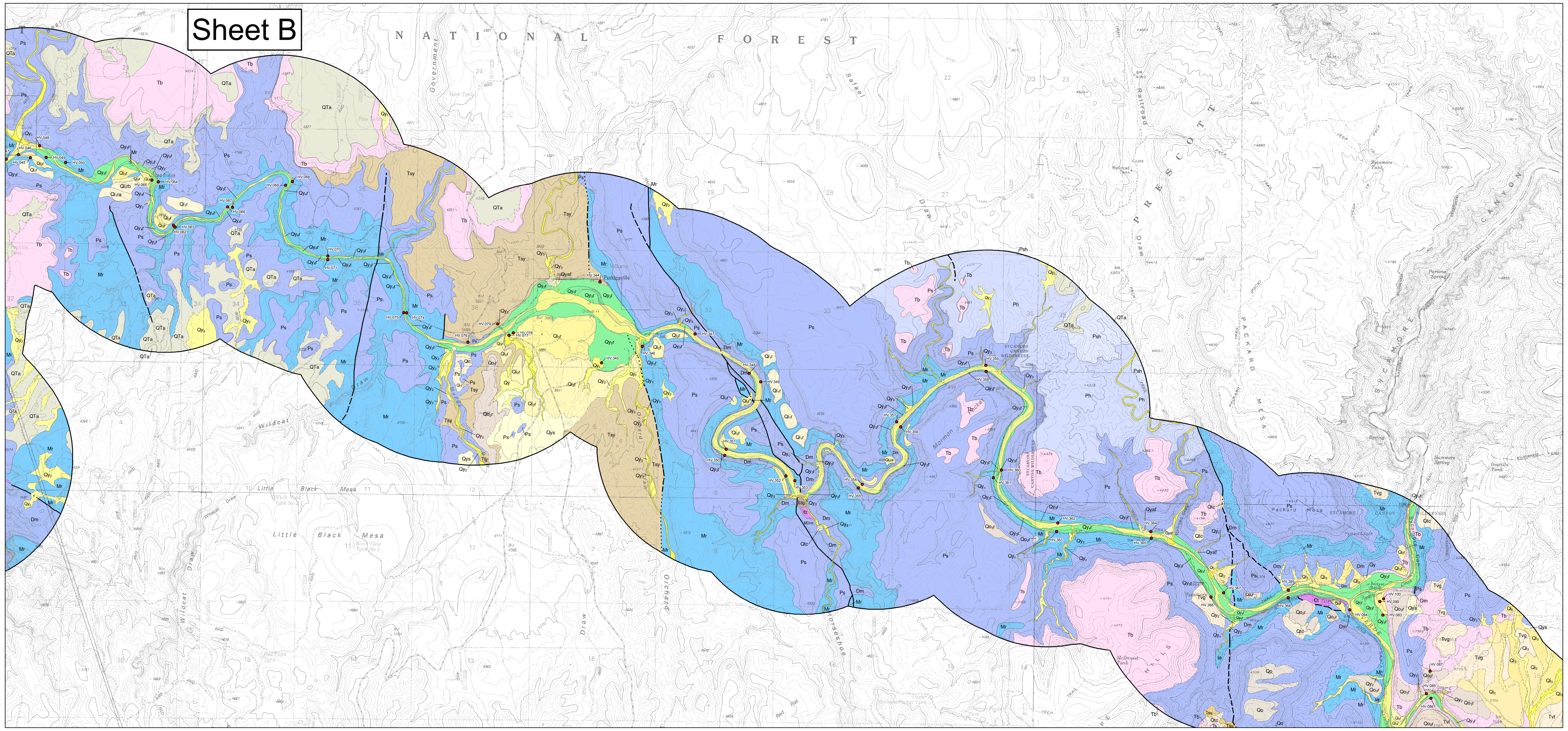


Map Unit Descriptions

Other Units

- Qtc — **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes
- Qvc — **Regolith and colluvium formed on deposits of the Verde Formation** - Generally fine-grained, in situ deposits mantling gentle slopes on the Verde Formation

River Alluvium

- Qy_4r — **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels
- Qy_4r — **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels
- Qy_3r — **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain
- Qy_2r — **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain
- Qi_3r — **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
- Qi_2r — **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits
- Qi_1rb — **Middle Pleistocene river terrace deposits, younger member** - higher-standing, gravelly, sandy river terrace deposits
- Qi_1ra — **Middle Pleistocene river terrace deposits, older member** - higher-standing, gravelly, sandy river terrace deposits
- Qi_1r — **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits
- Qo_3r — **Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level
- Qo_2r — **Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level

Piedmont Alluvium

- Qy_c — **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles
- Qy_3 — **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits
- Qyaf — **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns
- Qy_2 — **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits
- Qy_1 — **Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns
- Qys — **Holocene fine-grained deposits** - unconsolidated alluvium derived predominantly from basin fill deposits
- Qy — **Holocene alluvium** - Holocene alluvium, undivided
- Qi_3 — **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development
- Qi_2 — **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development
- Qi — **Middle to late Pleistocene alluvial deposits, undivided** - Middle to late Pleistocene alluvial deposits, undivided
- Qo — **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development
- QTa — **Late Pliocene to early Pleistocene fan gravel** - coarse, moderately to well-consolidated gravelly deposits capping high rounded ridges

Cenozoic Basin Deposits

- Tsy — **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits
- Tvg — **Late Miocene to Pliocene Verde Formation, conglomeratic facies** - Gravelly to sandy, moderately to strongly indurated alluvial fan deposits.
- Tvl — **Late Miocene to Pliocene Verde Formation, lacustrine facies** - Fine-grained, laminated playa and lacustrine deposits.

Bedrock Units

- Tb — **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks
- Psh — **Schnebly Hill Formation** - Tan to light-gray, eolian, crossbedded sandstone and minor mudstone, limestone, and evaporitic beds (DeWitt et al., 2008)
- Ph — **Hermit Shale** - Permian Hermit Shale
- Ps — **Supai Formation** - Supai formation (Permian and Upper Pennsylvanian). Mudstone, siltstone, sandstone, limestone and dolomite.
- Mr — **Redwall Limestone** - Mississippian Redwall Limestone
- Dm — **Martin Formation** - Devonian Martin Formation
- MDrm — **Redwall limestone and Martin Formation, undivided** - none
- Ꞓt — **Tapeats Sandstone** - Tapeats sandstone
- Xdg — **Diorite and gabbro** - Early Proterozoic diorite and gabbro

1 0.5 0 1 Miles
1 0.5 0 1 Kilometers
0 1000 2000 3000 4000 5000 Feet
1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov

Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

DeWitt, Ed, Langenheim, Victoria, Force, Eric, Vance, R.K., Lindberg, P.A., Driscoll, R.L., 2008, Geologic Map of Prescott National Forest and the Headwaters of the Verde River, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Scientific Investigations Map 2996, scale 1:100,000, 100-p. pamphlet.

House, P.K., and Pearthree, P.A., 1993, Surficial geology of the northern Verde Valley, Yavapai County, Arizona; Clarkdale, Page Springs, Cottonwood, and Cornville quadrangles [7.5 min]: Arizona Geological Survey Open-File Report 93-16, 19 p., 4 sheets, scale 1:24,000.

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A. and House, P.K.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2B
version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line
Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line
Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

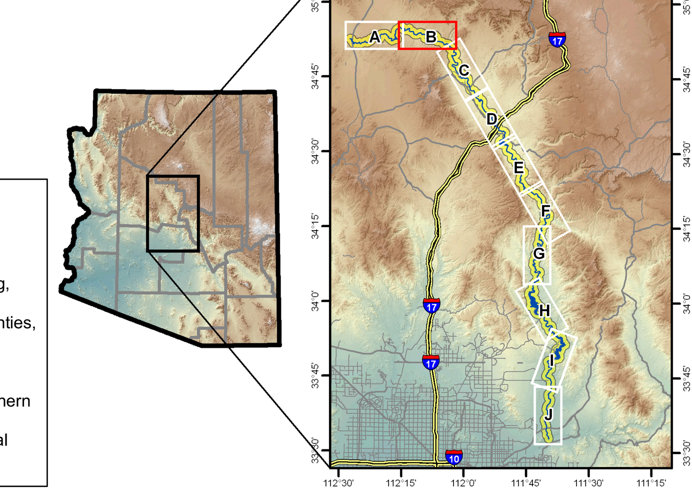
Thin, Dotted Line
Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

