From the Mineral Inventory Files

The Dunbrack Pb-Cu-Zn-Ag Mine: A Must Stop for Mineral and Rock Collectors

An interesting vein deposit of Pb-Cu-Zn-Ag occurs 5 km north of the village of Musquodoboit Harbour on Highway 357. Since discovery of mineralized boulders in the area in 1888, and the sinking of two shafts in 1910, the site has been known as the Dunbrack Mine (Fig. 1). By modern mining standards, however, the workings amount to no more than a development prospect. A Main Shaft (Shaft 2) reaches 41 m depth and is found immediately east of Highway 357, 4.95 km north of where it intersects Highway 7 at Musquodoboit Harbour. A level at 27 m depth has drifts that go north for 33.5 m and south for 33 m. Another shaft (Shaft 1) found a couple of hundred metres to the north of Shaft 2, and on the west side of the highway, reaches 20 m depth. The Main Shaft is still open and should be avoided while Shaft 1 was filled in some time ago when houses were built in that area.

The mineral deposit at Dunbrack occurs within a brecciated, quartz-rich fissure vein formed along the hanging wall of a fine-grained leucogranite dyke. The dyke is from 5 to 10 m thick and intrudes a fault zone in the coarse-grained biotite-muscovite monzogranite that constitutes most of the 370 Ma Musquodoboit Batholith. The dyke and fissure vein trend 110° and dip 62° north. The fissure vein is variable in width but averages approximately 1 m and has been traced by trenching along strike of the fault for several hundred metres. A small intrusion of fine-grained leucomonzogranite is found along the east side of Paces Lake about 1 km to the northwest of the Dunbrack deposit. The fault zone within which the mineralized fissure vein is located strikes toward this intrusion and previous workers have postulated that the leucogranite dyke forming the footwall to the mineralized fissure is an offshoot of this intrusion. It is, therefore, believed that the Dunbrack mineral occurrence is a result of hydrothermal fluids emanating from this intrusion.

Although the mineral occurrence within the fissure vein is massive and impressive, it appears that there is not enough tonnage to be economically mined. This is not to say the site has no interest or value. Perhaps its value may instead be its appeal to mineral and rock collectors, as the vein contains an impressive assemblage of minerals and the waste rock piles are littered with spectacular examples of epithermal textures typical of the high-level hydrothermal fluids from which the veins precipitated. The ore minerals are predominantly galena, chalcopyrite and sphalerite, but a host of secondary and/or supergene minerals are also present. The most common of these are malachite and azurite, but over the years several workers have recognized chalcocite, bornite, pyromorphite ($Pb[PO_4]3Cl$), meneghinite ($Pb_{13}CuSb_7S_{24}$), cerussite, ilmenite, djurleite ($Cu_{1.96}S$) and digenite (Cu_9S_5). Minerals also present, but not commonly considered 'economic minerals', include smoky quartz, calcite, sericite, fluorite, kaolinite, K-feldspar and an uncommon isomorphic variation of the quartz mineral family called tridymite. More than mineral collectors will be happy. Rock collectors will also find that the dumps contain an abundance of boulders displaying spectacular epithermal-style crystallization textures such as breccia, cockade, crustiform and comb textures. These quite possibly represent the best examples known in the province and, when slabbed or polished, produce beautiful conversation pieces.

G. A. O'Reilly

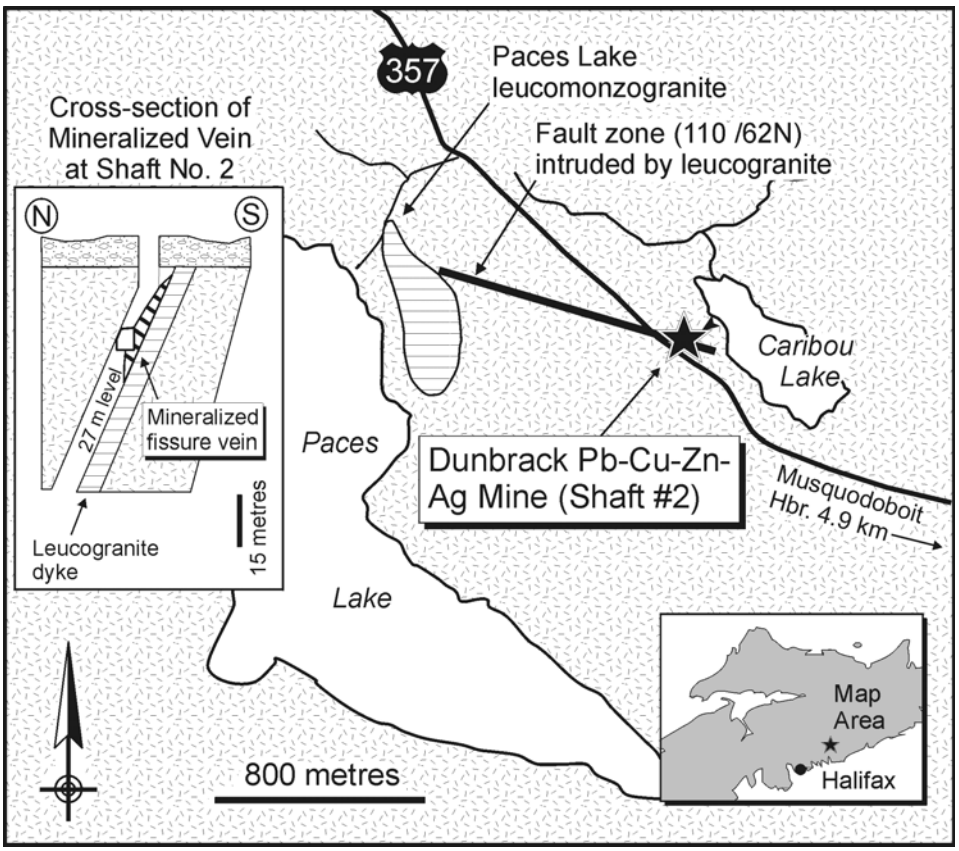

Figure 1. Location map and cross-section of the Dunbrack deposit, Halifax County.