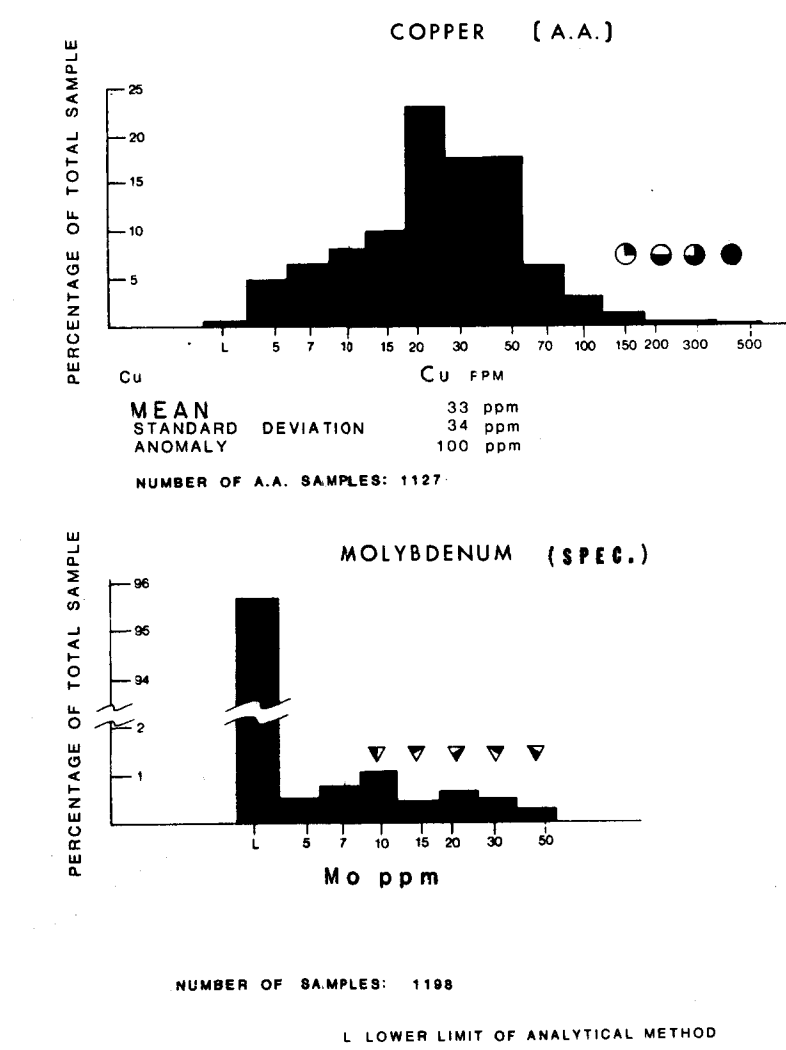


EXPLANATION OF ANOMALY SYMBOLS



COPPER

Copper was measured by both the atomic absorption and emission spectrographic methods. Values from the atomic absorption method were used to identify anomalous samples for this map. An anomalous value is defined as one which is more than two standard deviations above the arithmetic mean value.

There are more reported occurrences of copper in the Ambler River quadrangle than any other mineral commodity (Mayfield and Grybeck, 1978). This is probably due in part to the fact that copper minerals can be conspicuous and easy to identify in outcrop. Of 35 copper occurrences which have stream-sediment samples within five km downstream, eight (23%) have associated anomalous values of copper. There are more copper occurrences with associated stream-sediment anomalies of zinc (34%) and silver (26%), suggesting that these elements may be used to locate potential copper occurrences.

The primary concentration of copper anomalies is in the eastern schist belt, often associated with felsic igneous rocks (map unit fs) and/or known copper prospects. The western limit of copper stream-sediment anomalies correlates closely with the western limit of felsic bodies in the schist.

