



MINFILE NTS 092HSW – CHILLIWACK LAKE

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The Chilliwack Lake map area is situated in the southwest part of the province and contains 166 documented mineral occurrences. The map sheet is almost entirely within the Coast and Cascade mountains except for that part consisting of the flood plain of the Fraser River, called the Fraser Lowland. The map area straddles the contact of the Coast and Intermontane belts; most of the area lies in the Coast Belt.

The map area is dominated by the Cascade Fold Belt south and east of the Fraser River, and by the Coast Plutonic Complex north and west of the river. The Cascade Fold Belt consists of a high grade metamorphic and granitic core that formed mainly in the Cretaceous, and is flanked on the east and west by less metamorphosed rocks. To the north, this core forms the southeastern part of the Coast Plutonic Complex between Harrison Lake and the Fraser River. East of the core are Permian to Jurassic strata of the Hozameen Complex, east of which are Triassic to Cretaceous, mainly sedimentary, strata of the Methow Trough. West of the core and south of the Fraser River are upper Paleozoic strata of the Chilliwack Group and overlying Triassic to Jurassic strata of the Cultus Lake Formation. To the north of the Fraser River and mainly west of Harrison Lake are primarily Jurassic strata of the Harrison Lake Formation.

The Chilliwack map area has a long history of mineral discoveries beginning in the 1850s with the discovery of placer gold in the gravel bars of the Fraser River. The **Murphy** (092HSW006) occurrence just north of Hope is reputed to have been the first-ever lode mine on the mainland when, in 1858, the Murphy brothers sank a shaft on a mineralized quartz vein. The **Eureka-Victoria** deposit (092HSW011), just southwest of Hope, was discovered in 1868 and apparently shipped considerable high-grade ore prior to 1874. It has the distinction of being the first Crown-granted property in British Columbia. Also of historic interest is the **Steamboat Mountain** showing (092HSW055) located in the southeast part of the map sheet. In 1910, reports that gold occurred in a free state in a porphyry dike on the mountain now called Shawatum Mountain, set off a rush of several hundred prospectors. When the reports proved to be fraudulent, the resultant "evil effects of the Steamboat Mountain fiasco" shook the confidence of prospectors in this region for years after.

Eventually, confidence in the mineral wealth of the area returned as indicated by the numerous and varied mineral occurrences distributed throughout the map area. These occurrences are associated with a variety of deposit types including gabbroid nickel-copper deposits, porphyries, volcanogenic massive sulphides, polymetallic veins, gold-quartz veins, skarns and numerous industrial mineral deposits.

The most important discovery in the map area was made in 1923, when an ultramafic-related nickel-copper deposit was discovered at the head of Stulkawhits Creek northwest of Hope. The deposit became known as the Pride of **Emory or Giant Nickel** mine (092HSW004), with the first shipments of ore occurring between 1933 and 1937. However, it was not until 1958, and then through to 1974, that continuous production occurred along with corresponding government documentation. In those years, about 4.3 million tonnes of ore were mined yielding about 24,939 tonnes of nickel, 13,212 tonnes of copper, 140 tonnes of cobalt, 1 kilogram of gold and 16 kilograms of silver. Proven/probable reserves contained in 15 zones total 863,000 tonnes grading 0.75 per cent nickel, 0.3 per cent copper and 0.03 per cent cobalt.

The **Treasure Mountain** (092HSW016) occurrence is a polymetallic vein deposit in the northwest of the map area that has a long history of activity. Records indicate that it was mined intermittently from 1929 to 1939 and in 1988, producing about 2165 kilograms of silver, 290 tonnes of lead and 64 tonnes of zinc. Exploration is ongoing at Treasure Mountain. This deposit and the surrounding rocks of the Pasayten and Ladner groups remain an important target. To the east near the Coquihalla River, within the southern extension of the Coquihalla Gold Belt, the **Emancipation** mine (092HSW034) produced intermittently between 1916 and 1941 about 90 kilograms of gold

and 19 kilograms of silver. The gold-quartz veins along this belt typically lie east of, but generally close to the East Hozameen fault.

Recent activity at the southeast end of Harrison Lake at the **Harrison Gold** deposit (092HSW092) has delineated some 2.2 million tonnes of ore grading 3.2 grams per tonne gold. The mineralization is confined to a quartz diorite stock of Oligocene age and the adjacent strata of the Jurassic-Cretaceous Brokenback Hill Formation. Located near the eastern border of the map area, south of the Skagit River, the **Giant Copper** occurrence (092HSW001) represents a major porphyry-type deposit. This deposit, hosted in siliceous sediments of the Jurassic Dewdney Creek Formation (Ladner Group), has a drill-indicated resource of 19,956,200 tonnes at a stripping ratio of 4.5:1 grading 0.75 per cent copper, 0.41 gram per tonne gold and 12 grams per tonne silver.

The **Seneca** deposit (092HSW013) and associated **Vent** (092HSW139) and **Fleetwood** (092HSW165) occurrences have made the Jurassic Harrison Lake Formation, mainly west of Harrison Lake, a primary exploration target for volcanogenic massive sulphide mineralization. The Seneca is a Noranda/Kuroko massive sulphide deposit that contains drill-indicated, possible and inferred reserves of 1,506,239 tonnes at undiluted grades of 0.63 per cent copper, 3.57 per cent zinc, 0.15 per cent lead, 0.82 gram per tonne gold and 41.13 grams per tonne silver. Exploration on the Seneca deposits remains active.

In addition to metallic minerals, many industrial minerals have been mined in the area. The **Popkum Limestone** quarry (092HSW009) was active between 1917 and 1970, producing about 98,000 tonnes of limestone. The **Agassiz** quarries (092HSW123) yielded about 22,000 tonnes of limestone between 1941 and 1958. Marl was produced continuously between 1948 and 1987 from the **Cheam Marl** deposit (092HSW106), with over 593,000 tonnes mined. Several small granite and 2 travertine quarries once operated in the area. **Valley Granite** (092HSW157) produced about 68,000 tonnes of "granite" between 1960 and 1972. The **Skagit Valley** (092HSW159) and **Hope** (092HSW160) currently produce granite products. Other documented commodities of interest in the map area include asbestos, chromium, diatomite, feldspar, garnet, jade, sillimanite and uranium.