

# RigWatch® Equipment Condition Monitoring



## Real-time data to prevent equipment failure

RigWatch® Equipment Condition Monitoring (ECM) helps avoid inefficient maintenance of equipment by monitoring equipment conditions in real time and providing critical notification when equipment fails.

### ► RIGWATCH® EQUIPMENT CONDITION MONITORING

Nabors' RigWatch® ECM system allows equipment maintenance for top drives and engines to be remotely monitored anytime from anywhere in the world. Sensors on rig machinery gather information that determines how well the equipment is performing and when it might be due for maintenance. By identifying problems before they occur and scheduling maintenance as needed, RigWatch® ECM promotes a new level of drilling efficiency.

### ► KNOWLEDGE AT THE RIG

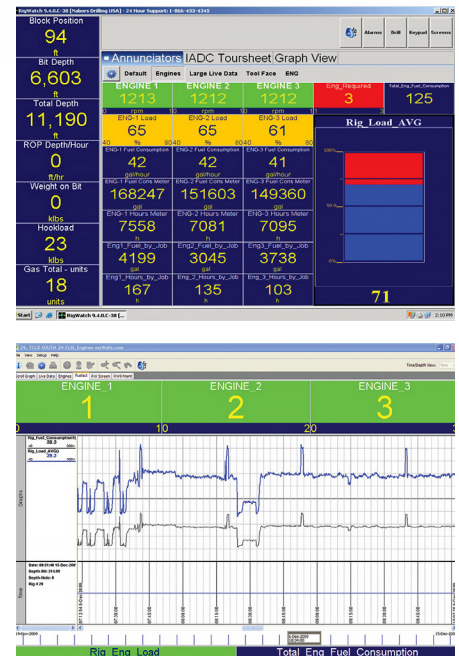
RigWatch® can produce hundreds of data points from nearly any type of instrument and execute advanced algorithms against this data to help improve drilling efficiency, monitor rig performance and track equipment usage.

Benefits include:

- Real-time monitoring and remote assistance from a 24/7 worldwide support center
- Local alarms to notify offsite personnel of problems for immediate response
- "Intelligent" alarms that feature trend analysis in order to anticipate future breakdowns
- Synchronized top-drive operating data and alarms to the PLC clock for further analysis
- Remote installation of top drive ECM to reduce engine hours and overall engine maintenance costs

### ► 24/7 TECHNICAL SUPPORT

RigWatch® Suite is supported by Nabors' 24/7 worldwide support center, which offers technical support and online troubleshooting to resolve many technical issues using remote diagnostics without dispatching a technician to the wellsite.



### ► CASE STUDY

Nabors' ECM can help stop costly top drive or engine failures before they occur. Consider the potential cost savings:

Top drive failure can result in:

- A minimum of three days of downtime at a cost of \$36,0000 (36 hours X\$1,000 per hour)
- Three weeks for a major overhaul
- \$265,000 to \$325,000 in repair costs

Each hour an engine is not running equates to a savings of \$12.34 in maintenance costs and a savings of \$22.20 in CO2 carbon credits.