

**Synthesis of
the Shallow Borehole Investigations
at the MIU Construction Site**

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All the work in the Shallow Borehole Investigation programme was managed by the MSB team, consisting of J Goto, K Hama (responsible for the co-ordination of the work), K Ikeda (drilling), N Kumazaki (geological investigations), K Mukai (hydrogeological investigations and long-term monitoring), T Iwatsuki and R Furue (hydrochemical investigations and long-term monitoring). The responsibility for editorial work on this report was with N Kumazaki.

ABSTRACT

The Shallow Borehole Investigations were one of the first programmes to be conducted at the MIU Construction Site, together with the reflection seismic survey and the re-investigation of borehole DH-2. The Shallow Borehole Investigations targeted the shallow part of the site, from the sedimentary cover rocks to the upper part of the granite. The main aims are to understand the initial state of groundwater flow and the groundwater chemistry, their long-term monitoring during excavation and operation of MIU and to identify structural discontinuities in the sedimentary rocks and the weathered granite.

From April to October 2002 four boreholes were drilled through the sedimentary sequence and the weathered granite section at the MIU Construction Site. Planned geological, hydrogeological and hydrochemical investigations were carried out. Four sets of the MP System™ were installed in all boreholes by December 2002 and continuous monitoring of hydraulic began. Information on geology, hydrogeology and hydrochemistry of the sedimentary formations and the weathered granite was acquired. JNC's quality control procedures worked well for the borehole investigation programmes. In addition, recommendations for future borehole investigation programmes, especially those in sedimentary rocks, were made.

要 旨

浅層試錐調査は、反射法探査および DH-2 号孔における再調査とともに、地表からの調査の最初の計画として実施され、研究所用地浅部の被覆堆積岩および基盤花崗岩の風化部において、①間隙水圧の長期モニタリングを実施すること、②地下水流動場の初期（研究坑道掘削前の）状態を把握すること、③不連続構造の地質学的・水理学的特性を把握すること、④地下水および岩石の化学的特性を把握することを主な目的とした。

2002 年 4 月から 10 月までの間に、研究所用地内の 4 地点において、地表から堆積岩層および花崗岩上部までの掘削、採取した岩芯の地質学的調査、水理試験、地下水の採水および分析を実施した。また、各孔に MP システムを挿入し、水理モニタリングを開始した。これら調査の結果、堆積岩層および花崗岩上部に関する地質学的および水理学的特性、ならびに地下水の地球化学的特性に関する新たな知見が得られた他、適用した JNC の品質管理方法の有効性を確認することができた。また、今後の（特に堆積岩層における）試錐調査に反映すべき調査の項目や手法などが抽出できた。

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