CONTENTS

IADC/SPE 39226 Slimhole Lateral Well Drilling Across Faults From 4-1/2” Cased Producers in the Denver-Julesburg Basin, Colorado ............................................ 11
L.E. Boone, F.J. Clausen, and T.J. Birmingham, HS Resources Inc., and N.D. Schappert, Strata Directional Technology Inc.

IADC/SPE 39295 Deep Water Riser System Design and Management .................................................. 25

IADC/SPE 39296 Riser Recoil During Unscheduled Lower Marine Riser Package Disconnects .................. 33
W.F. Puccio and R.V. Nuttall, Varco Shaffer

IADC/SPE 39297 Concentric Drilling Risers for Ultra Deepwater ....................................................... 53

IADC/SPE 39298 Deepwater Driven Advancements in Well Control Equipment and Systems .............. 65
S.P. Vigeant, Diamond Offshore Drilling Inc.

IADC/SPE 39299 Theoretical and Practical Application Guidelines for Using Electrokineatics to Improve Casing Support in Soft Marine Sediments ................................................... 77
R.C. Wrixon and G.A. Cooper, U. of California

IADC/SPE 39300 Cuttings Transport Problems and Solutions in Coiled Tubing Drilling ....................... 85
L.J. Leising and I.C. Walton, Schlumberger Dowell

IADC/SPE 39301 A New Improved Method for the Design and Field Implementation of Air-Mist Drilling .................................................. 101

IADC/SPE 39302 A Closed Circulating System for Air Drilling ......................................................... 107
J.A. Rusnak, New Prospect Drilling

IADC/SPE 39303 Development and Application of an Underbalanced Drilling Simulator .................... 113

IADC/SPE 39305 The First Coiled Tubing Sidetrack in Norway, Gullfaks Field ................................ 123
R. Gaasø, K. Gjerde, and B. Samsonsen, Statoil Norway

IADC/SPE 39306 The Effect of PDC Cutter Density, Back Rate, Size, and Speed on Performance ........ 131

IADC/SPE 39307 Development of a New Concept of Steerable PDC Bit for Directional Drilling ................ 141
T.S. Roberts, Hycalog

IADC/SPE 39308 Development and Successful Application of Unique Steerable PDC Bits .................. 153

IADC/SPE 39310 Innovative Cutting Structure Improves Stability and Penetration Rate of PDC Bits Without Sacrificing Durability ................................................................. 167
Graham Mensa-Wilmot, GeoDiamond, and Tony Krepp, K&M Technology Group

IADC/SPE 39311 Bit Balling Reduction by Electro-Osmosis While Drilling Shale Using a Model BHA (Bottom Hole Assembly) .................................................. 913

IADC/SPE 39312 Drill Bit Seismic: A Drilling Optimization Tool ....................................................... 177
R.J. Meehan, Schlumberger Cambridge Research; L. Nutt, Schlumberger Wireline and Testing; N. Dutta, BP; and J. Menzies, Lasmo
IADC/SPE 39313 Co-Coperative Approach to Drilling Optimization Yields Better Understanding of PDC Bit Performance in North Sea Program .......................... 935
R.J. Begbie, Amerada Hess UK Ltd., and B.E. Miller, Hughes Christensen Co.

IADC/SPE 39314 Revised Drilling Practices, VSS-MWD Tool Successfully Addresses Catastrophic Bit/Drillstring Vibrations ........................................ 925
N.E. Shuttleworth and E.J. van Kerkoerle, NAM Pro-Star; D.R. Folmer, Hughes Christensen Co.; and N. Foekema, Baker Hughes INTEQ

IADC/SPE 39315 Determination of Temperatures for Cementing in Wells Drilled in Deep Water .......................................................... 191
D.G. Calvert, Mobil Technical Co., and T.J. Griffin Jr., Schlumberger Dowell

IADC/SPE 39316 New Gas Hydrate Inhibitors for Deepwater Drilling Fluids .................. 201
W.S. Halliday, D.K. Clapper, and M. Smalling, Baker Hughes Inteq

