



EXPLANATION OF MAP UNITS

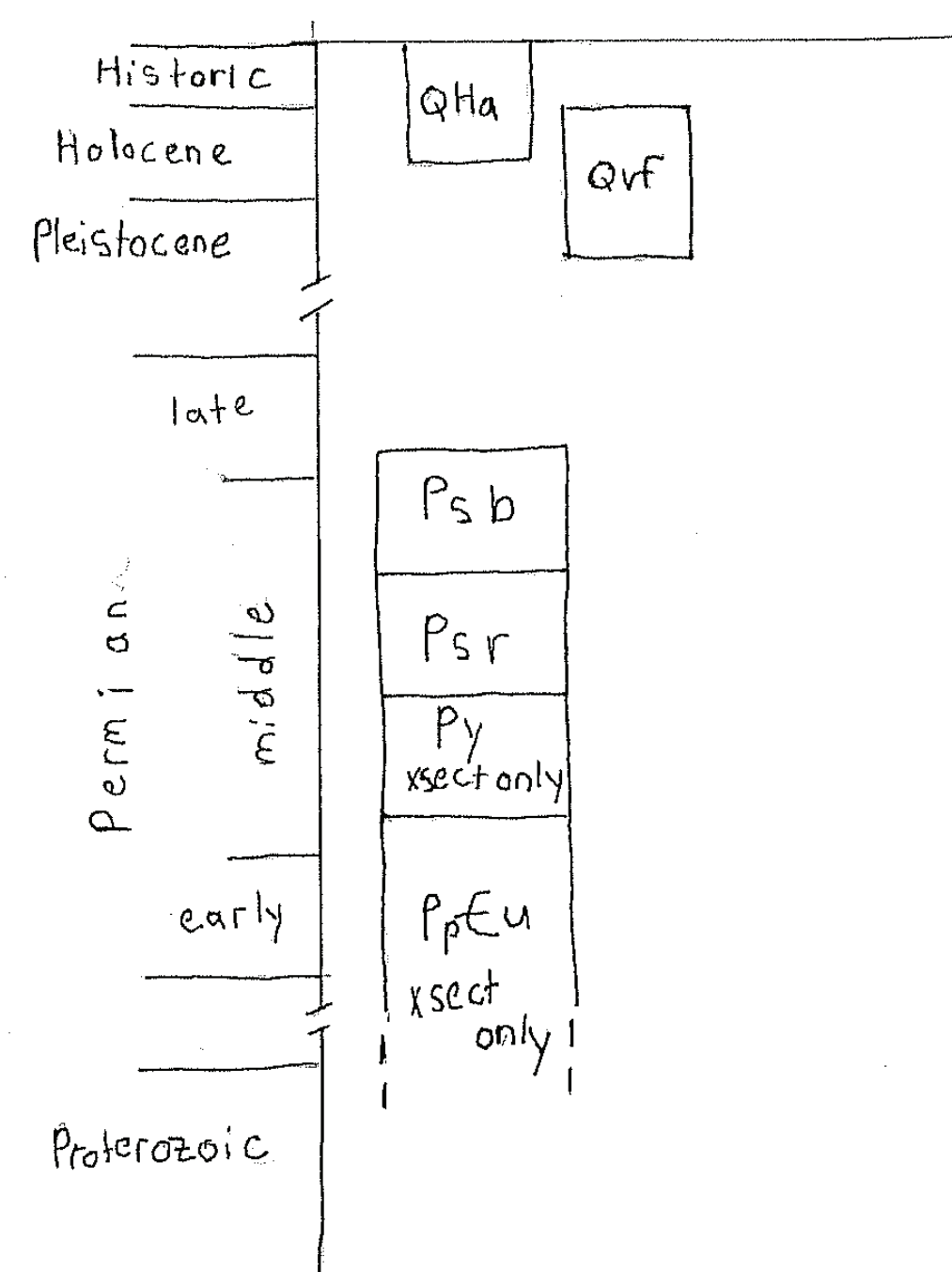
Quaternary and Tertiary Surficial Deposits

- QHa** Alluvium (Holocene to Historic) — Unlithified gravel of carbonate rocks and poorly to moderately sorted clay, silt, and sand in active stream channels. Generally present in gullies incised into *QvF*. Only mapped separately in the Rio Felix drainage and Lincoln Canyon; unit is otherwise grouped with *QvF*. Thickness 0 - 4 (?) m.
- QvF** Valley fill (upper Pleistocene to Holocene) — Unlithified valley fill composed of poorly sorted clay, silt, and sand, with angular to subrounded cobbles of local bedrock. Matrix material is light to dark brown, reflecting soil development processes. Grades into minor alluvial fans and abundant, poorly sorted colluvium on hillslopes. Often incised by arroyos floored by sand and cobble to boulder gravel of *QHa*. Fills sinkholes on flat uplands in the southeast and northeast corners of the quadrangle. Anthropogenic disturbance in the form of irrigated fields is common along the Rio Felix drainage. Thickness 0 - 12 (?) m.

