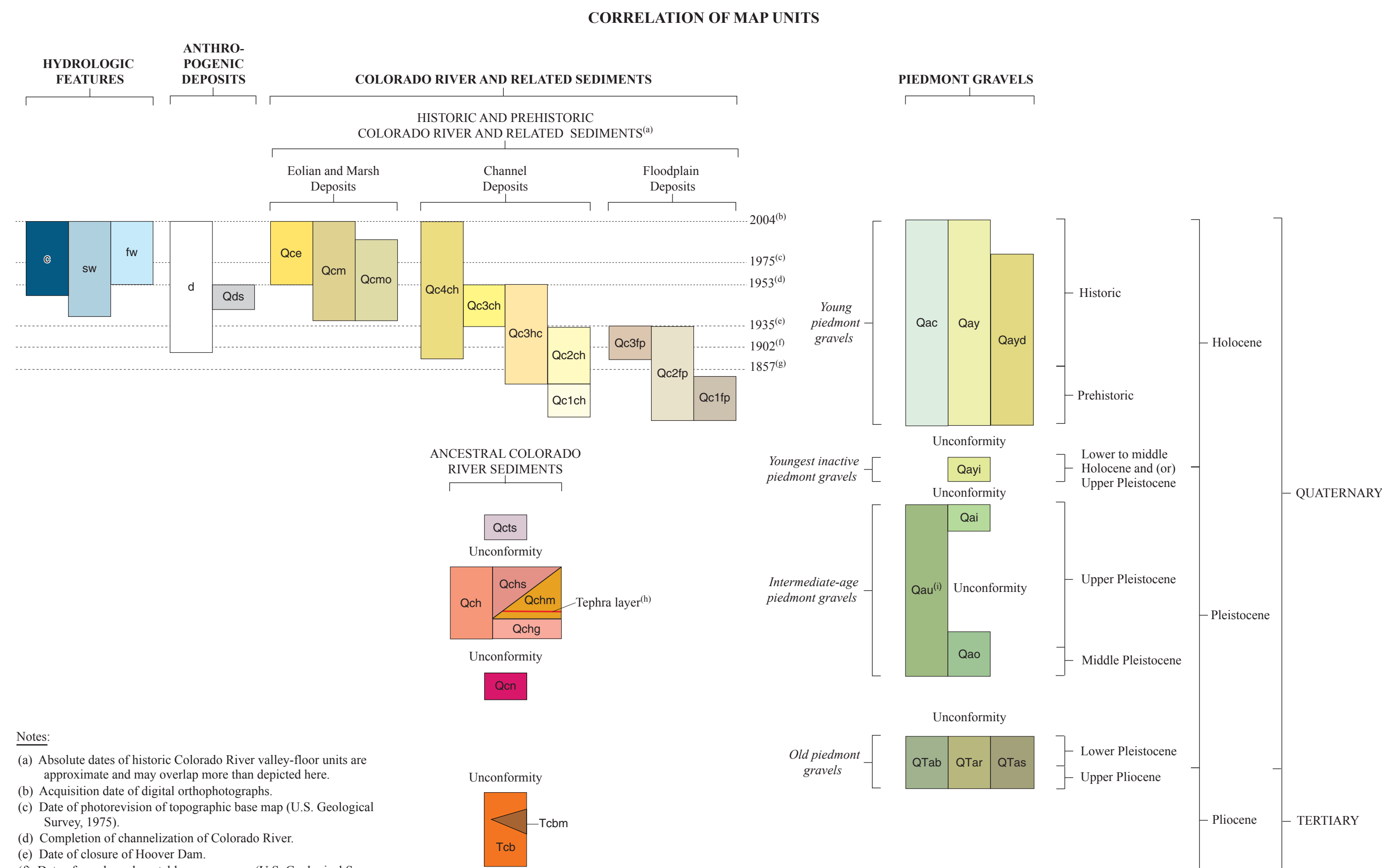