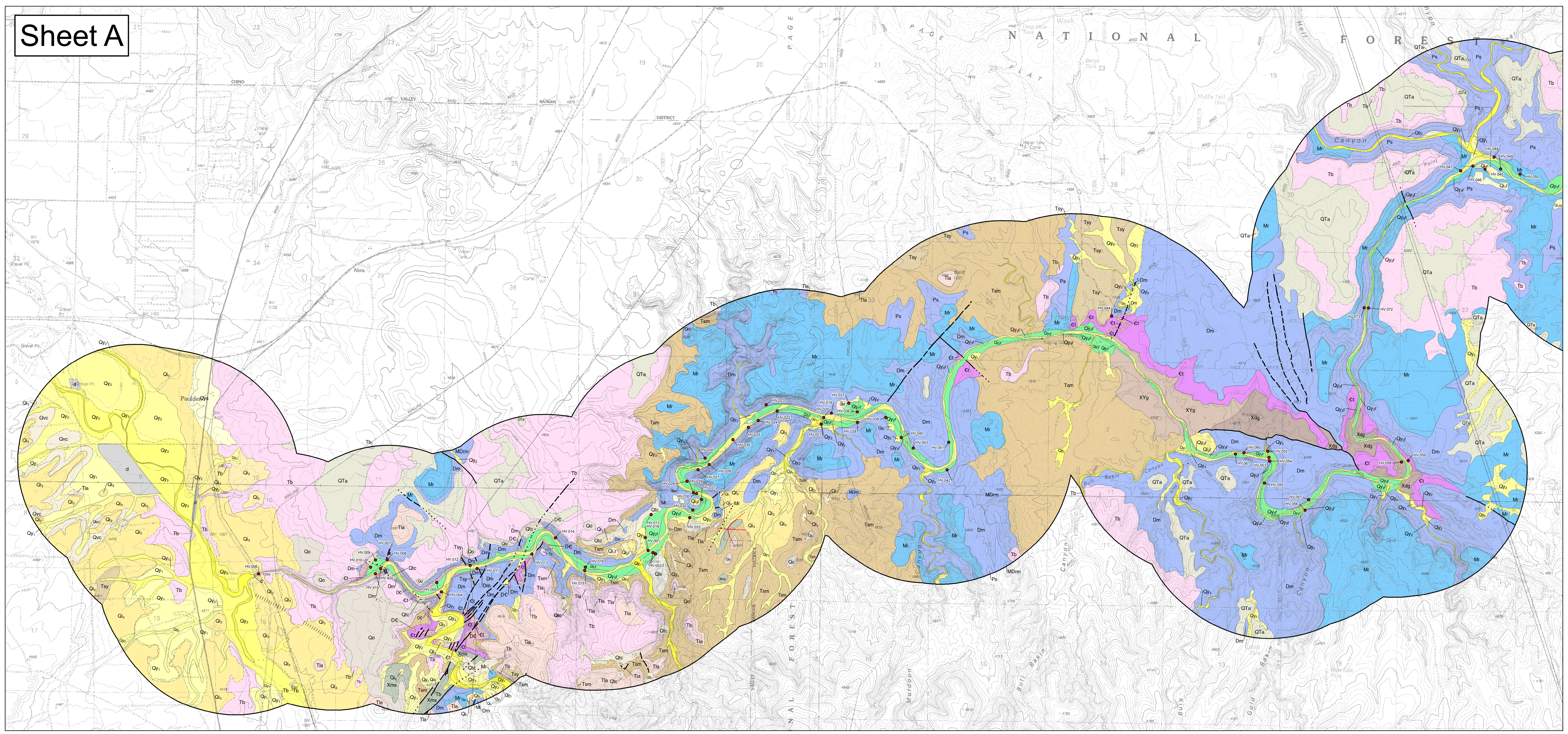
Other Geologic Lines

- **Thin, Solid Line** — Accurate contact
- **Thin, Dashed Line** — Approximate contact
- **Thin, Dotted Line** — Concealed contact
- **Hashed Line** — Gradational Contact
- **Solid, Bold Line** — Accurate Fault
- **Dashed, Bold Line** — Approximate Fault
- **Dotted, Bold Line** — Concealed Fault

Location Map

This sheet shown in red





Map Unit Descriptions

Other Units

- d — **Disturbed ground** - heavily disturbed ground due to agriculture, extensive excavation, mining activity, or construction of earth dams
- **Plowed areas** - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground
- Qtc — **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes
- Qvc — **Regolith and colluvium formed on deposits of the Verde Formation** - Generally fine-grained, in situ deposits mantling gentle slopes on the Verde Formation

River Alluvium

- Qy_4r — **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels
- Qy_4r — **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels
- Qy_3r — **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain
- Qy_2r — **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain
- Qi_3r — **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
- Qi_2r — **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits
- Qi_1rb — **Middle Pleistocene river terrace deposits, younger member** - higher-standing, gravelly, sandy river terrace deposits
- Qi_1ra — **Middle Pleistocene river terrace deposits, older member** - higher-standing, gravelly, sandy river terrace deposits
- Qi_1r — **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Piedmont Alluvium

- Qy_c — **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles
- Qy_3 — **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits
- Qyaf — **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns
- Qy_2 — **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits
- Qy_1 — **Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns
- Qys — **Holocene fine-grained deposits** - unconsolidated alluvium derived predominantly from basin fill deposits
- Qls — **Landslide Deposits** - Unsorted sediment resulting from mass down-slope movement (Wrucke and Conway, 1987)
- Qi_3 — **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development
- Qi_2 — **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development
- Qi_1 — **Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development
- Qo — **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development
- QTa — **Late Pliocene to early Pleistocene fan gravel** - coarse, moderately to well-consolidated gravelly deposits capping high rounded ridges

Cenozoic Basin Deposits

- Tsy — **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits
- Tsm — **Oligo-Miocene deposits** - Moderately to strongly consolidated conglomerate and sandstone deposited in basins during and after late Tertiary faulting

Bedrock Units

- Tb — **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks
- Tt — **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows
- Tla — **Tertiary intermediate volcanics, undivided** - Hornblende and biotite latites, rhyodacite, dacite, andesite, and associated volcanic and sedimentary rocks
- Ps — **Supai Formation** - Supai formation (Permian and Upper Pennsylvanian). Mudstone, siltstone, sandstone, limestone and dolomite.
- Mr — **Redwall Limestone** - Mississippian Redwall Limestone
- Dm — **Martin Formation** - Devonian Martin Formation
- MDrm — **Redwall limestone and Martin Formation, undivided** - none
- Ꞓt — **Tapeats Sandstone** - Tapeats sandstone
- DꞒ — **Undifferentiated lower Paleozoic rocks** - Dolostone, limestone, quartzite-pebble conglomerate, and minor green shale
- XYg — **Proterozoic granite, undivided** - Fine to coarse grained granitoids, quartz monzonite, porphry, rhyolite ash flows, mylonite, and granophyre
- Xms — **Proterozoic sedimentary, metasedimentary, and metavolcanic rocks, undivided** - Quartzite, sandstone, and metavolcanic rocks
- Xdg — **Diorite and gabbro** - Early Proterozoic diorite and gabbro

1 0.5 0 1 Miles
1 0.5 0 1 Kilometers
0 1000 2000 3000 4000 5000 Feet
1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov

Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

DeWitt, Ed, Langenheim, Victoria, Force, Eric, Vance, R.K., Lindberg, P.A., Driscoll, R.L., 2008, Geologic Map of Prescott National Forest and the Headwaters of the Verde River, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Scientific Investigations Map 2996, scale 1:100,000, 100-p. pamphlet.

Gootee, B.F., Ferguson, C.A., Spencer, J.E., and Cook, J.P.; 2009, Geologic map of the Chino Valley North 7½' Quadrangle, Yavapai County, Arizona: Arizona Geological Survey Digital Geologic Map DGM-80, scale 1:24,000.

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A. and House, P.K.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2A
version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line
Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line
Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

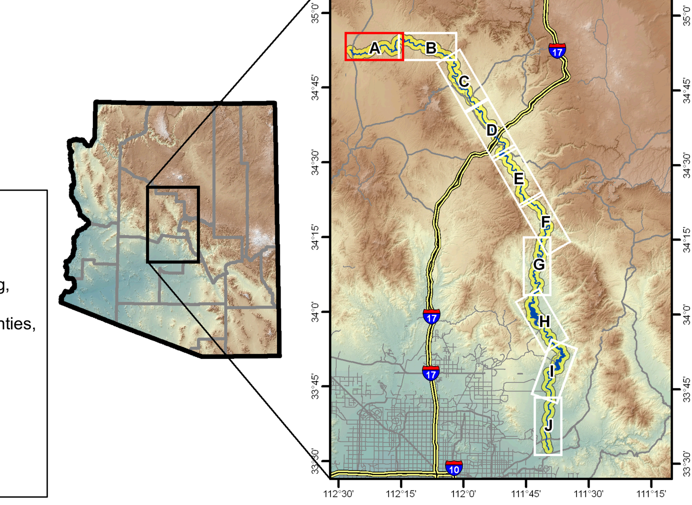
Thin, Dotted Line
Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

Other Geologic Lines

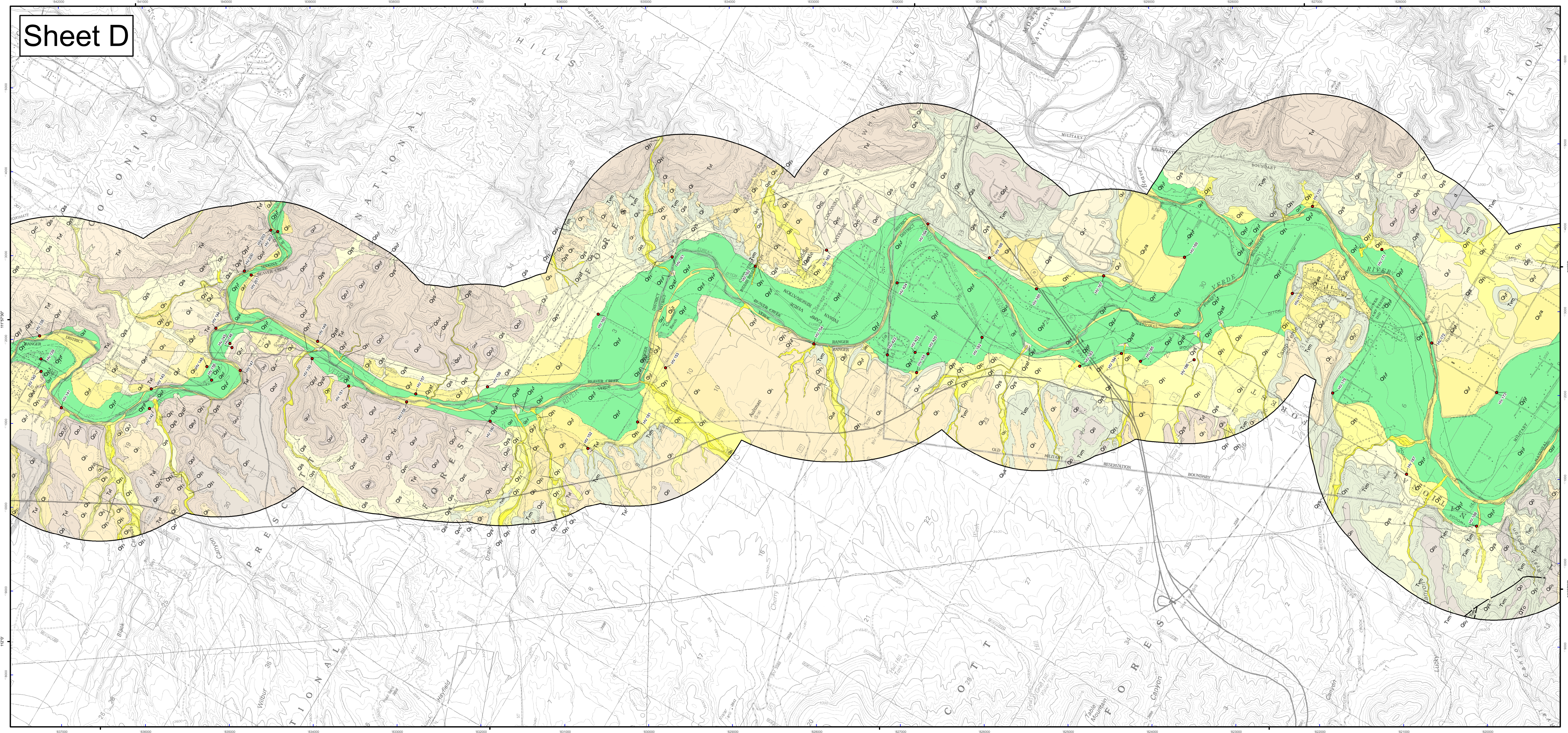
- **Thin, Solid Line** — Accurate contact
- **Thin, Dashed Line** — Approximate contact
- **Thin, Dotted Line** — Concealed contact
- **Hashed Line** — Gradational Contact
- **Solid, Bold Line** — Accurate Fault
- **Dashed, Bold Line** — Approximate Fault
- **Dotted, Bold Line** — Concealed Fault