IADC/SPE 39319 Purpose-Built Drillpipe for Extended Reach Drilling ...................... 221
M.L. Payne, ARCO E&P Technology, and E.I. Bailey, Stress Engineering Services

IADC/SPE 39320 New Generation Drill String Safety Valves .................................. 231

IADC/SPE 39321 A Robust Torque and Drag Analysis Approach for Well Planning and Drillstring Design ........................................................... 243
O.A. Adewuya and S.V. Pham, Baker Hughes INTEQ

IADC/SPE 39322 Field Curves for Critical Buckling Loads in Curving Wellbores .............. 259

IADC/SPE 39323 Shock Sub Performance Tests .................................................. 267
T.M. Warren and J.H. Oster, Amoco E&P Technology Group; L.A. Sinor, Hughes Christensen; and D.C.K. Chen, Sperry-Sun

IADC/SPE 39324 An Investigation of Pressure Capacity of Rotary Shouldered Connections ... 281
T.E. Winship, Grant Prideco Inc., and B. Vinson, Sub-Surface Tools Inc.

IADC/SPE 39325 Drill String Management to Reduce Drilling Risks .......................... 287
M.A. Summers, PetrEX Intl. Inc., and S.R. Crabtree, Technical and Quality Solutions, Inc.

IADC/SPE 39326 Development of Steerable Ream While Drilling Technology and Its Application in High Angle Wells in GOM .................................. 293
John Cook, Shell Offshore Inc., and M.L. Doster, M.W. Dykstra, and W.S. McDonald, Hughes Christensen

IADC/SPE 39328 Innovative Rotary Closed Loop System—Engineering Concept Proven by Extensive Field Application in the Adriatic Sea .................................. 305

IADC/SPE 39329 Rotary Steerable System Improves Reservoir Drilling Efficiency and Wellbore Placement in the Statfjord Field .................................... 313
E. Andreassen, H. Blikra, A. Hjelle, and S.A. Kvamme, Statoil, and J. Haugen, Baker Hughes INTEQ

IADC/SPE 39330 An Ergonomic, Process Oriented Approach to Driller’s Consoles ............ 327
W.D. Harbour, M/D Totco; J. Kracik, Varco Drilling Systems; and David Ford, Thule Rigttech

IADC/SPE 39331 New Information Systems Promise the Benefits of the Information Age to the Drilling Industry ............................................. 337
D.A. Close and O.V. Stelly, M/D TOTCO

IADC/SPE 39332 The Integrated Solution: New System Improves Efficiency of Drilling Planning and Monitoring ............................................. 351
D.P. McCann, Anadrrill Schlumberger; G.M. Ritchie, IPM Schlumberger; and V.L. Ward, GeoQuest Schlumberger

IADC/SPE 39333 Computerized Maintenance Programs: The Drilling Industry Requirements .............................................................. 365
Ian Murdoch, Diamond Offshore Drilling Inc.
IADC/SPE 39334  DP and Operability Capabilities of the Dynamically Positioned Drillship
Ocean Clipper  ......................................................... 373
D.L. Webb, Diamond Offshore Drilling Inc.

IADC/SPE 39335  A New Generation of Dynamically Positioned Drillship for
10,000 Ft. Water Depth ................................................ 409
Thomas Duhlen and Olivier de Bonnafos, Foraso/Foramer, and Bob Rietveldt,
IHC Gusto Engineering

IADC/SPE 39336  Using Suction Technology for Deep Installation of Structural Pipe
in Deepwater .......................................................... 417
G.L. Faul and J.M.E. Audibert, Fugro-McClelland Marine Geosciences Inc., and

IADC/SPE 39337  Experience Acquired During Deep Water Drilling and Testing of 3
Explo/Appraisal Wells in the Girassol Field .......................... 427
Stephan Crépin, J.L. Ybert, Laurent Foulhoux, Nicolas Payer, and Alain Chassagne,
Elf Exploration Production

IADC/SPE 39338  Risk Assessment of a Dynamically Positioned Drilling Operation .... 435
J.L. Thorogood and K.S. Bardwell

IADC/SPE 39339  Geomechanical Analysis for Deep-Water Drilling .......................... 441
B.S. Aadnøy, Stavanger U.

