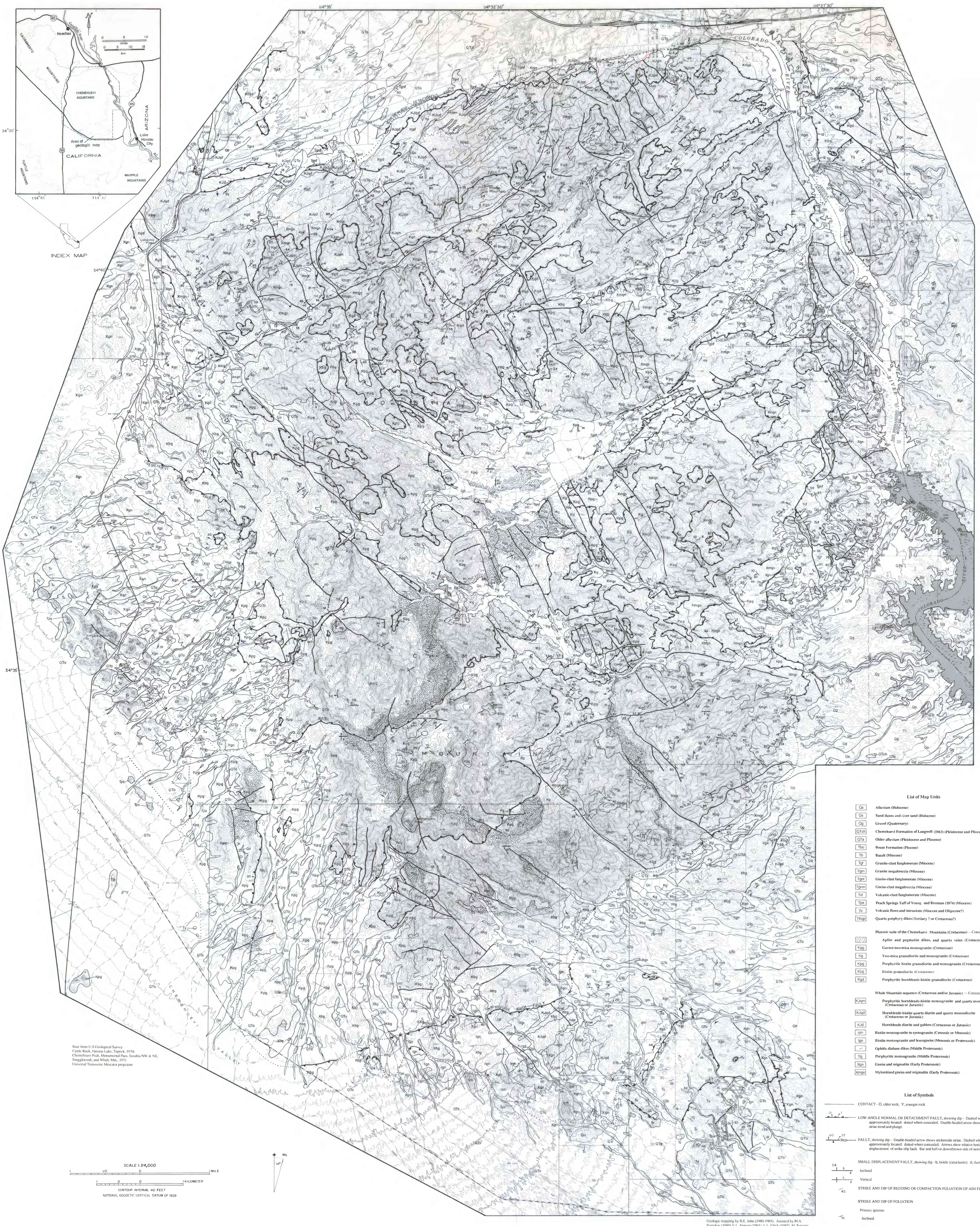
OPEN-FILE REPORT
87-666



Base from U.S.Geological Survey
Castle Rock, Havasu Lake, Topock, 1970;
Chemehuevi Peak, Monumental Pass, Savahia NW & NE,
Stuggletooth, and Whale Mtn., 1971
Universal Transverse Mercator projection

Geologic mapping by B.E. John (1980-1985). Assisted by M.A. Pernokas (1980),V.L. Hansen (1981), L.L. Glick (1982), M. Squyres (1983), and S.W. Garwin, (1984).

