



MINFILE NTS 094K – TUCHODI LAKES

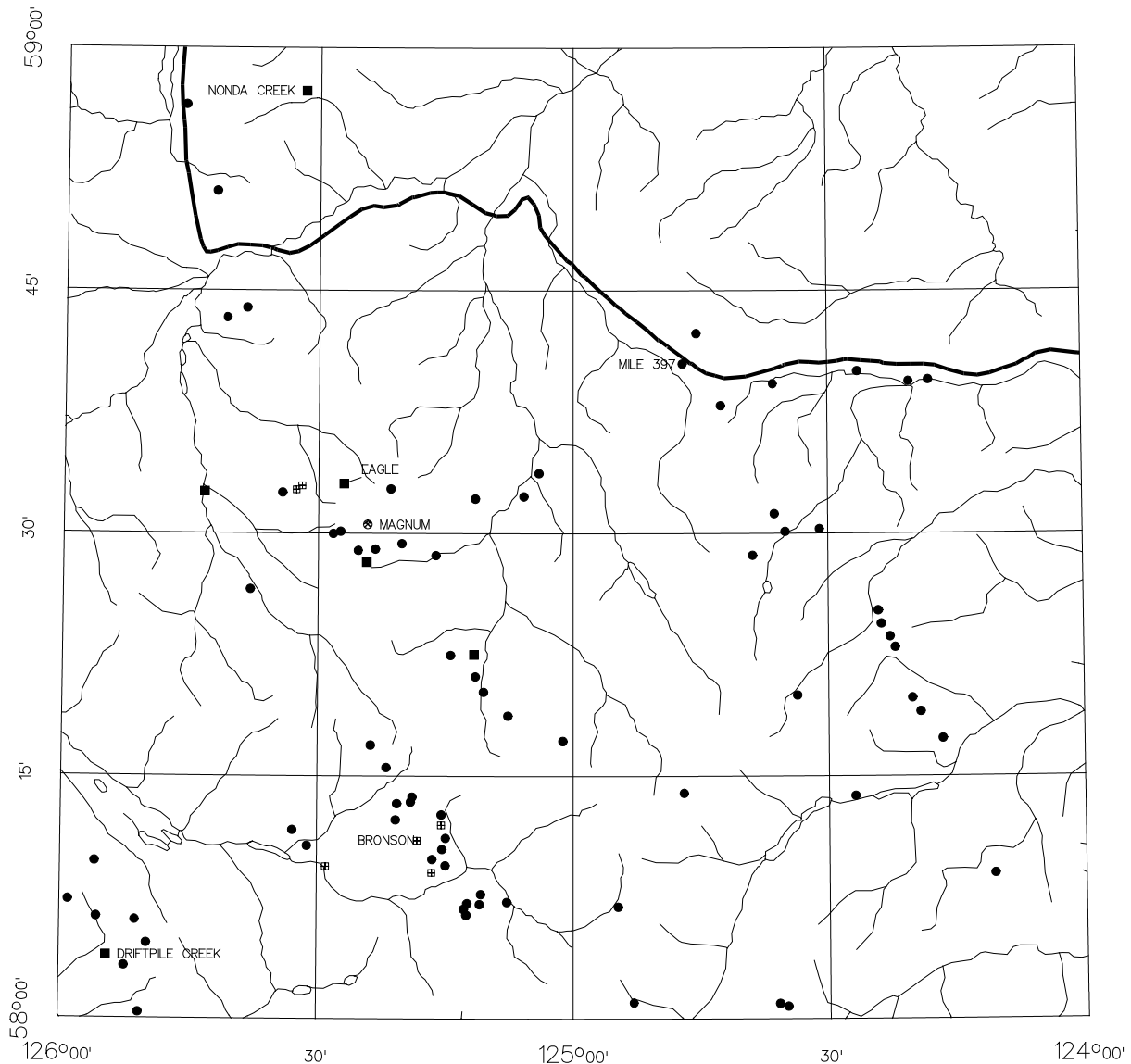
Original release date: March 1995

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The Tuchodi Lakes area, located in the Northern Rocky Mountains of British Columbia, 125 kilometres west-southwest of Fort Nelson, contains 86 documented mineral occurrences.

The Tuchodi Lakes map area is covered by the mountainous Muskwa Ranges, except for the eastern part which is characterized by more subdued topography of the Rocky Mountain Foothills. The major drainages, the Gataga, Toad and Racing rivers, generally flow to the north or northwest. The Alaska Highway stretches across the northern half of the map area.

