GEOLOGIC MAP OF THE RINCON VALLEY AREA, PIMA COUNTY, ARIZONA

by Stephen M. Richard, Jon E. Spencer, Ann Youberg, and Charles A. Ferguson

Arizona Geological Survey Digital Geologic Map 44 (DGM-44), version 1.0

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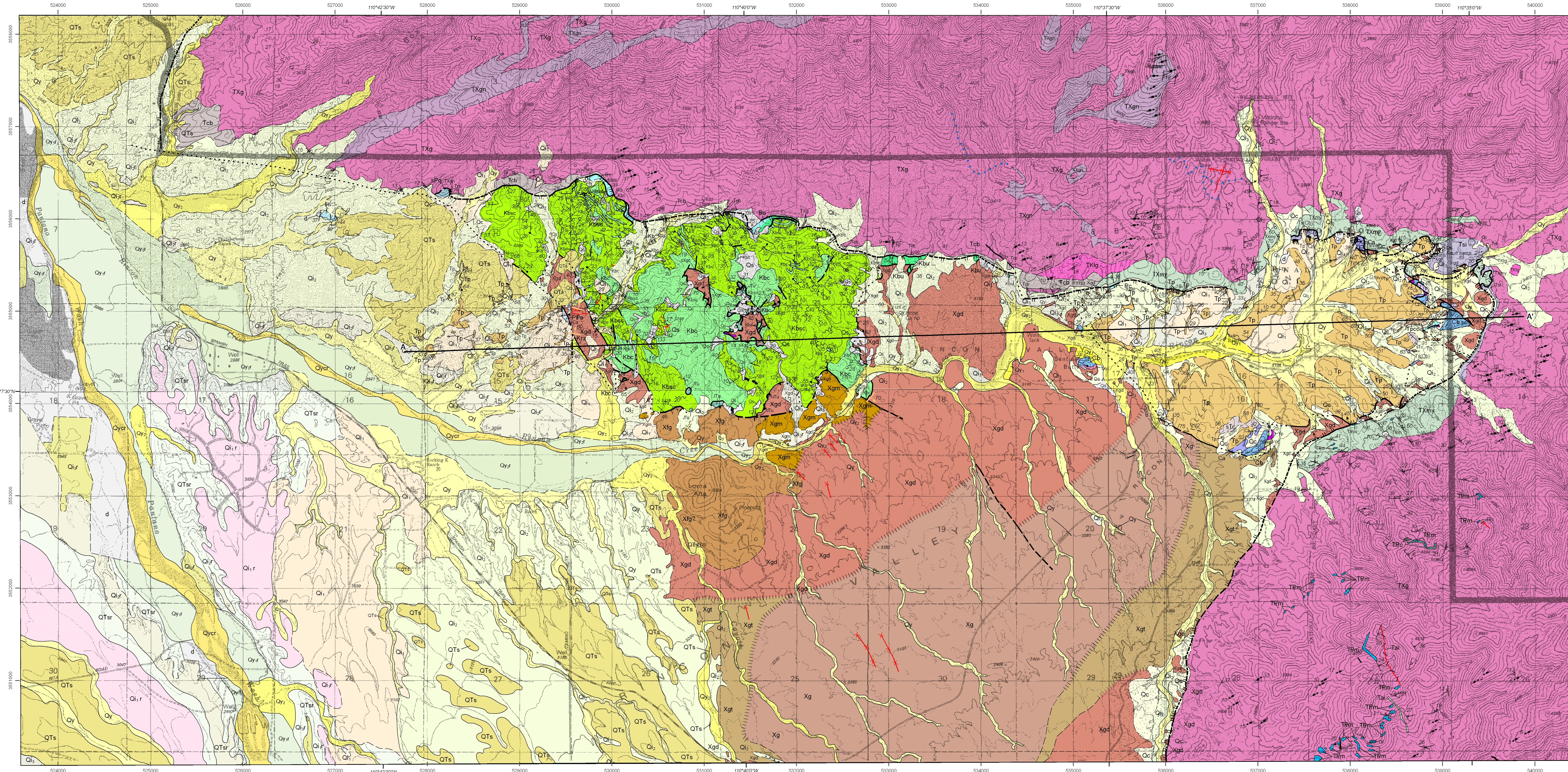


Rincon Valley area (this map) includes the following quadrangles: Tanque Verde Peak, Mica Mountain, Rincon Peak and Vail. These quadrangles are from the USGS 7½' series, compiled from photogrammetric methods in 1975, field checked in 1976, edited in 1981. Projection: Transverse mercator, UTM zone 12. Datum: NAD 27. Contour interval 40 feet. Magnetic declination 12.5º east of true north.

