

# Explanation to accompany geologic map of the Horse Mesa Dam quadrangle, Maricopa and Gila Counties, Arizona

by Wyatt G. Gilbert and Charles A. Ferguson  
1997

Arizona Geological Survey  
Open-File Report 97-15, sheet 2 of 3, with text

## MAP UNITS

- Qa** Alluvium
- Qac** Undifferentiated alluvial and colluvial deposits
- Qc** Talus and colluvium-covered slope deposits
- Qls** Landslides and mass-movement or avalanche deposits
- Qoa** Older alluvium
- Tsy** Weakly indurated conglomerate, sandy conglomerate, and pebbly sandstone
- Tcv** Volcaniclastic conglomerate, pebbly sandstone, sandstone, and breccia
- Tty** Unwelded rhyolite tuff associated with the quartz latite lava
- Tqi** Intrusive bodies of the quartz latite lava
- Tq** Crystal-rich quartz latite lava (plagioclase, sanidine, quartz, biotite, hornblende)
- Tqb** Crystal-rich quartz latite lava breccia
- Tqv** Crystal-rich quartz latite lava vitrophyre
- Tcx** Volcanic and epiclastic monolithic to heterolithic breccia, conglomerate, and bedded, unwelded tuff
- Ts** Superstition Tuff, undifferentiated
- Tsu** Upper Superstition Tuff
- Tsl** Lower Superstition Tuff
- Tes** Volcaniclastic sandstone and conglomerate with abundant pre-volcanic clasts found in between Ts and Tt along north edge of map area
- Trf** Rhyolite lavas of Fish Creek Peak - thought to post-date Superstition Tuff
- Ttf** Unwelded rhyolite tuff associated with the rhyolite lavas of Fish Creek Peak
- Tw** Whitlow Canyon type rhyodacite lava (feldspar and quartz phenocrysts)
- Twb** Monolithic breccia composed of Whitlow Canyon type rhyodacite lava
- Tbm** Middle basalt
- Tt** Unwelded bedded lapilli tuff, undifferentiated
- Tts** Unwelded bedded tuff interbedded with nonvolcaniclastic conglomerate
- Tr** Pre-Superstition Tuff aphyric to crystal-rich rhyolite lava undifferentiated (plagioclase, sanidine, biotite,  $\pm$  quartz)
- Tri** Intrusive rhyolite
- Tra** Aphyric (<0.5% phenocrysts) rhyolite lava
- Trp** Crystal-poor (between 0.5 and 3% phenocryst) rhyolite lava
- Trx** Crystal-rich (>3% phenocryst) rhyolite lava
- Trda** Apache Gap type rhyodacite lava (crystal-rich plagioclase, biotite)
- Tdp** Quartz-phyric dacite lava
- Td** Crystal-rich (30-60%) dacite lava (plagioclase, biotite,  $\pm$  hornblende,  $\pm$  pyroxene)
- Tdt** Dacitic crystal-rich unwelded tuff
- Tdb** Dacite lava breccia
- Tdi** Intrusive dacite, present as plugs along Lewis and Pranty Creek
- Tb** Older basalt lava
- Tbi** Basalt dikes and other hyabbyssal bodies
- Tbs** Basaltic sandstone and pyroclastic rocks
- Tc** Arkosic conglomerate, pebbly sandstone, and sandstone
- TKa** Andesitic dike
- Yg** K-feldspar porphyritic granite to quartz monzonite, locally megacrystic
- YXd** Diabase dikes
- YXg** Variably foliated sparsely K-feldspar porphyritic granite to quartz monzonite
- Xr** Welded rhyolite ash-flow tuff and related volcanic breccia
- Xt** Thin-bedded white crystal-poor unwelded tuff
- Xc** Metaconglomerate, arkose, and pebbly feldspathic arenite
- Xm** Light-gray weathering, dark-gray, very fine-grained marble
- Xva** Amphibolite
- Xv** Strongly foliated quartz and feldspar porphyroblastic schist (metafelsite)
- Xvs** Argillaceous schist

## MAP SYMBOLS

- Contacts, dashed where approximate**
- depositional and intrusive, dotted if "intraformational"
- normal fault, ball in hangingwall, dotted if concealed
- reverse fault, R in hangingwall, dotted if concealed
- Strike and dip of planar features**
- foliation in lavas and welded tuffs
- bedding in tuffs, sedimentary rocks and contacts between lava flows
- tectonic foliation in metamorphic rocks and granitoids
- dip of fault plane, spike indicates dip direction
- Trend of linear features**
- trend of striations on fault surface
- trend of flow-banding lineation in welded tuff and lava
- flow direction from foresets of flow-front autobreccias in felsic lava flows
- End points for line of cross-section
- Location of geochronology sample (dates in table)
- Syncline axis