Paleozoic Sedimentary Rocks

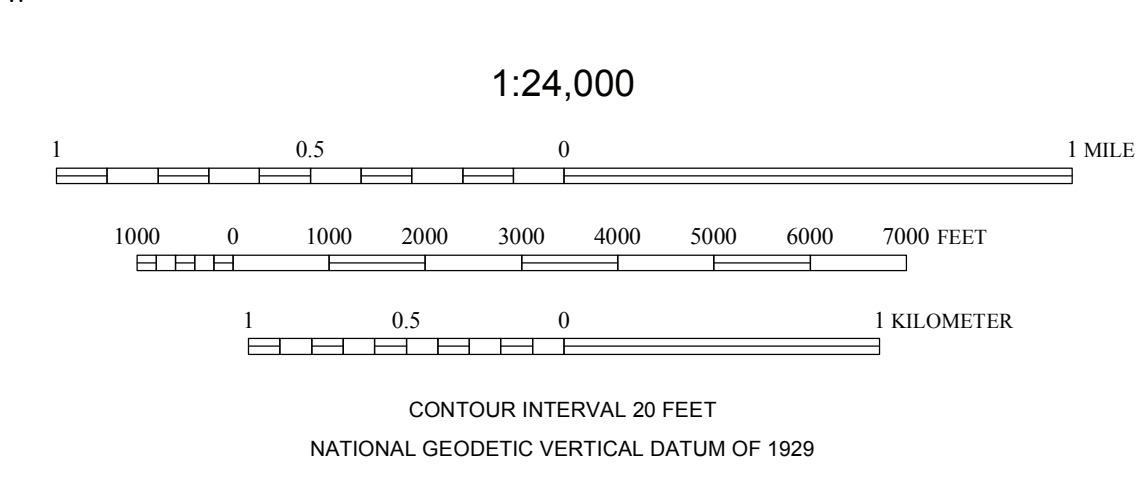
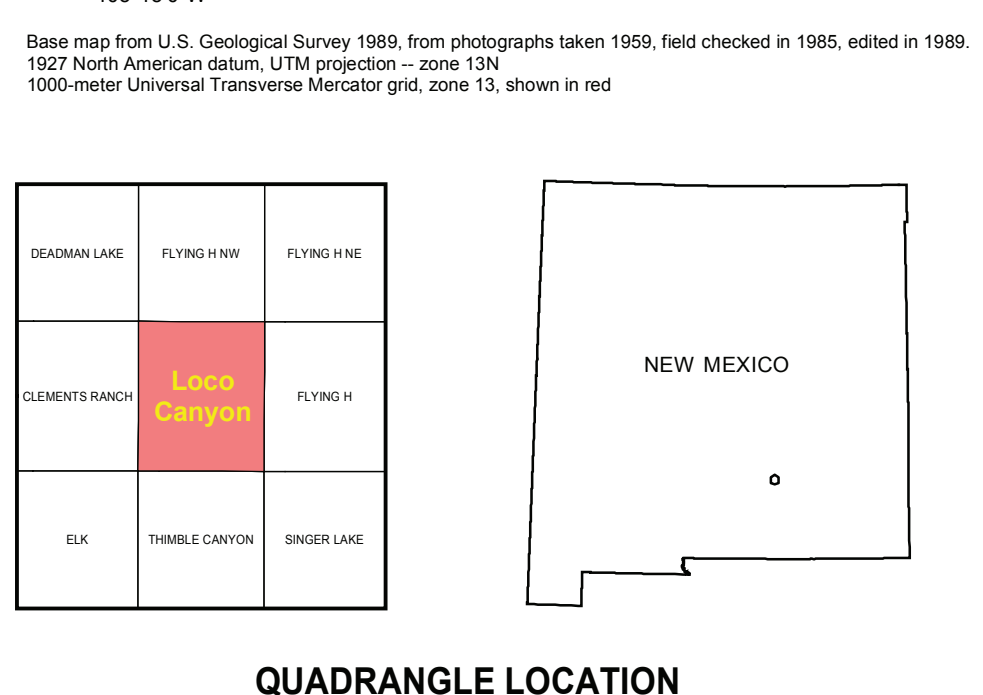
- Psar** San Andres Formation (middle to upper Permian) — Light to dark gray and bluish gray limestone and dolomite. Limestones and dolomites range from thin to very thick bedded, and are carbonate mudstones, wackestones, and grainstones. Freshly broken surfaces are darker gray than weathered surfaces and often fetid. Silty and sandy beds are common. Subdivision of the San Andres into the lower dominantly thick-bedded Rio Bonito Member (*Psar*) and upper dominantly medium- to thin-bedded Bonney Canyon member (*Psb*, Kelley, 1971) was based on aerial photograph interpretation. The members can be distinguished based on average bed thickness and continuity, and color, with the Bonney Canyon member being darker on average. Color and vegetation patterns give the Bonney Canyon member a distinctly striped appearance. A prominent sequence of ledge-forming, thick, white beds is present near the top of the Rio Bonito member and locally serves as a marker horizon on aerial photographs and in the field. Thicknesses: *Psar* - 182 m, based on the State "N" #001 oil test well; *Psb* - top not exposed in the quadrangle, at least 105 m.
- Py** Yeso Formation (middle Permian) — Yellow to tan siltstone and fine sandstone, red to pink muddy siltstone and fine sandstone, gray to tan silty limestone and dolomite (cross-section only, unit descriptions from exposures to the southeast in the Sacramento Mountains). Thickness: Base not exposed, approximately 510 m in the State "N" #001 oil test well.
- PpEu** Permian to Proterozoic rocks — Paleozoic sedimentary rocks and Proterozoic igneous and metamorphic rocks, undivided (cross section only). Thickness of Sub-Yeso Paleozoic rocks approximately 645 m in the State "N" #001 oil test well.

