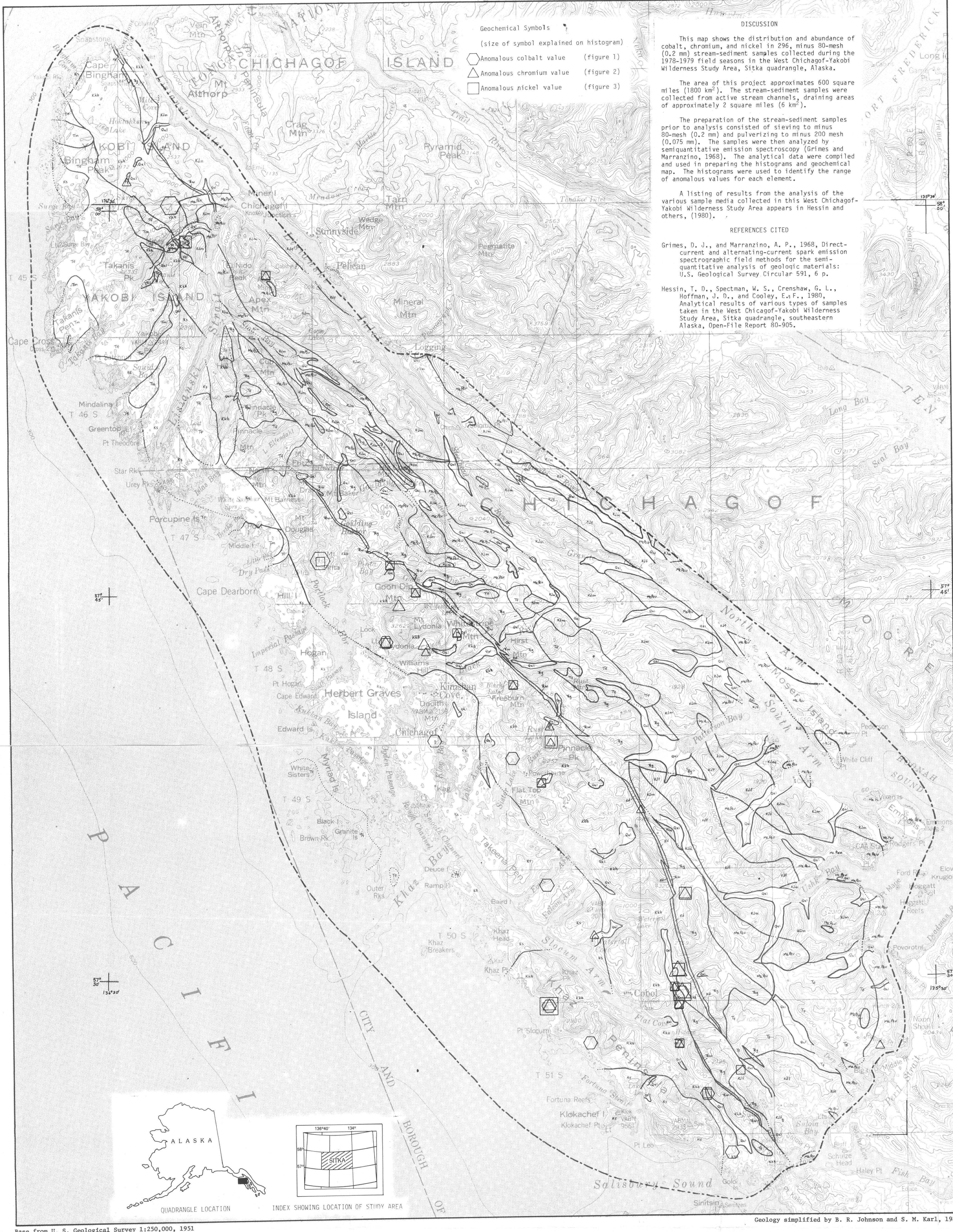


DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEYGEOCHEMICAL MAP SHOWING THE DISTRIBUTION AND ABUNDANCE OF COBALT, CHROMIUM AND NICKEL IN STREAM-SEDIMENT SAMPLES
IN THE WEST CHICHAGO-YAKOBI WILDERNESS STUDY AREA, SITKA QUADRANGLE, ALASKABy
T. D. Hessian, J. D. Hoffman
1981

DISCUSSION

This map shows the distribution and abundance of cobalt, chromium, and nickel in 296 minus 80-mesh (0.2 mm) stream-sediment samples collected during the 1978-1979 field season in the West Chichagof-Yakobi Wilderness Study Area, Sitka quadrangle, Alaska.