Map Units

- d — **Disturbed ground (Recent)**
- Qs — **Undivided Surficial Deposits (Quaternary)**
- Qc — **Colluvium and talus (Quaternary)**
- Qy — **Undifferentiated Holocene alluvium (0 to ~10 ka)**
- Qy_2 — **Late Holocene alluvium (<~2 ka)**
- Qy_1 — **Older Holocene alluvium (~2 to 10 ka)**
- Qi_2 — **Late Pleistocene alluvium (~10 to 130 ka)**
- Qi_1 — **Middle Pleistocene alluvium (~130 to 500 ka)**
- Qio — **Middle to early Pleistocene alluvium (~500 ka to 1 Ma)**
- Qo — **Early Pleistocene alluvium (~1 to 2 Ma)**

Axial Stream Deposits

Sediment deposited by Pantano Wash and lower Rincon Creek. Along Pantano Wash, deposits are a mix of gravel, sand and fine sediment; they include lithologies reflecting the relatively large and lithologically diverse drainage basin. Along lower Rincon Creek, deposits are slightly coarser and include cobbles and boulders. Lithologies reflect the source area of the Rincon Mountains.

- Qycr — **Modern river channel deposits (< 100 years)**
- Qy_2r — **Holocene floodplain and terrace deposits (~100 to 2 ka)**
- Qyr — **Holocene floodplain and terrace deposits (<~10 ka)**
- Qi_2r — **Late Pleistocene river terrace deposits (~10 to 130 ka)**
- Qi_1r — **Middle Pleistocene river terrace deposits (~130 to 500 ka)**
- Qor — **Early Pleistocene river terrace deposits (~1 to 2 Ma)**

- QTs — **Early Pleistocene to late Miocene alluvium (~1 to 10 Ma)**
- QTsy — **Early Pleistocene to Pliocene alluvium (~1 to 5 Ma)**
- Tcb — **Chloritic breccia (late Oligocene or early Miocene)**
- Tsi — **Silicified rock (late Oligocene or early Miocene)**
- Tx(Cb) — **Breccia derived from Bolsa Quartzite (late Oligocene or early Miocene)**
- sXgd — **Silicified granodiorite (late Oligocene or early Miocene)**
- sPq — **Silicified quartzite (late Oligocene or early Miocene)**
- sKb — **Silicified Bisbee Group rock (late Oligocene or early Miocene)**
- sTc — **Silicified Pantano Formation (late Oligocene or early Miocene)**
- Tp — **Pantano Formation (Oligocene or early Miocene)**
- Tpcc — **Carbonate-clast conglomerate facies**
- Tai — **Intermediate composition dike (Eocene, Oligocene or early Miocene)**
- TKd — **Mafic dikes (Cretaceous or Tertiary)**
- Krz — **Tuff breccia (Cretaceous or early Tertiary)**

Bisbee Group (Late Jurassic or Cretaceous)

Clastic sedimentary rocks correlated with the Bisbee Group form about 6 km^2 of outcrop along the north side of Rincon Creek in the hanging wall of the Catalina detachment fault. These rocks have been subdivided into a limestone-clast conglomerate unit and a mixed conglomerate-sandstone-limestone unit, and are locally undivided.

- Kbu — **Bisbee Group, undivided**
- Kbc — **Carbonate-clast conglomerate**
- Kbsc — **Bisbee Group, sandstone and conglomerate**

- **Diabase-clast sandstone and conglomerate**
- JTu — **Lower Mesozoic volcanic and sedimentary rocks (Triassic or Jurassic)**
- Pzc — **Undivided carbonate rocks (Paleozoic)**
- PPe — **Earp Formation (Pennsylvanian or Permian)**
- Ph — **Horquilla Formation (Pennsylvanian)**
- Ca — **Abrigo Formation (Cambrian)**
- Cb — **Bolsa Quartzite (Cambrian)**
- Yd — **Diabase (Middle Proterozoic)**
- Yp — **Pioneer Shale (Middle Proterozoic)**

Unit descriptions continued...

