

EXPLANATION

CORRELATION OF MAP UNITS

SEDIMENTS AND SEDIMENTARY AND METAMORPHIC ROCKS

Qa f Qa l } UNCONFORMITY QUATERNARY } CENOZOIC

Qb f Qb t } UNCONFORMITY } PALEOZOIC

Oe s } ORDOVICIAN } PALEOZOIC

} CAMBRIAN } PALEOZOIC

INTRUSIVE ROCKS

d } UNDIVIDED DIKES

a f g } ALKALI-FELDSPAR GRANITE

u m g } UZAMM MONZOGRANITE

q d } QUARTZ DIORITE

m g } MONZOGRANITE

s m g } SHAWAYMAN MONZOGRANITE

q m d } QUARTZ MONZODIORITE

t o } TONALITE

m c } MAKHUL COMPLEX

q d } QUARTZ DIORITE

UNCONFORMITY

q d } UNCONFORMITY

DESCRIPTION OF MAP UNITS

SEDIMENTS AND SEDIMENTARY AND VOLCANIC ROCKS

Qa f ALLUVIAL FAN DEPOSITS—Poorly sorted, braided distributary deposits including angular material ranging between silt and boulder size forming aprons around topographic highs

Qa l ALLUVIUM—Undifferentiated surficial deposits including active sediment in wadi channels, colluvium, talus, and pediment gravels. Locally includes minor windblown sand and silt, and evaporite deposits

Qb f ALKALI BASALT—Brownish-black, very fine grained, holocrystalline vesicular alkali basalt. Olivine and plagioclase phenocrysts in an intergranular matrix of plagioclase, opaque oxides, and augite

Qb t BASALTIC TUFF—Pale-brown, unwelded, cyclically graded, airfall lapilli tuff and greenish-black, moderately welded, vesicular vent-facies basalt; basalt contains phenocrysts of diopside as much as 2 cm long

Oe s SAQ SANDSTONE—Tan to reddish-brown well sorted quartz arenite composed of medium- to coarse-grained, subangular to subrounded grains of monocrystalline quartz cemented by carbonate, locally replaced by ferruginous material

INTRUSIVE ROCKS

UNDIVIDED DIKES—Mostly of intermediate composition

ALKALI-FELDSPAR GRANITE—Pinkish-gray, medium-grained alkali-feldspar granite; contains 2 percent hematite

UZAMM MONZOGRANITE—Very light gray medium- to coarse-grained, hypidiomorphic granular monzogranite; contains distinctive phenocrysts of microcline as much as 1.5 cm long. Cut by many dikes

QUARTZ—Milky quartz in massive plugs

MONZOGRANITE—Pinkish-gray, medium-grained hypidiomorphic granular monzogranite; contains subphenocrysts of microcline, 10 percent biotite, and a trace amount of muscovite. Cut by many dikes of intermediate to mafic composition

SHAWAYMAN MONZOGRANITE—Pinkish-gray, medium-grained, al-trochomorphic equigranular, alaskitic monzogranite. Contains 4 percent biotite and a trace of muscovite; cut by many mafic to intermediate dikes

QUARTZ MONZODIORITE—Medium-gray, medium-grained, hypidiomorphic inequigranular quartz monzodiorite. Contains biotite and hornblende in a 1:1 ratio; color index is 21. Cut by many dikes

TONALITE—Medium-gray, medium-grained, hypidiomorphic inequigranular tonalite. Contains biotite and hornblende in a 3:2 ratio; color index is 28. Cut by many dikes

MAKHUL COMPLEX—Grayish-black mafic plutonic rock; characterized by textural and compositional inhomogeneity and weakly developed gneissic foliation. Cut by many dikes. Color index is 33; biotite-hornblende ratio variable

QUARTZ DIORITE—Medium-greenish-gray, medium-grained hypidiomorphic inequigranular quartz diorite. Compositionally and texturally inhomogeneous. Contains biotite and hornblende, locally chloritized, in variable proportions; color index is 35. Cut by rhyolitic and andesitic dikes

METAMORPHIC ROCKS

TURMUS FORMATION—Medium-dark-gray to dark-greenish-gray meta-andesite flow rocks and intimately interbedded agglomerate and immature volcanic graywacke. cgl, small lenses of conglomerate; clasts are principally composed of granitic rock. mra, pale red metarhyolite dikes and sills that penetrate the layered rocks

GRAYWACKE—Medium-dark-gray to dark-greenish-gray, medium to coarse graywacke. Clasts 0.4 to 1 mm in diameter and composed of monocrystalline and polycrystalline quartz, feldspar, and volcanic lithic fragments set in a silt-size matrix composed of biotite, quartz, opaque oxides, and epidote

SYMBOLS

CONTACT

FAULT—Dotted where concealed or inferred. Bar and ball on downthrown block, arrows indicate relative offset

FAULT—Sense and amount of offset unknown, dotted where concealed or inferred

STRIKE AND DIP OF BEDS

Inclined, showing dip

Vertical

Horizontal

Dip unknown

TREND LINES—Average trend of layering in metamorphic rocks

STRIKE AND DIP OF PRIMARY IGNEOUS FOLIATION

Dip unknown

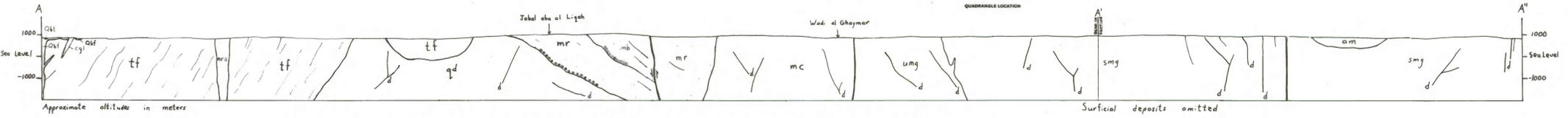
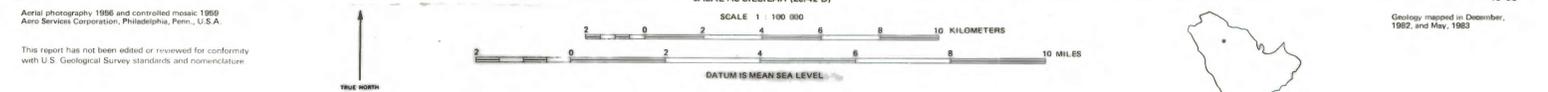
Gerthemi

ANCIENT MINE SITE

VILLAGE

Al Makhul

DESERT TRACK



**RECONNAISSANCE GEOLOGIC MAP OF THE AL MAKHUL QUADRANGLE, SHEET 26/42 B,
KINGDOM OF SAUDI ARABIA**
by
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