



CUSTOMER SUCCESS STORY

WIDE AREA WIRELESS COVERAGE ENABLES ADVANCED DRILLING AND PRODUCTION

SITUATION

PDO needed to build a network with a reliable high-speed wireless IP data infrastructure over an extremely large and diverse geographic area to establish a digital oilfield.

TASK

- Provide remote monitoring of 6,000 sites
- Enable advanced drilling and production applications with real-time data
- Support new collaboration, safety and security applications

ACTION

Redline Virtual Fiber™ wireless solution, with its robust product design, superior performance and open IP networking standards support, was used as the transport network.

RESULTS

- Connected 7,000+ wells with full high-speed coverage using only 52 base stations
- Enabled continuous remote monitoring and management of the oilfield
- Greatly improved production efficiency and output
- Significantly reduced drilling days
- Created an efficient and collaborative environment

With 45,000 sq km (18,000 sq mi) of oilfields, Petroleum Development Oman (PDO), a leading exploration and production company in the Sultanate of Oman, provides more than 70% of Oman's crude oil production and nearly all of the natural gas supply. They have in excess of 6,000 sites requiring continuous high-speed wireless IP data services in an oilfield larger than all of Switzerland.

Confident that creating a fully wireless communications infrastructure was the only practical solution to enable them to leverage all the benefits of advanced drilling and production applications, PDO was ready to move into the new era of the digital oilfield.

CHALLENGES OF THE OMANI DESERT

PDO's primary objective was to increase production, while improving safety and efficiency. They wanted to do this by making high-speed data connectivity universal throughout their entire oilfield operation. Building a wireless communications system across the oilfield would enable advanced drilling and production management applications. It would also provide a seamless communications link to facilitate greater collaboration between headquarters, field offices and mobile field teams.

PDO is experienced and understands the business value that can be derived from wireless technology. For their Oman oilfield, they identified some significant challenges in creating a critical wireless infrastructure:

- Strict RF power restrictions for unlicensed frequency use in Oman
- Sites widely distributed across rugged terrain
- Many locations using non-conventional power (e.g. solar)
- Extreme climatic conditions

UNIVERSAL CONNECTIVITY WITH REDLINE VIRTUAL FIBER™ WIRELESS SOLUTION

Redline was selected as the vendor because of its level of expertise in the Oil & Gas industry. Through years of experience, Redline has developed a secure



and reliable broadband wireless solution. This solution consistently exceeds industry technical requirements with the greatest overall ROI, while providing customers with opportunities to leverage the improved communication for new and unforeseen business requirements.

For this project, a detailed RF coverage map

determined that the Redline Virtual Fiber™ wireless solution would be able to cover the entire oilfield with just 52 base stations. That was less than one third of the other estimates PDO had received, delivering a savings of millions of dollars.

ONE OF THE WORLD'S LARGEST DIGITAL OILFIELD OPERATIONS

PDO successfully deployed a wireless communications infrastructure with capacity for all of their advanced oilfield applications, making this one of the largest digital oilfield operations in the world.

Today, more than 7,000 sites, including oil wells, work sites, 200+ drilling rigs, workover rigs, and other mobile assets, are connected using the Redline Virtual Fiber™ wireless solution; this is an increase of 17% over what was originally planned. Within one year of deployment,

36 times more data is collected, allowing for more accurate and faster decisions. All of which contributed to PDO achieving its third highest production year in the company's 50 year history.

SCADA traffic is supported to all wells and well clusters with additional network capacity for data, voice, video conferencing and video surveillance at field offices, battery sites and drilling sites. Work crews at field facilities, and in semi-mobile units, are wirelessly connected allowing person-to-person communications and access to corporate systems from anywhere within the coverage area for greater collaboration for improved workflow and operational safety.

With smart drilling techniques enabled, drilling time was reduced by more than 35 percent, wells were brought online more quickly, and PDO realized substantial per-well cost savings.

"Redline's ability to operate without interruption in harsh conditions over extremely wide areas was key to delivering a rapid return on investment. We have seen immediate and significant improvements in performance and data throughput as a result of the wireless digital connectivity delivered by Redline. Furthermore, increased collaboration has allowed for better safety and improved workflow."

~ Saeed Al Shidhani, PDO's Head of IT Projects.

ABOUT REDLINE COMMUNICATIONS

Redline Communications is the creator of powerful wide-area wireless networks for the world's most challenging applications and locations. Used by Oil & Gas companies, militaries, municipalities and telecom service providers, Redline's powerful and versatile networks securely and reliably deliver voice, data, M2M and video communications for mission-critical applications.