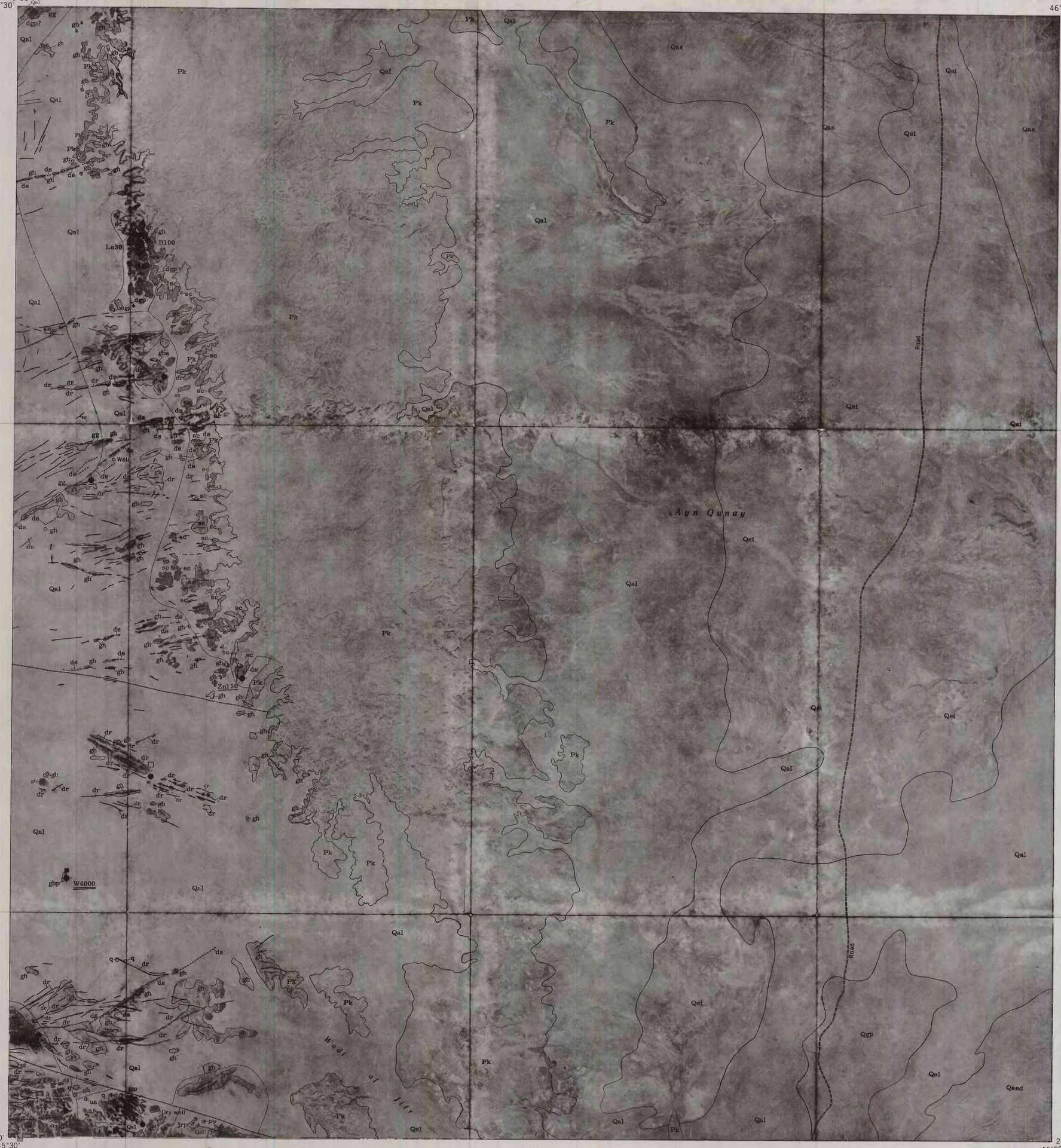
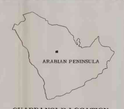


Aerial photography 1955 and controlled mosaic 1956
Aero Service Corporation, Philadelphia, Penn., USA

1:100,000

2 0 2 4 6 8 10 KILOMETERS

2 0 2 4 6 8 10 MILES



QUADRANGLE LOCATION

Geology of the Precambrian area mapped by W. C. Overstreet, J. W. Whitlow, U. S. Geological Survey, and A. O. Ankary, Directorate General of Mineral Resources, March-April 1964. The geology east of the Precambrian area adapted from Bramkamp and others (1956)

