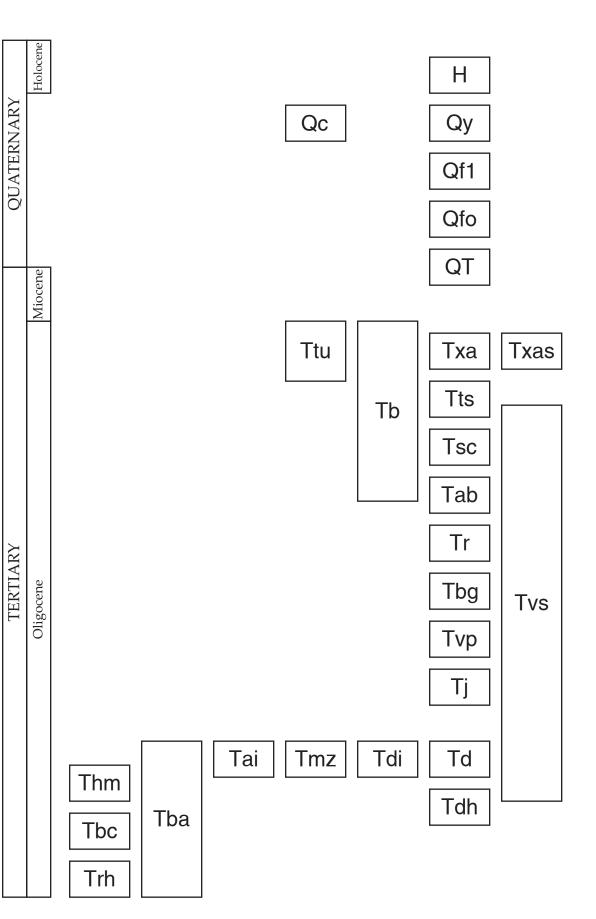


CORRELATION DIAGRAM



- H Man-made deposits (Holocene)-Earthen dams for tanks along active gulleys or valleys.
- Qy Active alluvium (Holocene)-Active and recently active alluvium, typically
- Qc Colluvium and other slope deposits (Quaternary).

lava derived from the Luera Mts. Thickness: 0-100m.

- Qf1 Alluvial fan and piedmont deposits (Quaternary)-Deposits are typically
- incised <5m. Clasts are derived from a local source. Qfo Older alluvial fan and piedmont deposits (Quaternary)-Deposits typically
- incised >5m. Clasts are derived from a local source. Older alluvium and piedmont deposits (Miocene- Quaternary)-Gravel and conglomerate containing clasts of rhyolitic ignimbrite, felsic, intermediate, and mafic

Tertiary

Quaternary

- Tvs Volcaniclastic sandstone and conglomerate (Oligocene Miocene) Sandstone and conglomerate containing clasts mostly of felsic to intermediate lava, but also variable amounts of rhyolitic ignimbrite. The unit occurs at many stratigraphic intervals thoughout the map area. Thickness: 0-50m.
- Txa Porphyritic andesite (Oligocene)-Mafic lava containing 2-15%, 2-20mm plagioclase phenocrysts and lesser <2.5mm pyroxene, and sparse olivine <1mm. Thickness: 0-150m.
- Txas Porphyritic andesite scoria (Oligocene) Porphyritic andesite scoria, depostied adjacent to intrusive conplex of the lava unit Txa. Thickness: 0-30m.
- Ttu Rhyolite ignimbrite, undifferentiated (Oligocene)-Isolated exposures of nonwelded rhyolite ignimbrite that are probably South Canyon or Turkey Springs Tuff, but whose correlation with either unit is poorly constrained due to limited or poor exposure in areas where stratigraphic relationships with other ignimbrites is poorly known. The rhyolitic ignimbrite(s) contain 2-10%, <2.5mm phenocrysts of plagioclase, sanidine, quartz, and sparse bitotite. Thickness: 0-20m.
- Tb Basalt (Oligocene)–Phenocryst-poor basaltic lava containing <5%, <2.5mm phenocrysts of olivine (typically altered to iddingsite), pyroxene, and sparse plagioclase. Matrix ranges from vitric to strongly crystalline with abundant plagioclase microlites <0.2mm. Thickness: up to 350m.
- Tab Aphyric basalt (Oligocene)–Aphyic mafic lava. The flow(s) occur at the base of a thick pile of basaltic lava (Tb), and may represent an intial eruptive phase of that

sequence in the southwestern part of the map area. Thickness: 0-30m.

