



This Month

ASP Flooding

What it is and why it may be the boost your existing reserves need.

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Industry News

Proven Reserves' new web-based notification service

Company News

Feature on one of Proven's Business Development Engineers

Alkaline-Surfactant-Polymer Flooding

Maximizing Existing Reserves with Chemical Enhanced Recovery

Norman Mohr

ASP flooding is a form of chemical enhanced oil recovery (EOR) that can allow operators to extend reservoir pool life and extract incremental reserves currently inaccessible by conventional EOR techniques such as waterflooding.

Although a relatively new and progressing technology, many ASP floods have been successfully conducted worldwide in recent years, commonly achieving 20% incremental oil recovery. One Albertan example of an ASP flood is the Husky Taber South Mannville B Pool which began ASP flooding in 2006 and is currently ongoing.

An ASP flood involves injecting a predetermined pore volume of ASP into the reservoir. Often the ASP injection is followed by an additional injection of polymer. Upon completion of the ASP and polymer injection, regular waterflooding behind the ASP wall resumes again.

The combination of the three chemicals is synergistic. Together they are more effective than as components alone.

Addition of a surfactant lowers the interfacial tension between water and oil which helps to reduce capillary pressure in the reservoir. This allows residual oil to be mobilized and produced from the formation.

The use of alkali adds many benefits to an ASP flood. The alkali reacts with elements of the oil to form in-situ surfactants. Additionally, it helps make the reservoir rock more water wet, thus increasing the flood effectiveness. As alkali is



"Field implementation of an ASP flood requires thorough research."

inexpensive, this helps to reduce the cost of an ASP flood. Common alkaline agents used include sodium hydroxide (NaOH) or sodium carbonate (Na₂CO₃).

The polymer increases the vertical and areal sweep efficiencies of the flood by increasing water viscosity. The increased viscosity decreases the chance of fingering and allows more oil to be contacted on a macroscopic scale.

Field implementation of an ASP flood requires much thorough research. Laboratory testing must be conducted to determine the most suitable alkali, surfactant and polymer type and concentrations for the reservoir oil and rock. Radial and linear corefloods tests should be conducted as well as simulation studies to determine flood effectiveness and feasibility.

As conventional reserves diminish and reservoirs mature, it is crucial and financially beneficial to maximize existing reserve potential. As research and technology progress, the potential and feasibility of ASP flooding continues to grow and offers much potential for increased oil recovery.



Proven Reserves' Web Notification Portal

Proven Reserves Exploitation Ltd. has recently finished development of their Web Notification Portal service.

This internet-based technology, when used with regulatory application projects, creates a map and visualization of the project in question. This allows concerned parties to instantly see what the project will look like, what its intent is, and how it may affect them.

By providing this useful information to clients, stakeholders, and surface owners, the Web Notification Portal will help to lessen the threat of potential objectors, provide feedback to clients, and allow regulatory applications to get ap-



proved much smoother.

Proven Reserves has created a sample WNP page for both mineral and surface notifications which can be found at proven-reserves.com/notice. When prompted for a Project Code, please enter s999hy for a surface example and m999wk for a mineral example.

Company News

Business Development Engineering and Open Mic Nights

Donald Ford is one of Proven Reserves' Business Development Engineers, and an important part of our technical sales team.

Though originally from the States, Don has spent most of his life here in Calgary, and will tell you he is a big Stamps fan (adding that he can't wait until the Grey Cup here in Calgary in November).

Don recently graduated from the University of Alberta with a degree in Electrical Engineering. He has



done various jobs, including many within his community ranging from community assistant to event coordinator.

When he has some spare time, Don enjoys reading a good book, taking a road trip, or going to the mountains. He also likes to play the guitar, and from time to time can be found at local open mic nights.

Don wants to continually learn and challenge himself in new ways, and hopes to continue helping clients meet their needs while working towards his P.Eng.

Thanks, Don!

MetroPetro



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Upcoming Events

Geological Carbon Sequestration Conference

August 16-19, 2009
Vancouver, BC
www.aapg.org

Professional Development Seminar Fundamentals of Project Management

August 24-25, 2009
Calgary, Alberta
www.apega.org

The Future of Stimulation in Tight Gas & Gas Shale

June 11, 2009
Kananaskis, Alberta
www.spe.org