IADC/SPE 39341  An Instrumented Bit: A Necessary Step to the Intelligent BHA
A. Leseulitre and E. Lamine, Security DBS, and A. Jonsson, Saga Petroleum ASA

IADC/SPE 39343  Automation of BOP Bonnet Access: A No Bolts Approach .............. 465
B.A. Levett and J.D. Brugman, Varco Shaffer

IADC/SPE 39344  Development of a One-Trip ECP Cement Inflation and Stage Cementing
System for Open Hole Completions ................................ 473
M.P. Coronado and M.J. Knebel, Baker Oil Tools

IADC/SPE 39344  The Implementation of a Computerised Maintenance Management System ... 959
A. Godot, P. Villard, and A. Savournin, Forasol-Foramer

IADC/SPE 39346  Development of a Novel Silicone Rubber/Cement Plugging Agent for Cost
Effective Thru Tubing Well Abandonment .......................... 483
and A. de Wit, Nederlandse Aardolie Mij.

IADC/SPE 39348  Selective Isolation of Perforated Liners Using Casing Patches: Case Studies
From North Sea Operations .......................................... 497
Charles Forbes, Weatherford U.K. Ltd., and Ian Taggart, Shell U.K. E&P Ltd.

IADC/SPE 39349  Innovative Way To Cement a Liner Utilizing a New Inner String Liner
Cementing Process .................................................. 501
M.S. Fuller, Weatherford Enterra Inc., and M. Littler and I. Pollock, Nodeco, Ltd.

IADC/SPE 39350  Reviving the Job Signature Concept for Better Quality Cement Jobs .... 505
B.M. Piot and Matteo Loizzo, Schlumberger Dowell

IADC/SPE 39352  An Analysis of Failures in Coiled Tubing ...................................... 515
R.K. Stanley, Quality Tubing Inc.

IADC/SPE 39353  Multi-Lateral Well Construction: A Multi-Benefit Drilling Technology ...... 523

IADC/SPE 39354  Trends Extracted From 800 Gulf Coast Blowouts During 1960–1996 ... 539
Pål Skalle, NTNU, and A.L. Podio, U. of Texas

IADC/SPE 39356  New Well Design on the Statfjord Field Utilizing a Multi-lateral Well in
Low Productive Zones in the Brent Reservoir ........................ 547
A. Njaerheim, A.K.H. Breivik, R. Rovde, E. Kvale, and S.A. Kvamme, Statoil,
and H.M. Bjorneli, Halliburton

IADC/SPE 39357  Optimizing Drilling Strategies in a Tectonic Belt, Pagerungan Field,
North of Bali ......................................................... 559
D.E. Mouton, Arco Intl. Oil & Gas Co.; Leksmono, Arco Indonesia Inc.;
and B.S. Wilton and G.G. Ramos, ARCO E&P Technology
IADC/SPE 39358 Through Tubing Infill Drilling as a Method for Increased Oil Recovery on the Gullfaks Field ................................................... 573
  E. Vikane, B. Samsonsen, and K.E. Lorentzen, Statoil A/S

IADC/SPE 39359 A Global Drilling Organization: The Role of the Drilling Professional ...... 581
  G.F. Boykin, Amoco E&P Technology

IADC/SPE 39360 Turnkey Drilling: Bringing Cost Predictability to a Risky Business ........... 593

IADC/SPE 39361 Successful Drilling Practices—An Experiment in Cooperation ...................... 603

IADC/SPE 39362 Rejuvenating Engineering Students Interest in the Oil Business .................. 615
  Jack Smith and Diane Warren, Grant Prideco

IADC/SPE 39364 Experiences On New Types of Drilling Contracts ................................. 619
  C.H. Caraballo, G.E. Bastidas, and A.J. Torres, H&P de Venezuela