- Tts Turkey Springs Tuff (Oligocene)–Rhyolite ignimbrite containing 2-15%, <2.5mm phenocrysts of sanidine, plagioclase, quartz, and biotite. Typically nonwelded, and light-colored, the ignimbrite locally grades upward into a pinkish gray welded zone. Phenocryst content increases gradually up-section. Thickness: 0-100m
- Tsc South Canyon Tuff (Oligocene)–Rhyolite ignimbrite containing 4-15%, 1-2mm phenocrysts of plagioclase, sanidine, quartz, and biotite. The unit is typically nonwelded, and the phenocryst content increases up-section gradually. Lithic-lapilli are generally <5%, and pumice lapilli 5-25%. Thickness: 0 - 50m.
- Tr Rhyolite lava (Oligocene)–Rhyolite lava containing ~5-7%, 1-3mm phenocrysts of plagioclase, possibly sanidine, and sparse biotite. Thickness: 0-100m.

Tbg Bloodgood Canyon Tuff (Oligocene)–Poorly to nonwelded rhyolite ignimbrite containing 2-10% phenocrysts of sanidine, plagioclase, quartz, and biotite. Quartz phenocrysts are conspicously large (up to 3mm) and commonly strongly embayed. Biotite is characteristically more abundant (1-2%) than in any of the other quartz-phyric ignimbrites in the area, and the rock has a slight pinkish color. Identification of this unit as Bloodgood Canyon is tentative. Thickness: 0-15m.

NMBGMR Open-file Geologic Map 222

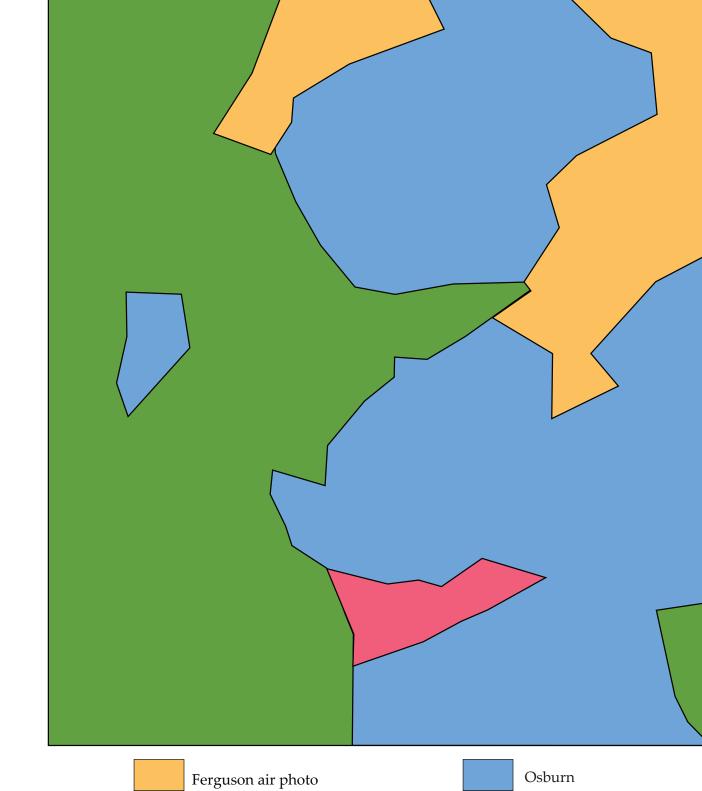
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- Typu Vicks Peak Tuff (Oligocene–Pumice-rich upper zonation of Vicks Peak Tuff.
- Tvp Vicks Peak Tuff (Oligocene)–Densely welded rhyolite ignimbrite containing 1-15% phenocrysts, chiefly sanidine up to 4mm, lesser plagioclase up to 2mm, and sparse pyroxene, hornblende, and biotite <2mm. The ignimbrite contains 2-25% strongly flattened pumice lapilli up to 1m long, and sparse <10cm lithic lapilli. The ignimbrite is typically light gray and the pumice lapilli are commonly recessive on weathered surfaces. Thickness: up to 90m.
- Tj La Jencia Tuff (Oligocene-Densely welded rhyolitic ignimbrite containing 2-10% phenocrysts of sanidine (1-4mm) and plagioclase (1-2mm), and minor biotite, pyroxene, hornblende, and quartz. Quartz is most abundant in the lower part, and essentially absent higher in the section. The ignimbrite is generally light to dark gray and contains 5-15% strongly flattened pumice lapilli up to 1m long, and up to 5% lithic lapilli. Thickness: up to 120m.
- Td Dacitic lava (Oligocene)–Dacitic lava containing 15-30% 1-10mm plagioclase, and <5% <3mm biotite and hornblende phenocrysts. The unit occurs as lava flows and intrusive masses mostly intruding the basaltic andesite map unit (Tba). Thickness: 0-200m.
- Tdi Dacite porphyry (Oligocene)-Phenocryst-rich dacite porphyry containing
- 15-35% phenocrysts of plagioclase, 1-5% <3mm biotite, hornblende +/- pyroxene.

