



## MINFILE NTS 093K – FORT FRASER

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**The Fort Fraser area, located in the Intermontane belt and comprising parts of the Stikinia, Cache Creek, and Quesnellia terranes, contains 104 recorded mineral occurrences.** Of these, 42 are industrial mineral occurrences and 61 are base and precious metal occurrences. The map is published at 1:250,000 scale.

The March 1995 update consisted of research into new assessment work and references for portions of NTS mapsheets 093K02, 03 and 05 and all of 093K04. The research resulted in minor updates to the Endako deposit and associated occurrences and one new showing, the **Jed** (093K 102).

The area is underlain by sedimentary and volcanic rocks of the Cache Creek, Takla, Hazelton, Ootsa Lake and Endako groups. The region has been intruded by the Early Jurassic quartz monzonitic to granodioritic Topley Intrusive Suite, Late Jurassic plutons of the Francois Lake Intrusive Suite, Permian to Triassic Trembleur Intrusions and plugs and stocks related to Upper Cretaceous and Tertiary volcanism.

The **Endako** (093K 006, 008) porphyry molybdenum deposit, currently in production, is hosted in the Endako quartz monzonite phase of the Francois Lake Batholith and consists of a series of east-west trending en echelon veins. Similar prospects, the **Kid** (093K 003) and **Dat** (093K 098), occur to the north. The **Snowbird** (093K 036) deposit is hosted within Cache Creek Group sedimentary rocks in a structure known as the Main Alteration Zone and in narrow shears and faults. The gold and antimony mineralization are related to the Pinchi fault and is not confined to a specific rock type. Hosted in Cache Creek Group metamorphosed rocks, the **Silver Fox** (093K 026) occurrence consists of a quartz vein stockwork enriched in silver, but also containing gold, copper and zinc. In 1921, 2.7 tonnes of sorted ore were shipped from the Silver Fox. Quartz-ankerite-barite veins rich in silver, copper and zinc occur in shear zones at the **Silver Island** (093K 025) occurrence. Massive sulphide mineralization with high silver and copper content occurs in pillow lava of the Jurassic Hazelton Group at the **Golden Glory** (093K 031) occurrence. Several mercury showings occur along the Pinchi fault. The **Pinchi Lake Mercury** (093K 049) deposit consists of cinnabar mineralization in blebs and veinlets concentrated in breccia zones along the fault and in Cache Creek Group rocks. The **Tas** (093K 080) showing, located in the northern part of the Quesnel trough, consists of porphyry-related precious metal mineralization hosted in Takla Group rocks. Chromite within ultramafics of the Trembleur Intrusions, occurs in the **Tsitsutl Mountain** (093K 037) area. The **Genesis** (093K 005) jade deposit occurs along the contact between serpentinite and quartz monzonite.

Limestone is common in Cache Creek Group rocks and minor production has occurred from the **Fort St. James South** (093K 092), **Fort St. James North** (093K 023) and **Necoslie River** (093K 085) limestone deposits. The **Thur** (093K 057) and **John** (093K 051) limestone prospects also occur within Cache Creek Group rocks. The **Francois** (093K 001) perlite deposit produced 1587 tonnes of perlite between 1949 and 1953. Clay from the **Fraser Lake** deposit (093K 087) was once used for brick manufacturing even though it is generally of poor quality. Two vermiculite prospects, **Joseph Lake** (093K 100) and **Sowchea Creek Vermiculite** (093K 101), occur in Jurassic granitic rocks.

Two placer deposits, **Sowchea Creek** (093K 071) and **Dog Creek** (093K 099), reportedly produced unrecorded amounts of gold.

Open File Map 1999-11, depicts the bedrock geology of the Cunningham Lake area at 1:100,000 scale. Mapping in 1997 and 1998 by the B.C. Geological Survey Branch and the Geological Survey of Canada built on previous regional scale mapping by J. Armstrong of the Geological Survey of Canada dating back to 1949 and by Placer Exploration dating back to the late 1960's. The new mapping presents significant revisions to the previous geologic maps available for the area. The Cunningham Lake area, which covers parts of Babine, Stuart and Trembleur Lakes, is located north of Burns Lake and west of Fort St. James. This area spans the boundary between the Stikine and Cache Creek geologic terranes. Within the Cache Creek terrane is the Sitlika volcanic belt considered to be prospective for Kutcho Creek type massive sulphide deposits. This belt is well exposed at several localities within the map area. Prior to the current mapping, this belt was believed restricted to the Takla Lake area to the north. Other important mineral prospects in the area include the **Mac** porphyry molybdenum deposit (093K 097) and the new **Fort** occurrence (093K 093) discovered in 1998.

The Geological Survey of Canada (GSC) and the BC Geological Survey (BCGS), together with researchers in universities and industry, conducted a geoscience program, from April 1995 to March 2001, in the Nechako Plateau area of central British Columbia. This area was selected because the existing geological database was poor. The first NATMAP program in British Columbia addressed questions relevant to improving our geological understanding of the area and to guide local mineral exploration.

The Nechako project was coordinated and funded by both the GSC and BCGS and the program was financially augmented by the GSC's National Mapping Program (NATMAP). More than fifty scientists from the GSC, BCGS, Canadian Forest Service, universities in North America, Asia and Europe, and mining and exploration companies were involved in the program. Bedrock and surficial mapping were enhanced by integration with site and area specific studies of metallic and industrial mineral deposits, biostatigraphy, geochronology, stream and till geochemistry, biogeochemistry, airborne geophysics, seismology and paleomagnetism.

From 1995-2000, new regional and detailed geological and geophysical maps were published for the Nechako River (93F), Fort Fraser (93K) and parts of Prince George (93G/12,13), Smithers (93L/16), Hazelton (93M/1), and Manson River (93N/4,5,12) map areas (see index map). In addition to hardcopy maps and reports, all data were brought together in computer-accessible, GIS compatible format and made available on CD-ROM disks and through the Internet. From 1995-2000, new regional and detailed geological and geophysical maps were published for the Nechako River (093F), Fort Fraser (093K) and parts of Prince George (093G/12,13), Smithers (093L/16), Hazelton (093M/1), and Manson River (093N/4,5,12) map areas.

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