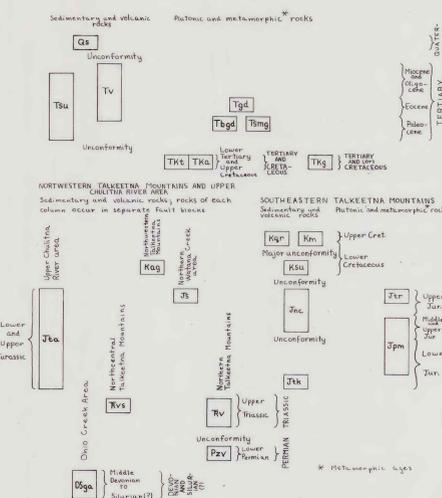


CORRELATION OF MAP UNITS

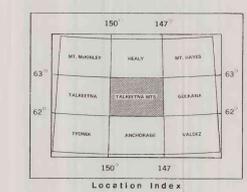
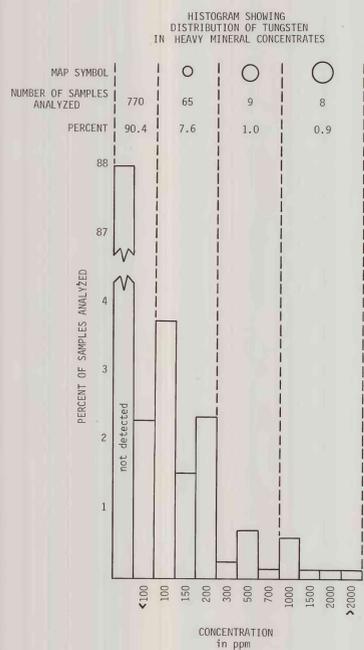
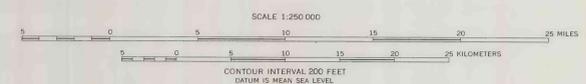
Geology generalized after Csejtey and others, 1978



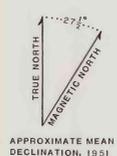
DESCRIPTION OF MAP UNITS

- 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 fluvial/estuarine strata with a few lignite interbeds.
- Tgd GRANDIORITE (Eocene).
- Tgpd BIOTITE AND HORNBLENDE GRANODIORITE (Paleocene, in part early Eocene).
- Tmg SCHIST, MICA-SCHIST, AND GRANITE (Paleocene intrusive and metamorphic ages)—Migmatitic border zone of biotite and hornblende granodiorite.
- TKL TOMALITE (Upper Cretaceous and lower Paleocene).
- Tka ADAMELITE (Upper Cretaceous and lower Paleocene).
- Tkg GRANITIC ROCKS, UNDIVIDED (Cretaceous and/or Tertiary).
- Kar ARIZONA RIDGE FORMATION (Lower and/or Upper Cretaceous).
- Ks MATANUSKA FORMATION (Lower and/or Upper Cretaceous).
- Ksu SEDIMENTARY ROCKS, UNDIVIDED (Lower Cretaceous)—Shallow marine sequence of calcareous sandstone, claystone, and massive clastic limestone.
- Kag ARGILLITE AND LITHIC GRANWACKE (Lower Cretaceous)—Intercalated, marine, flyschlike sequence.
- Jp SEDIMENTARY AND VOLCANIC ROCKS, UNDIVIDED (Upper Jurassic)—Marine sequence of argillite, greywacke, conglomerate, and andesitic to latitic felsic porphyry dikes and intercalated flows.
- Jtr TRONDHJEMITE (Upper Jurassic).
- Jnc JURASSIC SEDIMENTARY ROCKS, UNDIVIDED (Middle and Upper Jurassic)—Includes Naknek and Chitina 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).
- Jsv METASALT AND SLATE (Upper Triassic)—Intercalated, shallow-water marine sequence.
- Jsv BASALTIC METAVOLCANIC ROCKS (Upper Triassic)—Mainly shallow water marine metabasalt flows.
- Jzv BASALTIC AND ANDESITIC METAVOLCANIC ROCKS (Mesozoic(?) and Early Permian)—Metamorphosed marine sequence of inter-layered basaltic to andesitic flows, tuffs, coarse volcaniclastic rocks, and subordinate mudstone and limestone.
- Jsp GRAYWACKE, ARGILLITE, SHALE, AND LIMESTONE (Silurian(?) to Middle Devonian)—Intercalated marine sequence, probably continental margin deposits.

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



- EXPLANATION OF GEOCHEMICAL MAP SYMBOLS
- ▲ - Location of stream sediment sample
  - - Location of heavy mineral concentrate sample
  - - Location of both stream sediment and heavy mineral concentrate sample
  - - Heavy mineral concentrate sample with possibly significant tungsten value. Increase in symbol size indicates higher analytical value as shown on histogram.



EXPLANATORY STATEMENT

In the course of U.S. Geological Survey investigations of the Talkeetna Mountains quadrangle, 1118 stream sediment, 352 heavy mineral concentrate, and 501 rock samples were collected. All of these samples were analyzed for up to 30 elements by a six-step semi-quantitative spectrographic method (Grimes and Marranzino, 1965). Most of the stream sediment and rock samples were also analyzed for up to 4 elements by atomic absorption spectrophotometry, as described by Ward and others (1967). The present map shows the sample collection sites of 1117 stream sediment samples and 352 heavy mineral concentrates which were analyzed for tungsten by the spectrographic method. None of the stream sediment analyses showed tungsten concentrations above the lower limit of analytical determination, complete analytical data plus location maps, station coordinates, and discussion of sampling and analytical procedures for samples from sites shown on the present map are published in a report by Miller and others (1971). Concentration of metals in geochemical samples varies for different lithologies and in different areas. Because of this, as well as variability introduced from other sources such as sampling practice, analytical variance, and degree of chemical weathering, it is impossible to select a specific analytical level above which values might indicate the presence of tungsten deposits. For this reason, the analytical values have been grouped into ranges (see histograms), each range being represented by a different symbol on the map. Higher values may indicate a greater likelihood of tungsten deposits, but confidence levels are low for "single-element" anomalies and for results which are not supported by neighboring values.

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

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MAP SHOWING GEOCHEMICAL DISTRIBUTION AND ABUNDANCE OF TUNGSTEN IN HEAVY MINERAL CONCENTRATES,

TALKEETNA MOUNTAINS QUADRANGLE, ALASKA

by  
R. J. Miller, G. C. Curtin, and Béla Csejtey, Jr.

1978

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