

Uranium exploration in Mongolia: A major discovery in the Gobi Desert

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Uranium exploration in Mongolia started with Russian and Mongolian endeavors from 1950s, searching for volcano-sedimentary Strelsovskaya type deposits as well as sandstone hosted type within proximal sedimentary cretaceous basins. During the 1970s to the 1990s, systematic geological surveys allowed to target attractive areas with about 100 significant uranium occurrences of various mineralization types.

In 1997, AREVA Company with its COGEGOBI subsidiary started uranium exploration in Mongolia. It was the first company to believe in the potential of the wide distal cretaceous sedimentary basins of south-eastern Gobi Desert. Over the past 12 years, work has been focused on the Dornogobi Province, approximately 550km southeast of Ulaanbaatar, in the Uneget and Zuunbayaan sub-basins, in which two deposits have been discovered in the Sainshand formation (Upper Cretaceous). First one is the Dulaan Uul deposit in the Uneget basin, a typical roll-front type deposit with 6,500t of uranium resources at 150ppm U average grade, officially registered in 2011. The second one, located about 20km East, is Zoovch Ovoo deposit with 56,500t of uranium resources at 223ppm U, registered in 2013 (both based on a 75ppm U cut-off).

Zoovch Ovoo deposit is likely to be the only worldwide size deposit discovered during the last decade. Story began in 2008 within Zoovch Ovoo exploration license covering part of the Tsagaan Els endorheic depression, which roughly coincides with Zuunbayaan sub-basin, limited to the north by the NE-SW left strike slip Zuunbayaan regional fault. First reconnaissance works highlighted prospective sand reservoirs constituted by cycles of unconsolidated lacustrine and alluvial sediments with redox contrast. In 2009, the first mineralized impacts were discovered, and 30km of oxidization fronts were delineated. Between 2010 and 2012, an extensive development campaign was performed on the whole mineralized bodies covered by a 200x200m up to 100x100m drilling grid. This extensive development work confirmed the high potential of the deposit

Zoovch Ovoo deposit is a major high tonnage low grade sedimentary-hosted roll front type deposit. It consists of a complex system of partly over-imposed elementary sub-rolls of irregular shapes that built a quite atypical sub-massive tabular looking ore body. The recognized mineralization, comprising three main enriched blocks (SE, N and W), covers a WNW-trending area of approximately 7km x 3.5km, and ranges up to 40m thick, with an average thickness of about 15 m. It occurs at depths ranging from 100m to 230m below the surface.

The mineralization commonly consists in poorly expressed uranium oxide generally associated with pyritized organic matter fragments, coffinite, phosphocoffinite and uranothorite at the redox interface. The deposit is affected by a network of N60 to N70 striking minor normal faults (only few meters of vertical slip) suspected to constrain the circulation of oxidizing fluid flows coming from the South. However, these faults seem not to significantly affect or control the geometry of the ore bodies.

In 2014, the project enters into a prefeasibility study phase for an in-situ recovery (ISR) exploitation method.

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