Granitic rocks of Rincon Valley (Early Proterozoic)

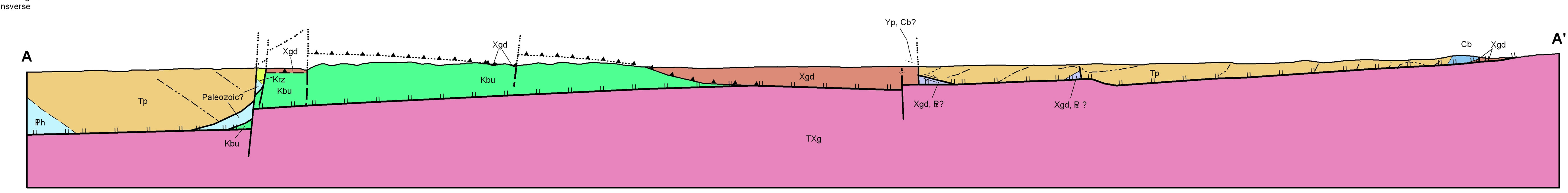
Most of the central part of Rincon Valley is a low-relief pediment underlain by medium- to coarse-grained granodiorite to granite. These rocks include the Rincon Valley Granodiorite as defined by Drewes (1977). Although Drewes mapped all the granitic rocks of Rincon Valley as Rincon Valley Granodiorite, these rocks are here divided into several phases. The name 'Rincon Valley Granodiorite' is restricted to the granodiorite phase mapped here, which includes the type locality proposed by Drewes (1977), in Section 32 and the eastern part of section 33, T15S, R17E. Other phases mapped here include coarse-grained granite, fine-grained granodiorite of Loma Alta, and muscovite granite. Contacts between all the phases are gradational, which suggests they are all part of a single plutonic suite.

- Xgm — **Fine-grained muscovite granitoid**
- Xfg — **Fine-grained granodiorite of Loma Alta**
- Xgt — **Rincon Valley Granodiorite and coarse-grained granitoid, undifferentiated**
- Xg — **Coarse-grained granitoid**
- Xgd — **Rincon Valley Granodiorite**

