



Foraco's hydro rig raises bar in LFDR

ADIA member Foraco's latest innovation, the NGBF 800 Hydro rig, has officially hit the ground running in the Pilbara, significantly raising the bar in Large Diameter Flooded Reverse (LFDR) waterwell drilling.

Jamie Wade writes.

“We can drill 17 ½” to 20” holes to depths of 400 metres with a single compressor.”

Foraco Australia vice president Nathan Elford



With a rich legacy of over 25 years, the original BF 800 rig has been a cornerstone of Foraco's international large rotary fleet. This new iteration, a collaboration between Foraco's French and Australian engineering teams, is set to elevate standards with its advanced technology and robust design.

"The original BF 800 has been the backbone of our fleet for over two decades, proving its mettle across five continents," Foraco Australia vice president, Nathan Elford, explains to Australasian Drilling.

"We've seen these rigs deliver bulk samples for diamond exploration in Canada, drill mineral waterwells in the French Alps, and complete numerous waterwell programs throughout Africa. Their reliability and performance are unmatched."

The BF 800's storied history includes drilling for Evian and Perrier in the French Alps and delivering NGO-funded waterwell packages of up to 1000 village wells in Africa. The rig's ability to adapt to diverse environments and demands has made it a trusted tool

include a 55-ton pullback capacity, a telescopic mast with an 11-metre feed stroke, a tilting drill head, and a 30-inch table opening. "This rig is specially designed for deep LFDR waterwells, making it the leader in its class in Australia," Nathan notes.

One of the standout aspects of the NGBF 800 is its small footprint and road-legal status. "Mounted on a standard wheelbase Mercedes Arocs 4846AK 8 x 8 carrier, the rig weighs in at a road-legal 38 tons. This allows us to move the rig without the need for restrictive permits, offering significant cost savings and flexibility," Nathan explains. This capability is particularly advantageous for clients with projects in remote or challenging terrains, providing access where traditional rigs might struggle.

Environmental and operational efficiency

In an era where environmental impact is a critical consideration, the NGBF 800 stands out with its eco-friendly design. The rig's hydraulic group is powered by the Mercedes truck engine via a PTO drive shaft, eliminating the need for a traditional diesel deck engine. This innovation not only reduces emissions but also enhances fuel efficiency.

in the field. This legacy of excellence sets a high bar for the NGBF 800 to meet and exceed.

Cutting-edge features

The NGBF 800 Hydro rig retains the core design principles that made its predecessor a success—strength, reliability, and user-friendliness—while integrating state-of-the-art technology. Key features

"LFDR drilling is the most energy-efficient method for large diameter waterwells. We can drill 17 ½” to 20” holes to depths of 400 metres with a single compressor, significantly cutting down on fuel consumption and greenhouse gas emissions," Nathan highlights.

The use of a Euro V specification truck engine further underscores Foraco's commitment to reducing its carbon footprint. By removing the traditional deck

Top: Tatra 6x6 prime mover transporting a mud trailer.

Right: Final commissioning of the NGBF 800.

Far right: Mercedes 8x8 flatbed with NGBF compressor mounted on a solar-powered hydraulic jack-up sloop.

Foraco Safe T Load pipe and BHA presenter.

The Foraco 16,000 litre mud trailer with integrated generator, cyclone, lighting tower, mixing station and shale shaker.

Tatra 8x8 support truck carrying 3,000 litres of diesel, 11,000 litres of water, and capacity for 40 x 6m of 5 ½" drill rods.

NGBF 800 drill rig in Foraco workshop yard pre-mobilisation.

engine, the rig's overall emissions are significantly lowered, aligning with global sustainability goals. This focus on eco-efficiency not only benefits the environment but also positions Foraco as a forward-thinking leader in the drilling industry.

Enhanced safety and comfort

Safety and operator comfort are paramount in the NGBF 800's design. The rig features wireless remote control and hands-free handling of all pipe and BHA components, operated from a climate-controlled driller's cabin.