List of Map Units

Qa	Alluvium (Holocene)
Qs	Sand dunes and river sand (Holocene)
Qg	Gravel (Quaternary)
QTch	Chemehuevi Formation of Longwell (1963) (Pleistocene and Pliocene)
QTa	Older alluvium (Pleistocene and Pliocene)
Tbo	Bouse Formation (Pliocene)
Tb	Basalt (Miocene)
Tgf	Granite-clast fanglomerate (Miocene)
Tgm	Granite megabreccia (Miocene)
Tgnf	Gneiss-clast fanglomerate (Miocene)
Tgnm	Gneiss-clast megabreccia (Miocene)
Tvf	Volcanic-clast fanglomerate (Miocene)
Tps	Peach Springs Tuff of Young and Brennan (1974) (Miocene)
Tv	Volcanic flows and intrusions (Miocene and Oligocene?)
TKqp	Quartz porphyry dikes (Tertiary ? or Cretaceous?)
	Plutonic suite of the Chemehuevi Mountains (Cretaceous) -- Consists of:
	Aplite and pegmatite dikes, and quartz veins (Cretaceous)
Kgg	Garnet-two-mica monzogranite (Cretaceous)
Kg	Two-mica granodiorite and monzogranite (Cretaceous)
Kpg	Porphyritic biotite granodiorite and monzogranite (Cretaceous)
Kbg	Biotite granodiorite (Cretaceous)
Kgd	Porphyritic hornblende-biotite granodiorite (Cretaceous)
	Whale Mountain sequence (Cretaceous and/or Jurassic) -- Consists of:
KJqm	Porphyritic hornblende-biotite monzogranite and quartz monzonite (Cretaceous or Jurassic)
KJqd	Hornblende-biotite quartz diorite and quartz monzodiorite (Cretaceous or Jurassic)
KJd	Hornblende diorite and gabbro (Cretaceous or Jurassic)
qm	Biotite monzogranite to syenogranite (Cenozoic or Mesozoic)
Ign	Biotite monzogranite and leucogneiss (Mesozoic or Proterozoic)
	Ophitic diabase dikes (Middle Proterozoic)
Yg	Porphyritic monzogranite (Middle Proterozoic)
Xgn	Gneiss and migmatite (Early Proterozoic)
Xmgn	Mylonitized gneiss and migmatite (Early Proterozoic)

List of Symbols

CONTACT - O, older rock; Y, younger rock

LOW-ANGLE NORMAL OR DETACHMENT FAULT, showing dip - Dashed where approximately located: dotted where concealed. Double-headed arrow shows slickenside striae trend and plunge

FAULT, showing dip - Double-headed arrow shows stickenside striae. Dashed where approximately located: dotted where concealed. Arrows show relative horizontal displacement of strike-slip fault. Bar and ball on downthrown side of normal fault

SMALL DISPLACEMENT FAULT, showing dip - b, brittle (cataclasite): d, ductile (mylonite)

Inclined

Vertical

STRIKE AND DIP OF BEDDING OR COMPACTION FOLIATION OF ASH FLOW TUFF

STRIKE AND DIP OF FOLIATION

Primary igneous

Inclined

Vertical

Absent

Metamorphic

Inclined, showing dip, trend and plunge of lineation within foliation plane

Vertical

Mylonitic

Inclined, showing dip, trend and plunge of mylonitic lineation within foliation plane

Vertical

Note: Primary foliation in igneous rocks measured on elongate mineral grains and mafic inclusions. Foliation in metamorphic rocks measured on minerals and mineral aggregates, schistosity and cleavage. Mylonitic foliation measured on planar orientation of mineral aggregates. Lineation measured on aligned elongate minerals.

see pamphlet for correlation, description of map units and discussion

This map is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

GEOLOGIC MAP OF THE CHEMEHUEVI MOUNTAINS AREA SAN BERNARDINO COUNTY, CALIFORNIA AND MOHAVE COUNTY, ARIZONA

by

Barbara E. John

1987