

Dando Drilling's Program in Borno State, Nigeria

Water scarcity is one of the most challenging issues in the 21st century and the lack of clean water and adequate sanitation has devastating effects. The range of water and sanitation related diseases include cholera, guinea worm disease, bilharzia and intestinal worms; but one of the most pernicious is diarrhoea, claiming the lives of 1.8 million people per year, 90% of which are children under five. Through its Millennium Campaign, the United Nations is working to reduce the proportion of people without access to safe drinking water by 2015 by 50% and is being aided to reach this goal by many international organizations and government departments. According to the World Bank only 47% of Nigeria's population has access to improved sources and drinking water of the highest quality.

Groundwater is an extraordinarily valuable resource for many reasons. The quality is normally excellent because the soil and rocks which the groundwater flows through help remove pollutants and it therefore requires far less treatment than river water to make it safe to drink and, because groundwater responds slowly to changes in rainfall, it stays available during droughts when rivers and streams have dried up. Additionally – and of particular importance in the developing world – it can often be found close to villages and therefore removes the costs associated with capturing, treating and piping surface water. Wells can also be sealed to avoid pollution from outside contaminants.

For these reasons, the Nigerian government is investing significant resources in tackling water scarcity by drilling new water wells. The Borno Rural Water Supply (BRWS) scheme is a long-term initiative that will ultimately provide 480 water wells in rural areas within the State. In 2012, the State government awarded a contract to **Dando Drilling International Limited** to supply ten drilling rigs and associated equipment together with commissioning and training services as part of the BRWS.

The specification and expectations of the rigs was clear; Borno State required reliable and robust equipment that would work for decades in extreme climate conditions and Dando Drilling proved to be the supplier of choice having been actively designing and shipping water well drilling rigs into Africa for over 140 years.

Dando Drilling International has invested heavily in workshop technology, the very latest design and manufacturing software and additional highly skilled and experienced staff to reach its goal of becoming one of the foremost providers of drilling rigs for the water sector and this is exemplified in the Dando Watertec range of top drive rotary drilling rigs. The rigs are recognized as being one of the most capable and fit-for-purpose range of water well drilling machines available on the market. In particular, Borno's rig of choice, the Watertec 40, is capable of a wide range of drilling



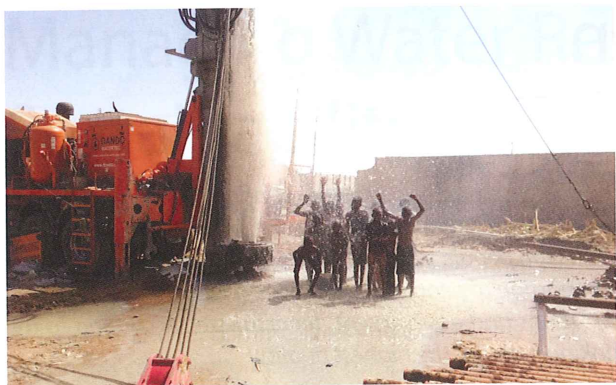
Maiduguri, Borno State, Nigeria

techniques and is a tried and tested hugely successful deep water well drilling rig designed for drilling large diameter water wells to great depths in some of the world's most challenging climates and terrains.

"The Nigerian government is investing significant resources in tackling water scarcity by drilling new water wells"

With a lifting capacity of 40,000kgf, the rig is favored by large aid agencies, government departments and private contractors for deep borehole drilling projects worldwide. With a total land mass of 69,435 square kilometers, Borno is one of the driest north-eastern states of Nigeria with semi-arid climate which consists of three seasons; long hot dry, short rainy and cold; temperatures can be as high as 45C and the surface resources, except for lake Chad, tend to dry up in the hot season.

Maiduguri, the largest city and capital of Borno State, lies on the Nigerian sector of the Chad basin with its dry season lasting longer than its rainy season contributing to serious droughts and levels of desertification. The exploitation of groundwater through the drilling of boreholes has therefore become essential to meet the increasing demand for water of Nigeria's growing population. Ten Watertec 40s have already been shipped and commissioned by Dando engi-



"The remaining rigs are being commissioned and training is being provided"

cone bit, and was cased using 8 inch (200mm) diameter steel casing screens. An entire community in Maiduguri has already started enjoying the services of the new boreholes drilled with all four rigs currently working at various locations in Borno State. Elsewhere in Borno State a water well of 800m using mud rotary technique has been recently recorded and is believed to be the deepest water well in Nigeria to date. The remaining rigs are being commissioned and training is being provided which will allow them to be deployed in this life-saving project. ■

Source:

Dando Drilling International Limited

Web: www.dando.co.uk

Maiduguri, Borno State, Nigeria

neers in Maiduguri. During the commissioning work a borehole of 600meters was drilled using a 123/ 3/4 tri-

تعتبر ندرة المياه إحدى القضايا الأكثر تحدياً في القرن ٢١ ولا شك أن النقص في المياه النظيفة ومرافق الصرف الصحي الملائمة لها آثار مدمرة. تعمل الأمم المتحدة من خلال حملتها الألفية على الحد من نسبة الأشخاص الذين لا يمكنهم الحصول على مياه الشرب بنسبة ٥٠٪ بحلول عام ٢٠١٥، ويساعدها العديد من المنظمات الدولية والإدارات الحكومية لبلوغ هذا الهدف. بحسب تقارير البنك الدولي، يملك ٤٧٪ فقط من سكان نيجيريا الحق بالوصول إلى مصادر مياه الشرب المحسنة وذات الجودة العالية. باعتبار أن المياه الجوفية مصدراً قيماً لأسباب عديدة، تستثمر الحكومة النيجيرية موارد كبيرة لمعالجة ندرة المياه من خلال حفر آبار مياه جديدة. يعد مخطط برنو لإمداد المياه للمناطق الريفية مبادرة طويلة الأجل من شأنها أن توفر في نهاية المطاف ٤٨٠ بئراً من المياه في المناطق الريفية داخل ولاية برنو.

Rovatti Pompe's Latest Developments

Rovatti Pompe is proud to highlight the latest developed product for deep installations: the new 16EX series of 16" AISI 316 casted stainless steel electric borehole pumps. With this new mixed-flow line, the well-known Extreme range is enlarged, again, welcoming an even bigger, powerful and efficient solution for deep installations. Designed and developed to satisfy the most severe working conditions with the purpose of pumping corrosive and aggressive fluids in several sectors (such as pumping sea water in reverse osmosis applications) with the new 16" 16EX series the Rovatti Extreme range of borehole pumps can now meet flow requirements up to 1200 m³/h, head up to 700 meters (thanks to the radial encapsulated 8ERCX series) and motor power up to 400 kW representing, in a nutshell, the best possibility of increasing the state of the art of any pumping station guaranteeing exceptional hydraulic efficiency next to the maximum corrosion and wear resistance. The Company is also proud to promote the exclusive 6" and 8" vertical turbine pumps 6VX and 8VX series. This innovative range of products have been engineered and designed for efficient and reliable pumping of aggressive liquids in a wide range of industrial, marine and civil applications. While all parts in contact with the pumped liquid are manufactured in AISI 316 casted stainless steel, shafts



The new 16" 16EX series

and couplings are made of AISI 329 Duplex stainless steel. Through this construction the hydraulic components do not show welding joints and are characterized by compact and smooth surfaces. ■