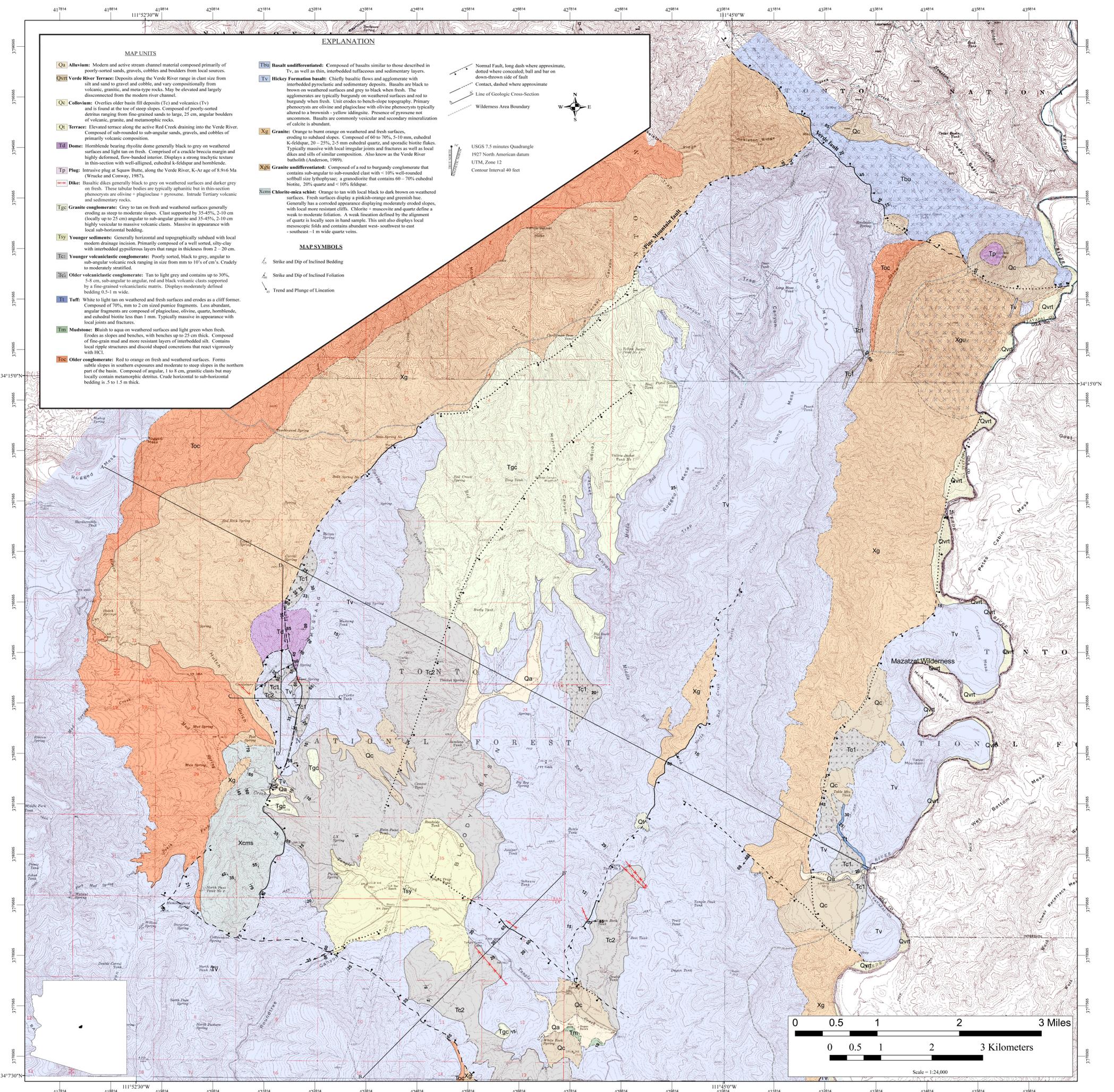


# GEOLOGIC MAP OF THE BLOODY BASIN

by Gwyn Rhys-Evans

2006

Plate 1



**EXPLANATION**

**MAP UNITS**

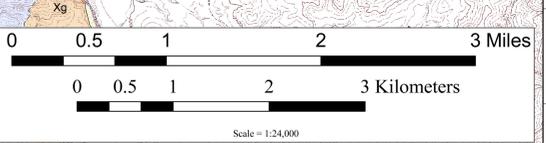
- Qa Alluvium:** Modern and active stream channel material composed primarily of poorly-sorted sands, gravels, cobbles and boulders from local sources.
- Qvt Verde River Terrace:** Deposits along the Verde River range in clast size from silt and sand to gravel and cobble, and vary compositionally from volcanic, granitic, and meta-type rocks. May be elevated and largely disconnected from the modern river channel.
- Qc Colluvium:** Overlies older basin fill deposits (Tc) and volcanics (Tv) and is found at the toe of steep slopes. Composed of poorly-sorted detritus ranging from fine-grained sands to large, 25 cm, angular boulders of volcanic, granitic, and metamorphic rocks.
- Qr Terrace:** Elevated terrace along the active Red Creek draining into the Verde River. Composed of sub-angled to sub-angular sands, gravels, and cobbles of primarily volcanic composition.
- Td Dome:** Hornblende bearing rhyolite dome generally black to grey on weathered surfaces and light tan on fresh. Composed of a crackle breccia margin and highly deformed, flow-banded interior. Displays a strong trachytic texture in thin-section with well-aligned, euhedral k-feldspar and trachyte.
- Tp Plug:** Intrusive plug at Squaw Butte, along the Verde River, K-Ar age of 8.9±0.6 Ma (Wrasche and Conway, 1987).
- Tg Dike:** Basaltic dikes generally black to grey on weathered surfaces and darker grey on fresh. These tabular bodies are typically aphanitic but in thin-section phenocrysts are olivine + plagioclase + pyroxene. Intrude Tertiary volcanic and sedimentary rocks.
- Tgc Granite conglomerate:** Grey to tan on fresh and weathered surfaces generally eroding as steep to moderate slopes. Clast supported by 35-45%, 2-10 cm (locally up to 25 cm) angular to sub-angular granite and 15-40%, 2-10 cm highly vesicular to massive volcanic clasts. Massive in appearance with local sub-horizontal bedding.
- Tsy Younger sediments:** Generally horizontal and topographically subdued with local modern drainage incision. Primarily composed of a well-sorted, silty-clay with interbedded gypsiferous layers that range in thickness from 2 - 20 cm.
- Tc1 Older volcanoclastic conglomerate:** Poorly sorted, black to grey, angular to sub-angular volcanic rock ranging in size from mm to 10's of cm's. Crudely to moderately stratified.
- Tc2 Older volcanoclastic conglomerate:** Tan to light grey and contains up to 30%, 5-8 cm, sub-angular to angular, red and black volcanic clasts supported by a fine-grained volcanoclastic matrix. Displays moderately defined bedding 0.5-1 m wide.
