






LIST OF MAP UNITS	
Qal	Alluvial deposits, undivided
Tf	Basalt plutonic rocks
ME	Mafic plutonic rocks
Kol	Diorite sill, extensively altered
Kn	Silica Gneiss/rocks
Kkb	Kip-Ray Group
KJf	Basalt plutonic rocks
KJn	Mafic plutonic rocks
Mu	Multistripe Marble
Pg	Green Bip Gneiss/rocks
NPpau	Undivided metasedimentary, metavol-

### CORRELATION OF MAP UNITS

Qa1		
Tf      Tn		} QUATERNARY
Kd		} TERTIARY (?)
Kc		} CRETACEOUS (?)
Kk-b		} CRETACEOUS
KJf    KJm		} CRETACEOUS AND JURASSIC
Tr		} TRIASSIC (?)
Nz-Pzu		} MESOZOIC AND PALEOZOIC

## SYMBOLS

- |   |  |
|---|--|
| -----   | Contact, approximately located, dotted where concealed |
| -----   | Boundary of study area                                 |
| •   | Geochemical sample site                                |
|    | Beryllium = 3 ppm                                      |
|    | Beryllium > 3 ppm                                      |
|    | Boron = 100 ppm  |
|  | Boron = 150-200 ppm                                    |
|  | Boron > 200 ppm  |

## STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines 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 geoscientific survey of the Western Chukchi-Yakutat Islands Wilderness Study Area in the Tongass National Forest, Alaska. About 65 percent of the study area was established as a wilderness on December 2, 1980, under the Alaska National Interest Lands Conservation Act (P.L. 96-487).

investigations of the Western Chichagof-Yakobi Islands Wilderness Study Area, 2,230 bedrock geochemical samples were collected. Samples were analyzed for 31 elements by a 6-step, semiquantitative spectrographic method (Grimes and Marranzino, 1968) and for 4 elements by atomic absorption spectrophotometry (Ward and others, 1969). Complete analytical data, station coordinates, and a station location map are available in two reports: Johnson, 1982, and Johnson and Elliott, 1984. A map and discussion of the mineral resource potential of the study area is also available (Johnson and others, 1984).

Background levels for each element vary for different lithologies in the study area. Because of this and the variability introduced from other sources such as sampling technique, analytical variance, and chemical weathering, it is impossible to select a single value for each element to represent background mineralization. Higher values may indicate a greater likelihood of bedrock mineralization, but confidence levels are low for single element high values and results which are not supported by neighboring values. The map shows the distribution of high analytical values for the elements barium and beryllium as well as the location of all 2,230 samples. Multiple symbols for a single element at one sample site represent multiple samples at that site. Although not of economic interest in this area, these elements, along with others, are used by geologists as pathfinders, or indicators of economic mineralization in other elements.

#### REFERENCES CITED

Grimes, D. J., and Marranzino, A. P., 1968, Direct-current arc and alternating-current spark emission spectrographic field methods for the semiquantitative analysis of geologic materials: U.S. Geological Survey Circular 591.

