

Mapping a New Exposure of the Basal Unconformity Between the Hearst and Larder Lake Assemblages, Skead Township, Northeastern Ontario

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The Larder Lake transect, part of the multiyear Metal Earth project, was designed to address regional geological problems related to the overall stratigraphic and structural framework of the area. The southern portion of the Larder Lake transect crosses through Skead township, in northeastern Ontario, which is the focus of this study. The area is underlain by older mafic and felsic volcanic rocks, mapped by Hewitt (1949) as the Keewatin formation, interpreted to be correlated to the Larder Lake assemblage. These rocks are overlain unconformably by younger sedimentary rocks ranging from conglomerates to mudstones, mapped as Timiskaming by Hewitt (1951) and later interpreted as the Hearst Assemblage by Jackson (1995). The correlation of these sedimentary units within the overall stratigraphy of the area has been controversial. Some studies regard these sedimentary units as correlative with the Timiskaming Group while others argue that they do not contain the same characteristic traits. The key outcomes of this targeted mapping is the uncovering of an unconformity in the northeastern part of Skead Township which exposes the basal contact between the underlying ultramafic volcanic rocks of the Larder Lake assemblage and the overlying sedimentary rocks. The underlying komatiite is fine grained, with polyhedral, serpentinized joints and common coarse-grained spinifex textures. The overlying basal conglomerate is matrix supported and contains angular to subangular clasts, up to 90 cm across, composed predominantly of veined granitoid and spinifex-textured komatiite clasts in a silty to muddy matrix. This relationship could bring further insight of the depositional environment at the time of sedimentation, and due to their similarities they may have implications for the development of the LLCZ. Samples were collected from both the granitic boulders in the basal conglomerate and from surrounding conglomerates and sandstones for geochronology. This study seeks to place the sedimentary rocks into context within the local and regional stratigraphy.