Location Map

This sheet shown in red



Sheet D



Map Unit Descriptions

Other Units

Unit	Description
d	**Disturbed ground** - heavily disturbed ground due to agriculture, extensive excavation, mining activity, or construction of earth dams
(hatched)	**Plowed areas** - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground
Qvc	**Regolith and colluvium formed on deposits of the Verde Formation** - Generally fine-grained, in situ deposits mantling gentle slopes on the Verde Formation

River Alluvium

Unit	Description
Qycr	**Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels
Qy4r	**Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels
Qy3r	**Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain
Qy2r	**Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain
Qy1r	**Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain
Qi3rb	**Late Pleistocene river terrace deposits, younger member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
Qi3ra	**Late Pleistocene river terrace deposits, older member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
Qi3r	**Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
Qi2ra	**Middle to late Pleistocene river deposits, older member** - high-standing, gravelly, sandy river terrace deposits
Qi2r	**Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits
Qi1r	**Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits
Qo3r	**Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level
Qo2r	**Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level
Qo1r	**Early Pleistocene river terrace deposits, older** - Very high, old Verde River terrace deposits, upper level

Piedmont Alluvium

Unit	Description
Qyc	**Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles
Qy3	**Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits
Qyaf	**Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns
Qy2	**Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits
Qy1	**Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns
Qys	**Holocene fine-grained deposits** - unconsolidated alluvium derived predominantly from basin fill deposits
Qy	**Holocene alluvium** - Holocene alluvium, undivided
Qis	**fine-grained Pleistocene deposits** - older fine-grained deposits derived primarily from the Verde Formation
Qi3	**Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development
Qi2	**Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development
Qi1	**Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development
Qi	**Middle to late Pleistocene alluvial deposits, undivided** - Middle to late Pleistocene alluvial deposits, undivided
Qo2	**Early Pleistocene alluvium, younger member** - high, thin, early Pleistocene alluvial fan remnants deposited on erosional surfaces cut on the Verde Formation
Qo1	**Early Pleistocene alluvium, older member** - high, thin, early Pleistocene alluvial fan remnants deposited on erosional surfaces cut on the Verde Formation
Qo	**Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development
QTo	**Latest Pliocene to early Pleistocene alluvium** - Highest standing fan remnants in Verde Valley

Cenozoic Basin Deposits

Unit	Description
Tvl	**Late Miocene to Pliocene Verde Formation, lacustrine carbonate facies** - Fine-grained, laminated playa and lacustrine deposits.
Tvf	**Late Miocene to Pliocene Verde Formation, fluvial clastic facies** - Reddish sandstone, siltstone, and mudstone with interbedded limestone
Tvm	**Late Miocene to Pliocene Verde Formation, lacustrine marl facies** - Olive green marl locally containing gypsum and minor halite

1 0.5 0 1 Miles

1 0.5 0 1 Kilometers

0 1000 2000 3000 4000 5000 Feet

1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov

Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

DeWitt, Ed, Langenheim, Victoria, Force, Eric, Vance, R.K., Lindberg, P.A., and Driscoll, R.L., 2008, Geologic map of the Prescott National Forest and the headwaters of the Verde River, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Scientific Investigations Map 2996, scale 1:100,000, 100-p. pamphlet.

House, P.K., 1994, Surficial geology of the southern Verde Valley, Yavapai County, Arizona; Middle Verde, Camp Verde, and Horner Mountain [Horner Mtn.] quadrangles [7.5 min]: Arizona Geological Survey Open-File Report 94-23, 20 p., 3 sheets, scale 1:24,000.

Pearthree, P.A., 1993, Geologic and geomorphic setting of the Verde River from Sullivan Lake to Horseshoe Reservoir: Arizona Geological Survey Open-File Report 93-04, 25 p., 5 sheets, scale 1:24,000.

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A., and House, K.P.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2D
version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line - Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line - Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

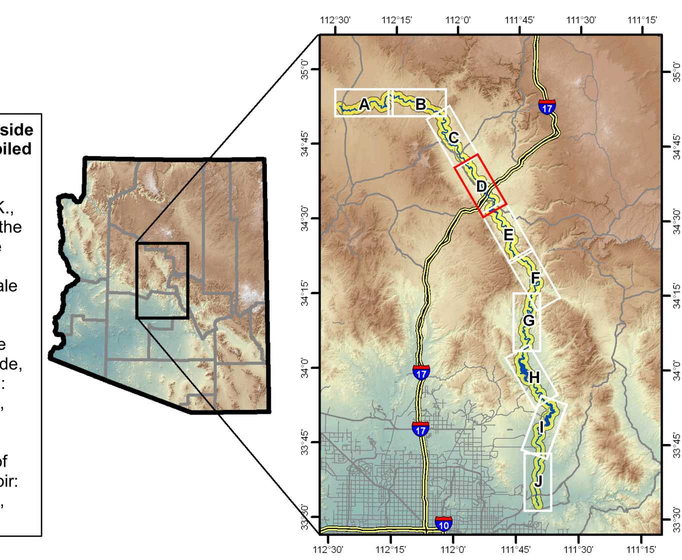
Thin, Dotted Line - Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

Other Geologic Lines

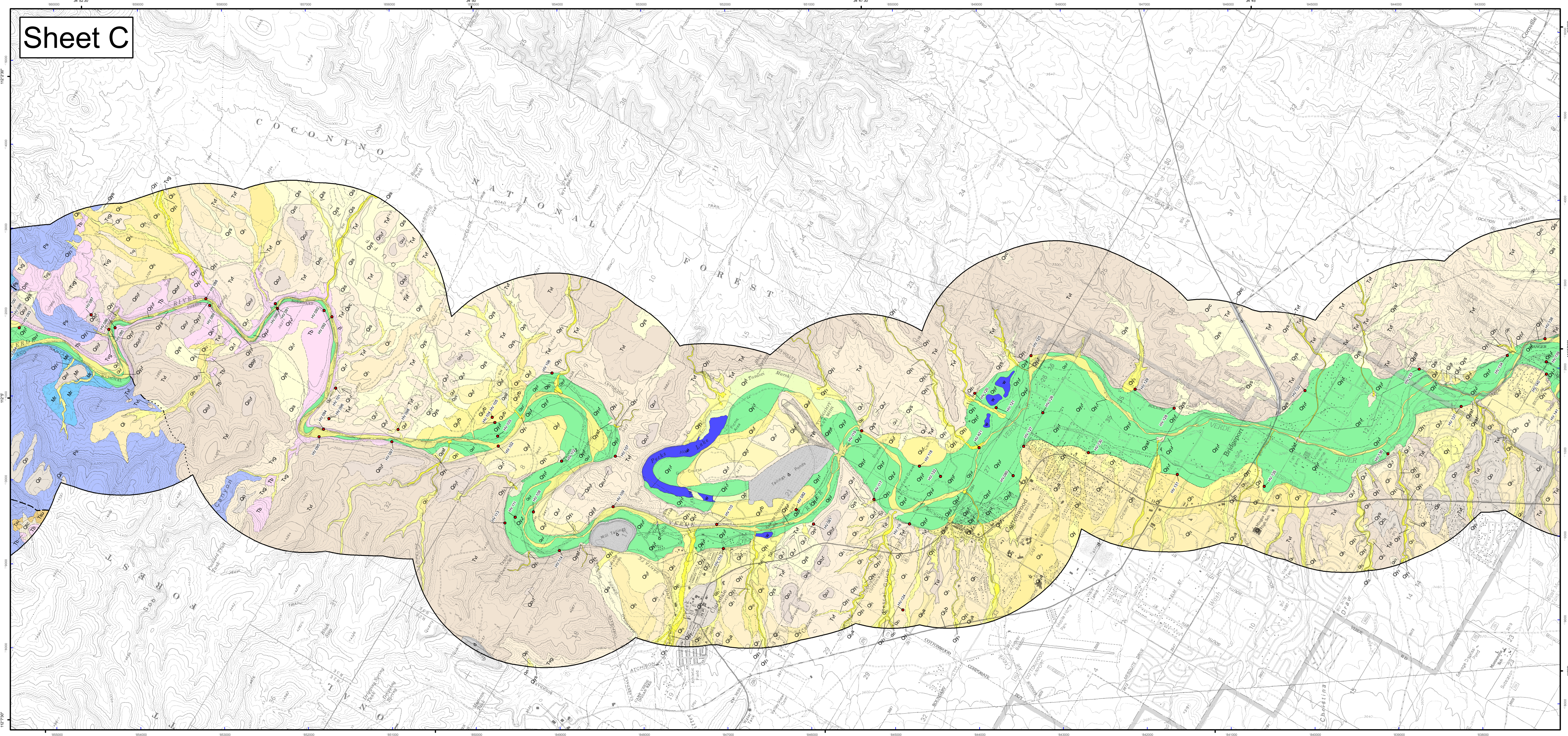
Thin, Solid Line - Accurate contact
Thin, Dashed Line - Approximate contact
Thin, Dotted Line - Concealed contact
Hashed Line - Gradational Contact
Solid, Bold Line - Accurate Fault
Dashed, Bold Line - Approximate Fault
Dotted, Bold Line - Concealed Fault

Location Map

This sheet shown in red



Sheet C



Map Unit Descriptions

Other Units

Unit	Description
w	**Water** - Underlying geology obscured by standing water (Pecks Lake, Horseshoe and Bartlett Reservoirs)
Qyl	**Modern lake sediments** - Underlying geology obscured by lake sediments (Pecks Lake, Horseshoe and Bartlett Reservoirs)
d	**Disturbed ground** - heavily disturbed ground due to agriculture, extensive excavation, mining activity, or construction of earth dams
(hatched)	**Plowed areas** - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground
Qvc	**Regolith and colluvium formed on deposits of the Verde Formation** - Generally fine-grained, in situ deposits mantling gentle slopes on the Verde Formation

River Alluvium

Unit	Description
Qycr	**Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels
Qy4r	**Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels
Qy3r	**Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain
Qy2r	**Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain
Qy1r	**Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain
Qi3rb	**Late Pleistocene river terrace deposits, younger member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
Qi3ra	**Late Pleistocene river terrace deposits, older member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
Qi3r	**Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel
Qi2r	**Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits
Qi1r	**Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits
Qo3r	**Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level
Qo2r	**Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level
Qo1r	**Early Pleistocene river terrace deposits, older** - Very high, old Verde River terrace deposits, upper level

Piedmont Alluvium

Unit	Description
Qyc	**Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles
Qy3	**Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits
Qyaf	**Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns
Qy2	**Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits
Qy1	**Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns
Qys	**Holocene fine-grained deposits** - unconsolidated alluvium derived predominantly from basin fill deposits