A second area of anomalous copper values is in the southern Jade Mountains. High copper values in this area are probably due to higher background copper concentrations in mafic igneous rocks (map unit mi) which outcrop in a belt nearly coincident with the anomalies. If this is the case, then these copper anomalies may not reflect copper deposits.

A few copper anomalies are in samples near the black phyllites of map units Db and Pzbs. Anomalous copper in these samples is usually associated with anomalous zinc. Shales rich in organic matter, from which the black phyllites were derived, are often enriched in copper and other metals relative to other sedimentary rocks (Tourtelot, 1970).

MOLYBDENUM

Only about five percent of the samples contain molybdenum in amounts above the five ppm lower limit measurable by the emission spectrographic method. Values of ten ppm and above, 1.8 percent of the samples, are plotted as anomalies.

Molybdenum anomalies are concentrated near the northwestern Shishakhshinovik pluton, and north of the Kaluich pluton. There are, however, no molybdenum anomalies near the Redstone pluton. This pattern is also exhibited by tin, lead, beryllium, and zinc.

Molybdenum anomalies also occur near black phyllites of map units Db and Pzbs.

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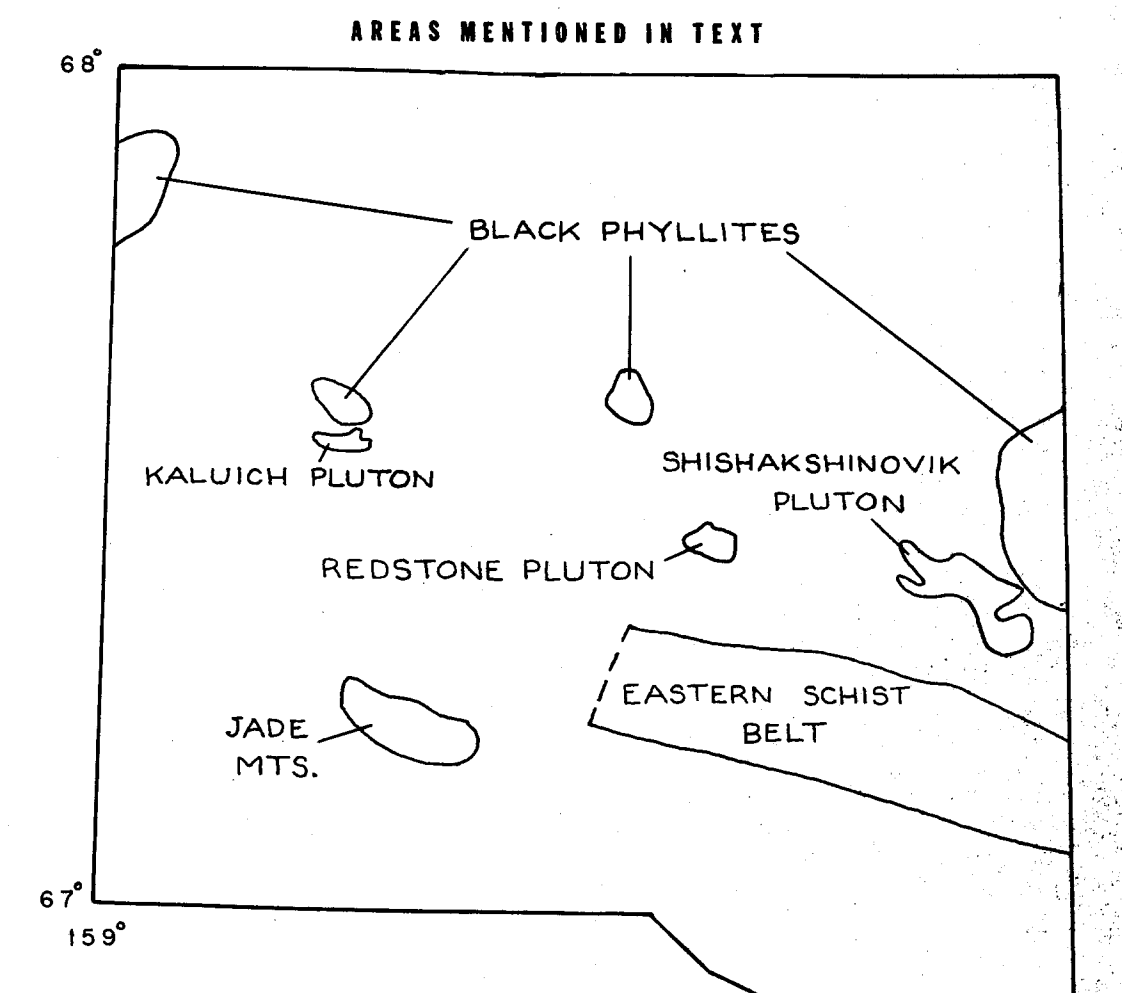
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EXPLANATION FOR GENERALIZED GEOLOGIC MAP

