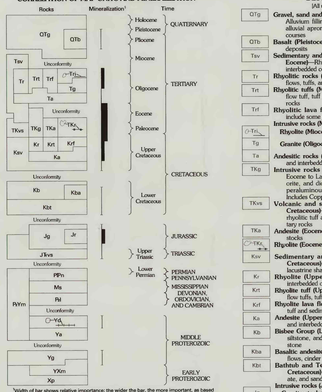
CORRELATION OF MAP UNITS AND MINERALIZATION



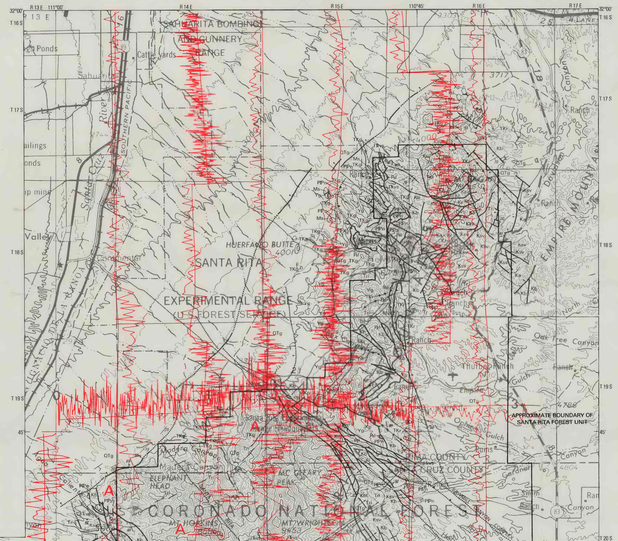
[1]Width of bar shows relative importance; the wider the bar, the more important, as based on a balance between total production and frequency of occurrence

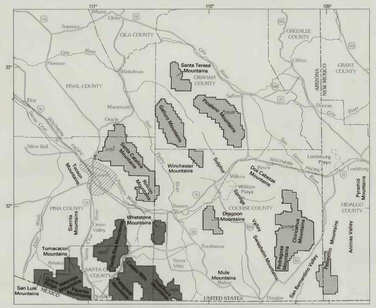
DESCRIPTION OF MAP UNITS

[All units may not appear on all maps]

- QTg — **Gravel, sand and conglomerate (Holocene to Miocene)**—Alluvium filling intermontane basins, on pediments, in alluvial aprons and stream terraces, and along watercourses
- QTb — **Basalt (Pleistocene to Miocene)**—Lava flows and cinder deposits
- Tsv — **Sedimentary and volcanic rocks, undivided (Miocene to Eocene)**—Rhyolitic to andesitic lava and tuff, and some interbedded conglomerate, sandstone, and shale
- Tr — **Rhyolitic rocks (Miocene and Oligocene)**—Includes lava flows, tuffs, and subjacent intrusives
- Trt — **Rhyolitic tuff (Miocene and Oligocene)**—Airfall tuff, ash-flow tuff, tuff breccia, welded tuff, and some sedimentary rocks
- Trf — **Rhyolitic lava flows (Miocene and Oligocene)**—May include some intrusive bodies
- **Intrusive rocks (Miocene and Oligocene)**
  - **Rhyolite (Miocene and Oligocene)**—Dikes and plugs
  - Tg — **Granite (Oligocene)**—Stocks
- Ta — **Andesitic rocks (Oligocene)**—Lava flows, breccia deposits, and interbedded sedimentary rocks
- TKg — **Intrusive rocks (Eocene to Late Cretaceous)**—Mainly Eocene to Late Cretaceous granite, monzonite, granodiorite, and diorite; some Oligocene to Late Cretaceous peraluminous (two-mica and garnet-bearing) granite. Includes Copper Creek Granodiorite
- TKvs — **Volcanic and sedimentary rocks (Eocene to Upper Cretaceous)**—Andesitic lava flows and breccia shoals, rhyolitic tuff and welded tuff, and volcaniclastic sedimentary rocks
- TKa — **Andesite (Eocene to Late Cretaceous)**—Plugs, dikes, and stocks
- Kr — **Rhyolite (Eocene to Late Cretaceous)**—Plugs and dikes
- Krt — **Sedimentary and volcanic rocks, undivided (Upper Cretaceous)**—Volcaniclastic conglomerate, sandstone, lacustrine shale, and some andesitic and rhyolitic tuff
- Krf — **Rhyolite (Upper Cretaceous)**—Lava flows, tuffs, and interbedded conglomerate and sandstone
- Ka — **Rhyolite tuff (Upper Cretaceous)**—Includes airfall and ash-flow tuffs, tuff breccia, welded tuff, and sedimentary rocks
- Kb — **Rhyolite lava flows (Upper Cretaceous)**—Includes some tuff and sedimentary rocks
- Kba — **Andesite (Upper Cretaceous)**—Lava flows, breccia sheets, and interbedded conglomerate and sandstone
- Kbt — **Bisbee Group (Lower Cretaceous)**—Mainly gray shale and siltstone, and some sandstone, conglomerate, and limestone
- Kvs — **Basaltic andesite and andesite (Lower Cretaceous)**—Lava flows, cinder deposits, and some dikes, sills, and plugs
- Jg — **Bathtub and Temporal Formations, undivided (Lower Cretaceous)**— Andesitic to rhyolitic rocks, conglomerate, and sandstone
- Jr — **Intrusive rocks (Jurassic)**
  - **Granite stocks**
  - **Rhyolite plugs**
- JTRvs — **Volcanic and sedimentary rocks (Jurassic to Upper Triassic)**—Rhyolitic welded tuff and lava flows, andesitic lava flows, eolian sandstone, and redbeds. Includes Walnut Gap Formation, Canelo Hills Volcanics, and Gardner Canyon and Mount Wrightson Formations
- PzYm — **Metamorphic rocks (Paleozoic or Middle Proterozoic)**—Metaquartzite, hornfels, and calc-silicate carbonate rocks
- PIPn — **Naco Group (Lower Permian and Pennsylvanian)**—Mainly limestone and dolomite; some siltstone, sandstone, and marlstone
- Mn — **Sedimentary rocks (Mississippian)**—Generally only Escabrosa Limestone; to the east unit also includes Paradise Formation, mostly shale
- Pil — **Lower Paleozoic formations, undivided (Upper Devonian to Middle Cambrian)**—Mainly limestone and dolomite; some sandstone, shale, and conglomerate. Includes Percha Shale, Portal, Swisshelm, Martin, El Paso, and Abrigo Formations, Coronado Sandstone, and Bolsa Quartzite
- Ya — **Diabase (Middle Proterozoic)**—Includes some metadiorite; sills, dikes, and plugs; line shows more acidic rock
- Yg — **Apache Group (Middle Proterozoic)**—Sandstone, shale, diabase; some conglomerate; and possibly some limestone
- YXm — **Intrusive rocks (Middle Proterozoic)**—Granite, granodiorite, and some alaskite, aplite, and syenite
- Xp — **Gneissic rocks (Middle and Early Proterozoic)**—Metamorphosed granite and older schist or gneiss
- **Pinal Schist (Early Proterozoic)**—Schist, phyllite, metaquartzite, metagraywacke, and meta-igneous rocks

