

Boots & Coots Conducts New Quantifiable Operational Rig Audits Leading to Double Digit Operational Improvement

HELPS MAJOR OPERATOR REDUCE EXPOSURE TO WELL CONTROL EVENTS

UNITED STATES

CHALLENGES

Identify potential rig hazards and well control events

Operators want to reduce potential well control events by proactively identifying possible risks and taking corrective actions to mitigate them. Many clients wanted a more thorough, quantitative audit to improve operational excellence for all their rigs.

Communicate performance objectives to employees

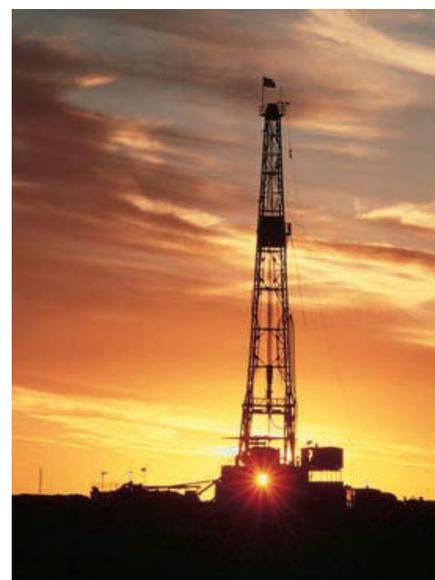
Many operators also wanted to more effectively communicate operational goals to employees. Companies sought objective and quantifiable goals to better train employees and improve performance.

Improve operational efficiency of rigs

In addition to identifying risks and reducing potential well control events, operators search for ways to improve the operational efficiency of their rigs. Any incident could lead to nonproductive time, which has the potential to cost companies millions of dollars.

OVERVIEW

Oil and gas companies are continually looking for ways to improve operational excellence and reduce exposure to potential well control events. Boots & Coots, a Halliburton service, has conducted a well control audit program that has successfully helped operators around the world for several years. Recently Boots & Coots developed a new, more quantifiable audit program that can help operators further improve safety and operational efficiency. Boots & Coots performed 188 of these audits for a major operator in the first two years of the program. Audit scores increased by 22 percent in one region alone during that period. The operator believes these audits upgraded the operations and efficiency of their rigs and has hired Boots & Coots to develop audits for other aspects of their operations.



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SOLUTIONS

Oil and gas companies, as part of a continuous effort to improve operational excellence, are always searching for ways to proactively identify potential risks and take actions to mitigate these risks. Boots & Coots has helped companies to improve operational excellence for several years by conducting rig audits. While these audits have been a great value to operators, Boots & Coots believed objective adjustments could be made to help improve operations and increase safety. Boots & Coots developed its new, one-of-a-kind well control audit system that is more objective and quantitative to help companies improve their well control efforts.



SOLUTIONS

Quantifiable audits increased operational excellence

Boots & Coots' new well control audit program is based on a standardized scoring system that provides clients a quantifiable way to measure well control operations. These audits incorporate both industry and regulatory guidelines to help increase operational excellence for all rigs.

Audit database created training tool

A database of corrected actions is created to identify potential issues and give management a tool to train employees. Workers are able to see why the corrective actions are needed and how it improves overall operations and efficiency.

Audits reduced nonproductive time on rigs

Boots & Coots' audits assess and rank potential issues. The database tracks corrective actions and steps taken to address them. The system provides management insight and accountability, helping to increase efficiency and reduce nonproductive time.

BOOTS & COOTS' AUDIT USES STANDARDIZED SCORING SYSTEM

The new audit system measures its findings against regulatory requirements. Boots & Coots' specialists and engineers, who have an unmatched depth of experience in identifying risks, developed the questions. While most drilling managers will never encounter a well control event, Boots & Coots' specialists and engineers deal with more than 30 a year.

The audit uses a risk matrix that bases scores on frequency across the industry, and documents if an issue is not resolved. Boots & Coots works together with its clients to classify the risks in a tiered system of critical, major, or minor, and a grade is assessed based on those scores.



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CORRECTIVE ACTION MODULE PROVIDED ACCOUNTABILITY

Another advantage of Boots & Coots' well control audits is the corrective action module. This system is designed to ensure corrective actions are taken on issues that are found by the auditor. After an audit is complete, a report is generated that gives the score of the rig, the items that need to be corrected, and the types and rank of the action items. Clients also receive photo documentation and supporting regulations that verify the findings.

Crews then use Boots & Coots' protocol to correct the items. Critical issues must be corrected within 48 hours, major items in 72 hours, and minor issues within five days. Crews use Boots & Coots' system to report to supervisors when the items are corrected. If the corrective actions aren't completed in the required time frame, emails are sent to management, alerting them to the issue. This provides built-in accountability to help ensure the issues are being resolved in a timely manner.

BOOTS & COOTS THOROUGHLY EXAMINES RIGS DURING AUDITS

During a typical audit, Boots & Coots' personnel interviews Health, Safety and Environment officers for the rigs, along with supervisors and other workers. Auditors also complete thorough, visual inspections that examine all the components of the operation that directly impact well control. This encompasses 12 areas of the rig and includes the blowout preventer, casing and rig specifications.

Hundreds of questions are asked, including questions about on-site communication, how personnel achieved safe practices and operational excellence, how they identified and evaluated risks, and preparations in the event of an incident. Auditors look at the standard, written operation procedures of the rigs, the review process, and ensure that everyone on the rig has an understanding of all interactions between personnel and equipment. Auditors also look at the training and experience of all personnel. These full, non-intrusive audits are completed without any nonproductive rigtime.

The new well control audit uses questions based on industry and regulatory standards developed by Boots & Coots' specialists and engineers. Boots & Coots has an unmatched depth of experience when it comes to identifying risks. While most drilling managers never encounter a well control event, Boots & Coots handles more than 30 a year.



UNMATCHED **DEPTH** OF EXPERIENCE

FIRST OF ITS KIND QUANTITATIVE AUDIT PROGRAM



Boots & Coots' new well control audit program is more objective and quantitative than other audits. Scores are based on frequency across the industry and the consequences if the issues are not resolved. Boots & Coots categorizes the risks as critical, major or minor and a grade is assessed based on those scores.

Within the first two years of the program for a major operator, Boots & Coots conducted 188 audits of the company's rigs in the United States.

188 RIGS AUDITED WITHIN THE FIRST TWO YEARS

The Boots & Coots' audits for this major operator helped improve scores by 22 percent in one year for one region.

**IN ONE REGION ALONE,
OPERATIONAL EXCELLENCE
SCORES IMPROVED**

22%

RESULTS

- » First of its kind quantitative audit program
- » Improved 22% operational excellence scores
- » 188 rigs audited in 2 years

RESULTS

Audits for a major operator showed double-digit improvement

Within two years of starting the new audit program, Boots & Coots performed 188 audits of rigs around the United States for a major operator. Improvements are already being seen as auditors complete another round of audits. In one region alone, operational excellence scores improved 22%.

Improved operations led to more audits

The operator believes these audits are an important component of its culture of continuous improvement. The findings from these audits provide visibility to management and can be used to train employees and improve overall operational efficiency. The operator is so pleased with the rig audits, it has now requested Boots & Coots develop audits for other phases of operation, including fracturing, snubbing and coiled tubing.



“The audit’s findings allowed us to see our strengths and weaknesses so we could identify areas of focus. Outside of the formal classroom, they are some of the best training tools we have.”

– *Drilling Safety Manager*
Major Operator

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