Piedmont Alluvium (continued)

Unit	Description
Qy	**Holocene alluvium** - Holocene alluvium, undivided
Qis	**fine-grained Pleistocene deposits** - older fine-grained deposits derived primarily from the Verde Formation
Qi3	**Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development
Qi2b	**Middle to late Pleistocene alluvial fan and terrace deposits, younger member** - broad planar fan terraces found capping basin fill deposits, typically inset into slightly older Qi2 and Qi2a deposits
Qi2a	**Middle to late Pleistocene alluvial fan and terrace deposits, older member** - Middle to late Pleistocene alluvium, older member
Qi2	**Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development
Qi1	**Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development
Qi	**Middle to late Pleistocene alluvial deposits, undivided** - Middle to late Pleistocene alluvial deposits, undivided
Qo2	**Early Pleistocene alluvium, younger member** - high, thin, early Pleistocene alluvial fan remnants deposited on erosional surfaces cut on the Verde Formation
Qo	**Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

Cenozoic Basin Deposits

Unit	Description
Tvg	**Late Miocene to Pliocene Verde Formation, conglomeratic facies** - Gravelly to sandy, moderately to strongly indurated alluvial fan deposits.
Tvl	**Late Miocene to Pliocene Verde Formation, lacustrine carbonate facies** - Fine-grained, laminated playa and lacustrine deposits.
Tvf	**Late Miocene to Pliocene Verde Formation, fluvial clastic facies** - Reddish sandstone, siltstone, and mudstone with interbedded limestone

Bedrock Units

Unit	Description
Tb	**Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks
Ps	**Supai Formation** - Supai formation (Permian and Upper Pennsylvanian). Mudstone, siltstone, sandstone, limestone and dolomite.
Mr	**Redwall Limestone** - Mississippian Redwall Limestone

1 0.5 0 1 Miles

1 0.5 0 1 Kilometers

0 1000 2000 3000 4000 5000 Feet

1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov

Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

DeWitt, Ed, Langenheim, Victoria, Force, Eric, Vance, R.K., Lindberg, P.A., and Driscoll, R.L., 2008, Geologic map of the Prescott National Forest and the headwaters of the Verde River, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Scientific Investigations Map 2996, scale 1:100,000, 100-p. pamphlet.

House, P.K., and Pearthree, P.A., 1993, Surficial geology of the northern Verde Valley, Yavapai County, Arizona; Clarkdale, Page Springs, Cottonwood, and Cornville quadrangles [7.5 min]: Arizona Geological Survey Open-File Report 93-16, 19 p., 4 sheets, scale 1:24,000.

Pearthree, P.A., 1993, Geologic and geomorphic setting of the Verde River from Sullivan Lake to Horseshoe Reservoir: Arizona Geological Survey Open-File Report 93-04, 25 p., 5 sheets, scale 1:24,000.

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A., and House P.K.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2C
version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line - Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line - Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

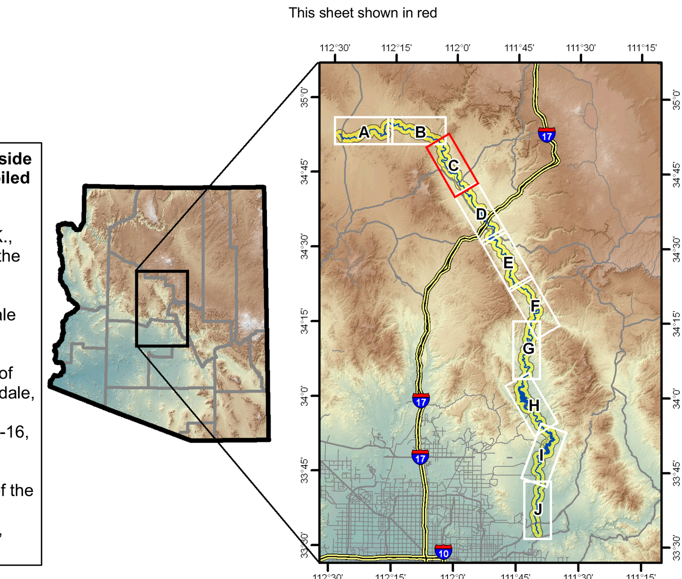
Thin, Dotted Line - Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

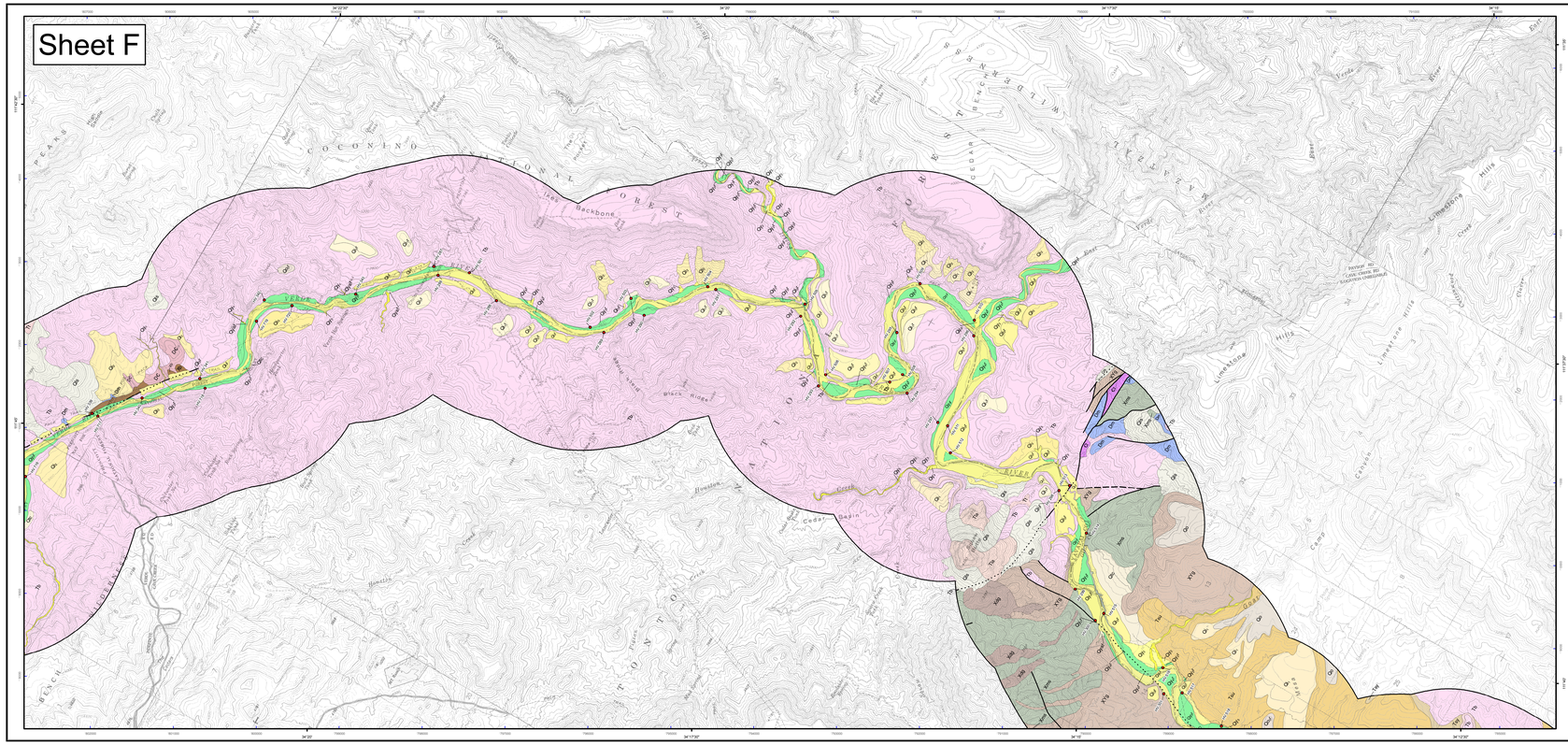
Other Geologic Lines

Thin, Solid Line - Accurate contact
Thin, Dashed Line - Approximate contact
Thin, Dotted Line - Concealed contact
Hashed Line - Gradational Contact
Solid, Bold Line - Accurate Fault
Dashed, Bold Line - Approximate Fault
Dotted, Bold Line - Concealed Fault

Location Map

This sheet shown in red





Map Unit Descriptions

Other Units

Qtc — **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes

River Alluvium

Qyr — **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels

Qyf — **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels

Qyr — **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain

Qyf — **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain

Qyr — **Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain

Qlr — **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qlr — **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits

Qlr — **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Qlr — **Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level

Piedmont Alluvium

Qy — **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles

Qy — **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits

Qyaf — **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns

Qy — **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits

Qls — **Landslide Deposits** - Unsorted sediment resulting from mass down-slope movement

Qfs — **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development

Qfs — **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development

Qfs — **Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development

Qfo — **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

Cenozoic Basin Deposits

Tsy — **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits

Tsu — **Tertiary deposits, undivided** - Moderately to strongly consolidated conglomerate, undivided

Bedrock Units

Tb — **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks

Tt — **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows

Tia — **Tertiary intermediate volcanics, undivided** - Hornblende and biotite latites, rhyodacite, dacite, andesite, and associated volcanic and sedimentary rocks

Dm — **Martin Formation** - Devonian Martin Formation

Ꞓt — **Tapeats Sandstone** - Tapeats sandstone

DC — **Undifferentiated lower Paleozoic rocks** - Dolostone, limestone, quartzite-pebble conglomerate, and minor green shale

Xfg — **Proterozoic granite, undivided** - Fine to coarse grained granitoids, quartz monzonite, porphyry, rhyolite ash flows, mylonite, and granophyre

Xms — **Proterozoic sedimentary, metasedimentary, and metavolcanic rocks, undivided** - Quartzite, sandstone, and metavolcanic rocks

Xdg — **Diorite and gabbro** - Early Proterozoic diorite and gabbro

Xb — **Basaltic flows** - Fine- to medium-grained metamorphosed tholeite, basalt, and minor ultramafic rocks

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by

Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A., and House, P.K.

July 2010

Arizona Geological Survey

Digital Map DM-RM-2F

version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

Thin, Dotted Line Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

Other Geologic Lines

Thin, Solid Line Accurate contact

Thin, Dashed Line Approximate contact

Thin, Dotted Line Concealed contact

Hashed Line Gradational Contact

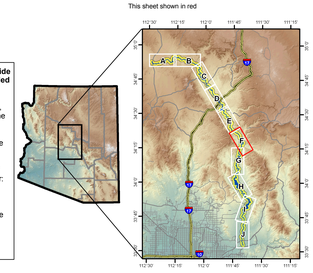
Solid, Bold Line Accurate Fault

Dashed, Bold Line Approximate Fault

Dotted, Bold Line Concealed Fault

Location Map

This sheet shown in red



Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

DeWitt, Ed, Langenheim, Victoria, Force, Eric, Vance, R.K., Lindberg, P.A., and Driscoll, R.L., 2008, Geologic map of the Prescott National Forest and the headwaters of the Verde River, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Scientific Investigations Map 2996, scale 1:100,000, 100-p. pamphlet.

