Introduction

The geology of the Avon quadrangle was mapped in 1986 as one of the first steps in a major geologic mapping project in northeastern Montana. Twenty-eight U/Pb dates on individual zircons from volcanic rocks exposed in the Avon quadrangle and surrounding area give a mean age of 48.98 ± 0.44 Ma (J. Brian Mahoney, U. of Wisconsin, personal communication, 2002). Reference samples collected at each of the Avon quadrangle and surrounding area give a mean age of 39Ar/40Ar age of 50.2 ± 0.43 Ma (Berg, 2011).

Mineral separates from the Lowland Creek Volcanics northwest of Butte yield ages (2σ) range from 52.9 ± 2.2 Ma and 48.6 ± 1.6 Ma, respectively (Callmeyer, 1984). Biotite separated from a rhyolite of Avon give K-Ar dates of 43.7 ± 2.2 Ma and 44.8 ± 2.2 Ma, respectively (Callmeyer, 1984). Rocks of the Rock Creek volcanic field 100 km (60 miles) west of Avon yield a mean age of 48.4 ± 0.4 Ma (Dudás and others, 2010). Rocks of the Marshall Hill volcanic field south of Livingston give a mean age of 48.9 ± 0.2 Ma (Trombetta, 1987) in conjunction with the mapping of four 7.5' Quadrangles to the south that were combined and released at a 1:24,000 scale (Trombetta, 1987) in conjunction with the mapping of four 7.5' Quadrangles to the south that were combined and released at a 1:24,000 scale (Trombetta, 1987). Twenty-eight U/Pb dates on individual zircons from volcanic rocks exposed in the Avon quadrangle and surrounding area give a mean age of 48.98 ± 0.44 Ma (J. Brian Mahoney, U. of Wisconsin, personal communication, 2002). Reference samples collected at each of the Avon quadrangle and surrounding area give a mean age of 39Ar/40Ar age of 50.2 ± 0.43 Ma (Berg, 2011).

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The United States Geological Survey Geologic mapping project in northeastern Montana (U.S. Geological Survey Geologic mapping project in northeastern Montana: 1:24,000 scale (K. Tamura, U. of Wisconsin, personal communication, 2002). Reference samples collected at each of the Avon quadrangle and surrounding area give a mean age of 39Ar/40Ar age of 50.2 ± 0.43 Ma (Berg, 2011).