The Bull-of-the-Woods intrusive complex consists of a cluster of dikes, sills, and irregular stocks, ranging in composition from pyroxene and/or hornblende andesite, dacite, diorite, to quartz diorite. These intrusions were emplaced at shallow depth within the Sardine Formation, which consists of a 600-m thick lower tuft unit and a 146-m thick upper andesite flow.

The host rock is metamorphosed in a zone 5 m wide around the intrusions to the albite-epidote hornfels facies. Major and trace element concentrations in the intrusive rocks are typical of andesites. Concentrations range from:

1.72-3.10 percent weight Na; 3.27-5.57 percent weight Fe; 8-140 ppm Cr; 14.5-29.6 ppm Co; 11.44-21.00 ppm Sc; 10-17 ppm Rb; 13-29 ppm La; 2.2-6.4 ppm Sm; 0.91-1.68 ppm Eu; 21-58 ppm Sm; 170-900 ppm Ba; 1.0-7.6 ppm Th; 0.18-0.80 ppm Lu; and 1.6-6.7 ppm Hf.
The narrow range of rare earth elements and the ratios of Fe/Co and Fe/Sc indicate that these rocks are comagmatic. The range of Sc is distributed in concentric, geographic zones of low, medium, and high concentrations through the area suggesting that mild gravity differentiation occurred in the parent magma body. The units were intruded along fissures in the host rock by forceful injection. The fine-grained rocks preceded intrusion of the coarse grained rocks, as indicated by cross-cutting relationships. Broad, gentle deformation and propylitic alteration of the host rock suggests that a stock underlies the area.