



April 2010 | Gushor Inc. | (403) 210-7594

Gushor Inc. Newsletter

Technology is the Key to Unlocking the Oil Sands Safe!

The oil and gas industry has mostly been focused on the oil resource as the valuable prize and while technology has always been a key part of the industry, with heavy oil and bitumen, technology itself may well be the prize!

While there is a trillion barrels of resource in Alberta and we know exactly where it is, it is mostly inaccessible today and even in the SAGD sweet spots of Athabasca all but a few of the pilots are well away from their expected SOR values. Having a large oil resource is no longer attractive to investors; the resource needs to be demonstrably recoverable at low economic and environmental cost! Oil no longer equals dollars and the oils sands safe is still for the most part locked. As the carbon economy develops the needs for technological solutions have never been greater. It has taken over 30 years for SAGD to become commercial so we desperately need a turbocharger to accelerate innovation and some carefully selected technology streams to assist existing operations with committed infrastructure costs and technology selections already in place.

Gushor has a wide range of technology solutions for more energy and cost efficient bitumen or heavy oil recovery aimed at unlocking even the most difficult pay. Coupled with Gushor's energy and emission optimized recovery process design and Gushor's CO2 management capabilities we offer technology and design routes to the most practical and sustainable bitumen recovery possibilities that are attractive to investors. But that's not what this letter is about! Does Gushor have inexpensive routes to cost saving operational decisions and means of inexpensively turning marginal processes such as SAGD operations in complex shaley reservoirs, or not quite cold recovery bitumen resources into viable ones? Gushor has many technical solutions but we focus here on two.

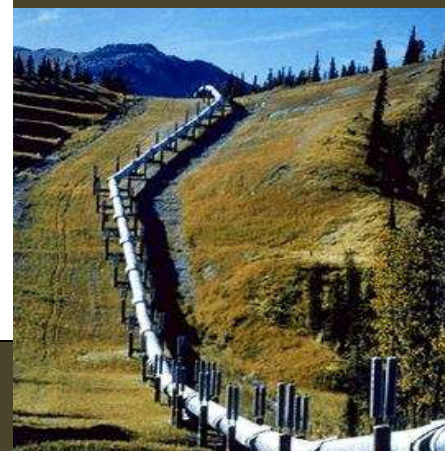
Gushor has led the revolution in oil viscosity assessment that is underway providing precise, accurate data in lab and at well site. This last drilling season we again demonstrated the value of accurate viscosity data at well site within hours of completion of drilling to provide very cost effective solutions to decisions over whether to do an expensive well production test or not, to help make decisions on well placements or to provide accurate oil viscosity data to calibrate company legacy datasets with substantial storage artifacts. We have also pioneered and demonstrated the recovery of accurate viscosity data from horizontal wells in both bitumen and heavy oil reservoirs. Gushor's Vlogger viscosity technology suite (Field Viscosity logging; Mechanical extraction; Vgee; Gvisc; Proxvisc) is a cost effective alternative to the uncertainty of traditional bitumen recovery processes for viscosity assessment. We have a suite of commercially proven services and are working towards being able to provide routine live oil well site viscosity logging in the 10/11 drilling season. After languishing for many years, onsite viscosity logging is now a routine accurate option if oil mobility is an issue you care about. If you really need to know if the well is cold flow or not you need accurate timely oil mobility data, not data variably impacted by the methods used to recover the bitumen or data too late to impact that production test or well placement decision!

It has taken over 30 years for the first SAGD projects to become commercially successful. If you don't want to wait 30 years for your oil, come and talk to Gushor.

[Click here to continue reading on our website....](#)

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Gushor Inc. Services

Geosciences Solutions

- **Petroleum Systems Analysis**
 - Exploration
 - Development
 - Production
- **Analytical Services**
 - Heavy & Conventional Oil
 - Viscosity API
 - Water Chemistry
 - Gas Analysis
 - Geochemistry
- **Geosciences Software**
 - Gnowd Pre-drill Fluids Prediction

Engineering Solutions

- **Reservoir Engineering**
 - Enhanced Oil Recovery
 - Advanced Reservoir Description
 - Steam/Solvent Scheduling
- **Reservoir Simulation**
 - SAGD, CSS, ES-SAGD
 - Reservoir Characterization
 - Well Performance Forecast
- **Reservoir Production Analysis**
 - Type Curve Construction
 - Production Decline Analysis
 - Trend Analysis
- **Engineering Software**