Tmz Monzodiorite (Oligocene)–Fine-grained equigranular monzodiorite to diorite

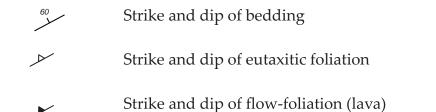
containing up to 35% biotite. The unit occurs as a small pluton intruding the basaltic

- andesite (Tba) north of Luera Spring in the northwest part of the map area.
- Tdh Hornblende dacite (Oligocene)-Dacitic lava containing 20-30% <2mm plagioclase, and 5% <3mm hornblende. Thickness: 0-150m.
- Tai Andesite porphyry (Oligocene)-Fine-grained matrix, plagioclase phenocryst-poor andesitic porphyry dikes.
- Tba Basaltic andesite lava (Oligocene)–A variety of mafic lavas containing less than 5% <3mm plagioclase with pyroxene and/or hornblende phenocrysts. Unit is interbedded with the Hells Mesa, Blue Canyon, and Rock House Canyon tuffs, and underlies dacitic lavas (Td, Tdh), and La Jencia Tuff (Tj). Several different flow units are recognized whose petrographic differences are too slight and subtle to consistently differentiate. Thickness: 0->200m.
- Thm Hells Mesa Tuff (Oligocene)-Densely welded phenocryst-rich rhyolitic to trachytic ignimbrite containing 20-35% phenocrysts of plagioclase (<3mm), sanidine (<3mm), quartz (<4mm), hornblende (<2mm), and biotite (<2mm). The ignimbrite is reddish brown to orange in color and contains sparse lithic lapilli and generally <10% pumice lapilli <10cm long. Thickness: 0-100m.
- Tbc Blue Canyon Tuff (Oligocene)–Moderately phenocryst-rich ignimbrite containing 10-20% 1-4mm plagioclase, and abundant 1-3mm biotite. The ignimbrite is typically strongly altered, commonly weathering to light orange, and forming slabby, crumbly outcrops. Thickness: 0-50m.
- Trh Rock House Canyon Tuff (Oligocene)–Phenocryst-poor densely welded, light gray ignimbrite containing less than 5% < 3mm feldspar phenocrysts, and a trace of mafics. Thickness: 0-50m.



Osburn and Ferguson

MAPPING RESPONSIBILITY



Strike and dip of flow-foliation (lava) Contact–dashed where approximate

Quartz vein

MAP EXPLANATION

Beach ridge, with barbs facing inward $\tau - \tau - \tau$ Projected beach ridge, with barbs facing inward

Geologic Cross Section

Base map from U.S. Geological Survey 1981, from photographs taken 1973, field checked in 1975, edited in 1981. 1927 North American datum, UTM projection -- zone 13N 1000-meter Universal Transverse Mercator grid, zone 13, shown in red 1000 0 1000 2000 3000 4000 5000 6000 7000FEET LUERA OUNTAINS NW C-N LAKE 1 KILOMETER **NEW MEXICO** CONTOUR INTERVAL 20 FEET NATIONAL GEODETIC VERTICAL DATUM OF 1929

Mapping of this quadrangle was funded by a matching-funds grant from the STATEMAP program of the National Cooperative Geologic Mapping Act, administered by the U. S. Geological Survey, and by the New Mexico Bureau of Geology and Mineral Resources, (L. Greer Price, Director and State Geologist, Dr. J. Michael Timmons, Geologic Mapping Program Manager).

