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ANALYSES OF OUTCROP AND STREAM SEDIMENT SAMPLES FROM THE YAKUTAT AND MT. ST. ELIAS QUADRANGLES, ALASKA

By

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This report lists semiquantitative spectrographic analyses of rocks, mineralized rocks, altered zones, veins, and sediments collected during a reconnaissance geochemical survey of parts of the Yakutat and Mt. St. Elias quadrangles, Alaska. It also gives the gold content, as determined by atomic absorption methods, for most of the samples. The analytical results provide background geochemical data for the rocks of the region and indicate minor anomalous concentrations of many metals. This investigation is under the sponsorship of the U.S. Geological Survey's Heavy Metals program, and its fieldwork was concomitant with other geologic studies during 1967 and 1968 under the direction of Plafker. The sampling was mainly helicopter-supported and done by Plafker in 1967 and by Plafker, MacKevett, and M. E. Perkins in 1968.

The report includes a map of parts of the Yakutat and Mt. St. Elias 1:250,000 quadrangles and three tables. The map shows the generalized geology as deduced from recent geologic mapping and the sample locations, which are keyed to the tables by sample numbers. Table 1 gives analyses of rocks, mineralized rocks, and veins that were collected during 1967. Table 2 shows analyses of rocks, veins, and altered zones that were sampled in 1968, and table 3 gives analyses of stream sediment samples and one beach sand. Except where otherwise noted, samples shown in tables 1 and 2 are representative grab samples. The stream sediment samples represent the finest grained material available at the sample site.

No attempt is made to discuss anomalous concentrations of metals and their economic implications. Many of the mineralized rock samples are representative of extensive zones that generally are characterized by disseminated pyrite. The few veins that were sampled are narrow and commonly less than a foot wide. Most of the altered zones are between 1 and 10 feet wide, but some attain widths of several hundred feet. Several of the larger altered zones were tested by chip or channel samples as indicated in the "Description" column of table 2.

The only mining in the quadrangles involved periodic small-scale attempts to exploit the beach sands for their gold content. The analytical results should be of value in any systematic prospecting in the quadrangles, and they also provide data fundamental to provenance and similar geologic studies.