Geology and mineralization of Temrezli uranium deposit, Yozgat, Turkey

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The Temrezli uranium deposit in Central Anatolia is one of the large-scale sedimentary rock-hosted uranium deposits of Turkey. Uranium ore bodies occur as lenses and are hosted within the Eocene shallow marine sedimentary rocks. These rocks are overlying the granite – granodiorite of Kırsehir Massif where located at the basement and consisting of coarse to fine grained sandstones, siltstones and claystones. These units are locally covered by Late Eocene volcanism. Plioecene lacustrine sediments and Quaternary alluvium are at the top of the succession. Uranium has been washed away from the acidic granitic rocks and deposited by the meteoric and underground waters and then were concentrated as lenses in the Eocene sedimentary rocks. Mineralization is controlled by organic carbon through the oxidation – reduction boundaries. Up to date in total 101,435m of drilling completed at 601 sites in the deposit area. The mineralized lenses are found in 25m shallowest and in 225m in deepest in the drill holes. The main structural trend of the mineralized lenses is SW – NE direction which complies with the geological structure of the Great Cankiri basin. According to the resource estimation in both indicated and inferred 17,4million pounds of U_3O_8 have been determined. The deposit is considered as the first in-situ recovery uranium mine of Turkey.