

REMOTE DRILLING SYSTEMS

At Cathedral Energy Services we are constantly striving to improve our fleet of tools from the electromagnetic measurement-while-drilling (EM/MWD) tools to the mud motors and tubulars that are used. We feel that by constant improvement and listening to our customers, we are able to provide the best possible service to each and every customer.

Through innovative modifications to our tools, Cathedral has increased its reliability and performance in the underbalanced drilling market.

Improved Depth Capability

Modifications to the tool — formation impedance matching properties combined with low resistance (anhydrite) short protection configurations — have allowed the system to be operated to increasingly deeper ranges.

The tool has consistently been run in applications with depths in excess of 9,500 ft TVD, and as far as 11,300 ft TVD, without losing detection.

Remote Drilling and Command Centre

Remote drilling has been a success, providing this service for customers over the past eight months.

Drilling multiple projects, HZ and HZ underbalanced wells, directional, and vertical monitoring of wells, has saved clients money and increased their safety by having less personnel on location and out on the roadways. We have one driller on days at the rig site, and graveyard shifts are run here from our Calgary location.

How does the system work?

Cathedral Energy uses Pason Satellite internet network in conjunction with Bell's cell tower network to provide a secured communication system.

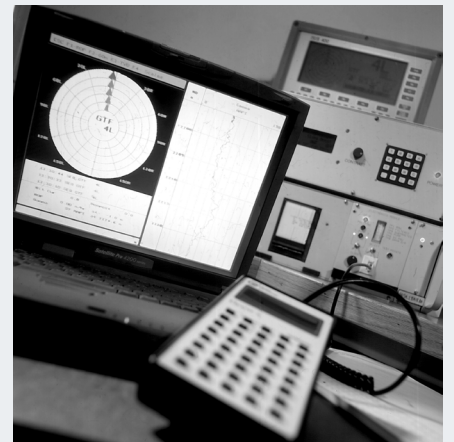
Pason Satellite is the main connection, while Bell/Cathedral's private network will act as the back-up system. Since Pason internet is a public network, Cathedral will use a Virtual Private Network (VPN) to establish a secured connection between the rig networks to Cathedral's secured network. This VPN will provide all necessary network services to support the old remote monitoring: ie transfer, network transport, remote desktop and future expansion to database communication. A second or back-up system is provided by Bell/Cathedral's branch-to-branch VPN. Since Bell/Cathedral's VPN network is already a secured network, there is no need to double up the VPN. Any trac within Bell/Cathedral's branch-to-branch network is complete, private and secure.

From the remote once the operator can look at raw and altered traces of the MWD tool. This data allows the remote driller to monitor how the EM/MWD tool is performing. Where pulse systems were formerly utilized for this function, Cathedral's modied equipment allows for this functionality. Cathedral utilizes 4 ways of maintaining communications between the remote directional driller and both the on-site rig floor driller and on-site geologist.

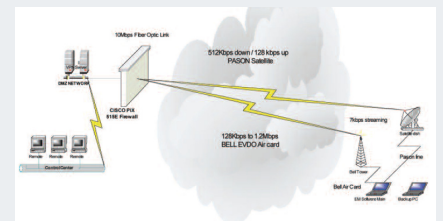
If you would like visit and/or learn more on what Cathedral Energy Services can provide for you and your team, please contact us at 403.265.2560 or 1-866-276-8201.



The remote office has the option of simply viewing rig computers or taking full control and operating rig site computers from the Calgary office.



Surveys can also be obtained on Pason's Live Rig View memo feature, a real-time interface with no delay. Pason Interface for gamma sensor-to-bit offset distance is entered by the EM/MWD on site. Typical offset is 10 meters.



Cathedral Energy VPN Infrastructure For Field Remote Monitoring