The area of this project approximates 600 square miles (1800 km²). The stream-sediment samples were collected from active stream channels, draining areas of approximately 2 square miles (6 km²).

The preparation of the stream-sediment samples prior to analysis consisted of sieving to minus 80-mesh (0.2 mm) and pulverizing to minus 200 mesh (0.075 mm). The samples were then analyzed by semi-quantitative optical spectroscopy (Grimes and Marranzino, 1968). The analytical data were compiled and used in preparing the histograms and geochemical map. The histograms were used to identify the range of anomalous values for each element.

A listing of results from the analysis of the various sample media collected in this West Chichagof-Yakobi Wilderness Study Area appears in Hessian and others, (1980).

REFERENCES CITED

Grimes, D. J., and Marranzino, A. P., 1968, Direct-current and alternating-current spark emission spectrometric field methods for the semi-quantitative analysis of geological materials: U.S. Geological Survey Circular 591, 6 p.

Hessian, T. D., Spectman, W. S., Crenshaw, G. L., Hoffman, J. D., and Cooley, E. F., 1980, Analytical results of various types of samples taken in the West Chichagof-Yakobi Wilderness Study Area, Sitka quadrangle, southeastern Alaska, Open-File Report 80-905.

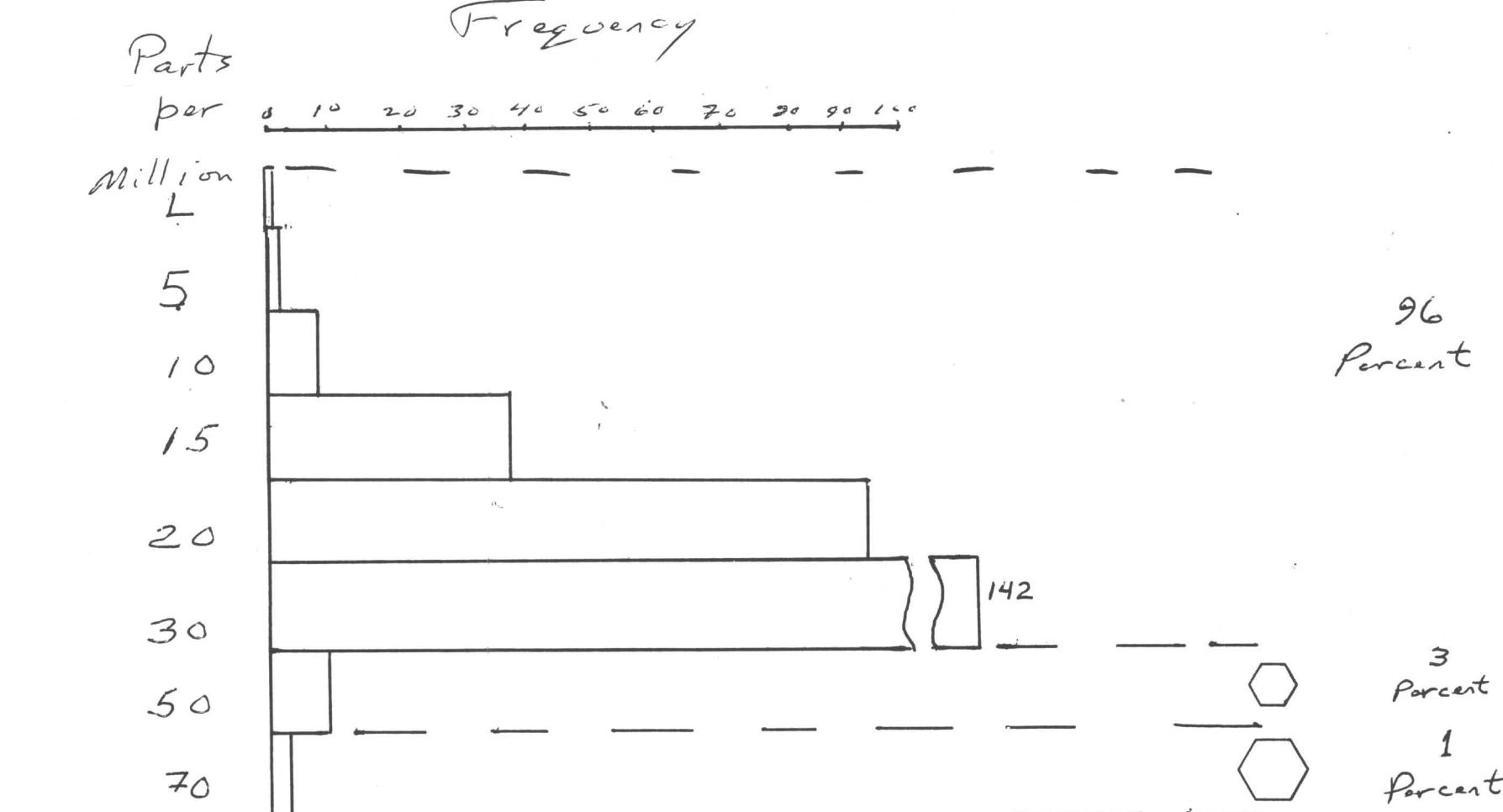


Figure 1--Histogram showing cobalt in 296, minus 80-mesh (0.2 mm) stream-sediment samples from the West Chichagof-Yakobi Wilderness Study Area. Analysis by optical emission spectroscopy (Grimes and Marranzino, 1968). Hexagons indicate anomalous concentrations and class percentages computed on total sample population.

