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EFFECT OF GROUND WATER LEVEL FLUCTUATION ON THE MECHANICAL PROPERTIES OF SOIL IN BASRAH

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ABSTRACT

Eighteen bore holes have been selected around Basrah city to monitoring the ground water level fluctuation. The depth of these bore holes reached 3 meters. Ground water level is relatively high it fluctuates daily and seasonally in a range with 0.11 meters on the ground surface and 2.32 metes below ground surface. This water originates from many sources, rainfall, irrigation, sewage and leakage from pipe-line of drinking water project. The concentration of calcium, sulphate and chloride are high in ground water. The presence of these ions causes corrosion for concrete, pipe- line, and sewage's pipe. The intensive evaporation and the presence of these ions conduct to precipitation of some salts like chlorides and sulphates in the capillary tubes. Consequently, the compaction and strength of soil increase, whereas, the rises of ground water level product consolidation and settlement in soil by the solution of the precipitated salt in the capillary tubes. Moreover, the nearby ground water level to the ground surface reduce the bearing capacity of soil, and the attraction forces between particles.