

The Shepherd and Murphy area is a preserved section of Gordon Limestone in an east-west trending syncline. Superimposed on this east-west trend are a series of minor folds almost parallel to the BCF. These drag folds, known only from drilling results, appear to decrease in amplitude away from the immediate mine area and are not recognized 500 m to the northwest in the centre of the main syncline.

The intersection of the Bismuth Creek fault and the east west trending fracture system is a weakened zone up which a cupola from the Dolcoath Granite was able to intrude.

6.2.3 Mineralization - Skarn and vein type mineralization throughout the area appears to be related to the Dolcoath Granite intrusion.

The main ore production, both past and present, has been wolframite and cassiterite from quartz veins with east west strike, hosted mainly in the Moina Sandstone, but also in the Cambrian volcanics (Shepherd and Murphy, All Nations, Pig and Whistle, Iris Mines). This veining is of limited extent, and has not been a target of the present investigations.

The main mineralization of interest to Shell are the skarns around the Shepherd and Murphy Mine area and minor thin skarns at the Stormont Mine (Bi - Au), Fletcher's Adit (Bi) and the Iris River - Ti-Tree Creek area (pyrite). The skarns have been produced by the addition of significant quantities of Si, Al, Fe<sup>2+</sup>, Fe<sup>3+</sup>, Mg, Na, K, S, H<sub>2</sub>O and F into reactive Gordon Limestone. Minor element additions have been Sn, W, Zn, Bi, Cu, Mo, Be, Au.

Sn and W show an apparent concentric zonation around the BCF and the Shepherd and Murphy Mine, with values decreasing away from the mine area.