# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Near a Kilometer of Perforating Guns, in a 7¼-km, Extended-Reach Well—Coiled Tubing Shows Its Mettle in New Zealand</td>
<td>1</td>
</tr>
<tr>
<td>P. Bartholomew, Shell Todd Oil Services Ltd.; L. Portman and R. Frost, BJ Services; P. Nunn and P. Vause, Vause Wireline; D. Edmondson, L. Andrich, and T. LaGrange, Owen Oil Tools</td>
<td></td>
</tr>
<tr>
<td>Coiled-Tubing Perforation and Zonal Isolation in Harsh Wellbore Conditions</td>
<td>8</td>
</tr>
<tr>
<td>Striving the Coil Tubing Limit Intervention on Snake “Long Horizontal” Complex Gas Well: Successful Perforation and Completion</td>
<td>16</td>
</tr>
<tr>
<td>Nasser M. Al-Araimi, Brunei Shell Petroleum Co. and Surasak Srisa-ard, Schlumberger</td>
<td></td>
</tr>
<tr>
<td>Coiled-Tubing Gyro MWD Improves Kickoff Direction Accuracy for Cased-Hole Re-entry Drilling</td>
<td>24</td>
</tr>
<tr>
<td>R. Madarapu, C.S. Corson, and D. Grant, Inteq</td>
<td></td>
</tr>
<tr>
<td>Recent HP/HT Coiled-Tubing Intervention and Perforating Operations on the Jade Field</td>
<td>30</td>
</tr>
<tr>
<td>Semistiff Carbon-Fiber Rod Pushed Into Live Wells for Reservoir Performance Monitoring and Leakage Detection</td>
<td>42</td>
</tr>
<tr>
<td>H. Hansen and T. Wilberg, Ziebel A.S.; G. Naldrett, FloDynamics Ltd.; and N. Meldrum, Sensornet Ltd.</td>
<td></td>
</tr>
<tr>
<td>Rigless Installation of Safety Valves To Implement a Well-Integrity Campaign and Return Wells to Production</td>
<td>50</td>
</tr>
<tr>
<td>Folorunso Afolabi, Shell Petroleum Development Co. of Nigeria Ltd.; Rodger Lacy, Robert Asher, and Bobby Butler, Weatherford Intl.</td>
<td></td>
</tr>
<tr>
<td>World’s First Combined Acid Stimulation of Horizontal Openhole Gravel-Pack Application of Coiled-Tubing, Dynamically Positioned Vessel, and Floating Production, Storage, and Offloading, Deepwater Offshore Brazil</td>
<td>57</td>
</tr>
<tr>
<td>Philip Bogaert, Shell Brasil E&amp;P, and G. Cavazzoli, D.R. Perez, C. Guimaraes, S. Trummer, and Bernhard Lungwitz, Schlumberger</td>
<td></td>
</tr>
<tr>
<td>Effective Application of an Innovative Conveyance-Risk Management Methodology To Reduce Well-Intervention Cost and Risks in Long/Deep/Tortuous Wells</td>
<td>72</td>
</tr>
<tr>
<td>H.C. Castillo and P. Wills, Baker Hughes Inc.</td>
<td></td>
</tr>
<tr>
<td>Fiber-Optic-Enabled Coiled-Tubing Operations on Alaska’s North Slope</td>
<td>87</td>
</tr>
<tr>
<td>P.D. Rangel and I. Sorman, Schlumberger, and C.G. Blount and N. Woods, ConocoPhillips</td>
<td></td>
</tr>
<tr>
<td>Use of 3D Visualization Software for Multifinger Caliper Analysis at Prudhoe Bay, Alaska</td>
<td>95</td>
</tr>
<tr>
<td>16Cr Coiled-Tubing Field Trial at Prudhoe Bay, Alaska</td>
<td>102</td>
</tr>
</tbody>
</table>
Pipeline Flow Capability Restoration Using Coiled-Tubing and Rotating-Jetting Technology

Marco Acosta, Juan Santamaria, Paul Moss, and Herman Rivera, BJ Services, and Julio Mosquera, Mario Robles, and Fernando Barragan, Petroproduccion

An E-Line Deployed Retrofit Completion With Temporary Automatic Water Shutoff in a Subsea U.K. North Sea Well Using an Intervention Vessel

Michael Hartley, and Neil Moodie, BP, and Mark Rogers, Bob Murphy, Weatherford Intl. Ltd.

