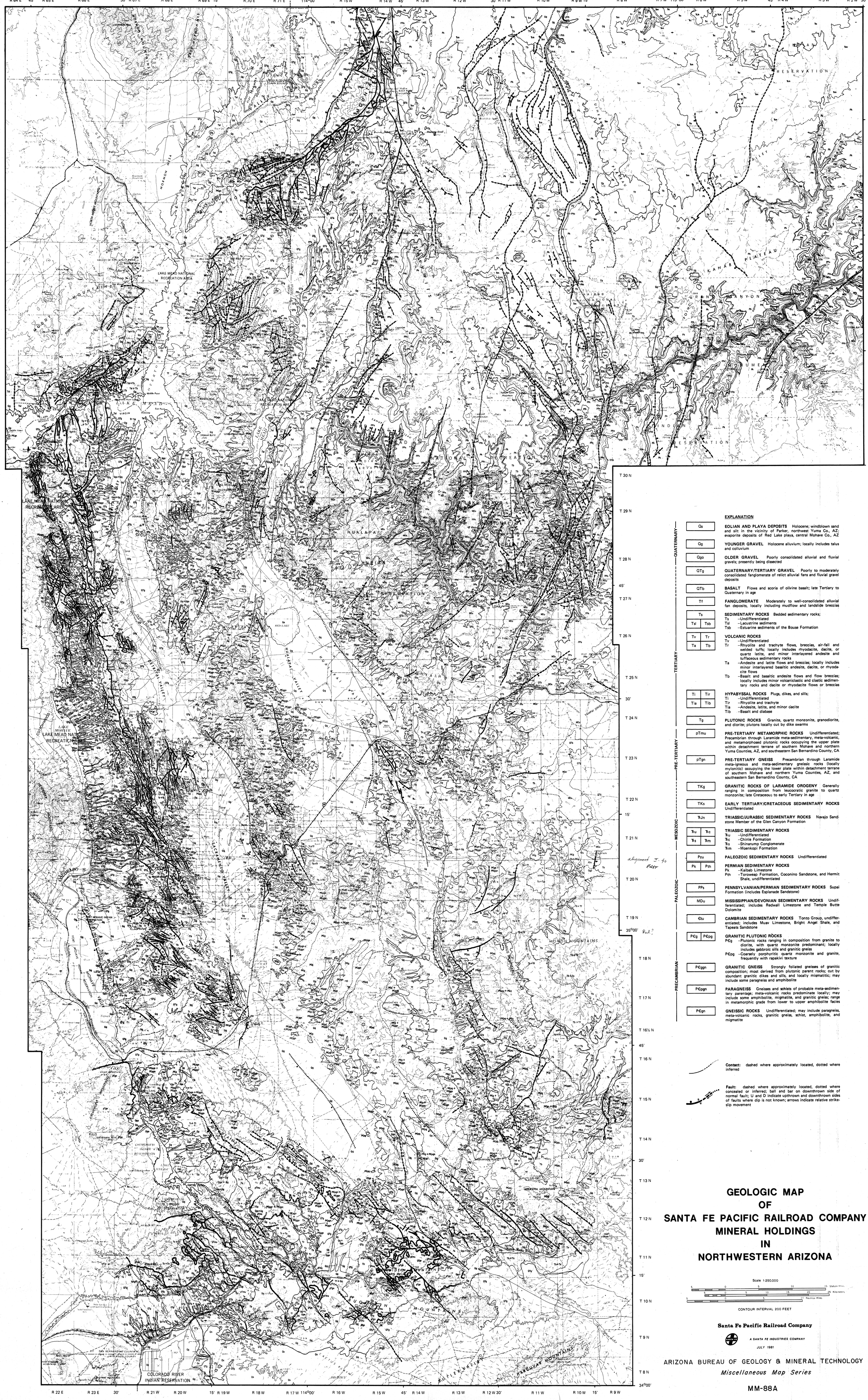
MM-88-A



EXPLANATION

QUATERNARY

Qs	**EOLIAN AND PLAYA DEPOSITS** Holocene; windblown sand and silt in the vicinity of Parker, northwest Yuma Co., AZ; evaporite deposits of Red Lake playa, central Mohave Co., AZ
Qg	**YOUNGER GRAVEL** Holocene alluvium; locally includes talus and colluvium
Qgo	**OLDER GRAVEL** Poorly consolidated alluvial and fluvial gravels; presently being dissected
QTg	**QUATERNARY/TERTIARY GRAVEL** Poorly to moderately consolidated fanglomerate of relict alluvial fans and fluvial gravel deposits
QTb	**BASALT** Flows and scoria of olivine basalt; late Tertiary to Quaternary in age
Tf	**FANGLOMERATE** Moderately to well-consolidated alluvial fan deposits, locally including mudflow and landslide breccias

