# LIQUEFACTION POTENTIAL HAZARD IN GHAZAN CHAY DAM SOIL LAYERS WITH USING STANDARD PENETRATION TEST RESULTS

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Liquefaction in loose saturate sandy and silty soil layers due to the seismic shaking is one of the important phenomenon in earthquake geotechnical engineering. According to liquefaction mechanism, during the earthquake, because of decreasing volumetric strain in saturate loose granular soil layers and impossibility in drainage, pore water pressure increases. When, exceed pore water pressure and total stress values are equal to each other, effective stress amount decreases and equals to zero. In this condition, bearing capacity and shear strength of soil layers reduce and sand boiling, major settlements and lateral spreading can be observed in soil layers. Main idea in present research is evaluation of liquefaction potential hazards in Ghazan Chay Dam at south east of Khoy city (Figure 1). 15 boreholes was collected in study area (Figure 2) and eight boreholes with conidering soil layer types and ground water level were selected for liquefaction analyses. In this research, liquefaction potential of soils in study area with using Standard Penetration Test (SPT) according to Idriss and Boulanger (2006, 2010) was evaluated. Then, Liquefaction Potential Index (LPI) was determined with using Iwasaki et al. (1978, 1982) and Sonmez (2003) methods. Result of data analyses showed that with considering variation ground water level liquefaction hazards in study area is very high (Figure 3). According to Iwasaki et al. (1978, 1982) criteria. Meanwhile, liquefaction severity based on Sonmez (2005) is medium.

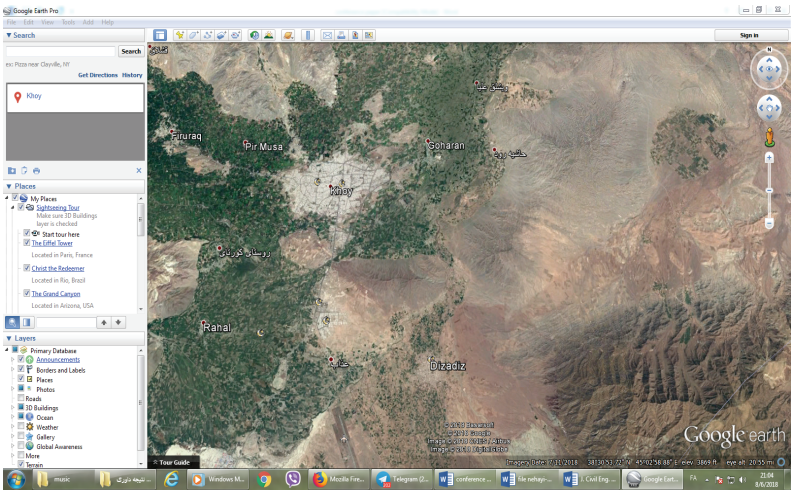


*Figure 1. Position of Ghazan Chay Dam in South east of Khoy city (www.earth.google.com).*

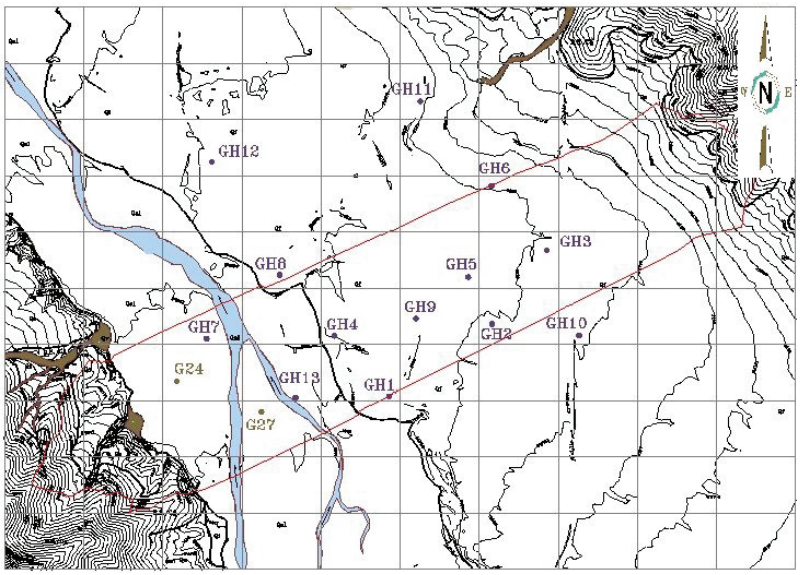


*Figure 2. Position of bore holes in Ghazan Chay Dam (Regional Water Company of West Azerbaijan).*

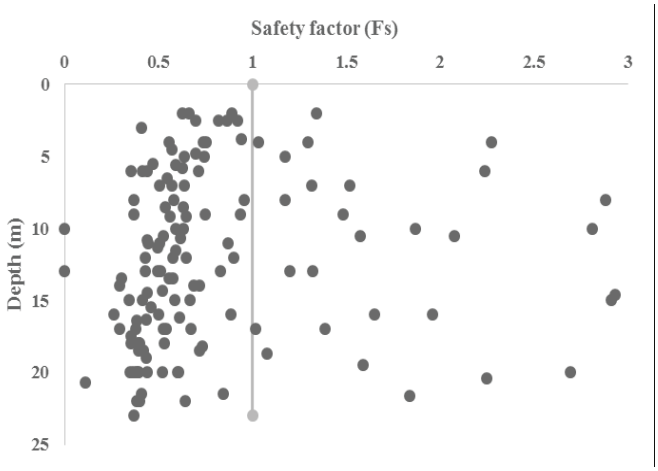


*Figure 3. Variations of Fs parameter in soil layers in study area.*

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