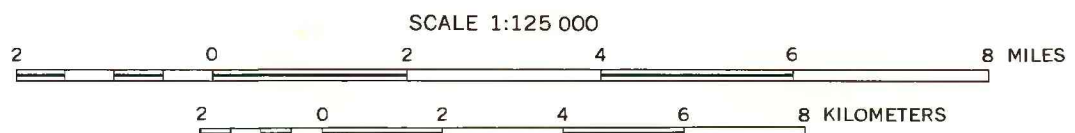
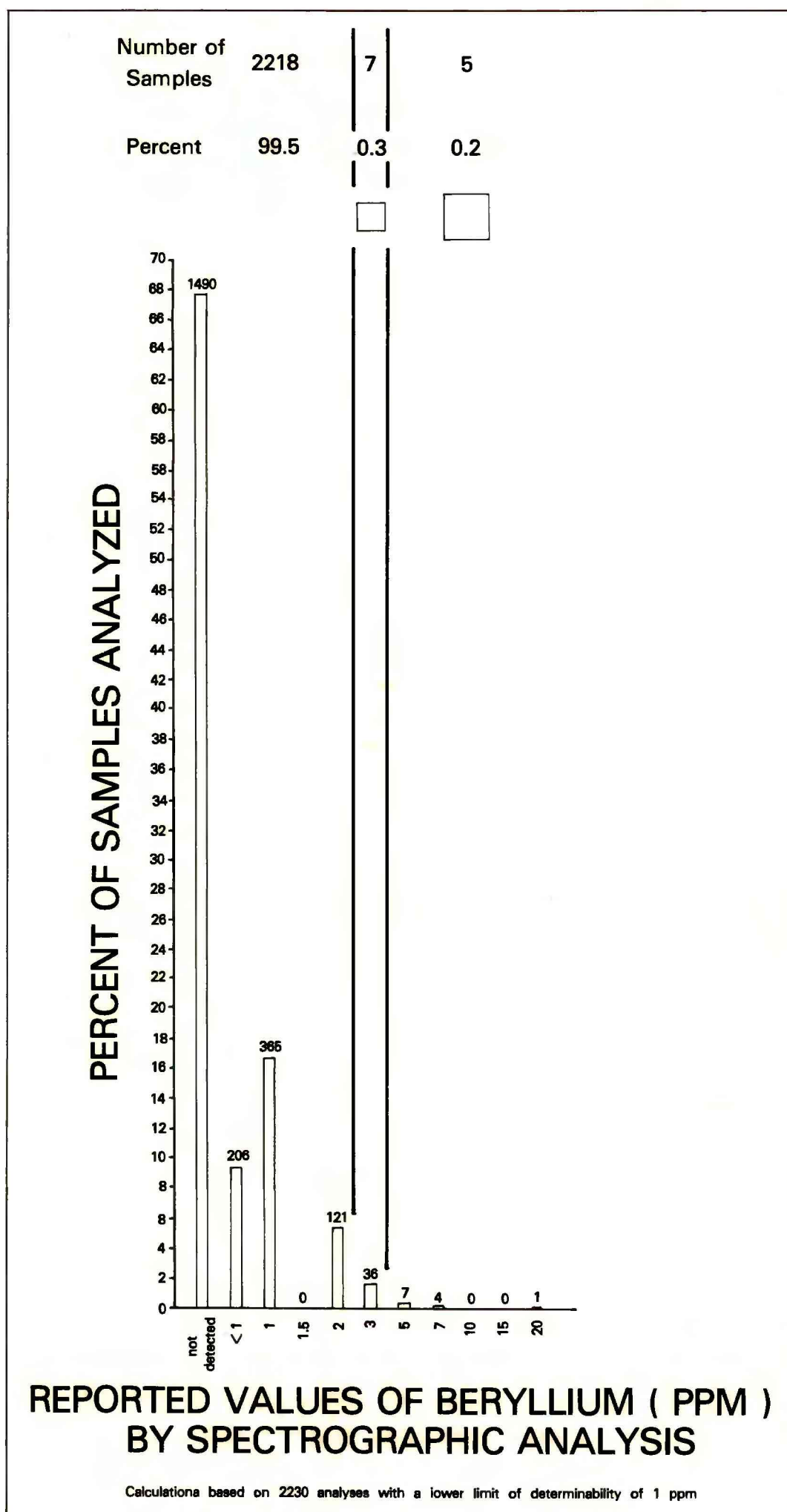
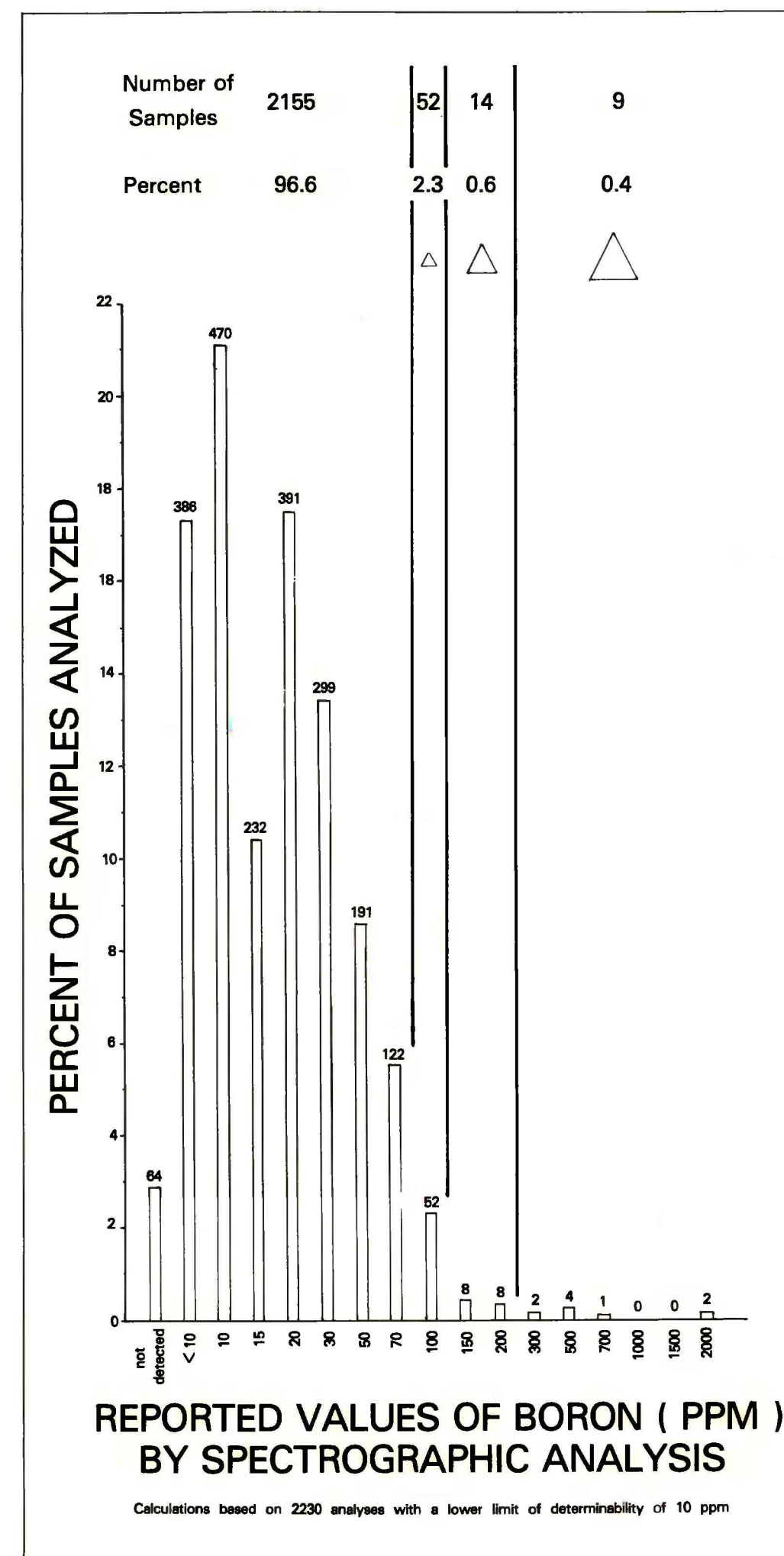
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Johnson, B. R., and Elliott, G. S., 1984, Map showing bedrock geochemical station locations, Western Chichagof-Yakobi Islands Wilderness Study Area, southeastern Alaska: U.S. Geological Survey Open-File Report 81-0027-A, scale 1:125,000.

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MAP SHOWING THE DISTRIBUTION AND ABUNDANCE OF BORON AND BERYLLIUM IN BEDROCK SAMPLES, WESTERN CHICHAGOF AND YAKOBI ISLANDS WILDERNESS STUDY AREA, SOUTHEASTERN ALASKA

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This map is preliminary and has not been reviewed for conformity with U. S. Geological Survey editorial standards, but the stratigraphic nomenclature has been approved previously.