L, detected but below level of determination

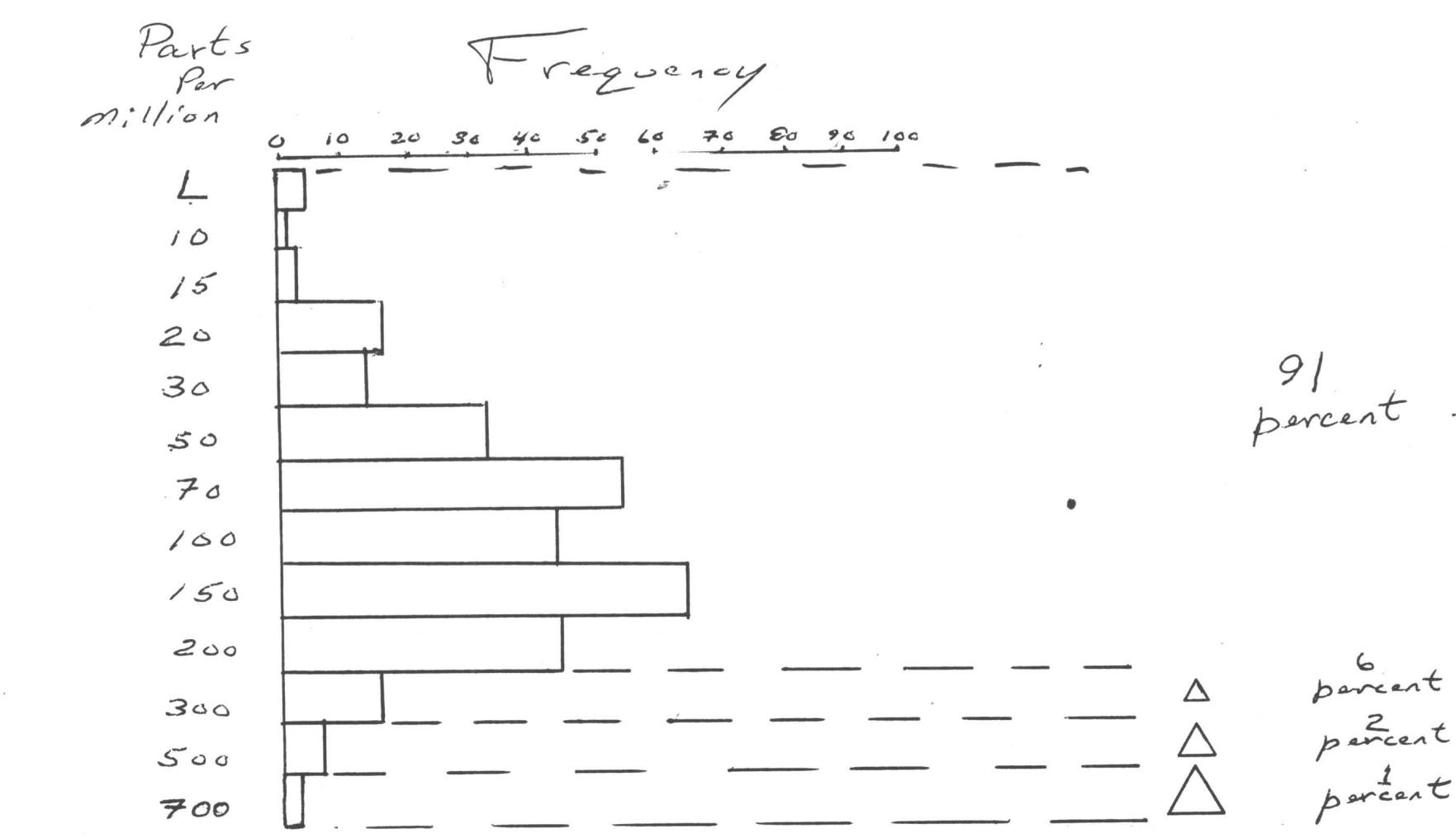


Figure 2--Histogram showing chromium in 296, minus 80-mesh (0.2 mm) stream-sediment samples from the West Chichagof-Yakobi Wilderness Study Area. Analysis by optical emission spectroscopy (Grimes and Marranzino, 1968). Triangles indicate anomalous concentrations and class percentages computed on total sample population.