- **Contact**—Dotted where concealed, queried where uncertain
- **Fault**—Showing dip, dotted where concealed or intruded, queried where uncertain. Where solid line becomes dotted line within a map unit, that unit is a composite of several formations, of which a younger one conceals faulting in an older one
- **Normal fault**—Ball and bar on downthrown side; dotted where concealed, queried where uncertain
- **Thrust fault**—Sawteeth on upper plate
- **Glide fault**—Open sawteeth on glide plate
- **Complex fault**—Earlier thrust fault on which later glide (gravity) faulting took place
- **Strike-slip fault**—Arrows couple shows relative movement; queried where uncertain
- **Oblique-slip fault**—Composite of strike-slip and normal movement likely, but either type of movement may have occurred without the other
- **Fold axis**—Dotted where concealed; arrow shows direction of plunge
- **Anticline**
- **Anticline in foliation**
- **Overturned anticline**—Side of closure of arrow ends is side of fold crest relative to fold axis
- **Syncline**
- **Syncline in foliation**
- **Overturned syncline**—Side of closure of arrow ends is side of fold trough relative to fold axis
- **Strike and dip of beds**
  - **Horizontal**
  - **Inclined**
  - **Vertical**
  - **Overturned**
- **Strike and dip of foliation**
  - **Inclined**
  - **Vertical**
- **Cinder cone**—Queried where uncertain




Santa Teresa Mountains
Winchester Mountains
Whetstone Mountains
Tumacacori Mountains
San Luis Mountains
Dragoon Mountains
Mule Mountains
Chiricahua Mountains
Peloncillo Mountains
San Bernardino Valley
Animas Valley
Playas Valley
Lordsburg Playa
Hachita Valley
Sonoita Valley
Santa Cruz Valley
Sonoita Creek
Santa Cruz River
Rillito Creek
Pantano Wash
Tucson Mountains
Rincon Mountains
Santa Catalina Mountains
Catalina Foothills
Pima County
Santa Cruz County
Cochise County
Pinal County
Graham County
Greenlee County
Hidalgo County
Pima County
Santa Cruz County
Cochise County
Pinal County
Graham County
Greenlee County
Hidalgo County
Sonora
Chihuahua
Tucson
Douglas
Bisbee
Benson
Sierra Vista
Nogales
Lordsburg
Deming
Rodeo
Cananea
Agua Prieta
Nacozari
Bacanuchi
Sasabe
Ajo
Tucson
Phoenix
Yuma
Gila Bend
Casa Grande
Coolidge
Florence
Superior
Globe
Miami
Safford
Clifton
Morenci
Duncan
Lordsburg
Deming
Silver City
Las Cruces
Alamogordo
Tularosa
Carrizozo
Ruidoso
Roswell
Artesia
Carlsbad
Hobbs
Lovington
Tucumcari
Clayton
Raton
Springer
Las Vegas
Santa Fe
Taos
Espanola
Los Alamos
Albuquerque
Socorro
Magdalena
Datil
Reserve
Quemado
Springerville
Eagar
Alpine
Nogales
Bisbee
Douglas