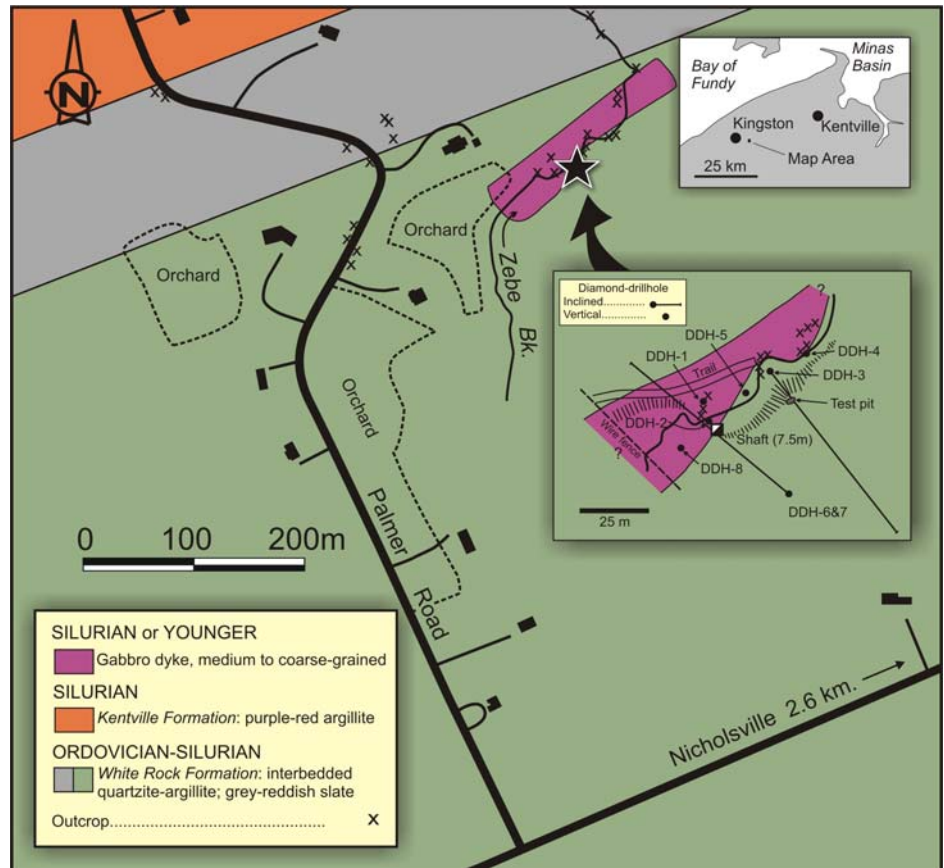


# From the Mineral Inventory Files

## Manganese, and Possibly More, at Nicholville

A small prospect of manganese (Mn) occurs east of Palmer Road at Nicholville, Kings County (Fig. 1). The prospect is intriguing, not only as an occurrence of Mn oxides and minor barite, but also for several features that suggest a potential for other economic commodities, such as base and precious metals. Mn oxides were first discovered at the site in 1885 when a vein exposed along Zebe Brook was prospected over a strike length of 123 m. Three barrels of Mn oxide were collected and the site became known as the Nicholville Mn Prospect (sometimes called Aylesford Mn Deposit). In 1918, a 7.5 m deep shaft was sunk on exposed veins of Mn oxide intruding Ordovician slate of the White Rock Formation along the southern contact of a northeast-trending gabbro dyke (Fig. 1). A second shaft or test pit was sunk 18 m to the east, but was abandoned as it encountered only altered and faulted slate. The mineralized zone occurs as veins and lenses of massive Mn oxide, mostly pyrolusite with lesser manganite and psilomelane, mixed with iron (Fe) oxides, barite, calcite and siderite. The veins, largest of which is 1 m wide, appear to intrude fault zones and all workers on the property have noted their likely genetic association with the gabbro intrusion.

In 1972, D. G. Bishop and J. D. Wright of the Nova Scotia Department of Mines carried out a detailed examination of the deposit as part of a province-wide inventory of Mn deposits (Bishop and Wright, 1974; <http://www.gov.ns.ca/natr/meb/pdf/74egs01.asp>). This included drilling eight diamond-drill holes totalling 895 m. Like all the previous explorers of the property, they concluded that the Mn oxide veins are epigenetic and related to the gabbro intrusions intersected by drilling. Their drilling, however, indicated other, possibly more significant findings. Four of the drillholes intersected several zones of massive sulphide in the White Rock Formation slate below the main gabbro



**Figure 1.** Geology of the Nicholville Mn Prospect, Kings County, modified after Bishop and Wright, 1974.

intrusion. Although these sulphide-rich zones are essentially pyrite, several intervals returned minor levels of Cu, Pb and Ag. Also noteworthy is the fact that several gabbro dykes were intersected, some of which display a high degree of carbonate alteration and deformation due to faulting. There are also a few intersections of a very peculiar, highly altered, felsic intrusive rock with an unknown relationship to the gabbro and to the manganese mineralization.

There appear to be a lot of questions to be answered at Nicholville; clearly, this isn't a simple vein deposit of Mn oxide. I will even go so far as to draw a possible relationship of the mineralization at

Nicholville with deposits of an elemental association of Ni-Co-Bi-Sb-Pb-Ag-Au that are found in the western Annapolis Valley and as far south as Cape St. Mary, Digby County (<http://www.gov.ns.ca/natr/meb/data/pubs/ftmif/mif06.pdf>). Occurrences such as the native gold-bearing, cobaltite-arsenopyrite veins at Nictaux Falls Dam, Annapolis County, the gold-bearing jamesonite-sphalerite-arsenopyrite veins at Lansdowne, Digby County, and richly argentiferous galena, stibnite, Co-pyrite quartz-siderite veins at Cape St. Mary, Digby County, like Nicholville, all share a genetic association with small intrusions and dykes of gabbro.

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