DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

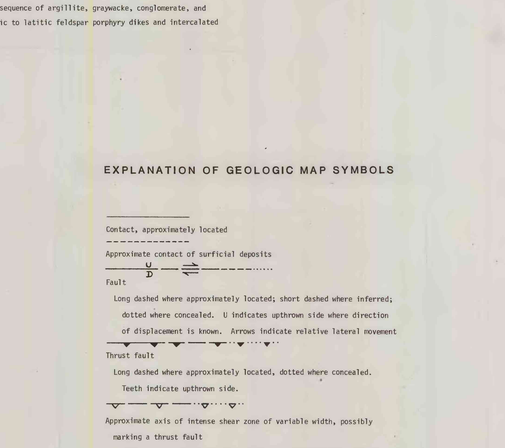
OPEN FILE REPORT
78-558B

Folio of the TALKEETNA MOUNTAINS Quadrangle, Alaska

Base map from U.S. Geological Survey, 1:250,000
Talkeetna Mountains Quadrangle, Alaska, 1955

CORRELATION OF MAP UNITS

(Geology generalized after Csejtey and others, 1978)



DESCRIPTION OF MAP UNITS

Qs - SURFICIAL DEPOSITS, UNDIFFERENTIATED (Quaternary).

Tv VOLCANIC ROCKS, UNDIVIDED (Paleocene to Pleistocene(?))--Felsic and mafic subaerial volcanic rocks and related shallow intrusions.

Tsu TERTIARY SEDIMENTARY ROCKS, UNDIFFERENTIATED (Paleocene to Miocene)--Terrestrial, mostly fluviatile strata with a few lignite interbeds.

Tgd GRANODIORITE (Eocene).

Tbgd BIOTITE AND HORNBLENDE GRANODIORITE (Paleocene, in part early Eocene).

Tsmg SCHIST, MIGMATITE, AND GRANITE (Paleocene intrusive and metamorphic ages)--Migmatitic border zone of biotite and hornblende granodiorite.

TKt TONALITE (Upper Cretaceous and lower Paleocene).

TKa ADAMELLITE (Upper Cretaceous and lower Paleocene).

TKg GRANITIC ROCKS, UNDIVIDED (Cretaceous and (or) Tertiary).

Kar ARKOSE RIDGE FORMATION (Lower and (or) Upper Cretaceous).

Km MATANUSKA FORMATION (Lower and Upper Cretaceous).

Ksu SEDIMENTARY ROCKS, UNDIVIDED (Lower Cretaceous)--Shallow marine sequence of calcareous sandstone, claystone, and massive clastic limestone.

Kag ARGILLITE AND LITHIC GRAYWACKE (Lower Cretaceous)--Intercalated, marine, flyschlike sequence.

Js SEDIMENTARY AND VOLCANIC ROCKS, UNDIVIDED (Upper Jurassic)--Marine sequence of argillite, graywacke, conglomerate, and andesitic to latitic feldspar porphyry dikes and intercalated flows.

Jtr TRONDHJEMITE (Upper Jurassic)

Jnc JURASSIC SEDIMENTARY ROCKS, UNDIVIDED (Middle and Upper Jurassic)--Includes Naknek and Chinitna Formations, and Tuxedni Group.

Jta CRYSTAL TUFF, ARGILLITE, CHERT, GRAYWACKE, AND LIMESTONE (Lower to Upper Jurassic)--Shallow to moderately deep marine, intercalated sequence.

Jpm PLUTONIC AND METAMORPHIC ROCKS, UNDIFFERENTIATED (Lower to Upper Jurassic)--Mainly quartz diorite, granodiorite, amphibolite, and greenschist.

Jtk TALKEETNA FORMATION (Lower Jurassic).

Rvs METABASALT AND SLATE (Upper Triassic)--Intercalated, shallow-water marine sequence.

Rv BASALTIC METAVOLCANIC ROCKS (Upper Triassic)--Mainly shallow water marine metabasalt flows.

Pzv BASALTIC AND ANDESITIC METAVOLCANOGENIC ROCKS (Pennsylvanian(?) and Early Permian)--Metamorphosed marine sequence of interlayered basaltic to andesitic flows, tuffs, coarse volcaniclastic rocks, and subordinate mudstone and limestone.

