

Liquefaction-fluidization horizons in subsurface strata at The 2011 off the Pacific coast of Tohoku Earthquake in Tonega

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Eastern Japan had serious damage by the and after shocks. Liquefaction-fluidization phenomena with few tens centimeter to one meter subsidence occurred widely around paleo-river channel at this earthquakes on Tonegawa lowland area along the Kashiwazaki-Cyoshi tectonic line. The phenomena with few centimeter subsidence occurred in narrow part of the paleo-river channel on there at the 1987 east off Chiba prefecture earthquake. Authors have investigation by continuous borings and trenches around the liquefaction-fluidization part. Liquefaction-fluidization horizons and stratigraphy after the last glacial epoch by continuous borings on Kozaki-shinnjyuku in Kozaki town in the Tonegawa lowland area are showed as follows. The strata after glacial epoch consist of Sawara formation and Man-made Strata. Sawara formation have more than 55 meter thick. The formation is composed of lower member, middle member and upper member. Lower member mainly consists of medium sand bed and pebbly dense fluvial sand bed. Middle member mainly consists of brackish coarse silt bed with flaser and wavy bedding and brackish to fresh clayly silt bed. Upper member mainly consists of clean loose fluvial fine sand bed with cross bedding and plant fragments. Man-made Strata consists of mainly clean very loose medium sand by hydraulic fill with about 5 meter thick. Liquefaction-fluidization horizons are Man-made Strata and upper member of Sawara formation. It is possible that the upper member of Sawara formation had been liquefied and fluidized at 1923 Kanto earthquake and 1703 Genroku earthquake.

Keywords: Liquefaction-Fluidization, The 2011 off the Pacific coast of Tohoku Earthquake, Tonegawa lowland, Man-made Strata, Holocene strata