SCIP PROJECT

Introduction and Overview

- Introduction
Subsurface Issues Related to Resource Evaluation and Recovery
1. Brief Background
2. Geoscience Overview
3. Drilling and Completions (n/a)
4. Artificial Lift (n/a)
5. Instrumentation in Wells
6. 4D Seismic (n/a)
7. Experimental Scheme Performance
8. Future Plans
BRIEF BACKGROUND

Subsurface Section 1

SCIP 2015 Annual Performance Presentation
# BACKGROUND

## SCIP Application History

<table>
<thead>
<tr>
<th>Project</th>
<th>Application Number</th>
<th>Date Submitted</th>
<th>Approval Date</th>
<th>New Approval No.</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Solvent Co-Injection Pilot at wells on Pad L3</td>
<td>1709858</td>
<td>2-Dec-11</td>
<td>11-Jun-12</td>
<td>11834</td>
<td>Initial application for the experimental scheme approval to co-inject solvent on 3 well pairs on Pad L3</td>
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<tr>
<td>Confidentiality request</td>
<td>1753179</td>
<td>13-Jan-13</td>
<td>6-Jun-13</td>
<td>11834A</td>
<td>Request for confidentiality for the project as well as a revised solvent start date</td>
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<td>Steaming start date notification</td>
<td>n/a</td>
<td>18-Mar-13</td>
<td>n/a</td>
<td>n/a</td>
<td>Notification of new solvent co-injection start date of September 2013.</td>
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</table>
GEOSCIENCE OVERVIEW
Pad L3 - Petrophysical Log Cross-Section along L3P3

119/12-27-078-10W4/0
102/12-27-078-10W4/0
1AF/04-34-078-10W4/0

Wabiskaw Member Top
McMurray Formation Top
McMurray A2 Mudstone Base
McMurray B1 Base
Bitumen Top
Bitumen Base
Devonian Top

Classification: Confidential  2015-03-09
GEOSCIENCE OVERVIEW

Pad L3 - Petrophysical Log Cross-Section along L3P3
DRILLING AND COMPLETIONS

Well Location Map – Wellbore Design for Pad L3

INJECTORS
8-5/8” slotted liners

PRODUCERS
7” slotted liners
INSTRUMENTATION

Leismer Downhole Producer Instrumentation for Pad L3

- Fiber Bragg Grating (FBG) - 40 discrete temperature points
- Bubble Tube and Thermocouple
- Thermocouple
- Fiber Optic (FO) Gauge, single temperature/pressure
INSTRUMENTATION

Leismer Downhole Injector Instrumentation for Pad L3

- Bubble Tube and Thermocouple
- Thermocouple
SCHEME PERFORMANCE

Pilot Operation

• Initial Solvent Co-Injection Start-Dates
  - L3I5: November 15, 2013
  - L3I4: January 7, 2014
  - L3I3: March 11, 2014

• Solvent Co-Injection Specifics
  - Concentration: 10% → 5% by volume

• Co-Injection Conclusion
  - L3I5, I4, I3: December 31, 2014
SCHEME PERFORMANCE

SCIP Co-Injection Summary

- 2014 Solvent Injection Period: January 1 to December 31, 2014
- Period of operation highlighted below captures first solvent (November 15, 2013 to December 31, 2014) to shut-in of co-injection
  - L3P2 and L3P6 represented control wells and produced solvent as a function of chamber coalescence

<table>
<thead>
<tr>
<th>Well</th>
<th>Solvent Injected (m³)</th>
<th>Approximate Recovery of Injected Solvent, Instantaneous (%)</th>
<th>Estimated Solvent Recovery (m³)</th>
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</thead>
<tbody>
<tr>
<td>PadL3 (L3P2-P6)</td>
<td>14,626.65</td>
<td>11.6</td>
<td>1700.43</td>
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</table>
SCHEME PERFORMANCE

SCIP Key Lessons Learned

• Optimal start-up time should occur within the ideal pressure-temperature envelope for the solvent system
• Understanding thief zone interactions helps mitigates risk
• High plant and field reliability has benefited pilot performance
• Integrated reservoir surveillance is a key factor in pilot monitoring and optimization:
  - Compositional data suite
  - Observation well data
  - 3D and 4D seismic
  - Production data
  - History matched reservoir models
Co-injection Strategy

• Co-injection of solvent with steam concluded on December 31, 2014 at 1200hrs
• Future solvent co-injection pilot-related activities:
  − Continue compositional sampling into Q3 2015
<table>
<thead>
<tr>
<th>Number</th>
<th>Section</th>
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<tbody>
<tr>
<td>1.</td>
<td>Facilities</td>
<td></td>
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<tr>
<td>2.</td>
<td>Facility Performance (n/a)</td>
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<td>3.</td>
<td>Measurement and Reporting</td>
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<td>4.</td>
<td>Water Production, Injection and Uses (n/a)</td>
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<td>5.</td>
<td>Sulphur Production (n/a)</td>
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<td>6.</td>
<td>Summary of Environmental Issues (will NOT be presented today as per AER request) (n/a)</td>
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<td>7.</td>
<td>Compliance Statement</td>
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<td>8.</td>
<td>Non-compliance Events</td>
<td></td>
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<tr>
<td>9.</td>
<td>Future Plans</td>
<td></td>
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</tbody>
</table>
FACILITIES
Pad L3 Plot Plan – no changes in 2014

[Diagram of Pad L3 Plot Plan]
MEASUREMENT AND REPORTING
Surface Section 3
SCIP 2015 Annual Performance Presentation
MEASUREMENT AND REPORTING

SCIP Well Testing

- Test separator used to calculate daily bitumen and water production (since February 2014)
- Well test duration: 11 hours with 1 hour purge
- Typical frequency is 6 – 7 tests per well for a given month
- Auto-samplers used to measure and monitor solvent recovery
  - Flexibility in sampling from casing, test separator overheads, and test separator bottoms
• Statoil believes that it is in compliance with all conditions of the AER scheme approval and regulatory requirements
None in 2014
Future solvent co-injection pilot-related activities:
  - Decommission upstream facilities, related to storage and co-injection of solvent
There’s never been a better time for good ideas.