Most of the mineral occurrences can be broadly divided into three categories: copper mineralization in structurally-controlled quartz-carbonate veins spatially associated with Proterozoic diabase dikes; barite, with or without lead and zinc, in Devonian carbonates; and syngenetic, stratiform lead-zinc-barite mineralization in Middle to Upper Devonian shales. These will be described in turn in the context of the geology of the region



The Northern Rocky Mountains are underlain by a broad belt of sedimentary rocks which are deformed by moderate folds and a stack of northeast-verging imbricate thrusts or reverse faults. The predominant stratigraphic and structural trend is northwest. Two large anticlinal culminations dominate this belt in the Tuchodi Lakes area. The Muskwa Anticlinorium exposes rocks as old as Middle Proterozoic (Helikian) called the Muskwa Assemblage, which consists of a 6000-metres thick succession of dolomitic and limy carbonates and coarse to fine-grained siliciclastics. The Muskwa Assemblage is also exposed in the core of the Tuchodi Anticline to the east, a smaller and less thrust-faulted structure.

The main phase of folding and thrusting took place in the Jurassic to Tertiary, but the Muskwa Assemblage was initially folded and fractured by steep faults in the Proterozoic. These faults and fracture systems trend from northeast to northwest, and many are marked by quartz-carbonate veins which may be mineralized with chalcopyrite, and less commonly pyrite and bornite. At this time or slightly later, numerous diabase or gabbroic dikes were intruded along the same structural systems such that mineralized veins very commonly occur along the margins of or very close to dikes. This association has been useful for exploration as the dikes tend to stand out from the sedimentary country rocks physically and geophysically.

Most of the documented veins are small and discontinuous, and high-grade copper mineralization is generally erratic. The most important area is between Yedhe Creek and Delano Creek, which includes the **Magnum** mine (094K 003), formerly of Churchill Copper Corporation and the only deposit brought to production. It produced 14,673 tonnes of copper between 1970 and 1975; inferred reserves at the time of mine closure were 90,710 tonnes grading 3 per cent copper. Five kilometres to the northwest is the **Eagle or Davis-Keays** deposit (094K 012), an extensive area of mineralized veins which underwent surface and underground development at the same time as the Magnum, but which did not produce ore; semi-proven reserves in 1971 were 1,119,089 tonnes grading 3.43 per cent copper. Another heavily explored area was south of Churchill Peak, centred on the **Bronson** prospect (094K 027) which is noteworthy for its high copper content and for anomalous values of silver and gold, metals which are generally very low in this region.

An angular unconformity separates these Proterozoic rocks from Lower Cambrian to Triassic sedimentary rocks which were subsequently deposited on the passive continental margin of Ancestral North America. In most of the map area, the Devonian was characterized by platformal carbonate deposition. The Lower and Middle Devonian Stone and, particularly, Dunedin formations host minor stratabound or vein-like bodies of barite of various sizes, in limestone or dolostone. Small amounts of massive or disseminated sphalerite and galena may be present in the barite, and rarely fluorite. A number of showings were examined in a narrow belt on the east flank of the Tuchodi Anticline, but nothing economic has been found. The barite itself was the target at the **Mile 397** (094K 004) and **Nonda Creek** (094K 001) showings.

In the southwestern corner of the map area, southwest of the Muskwa Anticlinorium and across the major Gundahoo Thrust, Paleozoic rocks form part of the Kechika Trough, a more basinal succession characterized by shales and siltstones and only minor carbonate. The Devonian Earn Group here is dominantly carbonaceous shale and contains intervals of stratiform lead-zinc-barite mineralization, formed by sedimentary exhalative activity in starved, fault-controlled sub-basins. This area is in the northwest of the Gataga mineral district, which includes the Stronsay or Cirque deposit (094F 008) 80 kilometres to the southeast. By far the most important occurrence is the **Driftpile Creek** developed prospect (094K 066), in which at least two sulphide-rich zones have been recognized. In 1980, indicated reserves were reported to be 18,145,000 tonnes averaging 2.38 per cent combined lead-zinc. Recent work has considerably refined understanding of the stratigraphy and structure of the deposit.

SELECTED REGIONAL REFERENCES (NTS 094K- TUCHODI LAKES)

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