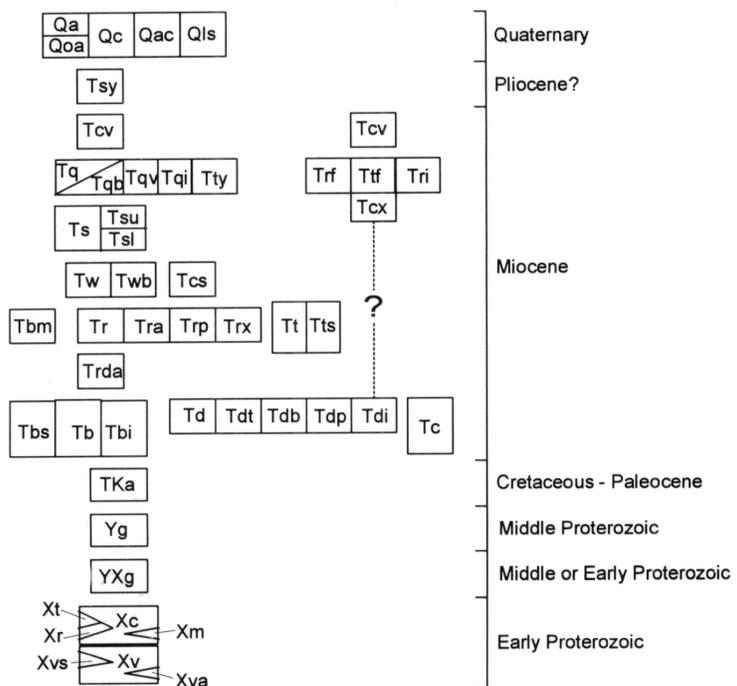
\*dates added 1-5-98

## TABLE OF GEOCHRONOLOGY

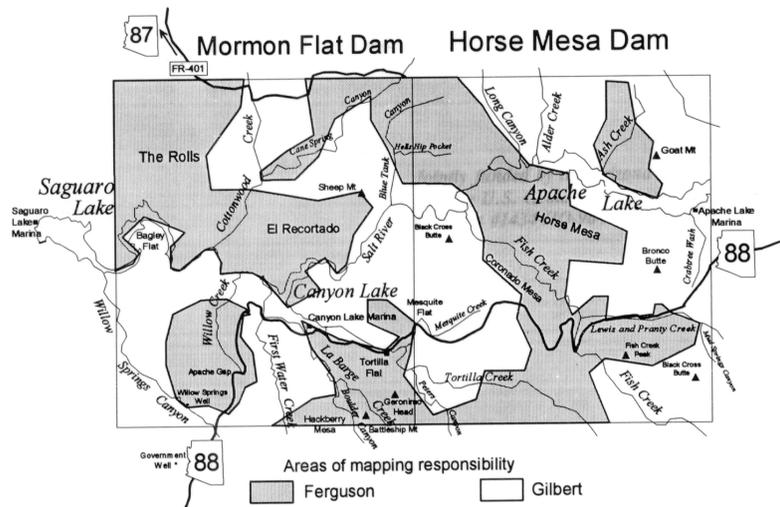
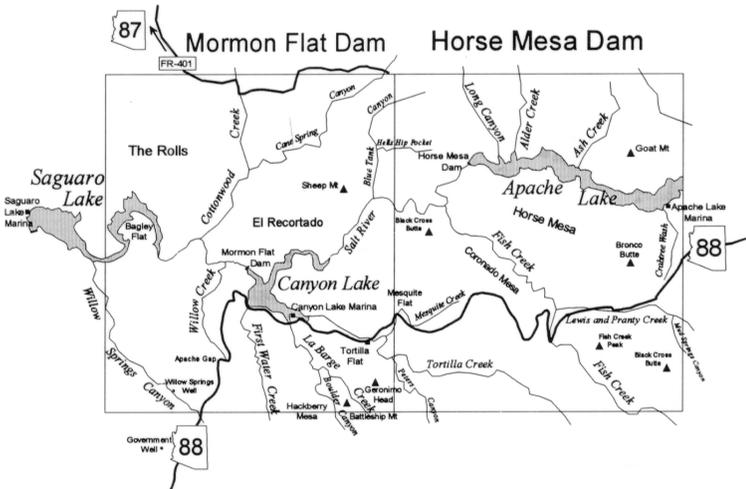
Date	Method	Sample	Source
1 18.59 $\pm$ 0.06 Ma*	Ar/Ar san	FZ-60	Ferguson and others, 199
2	U-Pb zircon	FZ-94	archived sample
3	U-Pb zircon	FZ-92	archived sample
4 17.46 $\pm$ 0.36 Ma	K/Ar WR	UAKA-80-127	Scarborough, 1981
5 21.40 $\pm$ 0.50 Ma	K/Ar WR	UAKA-81-31	"
6 no sanidine	Ar/Ar san	FZ-78	Ferguson and others, 199
7 16.68 $\pm$ 0.50 Ma	K/Ar san	AP-215	Stuckless and Sheridan, 1971
8 18.24 $\pm$ 0.08 Ma*	Ar/Ar san	FZ-38	Ferguson and others, 199
9 18.42 $\pm$ 0.06 Ma*	Ar/Ar san	FZ-41	"
10 18.92 $\pm$ 0.07 Ma*	Ar/Ar san	FZ-53	"

## STRATIGRAPHIC CORRELATION DIAGRAM, HORSE MESA DAM QUADRANGLE

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## LOCATION OF IMPORTANT GEOGRAPHIC FEATURES



Jointly funded by the Arizona Geological Survey  
and the U.S. Geological Survey STATEMAP Program.  
Contract #1434-HQ-96-AG-01474