MINFILE
NTS 094C – MESILINKA RIVER

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The Mesilinka River map area, situated in north-central British Columbia, contains 161 documented mineral occurrences. The area straddles three tectonic belts - the Foreland, Omineca and Intermontane. The major physiographic feature in the area is Williston Lake which fills part of the Rocky Mountain Trench. The northwest-trending trench forms the boundary of the Foreland and Omineca belts.

Geological mapping over portions of the map area have recently (1989-1992) been completed at 1:50 000 scale under projects headed by F. Ferri of the British Columbia Geological Survey and funded by the federal-provincial agreements on Mineral Development. These areas include the southern half of 094C/2, most of 094C/3 and 094C/5, and parts of 094C/4, 094C/6 and 094C/12. Several new mineral occurrences were discovered in 1992 by project mappers and are documented in the publication FIELDWORK 1992.

Parts of at least five terranes occur in the map area. The easternmost, within the Foreland Belt, consists of the Ancestral North America Terrane comprising mainly sediments and metasedimentary rocks of the Hadrynian to Lower Cambrian Misinchinka Group, and a Middle Cambrian to Middle Devonian clastic and carbonate sequence (including the Dunedin Formation, Road River Group and Kechika Group (Mount April Formation)). The central area of the map, within the Omineca Belt, consists mainly of displaced continental rocks of the Cassiar Terrane comprising mainly sediments and metasediments of the Hadrynian Ingenika Group and a succession of Paleozoic carbonate and clastic rocks, at least 2 kilometres thick (the Atan, Razorback, Echo Lake, Otter Lakes and Big Creek groups). The westernmost rocks, in the Intermontane Belt, are Upper Triassic to Lower Jurassic Takla Group volcanic rocks of the island-arc Quesnel Terrane. Separating Quesnellia from Cassiar rocks are volcanic(arc?)-sedimentary Harper Ranch Terrane rocks (the Upper Paleozoic Lay Range assemblage) and oceanic Slide Mountain Terrane rocks consisting of pillow basalts and cherty sediments (Nina Creek group).

North and east of Blackpine Lake, rocks of the Ingenika Group have been metamorphosed in the Jurassic(?) and intruded by Cretaceous to Tertiary stocks and pegmatites, such as the granodioritic Blackpine Lake stock. These rocks form part of an assemblage called the Wollverine Complex.

Intrusive rocks are found only in the southwest portion of the map sheet, three of them being part of the Omineca Intrusions described by E.F. Roots (Geological Survey of Canada Memoir 274). The Hogem Intrusive Complex intrudes rocks of the Takla Group and consists of numerous intrusive bodies ranging in age from Late Triassic to Early Cretaceous. Compositions include gabbro, diorite, monzonite and syenite. Close to the Hogem complex, small stocks and dykes of porphyritic monzodiorite, monzonite and syenite intrude Takla rocks. Although small, their association with gold-copper mineralization makes them significant. The Tenakihi intrusive complex, exposed at the headwaters of Tenakihi Creek, is a sill-like body of diorite and monzodiorite up to 1 kilometre thick and traceable for over 10 kilometres. The age is unknown but is thought be Late Triassic to Early Jurassic.

Tan, beige, pink or white hypabyssal quartz feldspar porphyry (dacite) sills of possible Tertiary age intrude schists of the Swannell Formation near Beveley Mountain; they rarely intrude rocks of the Takla Group. The sills vary from a few centimetres to over 100 metres in thickness.

The Polaris Ultramafic Complex and related intrusions (formerly part of the Trembleur Intrusions) are Alaskan-type ultramafic bodies of Early Jurassic age or older. The Lay Range assemblage is intruded by the Polaris Ultramafic Complex, a sill-like body covering an area of 40 square kilometres, composed of varying amounts of dunite, pyroxenite, hornblendite, wehrlite and gabbro.

Mineral occurrences are numerous, especially in the southwest portion of the map sheet, and represent a variety of deposit types. These include porphyry copper and carbonate-hosted lead-zinc occurrences, shear-controlled veining, (like **Polaris** (094C 013) and **Pluto** (094C 019)), sediment-hosted exhalatives (**Reb** (094C 049)), placer gold, ultramafic-hosted chromite, skarns, industrial minerals, and minor coal seams.

Porphyry copper (±gold±silver±molybdenum) occurrences are hosted in Takla Group rocks and are related to various intrusive phases of the Hogem Intrusive Complex. Prospects include **Porphyry Creek** (094C 007), **Cat** (094C 069), **Vega** (094C 021) and **Granite Basin** (094C 009).

Several carbonate-hosted lead-zinc occurrences occur within Paleozoic and Upper Proterozoic carbonate sequences. Most are apparently stratabound replacement-type occurrences, but a few are thought to be syngenetic/stratiform in nature. The replacement-type **Beveley** (094C 023) is the most developed lead-zinc occurrence in the map area with a mineral inventory of 100 000 tonnes, grading 36.33 grams per tonne silver, 1.42 per cent lead and 2.24 per cent zinc. South of the Beveley, across the Osilinka River, recent exploration activity has centred on the **Par** prospect (094C 024). In the north-central part of the map area, the **Ingenika Mine** prospect (094C 002) contains 22 675 tonnes, grading 120 grams per tonne silver, 9.8 per cent lead and 6.1 per cent zinc. Other carbonate-hosted deposits include the **Childhood Dream** (094C 029), **Whistler** (094C 096), **Rain** (094C 074), **Crag** (094C 082) and **Knoll** (094C 141) occurrences.

A variety of industrial mineral commodities are also documented. Several pegmatite-hosted mica occurrences are hosted in Ingenika Group rocks; a few tonnes of excellent quality muscovite were mined from the **Family Farm** occurrence (094C 034) in the 1920s. Significant kyanite and garnet porphyroblasts are hosted in the metasediments of the Ingenika and Misinchinka groups and a number of limestone beds from various localities have been tested for their purity.