



The Rock Record - February 2016

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Please contribute to the SGS Newsletter

The SGS Newsletter is produced by the SGS executive. Letters, announcements, notices, comments, photos, news and information about SGS members, etc. are always welcome. Call an executive member or write to us at:

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Saskatchewan Geological Society Luncheon Talk

Wednesday, March 16th, 2016

Bitumen-filled natural fractures of the Souris Valley Beds
(Lodgepole Formation) in Southern Saskatchewan

Sienna Johnson, University of Regina

(Abstract & Bio to be posted on our website soon...)

VENUE:

The Artful Dodger, 1651 11th Ave

Lunch: 11:45 a.m.

Meeting talk: 12:15-1:00 p.m.

For lunch the cost is:

No Lunch (Talk only): \$5.00

Members: \$15.00

Student Members: \$10.00

Non-Members: \$20.00

Please RSVP to Jason Cosford at cosford@jdmollard.com

before 12 noon, Monday, March 14, if you are going to have lunch.

President's Message

The first order of business for my inaugural presidential blog as incoming president is to acknowledge a few key Society members. First and foremost, a heartfelt congratulations goes out to Dr. Don Kent, who received the prestigious Canadian Society of Petroleum Geologists RJW Douglas medal (see story [here](#)), and to Dr. Tom Sibbald, who was inducted into the SGS Geoscience Honour Roll. Both of these honours were presented at the recent 2015 Annual General Meeting, which was a very well-attended event and by all accounts an enjoyable night for all. This is due mainly to the efforts of the AGM committee chair, David MacDougall, who put in a tremendous amount of work again this year to make it such a successful event. So thank you Dave! And last but not least I'd like to express my sincere gratitude to last year's executive for a successful and enjoyable year. With many returning members on this year's executive and the addition of Mike Thomas as Co-Program Chair, it should be a smooth transition and another terrific year for the Society in 2016!

Much of the success the Society has experienced over the past year has been due to the leadership of the (now Past-) President, Ralf Maxeiner. Ralf's dedication to the health of the Society was abundantly evident throughout the year and he showed great leadership in navigating a variety of issues. One of Ralf's overarching messages to members last year – which I plan on reiterate throughout the current term – was one of member engagement. The Society cannot function in any meaningful way without the involvement of its members, but will flourish if people become involved and make a point of participating. With this in mind, there are few items I'd like to bring to everyone's attention (see also the News and Events section later in the Newsletter):

- The foundation of the Society is its members, and so I encourage everyone who hasn't done so to **renew their membership** as soon as possible! Please go to our website and renew your membership without waiting for repeated reminders. It's only \$25 for an active membership and it takes about 3 minutes and a credit card to renew: <http://sgshome.ca/membership>
- The next major Society function is the **annual Curling Bonspiel**, which is taking place in just a few weeks on **Saturday March 19th**. Turnout by active members was very low last year, so let's get the year off to a good start and get some teams registered asap! This can be done by submitting the form on our website (<http://sgshome.ca/events/bonspiel>).
- The Society is planning on producing a geological calendar for a second consecutive year, but needs your help. We are looking for some excellent photos of Saskatchewan-based geological features to be featured in the calendar, so are running a **calendar photo contest**. Please take some time to go through your personal photos and then visit the calendar webpage (<http://sgshome.ca/products/geological-calendar>) for details on how to enter the contest.
- Please continue to support the **luncheon lecture talks** as they become available.

Please feel free throughout the year to provide any feedback you have or to make any suggestions that you think would benefit the Society. I look forward to a terrific year for the Society in 2016!

Ryan Morelli



NEWS AND EVENTS

Membership Renewals PLEASE

SGS membership is on a calendar year basis. It is now time to renew your membership for 2016. The most convenient way to renew your membership is to do it online and pay by Paypal; you do not need a PayPal account to do this: <http://sgshome.ca/membership>.

2016 Curling Bonspiel

The 2016 Annual Curling Bonspiel is set for **Saturday, March 19th**. Please register your team for the Bonspiel as soon as possible using the registration form at: <http://sgshome.ca/events/bonspiel>.

Other Upcoming Talks

And here is what is in the works for the months to come, submitted by Jason Cosford and Mike Thomas. All are still quite tentative, as you can see. It has been difficult this year to firm up the AAPG talks.

