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Welcome to the Thermal Well Integrity and Design Symposium!

Effective thermal well design and integrity involves the appropriate application of technical, operational and organizational solutions to reduce the risk of unplanned wellbore events. As heavy oil and bitumen projects require significant capital investment over long time frames, the consistent application of sound engineering principles must continue even during commodity price cycles. Through progression of new technology and practical sharing of ideas amongst participants, industry will improve the collective efficiency, safety, reliability and longevity of existing and planned thermal wells.

This informative, interactive event has been one of SPE Canada's most popular, growing from a small 2-day workshop to a 3-day symposium that includes technical papers, invited presenters, a panel and breakout sessions. Bringing together a local and international audience made up of SPE members and experts in the thermal in-situ community, the goal of this symposium is for attendees to share, discuss and learn from each other.

SCHEDULE OVERVIEW
Subject to change.

**SUNDAY, 22 NOVEMBER**
1800–1930 | Welcome Reception

**MONDAY, 23 NOVEMBER**
Thermal Well Integrity
0700–0750 | Registration and Breakfast
0750–0800 | Welcome & Opening
0800–0930 | Session 1: Thermal Cement Design and Placement
0930–1000 | Coffee Break and Exhibits
1000–1130 | Session 2: Well Integrity Assessment and Management
1130–1300 | Lunch & Exhibition
1300–1430 | Session 3: Technology and Design Advancements
1430–1500 | Coffee Break and Exhibits
1500–1700 | Session 4: Industry’s-AER Well Integrity Workshop Results
1700–1830 | Networking Reception

**TUESDAY, 24 NOVEMBER**
International Perspectives
0700–0800 | Hot Breakfast Sponsored by Statoil Canada Ltd.
0800–0930 | Session 5: Surveillance, Data Management, and Analytics for Thermal Well Integrity
0930–1000 | Coffee Break and Exhibits
1000–1130 | Session 6: Thermal Well Performance
1130–1300 | Lunch & Exhibition
1300–1500 | Session 7: Break-out Groups
1500–1530 | Coffee Break and Exhibits
1530–1700 | Session 8: Panel - Current Impacts to the Oil Sands Community

**WEDNESDAY, 25 NOVEMBER**
Sand Control and Production Technology
0700–0800 | Breakfast
0800–0930 | Session 9: Advancements in Sand Control and Deployment
0930–1000 | Coffee Break and Exhibits
1000–1130 | Session 10: Sand Control Media and Testing
1130–1230 | Lunch
1230–1400 | Session 11: Inflow Control and Wellbore Heat Loss
1400–1430 | Coffee Break and Exhibits
1430–1530 | Session 12: Production Operations
TECHNICAL AGENDA
All technical sessions are located in Van Horne A.

SUNDAY, 22 NOVEMBER
1800–1930 | Welcome Reception
Oak/Mt Stephen Room

MONDAY, 23 NOVEMBER
0700–0750 | Registration and Breakfast
Van Horne C
0750–0800 | Welcome and Opening Remarks
Trystan Wall
Ulana Romanova, Romenex
0800–0930 | Session 1: Thermal Cement Design and Placement
Session Chairpersons: Juvenal Faria, Sanjel Corp
Trevor Ironside, MEG Energy Corp
Thermal cycling is a critical factor to wellbore integrity. This session looks at the effects of thermal cycling on the cement sheath and between casing strings.

0800–0830 #178454
Presentation 1: Thermosetting Polymer based Flexible Synthetic Cement for Successful Zonal Isolation in Thermal Wells - A New Approach
Presenting Author: Ruchir Shanbhag, UCLA

0800–0930 #178467
Presentation 2: Effect of Thermal Cycling on Cement Sheath Integrity: Realistic Experimental Tests and Leak Rate Estimations
Presenting Author: Torbjorn Vralstad, SINTEF

0930–1000 Invited Presenter
Presentation 3: Unique Cement Design to Mitigate Trapped Annular Pressure (TAP) Between Two Casing Strings in Steam Injection Wells
Presenter: Jeanna Brown, Shell Canada Ltd.

