The Rock Record – February, 2011

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:

Saskatchewan Geological Society
P.O. Box 234
Regina, SK S4P 2Z6

SGS e-mail address:
info@sgshome.ca

SGS Website:
www.sgshome.ca

All advertising inquiries should be directed to **Andrew Morley**

In This Issue

Friday, February 11, 2011

Seafloor Sulfide Mining (and Thermogenic Oil) – The Dawning of a New Industry

Dr. Steve Scott
CIM Distinguished Lecturer
(abstract and biography attached)

University of Regina, Room ED 623
Meeting: 12:00 – 1:00 p.m.
The talk is free. Free pizza will be provided.
Parking is available by the Education Building (lot 11 – meters), near Riddell Centre (lot 8), and underground at the Kinesiology Building (gym)

Co-sponsored with the U. of R. Geology Department

Thursday, February 24, 2011

Tight-Gas Sandstone Reservoirs: 25 Years of Searching for "The Answer"

Mr. James L. Coleman Jr., AAPG Distinguished Lecturer
(abstract and biography attached)

Ramada Hotel, 1818 Victoria Avenue, Regina
Lunch: 11:45 a.m.
Meeting: 12:00 – 1:00 p.m.
Members: $10.00 and Non-members: $15.00 for lunch
For those not having lunch the talk is free
Please contact Kate MacLachlan (katem@apegs.sk.ca) or Bernadette Knox (bernadette.knox@gov.sk.ca) by noon, Tuesday, February 22nd if you are planning to have lunch

ANNOUNCEMENTS and EVENTS

1) Annual Field Trip Meeting

The annual field trip meeting will be held on Wednesday, February 16th at 7:00 p.m. at Bushwakkers Restaurant at 2206 Dewdney Avenue. It will be decided at this meeting where the field trip will be going this summer. If you have any ideas please present them.

2) Annual Curling Bonspiel

The annual SGS Curling Bonspiel will be held on Saturday, March 5th at 7:00 p.m. at the Caledonian (Callie) Curling Club at 2225 Sandra Schmirler Way near the Regina airport. The cost is $20/person. If you are interested in registering as a team or individually please contact Lynn Kelley (lynn.kelley@gov.sk.ca) or Kate MacLachlan (katem@apegs.sk.ca). This is a non-competitive fun event which will be followed by a meal.

3) Luncheon Talk Speakers

If anyone has any ideas for luncheon speakers please contact Bernadette Knox (tel.: 787-9373) or (bernadette.knox@gov.sk.ca) or Lynn Kelley (lynn.kelley@gov.sk.ca).

WHERE Challenge

Please spread the word to teachers and students about the third annual WHERE Challenge, a national contest for students aged 9 to 14 years, that is designed to make kids more aware of the importance of Earth resources in their everyday lives – and to encourage them to consider a career in Earth Science. All the details can be found at http://www.earthsciencescanada.com/where/. The contest deadline is **April 1**.

Field Trip Guides

Following from a suggestion by Brian Brunskill, the SGS will start compiling a library of field trip guides and maps at the Subsurface Laboratory. These will comprise the guides that John Lake compiles for our annual field trips and any published guides. The titles of those available will be listed on our website. Any SGS member can then sign them out for temporary use instead of having to buy them. If anyone has any guides that they would like to contribute please contact Andrew Morley (contact information below).

SGS Merchandise

The SGS has a variety of reasonably-priced merchandise, mainly clothing, that is posted on the website: www.sgshome.ca for viewing. This includes seasonal items such as very nice golf shirts, t-shirts, and hats. Please contact Andrew Morley (andrew.morley@gov.sk.ca) if you are interested in making a purchase.

It's time to renew your membership for 2011. Please fill out the attached form and submit it with the payment at a meeting, or mail it to the SGS postal address on the first page. Jason Berenyi at (787-2579) or jason.berenyi@gov.sk.ca is the contact for memberships. You can also sign up for membership on-line at http://www.sgshome.ca/sgs_membership_form.

Abstract

Seafloor Sulfide Mining (and Thermogenic Oil) – The Dawning of a New Industry

Dr. Steven Scott, CIM Distinguished Lecturer
Director, Scotiabank Marine Geology Research Laboratory and
Emeritus Professor, Department of Geology, University of Toronto, and
President, Marine Mining Consultants, Toronto

First observed 30 years ago, high temperature hot springs ("black smokers") on the deep ocean floor are precipitating mounds and columnar edifices ("chimneys") of copper, zinc, lead, iron and silver sulfides, gold and other major and minor elements. Some deposits are of sufficient size and metal content to be considered for mining. Canadians have played important roles in their geological and geophysical exploration and evaluation. The speaker is a pioneer in the study of these seafloor massive sulfide (SMS) deposits and is the co-discoverer of the Solwara site in the Manus basin of the Bismarck Sea offshore eastern Papua New Guinea that Toronto-headquartered Nautilus Minerals intends to mine. He will present an overview of this new type of mineral resource as well as comments on the seafloor sedimentary sulfides (SSS) in the Red Sea, first explored in the 1960's and for which Vancouver-headquartered Diamond Fields International and their Saudi partner Manafa have recently received a mining licence. The talk emphasizes exploration strategies for SMS, proposed robotic mining methods, environmental issues unique to these deposits and future prospects for continued commercialization of both SMS and SSS. The speaker will also discuss the significance of thermogenic oil associated with hot spring deposits in sediments of Guaymas basin in the Gulf of California on which he has worked.