TERTIARY

Ts; Tsl, Tsb	**SEDIMENTARY ROCKS** Bedded sedimentary rocks; Ts --Undifferentiated Tsl --Lacustrine sediments Tsb --Estuarine sediments of the Bouse Formation
Tv, Tr; Ta, Tb	**VOLCANIC ROCKS** Tv --Undifferentiated Tr --Rhyolite and trachyte flows, breccias, air-fall and welded tuffs; locally includes rhyodacite, dacite, or quartz latite, and minor interlayered andesite and tuffaceous sedimentary rocks Ta --Andesite and latite flows and breccias; locally includes minor interlayered basaltic andesite, dacite, or rhyodacite flows Tb --Basalt and basaltic andesite flows and flow breccias; locally includes minor volcaniclastic and clastic sedimentary rocks and dacite or rhyodacite flows or breccias
Ti, Tir; Tia, Tib	**HYPABYSSAL ROCKS** Plugs, dikes, and sills; Ti --Undifferentiated Tir --Rhyolite and trachyte Tia --Andesite, latite, and minor dacite Tib --Basalt and diabase
Tg	**PLUTONIC ROCKS** Granite, quartz monzonite, granodiorite, and diorite; plutons locally cut by dike swarms

PRE-TERTIARY

pTmu	**PRE-TERTIARY METAMORPHIC ROCKS** Undifferentiated; Precambrian through Laramide meta-sedimentary, meta-volcanic, and metamorphosed plutonic rocks occupying the upper plate within detachment terrane of southern Mohave and northern Yuma Counties, AZ, and southeastern San Bernardino County, CA
pTgn	**PRE-TERTIARY GNEISS** Precambrian through Laramide meta-igneous and meta-sedimentary gneissic rocks (locally mylonitic) occupying the lower plate within detachment terrane of southern Mohave and northern Yuma Counties, AZ, and southeastern San Bernardino County, CA

MESOZOIC

TKg	**GRANITIC ROCKS OF LARAMIDE OROGENY** Generally ranging in composition from leucocratic granite to quartz monzonite; late Cretaceous to early Tertiary in age
TKs	**EARLY TERTIARY/CRETACEOUS SEDIMENTARY ROCKS** Undifferentiated
ŦJn	**TRIASSIC/JURASSIC SEDIMENTARY ROCKS** Navajo Sandstone Member of the Glen Canyon Formation
Ŧu, Ŧc; Ŧs, Ŧm	**TRIASSIC SEDIMENTARY ROCKS** Ŧu --Undifferentiated Ŧc --Chinle Formation Ŧs --Shinarump Conglomerate Ŧm --Moenkopi Formation

PALEOZOIC

Pzu	**PALEOZOIC SEDIMENTARY ROCKS** Undifferentiated
Pk, Pth	**PERMIAN SEDIMENTARY ROCKS** Pk --Kaibab Limestone Pth --Toroweap Formation, Coconino Sandstone, and Hermit Shale, undifferentiated
PPs	**PENNSYLVANIAN/PERMIAN SEDIMENTARY ROCKS** Supai Formation (includes Esplanade Sandstone)
MDu	**MISSISSIPPIAN/DEVONIAN SEDIMENTARY ROCKS** Undifferentiated; includes Redwall Limestone and Temple Butte Dolomite
Ꞓtu	**CAMBRIAN SEDIMENTARY ROCKS** Tonto Group, undifferentiated; includes Muav Limestone, Bright Angel Shale, and Tapeats Sandstone

PRECAMBRIAN

PꞒg, PꞒpg	**GRANITIC PLUTONIC ROCKS** PꞒg --Plutonic rocks ranging in composition from granite to diorite, with quartz monzonite predominant; locally includes gabbroic sills and granitic gneiss PꞒpg --Coarsely porphyritic quartz monzonite and granite, frequently with rapakivi texture
PꞒggn	**GRANITIC GNEISS** Strongly foliated gneisses of granitic composition; most derived from plutonic parent rocks; cut by abundant granitic dikes and sills, and locally migmatitic; may include some paragneiss and amphibolite
PꞒpgn	**PARAGNEISS** Gneisses and schists of probable meta-sedimentary parentage; meta-volcanic rocks predominate locally; may include some amphibolite, migmatite, and granitic gneiss; range in metamorphic grade from lower to upper amphibolite facies
PꞒgn	**GNEISSIC ROCKS** Undifferentiated; may include paragneiss, meta-volcanic rocks, granitic gneiss, schist, amphibolite, and migmatite

Contact: dashed where approximately located, dotted where inferred

Fault: dashed where approximately located, dotted where concealed or inferred; ball and bar on downthrown side of normal fault; U and D indicate upthrown and downthrown sides of faults where dip is not known; arrows indicate relative strike-slip movement

GEOLOGIC MAP OF SANTA FE PACIFIC RAILROAD COMPANY MINERAL HOLDINGS IN NORTHWESTERN ARIZONA

Scale 1:250,000

CONTOUR INTERVAL 200 FEET

Santa Fe Pacific Railroad Company

A SANTA FE INDUSTRIES COMPANY

JULY 1981

ARIZONA BUREAU OF GEOLOGY & MINERAL TECHNOLOGY

Miscellaneous Map Series

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