DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

OPEN-FILE REPORT 78-120F

FOLIO OFTHE AMBLER RIVER QUADRANGLE, ALASKA

ELLERSIECK - TIN AND BERYLLIUM GEOCHEMICAL ANOMALIES

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

BASE BY U.S. GEOLOGICAL SURVEY, 1956

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

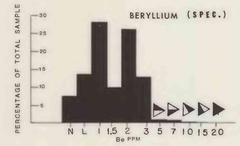
MAP SHOWING TIN AND BERYLLIUM STREAM-SEDIMENT GEOCHEMICAL ANOMALIES, AMBLER RIVER QUADRANGLE, ALASKA

BY INYO ELLERSIECK

1978

Background information to this folio is published as U. S. Geological Survey Circular 793, available free of charge from the U. S. Geological Survey, Reston, Va. 22092.

EXPLANATION OF ANOMALY SYMBOLS



MEAN		1.6 PPM
STANDARD	DEVIATION	1.1 PPM
ANOMALY		3.8 PPM

NUMBER OF SAMPLES: 1198

TIN (SPEC.)

Mean and standard deviation were not determined because too many samples lie below measurable limits. Anomalous values are arbitrarily chosen.

L - LOWER LIMIT OF ANALYTICAL METHOD

Tin

Only 2.5 percent of the samples had tin values above the ten ppm lower measurable limit of the emission spectrographic method. Values of 15 ppm and above, 1.5 percent of the samples, are plotted as anomalies. No samples from 1976 were reported to have ten or 15 ppm tin, although there were five 1976 samples with 20 ppm or more. There is a possibility that 20 ppm may be the effective lower limit of detection in the 1976 sample set, and that there are some unrecognized "anomalies" of 15 ppm in these samples.

Tin anomalies are concentrated around the Kaluich and Shishakshinovik plutons and a smaller felsic intrusion north of the Shishakshinovik pluton. They are absent near the Redstone pluton. In this respect, tin anomalies follow the observed distribution of beryllium, molybdenum, lead, and zinc anomalies near the granitic intrusions.

One sample near the Cutler River, eight km downstream from the Kaluich pluton, is probably a placer concentration related to tin occurrences in or near the pluton.

Beryllium

Beryllium was measured by the emission spectrographic method. Over 20 percent of the samples had values below the lower measurable limit of one ppm. The mean and standard deviation calculated from this data are therefore only approximate. Beryllium values of five ppm and above, 1.9 percent of the samples, are plotted as anomalies.

Most beryllium anomalies are near the Kaluich pluton or the northeast side of the Shishakshinovik pluton, associated with anomalies of tin, molybdenum, zinc, and silver. Some beryllium anomalies of five ppm are near black phyllites of map units Db and Pzbs.

REFERENCES

Ellersieck, Inyo, 1978a, Map showing stream-sediment geochemical sample locations, Ambler River quadrangle, Alaska: U. S. Geological Survey Open-File Report 78-120 B, scale 1:250,000, 1 sheet.

Ellersieck, Inyo, 1978b, Analytical results for stream-sediment geochemical samples, Ambler River quadrangle, Alaska: U. S. Geological Survey Open-File Report 78-120 C, 6 sheets.

EXPLANATION FOR GENERALIZED GEOLOGIC MAP

CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS	METASEDIMENTARY ROCKS OF UNCERTAIN AGE	IGNEOUS AND META-IGNEOUS ROCKS
Qu — QUATERNARY	MzPzpw — MESOZOIC OR PALEOZOIC	Kgr — CRETACEOUS
SEDIMENTARY AND METASEDIMENTARY ROCKS	Pzcq — PALEOZOIC	Ju — JURASSIC
Kq, Kc — CRETACEOUS	Pzbs — PALEOZOIC	mi, fs, Pzi — MESOZOIC AND (OR) PALEOZOIC
Unconformity	Pzu — PALEOZOIC	
M — MISSISSIPPIAN	uqm — PALEOZOIC AND OLDER (?)	
Unconformity		
De, Db — DEVONIAN		
Pzm — DEVONIAN AND OLDER		

DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS

Qu — UNCONSOLIDATED SURFICIAL DEPOSITS (QUATERNARY)

SEDIMENTARY AND METASEDIMENTARY ROCKS

Kq — QUARTZ CONGLOMERATE, SANDSTONE, AND MUDSTONE (CRETACEOUS)

Kc — IGNEOUS PEBBLE-COBBLE CONGLOMERATE (CRETACEOUS)

M — LISBURNE GROUP AND UPPER PART OF ENDICOTT GROUP (MISSISSIPPIAN)—INCLUDES KAYAK SHALE AND KEKIKTUK CONGLOMERATE

De — LOWER PART OF ENDICOTT GROUP (DEVONIAN)—MAINLY SLATE AND SANDSTONE

Db — DARK CALCAREOUS SCHIST, LIMESTONE, AND SILICEOUS PHYLLITE (DEVONIAN)

Pzm — LIMESTONE AND MARBLE (DEVONIAN AND OLDER)

METASEDIMENTARY ROCKS OF UNCERTAIN AGE

MzPzpw — PHYLLITE AND MAFIC VOLCANIC WACKE (MESOZOIC OR PALEOZOIC)

Pzcq — CHLORITIC QUARTZITE AND SCHIST (PALEOZOIC)—LOCALLY INCLUDES FELDSPATHIC ORTHOGNEISS

Pzbs — GRAPHITIC PHYLLITE AND SCHIST (PALEOZOIC)

Pzu — UNDIFFERENTIATED METAMORPHIC ROCKS (PALEOZOIC)—INCLUDES MARBLE, QUARTZITE, CALC-SCHIST, AND LESSER QUARTZ-MICA SCHIST

uqm — GRAY PHYLLITE AND QUARTZ-MICA SCHIST (PALEOZOIC AND OLDER (?))

IGNEOUS AND META-IGNEOUS ROCKS

Kgr — META-GRANITIC PLUTONIC ROCKS (CRETACEOUS)

Ju — ULTRAMAFIC ROCKS AND SERPENTINITE (JURASSIC)

mi — BASALT, DIABASE, AND GREENSTONE (MESOZOIC AND/OR PALEOZOIC)

fs — FELSIC SCHIST (MESOZOIC AND/OR PALEOZOIC) MAY BE, IN PART, VOLCANIC

Pzi — INTERMEDIATE META-IGNEOUS ROCKS (MESOZOIC AND/OR PALEOZOIC) MAY BE PLUTONIC AND (OR) VOLCANIC, MOSTLY GRANODIORITE OR QUARTZ DIORITE IN COMPOSITION

LITHOLOGIC CONTACT; dashed where uncertain

HIGH ANGLE FAULT; dashed where uncertain, dotted where concealed

THRUST FAULT; dotted where concealed

Generalized geologic map compiled by

C. F. MAYFIELD

AREAS MENTIONED IN TEXT