

## **Completion of the third phase of ICDP drilling in the Songliao Basin, Northeastern China**

The third phase of scientific drilling in the Songliao Basin involved the SK-3 (originally named SK-2w) borehole in Nong'an County, Jilin Province, China. The SK-3 borehole has been drilled to a final depth of 3600 m with a coring footage of 1607 m, and achieved core with a total length of 1592 m (core recovery of more than 99 %). Drilling has been completed on January 30, 2021. In total, the SK project consists of three phases and four holes, with cores containing over 8,200 m of terrestrial sediments covering the entire Cretaceous.

The SK-3 was jointly funded and supported by the Ministry of Science and Technology of the People's Republic of China, the Jilin Oilfield Company and the International Continental Scientific Drilling Program ICDP. Drilling commenced on September 24, 2020 with a target depth of 3,600 meters, of which 1,580 meters was planned to be core. The cored strata date back to the middle Cretaceous, known as "hothouse period", the warmest time period in the past 100 million years. Studies on the SK-3 core will help to understand the climatic evolution of the northern mid-latitudes, a region populated by more than 40% of global population. This project will establish a high-precision comprehensive chronostratigraphic frame to reconstruct paleoclimate evolution at multiple timescales in the mid-Cretaceous Songliao Basin, and explore the coupling relationship between the formation of continental petroleum reservoirs and the change of paleoclimate and paleoenvironment.

The SK project invites the international geoscientific community to participate in collaborative research on the SK cores, including core from the wells SK-1 and SK-2 (~6620 m), which are already available, and new core from SK-3 (~1590 m). The available core material ranges consistently from Late Jurassic to Early Paleogene. Following regulations and suggestions of the oceanic and continental scientific drilling programs, the SK cores are available in a long-term repository and accessible

to Earth scientists from all over the world. Through the combined efforts of experts from a variety of research fields, the over-8,000-meter cores will elucidate the history and mechanisms of the interactions among the climate system, biosphere and lithosphere under the most recent long-lasting greenhouse state and the age of the Dinosaurs.

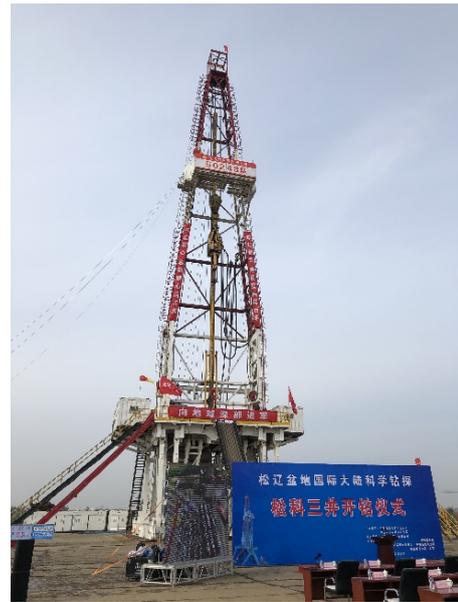


Drill site of the SK-3 project



Mid-Cretaceous cores obtained by the SK-3 project

All photos by Songliao Project



SK-3 Drill rig