Pearthree, P.A., 1993, Geologic and geomorphic setting of the Verde River from Sullivan Lake to Horseshoe Reservoir: Arizona Geological Survey Open-File Report 93-04, 25 p., 5 sheets, scale 1:24,000.

Wrucke, C.T., and Conway, C.M., 1987 Geologic map of the Mazatzal Wilderness and contiguous Roadless Area, Gila, Maricopa, and Yavapai Counties, Arizona: U.S. Geological Survey Open-File Report 87-0664, 22 p., 1 sheet, scale 1:48,000.

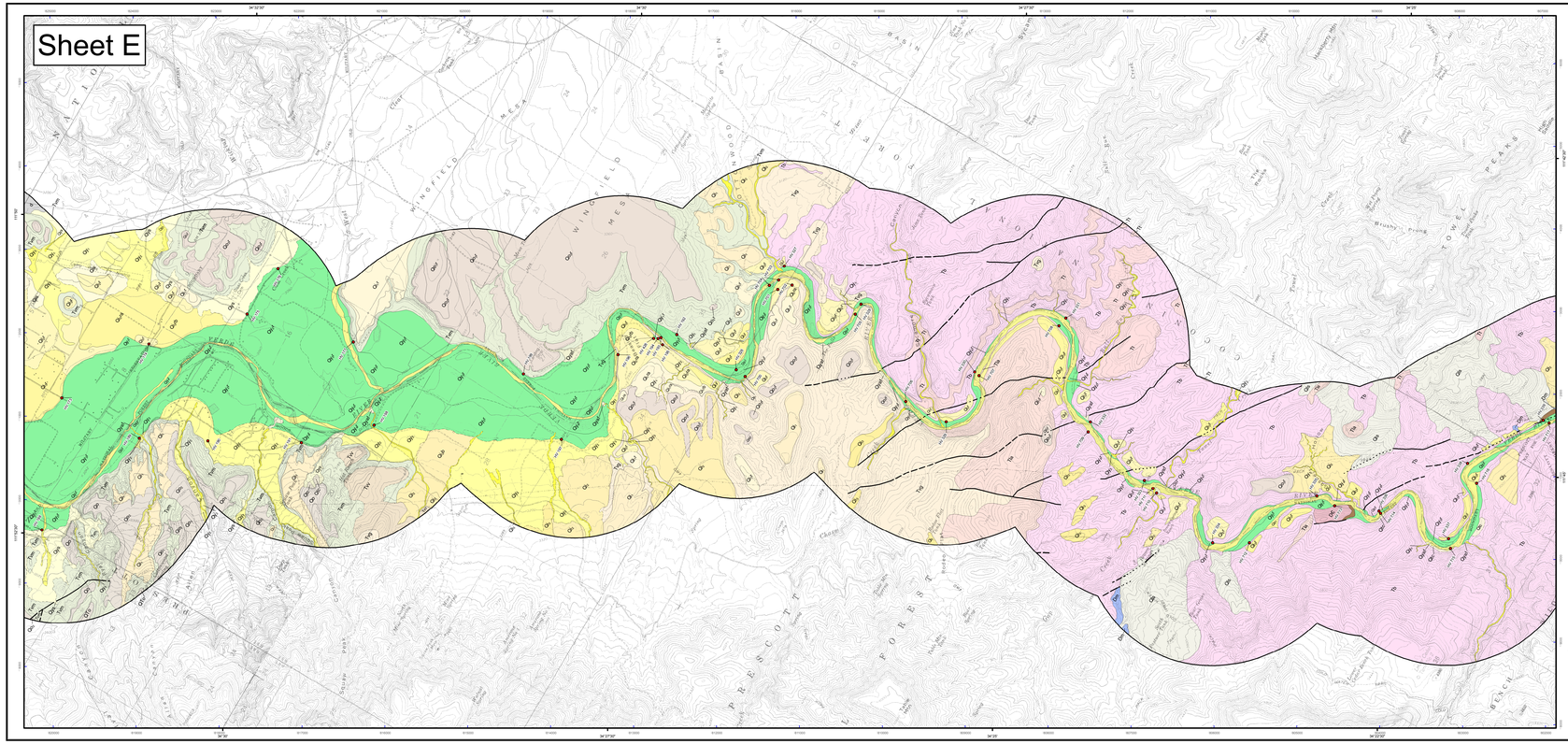
1 0.5 0 1 Miles

1 0.5 0 1 Kilometers

0 1000 2000 3000 4000 5000 Feet

1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov



Map Unit Descriptions

Other Units

Plowed areas - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground

d — **Disturbed ground** - heavily disturbed ground due to agriculture, extensive excavation, mining activity, or construction of earth dams

Qtc — **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes

River Alluvium

Qyr — **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels

Qyf — **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels

Qyr — **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain

Qyf — **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain

Qyr — **Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain

Qlrb — **Late Pleistocene river terrace deposits, younger member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qlrea — **Late Pleistocene river terrace deposits, older member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qlr — **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qlrb — **Middle to late Pleistocene river deposits, younger member** - high-standing, gravelly, sandy river terrace deposits

Qlrea — **Middle to late Pleistocene river deposits, older member** - high-standing, gravelly, sandy river terrace deposits

Qlr — **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits

Qlrb — **Middle Pleistocene river terrace deposits, younger member** - higher-standing, gravelly, sandy river terrace deposits

Qlrea — **Middle Pleistocene river terrace deposits, older member** - higher-standing, gravelly, sandy river terrace deposits

Qlr — **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Qlrd — **Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level

Qlrd — **Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level

Qlrd — **Early Pleistocene river terrace deposits, older** - Very high, old Verde River terrace deposits, upper level

Piedmont Alluvium

Qy — **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles

Qy — **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits

Qyaf — **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns

Qy — **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits

Qy — **Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns

Qys — **Holocene fine-grained deposits** - unconsolidated alluvium derived predominantly from basin fill deposits

Piedmont Alluvium (continued)

Qls — **Landslide Deposits** - Unsorted sediment resulting from mass down-slope movement

Qfs — **Fine-grained Pleistocene deposits** - older fine-grained deposits derived primarily from the Verde Formation

Qfs — **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development

Qfsb — **Middle to late Pleistocene alluvial fan and terrace deposits, younger member** - broad planar fan terraces found capping basin fill deposits, typically inset into slightly older Qt2 and Qt2a deposits

Qfs — **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development

Qfs — **Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development

Qfo — **Early Pleistocene alluvial, younger member** - high, thin, early Pleistocene alluvial fan remnants deposited on erosional surfaces cut on the Verde Formation

Qfo — **Early Pleistocene alluvial, older member** - high, thin, early Pleistocene alluvial fan remnants deposited on erosional surfaces cut on the Verde Formation

Qfo — **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

QTg — **Latest Pliocene to early Pleistocene alluvium** - Highest standing fan remnants in Verde Valley

Cenozoic Basin Deposits

Tsy — **Late Miocene to Pliocene Verde Formation, conglomeratic facies** - Gravelly to sandy, moderately to strongly indurated alluvial fan deposits.

Tyl — **Late Miocene to Pliocene Verde Formation, lacustrine facies** - Fine-grained, laminated playa and lacustrine deposits.

Tvv — **Late Miocene to Pliocene Verde Formation** - Late Miocene to Pliocene Verde Formation, undivided

Tvw — **Interbedded gravel, lacustrine, and volcanic facies** - This designation is used in areas where volcanic rocks are clearly interbedded with fluvial and lacustrine facies of the Verde Formation

Bedrock Units

Tb — **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks

Tt — **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows

Tia — **Tertiary intermediate volcanics, undivided** - Hornblende and biotite latites, rhyodacite, dacite, andesite, and associated volcanic and sedimentary rocks

Dm — **Martin Formation** - Devonian Martin Formation

DC — **Undifferentiated lower Paleozoic rocks** - Dolostone, limestone, quartzite-pebble conglomerate, and minor green shale

Xb — **Basaltic flows** - Fine- to medium-grained metamorphosed tholeite, basalt, and minor ultramafic rocks

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by

Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A., and House, P.K.

July 2010

Arizona Geological Survey

Digital Map DM-RM-2E

version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

Thin, Dotted Line Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

Other Geologic Lines

Thin, Solid Line Accurate contact

Thin, Dashed Line Approximate contact

Thin, Dotted Line Concealed contact

Hashed Line Gradational Contact

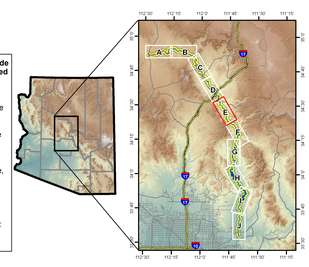
Solid, Bold Line Accurate Fault

Dashed, Bold Line Approximate Fault

Dotted, Bold Line Concealed Fault

Location Map

This sheet shown in red



Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

DeWitt, Ed, Langenheim, Victoria, Force, Eric, Vance, R.K., Lindberg, P.A., and Driscoll, R.L., 2008, Geologic map of the Prescott National Forest and the headwaters of the Verde River, Yavapai and Coconino Counties, Arizona: U.S. Geological Survey Scientific Investigations Map 2996, scale 1:100,000, 100-p. pamphlet.

House, P.K., 1994, Surficial geology of the southern Verde Valley, Yavapai County, Arizona; Middle Verde, Camp Verde, and Horner Mountain [Horner Mtn.] quadrangles [7.5 min]: Arizona Geological Survey Open-File Report 94-23, 20 p., 3 sheets, scale 1:24,000.

Pearthree, P.A., 1993, Geologic and geomorphic setting of the Verde River from Sullivan Lake to Horseshoe Reservoir: Arizona Geological Survey Open-File Report 93-04, 25 p., 5 sheets, scale 1:24,000.

