On April 14th 2010 a large earthquake with magnitude of Ms7.1 occurred near Yushu at north-eastern Tibetan plateau in China. The earthquake has created a surface rupture with a length of at least 60km long. The rupture is developed along the Ganzi-Yushu fault that has been active during the Quaternary. Ganzi-Yushu fault is the southern boundary of the so called Bayan Har block, around which there have been several large earthquakes occurred in the last decades, such as the Kunlun earthquake (8.1) in 2001 and the Wenchuan earthquake (8.0) in 2008. The fault movement along the surface rupture was left-lateral with about 2m of maximum horizontal displacement and the maximum vertical displacement is about 0.5m. 171 GPS stations around the surface rupture and the surrounding areas have been reoccupied after the earthquake. All the 171 GPS stations were measured last years before the earthquake. Another 15 GPS stations across the surface rupture were also established immediately after the earthquake, among them 4 has been continuously observed and the rest of them have measured four times since April 20th 2010. The preliminary result from the GPS observations has shown that the maximum horizontal displacements across the rupture near Yushu is about 1m, it decreases from 40cm near the rupture to about 3cm at 40km away from the rupture and to about 0.5cm at 120km away, showing the rheological property of the deformed crust in the plateau. The post-seismic creeping rate across the fault is decreasing with time. The results from the GPS observation analysis are very much alike to that of the geological results.