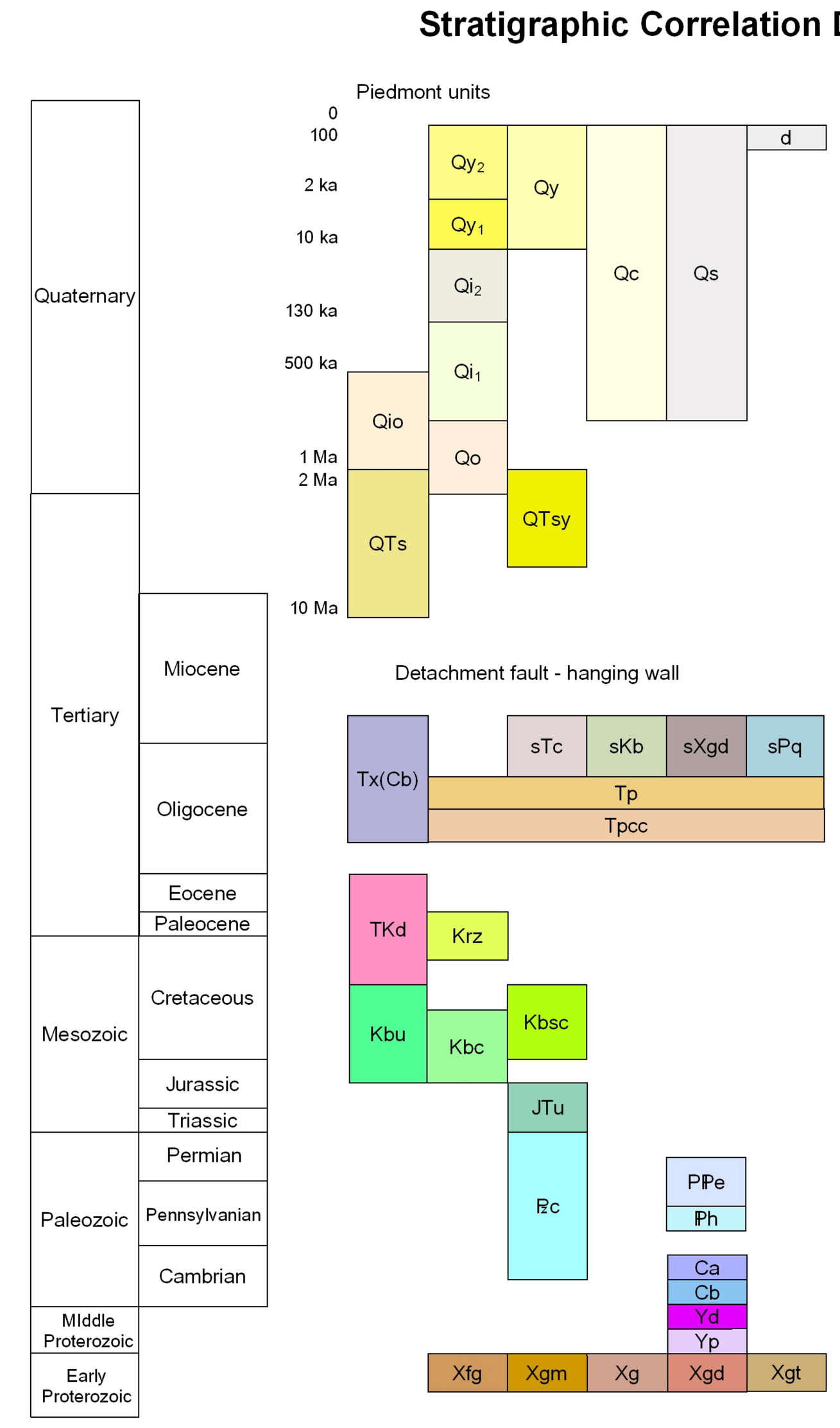
Footwall of the Catalina detachment fault

Rocks in the footwall of the detachment fault were not mapped in detail. The footwall consists of a heterogeneous assemblage of igneous and metamorphic rocks dominated by a leucocratic granitoid named the Wrong Mountain Quartz Monzonite, Drewes (1977). This granitoid ranges from massive to strongly mylonitic, with fabric development generally intensifying with proximity to the Catalina detachment fault. The Wrong Mountain Quartz Monzonite intrudes older igneous and metamorphic rocks in a lit-par-lit fashion. These older rocks include schistose rocks and quartz-feldspar-biotite gneiss that may have been derived from a Pinal Schist-like protolith, and a variety of igneous rocks including equigranular gabbro(?) to quartz diorite, equigranular to slightly porphyritic biotite granodiorite, and porphyritic granite. Gneissic foliation in these rocks is variably developed and appears to have developed during intrusion of various granitoid phases, of which the Wrong Mountain Quartz Monzonite is the youngest. In places fine-grained, equigranular biotite granitoid dikes cut the gneissic foliation. Gneissic foliation is distinguished from mylonitic foliation that is spatially associated with the detachment fault based on the more granoblastic nature of grain boundaries and presence of cross-cutting igneous phases in the gneissic foliation. The mylonitic foliation is characterized by 'greasy' looking quartz (reflecting the development of nearly cryptocrystalline subgrain texture in the quartz), broken feldspar grains, and the ubiquitous presence of stretching lineation in quartz-bearing rocks.

