

World Oil®

ADVANCES IN DRILLING

Advancements lead the way
to autonomous drilling

DRILL BIT INNOVATIONS

Manufacturers bring new
technologies to fruition

RESERVOIR MANAGEMENT

Data-driven solutions
improve productivity

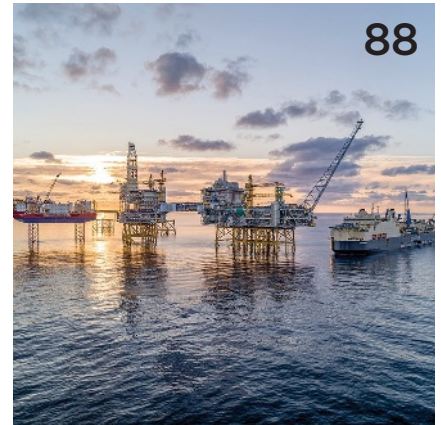
SHALETECH: NIOBRARA

Fates hinge on election,
cracking the code



CONTENTS

OCTOBER 2018 / VOL. 239 NO. 10



SPECIAL FOCUS: ADVANCES IN DRILLING

- 29 The path to autonomous directional drilling**
J. Marck / L. Vitta
- 35 Direct drillstring measurements in drawworks improve autodriller performance**
I. Soukup / M. Boudreaux
J. Anderson / R. Ramirez
J. Shim
- 43 Advancing drilling operations through collaborative work and innovation**
T. Horn

DRILL BIT INNOVATIONS

- 49 PDC bit technology evolves to 4D cutters**
R. Rahmani
- 51 Manufacturers bring new bit technologies to fruition**
C. Fleming

RESERVOIR MANAGEMENT

- 57 Data-driven solutions improve oil field productivity**
G. Breerwood / C. Näden

SHALETECH: NIOBRARA/UINTA

- 62 Fates hinge on election, cracking the code**
J. Redden

DIGITAL TRANSFORMATION

- 69 Analytics can optimize oil and gas equipment performance, predict failures**
A. Weatherhead
- 73 Chemical management goes digital**
P. Gould

REGIONAL REPORT: MENA

- 78 The heart of global oil exports thrives amid geopolitical tensions**
M. Cowart

ABOUT THE COVER

On March 29, 2018, day three of rig-up for Latshaw Drilling's Rig 9 takes place at FourPoint Energy's Hefley 4A wellsite in Texas Railroad District 10. The site is in the Texas Panhandle, on Texas state highway 152, 7 mi east of the town of Wheeler, in Wheeler County. Rig 9 features an SCR-powered, 1,700-hp system. The Hefley 4A was spudded on April 9, and the rig was walked over to the next well on May 21. TD on this horizontal well, which was targeting natural gas, was 17,449 ft. Photo: Latshaw Drilling Company.

COLUMNS

- 9 First oil**
A job done well
- 15 Energy issues**
There is sand, and then there is sand
- 17 What's new in exploration**
Where are the oil reserves?
- 19 Drilling advances**
Windows to the hole
- 21 What's new in production**
Let's party
- 23 Executive viewpoint**
21st century commercialization: Where are we now?
- 25 Innovative thinkers**
John Costagna: Fostering the industry's human intelligence
- 94 The last barrel**
Everything old is new again

NEWS AND RESOURCES

- 11 World of oil and gas**
- 27 Industry at a glance**
- 86 People in the industry**
- 88 Companies in the news**
- 90 New products and services**
- 91 Advertisers' index**
- 92 Advertising sales offices**
- 93 Meetings and events**