IADC/SPE 39365 Outsourcing Can Be Used Successfully Within an Existing Well Construction Organization .................................................. 625
  C. Harder, Vastar Resources Inc., and P. Drennon, Sierra Engineering

IADC/SPE 39367 Improving Multilateral Drilling and Completion Efficiency With a Hollow Whipplestock .............................................. 629
  J.L. Foster, K.T. Olds, and R.P. Stebbings, Halliburton Energy Services; L.A. Giangiacomo, Rocky Mountain Oilfield Testing Center; and Doug Durst and Thurman Carter, Weatherford Enterra Inc.

IADC/SPE 39368 Technology Improvements in Platform Slot Recovery and Liner Removal ... 641
  T.F. Bailey, M. Neff, and T.L. Wilson, Weatherford Enterra Inc.

IADC/SPE 39369 First Successful Multilateral Well Installation From a Floating Rig: Development and Case History ........................................ 647
  Austin Freeman, Halliburton Energy Services; Tore Gronas, Norsk Hydro; Frode Berge, Halliburton Oilfield Services; and Doug Durst and Mike Luke, Weatherford Enterra

IADC/SPE 39370 Eliminating Heave Induced Difficulties in Critical Multilateral Casing Exit Operations ................................................................. 659
  Bill Blizzard and Mike Luke, Weatherford Enterra Inc.

IADC/SPE 39371 Conversion of a 1,500-Ft Water-Depth Conventionally Moored Drillship Into an Ultradeep Water Dynamically Positioned Drillship ....................... 669
  J.M. Vecchio, Diamond Offshore Drilling Inc.

IADC/SPE 39372 Mobile Offshore Jack-Up Units: The Next Generation .......................... 689
  R. Rimlinger, Rowan Companies Inc.

IADC/SPE 39373 The Development of Automated Drilling Rigs .................................. 695
  D. Reid, Varco Intl. Inc.

IADC/SPE 39374 Hybrid Coiled Tubing System for Offshore Re-entry Drilling and Workover ................................................................. 711
  Bruce Selby, Halliburton Energy Services; Nagan Srinivasan and Bob Donnally, IRI Intl.; and Randy Vincent and Jerry Wilke, Halliburton Energy Services

IADC/SPE 39375 Biodegradable Surfactants for Cosmetics Find Application in Drilling Fluids ......................................................... 723
  L.F. Nicora and W.M. McGregor, Lamberti SpA

IADC/SPE 39376 Studies Dispel Myths, Give Guidance on Formulation of Drilling Fluids for Shale Stability ................................................ 731