- TPzm — **Marble, quartzite and calcsilicate metamorphic rocks (Middle Proterozoic, Paleozoic, Cretaceous, and Tertiary)**
- TPzc — **Calcareous metamorphic rock (Tertiary or Cretaceous, possibly Paleozoic)**
- TXmy — **Heterogeneous gneiss and mylonite near detachment fault (Proterozoic, Paleozoic, Cretaceous, and Tertiary)**
- TXg — **Mixed granitoid and gneiss (Proterozoic, Cretaceous, and Tertiary)**
- TKlg — **Leucogranite (Early Tertiary or Late Cretaceous)**
- TXgn — **Schist and gneiss (Proterozoic or Cretaceous)**



Stratigraphic Correlation Diagram



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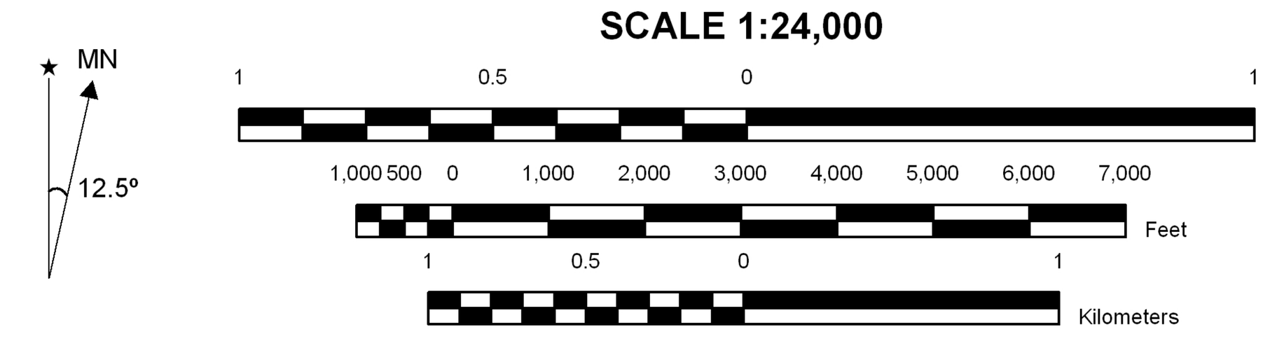
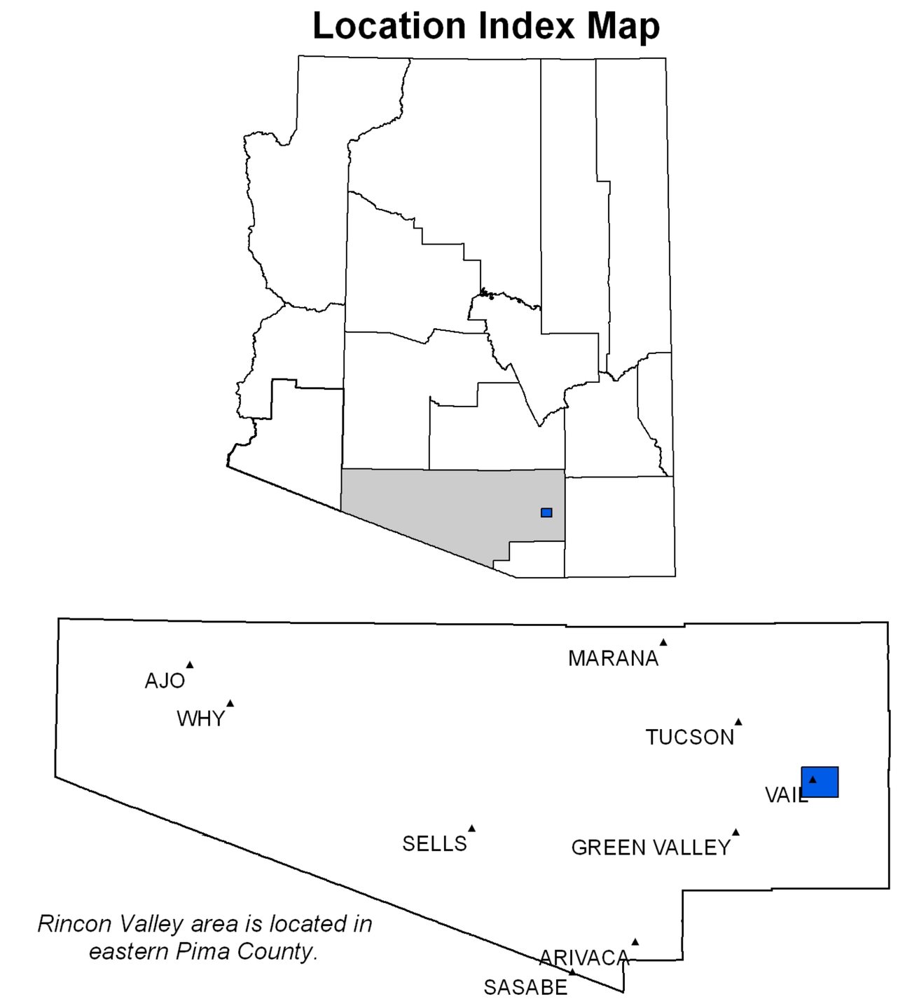
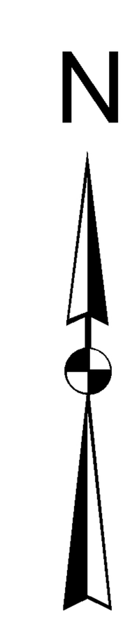