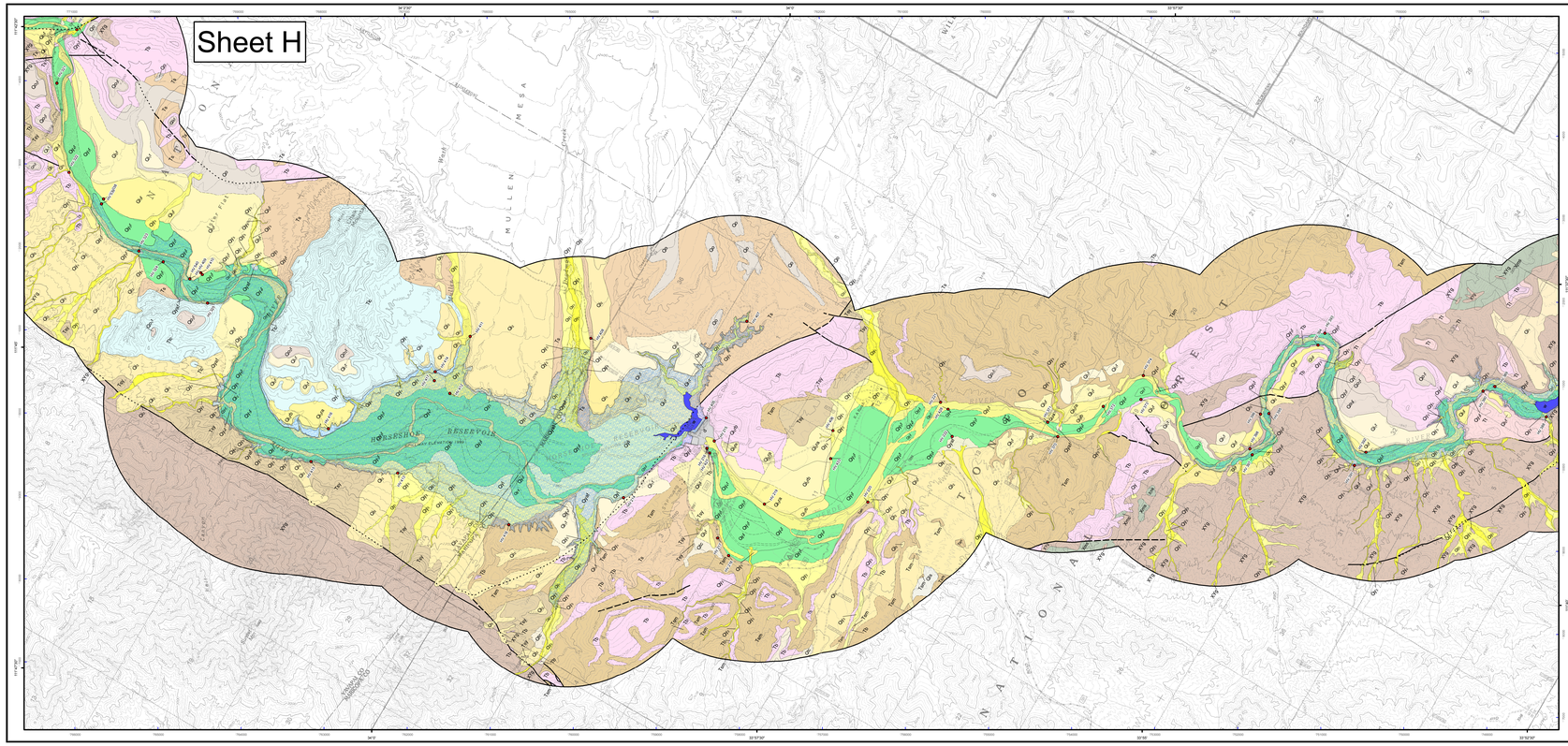
1 0.5 0 1 Miles

1 0.5 0 1 Kilometers

0 1000 2000 3000 4000 5000 Feet

1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov



Map Unit Descriptions

Other Units

Water - Underlying geology obscured by standing water (Pecks Lake, Horseshoe and Bartlett Reservoirs)

Submerged - underlying unit submerged due to seasonal inundation in Bartlett and Horseshoe Reservoirs

Qyl **Modern lake and marsh sediments** - Underlying geology obscured by lake sediments (Pecks Lake, Horseshoe and Bartlett Reservoirs)

Qtc **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes

River Alluvium

Qyr' **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels

Qyrf **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels

Qyrt **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain

Qyrf **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain

Qyr1 **Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain

Qlr **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qlr **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits

Qlr **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Qlr2 **Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level

Qlr2 **Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level

Qlr2 **Early Pleistocene river terrace deposits, older** - Very high, old Verde River terrace deposits, upper level

Piedmont Alluvium

Qy' **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles

Qy1 **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits

Qyaf **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns

Qy1 **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits

Qy2 **Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns

Qls **Landslide Deposits** - Unsorted sediment resulting from mass down-slope movement (Wrucke and Conway, 1987)

Qlf **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development

Qlf **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development

Qf **Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development

Qp **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

Cenozoic Basin Deposits

Tsy **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits

Tlc **Limestone of Chalk; Mountain (Pliocene or Miocene)** - White to light-gray, finely laminated, porous limestone and minor medium-gray to light-brown, thin-bedded chert (Wrucke and Conway, 1987)

Toc **Older conglomerate** - Weakly consolidated conglomerate and sandstone (Wrucke and Conway, 1987)

Tsu **Tertiary deposits, undivided** - Moderately to strongly consolidated conglomerate, undivided

Bedrock Units

Tb **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks

Tt **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows

Dm **Martin Formation** - Devonian Martin Formation

Ct **Tapeats Sandstone** - Tapeats sandstone

XYg **Proterozoic granite, undivided** - Fine to coarse grained granitoids, quartz monzonite, porphry, rhyolite ash flows, mylonite, and granophyre

Xms **Proterozoic sedimentary, metasedimentary, and metavolcanic rocks, undivided** - Quartzite, sandstone, and metavolcanic rocks

1 0.5 0 1 Miles

1 0.5 0 1 Kilometers

0 1000 2000 3000 4000 5000 Feet

1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov

Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

Ferguson, C.A., Gilbert, W.G., Skotnicki, S.J., Wrucke, C.T., and Conway, C.M., 1999, Geologic map of the Horseshoe Dam 7.5' quadrangle, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 99-15, 11 p., 1 sheet, scale 1:24,000.

Skotnicki, S.J., 1996, Geologic map of the Bartlett Dam quadrangle and southern part of the Horseshoe Dam quadrangle, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 96-22, 21 p., 1 sheet, scale 1:24,000.

Wrucke, C.T., and Conway, C.M., 1987 Geologic map of the Mazatzal Wilderness and contiguous Roadless Area, Gila, Maricopa, and Yavapai Counties, Arizona: U.S. Geological Survey Open-File Report 87-0664, 22 p., 1 sheet, scale 1:48,000.

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A., and House, P.K.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2H
version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps.
North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line
Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line
Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

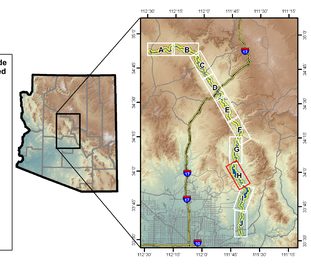
Thin, Dotted Line
Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (paved vs. paved, original topography maintained/obliterated etc.)

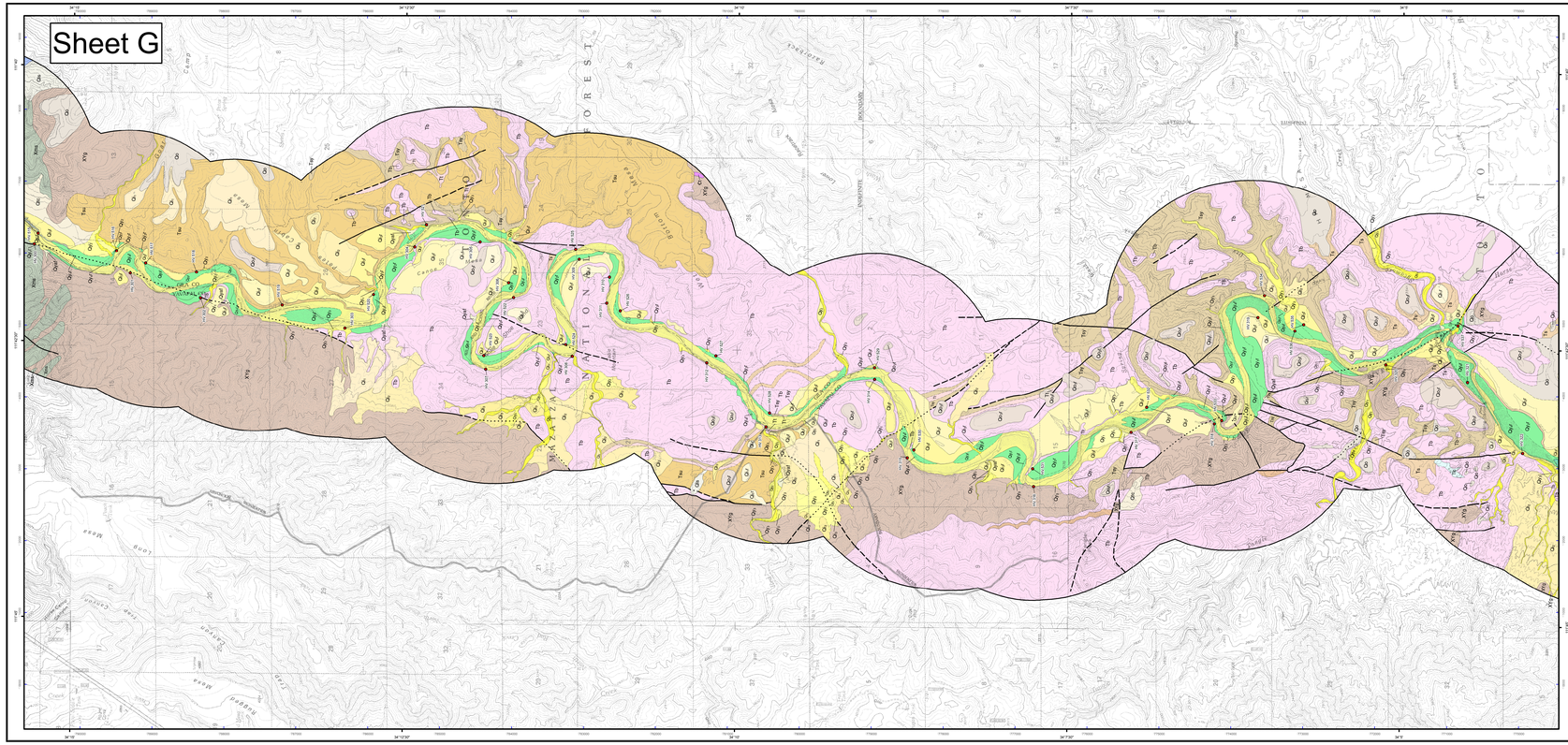
Other Geologic Lines

Thin, Solid Line Accurate contact
Thin, Dashed Line Approximate contact
Thin, Dotted Line Concealed contact
Hashed Line Gradational Contact
Solid, Bold Line Accurate Fault
Dashed, Bold Line Approximate Fault
Dotted, Bold Line Concealed Fault

