Description of Map Units for Port Wing/Solon Springs quads in Wisconsin

STRATIFIED ROCKS

Phanerozoic Rocks

~~C~~ms Mount Simon Sandstone- quartzose sandstone containing some thin interbedded shale

Mesoproterozoic Rocks

Keweenawan Supergroup

Bayfield Group

Ybc Chequamegon Sandstone – Red, brown, and white feldspathic sandstone, generally thick-bedded and commonly cross-bedded. Sparse interbeds of red shale and conglomerate

Ybd Devils Island Sandstone – White to tan quartz arenite, generally thin-bedded. Cross-bedding and ripple marks are common

Ybo Orienta Sandstone – Red, brown, and white feldspathic sandstone, cross-bedded in part. Sparse interbeds of red shale and conglomerate

Yu Unnamed sandstone – East of Lake Owen fault, inferred from geophysical data

Oronto Group

Yof Freda Sandstone – Red, brown, and tan sandstone containing minor shale and conglomerate interbeds. Mostly fine- to medium-grained feldspathic and lithic arenite, commonly micaceous. Well-bedded and commonly crossbedded

Yon Nonesuch Formation – Siltstone, shale, sandstone, mostly gray to black, some red units. No outcrops in the map area but extent and lithology of formation in Ashland syncline well-defined by numerous drillholes

Yoc Copper Harbor Conglomerate – Red to brown conglomerate, sandstone, and siltstone. Conglomerates are generally massive to crudely bedded and contain rounded clasts as much as 50 cm in diameter of mostly felsic volcanic rocks. Sandstones are mostly lithic arenites containing dominantly volcanic grains, commonly

trough cross-bedded. Conglomerates are mostly near the base and finer grained rocks in higher in section

St. Croix Volcanic Group

Minong Volcanics

Yml Low-TiO_2 flood basalts; locally ophitic; near top of section contains basalt flows with a composition similar to normal mid-ocean ridge basalt (N-MORB); contains a few conglomerate interbeds (more common on the southeast side of the Ashland syncline than on the northwest limb of the syncline)

Ymh High-TiO_2 basalt flows interlayered with andesite and rhyolite flows. Quartz-phyric rhyolite at Lake Nelson dated at 1094.6 +/- 2.1 Ma (Zartman et al., 1997)

Ycv Chengwatana Volcanics- Basalt, andesite, and minor rhyolite flows. Basalt flows range from 10-300 feet thick. At least six conglomerates beds occur between flows. Rhyolite stratigraphically overlying Amnicon complex dated at 1101.8 +/- 6.7 Ma (Isachsen, Univ. of Arizona, unpub. data)

Powder Mill Group

Ykc Kallander Creek Volcanics – Basalt, andesite and lesser rhyolite flows. Basalt flows near base of the formation contain plagioclase phenocrysts, some in radiating clusters

Ysc Siemens Creek Volcanics – Basalt and lesser andesite, olive-gray to dark greenish-gray. Basal flows are locally picritic

Paleoproterozoic Rocks

Marquette Range Supergroup

Menominee Group

Xi Ironwood Iron Formation – Banded cherty iron-formation in which iron is contained in magnetite and iron amphiboles. Magnetite content highly variable but decreases to west. Western exposures nearly magnetite-free. Contains some pyritic black shale and greywacke interbeds. Minor basalt flows

Xp Palms Formation – Gray, grayish-green, and reddish-brown argillite, siltstone, quartzite, and conglomerate. Locally has thin basal conglomerate containing clasts of Archean and older Paleoproterozoic strata. Remainder of unit is generally a coarsening-upward sequence of thin-bedded siltstone to fine-grained sandstone near base and massive to cross-bedded, white to pink quartzite near top

Chocolay Group

Xb Bad River Dolomite – Dolomite and dolomitic marble. Not exposed in map area but inferred based on exposures one kilometer to east of map area where it is tan to white, generally thick bedded, commonly containing lenses or thin beds of chert. Most primary textures obliterated by metamorphism but domal structures preserved in cherty layers are probably algal stromatolitic mounds. Coarse rosettes of tremolite are common along cherty beds

Archean Rocks

Wg Archean rocks, undivided – granite and gneiss

INTRUSIVE ROCKS

Yaf Granophyre of Amnicon intrusion - pink fine-grained granophyre containing poikilitic quartz. Small phenocrysts of plagioclase in a sericitized, calcitized groundmass

Yag Gabbro of Amnicon pluton – generally about 70 percent plagioclase (An_{65}), and lesser olivine and clinopyroxene. Weak compositional layering

Ygb In Wg there are several unexposed gabbroic bodies inferred based on aeromagnetic signature; one body has been drilled (the Round Lake intrusion) yielding gabbro core

Ygr Small granitic plug near Atkins Lake

Ymf Granophyre of Mellen Intrusive Complex - brick-red to pink, fine- to medium-grained granophyre and ferrodiorite. Small phenocrysts of plagioclase in graphic-textured matrix of K-feldspar and quartz

Ymg Gabbro of Mellen Intrusive Complex - coarse-grained, generally 80-90 percent plagioclase (An_{55} to An_{60}), lesser clinopyroxene, orthopyroxene, and sparse olivine. Plagioclase crystals commonly have a preferred orientation

Xmd Metadiabase - medium- to coarse-grained, metamorphosed diabase and gabbro, with a scratch boundary where outcrop is lacking