Correlation chart
Loco Canyon quadrangle



MAP AND CROSS SECTION SYMBOLS

- Location of geologic cross section
- Geologic contact, solid where exposed and identification is certain, dashed with approximate location and identification is certain, dashed with approximate location and identification is probable, queried where location and identification are uncertain.
- Strike-slip fault, dashed where intermittent or obscured, dotted where obscured
- Syncline, dashed where approximately located, dotted where buried
- Monocline, dashed where approximately located, dotted where buried
- Horizontal bedding
- Dip and dip direction of bedding
- Dip and dip direction of joints
- Dip direction of vertical joints
- Dip and dip direction of bedding measured from air photos
- Dip direction of bedding interpreted from air photos
- Horizontal bedding interpreted from air photos
- Oil test well used in construction of cross-section

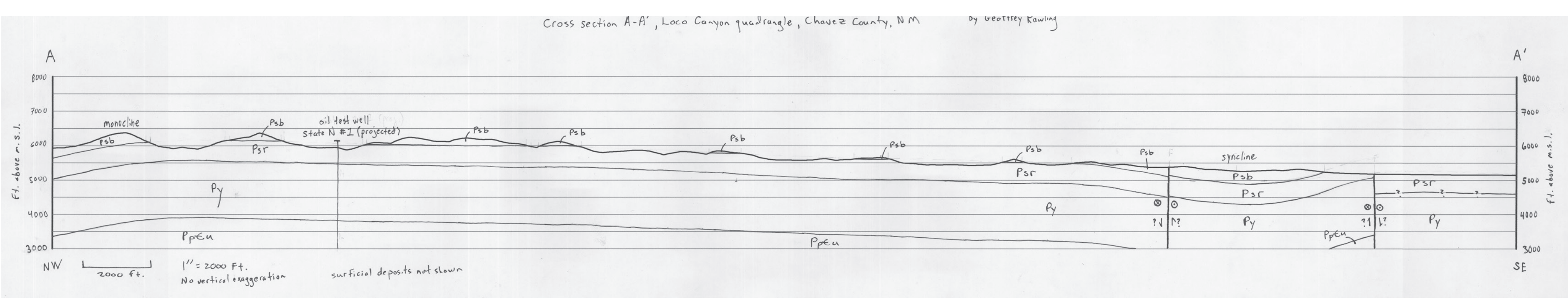


Geologic map of the
Loco Canyon quadrangle,
Chaves County, New Mexico.

May 2008
By
Geoffrey Rawling
New Mexico Bureau of Geology and Mineral Resources, 801 Leroy Pl., Socorro, NM, 87801

New Mexico Bureau of Geology and Mineral Resources
Open-file Map Series
OF-GM 174

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. (Dr. Peter A. Schulte, Director and State Geologist, Dr. J. Michael Timmons, Geologic Mapping Program Manager)



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 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.

DRAFT

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 scientific peer 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 supersede this preliminary open-file geologic map.

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

[505] 835-5490
<http://geoinfo.nmt.edu>

This and other STATEMAP quadrangles are (or soon will be) available for free download in both PDF and ArcGIS formats at:

<http://geoinfo.nmt.edu/publications/maps/geologicofgm/home.html>