Location Map

This sheet shown in red





Map Unit Descriptions

Other Units

Qtc **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes

River Alluvium

Qyr' **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels

Qyrf **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels

Qyrt **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain

Qyrf **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain

Qyr1 **Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain

Qlr **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qlr **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits

Qlr **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Qlr2 **Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level

Qlr2 **Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level

Qlr2 **Early Pleistocene river terrace deposits, older** - Very high, old Verde River terrace deposits, upper level

Piedmont Alluvium

Qy' **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles

Qy1 **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits

Qyaf **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns

Qy1 **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits

Qy2 **Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns

Qls **Landslide Deposits** - Unsorted sediment resulting from mass down-slope movement (Wrucke and Conway, 1987)

Qlf **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development

Qlf **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development

Qf **Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development

Qp **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

Cenozoic Basin Deposits

Tsy **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits

Tlc **Limestone of Chalk; Mountain (Pliocene or Miocene)** - White to light-gray, finely laminated, porous limestone and minor medium-gray to light-brown, thin-bedded chert (Wrucke and Conway, 1987)

Toc **Older conglomerate** - Weakly consolidated conglomerate and sandstone (Wrucke and Conway, 1987)

Tsu **Tertiary deposits, undivided** - Moderately to strongly consolidated conglomerate, undivided

Bedrock Units

Tb **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks

Tt **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows

Dm **Martin Formation** - Devonian Martin Formation

Ct **Tapeats Sandstone** - Tapeats sandstone

XYg **Proterozoic granite, undivided** - Fine to coarse grained granitoids, quartz monzonite, porphry, rhyolite ash flows, mylonite, and granophyre

Xms **Proterozoic sedimentary, metasedimentary, and metavolcanic rocks, undivided** - Quartzite, sandstone, and metavolcanic rocks

1 0.5 0 1 Miles

1 0.5 0 1 Kilometers

0 1000 2000 3000 4000 5000 Feet

1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov

Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

Pearthree, P.A., 1993, Geologic and geomorphic setting of the Verde River from Sullivan Lake to Horseshoe Reservoir: Arizona Geological Survey Open-File Report 93-04, 25 p., 5 sheets, scale 1:24,000.

Wrucke, C.T., and Conway, C.M., 1987 Geologic map of the Mazatzal Wilderness and contiguous Roadless Area, Gila, Maricopa, and Yavapai Counties, Arizona: U.S. Geological Survey Open-File Report 87-0664, 22 p., 1 sheet, scale 1:48,000.

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A., and House, P.K.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2G
version 1.1

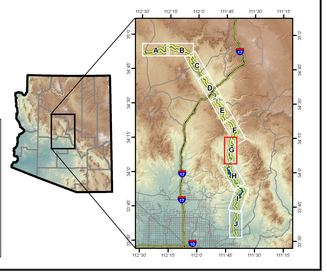
Funding for this project was provided by the Arizona Department of Water Resources

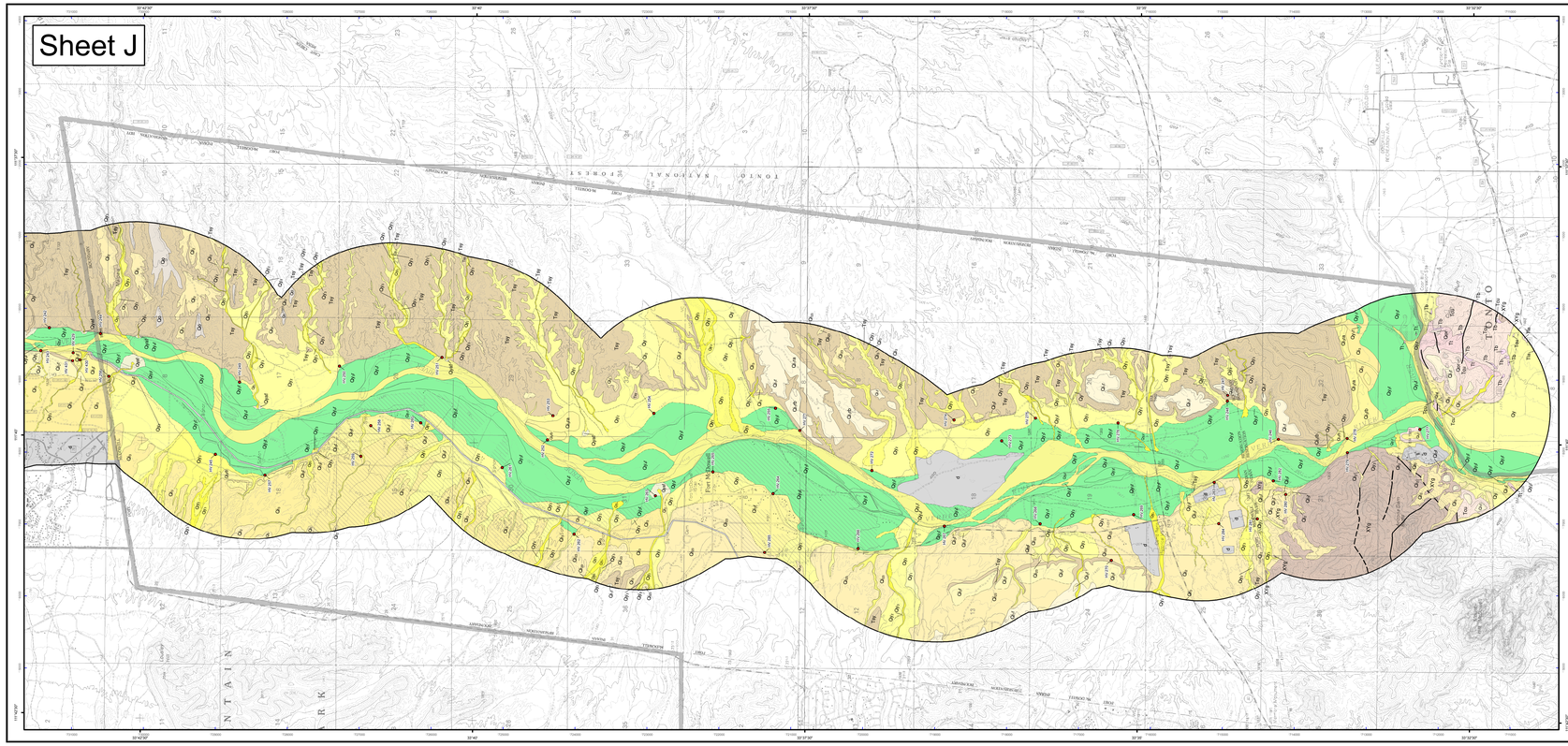
USGS 24k quadrangle series topographic base maps.
North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium
Thin, Solid Line
Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.
Thin, Dashed Line
Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.
Thin, Dotted Line
Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (paved vs. paved, original topography maintained/obliterated etc.)

Other Geologic Lines
Thin, Solid Line Accurate contact
Thin, Dashed Line Approximate contact
Thin, Dotted Line Concealed contact
Hashed Line Gradational Contact
Solid, Bold Line Accurate Fault
Dashed, Bold Line Approximate Fault
Dotted, Bold Line Concealed Fault

Location Map
This sheet shown in red





Map Unit Descriptions

Other Units

d — **Plowed areas** - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground

Disturbed ground - heavily disturbed ground due to agriculture, extensive excavation, mining activity, or construction of earth dams

River Alluvium

Qyr — **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels

Qyr — **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels

Qyr — **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain

Qyr — **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain

Qyr — **Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain

Qyrb — **Late Pleistocene river terrace deposits, younger member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qora — **Late Pleistocene river terrace deposits, older member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qor — **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qor — **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits

Qorb — **Middle Pleistocene river terrace deposits, younger member** - higher-standing, gravelly, sandy river terrace deposits

Qora — **Middle Pleistocene river terrace deposits, older member** - higher-standing, gravelly, sandy river terrace deposits

Qor — **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Qor — **Early Pleistocene river terrace deposits, undivided** - Well rounded indurated pebble to cobble river gravels

Piedmont Alluvium

Qy — **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles

Qy — **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits

Qyaf — **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns

Qy — **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits

Qy — **Older Holocene alluvium** - broad, low-relief, undulating fan deposits ehxibiting widespread, shallow braided drainage patterns

Qy — **Holocene alluvium** - Holocene alluvium, undivided

Qs — **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development

Qs3 — **Middle and late Pleistocene alluvium, undivided** - middle to late Pleistocene alluvium, undivided

Qs — **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development

Qs — **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

Cenozoic Basin Deposits

Tsy — **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits

Tcu — **Conglomerate, breccia, and sandstone undivided** - Middle Tertiary interbedded red-colored, matrix-supported breccia, and clast-supported conglomerate, sandstone, and minor siltstone and limestone (Skotnicki, 1995)

Bedrock units

Tb — **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks

Tt — **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows

Tia — **Tertiary intermediate volcanics, undivided** - Hornblende and biotite latites, rhyodacite, dacite, andesite, and associated volcanic and sedimentary rocks

XYg — **Proterozoic granite, undivided** - Fine to coarse grained granitoids, quartz monzonite, porphyry, rhyolite ash flows, mylonite, and granophyre

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA

by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A. and House, P.K.

July 2010
Arizona Geological Survey
Digital Map DM-RM-2J
version 1.1

Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

Boundaries of Holocene River Alluvium

Thin, Solid Line
Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

Thin, Dashed Line
Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

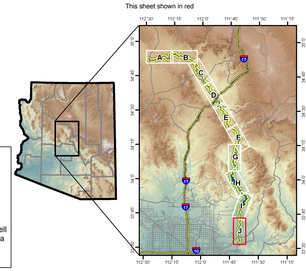
Thin, Dotted Line
Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (paved vs. paved, original topography maintained/obliterated etc.)

