MINFILE – 082FNW
SLOCAN CAMP AND AREA - NTS 082F14, 082K03 (parts of)

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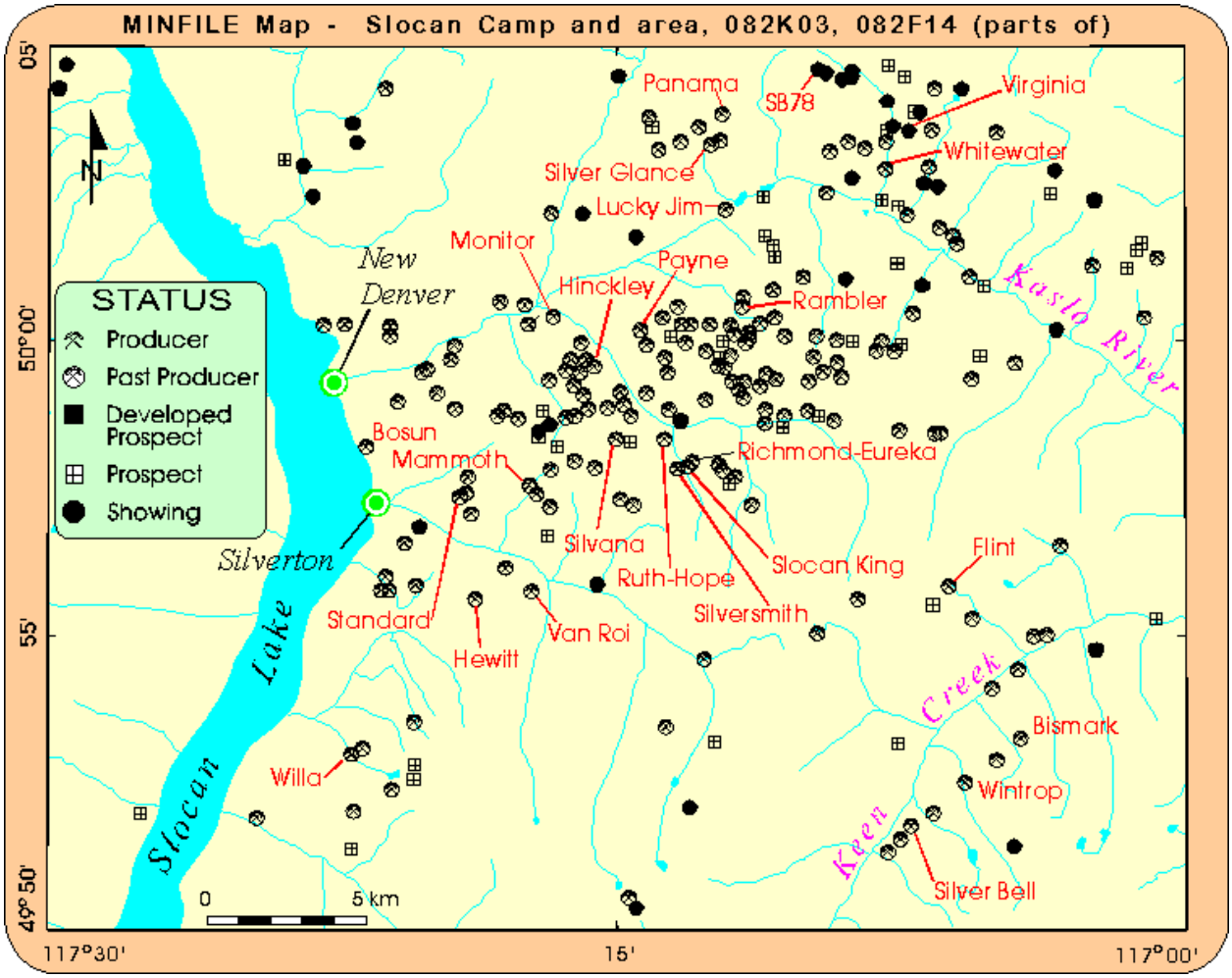
The Slocan camp inset map area is located in the southeastern part of British Columbia and contains 228 documented occurrences; 123 occurrences on 082FNW (Slocan) map sheet and 105 occurrences on 082KSW (Nakusp) map sheet. The area includes the main portion of the Slocan mining district, the premier polymetallic silver vein mining camp in the province. Physiographically, the map sheet covers the Selkirk Mountains. Slocan Lake is in the western part of the map inset and the communities of New Denver and Silverton are on the east shore of the lake. The inset map is bound to the north by latitude 50 degrees 5 minutes and to the south by latitude 49 degrees 50 minutes, and to the west and east by longitude 117 degrees 30 minutes and 117 degrees, respectively. The map is published at a 1:50,000-scale.



