

AWARUITE

Ni_2Fe to Ni_3Fe

A very rare nickel-iron alloy occurring in a few serpentinitized peridotite bodies. Northern Peninsula.

Marquette County: A nickel-iron alloy, “probably awaruite,” occurs as rare angular grains as large as 15 microns in diameter in the partly serpentinitized plagioclase lherzolite body called the Yellow Dog peridotite by Klasner et al. (1979). The Yellow Dog body occurs in only two outcrops in sections 11 and 12, T50N, R29W. The alloy occurs within secondary silicates (serpentine, talc) and as isolated inclusions in crystals of olivine (q.v.) and pyroxene (augite, enstatite). Klasner et al. (1979, page 7) state, “It is most likely the result of a reducing environment generated during serpentinitization, producing native metals from decomposed silicates and altered sulfides.” The peridotite body apparently is represented subsurface by a 19-kilometer-long zone of positive aeromagnetic anomalies, some of which may be caused by sulfide-rich zones and this, along with anomalously rich contents of Cu and S, suggests that the body may host Cu-Ni mineralization (Klasner et al., 1979).

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