- Tt Tuff:** White to light tan on weathered and fresh surfaces and erodes as a cliff former. Composed of 70% mm to 2 cm sized pumice fragments. Less abundant, angular fragments are composed of plagioclase, olivine, quartz, hornblende, and euhedral biotite less than 1 mm. Typically massive in appearance with local joints and fractures.
- Tm Mudstone:** Bluish to sage on weathered surfaces and light green when fresh. Erodes as slopes and benches, with benches up to 25 cm thick. Composed of fine-grain mud and more resistant layers of interbedded silt. Contains local ripple structures and discoid shaped concretions that react vigorously with HCl.
- Tc Older conglomerate:** Red to orange on fresh and weathered surfaces. Forms subtle slopes in southern exposures and moderate to steep slopes in the northern part of the basin. Composed of angular, 1 to 8 cm, granitic clasts but may locally contain metamorphic detritus. Crude horizontal to sub-horizontal bedding is 3 to 1.5 m thick.
- Tbu Basalt undifferentiated:** Composed of basalts similar to those described in Tv, as well as thin, interbedded tuffaceous and sedimentary layers.
- Tv Hickey Formation basalt:** Chiefly basaltic flows and agglomerate with interbedded pyroclastic and sedimentary deposits. Basalts are black to brown on weathered surfaces and grey to black when fresh. The agglomerates are typically burgandy on weathered surfaces and red to burgandy when fresh. Unit erodes to bench-slope topography. Primary phenocrysts are olivine and plagioclase with olivine phenocrysts typically altered to a brownish-yellow iddingsite. Presence of pyroxene not uncommon. Basalts are commonly vesicular and secondary mineralization of calcite is abundant.
- Xg Granite:** Orange to burnt orange on weathered and fresh surfaces, eroding to subdued slopes. Composed of 60 to 70%, 5-10 mm, euhedral K-feldspar, 20 - 25%, 2-5 mm euhedral quartz, and sporadic biotite flakes. Typically massive with local irregular joints and fractures as well as local dikes and sills of similar composition. Also known as the Verde River batholith (Anderson, 1999).
- Xgu Granite undifferentiated:** Contains sub-angular to sub-rounded clast with <10% well-sorted softball size lithophyses; a granodiorite that contains 60-70% euhedral biotite, 20% quartz and <10% feldspar.
- Xcms Chlorite-mica schist:** Orange to tan with local black to dark brown on weathered surfaces. Fresh surfaces display a pinkish-orange and greenish hue. Generally has a corrugated appearance displaying moderately eroded slopes, with local more resistant cliffs. Chlorite + muscovite and quartz define a weak to moderate foliation. A weak lineation defined by the alignment of quartz is locally seen in hand sample. This unit also displays local mesoscopic fold and contains abundant west-southwest to east-southeast -1 m wide quartz veins.