Biography

Steven Scott is the Norman B. Keevil Professor Emeritus of Ore Genesis, the McRae-Quantec Professor Emeritus of Geoscience, Director of the Scotiabank Marine Geology Research Laboratory and the past chair of the Department of Geology (2001-2005) and of Geological and Mineral Engineering (1988-1997), all at the University of Toronto. He is also an Honorary Professor of the China University of Geosciences in Beijing and from 1995 to 2004 was an Invited Professor at the University of Western Brittany's "European University Marine Institute" in Brest, France. He was educated at the University of Western Ontario (B.Sc. and M.Sc.) and at Penn State (Ph.D.).

Professor Scott is a geologist /oceanographer specializing in base and precious metal sulphide ore deposits that he and his students have studied on five continents and on the bottom of three oceans. He has participated on 28 oceanographic surface and submersible expeditions, many of them as Chief Scientist. He was the first ore deposits geologist and first Canadian to witness the formation of seafloor massive sulphide (SMS) deposits by "black smoker" high temperature hot springs on the deep ocean floor. These SMS deposits are modern analogues of ancient volcanic-hosted massive sulphide (VMS) ores that are mined on land. Professor Scott's research has led directly to a Canadian company's

advanced planning to mine the seafloor deposits that he co-discovered in the 1990's with an Australian colleague off the east coast of Papua New Guinea.

Professor Scott has published 174 refereed research papers and delivered 528 lectures (451 invited) in 19 countries. He has presented 41 short courses in 11 countries. Popularized accounts of his work have appeared in television, radio and print media. He has been honoured with several awards including an honorary doctorate from France, Fellowship in the Royal Society of Canada, 6 societal medals and many distinguished lectureships. He retired from the University of Toronto in 2006 as an Emeritus Professor and maintains an active research career and consulting business (Marine Mining Consultants). He and his wife, Joan, live in Toronto and on the Brittany seacoast of France.

Abstract

Tight-gas Sandstone Reservoirs: 25 Years of Searching for ''The Answer''

James L. Coleman Jr., U. S. Geological Survey, Reston, VA, AAPG Distinguished Lecturer

During the past 25 yr, several different tight-gas sandstone reservoirs have been brought into the nation's productive natural-gas inventory. These include reservoirs of many different ages in many different basinal settings. In this chapter, reservoir discovery and management efforts at select fields in the Silurian Tuscarora, Devonian Oriskany, Pennsylvanian Pottsville and Jackfork, Jurassic Cotton Valley, Cretaceous Frontier and Almond, and Eocene Wilcox sandstones are reviewed, compared, and contrasted. Each of these target reservoirs is unique and both simple and complex. However, from a general understanding of the characteristics and variety of tight-gas reservoirs, a set of common generalities can be developed that may even be developed into rules for discovery.

Although many tight-gas sandstone reservoirs may be classified as continuous-type reservoirs, (i.e., unconventional gas accumulations lacking well-defined field boundaries), tight-gas sandstone reservoirs are complexly subtle, with reservoir properties that are anything but continuous across their extent. Intentional discovery and development of tight-gas sandstone reservoirs requires knowledge, planning, careful execution, flexibility, and patience. A discovery model for the exploration and development of tight-gas sandstone reservoirs is proposed: (1) locate wells within a dry, gas-prone basin or part of the basin to avoid liquid (water, crude oil, or condensate) production, which will hurt gas-production rates; (2) select as intended targets depositionally heterogeneous reservoirs (i.e., channel systems), which are close to organic-rich intervals; (3) target slightly higher-shale-content sandstones instead of lower-shale-content sandstones (quartz arenites) to avoid loss of reservoir storage volume caused by cementation; (4) take advantage of whatever structure there is, and drill as high up on that structure as possible; (5) consider how you plan to manage a fractured, tight-gas reservoir (if fractures are anticipated to be present); (6) try to avoid sandstones with the potential for high water flow and low gas flow; (7) develop a clear petrophysical understanding of the reservoir early in the life of the field; and (8) plan on infill drilling once the initial spacing unit design is approved and implemented.

Biography

Jim Coleman is the Director of the Eastern Energy Resources Science Center, U. S. Geological Survey (USGS), which conducts research and resource assessments on fossil fuel resources and examines the effects of their presence and use on human health and the environment. At the USGS, he has continued

his research on unconventional gas systems and oil and gas resource assessments in the Appalachian, Gulf of Mexico, and Arkoma-Ouachita Basins. Before joining the USGS in 2003, Jim worked for 25 years with Amoco and BP on a variety of international and domestic oil and gas exploration and production and produced water management projects.

Jim has published articles on unconventional gas reservoirs, oil and gas resource assessments, basin belt structural geology and petroleum accumulations, and carbonate sedimentology. His work comparing the American Petroleum Industry with the American Whale Oil Industry was recognized with the best presentation award for his talk at the Energy Minerals Division session at the 1994 Denver AAPG annual meeting. He received an M.S. in geology from Mississippi State University in 1978. He lives in Sterling, Virginia, with his wife Jane.

SGS MEMBERSHIP FORM – 2011

(If you have access to electronic mail, please provide your e-mail address in the space provided below)

I, _ _____ , wish to renew my/apply for a membership in the
SASKATCHEWAN GEOLOGICAL SOCIETY for 2011.

MY STATUS IS (please check one):

[ ] ACTIVE ($25.00)
[ ] ASSOCIATE ($25.00)
[ ] AMATEUR ($10.00)
[ ] STUDENT ($5.00)
[ ] LIFETIME ($350.00)

MY CURRENT MAILING ADDRESS IS:

[ ] No change from last year
[ ] New address (please print):

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Mail to:
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info@sgshome.ca

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I am enclosing _____ along with the renewal form.

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