0900–0930 #178450
Presentation 3: A Novel Cementing Technique in Mid-deep Heavy Oil Reservoirs
Presenting Author: Lei Wang, China University of Petroleum

0930–1000 Coffee Break and Exhibits
Van Horne B

1000–1130 Session 2: Well Integrity Assessment and Management
Session Chair: Jeanna Brown, Shell Canada Ltd.
Obadah Al-Sawadi, Halliburton
Well integrity assessment and management requires an understanding of current well integrity standards, integrity assurance processes and the continually evolving best practices. Together these are crucial elements for profitably safeguarding our well assets while ensuring their maximum potential availability throughout an extended well lifecycle. This gains particular importance in managing Thermal Well Integrity with more complex operating conditions and relatively more challenging profit margins. Reviewing field best practices and enhancing risk management processes while following innovative approaches for observing, verifying, and taking remedial actions are examples of what will be shared in this session.

1000–1030 #178447
Presentation 1: Behind Casing Cement Void Volumetric Evaluation
Presenting Author: Yike Hu, Halliburton

1030–1100 Invited Presenter
Presentation 2: Risk Assessment Journey of Well Integrity at Devon Jackfish Operation
Presenter: Barkim Demirdal, Devon Energy

1100–1130 Invited Presenter
Presentation 3: Near Surface Casing Corrosion Management Program
Presenting Author: Kelly Wiebe, Imperial

1100–1300 Lunch and Exhibits Sponsored by Schlumberger
Van Horne C

1300–1430 Session 3: Technology and Design Advancements
Session Chairs: Scot Buell, Chevron
Isaac Khallad, ConocoPhillips
Tubular design for thermal operations is a challenge for several reasons which include: thermal loads which exceed the yield point of steel and reduce ultimate strength, H2S exposure which synergistically interacts with post-yield strain, and thermal cyclic loads which fatigue both steel and cement. This session examines tubular design with thermal cyclic loads and how these design practices assure well integrity.

1300–1330 #178473
Presentation 1: Strain-based and Low Cycle Fatigue Design Approaches for Thermal Service Tubulars
Presenting Author: Poodipeddi Suryanarayana, Blade Energy Partners

2015 SPE Thermal Well Integrity & Design Symposium
1330-1400 | Invited Presenter
- Presentation 2: New Well Integrity Technology Development
  Presenter: Duncan Fitzpatrick, Imperial Oil

1400-1430 | Presentation 3: Casing Integrity: Strain-Based Fatigue Life Estimation Coupled with Numerical Thermal-Flow Simulation and Multi-String Stress Analysis
  Presenting Author: Michael Liu, Halliburton

1430-1500 | Coffee Break and Exhibits
  Van Horne B

1430-1445 | Eposter: Downsizing Steam Injection Insulated Tubing Through the Use of Superior Thermal Performance
  Presenting Author: Jean Damour, MAJUS

1500-1700 | Session 4: Industry - AER Well Integrity Workshop Results
  Session Chairs: Dejan Ristic, CNRL
  Christian Hamuli, Suncor Energy
  In June of 2015, the AER organized a two day technical workshop to discuss recognized thermal well failure risks based on AER database and discussions with operators. This session consists of a summary of the workshop’s report on identified risks, potential root causes, mitigation, and solutions followed by an industry panel discussion.

1500-1700 | Invited Presenter
- Presentation 1: AER Summary
  Presenter: Zach Linkewich, Phase Thermal

1600-1700 | Panelists:
  Zach Linkewich, Phase Thermal
  Russ Bacon, RMB Engineering
  Blair Temple, Imperial Oil Limited
  Mirko Zatka, Shell
  Bob Dyck, Remedy Energy Services
  Ian Peleshok, AER

1700-1830 | Reception
  Van Horne C

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TUESDAY, 24 NOVEMBER

0700-0800 | Hot Breakfast  
Van Horne C

0800-0930 | Session 5: Surveillance, Data Management & Analytics for Thermal Well Integrity  
Session Chairs: Christian Hamuli, Suncor Energy  
Scot Buell, Chevron  
Discussed papers in this session provide practical examples on the importance of continuous monitoring through sounds data analysis to ensure life cycle well integrity and containment.

0800-0830 | Invited Presenter  
Presentation 1: Timeliness of Thermal Compatibility for Abandoned Wells  
Presenter: Ryan Munro, CNRL

0830-0900 | #178463  
Presentation 2: Enhanced Well Integrity Management Using an Integrated IT Platform-Based Solution  
Presenting Author: Obadah Al Sawadi, Halliburton

0900-0930 | #178463  
Presentation 3: New Approach to Thermal Profiling in High Temperature Reservoirs Based on Advanced, Polymeric Insulated Thermocouples to Increase Measurement Point Density  
Presenting Author: Scott Penny, Petrospec Engineering Ltd.

