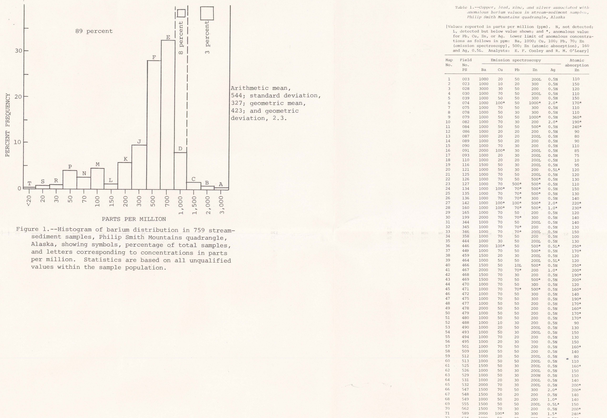
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF-879K
PHILIP SMITH MOUNTAINS QUADRANGLE, ALASKA
FOLIO OF THE GEOCHEMICAL MAP, Ba

Base from U.S. Geological Survey, 1971

Geology generalized in 1977 by
W. P. Brosge, H. N. Reiser, J. T. Dutro, Jr., and R. L. Detterman

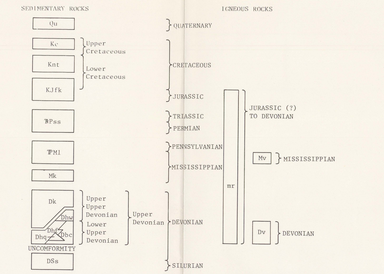
BARIUM IN THE MINUS 80 MESH STREAM-SEDIMENT FRACTION AND ROCK



Arithmetic mean, 544; standard deviation, 327; geometric mean, 423; and geometric deviation, 2.3.

Figure 1.--Histogram of barium distribution in 759 stream-sediment samples, Philip Smith Mountains quadrangle, Alaska, showing symbols, percentage of total samples, and letters corresponding to concentrations in parts per million. Statistics are based on all unqualified values within the sample population.

CORRELATION OF MAP UNITS



DESCRIPTION OF MAP UNITS

SEDIMENTARY ROCKS

Qu SURFICIAL DEPOSITS, UNDIVIDED (QUATERNARY)

Kc COLVILLE GROUP (UPPER CRETACEOUS)--Tuff; tuffaceous clastic rocks

Knt NANUSHUK GROUP (UPPER AND LOWER CRETACEOUS) AND TOROK FORMATION (LOWER CRETACEOUS)--Nonmarine and marine; sandstone, shale, siltstone and conglomerate

KJfk FORTRESS MOUNTAIN, ORTPIERIAK AND KONGAKUT FORMATIONS (LOWER CRETACEOUS) AND KINGAK SHALE (JURASSIC)-- Graywacke, dark-gray, partly manganiferous shale and siltstone, conglomerate

PPss SHUBLIK FORMATION (TRIASSIC) AND SADLEROCHIT GROUP (TRIASSIC AND PERMIAN)-- Phosphatic shale and limestone, partly calcareous siltstone and shale, sandstone, barite concretions

PPMl LISBURNE GROUP (PENNSYLVANIAN AND MISSISSIPPIAN)--Limestone and dolomite

Mk KAYAK SHALE (MISSISSIPPIAN)--Black shale, limestone, sandstone

Dk KANAYUT CONGLOMERATE (UPPER DEVONIAN)--Nonmarine quartzite, ferruginous conglomerate, red shale, basal marine sandstone

HUNT FORK SHALE (UPPER DEVONIAN)

Dhw Black member--Manganiferous shale and siltstone, ferruginous subgraywacke

Dhf Shale--Dark-gray shale and slate; quartzite, limestone. Thin mafic flow and sills

Dbq Quartzite member

Dbc CALCAREOUS SANDSTONE MEMBER OF HUNT FORK SHALE AND UNNAMED BROWN CALCAREOUS CLASTIC ROCKS (UPPER DEVONIAN)--Includes some reef limestone and red and green shale

DSs SKAJIT LIMESTONE (DEVONIAN AND SILURIAN)--Limestone, dolomite, marble. Few small mafic dikes

IGNEOUS ROCKS

Mv VOLCANIC ROCKS (MISSISSIPPIAN)--Diorite sill

Dv VOLCANIC ROCKS (DEVONIAN)--Pillow basalt flows

mr MAFIC ROCKS--Gabbro, diorite, and greenstone

GEOLOGIC CONTACT--Approximately located

FAULT--Dashed where approximately located

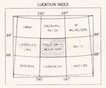
THRUST FAULT--Saw teeth on upper plate, Dotted where concealed

GEOCHEMICAL SYMBOLS

A BARIUM VALUE VALUE DETERMINED AT SAMPLE SITE--Letters are defined on histograms (figs. 1 and 2)

□ 4 ANOMALOUS BARIUM VALUE--Number corresponds to the analytical results shown in tables 1 and 3

③ ROCK SAMPLE SITE--Numbers correspond to the analytical results shown in table 2



SCALE 1:250000

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL

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BARIUM IN THE NONMAGNETIC HEAVY MINERAL CONCENTRATE FROM STREAM SEDIMENTS

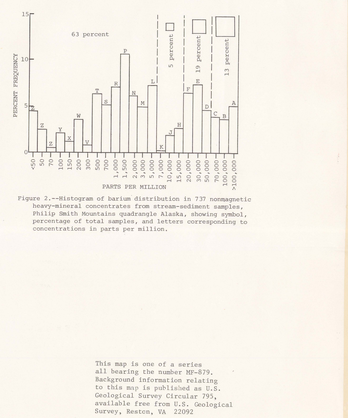

Figure 2.--Histogram of barium distribution in 737 nonmagnetic heavy-mineral concentrates from stream-sediment samples, Philip Smith Mountains quadrangle Alaska, showing symbol, percentage of total samples, and letters corresponding to concentrations in parts per million.

GEOCHEMICAL MAPS SHOWING THE DISTRIBUTION AND ABUNDANCE OF BARIUM IN THE PHILIP SMITH MOUNTAINS QUADRANGLE, ALASKA

By
J. B. Cathrall, D. E. Detra, and E. F. Cooley
1978

This map is one of a series all bearing the number MF-879. Background information relating to this map is published as U.S. Geological Survey Circular 795, available free from U.S. Geological Survey, Reston, VA 22092

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