DSga GRAYWACKE, ARGILLITE, SHALE, AND LIMESTONE (Silurian(?) to Middle Devonian)--Intercalated marine sequence, probably continental margin deposits.

EXPLANATORY NOTE

This map and accompanying table (in pamphlet) provide information on the known metalliferous and selected nonmetalliferous mineral deposits of the Talkeetna Mountains quadrangle in southern Alaska. The term "mineral deposits" is used in the broad sense to include deposits, both lode and placer, at mines and prospects as well as unclaimed occurrences, regardless of economic significance. Localities of geochemical rock samples with anomalous metal concentrations have also been included. Several prospects are known only from a U.S. Bureau of Mines claim map (1973); information on these deposits generally is limited to reported commodities and category of deposit. Zeolites are the only nonmetallic commodity known to occur in the study area, and they are described in this report. Other nonmetallic commodities, such as construction material and decorative stone, may also occur but are not described. Geothermal resources of the quadrangle have not been studied and, therefore, are excluded from this report. Fossil fuel resources are not known to occur within the Talkeetna Mountains quadrangle.

In this report, geochemical rock samples are considered to be anomalous when out of the selected ten metallic elements, one element greatly exceeds or two or more elements at least reach the following empirically chosen concentration levels (in parts per million): silver--0.7, arsenic--200, gold--0.25, chromium--1,500, copper--1,000, molybdenum--7, lead--70, antimony--300, tin--10, and zinc--500. The sample numbers of these anomalous geochemical rock samples from prospects as well as from unclaimed occurrences, including float samples, are given in parentheses in the Principal references column of the accompanying table. Complete analytical data for all geochemical rock samples collected by the U.S. Geological Survey in the study area have been reported by Miller and others (1978).

Numbers adjacent to the mineral deposit symbols on the map correspond to map numbers in the descriptive table that accompanies this report.

SYMBOLS

Lode deposits

- Mine. Has produced but not necessarily shipped ore. Presently claimed.
- Prospect. Has been claimed; in most cases has been scantily explored; lacks evidence of production. Claims may or may not be presently active.
- Occurrence. Generally a minor deposit that has not been claimed as far as known. Mainly known from recent U.S. Geological Survey field investigations or from the analyses of geochemical rock samples. Also includes the locations of float samples with anomalous concentrations of metals.

Placer deposits

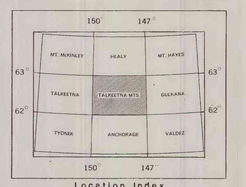
- Mine. Minor but proven record of production. Presently claimed.
- Prospect. Has been claimed but without proven record of production. Claims may or may not be presently active.
- Extent of placer deposits.

Cu, Au, Sn, zeolites — Known or reported commodity(ies). Listed in decreasing order of probable commercial value or of abundance in the deposit. Minor constituents or potential byproducts are shown in parentheses. Metallic commodities are abbreviated using their standard chemical symbols.

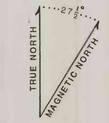
SCALE 1:250 000

5 0 5 10 15 20 25 MILES
5 0 5 10 15 20 25 KILOMETERS

CONTOUR INTERVAL 200 FEET
DATUM IS MEAN SEA LEVEL



Location Index



APPROXIMATE MEAN DECLINATION, 1951

EXPLANATION OF GEOLOGIC MAP SYMBOLS

Contact, approximately located

Approximate contact of surficial deposits

Fault
Long dashed where approximately located; short dashed where inferred; dotted where concealed. U indicates upthrown side where direction of displacement is known. Arrows indicate relative lateral movement

Thrust fault
Long dashed where approximately located, dotted where concealed. Teeth indicate upthrown side.

Approximate axis of intense shear zone of variable width, possibly marking a thrust fault
Dotted where concealed; teeth indicate possible upthrown side of postulated thrust

MAP AND TABLE DESCRIBING METALLIFEROUS AND SELECTED NONMETALLIFEROUS MINERAL DEPOSITS, TALKEETNA MOUNTAINS QUADRANGLE, ALASKA

By

Béla Csejtey, Jr. and R. J. Miller

1978

This report is preliminary and has not been edited or reviewed for conformity with Geological Survey standards and nomenclature.