

# Case Study

## Oil & Gas



### Customer

Magnus Services  
[www.magnus-llc.com](http://www.magnus-llc.com)

### Industrial IoT Solutions

#### Provider

LEC Inc.  
[www.lecinc.com](http://www.lecinc.com)

### Location

North America

### Challenges

- > Accurately monitor and control fracking site water supplies
- > Log and send data from and to remote devices
- > Rugged and reliable communications from extreme environments

### Products

Industrial Networking  
RAM 6900 series

### Results

- > Improvement of overall process control
- > Less need for on-site support staff
- > Worldwide secure access to reports and near real-time data from any web browser capable device

### Project Scope

In the fracking process, it is important to monitor and control the supply of water to the frack site and ensure that water is continually available. Traditionally, two to four people are needed on-site to physically monitor storage tank levels, turn pumps on and off, and open and close valves. In addition, this on-site staff notifies trucking companies when more water trucks are needed. Magnus Services, a start-up oilfield water management and automation company based in North Dakota, was looking for a way to remotely monitor and control water usage during the fracking operation in order to maintain critical water levels and prevent overflow of tanks onsite, which can bring work to a standstill. It was also important for the company to improve the utilization of its mobile units, which are often used on a customer site for three to four weeks but need to be relocated to different locations in an efficient manner. This efficiency is important because Magnus has grown its business and is now working with several key oil companies.

*"We needed a way to remotely control the water supply and monitor water usage, pumps, storage tank levels and overall operational efficiencies of our mobile units that are relocated from site to site and customer to customer. This required a truly unique application with enough flexibility to add new features and meet the growing needs of our industry."*

- JR Ewing, CEO, Magnus Services

### Solution

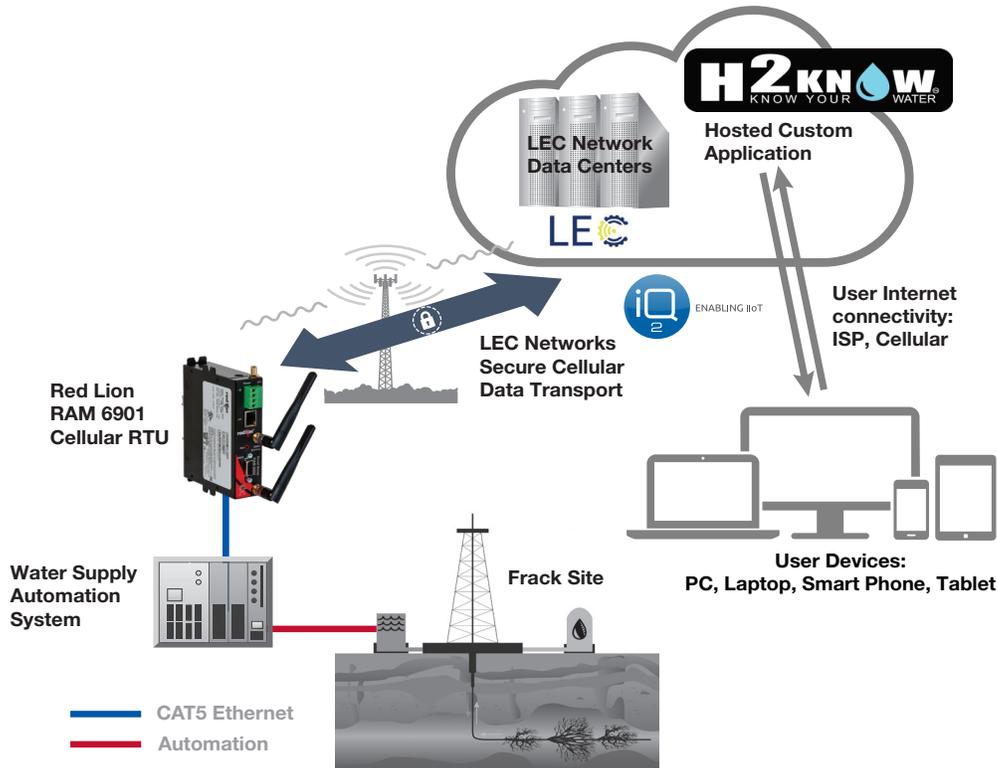
Magnus developed the H2Know solution, which can remotely monitor and control the supply of water to fracking operations for several major oil companies across the US. H2Know is built on iQ2, an IIoT platform technology from LEC, a leader in industrial automation control engineering and Industrial Internet of Things (IIoT) enablement, and IIoT-ready RAM 6900 series cellular RTUs from Red Lion Controls.

The integrated solution, a first of its kind in the industry, was designed and built to meet the specific needs of Magnus, including integration into the automation system, platform development, monitoring and related control logic. It can operate in rugged environments common to fracking sites that often include extreme cold temperatures, wind and dust, providing reliable communications from remote areas using cellular technology. With Magnus, oil companies now have access to near real-time data on the water levels and water control functions at their fracking sites. In addition, H2Know sends alerts on alarm conditions, and provides recording, trending and reporting capabilities. This allows oil companies to take preventive steps to ensure proper water levels, and gives them important insights into trend data that can help them plan more effectively to stay ahead of future requirements.

## Benefits

The deployment of H2Know gives Magnus customers the ability to improve overall process control, with remote monitoring and control capabilities that span all fracking operation sites. This monitoring and control can be done faster and with less need for personnel on-site, assisting in more efficient use of the water stored at each location. Operations and support staff can make fewer trips to remote locations, which saves time and allows staffers to focus on other tasks, which helps to reduce costs.

The automated system can produce meaningful data through cloud-based visualization and reporting, and data can be accessed from a range of different devices via a web browser, providing the flexibility to access important information when and where it is needed. H2Know gives Magnus a market-first and helps to create a new model for how fracking operations are conducted.



## Products

Model	Description
RAM 6900 series	Cellular RTU with multi-carrier 4G LTE support, GPS, up to five Ethernet ports and RS-232 serial port



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