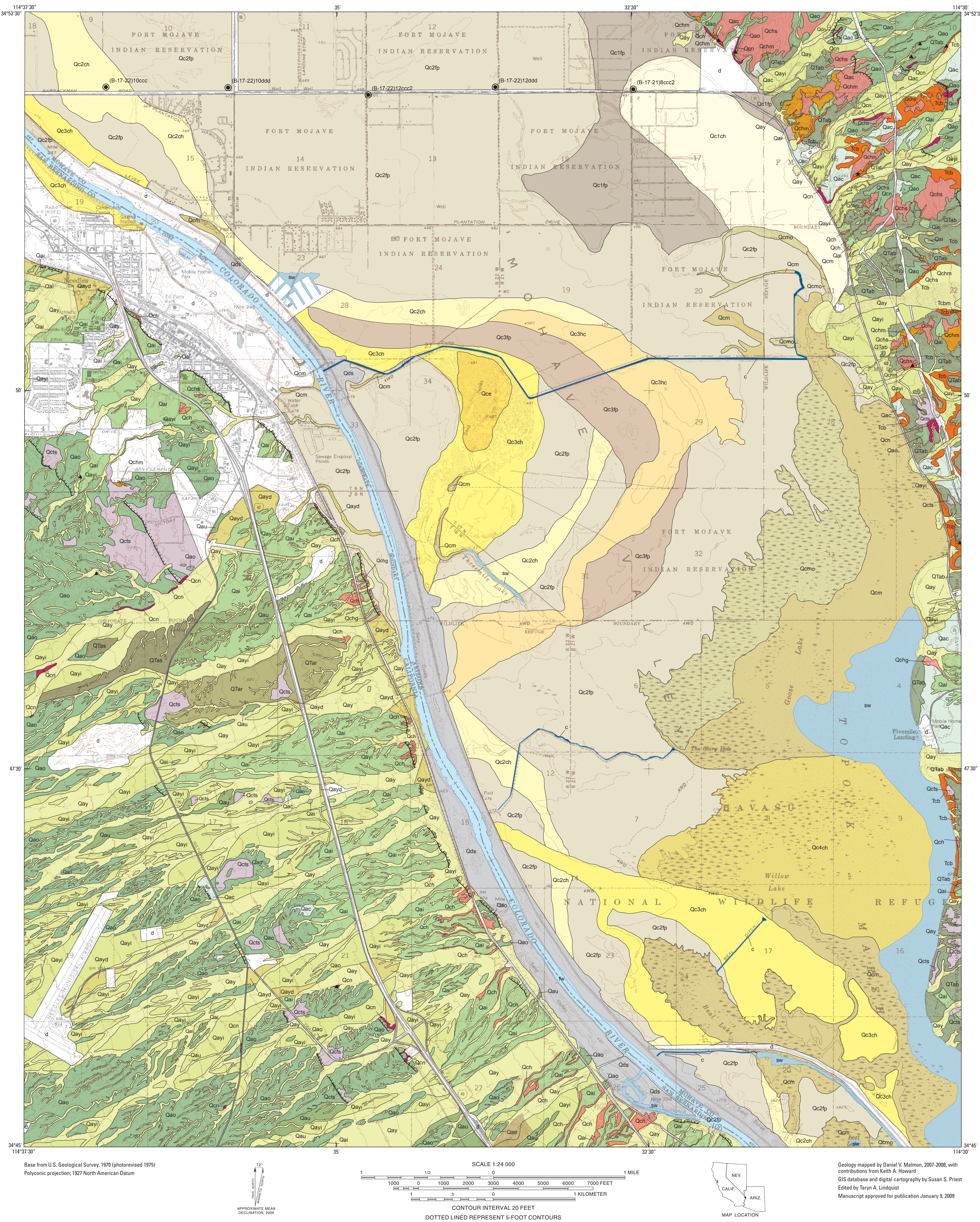




