase (Kelley and Kudo, 1978). Unconformably overlies Lomatas Negras Formation (Qrl), and is partially buried by the Los Duranes Formation (Qrd) to the north (Connell. 1996, unpubl.). Records a geomagnetic excursion during the Brunhes polarity chron (Geissman et al.,

(Peate et al., 1996). Approximately 6-20 ft (2-6 m) thick.

1990) that has been dated at 1.56±20 ka using the 238U/230Th technique



Correlation of Map Units

Explanation of Map Symbols

01.01.01 Contact—Identity and existence are certain. Location is

01.01.03 Contact—Identity and existence are certain. Location is

01.01.07 Contact—Identity and existence are certain. Location is concealed. 01.01.08 Contact—Identity or existence are questionable. Location is

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

02.01.08 Fault (generic; vertical, subvertical, or high-angle; or unknown ······?··· or unspecified orientation or sense of slip)—Identity or existence are questionable. Location is concealed.

05.09.23 Monocline, anticlinal bend (1st option)—Identity and existence are certain. Location is concealed. Arrows show direction of dip; shorter arrow on steeper limb.

12.03 Fluvial terrace riser-Identity and existence certain, location approximate. Location is approximate due to terrace risers being buried. Hachured towards named fluvial terraces representing ancestral Rio Grande (post Santa Fe Group) tread elevations.

→ 17.10 Direction of downslope movement of

02.11.02 Fault showing local normal offset (2nd option)—U, upthrown block; D, downthrown block.

⊕ 06.01 Horizontal

31.08 Map

— 06.02 Inclined bedding—Showing strike and dip.

12.06 Sediment transport direction determined from

19.05.007 Exploratory geotechnical borehole (NM State Highway & Transportation Dept.)

• 26.01.06 Well used for collection of water

• 26.01.07 Well used for domestic-water

• 31.21 Sample locality—Showing sample number.

Primo Alto geomorphic

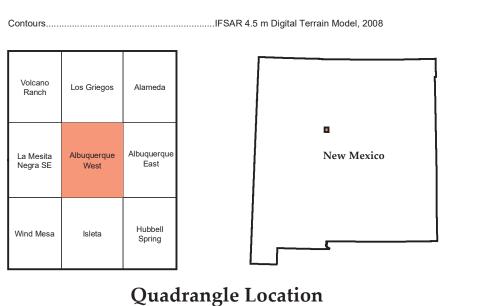
Segundo Alto geomorphio

→ 31.10 Cross section line and

Base from U.S. Geological Survey 1954, photorevised 1967 and 1972 Polyconic projection,

cental zone 1000-meter Universal Transverse Mercator grid ticks, zone 13, shown in blue

35°2'30"N 387900



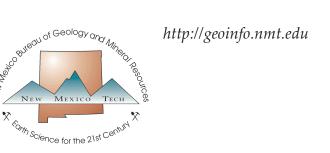
New Mexico Bureau of Geology and Mineral Resources New Mexico Tech 801 Leroy Place Socorro, New Mexico

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[575] 835-5490 This and other STATEMAP quadrangles are available for free download in both PDF and ArcGIS formats at:

Digital layout and cartography by the NMBGMR Map Production Group:

Phil L. Miller, Amy L. Dunn, Ann D. Knight, and Justine L. Nicolette





Magnetic Declination May, 1998 10° 40' East

Sean D. Connell¹, Bruce D. Allen¹, John W. Hawley², and Ralph R. Shroba³

Geologist; Dr. J. Michael Timmons, Assoc. Director for Mapping Programs).

This draft geologic map is preliminary and will undergo revision. It was produced from either scans of handdrafted 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

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

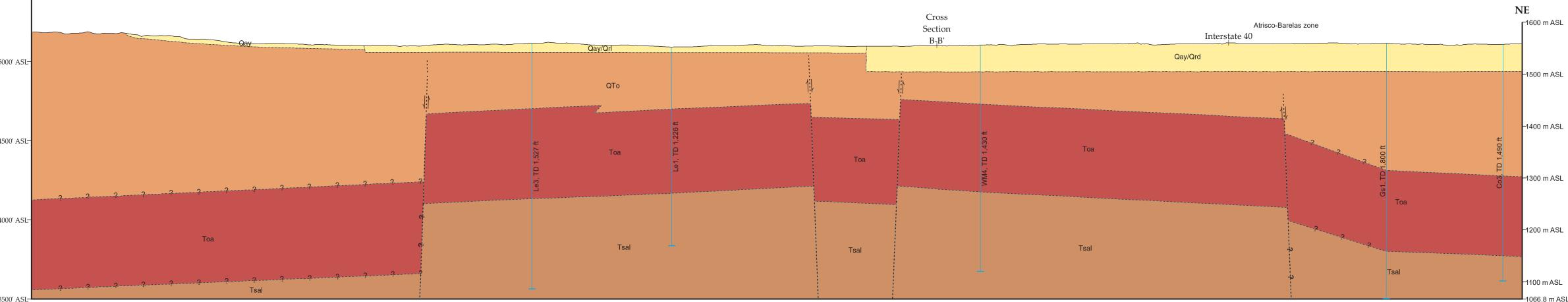
Comments to Map Users

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.

Minute Quadrangle, Bernalillo County, New 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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Geologic Cross Section A–A' (5x vertical exaggeration)



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1000 0 1000 2000 3000 4000 5000 6000 7000 Fee

Contour Interval 10 Feet

National Geodetic Vertical Datum 1929

New Mexico Bureau of Geology and Mineral Resources

Open-File Geologic Map 17

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Geologic Map of the Albuquerque West 7.5-

Mexico

May 1998