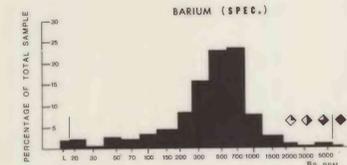


EXPLANATION OF ANOMALY SYMBOLS



MEAN STANDARD DEVIATION ANOMALY

MEAN	962 ppm
STANDARD DEVIATION	634 ppm
ANOMALY	1629 ppm

MEAN AND STANDARD DEVIATION WERE NOT DETERMINED BECAUSE TOO FEW SAMPLES (16) BELOW MEASURABLE LIMITS. ANOMALOUS VALUES ARE ARBITRARILY SHOWN.

NO VALUES OF .5 ppm OR MORE WERE REPORTED FOR SAMPLES FROM 1976. SILVER VALUES ABOVE MEASURABLE LIMITS ARE SIGNIFICANTLY MORE ANOMALOUS, IN GARLAND AND FOSSEL (1978) DATA.

● 200 PPM
Only one sample, 76EK620, map no. 448, contained arsenic above detectable limits.

— LOWER LIMIT OF ANALYTICAL METHOD
— UPPER LIMIT OF ANALYTICAL METHOD
NUMBER OF SAMPLES: 1199

EXPLANATION FOR GENERALIZED GEOLOGIC MAP

CORRELATION OF MAP UNITS		
SURFICIAL DEPOSITS		
Qu	Quaternary	
SEDIMENTARY AND METASEDIMENTARY ROCKS		
Kq	CRETACEOUS	
Kc	CRETACEOUS	
M	MISSISSIPPIAN	
U	UNCONFORMITY	
Db	DEVONIAN	
Pz	DEVONIAN AND OLDER	
METASEDIMENTARY ROCKS OF UNCERTAIN AGE		
Mp	MESOZOIC OR PALEOZOIC	
Pzc	PALEOZOIC	
Pzb	PALEOZOIC	
Pzu	PALEOZOIC AND OLDER (?)	
IGNEOUS AND META-IGNEOUS ROCKS		
Ju	JURASSIC	
Mi	MESOZOIC AND/OR PALEOZOIC	
Pr	PALEOZOIC	
DESCRIPTION OF MAP UNITS		
SURFICIAL DEPOSITS		
Qu	UNCONSOLIDATED SURFICIAL DEPOSITS (QUATERNARY)	
SEDIMENTARY AND METASEDIMENTARY ROCKS		
Kq	QUARTZ CONGLOMERATE, SANDSTONE, AND MUDSTONE (CRETACEOUS)	
Kc	IGNEOUS PERLE-COBBLE CONGLOMERATE (CRETACEOUS)	
M	LISBURG GROUP AND UPPER PART OF ENDCOTT GROUP (MISSISSIPPIAN)—INCLUDES KAYAK SHALE AND KENTUCKY CONGLOMERATE	
Db	LOWER PART OF ENDCOTT GROUP (DEVONIAN)—MAINLY SLATE AND SANDSTONE	
Pz	DARK CALCAREOUS SCHIST, LIMESTONE, AND SILICEOUS PHYLLITE (DEVONIAN)	
Pzm	LIMESTONE AND MARBLE (DEVONIAN AND OLDER)	
METASEDIMENTARY ROCKS OF UNCERTAIN AGE		
Mp	PHYLLITE AND MAFIC VOLCANIC WACRE (MESOZOIC OR PALEOZOIC)	
Pzc	CHLORITIC QUARTZITE AND SCHIST (PALEOZOIC)—LOCALLY INCLUDES FELDSPATHIC ORTHOQUARTZ	
Pzb	GRAPHITIC PHYLLITE AND SCHIST (PALEOZOIC)	
Pzu	UNDIFFERENTIATED METAMORPHIC ROCKS (PALEOZOIC)—INCLUDES MARBLE, QUARTZITE, CALC-SCHIST, AND LESSER QUARTZ-MICA SCHIST	
Ugn	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 GNEISS (MESOZOIC AND/OR PALEOZOIC)	
Fa	FELSIC SCHIST (MESOZOIC AND/OR PALEOZOIC) MAY BE, IN PART, VOLCANIC	
Pz	INTERMEDIATE META-IGNEOUS ROCKS (MESOZOIC AND/OR PALEOZOIC) MAY BE PLUTONIC AND/OR VOLCANIC, MOSTLY GROUNDORITE OR QUARTZ DIORITE IN COMPOSITION	
LITHOLOGIC CONTACT, dashed where uncertain		
HIGH ANGLE FAULT, dotted where uncertain, dotted where concealed		
THRUST FAULT, dotted where concealed		

Generalized geologic map compiled by
C. F. MAYFIELD

BARIUM

Barium was analyzed by the emission spectrographic method. Several barium values are in the 5,000 ppm range, above the measurable limits of this method. The threshold value for an anomaly is two standard deviations above the mean. Values of 2,000 ppm and above, 2.4 percent of the samples, are considered anomalous.

