DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

OPEN-FILE REPORT
75-108

CORRELATION OF MAP UNITS

Qa, Qtg, Qf, Qt, Ql	Holocene	QUATERNARY
Qg	Holocene or Pleistocene	
UNCONFORMITY		
Tsf, Tsfb	Pliocene	TERTIARY
UNCONFORMITY		
Tra, Tram, Tpl, Tpla, Tplb, Tmp, Tmpv, Trs, Tr	Oligocene	
UNCONFORMITY		
Tkn, Tknt		
UNCONFORMITY		
Tst, Tstw		
UNCONFORMITY		
Trn		
UNCONFORMITY		
Kqmd, Kqmc, Kql, Kqm, Kqd, Kqds	Upper Cretaceous	CRETACEOUS
UNCONFORMITY		
Krps, Krp, Krpsl, Krpa, Kacf, Kacfs		
UNCONFORMITY		
Kb		
UNCONFORMITY		
Pa	Lower Permian	PERMIAN
IPm	Upper Pennsylvanian	PENNSYLVANIAN
Mlv	Lower Mississippian	MISSISSIPPIAN
Dp	Upper Devonian	DEVONIAN
SOfm	Middle Silurian	SILURIAN
Oep	Lower Ordovician	ORDOVICIAN
O€b	Upper Cambrian	CAMBRIAN
UNCONFORMITY		
p€gs, p€gd, p€g, p€s, p€h		PRECAMBRIAN

LIST OF MAP UNITS

SURFICIAL DEPOSITS (HOLOCENE)
- Qa Alluvium
- Qtg Terrace gravel
- Qf Fan deposits
- Qt Talus deposits
- Ql Landslide deposits
- Qg PEDIMENT GRAVEL DEPOSITS (HOLOCENE OR PLEISTOCENE)
- Tsf SANTA FE FORMATION (PLIOCENE)
- Tsfb Basaltic andesite
- Tra RAZORBACK(?) FORMATION OF JICHA, 1954 (OLIGOCENE)
- Tram Basaltic andesite
- Tpl Tuff of McClede Spring
- Tpla POLLACK QUARTZ LATITE OF JICHA, 1954 (OLIGOCENE)
- Tplb Andesite
- Tmp Air-fall tuff
- Tmpv Latite breccia
- Tr MIMBRES PEAK RHYOLITE (OLIGOCENE)
- Trs Rhyolite witrophyre
- Tkn Rhyolite plugs and dikes
- Tknt Rhyolite sill
- Tst KNEELING NUN TUFF (OLIGOCENE)
- Tstw Air-fall tuff
- Trn LAKE BEDS (OLIGOCENE)
- SUGARLUMP TUFF (OLIGOCENE)
- Ash-flow tuff
- RHYOLITE OF NORTH PERCHA CREEK (OLIGOCENE)
- IGNEOUS ROCKS (UPPER CRETACEOUS)
- Copper Flat stock
- Kqmc Quartz monzonite
- Kql Quartz latite dikes
- Warm Springs Canyon stock
- Kqm Quartz monzonite
- Kqmd Quartz monzodiorite
- Kqd Quartz diorite of Tank Canyon
- Kqds Quartz diorite of Sawpit Canyon
- Kd Diorite of North Percha Creek
- Ka ANDESITE DIKES AND SILLS (UPPER CRETACEOUS?)
- RUBIO PEAK(?) FORMATION (UPPER CRETACEOUS?)
- Krps Upper sandstone
- Krp Hornblende andesite and latite
- Krpsl Lower sandstone
- Krpa Andesite
- Kacf ANDESITIC ROCKS OF COPPER FLAT (UPPER CRETACEOUS)
- Kacfs Sandstone
- Kb BEARTOOTH QUARTZITE (UPPER SARTEN SANDSTONE OF JICHA, 1954) (UPPER CRETACEOUS)
- Pa ABO FORMATION (LOWER PERMIAN)
- IPm MAGDALENA GROUP (UPPER PENNSYLVANIAN)
- Mlv KELLY FORMATION, LAKE VALLEY LIMESTONE, AND CABALLERO FORMATION (LOWER MISSISSIPPIAN)
- Dp PERCHA SHALE (UPPER DEVONIAN)
- SOfm FUSSELMAN DOLOMITE (MIDDLE SILURIAN) AND MONTOYA GROUP (LOWER ORDOVICIAN)
- Oep EL PASO LIMESTONE (LOWER ORDOVICIAN)
- O€b BLISS SANDSTONE (LOWER ORDOVICIAN AND UPPER CAMBRIAN)
- PRECAMBRIAN ROCKS
- p€gs Granite of Seven Brothers Mountain
- p€gd Granite of Dumm Canyon
- p€g Granophyre of North Percha Creek
- p€s Quartzofeldspathic gneiss of Tank Canyon
- p€h Hornblende schist, amphibolite, chlorite schist, and phyllite

CONTACT--Dotted where concealed

FAULT--Showing dip. Dashed where approximately located; dotted where concealed; queried where inferred. Direction of displacement indicated where known. Bar and ball on downthrown side

FOLD AXES--Showing crestline or troughline and plunge. Dashed where approximately located
- Anticline
- Syncline

STRIKE AND DIP OF BEDS
- Inclined
- Vertical

STRIKE AND DIP OF FLOW LAYERING IN TERTIARY LAVA AND OF COMPACTION FOLIATION IN ASH-FLOWS
- Inclined
- Vertical

STRIKE AND DIP OF FOLIATION OR SCHISTOSITY
- Inclined
- Vertical

BEARING AND PLUNGE OF LINEATION--May be combined with planar symbols

STRIKE AND DIP OF JOINTS IN TERTIARY VOLCANIC ROCKS
- Inclined
- Vertical

STRIKE AND DIP OF JOINTS IN PRECAMBRIAN AND LARAMIDE INTRUSIVE ROCKS
- Inclined
- Vertical

VEIN--Showing dip, where known. Dash where approximately located
- Qtz Quartz vein
- Cc Calcite vein

ABANDONED MINE WORKINGS
- Prospect pit
- Shaft
- Adit
- Drill hole (all holes not shown)
- Gold placer deposit

Base from U.S. Geological Survey
1:62,500, 1940

SCALE 1:48,000
1 0 1 2 3 4 MILES
5000 0 5000 10000 15000 20000 FEET
1 0 1 2 3 4 5 KILOMETRES

Contour interval 40 feet
Datum is mean sea level

Geology mapped in 1972-73

U.S. Geological Survey
OPEN FILE REPORT
This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

GEOLOGIC MAP OF THE HILLSBORO QUADRANGLE, SIERRA AND GRANT COUNTIES, NEW MEXICO

By
D.C. Hedlund
1975

Now 1000 FT per inch
make 2x enlargement of
the current, to 2000 ft/inch