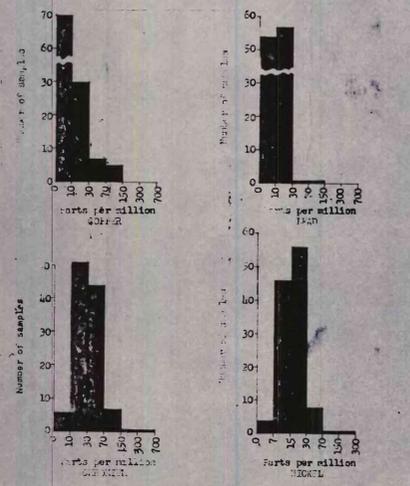


AERIAL PHOTOGRAPHY 1955 AND CONTROLLED MOSAIC 1956
SERVICES COMPANY PHOTOGRAMMETRIC ENGINEERS
LADLEPARK 29 PENNSYLVANIA U.S.A.

PROJECT
ORIGINAL BY: ROY O. JACKSON, RICHARD G. KURTZ, GLEN F. ERMANN, AND RUEL D. STERNBERG, U.S. GEOLOGICAL SURVEY, 1963
ADAPTED BY: JESSE W. WHITLOW, U.S. GEOLOGICAL SURVEY, 1966



Labels for histograms: COPPER, LEAD, ZINC, NICKEL

EXPLANATION

gp/qu
Silt and gravel
Sheet-like lap gravel deposits of quartz and other pebbles from the basement complex; darker rocks predominate, Qpp. Unconsolidated surficial deposits of silt, sand and gravel; may include unrecognized equivalents of other units of Quaternary age, Qu

ha/hc
Halahan formation
Andesite, typically felsitic, agglomerate, conglomerate, quartzite, rhyolite; locally interbedded marls and shalyites; sheared and folded, ha. Discordant andesite, minor acidic extrusives, epidiorite, diorite, diorite, rhyolite and serpentinite, ha

gr
Biotite-hornblende granite
Gray and pink calc-alkalic hornblende granite; generally massive, weathers to bortholite. Includes some quartz diorite, diorite, and epidiorite. Age 735 million years from Rb/Sr ratios

an
Anorthosite
Medium gray plagioclase feldspar possibly of andesite grade; ranges from nearly pure feldspar to about 90 per cent feldspar and 10 per cent combined amphiboles and ilmenite

qu
Granite and granodiorite
Gray, generally felsitic, sheared granite; includes intrusions of younger granite dikes and plugs; micritic xenoliths, usually amphibolized, of older rocks are common. Age one billion years from Rb/Sr isotope ratios

Lithology of thin rock units
Letters indicate lithology of dikes: A - andesite, B - breccia, generally a broken siliceified rock healed by quartz, O - granite, R - rhyolite, N - limestone or marble

Trend lines
Shows an alignment that is visible on aerial photographs; bedding, joints, or other planar feature forming lineament

Contact
Dashed where approximately located

Fault
Dashed where approximately located

Mine or prospect

20 or less
30, 50, or 70
100, 150 or 200
COPPER

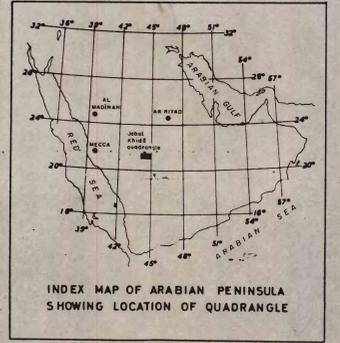
100 or less
150, 200 or 300
ZINC

2 or less
3, 5, or 7
10, 15, or 20
MOLYBDENUM

30
50
150
Pb
Zn

20 or less
30 mesh material in parts per million
Ag - silver, Be - beryllium, Co - cobalt, Cr - chromium, Hf - hafnium, Pb - lead, Sn - tin, Ti - titanium, V - vanadium, W - niobium

Sample station and number
Copper symbol used except where copper was not detected and either zinc or molybdenum was detected.
S - indicates that scheelite or powellite was found in the sample/or in the area



SCALE 1:100,000

GEOLOGIC MAP SHOWING SAMPLE LOCATIONS FOR A MINERAL SURVEY OF THE JABAL KHIDA QUADRANGLE, SAUDI ARABIA

by
JESSE W. WHITLOW
1966