Barium is primarily associated with black phyllites of map units Db and Pzbs. Barite veins have been found in map unit Pzbs (Mayfield and Grybeck, 1978). The greatest concentration of these anomalies and the highest barium values are in the upper Amakomnak Creek area, associated with anomalies of zinc, molybdenum, vanadium, iron, lead, and copper.

There are also barium anomalies on the western side of the Jade Mountains, associated with anomalies of copper, zinc, chromium, and lanthanum.

There are a few barium anomalies associated with the large granitic plutons. Barium and silver are the only anomalous elements clearly related to the Redstone pluton.

SILVER

Silver was analyzed by the semiquantitative emission spectrographic method, which has a lower measurable limit of 0.5 ppm. None of the samples from 1976 has a reported silver value of 0.5 or 0.7 ppm, although eight of these samples have reported silver values of 1 ppm or above. One ppm may be an effective lower limit for this data set. Because so many samples (90.9%) have undetectable amounts of silver, no mean value was calculated. Silver values of one ppm or above, 4 percent of the samples, are considered to be anomalous.

Silver anomalies are abundant in the eastern schist belt. However, it should be noted that the boundaries of this area roughly coincide with those of a single data set (Garland and others, 1973), so there is a small possibility that there is a systematic bias to the data. This area also has many anomalous values of copper, lead, zinc, cobalt, nickel, yttrium, and lanthanum.

Three silver anomalies on the northeastern side of the Jade Mountains include the highest concentration reported, 15 ppm.

The three large granitic plutons have surrounding silver anomalies. Near the Kaluich and Shishakhshinovik plutons, silver is associated with anomalous values of several other elements; near the Redstone pluton, with barium only.

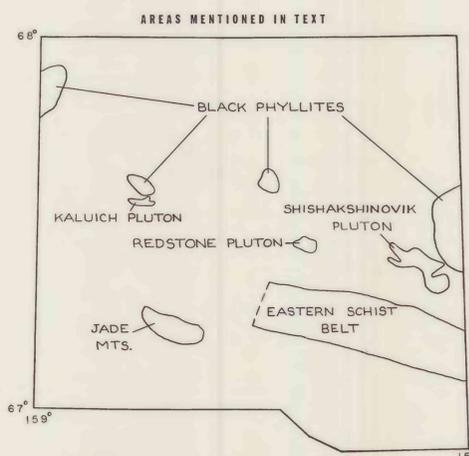
Silver anomalies are also present near the black phyllites of map units Db and Pzbs, especially near anomalies of other elements.

ARSENIC

The lower measurable limit of arsenic by emission spectrography is 200 ppm. Only one sample, 76EK620, map number 448 (Ellersieck, 1978a) contained a measurable amount of arsenic. The sample is red spongy foam and black sulfurous mud, downstream from a spring emerging from black phyllite with sulfate bloom, in map unit Db. This sample also contained anomalously high iron and vanadium, but unusually low concentrations of most other elements.

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.
- Garland, R. E., Pessel, G. H., Tribble, T. C., and McClintock, W. W., 1973, Geochemical analysis of stream sediment samples from the Ambler River A-1, A-2, A-3, B-1, B-2, B-3, C-1, C-2, and C-3 quadrangles, Alaska: Alaska Division of Geological and Geophysical Surveys Open-File Report no. 39, scale 1:63,360, 4 sheets.
- Mayfield, C. F., and Grybeck, Donald, 1978, Mineral occurrences and resources map of the Ambler River quadrangle, Alaska: U. S. Geological Survey Open-File Report 78-120 I, scale 1:250,000, 1 sheet.



MAP SHOWING BARIUM, SILVER, AND ARSENIC STREAM-SEDIMENT GEOCHEMICAL ANOMALIES, AMBLER RIVER QUADRANGLE, ALASKA
BY INYO ELLERSIECK
1978

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