Economic Recovery of Gulf of Mexico Shelf Reserves Using an Integrated Approach to Well Services

Chad Nicosia and M.E. Fremin, Halliburton, and N.J. Matthews, Apache Corp.

Repeatedly Increased Efficiency and Success Rate From a New Solids-Cleanout Process Using Coiled Tubing: A Review of Recent Achievements From Over 100 Operations

M. Sach and J. Li, BJ Services Co.

Ultradeep Extended-Reach Stimulations

Taylor Tongs, Andergauge Drilling Systems; Angela Hinrichs, Suncor Energy; Rae Spickett, Schlumberger Reservoir Evaluation & Development; and Les Robertson, Andergauge Drilling Systems

Coiled-Tubing-Deployed ESP in 5½-in. Casing: Challenges in Designing Down

John Mack and Jimmy Donnell, Centrilift

Short-RADIUS Re-entry Well in Hassi Messaoud, Algeria


Vibration and Rotation Considerations in Extending Coiled-Tubing Reach

Kenneth R. Newman, CTES, Natl. Oilwell Varco

Challenges in Working Over-Severely Corroded Water Injectors for PWRI Application

Manish Kumar, and HonVoon Chin, Shell U.K. Ltd., and Alex Malcolm, EGIS

New Cleanup System for Gravel-Pack Completions: A Synergy of a Unique Acid System and Special Rotating Jetting Tool

J. Aguiar, J.M. PorDeus, and J.B. Almeida, Petrobras, and R.C.B. Melo, L. Duque, and R.S. Aboud, BJ Services

Enhanced Solids-Removal Techniques From Ultralow-Pressure Wells Using Concentric Coiled Tubing Vacuum Technology

Phil Rafferty, BJ Services Co.; Jim Ennis, ConocoPhillips Alaska Inc.; and Jason Skufca and Steven Craig, BJ Services Co.

Sour-Well Serviceability of Higher-Strength Coiled Tubing

H.B. Luft, T. Padron, and E. Kee, BJ Services Co. Canada Ltd., and E. Szklarz, Shell Canada Ltd.

Liquid Unloading of Depleted Gas Wells in the North Sea and Continental Europe, Using Coiled Tubing, Jointed Pipe Velocity/Insert Strings, and Microstrings

R.M. de Jonge, and U. Tousis, BJ Services Co.

Abrasive Perforating via Coiled Tubing Revisited

Darcy Schultz, BJ Services; Dave Thompson, EnCana; and Dwayne Whitney, Thru Tubing Solutions

Coiled-Tubing-Deployed Fracturing Service Yields Increase in Completion Efficiency


Oriented Perforating Using Abrasive Fluids Through Coiled Tubing

A.D. Nakhwa, S.W. Loving, and A. Ferguson, Thru Tubing Solutions, and S.N. Shah, U. of Oklahoma
Case Histories of Barium Sulfate Scale Removal in Offshore Wells, Brazil, Using a New Engineered Combination of Coiled-Tubing Tools ............................................................. 240

Measuring CT and Slickline Fatigue Life Reduction Due to Corrosion ............................................................. 248
Kenneth R. Newman, CTES, Natl. Oilwell Varco

A Successful Dual-Casing Exit Campaign ............................................................. 254
Brian Cruickshank, Charles Grigor, Lewis Parker, and Gary Pape, Smith Intl. Inc.

Two-Phase Fluid Flow Through Fully Eccentric Horizontal Annuli: A Mechanistic Approach .......................................................................................................................... 260
C. Omurlu Metin and M.E. Ozbayoglu, Middle East Technical U.

Successful Implementation of Coiled-Tubing Acid Tunneling Gives Operator a Viable Alternative to Conventional Stimulation Techniques in Carbonate Reservoirs ........................................................................................................................................ 267
Jose Daniel Diaz, BJ Services; Victor Espina, Melvi Guerrero, and Omar Colmenares, PDVSA; and Paul Moss, BJ Services

Novel Coiled-Tubing Spoolable Connector Deployment in the Norwegian Sector of the North Sea ........................................................................................................................................ 276
S.O. Bolarinwa, M. McKee, F.F. Espinosa, J. Cochran, and O. Lien, Schlumberger, and J. Toften, Statoil ASA

Coiled-Tubing Milling of an Incoloy Alloy 925 Safety Valve Flapper in the North Sea ............................................................. 282