CORRELATION OF MAP UNITS		
SURFICIAL DEPOSITS		
Qu	QUATERNARY	
SEDIMENTARY AND METASEDIMENTARY ROCKS		
Kc	CRETACEOUS	
M	MISSISSIPPIAN	
Db	DEVONIAN	
Pzm	DEVONIAN AND OLDER	
METASEDIMENTARY ROCKS OF UNCERTAIN AGE		
Mpzm	MESOZOIC OR PALEOZOIC	
Pzcq	PALEOZOIC	
Uqm	PALEOZOIC AND OLDER (?)	
IGNEOUS AND META-IGNEOUS ROCKS		
Kgr	CRETACEOUS	
Ju	JURASSIC	
Mi	MESOZOIC AND/OR PALEOZOIC	
Fi	PALEOZOIC	
Psi	PALEOZOIC	

DESCRIPTION OF MAP UNITS	
SURFICIAL DEPOSITS	
Qu	UNCONSOLIDATED SURFICIAL DEPOSITS (QUATERNARY)
SEDIMENTARY AND METASEDIMENTARY ROCKS	
Kc	QUARTZ CONGLOMERATE, SANDSTONE, AND MUDSTONE (CRETACEOUS)
Kc	IGNEOUS PERBLE-COBBLE CONGLOMERATE (CRETACEOUS)
M	LISBURGH GROUP AND UPPER PART OF ENDICOTT GROUP (MISSISSIPPIAN)—INCLUDES KAYAK SHALE AND KENIKTUR CONGLOMERATE
Db	LOWER PART OF ENDICOTT GROUP (DEVONIAN)—MARLY SLATE AND SANDSTONE
Db	DARK CALCAREOUS SCHIST, LIMESTONE, AND SILICEOUS PHYLLITE (DEVONIAN)
Pzm	LIMESTONE AND MARBLE (DEVONIAN AND OLDER)
METASEDIMENTARY ROCKS OF UNCERTAIN AGE	
Mpzm	PHYLLITE AND MAFIC VOLCANIC WACKE (MESOZOIC OR PALEOZOIC)
Pzcq	CHLORITIC QUARTZITE AND SCHIST (PALEOZOIC)—LOCALLY INCLUDES FELSPATHIC ORTHOQUARTZ
Pzba	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)
Fi	FELSIC SCHIST (MESOZOIC AND/OR PALEOZOIC) MAY BE, IN PART, VOLCANIC
Psi	INTERMEDIATE META-IGNEOUS ROCKS (MESOZOIC AND/OR PALEOZOIC) MAY BE PLUTONIC AND HIGH VOLCANIC, MOSTLY GRANODIORITE OR QUARTZ DIORITE IN COMPOSITION
LITHOLOGIC CONTACTS, 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



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

MAP SHOWING COPPER AND MOLYBDENUM STREAM-SEDIMENT ANOMALIES,
AMBLER RIVER QUADRANGLE, ALASKA

BY INYO ELLERSIECK
1978

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