

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 geochemical survey of the Western Chichagof-Yakobi 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).

In the course of the U.S. Geological Survey 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 5-step, semi-quantitative spectrographic method (Grimes and Vancott, 1969) 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, 1980. A map and discussion of the mineral resource potential of the study area is also available (Johnson, Vahall, and Scill, 1982).

Background levels for each element vary for different lithologies in the study area. Because of this and variability introduced from other sources such as sampling technique, analytical variance, and chemical weathering, it is impossible to select a specific analytical level above which values indicate 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. This map shows the distribution of high analytical values for the elements molybdenum, tin, and vanadium 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.

REFERENCES CITED

Grimes, D. J., and Vancott, A. P., 1969, Direct-current arc and alternating-current spark emission spectrographic field methods for the semi-quantitative analysis of geologic materials: U.S. Geological Survey Circular 391, 6 p.

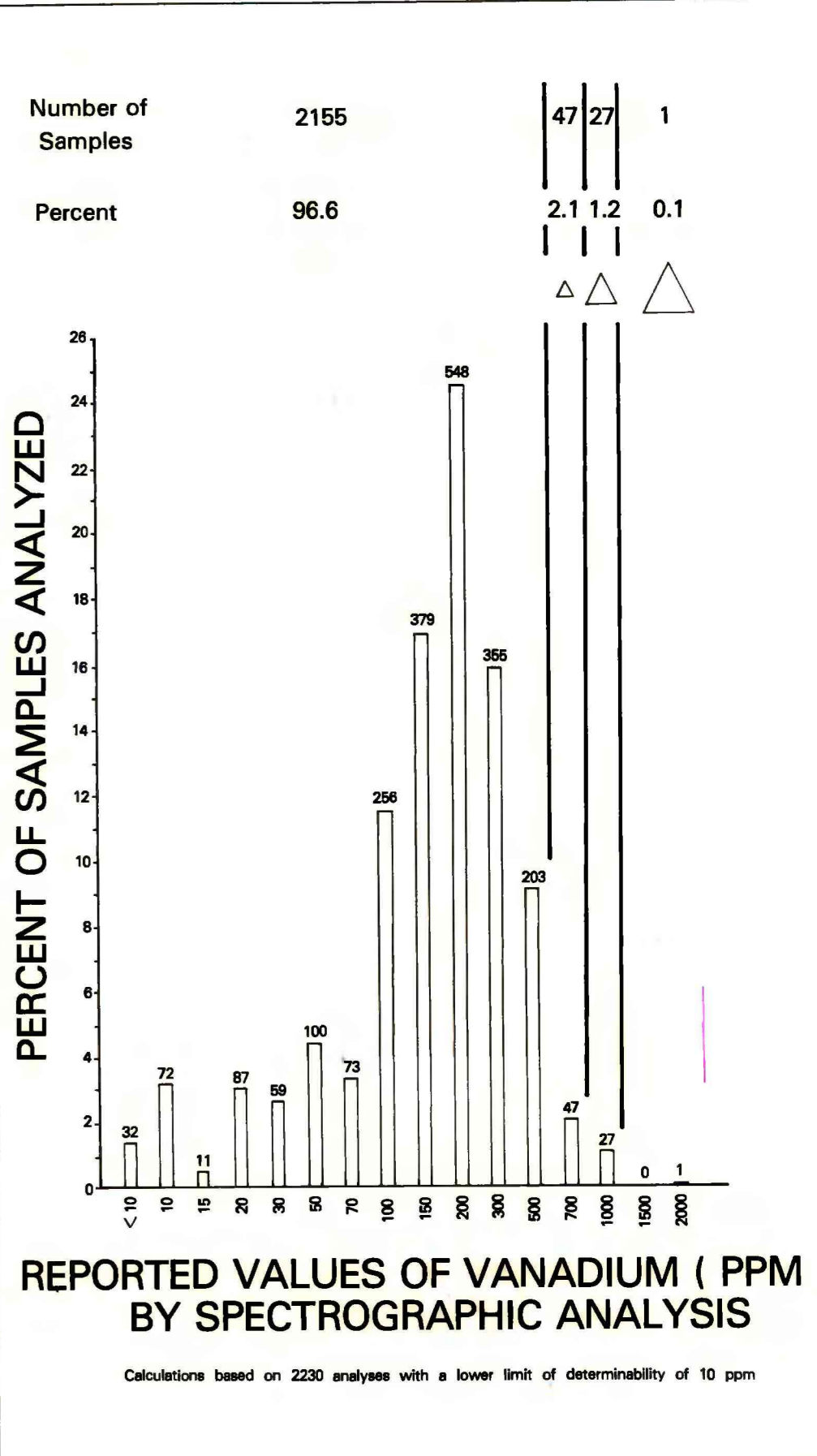
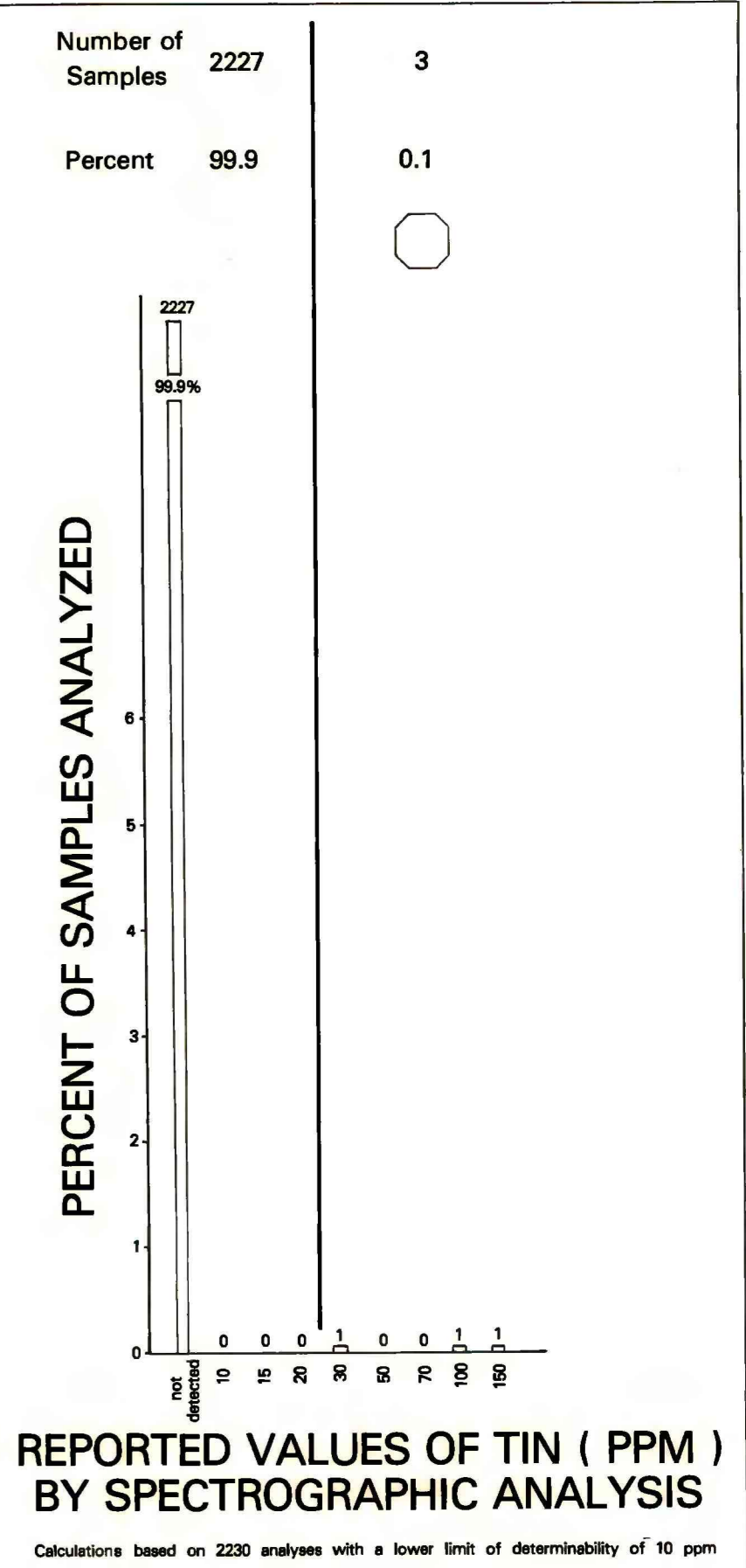
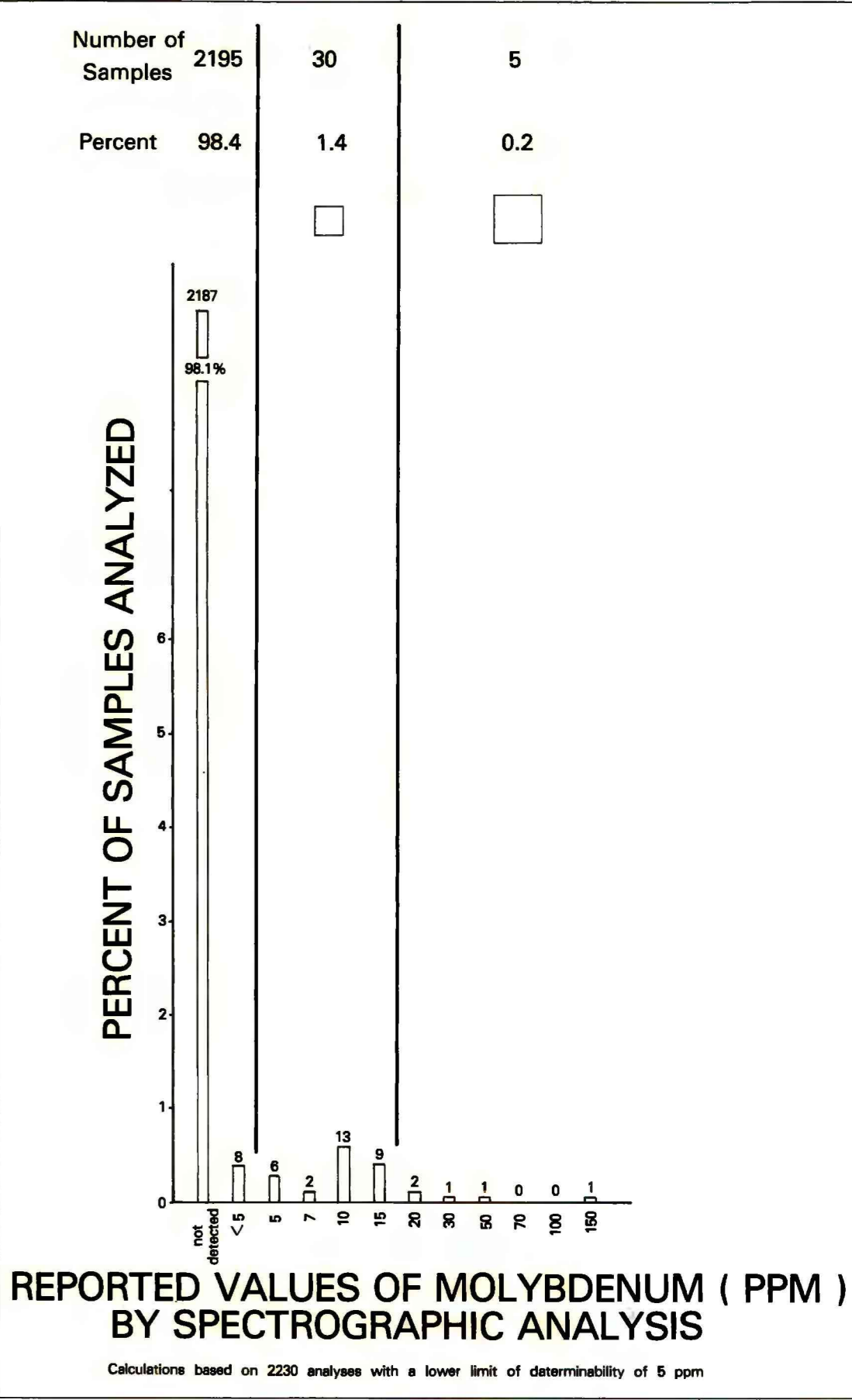
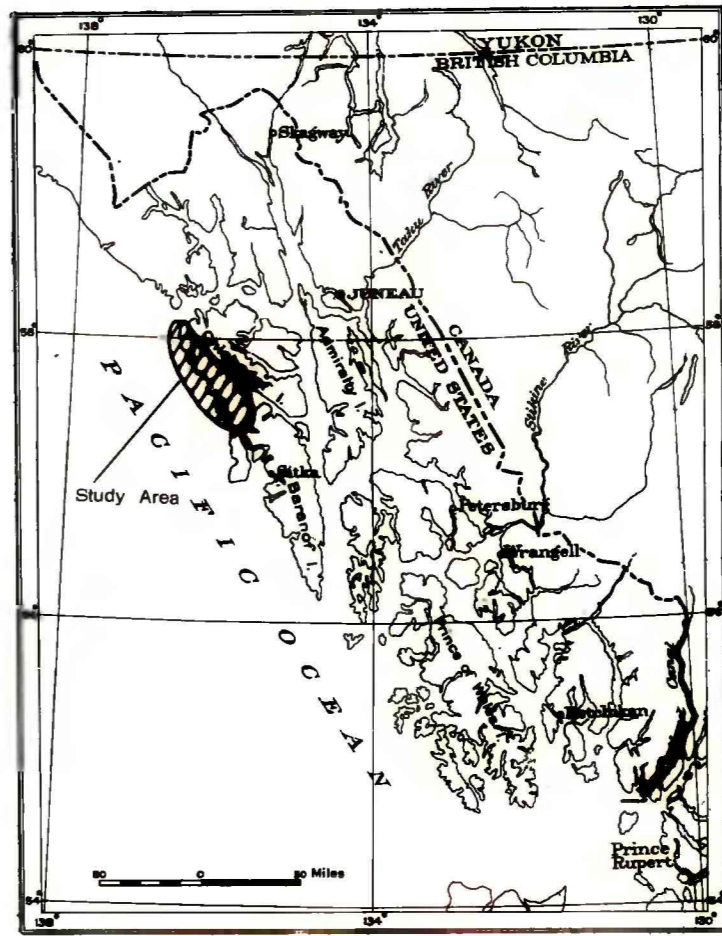
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MAP SHOWING THE DISTRIBUTION AND ABUNDANCE OF MOLYBDENUM, TIN, AND VANADIUM IN BEDROCK SAMPLES, WESTERN CHICHAGOF AND YAKOBI ISLANDS WILDERNESS STUDY AREA, SOUTHEASTERN ALASKA

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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.