

Study of geohazard state of Kadji-Sai uranium tailing site

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Radioactive waste and tailings of the former Kadji-Sai uranium mine and treatment plant in north eastern Kyrgyzstan are in high environmental concern. High resolution panchromatic SPOT images were used for erosion study of tailing site. Historical seismicity of the region serve as a high potential risk to the dumpsites. Around Kadji-Sai, earthquakes with magnitude at $m_b = 4.0-5.5$, and intensity equivalent to $I=6.0-7.0$ (balls) periodically took place in a region. Northern part of the study area occupied by the lake itself and is almost aseismic, with only a small number of weak events. As a consequence of the high seismic activity on the mountain ranges bordering the lake, the Kadji-Sai uranium tailing area is particularly exposed to direct and indirect effects of strong earthquakes. The area is characterized by critical slope stability due to generally steep relief. Therefore strong seismic shaking can easily destabilize large surface soil masses and cause numerous gravity mass movements like landslides, avalanches.