

Dear Sirs,

Exploration Drilling and Core Logging Procedures Using the AGR System

In 2012 Wardell Armstrong conducted a review of the exploration procedures adopted at the Shatyrkul deposit owned by Kazakhmys Plc, located in the Shuisky province of the Zhambyl region in southern Kazakhstan. The audit included assessment of the exploration drilling and quality of core logging procedures that have been adopted by Kazakhmys Exploration LLC.

During the site visit, Wardell Armstrong reviewed the core logging procedures developed by RJC Exploration (RJC). RJC Company performs a number of services for Kazakhmys Exploration LLC in Kazakhstan. On some exploration projects of Kazakhmys, the RJC geologists provide geological support of exploration program using the AGR system, including drilling monitoring, geotechnical documenting, core logging and sampling. This work is a part of the general program of implementing AGR system at Kazakhmys Exploration.

AGR is an exploration data collecting and managing system developed by RJC Company. The most recent version AGR 3.0 combines experience of the past years with the latest computer technologies, such as xml-based engine, smooth user-friendly Excel-like interface, MS Office-style ribbon, multi-language logging support, Web and SQL database support.

The AGR system approach is based on development of a documentation standard, containing the drilling journal, core logging, sampling, and various report forms. The core logging standard (template) allows collecting and managing data on exploration workings (in case of Kazakhmys, drill holes) in a unified format. All data is conveniently stored in .agr files, which are then uploaded to the database.

Thus, AGR allows collecting and managing of wide variety of exploration data in a fast, reliable and uniform manner, eliminating risks of inaccurate descriptions or incompetent geologists. AGR



Wardell Armstrong International is the trading name of Wardell Armstrong International Limited,
Registered in England No. 3813172

Registered office: Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom

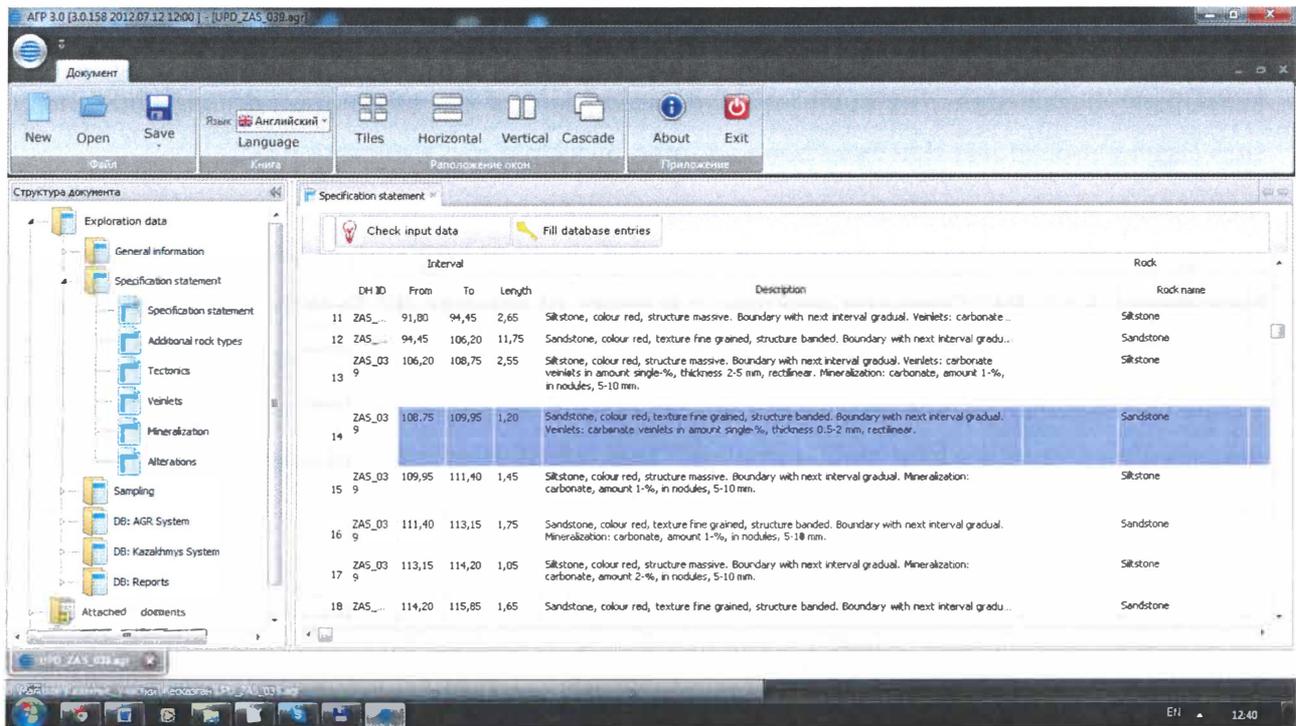
UK Offices: Stoke-on-Trent, Cardiff, Edinburgh, Greater Manchester, Liverpool, London,

Newcastle upon Tyne, Sheffield, Truro, West Bromwich. International Offices: Almaty, Beijing

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING, QUARRYING AND MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



version 3.0 added even more to the system's benefits, bringing more logic and transparent program modules. They are: separate administrative modules for senior geologists to modify the standard format, comfortable tools for geologists and technicians to input data, and a data manager to monitor and control state of work. AGR 3.0 also has a more powerful graphic reports engine, added new capabilities of customisation and integration with other services, and, finally, web-interface for instant access to the single DB containing up to date exploration information.



The core logging system suggested by RJC Exploration is an optimal tool during exploration activities and can be recommended to mining companies who are actively involved in exploration.

Yours sincerely
for Wardell Armstrong International Ltd

M L Owen
Technical Director Geology and Resources