The map area is entirely within the Omineca tectonic belt, and lies on the western margin of the Kootenay Arc, mostly in allochthonous rocks of the Quesnel Terrane. Within the Slocan mining camp, the Quesnel Terrane is dominated by very fine grained clastic sedimentary rocks of the Upper Triassic Slocan Group which disconformably overlie the volcanic rocks of the Permian and/or Triassic Kaslo Group in the northeastern part of the map area. The base of the Slocan Group is marked by a conglomerate and sedimentary breccia composed of Kaslo detritus. Overlying the basal conglomerate is a unit consisting of one or more limestone beds up to 30 metres in thickness, intercalated with argillite, phyllite and quartzite. This unit hosts stratabound polymetallic "replacement" deposits in the Slocan camp. The upper part of the Slocan Group is composed of argillite, phyllite and quartzite. Near the top of the sequence, strata become tuffaceous passing into metadacite and meta-andesite flows and tuffs. Rocks of the Slocan Group are tightly and disharmonically folded. Early minor folds are tight to isoclinal with moderate east plunging, southeast inclined axial planes. Several fault structures are evident and host mineralization. Later stage

normal and thrust faults and shearing have chopped, deformed and remobilized the veins and mineralization. The sedimentary sequence has been regionally metamorphosed to lower greenschist facies and intruded by dikes, sills and stocks of varied composition and origin.

The Middle Jurassic Nelson intrusions are immediately south of the Slocan Group and are inferred to be the source of granitic sills and dikes intruded into the Slocan Group rocks. The intrusions comprise at least six texturally and compositionally distinct phases ranging from diorite to lamprophyre. The most dominant phase is a medium to coarse grained potassium feldspar porphyritic granite. Although the Nelson intrusions do not have a large contact aureole, the emplacement of the intrusions likely played an important role in fracturing the overlying sedimentary sequence thereby preparing channels for fluid migration and sulphide deposition. The mineralized veins usually cut early feldspar porphyry dikes associated with the emplacement of the Nelson intrusions, but the veins often follow lamprophyric dikes on their footwall or hangingwall.

Mining has been important in the Slocan area since silver was discovered in the late 1800s. Significant silver, lead and zinc have been produced from polymetallic silver-lead-zinc veins and from polymetallic silver-lead-zinc "replacement" deposits hosted in limestone of the Slocan Group. Polymetallic veins have been classified into "wet ore" or "dry ore" types by Cairnes (1934) and others. The "wet ore" types are the most important type in this area. They typically have abundant galena and sphalerite associated with silver-rich sulphide minerals. Gangue minerals, consisting chiefly of quartz and siderite, are vertically zoned as exemplified in such past producers as the **Silvana** (082FNW050) and the **Mammoth** (082FNW060). Galena is typically abundant in the upper portions, while sphalerite is associated with the siderite-rich zone; the lower quartz-rich zone is usually barren. The **Hewitt** (082FNW065) and **Van Roi** (082FNW064) are examples of the "dry ore" type. The "dry ore" contain abundant quartz and the silver-bearing minerals are commonly argentite, tetrahedrite, pyrargyrite and native silver. Galena and sphalerite are of minor importance. The limestone-hosted "replacement" deposits are typically rich in sphalerite and low in silver. Quartz is the predominant gangue mineral and is more abundant than ore minerals. Controls on ore deposition are enigmatic. However, the following factors are thought to be important: (1) favourability of competent wallrock lithologies, (2) crossfractures consisting of joints, conjugate shear planes, tension cracks or linking fractures, and (3) the absence of strong gouge (Hedley, 1952). Larger orebodies tend to be oriented oblique to the main direction of fault movement.

Significant past producers include Silvana, **Standard** (082FNW180), Mammoth and **Ruth-Hope** (082FNW052). The Silvana is one of the more recent producers of the area; the mine produced 510,964 tonnes between 1913 and 1993 yielding about 243 tonnes of silver, 28,691 tonnes of lead, 26,300 tonnes of zinc and 72 tonnes of cadmium. Total reserves at the Silvana and **Hinckley** (082FNW013) were calculated at 54,400 tonnes grading 290 grams per tonne silver, 3.4 per cent lead and 4.7 per cent zinc in April 1993. The Standard mine was one of the most prolific producers of the Slocan camp. It produced 746,235 tonnes between 1894 and 1969 yielding about 278 tonnes of silver, 39,690 tonnes of lead, 49,361 tonnes of zinc, 62 tonnes of cadmium and 20 kilograms of gold. The mine was on the same vein system as the Mammoth mine which produced 63,865 tonnes yielding about 26 tonnes of silver, 2622 tonnes of lead, 4158 tonnes of zinc, 20 tonnes of cadmium, 46 kilograms of copper and 3.6 kilograms of gold. The Ruth-Hope deposit was one of the earliest producers in the camp. Production began in 1895 and was intermittent until 1962 producing 60,575 tonnes which yielded about 77 tonnes of silver, 7.7 kilograms of gold, 1 tonne of cadmium, 10,122 tonnes of lead and 1606 tonnes of zinc. The deposit is part of a continuous vein system that has been mined for about a 1.5-kilometre strike length and includes the **Silversmith** (082FNW053), **Slocan King** (082FNW196) and **Richmond-Eureka** (082FNW054) deposits.

The area has excellent potential of hosting new polymetallic silver-lead-zinc deposits, but these will likely be of similar size to the past producing mines. The potential of locating tin-tungsten skarn deposits associated with the contact aureole of the Nelson intrusions does not appear to have been explored in detail. Cassiterite has been identified at the **Bosun** (082FNW003) and scheelite has been identified at the **Flint** deposit (082FNW083).

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