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Sliding processes monitoring of objects of high environmental risk in Moscow.

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Study of sliding processes on objects of high environmental risk requires special precision and reliability of engineering survey. Thus it is necessary to extend the ordinary used complex of engineering investigations with new technologies. The authors present the results of complex geological - geophysical monitoring of active landslides in Moscow in the area of high bank of Moskva River. The monitoring complex includes following investigations: 1) geological engineering survey (exploratory boring and test of rock characteristic); 2) prospecting seismology, common-depth-point method using reflected transverse waves and vertical seismic profiling in boreholes; 3) microseismic survey method; 4) high-precision inclinometer measurements in boreholes; 5) strain measurements in boreholes; 6) geodetic measurements of vertical displacements of reference points by differential leveling method; 7) geodetic measurements of horizontal displacements of reference points by GPS and land line-angular methods.
In the investigation area landslides destroyed sewage collector construction several times till 2002, after 2002 landslide collector operation was stopped. The aim of complex investigations was the finding the most safe collector runs in 3-D environment. Sewage collector developer worked over two possible options of collector paths running deeply under the sliding surfaces. The results received during complex geological-geophysical monitoring help to estimate the stability the different parts of landslide and find the most safe and efficient variant of sewage collector run.