

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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MIS022-P12

Room:Convention Hall

Time:May 23 14:00-16:30

## Upgrade development of a deep all core wire line drilling for sedimentary soft rock in coastal area

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In the all core drilling deeper than 200m in depth, it is generally adopted to a wire line (WL) core drilling method which have higher advantage of certainly and working efficiency than an usual drilling methods which is constantly entering and withdrawing all drill pipes, tubes and so on. However, a WL core drilling method was developed for the hard rocks, and the issue to be solved is the improvement of a coring technique for the soft rocks. We carried out the deep drilling survey to the depth of 1,004m. The drilling site locates the coastal area of Horonobe town in Hokkaido and the subsurface geology is composed of sedimentary soft rocks (mud, sand and conglomerate). It was concerned the occurrence of sloughing and the reduction of core collection rate. Therefore, we selected the PQ-WL drilling method combined with a high viscosity and low dehydrating drilling mud. And a new WL drilling tools, composed of the over-size reamer and the WL single core tube, have been developed to prevent an excessive rise of water pressure and to remove sloughed cuttings quickly. As a result, we have succeeded in keeping a high core collection rate (over average 90%) and getting a good quality core.

Keywords: Coastal area, Sedimentary soft rocks, All core wire line drilling, Upgrade development