EXPLANATION

PLUTONIC AND HYPABYSSAL INTRUSIVE ROCKS

ds | dr

Andesite dikes, rhyolite dikes, and other dikes

Dark-gray to light-gray dikes of andesite, andesite porphyry, microdiorite, diabase, lamprophyre, and dacite (ds), light- to dark-red and brown dikes of rhyolite, rhyolite porphyry, felsite, and microgranite (dr); rhyolite dikes are locally garnetiferous; dikes form ridges. Where rock type is unknown, symbol for dike is used without letters

g

Granite porphyry

Pink granite porphyry, very variable grain size and texture; milky quartz veins, pods of calcite and pyrite common; clusters of black tourmaline present

gh

Biotite-hornblende granite

Gray, pink, and red fine- to coarse-grained, massive to weakly flow-banded, biotite-hornblende granite; locally myloniitized with quartz drawn out into spindles that plunge down dip of cataclastic foliation; locally granodioritic

dgp | gba

Diorite, gabbro, pyroxenite, and amphibolite

Dark-green, brown to nearly black, fine- to coarse-grained, massive intrusive complex of diorite, gabbro, and pyroxenite (dgp), may be serpentinized locally; dark coarse-grained amphibolite (gba), with cores of gabbro and pyroxenite, formed by contact metamorphic effect on gabbro and pyroxenite of intrusive granite (gh)

gg

Gray hornblende-biotite granite gneiss

Contact

Dashed where approximately located or inferred; dotted where concealed

Fault

Showing relative horizontal movement
Dotted where concealed

Vertical 60 Dipping

q

Prominent outcrops and knobs of milky quartz, quartz vein, or rare pegmatite; stratigraphic position unassigned

Lineament from aerial photographs

Prominent lineament not checked on ground; may be dike, bedding, foliation, joint, or fault

Water well

Marked Dry well where abandoned

20ppm Cu or less
>100ppm Zn
>2ppm Mo

30ppm Cu

Location and metal content of samples of wadi sediment expressed in parts per million (ppm)

2ppm Mo 4ppm Mo

Wadi sand containing molybdenum (located by adjacent copper symbol)

Scheelite and/or powellite

Present in concentrates from wadi sand (superimposed on symbol for copper)

LAYERED SEDIMENTARY, PYROCLASTIC, AND METAMORPHIC ROCKS

QUATERNARY

Qasd | Qas

Aeolian sand

Aeolian sand in prominent dunes, mostly mobile (Qasd); mostly mobile aeolian sand (Qas); both adapted from Bramkamp and others, 1956

Qsi

Silt

Silt and associated fine sediments including caliche-like and gypsiferous deposits in undrained depressions; adapted from Bramkamp and others, 1956

Qal

Sand

Alluvial, sheet-wash, and aeolian sand

Qgp

Gravel

Sheet of dark lag gravel; possibly includes beds of Tertiary age; adapted from Bramkamp and others, 1956

PERMIAN

Pk

Khuff Formation

Light-colored limestone, interbedded argillaceous limestone, dolomite, marl, and gypsiferous clay; adapted from Bramkamp and others, 1956

UNCONFORMITY

PRECAMBRIAN

BI'R KHOUNTINA GROUP

sc

Abu Sawarir Formation

Dark-green, dark-brown, to nearly black, fine-grained chlorite-sericite schist and chlorite schist

UNCONFORMITY

HALABAN GROUP

jrp

Wadi al Jifr Formation

Sericite schist with porphyroclasts of blue quartz formed from rhyolite porphyry; fine-grained biotite-muscovite schist and quartzite

ua

Umm Mushraha Formation

Dark-green to nearly black layered to massive amphibolite

UNCONFORMITY

B La

Threshold elements in wadi sand. Boron (B) 100ppm; lanthanum (La) 30ppm (located by adjacent copper symbol)

W

Anomalous element in concentrate. Tungsten (W) 4000ppm

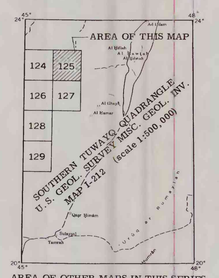
Zn

Threshold element in concentrate

×420

Sample for isotopic age

Potassium 40/argon isotopic age of 610±12 m.y. for biotite and 621±12 m.y. for hornblende from granite gneiss. Specimen 420 collected by Glen F. Brown; age determined by Isotopics, Inc., U.S.A.



AREA OF OTHER MAPS IN THIS SERIES

124 Jabal Bitran quadrangle
126 Bi'r al Badriyah quadrangle
127 Sabkhat Muraysis quadrangle
128 Bi'r Ghamrah quadrangle
129 Wadi Mahraghah quadrangle

RECONNAISSANCE GEOLOGIC MAP OF THE AYN QUNAY QUADRANGLE, KINGDOM OF SAUDI ARABIA

By

William C. Overstreet, Jesse W. Whitlow, and Abdullah O. Ankary

1972