0930-1000 | Coffee Break and Exhibits  
Van Horne B

0930-0945 | #178472  
Eposter: Maximizing the Life of the Well Through Successful Cementing Technologies in Thermal Wells  
Presenting Author: Corey Hunn, Halliburton

1000-1130 | Session 6: Thermal Well Performance  
Session Chairs: Todd Zahacy, C-FER Technologies  
John Van Vliet, Noetic Engineering  
In this session, aspects related to the design, construction and operation of thermal wells will be shared, including presentations on the selection and placement of low-density cement systems in weak, unconsolidated

UNCONVENTIONAL INSIGHT
formations in California; the use of liner installation ‘torque-and-drag’ load analysis methods to better understand the mechanical integrity of liners installed in horizontal thermal wells; and the use of thermal-hydraulic simulators to examine the potential impacts of heating rates, alternative heating rate methods and tubular insulation on subsequent wellbore integrity and performance of SAGD wells.

1000-1030  #178451
- **Presentation 1:** Factors Contributing to SAGD Start-Up Performance
  **Presenting Author:** Trent Kaiser, Noetic Engineering

1030-1100  #178471
- **Presentation 2:** Integrity Assessment of Thermal Horizontal Well Liners Using Torque and Drag
  **Presenting Author:** Scot Buell, Chevron

1100-1130  #178464
- **Presentation 3:** Case Study: Zonal Isolation Challenges in the Midway-Sunset Field of the San Joaquin Valley
  **Presenting Author:** Mark Cleveland, Schlumberger

1130-1300  Lunch and Exhibits
  Van Horne C

1300-1500  Session 7: Break-out Groups

  **Option 1:** Thermal Well Integrity Discussion
  **Session Chairs:** Sarah Whitton, Schlumberger
  Pat McLellan, McLellan Associates

  **Option 2:** Sand Control Discussion
  **Session Chairs:** Doug Hollies, Codeco Oilsands Engineering
  Mark Chartier, Noetic Engineering

1500-1530  Coffee Break and Exhibits
  Van Horne B

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*Every challenge is a possibility.*

*Every project is an opportunity.*

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1500-1515  #178466
- **Eposter:** Contribution of Modern Steel Concepts and Manufacturing Processes to Optimized Properties of Seamless Steel Tubulars for Thermal Wells  
  *Presenting Author:* Juergen Klarner, Voestalpine Tubulars

1530-1700  | **Session 8: Panel - Current Impacts to the Oil Sands Community**  
**Session Chairs:** Sarah Whitton, Schlumberger  
Linda Blair, EVRAZ  
A series of presentations from finance, transportation and social standpoints will provide insights on the current market. A panel discussion with these speakers will provide further perspective on how the current in-situ thermal environment and ongoing changes to the global oil and gas industry will affect the oil sands community.

- **Panelists:**  
  Janice Plumstead, CanadaWest Foundation  
  Gurpreet Khaira, CP Rail  
  Hon. Monte Solberg, P.C., New West Public Affairs

**WEDNESDAY, 25 NOVEMBER**

0700-0800  | Breakfast  
*Van Horne C*

0800-0930  | **Session 9: Advancements in Sand Control and Deployment**  
**Session Chairs:** Trystan Wall  
Stephen Kallir, Cenovus Energy  
This session will include an in-depth discussion of the fluid mechanics and downhole conditions that result in liner sand control failures. Drilling and operating best practices for SAGD well pairs to effectively mitigate these costly failures will also be discussed.

- **0800-0830**  
  - **Presentation 1:** In-Situ Thermal-Chemical Effects and Coated Slotted Liner Design for Enhanced Sand Control, Flow and Long Term Performance  
    *Presenting Author:* D. Zhu, RGL Reservoir Management

- **0830-0900**  
  - **Invited Presenter**  

- **0900-0930**  
  - **Presentation 2:** Optimizing Liner Design and Installation with Dynamic Surface Load Limit Envelopes  
    *Presenters:* Julio Oliveira, Suncor Energy  
    Jon Van Vliet, Noetic Engineering

- **0930-1000**  
  - **Presentation 3:** Comparison of Direct-Wrap and Slip-On Wire Wrap Screens for Thermal Well Applications  
    *Presenting Author:* Matt Hughes, Variperm

0930-0945  #178457
- **Eposter:** Slotted Liner Design Optimization for Sand Control in SAGD Wells  
  *Presenting Author:* Fung Rong, C-FER Technologies

1000-1130  | **Session 10: Sand Control Media and Testing**  
**Session Chairs:** Uliana Romanova, Romenex  
Pedro Aleman, Statoil Canada Ltd.  
The focus of the session is sand control, from laboratory testing to field applications. Different types of sand control media, including flow control devices, are to be discussed from the standpoint of maximizing productivity and longevity of thermal wells.

