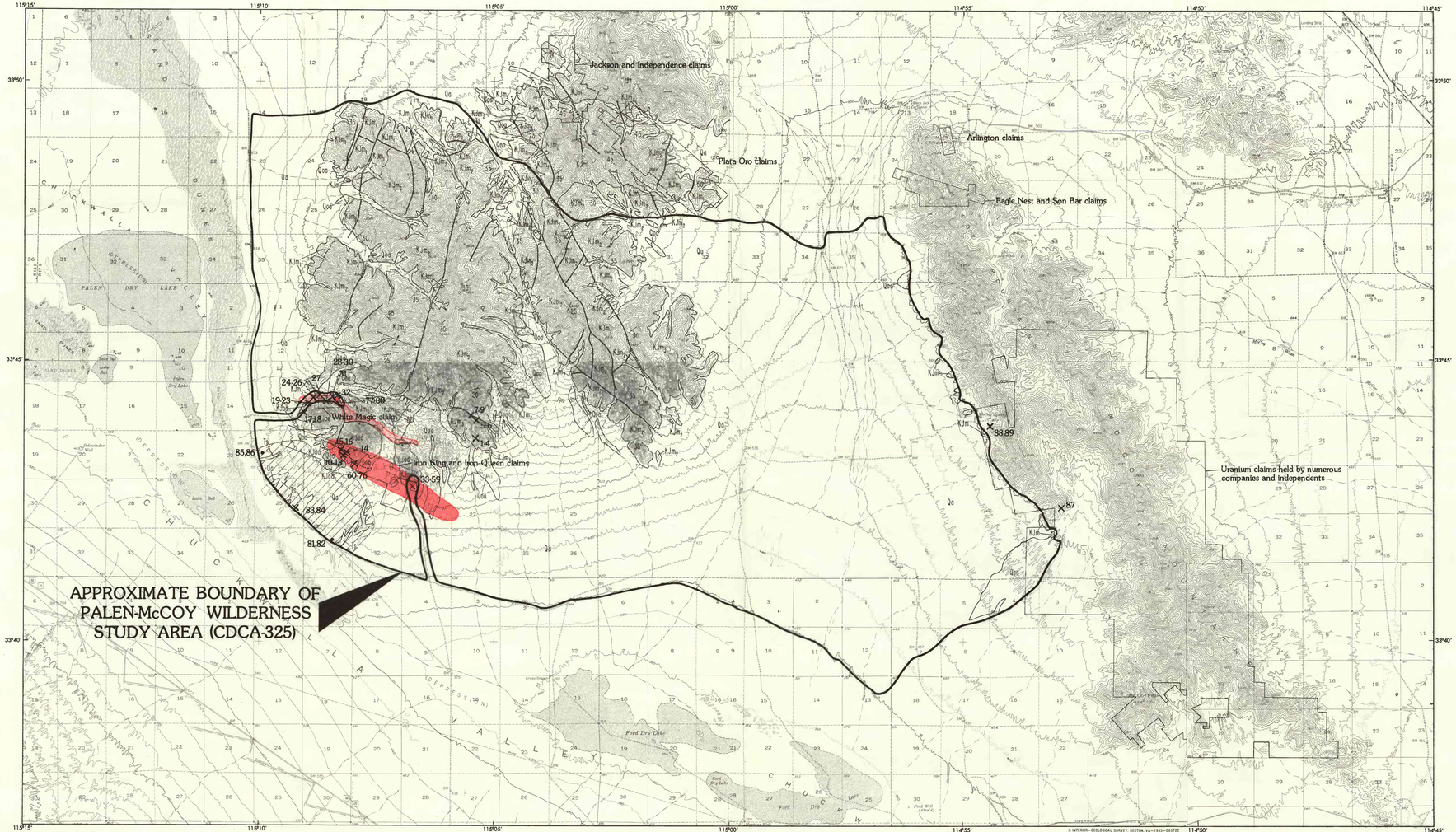
DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

BULLETIN 1710-A
PLATE I



Base from U.S. Geological Survey
McCoy Spring, Midland, Palen Mountains, Sidewinder Well, 1952

Geology mapped in 1983-84 by P. Stone and W. E. Yeend.
Assisted in 1983 by K. Brownfield and in 1984 by M. Kelly

SCALE 1:62500

CONTOUR INTERVALS 40 AND 80 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

APPROXIMATE MEAN DECLINATION, 1985

AREA OF MAP

EXPLANATION

AREA WITH HIGH MINERAL RESOURCE POTENTIAL

AREA WITH MODERATE MINERAL RESOURCE POTENTIAL

PROSPECT WITH IDENTIFIED MINERAL RESOURCES—Commodity indicated; numbers refer to sample localities discussed in text

