



MINFILE NTS 093F – NECHAKO RIVER

Original release date: September 1989, updated March 1995

Researched and compiled by: D.G. Bailey, D.E. Jakobsen and R.A. Lane

The Nechako River area, located in the Intermontane belt and comprising part of the Stikinia terrane, contains 68 recorded mineral occurrences. Of these 7 are industrial mineral occurrences, 54 are base and precious metal occurrences and one is a coal occurrence. The map is published at 1:250,000 scale.

Recent mapping by the B.C. Geological Survey Branch has resulted in the discovery of several new mineral occurrences and has redefined geology in the southern part of the mapsheet. This work, which is part of the Interior Plateau Project, is ongoing and results will be published in the next few years. Only the occurrences in the areas mapped to date (NTS 093F02, 03, 06 and 07) have been updated with the new geology. The published MINFILE map uses the older version of the bedrock geology.

The area is underlain by Lower to Middle Jurassic Hazelton Group volcanic and sedimentary rocks that are intruded by felsic plutons that range in age from Jurassic to Tertiary. These are overlain by the Upper Cretaceous to Lower Tertiary Ootsa Lake Group and younger Endako Group and/or Chilcotin Group plateau basalt. A belt of granodiorite, diorite and quartz diorite plutons of the Lower Jurassic Topley Intrusive suite intrude Lower Jurassic Hazelton Group rocks in the northeastern part of the map area.

Epithermal Au-Ag occurrences, hosted mainly by Ootsa Lake Group felsic volcanic rocks [e.g. **Wolf** (093F 045), **Trout** (093F 044), **Uduk Lake** (093F 057) and **Loon** (093F 061)] and to a lesser degree by Hazelton Group intermediate volcanic rocks [e.g. **Tsacha** (093F 055) and **Fawn** (093F 043)] are common in the area.

Molybdenum and copper porphyry-style occurrences are associated with Tertiary intrusions where they cut Hazelton Group intermediate volcanic rocks [e.g. **C** (093F 004), **April** (093F 060) and **Chu** (093F 001)]. An association between older plutons and porphyry-style mineralization may also exist. Porphyry-related precious and base metal mineralization, hosted by Hazelton Group intermediate volcanic rocks in association with crosscutting rhyolitic dikes of Cretaceous(?) age, have been reported [e.g. **Pem** (093F 037) and **Capoose** (093F 040)].

Contact metasomatic iron and copper-gold showings hosted by Hazelton Group rocks occur in and along the margin of the Jura-Cretaceous Capoose Batholith [e.g. **Fawn 5** (093F 053)].

Secondary uranium occurs in a rhyolite porphyry dike at the **Nithi Mountain** (093F 012) showing. The **Exo** (093F 017) prospect consists of tungsten, copper and molybdenum hosted in both quartz stockworks and garnet diopside skarn.

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, biostratigraphy, 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.

SELECTED REGIONAL REFERENCES (NTS 093F – NECHAKO RIVER)

- Cook, S.J. and Jackaman W. (1994): Regional Lake Sediment and Water Geochemistry of part of the Nechako River Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-19.
- Diakow, L.J. and Green, K. (1993): Geology of the Nataalkuz Lake Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1993-14.
- Diakow, L.J. and Green, K. (1993): The Fawnie Range Project - Geology of the Nataalkuz Lake Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Fieldwork 1992 pages 57-67.
- Diakow, L.J. et al (1994): Bedrock and Surficial Geology of the Fawnie Creek Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-2.
- Diakow, L.J. et al (1995): Bedrock and Surficial Geology of the Tsacha Lake Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1995-16.
- Diakow, L.J. et al (1995): Bedrock and Surficial Geology of the Chedakuz Creek Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1995-17.
- Giles, T.R. and Levson, V.M. (1994): Drift Prospecting Potential of the Fawnie Creek Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-10.
- Giles, T.R. and Levson, V.M. (1995): Surficial Geology and Quaternary Stratigraphy of the Tsacha Lake Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1995-10.
- Green, K. and Diakow, L.J. (1993): Mineral Potential of the Nataalkuz Lake Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Mineral Potential Map 1993-3.
- Lane, R.A. and Schroeter, T.G. (1995): Mineral Occurrence Investigations and Exploration Monitoring in the Nechako Plateau, B.C. Ministry of Energy, Mines and Petroleum Resources, Fieldwork 1994, pp. 177-192.
- Levson, V.M. and Giles, T.R. (1994): Surficial Geology and Quaternary Stratigraphy of the Fawnie Creek Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-9.
- Levson, V.M. et al (1994): Till Geochemistry of the Fawnie Creek Map Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-18.
- Pautler, Jean M., Smith, Scott W. and Lane, Robert A. (1999): Exploration and Geology of the Tsacha Epithermal Gold Deposit, Exploration and Mining in British Columbia 1998, pages B-1 - B-10.
- Plouffe, A.; Williams, Stephen, P. (2001): Quaternary geology data: Manson River (93N), Fort Fraser (93K) and Nechako River (93F), central British Columbia. Geological Survey of Canada, Open File D2270.
- Schroeter, T.G. and Lane, R.A. (1994): Mineral Resources: Interior Plateau Project, B.C. Ministry of Energy, Mines and Petroleum Resources, Fieldwork 1993, pp. 45-58.
- Weary, G.F. et al (1995): Surficial Geology and Quaternary Stratigraphy of the Chedakuz Creek Area, B.C. Ministry of Energy, Mines and Petroleum Resources, Open File 1994-10.