- Shawn Harvey (Cigar Lake Uranium deposit) – April 8th (see next page)
- William McKinnon: Public lecture on Pluto - Weeks of April 19th

Waiting for Details:

- Dr. Murray Gingras (2015-2016 W.W. Hutchison Lecturer).
- Colin Card (Uranium exploration).
- Kate MacLachlan (Ethics in Geoscience)
- Mike Demuth – U of Sask: Glaciers - Delayed until autumn
- ?Emily Bamforth (Royal Sask Museum) Life Before Impact: Exploring Biodiversity Trends Immediately Prior to the End

Suggestions for other potential speakers are always welcome. Please contact either Jason Cosford or Mike Thomas with your ideas.

News from the D.M. Kent Club

The D.M. Kent Club is excited to invite everyone to a steak night at the Bushwakker Brew Pub on March 22. For \$25 you will receive a 6 oz steak, hand cut fries, garlic toast, Caesar salad, AND a 12 oz Bushwakker beer. In addition to all this food, you will have helped ensure that the club can continue to send our members to great conferences such as WIUGC, PDAC and RoundUp. For tickets email dmkentclub@gmail.com, message us on Facebook at the D.M Kent Club of Geology, or text or call John at 306-596-5231.

Royal Saskatchewan Museum still looking for a Provincial Fossil

Please visit the museum to cast your vote. Learn more details by visiting their website:

[Saskatchewan Provincial Fossil Video Contest](#)



DETAILS OF APRIL 8th TALK – Shawn Harvey

ABSTRACT – Geological and Geotechnical Modelling of the Cigar Lake Uranium Deposit

The Cigar Lake uranium deposit is the world's second largest known high-grade uranium deposit (2nd behind Cameco's McArthur River Operation), but is the highest grade uranium deposit with mineral reserves at an average grade of approximately 16.7% U₃O₈ (as of Dec 31, 2015). The deposit was discovered in 1981 and officially achieved commercial production in May of 2015 after a series of geotechnical difficulties were cleared. Cigar Lake consists of two separate deposits known as Phase 1 and Phase 2. As of December 31st, 2015 total Proven and Probable mineral reserves consist of 601,800 tonnes at 16.7% U₃O₈, for a total of 221.6 Mlbs U₃O₈. Inferred Mineral Resources total 103.1 Mlbs (284,700 tonnes at an average grade of 16.43 U₃O₈). As of the end of 2015, Cigar Lake has mined approximately 11.6 Mlbs U₃O₈ from the Phase 1 deposit.

The deposit is situated at the unconformity between Paleoproterozoic variably graphite-bearing pelitic basement rocks of the Wollaston Domain and overlying Paleo- to Meso-Proterozoic Athabasca Group sandstone and conglomerate. Within the graphitic pelite are a network of foliation parallel semi-brittle to brittle faults that coincide with the uranium mineralization at the intersection with the unconformity. The faults commonly exhibit evidence for multiple reactivations and show a relative enrichment in graphite. Cross-cutting structures are largely found with north-northwest orientations and, more rarely, northeast orientations.

Overprinting the fault network is variable clay alteration that is strongest proximal to the mineralization but extends into both the basement and the overlying sandstone to vertical distances of up to 50 m. This clay alteration has geotechnical challenges to both underground mine development through drifting, artificial ground freezing and the production through the jet-boring system (JBS). The modelling of the geological structures, rock strength and the associated clay alteration is important for continued forward planning and mine development.

BIOGRAPHY – Shawn Harvey, Cameco Corp.

Shawn graduated from University of Regina with a Bachelor of Science (Honours) in 1998. He then went to work for Shell Canada in 1998 before returning to the University of Regina to complete a Master of Science thesis on the Structural Geology of the Deilmann Uranium Orebody, Key Lake, Saskatchewan.

While completing my thesis he started working for Saskatchewan Energy and Mines as an Industrial Minerals geologist where he worked for four years. This included a variety of commodities with a particular emphasis on diamonds.

Utilising this experience on diamonds he went to the private industry to work as a Geology Manager at Shore Gold Inc. and was involved in the implementation of exploration and evaluation of several kimberlites in Saskatchewan and Alberta for seven years.

In 2013, he returned to the uranium field with Cameco Corporation as a Senior Structure Geologist within Mineral Resources Management. This work has included projects in Australia, Kazakhstan and Canada with prioritization on the Cigar Lake deposit.



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