L, detected but below level of determination

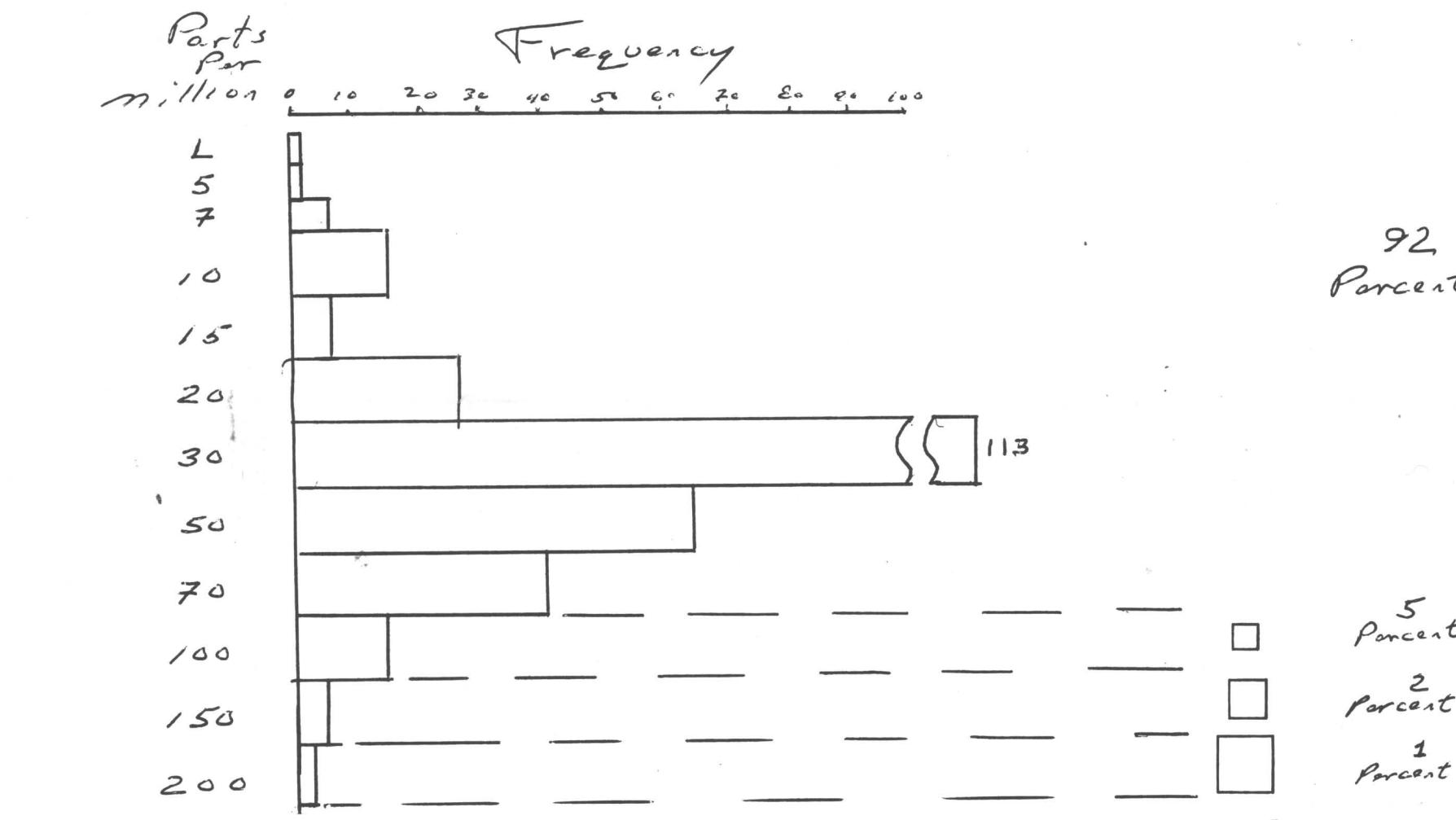


Figure 3--Histogram showing nickel in 296, minus 80-mesh (0.2 mm) stream-sediment samples from the West Chichagof-Yakobi Study Area. Analysis by optical emission spectroscopy (Grimes and Marranzino, 1968). Squares indicate anomalous concentrations and class percentages computed on total sample population.

L, detected but below level of determination

CORRELATION OF MAP UNITS	
Qa1	QUATERNARY
Tf	TERTIARY(?)
Tm	Kd
Kd	Ks
Ks	Kkb
Kkb	SITKA CRANACKA
KJf	KELP BAY GROUP--Metasediments and metavolcanics
KJm	FELSIC PLUTONIC ROCKS--Dominantly granodiorite
Trs	MAFIC PLUTONIC ROCKS--Dominantly quartz diorite, diorite, and gabbro
Trg	METAVOLCANIC ROCKS
MzPzu	GOON DIP GREENSTONE
	UNDIVIDED METASEDIMENTARY--Metavolcanic and metaplutonic rocks

LIST OF MAP UNITS

Qa1	ALLUVIAL DEPOSITS--Undivided
Tf	FELSIC PLUTONIC ROCKS--Dominantly tonalitic
Tm	MAFIC PLUTONIC ROCKS--Dominantly gabbroic
Kd	DIORITE--Extensively altered
Ks	SITKA CRANACKA
Kkb	KELP BAY GROUP--Metasediments and metavolcanics
KJf	FELSIC PLUTONIC ROCKS--Dominantly granodiorite
KJm	MAFIC PLUTONIC ROCKS--Dominantly quartz diorite, diorite, and gabbro
Trs	METAVOLCANIC ROCKS
Trg	GOON DIP GREENSTONE
MzPzu	UNDIVIDED METASEDIMENTARY--Metavolcanic and metaplutonic rocks

Studies Related to Wilderness

The Wilderness Act (Public Law 88-577, Sept. 3, 1964) and related Acts require the U.S. Geological Survey to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a geochemical survey of the West Chichagof-Yakobi Wilderness Study Area, Sitka quadrangle, southeastern Alaska.