

of Snowpack as an Indicator for Detection of Underground Nuclear Explosions

The concentrations of tritium have been determined outside “Degelen” site, as well as in settlements Kurchatov, Kaynar and Sarzhal adjacent to the STS. Accumulation of tritium has been estimated in the snow cover over the epicenters of underground nuclear explosions of some adits on “Degelen” site and warfare borehole 1355 on “Balapan” site. The major mechanisms for tritium inflow in the snow have been examined and identified. No tritium in the snow cover was detected in the residential areas adjacent to the STS, the detection limit was 11 Bq/kg. In the southern and south-easterly direction from “Degelen” site the average tritium concentration in the layers of snow cover is 11 Bq/kg.

At the mouth area of the warfare borehole 1355 over the UNE epicentre tritium content in the snow cover is changing over time, upon that maximum tritium accumulates in spring, reaching 75-100 Bq/kg in the near the ground layer. There no surface water flows near the mouth area of the warfare borehole, so the presence of tritium in the surface layer of snow confirms the assumption on the flow of tritium from the UNE cavity, or close located ground-water table.

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