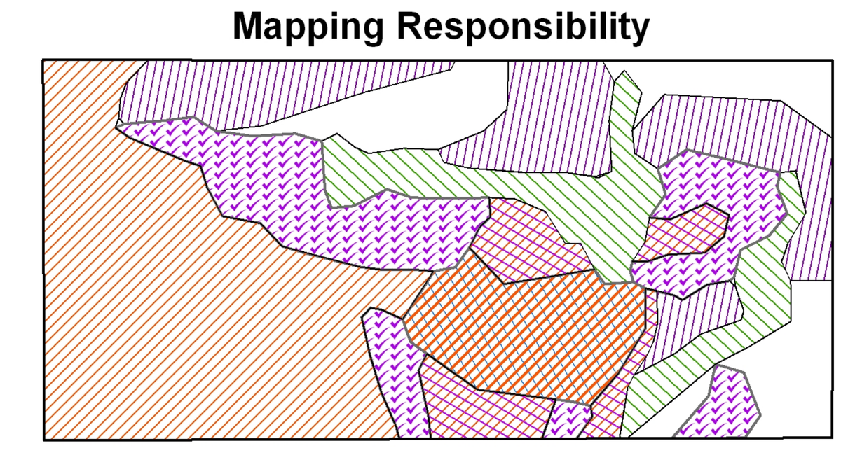
Contour interval 40 feet

Location Index Map





Mapping Responsibility



- Ann Youberg
- C. A. Ferguson, Ann Youberg
- J. E. Spencer
- S. M. Richard
- S. M. Richard, photogeology
- S. M. Richard, photogeology, Ann Youberg

Symbols

Bedding
- bedding, horizontal
- bedding, inclined
- bedding, inclined, approximate
- bedding, inclined crenulated or warped
- bedding, inclined w/tops known
- bedding, overturned
- bedding, overturned w/tops known
- bedding, vertical
- apparent dip

Foliation, Tectonic
- generic foliation, inclined
- inclined gneissic foliation
- laminated differentiated foliation

Primary Igneous foliation
- inclined flow foliation

Cleavage
- close disjunct cleavage, inclined
- bedding parallel to cleavage, inclined

Mylonite series
- weak protomylonite
- protomylonite
- mylonite

Surface orientation
- fault attitude
- fault or vein orientation
- mineralized vein with dip

Primary genetic contacts
- accurate contact
- approximate contact
- concealed contact
- depositional contact exposed

Other contacts
- gradational contact
- scratch contact
- contact, nature uncertain
- photo-mapped marker layer

Joint
- vertical joint, open rectangle

Fold Hinge
- minor anticline
- asymmetric fold (sinisral)

Lineation
- generic lineation
- stretching lineation in foliation, down-dip sense of shear
- L-fabric, no foliation

Fault

High-angle or unclassified fault
- fault, accurate
- fault, approximate
- fault, concealed
- fault, hypothetical
- fault, concealed, hypothetical

Low-angle fault
- low-angle fault, accurate
- low-angle fault, approximate
- low-angle fault, concealed

Detachment fault
- detachment fault, accurate
- detachment fault, approximate
- detachment fault, concealed

Thrust fault
- Thrust fault, accurate

Fold hinge surface trace
- fold hinge surface trace, accurate
- fold hinge surface trace, approximate

Dikes
- mafic dike
- felsic dike
- intermediate dike

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, Arizona 85701
www.azgs.az.gov