Other Geologic Lines

Thin, Solid Line — Accurate contact
Thin, Dashed Line — Approximate contact
Thin, Dotted Line — Concealed contact
Hashed Line — Gradational Contact
Solid, Bold Line — Accurate Fault
Dashed, Bold Line — Approximate Fault
Dotted, Bold Line — Concealed Fault

Location Map

This sheet shown in red



Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

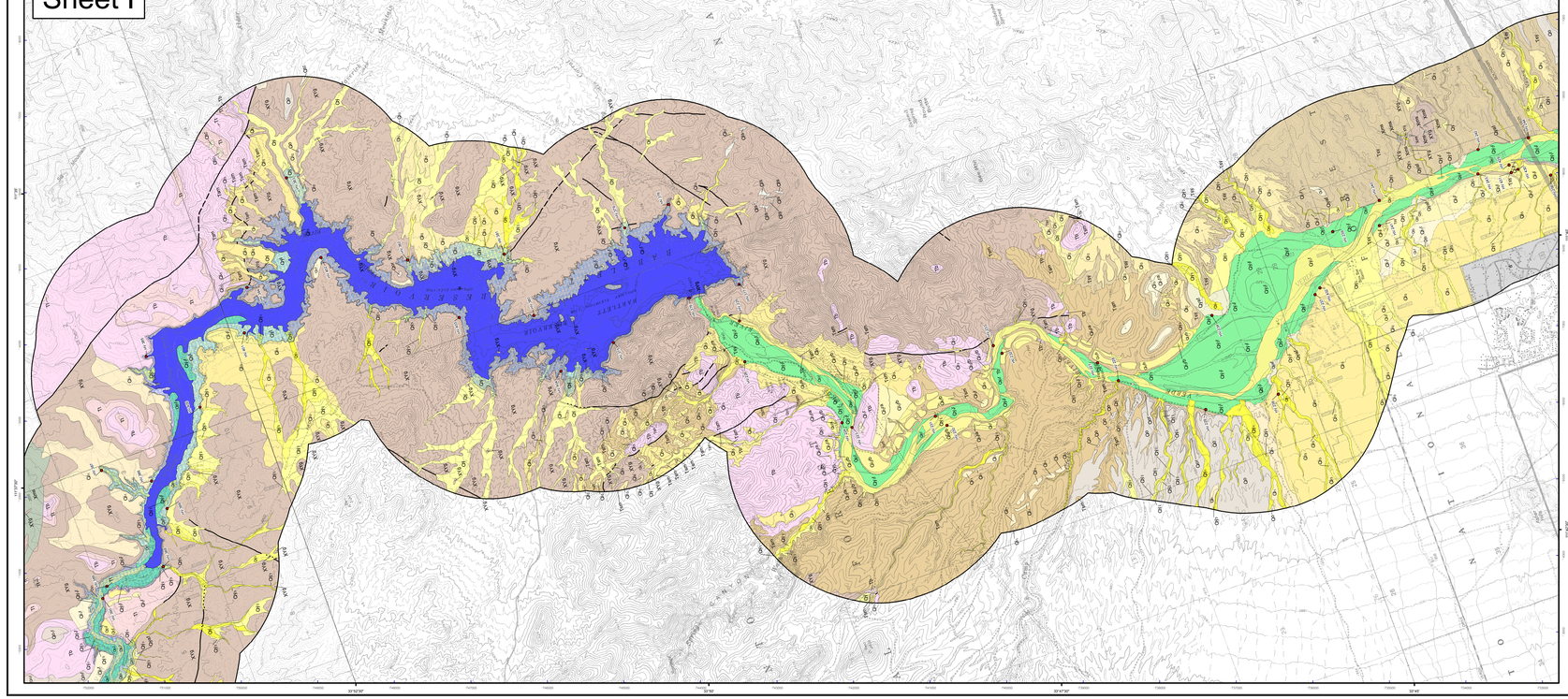
Skotnicki, S.J., 1995, Geologic map of the Fountain Hills / Mount McDowell area, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 95-16, 28 p., 1 sheet, scale 1:24,000.

Skotnicki, S.J., 1996a, Geologic map of portions of the Fort McDowell and McDowell Peak quadrangles, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 96-11, 20 p., 1 sheet, scale 1:24,000.

Skotnicki, S.J., 1996b, Geologic map of portions of the Fort McDowell and McDowell Peak quadrangles, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 96-11, 20 p., 1 sheet, scale 1:24,000.

1 0.5 0 1 Miles
1 0.5 0 1 Kilometers
0 1000 2000 3000 4000 5000 Feet
1:24,000 Scale

Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov



Map Unit Descriptions

Other Units

Water - Underlying geology obscured by standing water (Pecks Lake, Horseshoe and Bartlett Reservoirs)

Submerged - underlying unit submerged due to seasonal inundation in Bartlett and Horseshoe Reservoirs

Qyl — **Modern lake and marsh sediments** - Underlying geology obscured by lake sediments (Pecks Lake, Horseshoe and Bartlett Reservoirs)

d — **Disturbed ground** - heavily disturbed ground due to agriculture, extensive excavation, mining activity, or construction of earth dams

Plowed areas - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground

Qtc — **Quaternary hillslope talus and colluvium** - unconsolidated to weakly consolidated, very poorly sorted angular rock debris deposited at the base of bedrock slopes

River Alluvium

Qyr — **Active river channel deposits** - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels

Qyr — **Flood channel and low terrace deposits** - unconsolidated sand, gravel and silt deposits on bars, low terraces and flood channels

Qyr — **Historical river terrace deposits** - unconsolidated sand, gravel and silt deposits on low terraces inset below the abandoned early historical floodplain

Qyr — **Late Holocene to historical river terrace deposits** - silt, clay, sand and minor gravel deposits underlying the early historical floodplain

Qyr — **Late to early Holocene river terrace deposits** - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain

Qyrb — **Late Pleistocene river terrace deposits, younger member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qora — **Late Pleistocene river terrace deposits, older member** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qor — **Late Pleistocene river terrace deposits** - gravelly, sandy river terrace deposits up to 25 m above the active river channel

Qorb — **Middle to late Pleistocene river deposits, younger member** - high-standing, gravelly, sandy river terrace deposits

Qora — **Middle to late Pleistocene river deposits, older member** - high-standing, gravelly, sandy river terrace deposits

Qor — **Middle to late Pleistocene river terrace deposits** - high-standing, gravelly, sandy river terrace deposits

Qorb — **Middle Pleistocene river terrace deposits, younger member** - higher-standing, gravelly, sandy river terrace deposits

Qora — **Middle Pleistocene river terrace deposits, older member** - higher-standing, gravelly, sandy river terrace deposits

Qor — **Middle Pleistocene river terrace deposits** - higher-standing, gravelly, sandy river terrace deposits

Qour — **Early Pleistocene river terrace deposits, younger** - Very high, old Verde River terrace deposits, lower level

Qouo — **Early Pleistocene river terrace deposits, middle** - Very high old Verde River terrace deposits, middle level

Qor — **Early Pleistocene river terrace deposits, undivided** - Well rounded indurated pebble to cobble river gravels

Piedmont Alluvium

Qy — **Modern stream channel deposits** - active channel deposits composed of very poorly-sorted sand, pebbles, and cobbles with some boulders to moderately-sorted sand and pebbles

Qy — **Latest Holocene alluvium** - unconsolidated, very poorly sorted silty to cobbly low terrace and overflow channel deposits

Qyaf — **Late Holocene alluvium, active fan deposits** - active portions of young fan deposits exhibiting distributary drainage patterns

Qy — **Late Holocene alluvium** - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits onlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits

Qy — **Holocene alluvium** - Holocene alluvium, undivided

Qls — **Landslide Deposits** - Unsorted sediment resulting from mass down-slope movement (Wrucke and Conway, 1987)

Qs — **Late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with moderate soil development

Qs — **Middle to late Pleistocene alluvial fan and terrace deposits** - weakly consolidated sandy gravel deposits with strong soil development

Qs — **Early to middle Pleistocene alluvial fan and terrace deposits** - high, moderately consolidated gravelly deposits with strong soil development

Qs — **Early Pleistocene alluvial fan deposits, undivided** - High, moderately consolidated gravelly deposits with strong soil development

Cenozoic Basin Deposits

Tsy — **Late Miocene to Pliocene deposits** - moderately to strongly indurated conglomerate and sandstone basin fill deposits

Tsm — **Oligo-Miocene deposits** - Moderately to strongly consolidated conglomerate and sandstone deposited in basins during and after late Tertiary faulting

Bedrock Units

Tb — **Tertiary basalt, undivided** - Tertiary basalt flows, associated cinder cones and pyroclastic rocks, intrusive basalts, and mafic rocks

Tt — **Tertiary tuff, undivided** - Felsic ash flow tuff, pumice, and siliceous flows

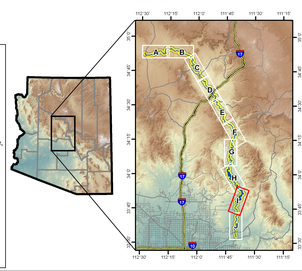
XYg — **Proterozoic granite, undivided** - Fine to coarse grained granitoids, quartz monzonite, porphyry, rhyolite ash flows, mylonite, and granophyre

Xms — **Proterozoic sedimentary, metasedimentary, and metavolcanic rocks, undivided** - Quartzite, sandstone, and metavolcanic rocks

SURFICIAL GEOLOGIC MAP OF THE VERDE RIVER CORRIDOR, CENTRAL ARIZONA
by
Cook, J.P., Bigio, E.R., Youberg, A., Pearthree, P.A. and House, P.K.
July 2010
Arizona Geological Survey
Digital Map DM-RM-2I
version 1.1
Funding for this project was provided by the Arizona Department of Water Resources
USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.
Boundaries of Holocene River Alluvium
Thin, Solid Line — Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, abruptly incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.
Thin, Dashed Line — Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan onlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.
Thin, Dotted Line — Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (paved vs. paved, original topography maintained/obliterated etc.)
Other Geologic Lines
Thin, Solid Line — Accurate contact
Thin, Dashed Line — Approximate contact
Thin, Dotted Line — Concealed contact
Hashed Line — Gradational Contact
Solid, Bold Line — Accurate Fault
Dashed, Bold Line — Approximate Fault
Dotted, Bold Line — Concealed Fault

Location Map

This sheet shown in red



Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

Skotnicki, S.J., 1996a, Geologic map of portions of the Fort McDowell and McDowell Peak quadrangles, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 96-11, 20 p., 1 sheet, scale 1:24,000.

Skotnicki, S.J., 1996, Geologic map of the Bartlett Dam quadrangle and southern part of the Horseshoe Dam quadrangle, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 96-22, 21 p., 1 sheet, scale 1:24,000.

Skotnicki, S.J., and Leighty, R.S., 1998, Geologic map of the Maverick Mountain 7.5' quadrangle, Maricopa County, Arizona: Arizona Geological Survey Open-File Report 98-14, 18 p., 1 sheet, scale 1:24,000.

Wrucke, C.T., and Conway, C.M., 1987 Geologic map of the Mazatzal Wilderness and contiguous Roadless Area, Gila, Maricopa, and Yavapai Counties, Arizona: U.S. Geological Survey Open-File Report 87-0684, 22 p., 1 sheet, scale 1:48,000.

1 0.5 0 1 Miles
1 0.5 0 1 Kilometers
0 1000 2000 3000 4000 5000 Feet
1:24,000 Scale
Arizona Geological Survey
416 W. Congress Street, Suite 100
Tucson, AZ 85701
(520) 770-3500
www.azgs.az.gov