- **1000-1030**  
  - **Presentation 1:** Oil Sand Characterization for Standalone Screen Design and Large-Scale Laboratory Testing for Thermal Operations  
    *Presenting Author:* Mahdi Mahmoudi, University of Alberta

- **1030-1100**  
  - **Presentation 2:** Size Matters! Using Prepack Sand-Retention Tests (SRT’s) to Narrow Down Liner / Screen Sizing  
    *Presenting Author:* Noel Devere-Bennett, Nexen Energy

1100-1130  #178441
- **Presentation 3:** Sand Control Screens and Flow Control Devices Thermal Cyclic Testing for Life of SAGD Wells  
  *Presenting Author:* Thomas Dessein, C-FER Technologies

1130-1230  | Lunch  
*Van Horne C*

1230-1400  | **Session 11: Inflow Control and Wellbore Heat Loss**  
**Session Chairs:** Blair Mackie, Summit Tubulars  
Zied Ouled Ameur, Cenovus Energy  
A variety of downhole flow control methods and devices are in use in SAGD operations. This session will cover some recent improvements in function and design of certain tools, with the goal of highlighting ways to benefit from and optimize their implementation.

- **1230-1300**  
  - **Presentation 1:** Management of Steam Flashing in SAGD Completion Designs via the Implementation of Flow Control Devices  
    *Presenting Author:* Berna Hascakir, Texas A&M University

- **1300-1330**  
  - **Presentation 2:** Optimizing Flow Control Devices in SAGD Operations: How Different Methodologies are Functional  
    *Presenting Author:* Mohammadmehdi Noroozi, Weatherford
Presentation 3: Vacuum Insulated Tubing in Thermally Assisted Heavy Oil Production: Well Completion Design and Field Data for CSS, Steam Flood and SAGD Applications

Presenting Author: Eric Klotz, Andmir Group Canada Inc.

Session 12: Production Operations

Session Chairs: Lars Hinrichs, Devon Energy
Chris Baker, Suncor Energy

During production operations, engineers utilize subcool management as a control method to maximize production. Management without reliable downhole monitoring can lead to subcool events that have the ability to impact integrity of your sand control liner. This session seeks to generate a discussion on subcool management and steam break-thru mitigation.

1330-1400 #178483

Presentation 1: Use of a Thermal-Hydraulic Program to Predict What Happens in a Wellbore During a Subcool Event and the Potential Affects on the Liner for Risk Assessment

Presenting Author: Mike Carlson, Applied Reservoir Enterprises

1400-1430 Coffee Break and Exhibits
Van Horne C

1430-1530 #178453

Presentation 2: Assessing Subcool Control Issues in SAGD Producers and Methods for Mitigation

Presenting Author: Spencer Taubner, Noetic Engineering

2016 SPE CANADA EVENTS AND TRAINING COURSES

26-27 January SPE Refracturing Workshop – What’s Working and Why? The Marriott Downtown, Calgary
14-16 March SPE Thermal Completions and Workover Operations Workshop Met Centre, Calgary
5 April SPE/CHOA Slugging it Out BMO Centre, Calgary
May SPE Oilsands Well Pad Life Cycle Workshop Calgary
7-9 June SPE Heavy Oil Technical Conference BMO Centre, Calgary
September SPE Caprock Integrity for Thermal Applications Workshop Calgary
18-20 October SPE/CSUR Unconventional Resources Conference BMO Centre, Calgary
28 November-1 December SPE Thermal Well Integrity & Design Symposium Banff Springs Hotel, Banff

Upcoming Training Courses:

26 January Introduction to Re-fracturing Fundamentals Calgary
16-17 February Casing and Tubing Design Calgary
23-24 February Shale Selection, Completions, Fracturing and Production Calgary
22-26 February Evaluation of Canadian Oil and Gas Properties Calgary

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Symposiums maximize the exchange of ideas among attendees and presenters through technical presentations followed by extended Q&A. Focused topics attract an informed audience eager to discuss issues critical to advancing both technology and best practices. There is a combination of papers and invited presentations which can take the form of case studies, best practices and technology reviews highlighting engineering achievements and lessons learned. In order to stimulate frank discussion members of the press are not invited to attend.
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