Delivering Value for Tracking Coiled-Tubing Failure Statistics ........................................................................................................................................ 294
Rex Burgos, Rafael Fernando Mattos, and Scott Bulloch, Schlumberger

Corrosion Inhibition for High-Temperature and High-H2S Coiled-Tubing Applications ........................................................................................................................................ 302
A.S. Ali Al-Habsi, S. Mokhtar, and A. Lahmadi, Schlumberger

Improving Reliability and Consistency in BHA Configuration Through the Use of an Expert Tool-Selection System ........................................................................................................................................ 307
Robert Greenaway and Rex Burgos, Lambert Dilling, and Cabe Vreeland, Steve Bruce, and Loren Hauglund, Schlumberger

Water-Shutoff Treatment in Wells With Single-String Multizone Completion Intervals ........................................................................................................................................ 313

Opportunities for Rigless CT Intervention for Marginal Fields in Offshore Nigeria ........................................................................................................................................ 322
Victor E. Uadiale and Daniel Asedegbega, Schlumberger

Comparison of Computation Fluid Dynamics of Slurry Flow in Coiled Tubing to Field Data ........................................................................................................................................ 338
Ivan Blanco, Michael Bailey, and Randy Rosine, Halliburton

Coiled-Tubing Fracturing on Slant-Well Operations ........................................................................................................................................ 344

Metal-to-Metal Sealing Technology: Bridging the Gap Between Conventional and High-Expansion Zonal Isolation Applications ........................................................................................................................................ 351
Garry Garfield and Gordon Mackenzie, Baker Oil Tools

Coiled-Tubing-Conveyed Perforating for High-Pressure/High-Temperature Environment in Mexico Marine ........................................................................................................................................ 357
Nestor Molero, Sergio Garcia, and Eduardo Zavala, Schlumberger, and Javier Cordova and Ulises Solis, Pemex
Coiled Tubing Becomes the Key Enabler for Successful Multilateral Well Development Campaign Offshore Brazil ................................................................. 365
S. Trummer, D. Silva, V. Cano, and M. Guzman, Schlumberger, and N. Siqueira, C. Peixoto, and V. Nazareth, Petrobras

Fatigue Life of Coiled Tubing With External Mechanical Damage .......................................................... 379
Tomas Padron, Bernie Luft, and Emmanuel Kee, BJ Services, and Steve M. Tipton, U. of Tulsa

Drilling With a Positive-Displacement Motor and a Rotary-Steerable System on 3½-in. Coiled Tubing in the San Juan Basin ........................................................................... 395
Tony Pink, Maria Neves, Chuck Seyler, and Marc Allcom, Schlumberger, and Jim O’Leary, Sam Noynaert, and Fred Hartensteiner, BP

Application of Lateral Entry Guidance System (LEGS) Technology in Western Kazakhstan Oil Fields .............................................................. 404
Doru Pumnea, BJ Services Co., and Anthony Hunt and Giuseppe Mennilli, Karachaganak Petroleum Operating Kazakhstan

A Novel Coiled-Tubing Wall Thickness and Ovality Measuring Tool for Field Use .......................... 409
Robert Standen and Don Pike, BJ Services Co.

Enabling Workover Applications With Coiled-Tubing-Deployed Inflatable Packers .................. 415

Toolstring Impact Sensors .................................................................................................................... 427
Stuart McLaughlin and Alan McLauchlan, Impact Guidance Systems Inc.

First Subrigfloor HWO Intervention System for a Floating Vessel .............................................. 434
Tim Pollock and Ken Armagost, BP America; David Andersen, Halliburton/Granherne; and Michael Oser and Jason Besly, Halliburton

4th-Generation Coiled-Tubing Manufacturing Technology ......................................................... 439
Jon D. DuBois and Martin P. Atwood, Global Tubing LLC

An E-Line Solution to Sand and Scale Remediation in High-Angle Wells ................................. 442
Brian Schwanitz, Welltec Inc., and Alex McKay, Welltec U.K.

A Process Delivery Template for an Underbalanced Coiled-Tubing-Drilling Project From Concept To Execution ........................................................................... 447
T.P. da Silva and T. Kavanagh, Schlumberger; J. Rennox, Halliburton Energy Services; P. Savage, Blade Energy Services; and J. Capps, Margham Dubai Establishment

AUTHOR INDEX