

Nearshore Geotechnical Drilling Rig GMRJ50



Introduction

The drilling rig is capable of conducting drilling, sampling and testing operations from a jack-up barge. A simultaneous drilling and casing system is operated with this rig - this being far more efficient in terms of time and equipment than traditional rod based drilling systems.

Efficiency and Quality

The wireline piston sampler or core barrel, and the casing are advanced together, ensuring a high quality sample recovery and a stable borehole. When full, the piston sampler or core barrel is 'delatched' from the lead length of casing, brought to deck level and the sample extruded horizontally.

Guar gum powder is used to form the flush medium during drilling operations. It is mixed with seawater, and the resulting 'mud' or flush is then pumped downhole, providing lubrication during drilling, stabilising the borehole and lifting away the cuttings from the base of the hole.

Capabilities

Piezocone Penetration Testing (PCPT) using the AP van den Berg PCPT system (WISON-APB) can be conducted with this spread. It is a wireline system and can be used interchangeably with the sampling and coring barrel, giving the advantage of a flexible sampling and testing regime. As with the sampling and coring equipment, this wireline testing system ensures maximum efficiency during drilling operations. The 10cm² cone with a three metre stroke is an ideal tool to be used in soft ground, giving high quality data.

Parameters recorded by the cone are displayed in real-time on the acquisition computer, include tip resistance, sleeve resistance and pore water pressure. The stroke length during a test is measured by a calibrated flow cylinder.