Stratigraphy and radiometric ages of borehole core from the Matsukawa observation well, Sengan volcanic region, Northeast Japan.

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The Matsukawa observation well in the 200 m-depth class was drilled by NIED at northwest side of Iwate volcano (N39.88346° E140.93582°). Based on the lithologic features, the borehole core consists of three stratigraphic groups. The upper part (0-106.0m in depth) consists mostly of andesitic volcanic breccia and tuff breccia. K-Ar age of an andesitic block in volcanic breccia in depth of 75.3m is 0.94 ±0.03Ma. In addition, the results of ^{14}C dating by humus soil block and wood chips in the depth of 40.2m to 69.9m are about 3600-4800 cal.BC. The middle part (106.0-134.7m in depth) is composed mainly of hydrothermal altered volcanic breccia and tuff breccia. Their matrix have partially horizontal sheared structure. K-Ar age of an andesitic block in volcanic breccia in depth of 121.4m is 1.04 ±0.07Ma. The lower part (134.7-203.0m in depth) consists heavil altered volcanics. Steep shear zone was formed in the altered rocks in depth of 148-150m. The rocks in the depth of 157-167m consist of an andesitic lava flow or intrusive body. There is a possibility of the green gray consolidated lapilli tuff deeper than depth of about 170m are welded tuff since unclear eutaxitic texture is recognized.
The most characteristics of the lower part of Matsukawa core are unknown as strong alteration,but might be correlated to member of the Tamagawa Welded Tuffs. Volcanic rocks contained in the upper and middle part are likely derived from Matsukawa andesite and / or Nakakura (Marumori) volcano since K-Ar dating results of andesite blocks exhibited around about 1Ma. On the other hand ^{14}C age of soil block and woods included are indicate depositional age of the upper part likely to be Holocene. The drilling site is located in "Marumori landslide". ^{14}C age of 2390 ±90yrBP have been reported from the soil that covers the surface structure of Marumori landslide body(Sumi, et.al.,1988). Since shear structure was developed in the middle part, the upper and middle part of Matsukawa core are considered that belong to the landslide body of Marumori landslide. And presumably the topsoil and vegetation were engulfed at the time of the occurrence of landslides at a few thousand years ago. However, the steep shear zone of the lower part is also likely to relate to reverse faults that were developed along eastern margin of the backbone range of NE Japan. There are required further research.

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