IADC/SPE 39378 Smart Centrifuge for Solid Answers to Solids Control .......................... 743
  V. Phillips, Swaco Geolograph Co.
<table>
<thead>
<tr>
<th>Document ID</th>
<th>Title</th>
<th>Authors/Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>IADC/SPE 39380</td>
<td>New Treatment for Removal of Mud Polymer Damage in Multi-Lateral Wells Drilled Using Starch Based Fluids</td>
<td>K.P. O'Driscoll and N.M. Amin, BJ Services Co. Middle East, and I.Y. Tantawi, Zakum Development</td>
</tr>
<tr>
<td>IADC/SPE 39381</td>
<td>Well Examination—Self Regulation in a Goal Setting Environment</td>
<td>Gregory King, Mobil North Sea Ltd., and Donald Dobson, Health &amp; Safety</td>
</tr>
<tr>
<td>IADC/SPE 39383</td>
<td>Eliminating the Stabber When Running Casing and Tubing: The Next Step in the Rig Mechanization Process</td>
<td>J.L. Hollingsworth and Joerg Lorenz, Weatherford Oil Tool GmbH</td>
</tr>
<tr>
<td>IADC/SPE 39387</td>
<td>Drilling Optimization and Use of Titanium Motor Results in 40% Reduction in Short Radius Drilling Time</td>
<td>M.R. French and Mangojak Siagian, PT Caltex Pacific Indonesia, and B.C. Sutcliffe and Jerry Jones, Baker Hughes Inteq</td>
</tr>
<tr>
<td>IADC/SPE 39388</td>
<td>Variations in Multilateral Well Design and Execution in the Prudhoe Bay Unit</td>
<td>W.G. Aubert, ARCO Alaska Inc.</td>
</tr>
<tr>
<td>IADC/SPE 39391</td>
<td>Friction Analysis for Long-Reach Wells</td>
<td>B.S. Aadnøy, Stavanger U., and Ketit Andersen, Statoil</td>
</tr>
<tr>
<td>IADC/SPE 39395</td>
<td>Field Validation of Swab Effects While Tripping-In the Hole on Deep, High Temperature Wells</td>
<td>R.L. Rudolf and P.V. Suryanaravana, Mobil E&amp;P Technical Center</td>
</tr>
<tr>
<td>IADC/SPE 39396</td>
<td>Stopping a Water Crossflow in a Sour Gas Producer Well</td>
<td>Y. Le Hello and P. Ghesquiere, Elf Aquitaine Production, and J. Woodruff, John Wight Co.</td>
</tr>
<tr>
<td>IADC/SPE 39397</td>
<td>Application and Analysis of Simultaneous Near Bit and Surface Dynamics Measurements</td>
<td>J.D. Macpherson and P. Jogi, Baker Hughes INTEQ, and J.E. Kingman, Consultant</td>
</tr>
<tr>
<td>IADC/SPE 39398</td>
<td>Minimising Down Hole Mud Losses</td>
<td>J.C. Rojas and PA. Bern, BP Exploration; B.L. Fitzgerald, Baroid Drilling Fluids; and S. Modi and P.N. Bezant, BP Exploration</td>
</tr>
<tr>
<td>IADC/SPE 39399</td>
<td>Rotary Liner Drilling for Depleted Reservoirs</td>
<td>L.A. Sinor, Hughes Christensen Co.; P. Tybero and O. Eide, Amoco Norway Oil Co.; and B.C. Wenande, Consultant</td>
</tr>
</tbody>
</table>
IADC/SPE 39402  Whipstock Performance Review in Gulf Coast Region Yields Operational Guidelines ................................................................. 907
Robert Hinojosa, Texaco North America Production, Jimmy Ryan and Richard Wyman, Baker Oil Tools; and Barton Wiley, Texaco North America Production

No manuscript received for the following:

IADC/SPE 39317  Chemical Grouting Techniques for Shallow Water Flow Control in Deepwater Gulf of Mexico
D.J. Oakley, Dowell

IADC/SPE 39327  Application of Steerable Rotary Drilling Technology to Drill Extended Reach Wells

IADC/SPE 39340  Downhole Mud Hammer Improves R.O.P. in Hard Rock Applications
J.A. Meyers, SII Smith Tool; J. Jeansson and F. Egerstrom, G-Drill; B. Ellingsen, Statoil; D. Zijssling and P. Krissels, SIEP EPT-RO; A. Wevers and J.M. Schoenmakers, Petroleum Development Oman; H. Bui, SII Smith Tool; P. Scott and C.F. Svoboda, M-I Drilling Fluids Co.; and P.M. Hanson, Swaco Geolograph Co.

IADC/SPE 39377  Silicate Muds: An Alternative to Oil Based Muds in Extended Reach Wells?: Case Study
J.W. van der Sijp, KCA Drilling Ltd.

IADC/SPE 39379  Drilling Highly Depleted Zones Offshore Cabinda, West Africa Using Specially Programmed Bridging Material Formulation
M.B. Jones and R. Allison, Dowell, and E.L. Dodd, Chevron Overseas Petroleum Technology Co.

IADC/SPE 39385  Mud Waste Handling: One Operator’s Experience With On-Site Treatment
A. Nugroho and M.A. Solihin, PT Caltex Pacific Indonesia

IADC/SPE 39390  Integrated Methodology for ERD Well Planning and Rig Sizing
M.L. Payne, ARCO E&P Technology