

## TERRA SONIC INTERNATIONAL VERTICAL MOBILE DRILLING RIG



Project — Terra Sonic International Vertical Mobile Drilling Rig

Integrator — S. G. Morris

Location — Marietta, Ohio

Application — Wireless Control Functions

Products Used —

- Enrange™ MLTX2 Transmitter
- Enrange™ MHR Radio Controller

### CHALLENGE

- Install a wireless control system for mobile drilling rig via hydraulics
- Integrate controls for RPM increase/decrease and engine start/stop
- Increase durability and availability of professional set-up technical support
- Provide a durable radio system to operate in harsh environments

### SOLUTION

- Magnetek provided a wireless communication system for Terra Sonic's mobile vertical drilling rig
- Installed a wireless control movement system via hydraulics
- Simplified start/stop functions and provided immediate technical support
- Integrated radio controls to better handle harsh environments and temperatures



Engineers at Terra Sonic International strive to produce clean, low-impact sonic drills for a variety of environmental, mineral, and geothermal sampling applications. Sampled materials can be used for geological analysis of minerals, hazardous waste and structure stability for buildings. In particular, the mobile vertical drilling rig required the installation of easy, onboard adjustment capabilities for crawling movements, engine start and stop, and revolutions per minute (RPM) increase and decrease.

High frequency waves are transmitted through a drill casing and rods that causes a thin layer of the surrounding soil to fluidize. In addition to vertical sonic vibration, drill heads can rotate simultaneously and cut through materials such as concrete or asphalt. The vibrations, combined with the rotating drill head, allow for a simple sampling process and more complete breakup of porous materials.

Vertical mobile drilling rigs are mounted and move on a set of tracks called trawlers. The new wireless controlled hydraulic system was installed for superior functionality and smoother maneuverability as the rig travels to various sampling sites. Flexible wireless controls easily adapted to the crawling function and valve adjustment capabilities, allowing for a more streamlined operating process.

S. G. Morris created a system solution that offers an integrated package of Magnetek's wireless controls and hydraulics, allowing for smoother and more flexible operations. Enhancing equipment performance and simplifying adjustment capabilities were the goals of the new system install on the mobile drilling equipment.

## ADVANTAGES OF USING MAGNETEK'S WIRELESS CONTROLS

- Experts in providing innovative, cost-effective, custom-engineered wireless communication products
- Meets application specifications to reduce internal engineering, improves time to market and enhances performance
- Manufactured and tested at our U.S. facility
- Customized application software designed at our Bridgeville, PA, facility
- Aftermarket service in our Ontario, Canada, and U.S. facilities



Magnetek's MHR radio controller combines the components of a radio receiver and hydraulic controller into a single unit. When implemented with the MLTX2 bellybox transmitter, it provides a total radio control system for operating the drilling rig. The radio system also manages the RPMs of the rotating drill head and the engine on and off functions.

The MHR/MLTX2 system meets industry and government standards for high and low temperatures, water resistance, excessive vibration and shock, and electromagnetic interference, making it more durable in harsh outdoor conditions. Graphic displays on both products monitor system settings, diagnostics, and machine functions.

S. G. Morris integrated the hydraulic products and electrical systems for the drilling rig, incorporating Magnetek's industry-leading wireless controls within the existing structures. By implementing this complete system solution, Terra Sonic received enhanced overall performance and decreased setup times and training, thereby allowing more time for practical use of the rig, and improved durability of their machinery.