Technology Applications

- Plunger™ (lab and field)
- GVisc™
- ProxVisc™
- Carbonates

Unconventional Wisdom

- Reduced Emission Recovery
- Carbon Management
- Biodegradation
- Fluid Mobility
- Heavy Oil Recovery

Gushor Education

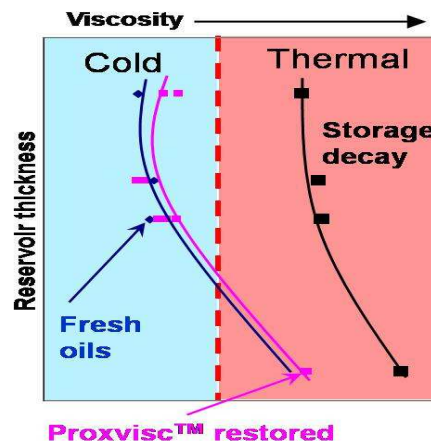


Viscosity Data not Matching Production Performance? Revisit viscosity measurements using stored cores.

Sherlock Holmes had the advantage of being able to analyze indelible evidence; unfortunately after reservoir sampling, oil physical properties can decay with time and the viscosity of oil residing in stored cores may increase by an order of magnitude after storage and sampling; re-extraction and re-measuring the viscosity of the bitumen directly without a Gushor correction is a fruitless exercise!

In the figure, the viscosity profile (blue trace) measured on fresh cores suggests cold production is possible. After 18 months of cold storage and thawing for sampling for other purposes, the then sampled core (black trace) now has a viscosity profile an order of magnitude higher in viscosity. Delayed access to core material and sample breakup during prior sampling leads to decaying physical properties due to loss of volatile components. Proxvisc™ (geochemically recovered viscosity) analysis of the aged cores can restore the data (purple trace).

Although viscosity decays during storage, due to loss of volatiles, the involatiles provide a record of oil quality, which can be exploited using Proxvisc™ to determine oil physical properties at drill time.



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Geosolutions for Unconventional Systems &
Heavy Oil Recovery

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We recommend Proxvisc™, not only as a means to correct legacy viscosity data. Proxvisc™ can be performed on:

- 1) Stored cores, restoring legacy viscosity data,
- 2) Cuttings from vertical and horizontal wells,
- 3) Contaminated cuttings/cores, Proxvisc™ is not usually distracted by contamination
- 4) Samples with low oil saturation that cannot be analyzed conventionally at all.

The gold standard for viscosity measurement is definitely mechanical oil recovery and standard viscometry. Proxvisc™ gives similar accuracy with almost any sample even aged samples.

Gushor Participates in the Canadian Heavy Oil Associations 2010 FunSpiel

The Gushor's team "The Reservoir Warriors" put on a valiant effort in their attempt to dominate the curling field...

The Reservoir Warriors were; Bill Robinson (**Paramount Resources**), Osvaldo Martinez (**Husky Energy**), Richard Stephens (**Gushor Inc.**), and Ed Jousaume (**Ingrain Rocks**).



Gushor's Upcoming Events

April 11-14, 2010 – AAPG 2010 Annual Meeting and Conference – New Orleans, Louisiana. [Website](#)

May 10-14, 2010 – GeoCanada 2010 Conference – Calgary, Alberta. [Website](#)

May 25 & 26, 2010 – Intermediate Thermal Reservoir Engineering Course – Calgary, Alberta [Course Info](#)

June 8-10, 2010 – SPE International Oil & Gas Conference – Beijing, China. [Website](#)

June 8-11, 2010 – AAPG Hedberg Conference – Vail, Colorado. [Website](#)

Sept 26-29, 2010 – EAGE Conference – Manama, Bahrain. [Website](#)

Sept 27-29, 2010 – Advanced Thermal Reservoir Simulation Course – Calgary, Alberta. [Course Info](#)

Oct 4-8, 2010 – AAPG Fall Education Course – Houston, Texas [Website](#)

For more information and abstracts on our participation with each of these upcoming events please feel free to visit our website. www.gushor.com/upcoming_events

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