"Our remote-control systems allow the driller to stay away from high-pressure zones, reducing exposure to extreme energy sources, noise, heat, and vibration. This setup not only enhances safety but also reduces fatigue, leading to better decision-making and productivity," Nathan says.

The climate-controlled driller's cabin is more than just a comfort feature; it's a critical component in ensuring the well-being of the operators.

"Working inside a climate-controlled environment eliminates thermal stress as well as noise, wind, and vibration. These factors are major sources of fatigue, which is often a precursor to incidents," Nathan explains.

The cabin is equipped with modern amenities, including a fridge, microwave, and 240v appliances, making it a much more pleasant place to work.

Commitment to innovation and inclusion

Foraco's investment in the NGBF 800 is also a testament to their commitment to fostering a diverse and inclusive workforce.

"We have always focused on employing the best person for the job, but the harsh climates and physical nature of drilling have been challenging for many," Nathan admits.

"By innovating our drilling operations, we aim to make the work environment more appealing to everyone, including women. We currently have 20 percent female representation on one of our major projects, and we hope to increase this number by providing a safer, more comfortable working environment."

Foraco's efforts to make the drilling industry more inclusive are multifaceted. The remote-control functionality, mechanised rod handling, and hydraulic breakouts remove much of the physical strain traditionally associated with drilling operations. This innovation makes the roles more accessible and appealing to a broader range of potential employees.

"We've seen that gender-diverse crews bring a wider array of problem-solving skills and a more respectful working environment," Nathan states. "Our goal is to continue these advances to attract and retain a diverse workforce."

Prospects and long-term vision

Looking ahead, Foraco is poised to continue integrating advanced rigs into their fleet.

"Our long-term vision is to standardise our fleet with the NGBF 800, which offers unmatched safety, productivity, and environmental benefits. We have a second unit arriving from France soon, and our



Perth team is already preparing for its deployment," Nathan shares. "We see these rigs as the pathway to achieving our goal of having the best people operating the safest, most productive, and reliable equipment in the industry."

The modular design of the NGBF 800 allows for flexibility in various hydro contracts by mixing and matching ancillary equipment to suit project specifics. This adaptability ensures that Foraco can meet the diverse needs of their clients while maintaining high standards of safety and efficiency.

Technological evolution

Nathan Elford is optimistic about the future of drilling technology. "We are seeing technology evolve at a faster rate than ever before. Remote-controlled drill rigs are now accepted and proven. This foundation allows us to automate some functions, giving the driller and crew more time to focus on ancillary tasks while the rig advances the hole," he explains.

Electrification is another frontier that Foraco is watching closely. "Electrification is coming. Once large batteries for heavy earthmoving equipment are proven, we can adopt these on our drilling equipment. In the future, we envision replacing the diesel-powered truck carrier with an electric unit to power the rig hydraulics," Nathan predicts. This transition to electric power will further reduce greenhouse gas emissions, aligning with global sustainability trends.

Investment and market position

Foraco's substantial investment in the NGBF 800, a \$6 million rig package, underscores their commitment to innovation and market leadership.

"The original BF 800 series had an outstanding performance record. With the NGBF 800, we wanted to exceed the technical scope of works our clients specified and future-proof our large rotary operations," Nathan explains. This rig is not just a tool for today but a step towards a more advanced, sustainable future in drilling operations.

By investing in cutting-edge equipment and technology, Foraco aims to attract the best talent in the industry.

"We invest a lot in training and prefer promoting from within to ensure long-term career options for our



employees. We want the best people to develop their drilling careers with Foraco, operating the safest, most productive, and reliable equipment," Nathan says. ▲

The Wireless Remote Controls (WRC) and the interior of the dog house featuring WRC, Measurement While Drilling (MWD) screens, and rig camera screens.

Doghouse for wireless remote control drill rig operations, featuring climate control, an integrated telescopic lighting tower, a 10kVA generator, and a flat deck for transporting field toolboxes and bit bins.

Foraco Australia vice president Nathan Elford next to the 24" conventional diverter for the NGBF 800.

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