The workshop will help accelerate our understanding and develop improved solutions to sustain high injection rates, deliver fluid conformance, and maintain fluid containment for water injectors used for waterflooding or pressure maintenance and disposal.

High-rate water and seawater injection or produced water reinjection has been used for pressure maintenance applications or environmental requirements. Maintaining a sustained injectivity for these injectors is critical for the economic success of projects around the globe. The challenge is more pressing in offshore fields that typically have a low ratio of injectors to producers. These injectors have experienced (a) rapid loss of injectivity, (b) non-uniform injection distributions within a completion or between different completions within a wellbore, (c) premature completion failure, and (d) loss of fluid containment. Possible mechanisms with different solutions have been proposed and deployed to address these problems. The similarities and differences between water injectors used for different applications highlight the benefits of sharing lessons learned and solutions used.

The objective of this workshop is to discuss and share the latest developments in:

• Understanding injector impairment, containment of injection induced fractures, injector conformance and performance results in the field

• Injector completion design selection, considerations, and deployment lessons learned

• Injector surveillance and operating best practices, and

• Advances from industry and academia for injectors in upstream and environmental applications
MONDAY, 13 NOVEMBER

0700–0800  Registration Check-In and Continental Breakfast  Crystall Ballroom Foyer

0800–0810  Chairperson’s Welcome and Introduction


0840–1010  Session 1: Factors Controlling Injector Performance: Field Case Studies—Part 1

SAS Injection Performance (Injectivity and Conformance) with PWRI along with Results of Acid Stimulation

Water Injectors Performance in West African Deep Water Field

Implementing a Reservoir Management Plan in a Mature Waterflood

1010–1030  Coffee Break

1030–1200  Session 2: Factors Controlling Injector Performance: Field Case Studies—Part 2

4 years of PWRI in a UKCS Heavy Oil Reservoir

A Novel Proppant for Water Injection in Soft Sands: Operations and In-Well Injection Performance History

Low-Rate Acidizing in CTD Wells, Case Study From CTDInjectors From Greater Ekofisk Area, Norway

1200–1330  Networking Lunch  Crystal Ballroom B

AFTERNOON EVENTS

1330–1500  Session 3: Completion Design: Injectivity & Conformance Control—Part 1

A Unique Cased Hole Sand Control Injector Design and the Performance for a Project in the Gulf of Mexico

Integrated Modeling Workflow to Optimize Deep Water Miocene Injector

Design and Performance of ICDs for Conformance Control in Fractured Horizontal Injection Wells

1500–1530  Coffee Break

1530–1700  Session 4: Completion Design: Injectivity & Conformance Control—Part 2

Subsea Dump Flood Well Managed Successfully by ICVs through Implementation of Historic Lessons Learned from Similar Wells

Perforation Selection and Injection Start-Up Surveillance in Downhole Flow Control Multi-Zone Water Injection Wells

Well Design for High Pressure Injection (Monitoring for Safe Operation)

1700–1800  Networking Reception  Skylight Court

TUESDAY, 14 NOVEMBER

0700–0800  Continental Breakfast

0800–0930  Session 5: PWRI: Injectivity Optimization—Field Results

Greater Kuparuk Area Injectivity Trials

All Technical Session take place at the Crystal Ballroom A
Produced Water Reinjection in Campos Basin Mature Fields: Challenges, Impacts and Mitigation
Fernando Carvalho, Petrobras

Gorgon CCS Produced Water Matrix Reinjection: Experience & Optimization
James Nilesheva, Chevron

Coffee Break
0930–1000

Session 6: PWRI: Injectivity Optimization—Laboratory Results & Modelling
Chairs: Frode Uniansrud, Equinor
Jalel Ochi, TotalEnergies

Adding Injectivity Decline to Reservoir Simulation Using Laboratory and Field Data
Claudio Purtado, Petrobras

Hydraulic Fracturing Mechanisms Understanding in Unconsolidated Sand Reservoirs
Jean Sulem, Ana Loyola, École des Ponts ParisTech (ENPC)

Injection Impairment by Suspended Solids: 3-D Sand Pack Lab Tests & Model Results
Xuqia Du, University of Houston

Networking Lunch
1130–1300

Session 7: Well Surveillance and Operating Best Practices
Chairs: Bulent Izgec, Hess
Max Baumert, ExxonMobil

Where Did My Water Go? - An Evaluation of Injection Performance in a Deepwater GoM Field
Emeka Anynamu, Hess

Injection Rate Targets to Improve Sweep and Reduce Fluid Cycling from Physics-Based Surveillance Models
Marco R. Thiele, Rod P. Batycky, Streamsim Technologies

Hall Plots—Helpful or Misleading?
Giles DuVivier, BP

Coffee Break
1430–1500

Session 8: Injection Geomechanics: Fracture Containment & Injectivity
Chairs: Duane Mikulencak, Shell
Amr El-Fayoumi, Chevron

Out of Zone Fracturing Investigation
Bulent Izgec, Hess

Impact of Thermal Stresses and Water Quality on Fracture Containment in Offshore Injectors: A Case Study
Mukul Sharma, The University of Texas at Austin

Injection Effects on Changing Stress Path Coefficient and Yield Surface: Experimental Studies with Unconsolidated Sands
Saburaschi Prakash, George Wong*, Michael Myers and Lori Hathorn, University of Houston, Texas, USA.
*Presenter, University of Houston

Continental Breakfast
0700–0800

Session 9: Emerging Techniques and Technologies
Chairs: John O’Hara, Halliburton
Balkrishna (Bala) Gadiyar, SLB

Autonomous Outflow Control Devices (AOCD) for Improved Injection Conformance
Steven Fipke, inflow control

Intelligent Completion Water Injection Methods
Matt Gray, Halliburton

Using AI and Modeling to Manage a Mature WF
Doug Valentine, Rodney Murray, ConocoPhillips

Coffee Break
0930–1000

PANEL DISCUSSION: Injection Containment: Examples, Challenges, and Best Practices
Moderator: George K. Wong, University of Houston

Panelists:
Karim Zaki, Chevron
Frode Uniansrud, Equinor
Luís Carlos de Sousa Jr, Petrobras
Zaheer Malik, Shell
Trond Jensen, ConocoPhillips

Workshop Summary: Survey & Wrap-Up
Chairs: George K. Wong, University of Houston
Mukul Sharma, UT Austin

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