Notes:

- (a) Absolute dates of historic Colorado River valley-floor units are approximate and may overlap more than depicted here.
- (b) Acquisition date of digital orthophotographs.
- (c) Date of photorevision of topographic base map (U.S. Geological Survey, 1975).
- (d) Completion of channelization of Colorado River.
- (e) Date of closure of Hoover Dam.
- (f) Date of pre-dam plane-table survey maps (U.S. Geological Survey, 1927).
- (g) Date of first Colorado River map (Ives, 1961).
- (h) Tephra layer mapped near local base of the mud facies of the Chemehuevi Formation; location indicated on map by black star.
- (i) Unit Qau mapped where impractical to differentiate between units Qai and Qao; stratigraphic unit does not span entire time indicated by box.

LIST OF MAP UNITS

[For this map, “historic” refers to time period after 1857, date of earliest available map of Colorado River in study area (Ives, 1861), “prehistoric” refers to late Holocene time, exclusive of “historic” period; “present” refers to time after 2008). Absolute dates of units on historically active valley floor are approximate and may overlap more than depicted here. Some unit exposures on map are too small to distinguish color for unit identification; these units are labeled on map where possible, and all units are attributed in geodatabase. See Description of Map Units (in pamphlet) for complete unit descriptions.]

HYDROLOGIC FEATURES

- | | |
|---|---------------------------------|
|  | Canals (historic) |
| sw | Standing water (historic) |
| fw | Flowing water (1953 to present) |

ANTHROPOGENIC DEPOSITS

- | | |
|-----|-----------------------------|
| d | Disturbed ground (historic) |
| Qds | Dredged sand (1949-1953) |

COLORADO RIVER AND RELATED SEDIMENTS

HISTORIC AND PREHISTORIC COLORADO RIVER AND RELATED SEDIMENTS

- | Eolian and Marsh Deposits | |
|---------------------------|--|
| Qoa | Historic sand dunes (1953 to present) |
| Qom | Marsh deposits (1938 to present) |
| Qomo | Old marsh deposits (1938-1990s) |
| Channel Deposits | |
| Qc4ch | Partially submerged historic channel, deltaic, and marsh deposits (historic) |
| Qc3ch | Post-Hoover Dam channel deposits (1935-1953) |
| Qc3hc | High-flow channel deposits (prehistoric through 1953) |
| Qc2ch | Pre-Hoover Dam channel deposits (prehistoric through 1935) |
| Qc1ch | Prehistoric channel deposits (prehistoric) |
| Floodplain Deposits | |
| Qc3fp | Proximal-floodplain deposits (historic through 1935) |
| Qc2fp | Pre-Hoover Dam floodplain deposits (prehistoric through 1935) |
| Qc1fp | Prehistoric floodplain deposits (prehistoric) |

ANCESTRAL COLORADO RIVER SEDIMENTS

- | | |
|------------------|---|
| Qcts | Terrace sand and gravel (Upper Pleistocene) |
| Qch | Chemehuevi Formation of Longwell (1963), undivided (Upper Pleistocene) |
| Qchs | Sand facies |
| Qchm | Mud facies |
| Qchg | Gravel facies |
| Qor | Sand and mud beds near Needles (Middle? Pleistocene) |
| Tcb | Alluvium of Bullhead City of House and others (2005b) (Pliocene) |
| Tcbm | Mud facies |
| PIEDMONT GRAVELS | |
| Qac | Colluvium, undivided (prehistoric to present) |
| Qay | Young piedmont gravels (prehistoric to present) |
| Qayd | Deposits in diked, historically active washes (prehistoric to historic) |
| Qay1 | Youngest inactive piedmont gravels (lower to middle Holocene and (or) Upper Pleistocene) |
| Qai | Intermediate-age piedmont gravels, undivided (Pleistocene) |
| Qai | Younger intermediate-age piedmont gravels (Upper Pleistocene) |
| Qao | Older intermediate-age piedmont gravels (Upper and (or) Middle? Pleistocene) |
| QTab | Old piedmont gravels (Lower Pleistocene and (or) upper Pliocene)
Basalt-boulder conglomerate |
| QTar | Rhyolite-boulder conglomerate |
| QTas | Boulder conglomerate from Sacramento Mountains |

Approximate contact

 Erosional scarp—Hachures point downscarp

⁵ **Inclined bedding**—Showing dip

★ **Location of tephra layer**—Tephra is found near base of the mud facies (unit Qchm) of the Chemehuevi Formation. See figure 6 (in pamphlet) for photograph showing stratigraphic context of tephra layer

🕒 (B-17-22)12ddd

🔍 **Auger hole locality**—See figure 9 (in pamphlet) for section diagrams

▲ Paleosol locality

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