Bibliography of selected references
on the geology of the
Livengood quadrangle, east-central Alaska

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Introduction

The Livengood 1:250,000 quadrangle, in east-central Alaska, encompasses approximately 12,052 km² in the western part of the Yukon-Tanana Upland. The quadrangle is bounded by 65° and 66° N. Lat., and 147° and 150° W. Long. Two mineral resource assessment programs were undertaken by the U.S. Geological Survey in the Livengood quadrangle in 1986-87 and a geological bibliography was compiled in connection with this work.

Ages of the rocks of the Livengood quadrangle range from Precambrian to Recent and include a great variety of lithologies. Precambrian (?) greenschist facies schists dominate the southeastern part of the quadrangle, but the metamorphic grade of rocks across the quadrangle generally decreases to the northwest. Ordovician mafic volcanic rocks, Silurian to Devonian limestone, and Paleozoic (?) quartzite form the White Mountains, a largely fault-bounded block in the central part of the quadrangle, north of the metamorphic rocks. A Mesozoic basin to the north and west of the White Mountains extends southwestward across the quadrangle and consists of conglomerate, sandstone, siltstone, and shale. North of this Mesozoic basin is a sequence of grit, slate, mafic-ultramafic rocks, and dolomite, of probable Cambrian to Precambrian age, and chert, conglomerate, shale, and limestone of Paleozoic age. Cretaceous to Tertiary granitic intrusions compose Elephant, Wolverine, Sawtooth, and Cache Mountains, as well as Tolovana Hot Springs Dome in the southern and central parts of the quadrangle. The northwestern third of the Livengood quadrangle is largely underlain by mafic volcanic and intrusive rock with related chert and clastic sedimentary rocks of Mississippian to Triassic age.
The rocks of the Livengood quadrangle regionally strike northeast, and are complexly folded and faulted largely because of repeated right-lateral strike-slip movement and compression in, and south of, the Tintina fault zone. The Victoria Creek fault, a strand of the Tintina fault system, appears to separate rocks of differing structural style and sedimentological characteristics. Folds are mostly overturned to the north. In the western part of the quadrangle a major structural feature is displayed in a Mesozoic sequence which is folded around a core of Paleozoic and Precambrian sedimentary and volcanic rocks (Chapman and others, 1971).

Several placer gold mining districts are wholly or partly within the Livengood quadrangle. The Rampart district is in the northwestern third of the quadrangle, the Hot Springs district is in the southwestern corner, the Tolovana district extends northeast-southwest through the central part, and the Fairbanks district is in the southeast corner (Ransome and Kerns, 1954).

In 1882, the Schieffelin brothers of Tombstone, Arizona fame discovered gold in the Rampart district. In 1898, five to six men from New England, informally known as the "Boston Boys", struck pay in the Hot Springs district, and in 1902, Felix Pedro found gold in the Fairbanks district. Jay Livengood and N.R. Hudson discovered placer gold on Livengood Creek in 1914. By 1918, the town of Livengood, in approximately the center of the quadrangle, supported a population of approximately 1,500 people. Mining activity decreased, and since 1922 the population has gradually declined to only a few permanent residents.

The U.S. Bureau of Land Management manages land usage in large sections of the quadrangle, including portions of the Yukon Flats National Wildlife Refuge and the White Mountains National Recreation Area.
Fairbanks North Star Borough government manages the borough lands in the southeastern part of the quadrangle (figure 1). Townships of native land selections are also present in the vicinity of the communities of Minto, Rampart, and Steven's Village.

The bibliography is divided into two parts. Part A contains geological references on the Livengood quadrangle. References in part B pertain to related stratigraphic correlations, structural styles, and paleontology in adjoining quadrangles and eastern Alaska. Part B also includes references to Canadian geology, with its similar stratigraphic units and mineral deposits, and to the Tintina fault system.

This geological bibliography represents a comprehensive, but not exhaustive literature survey. References include state and federal publications, articles and abstracts from scientific journals, and some unpublished theses and dissertations.

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Figure 1.--Land use status in the Livengood area, showing outline of Livengood quadrangle.
PART A

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