



Geological and engineering problems of the Tashkent Metropolitan construction.

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Mastering of underground space under the city territory considerably influences the change of geological environment and has principle importance at the estimation of operational safety degree of all building types.

Character and intensity of underground space change mostly defined by its geo-structured particularity, hydrogeological and engineering-geological conditions, and also by specifics and duration of technogene loads.

Construction and exploitation of the metropolitan influence much upon the change of geological environment.

At the present, in Tashkent, there act two lines of metropolitan and already constructed the third one

First metro line from the station "Sabir Rahimov" to the station "Buyuk Ipak Yuli" crosses the city from northeast to south-west and passes through the upper terraces of Chirchik river

Adjournments of top terraces are submitted by powerful thicknesses of subsiding loessial rocks that are in southwestern part of the city spread with stony loess and in north-eastern part of "Amir Timur" station with gravels of mid-quaternary age. Above loessial rocks are blocked by technogeneous adjournments of small capacities. Almost on all extent, the line passes on watershed through the flow of ground waters, not creating a barrier for them. Valleys of main channels (Salar, Aktepe) cross on stockades.

Location of the city in conditions of high and low terraces of Chirchik river, described differently from each other on engineering-geological and hydro-geological

conditions, predetermines the specialty of display and development of engineering-geological processes.

To the number of the most widespread engineering-geological processes at high terraces concern the processes of subsidence, suffusion, ticksotrophy, flooding and pollution. They are submitted by loessial adjournments, sensitive to humidifying and water-saturation that are complicating the condition and exploitation of metro line rendering big material damage.

Activation of these processes caused by the rise of ground waters level, which connected to crossing of the flow of ground waters, and also the construction of stations in veins of superficial water-flows.

Approximate circle of the problems:

1. Change of underground hydrosphere, including ground water preservation procedures from pollution by oil products, heavy metals and wastes of industrial enterprises, containing great amount of organic compounds. This provides the reconstruction of environment, in which actively run the processes of decomposition of metal, bitumen and brick.

2. Change of the condition of loessial rocks, as a result of ground waters level rise. This promotes their transition into unstable condition, occurrence of subsidence, suffusion and ticksotrophic characteristics with high sensitivity degree to dynamic loads and seismic influences.

3. Change of the condition of technogeneous grounds as a result of ground waters level rise.

4. Organization and undertaking the complex monitoring, allowing the control and management over the condition of underground space.

Only on the basis of these researches can be guaranteed the reliability of taken decisions and longevity of the objects that are under the construction and exploitation.