33-59. Iron King and Iron Queen prospect (iron)

77-80. White Magic prospect (pyrophyllite)

LEVELS OF RESOURCE POTENTIAL

H High mineral resource potential
M Moderate mineral resource potential
L Low mineral resource potential
U Unknown mineral resource potential

LEVELS OF CERTAINTY

A Available data not adequate
B Data indicate geologic environment, and suggest level of resource potential
C Data indicate geologic environment, indicate resource potential, but do not establish activity of resource-forming processes
D Data define geologic environment and level of resource potential and indicate activity of resource-forming processes in all or part of area

LEVEL OF RESOURCE POTENTIAL	A	B	C	D
UNKNOWN POTENTIAL	U/A	H/B HIGH POTENTIAL	H/C HIGH POTENTIAL	H/D HIGH POTENTIAL
		M/B MODERATE POTENTIAL	M/C MODERATE POTENTIAL	M/D MODERATE POTENTIAL
		L/B LOW POTENTIAL	L/C LOW POTENTIAL	L/D LOW POTENTIAL
				N/D NO POTENTIAL

LEVEL OF CERTAINTY

Relationships between levels of resource potential and levels of certainty

COMMODITIES

Py pyrophyllite
Fe iron

CORRELATION OF MAP UNITS

Qa, Qoa		QUATERNARY
Ts		TERTIARY
Kjad		CRETACEOUS OR JURASSIC
Kjm	Kjm3, Kjm2, Kjm1	CRETACEOUS AND JURASSIC (?)
Jr		JURASSIC

DESCRIPTION OF MAP UNITS

Qa ALLUVIUM (QUATERNARY)—Unconsolidated to weakly consolidated gravel and sand. Includes Holocene stream-wash deposits, alluvial-fan deposits, colluvium, talus, and older alluvial-fan gravels of Pleistocene or Holocene age

Qoa OLDER ALLUVIUM (QUATERNARY)—Highly dissected, weakly consolidated alluvial-fan gravels of Pleistocene age exposed along mountain fronts. Characterized by well developed desert pavement, dark-brown desert varnish, and a 6-ft-thick calcrete horizon

Ts SEDIMENTARY ROCKS (TERTIARY)—Weakly consolidated arkosic sandstone exposed in the southwestern part of the map area. A thin clay layer is present in the upper part. Possibly correlative with the Pliocene Bouse Formation

Kjad ANDESITE-DIORITE COMPLEX (CRETACEOUS OR JURASSIC)—Dark-colored, porphyritic andesite and medium-grained diorite containing abundant secondary chlorite and epidote

Kjm MCCOY MOUNTAINS FORMATION OF MILLER (1944), UNDIVIDED (CRETACEOUS AND JURASSIC?)—In Palen Mountains, divided into:

Kjm3 Unit 3—Sericitic phyllite, metasandstone, metaconglomerate, tan marble, and rare metavolcanic rocks, all strongly foliated and folded. Thickness about 2,500 ft

Kjm2 Unit 2—Light-gray arkosic sandstone, conglomerate, and light-gray to greenish-gray, locally phyllitic mudstone. Thickness 13,000 to 15,000 ft

Kjm1 Unit 1—Dark-gray volcaniclastic sandstone, dark-gray mudstone, conglomerate, light-gray orthoquartzite, and tan marble. Thickness about 6,500 ft

Jr RHYODACITE (JURASSIC)—Light-gray, weakly metamorphosed volcanic or hypabyssal intrusive rocks containing small quartz and feldspar phenocrysts in a microgranular groundmass

APPROXIMATE AREA OF CLAY OUTCROP IN UNMAPPED EXPOSURES OF TERTIARY SANDSTONE (UNIT Ts)

CONTACT

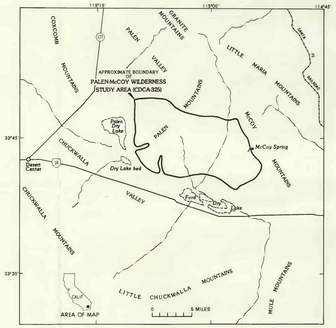
FAULT—Showing direction of dip; dotted where concealed

ANTICLINE—Showing direction of plunge

STRIKE AND DIP OF INCLINED BEDDING

PROSPECT WITHOUT IDENTIFIED MINERAL RESOURCES—Numbers refer to sample localities discussed in text

81-82 SAMPLE LOCALITY DISCUSSED IN TEXT



INDEX MAP

MINERAL RESOURCE POTENTIAL MAP OF THE PALEN-McCOY WILDERNESS STUDY AREA, RIVERSIDE COUNTY, CALIFORNIA