Geologic map of the Luera Mountains East 7.5-Minute Quadrangle, Catron County, New Mexico

June, 2012

Charles A. Ferguson¹ and Robert G. Osburn²

¹119 North Fork Road, Centennial, WY, 82055

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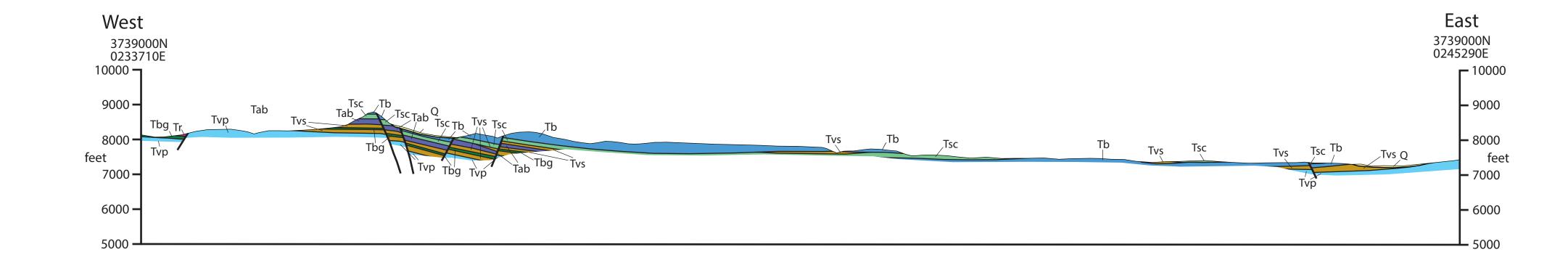
COMMENTS TO MAP USERS A geologic map displays information on the distribution, nature, orientation, and age relationships of rock and deposits and the occurrence of structural features. Geologic and fault contacts are irregular surfaces that form boundaries between different types or ages of units. Data 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

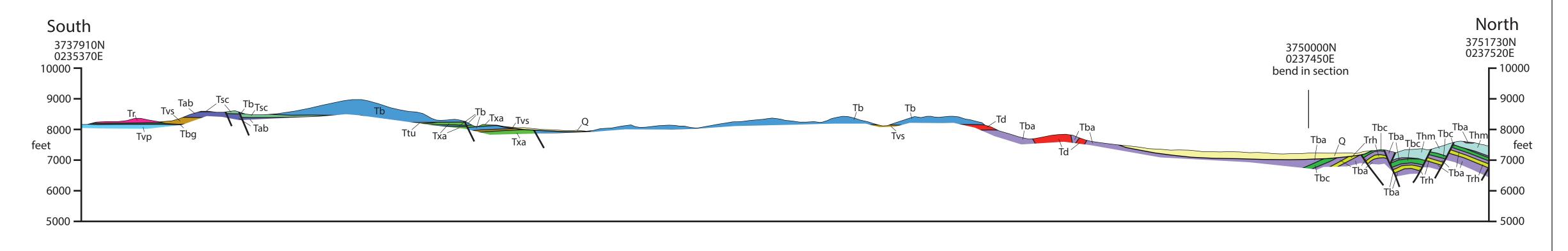
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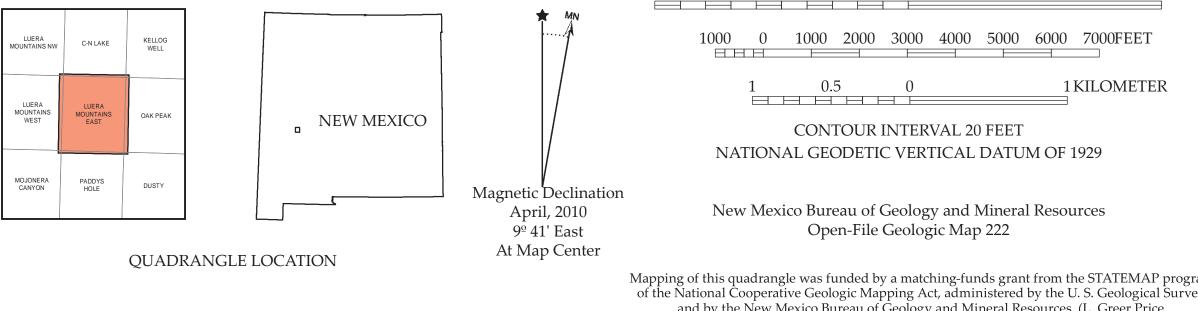
are not surveyed, but are plotted by interpretation of the position of a given contact onto a topographic base map; therefore, the accuracy of contact locations depends on the scale of mapping and the interpretation of the geologist(s). Any enlargement of this map could cause misunderstanding in the 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 associated with recent development may not be shown. 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.

The map has not been reviewed according to New Mexico Bureau of Geology and Mineral Resources standards. The contents of the report and map should not be considered final and complete until reviewed and published by the New Mexico Bureau of Geology and Mineral Resources. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the State of New Mexico, or the U.S. Government.







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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?