**MAP SYMBOLS**

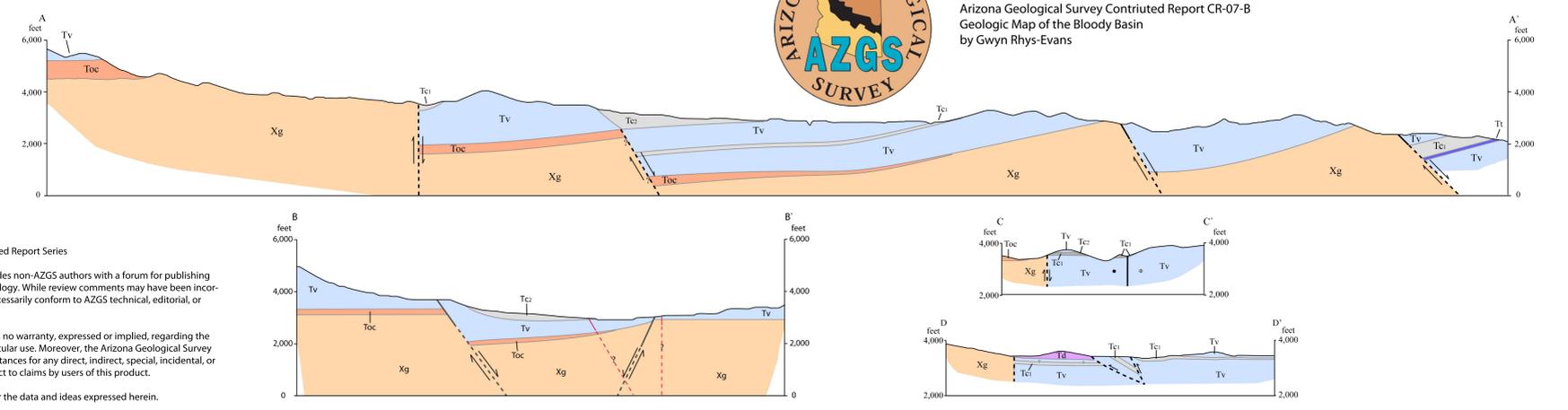
- Strike and Dip of Inclined Bedding
- Strike and Dip of Inclined Foliation
- Trend and Plunge of Lineation

Normal Fault, long dash where approximate, dotted where concealed; ball and bar on down-thrown side of fault  
 Contact, dashed where approximate  
 Line of Geologic Cross-Section  
 Wilderness Area Boundary

USGS 7.5 minutes Quadrangle  
 1927 North American datum  
 UTM, Zone 12  
 Contour Interval 40 feet



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 Geologic Map of the Bloody Basin  
 by Gwyn Rhys-Evans



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