

PROGRAM ON WATER ISSUES

**Burying Carbon Dioxide in Underground Saline Aquifers:  
Political Folly or Climate Change Fix?**

**September 23, 2009**

**Biographies of Panel Members (in Alphabetical Order)**

**Don Broussard**

Graduated in May, 1978 from the-then University of Southwestern Louisiana (now the University of Louisiana at Lafayette) with a Bachelor of Science in Civil Engineering; earned and maintains Professional Engineer registration in Louisiana

Currently serving the Lafayette Utilities System as Water Operations Manager, with overall responsibility of water from source to tap

Holds Class IV certifications in Water Production, Water Treatment, Water Distribution, Wastewater Collection and Wastewater Treatment

Water Sector Coordinating Council (WSCC) – elected as Chair September, 2008 for a two-year term

- WSCC – Chair, National Response Plan Update Workgroup
- WSCC – Co-Chair, Decontamination Workgroup
- WSCC – Co-Chair, Emergency Response Workgroup

Association of Metropolitan Water Agencies

- Board of Director
- Chair, Legislative Committee
- Chair, Membership Committee
- Member, Resolutions Committee

American Water Works Association

- Member, Water Utility Council – three-year term, expiring June, 2011
- Past Chair, Southwest Section AWWA
- Board of Directors, June 2008 –June 2010
- Presented at several regional WARN workshops; presented on three webcasts, presented at and/or moderated sessions at AWWA’s Annual Conference

Southeastern Regional Small Public Water Systems Technical Assistance Center (SE-TAC)

- Board Member

Louisiana Water/Wastewater Agency Response Network

- Co-Founder and Co-Chair with Patrick Credeur, Executive Director of the Louisiana Rural Water Association

Chicot Aquifer Stakeholder Group (CASH)

Co-Founder, along with ULL Geology Department Professor Dr. Tim Duex

US Environmental Protection Agency's Water Security Program

Member, Water Security Executive Committee

US Department of Homeland Security

Member, Editorial Review Committee Michael Baker, Jr. Project "Domestic Municipal End-to-End Water Architecture Study"

Louisiana Water Quality Technology Conference

Moderator, Alexandria Conference for past 7 years

Testified on behalf of AWWA on Geologic Carbon Sequestration before House Energy and

Commerce Committee's Environment and Hazardous Waste Subcommittee on July 24, 2008

## **Mary Griffiths**

MARY GRIFFITHS, PhD recently retired from the Pembina Institute where, as Senior Policy Analyst with the Energy Solutions team, she was engaged in efforts to reduce the environmental impact of fossil fuel energy development. She was the lead author of more than ten reports, including the Institute's primer on carbon capture and storage and several on energy and water. Mary served on various Alberta government committees dealing with the environmental aspects of energy development and since 2002 has participated in a number of workshops and spoken at conferences on the Pembina Institute's perspective on carbon capture and storage. Mary now continues her environmental work as a part-time consultant with MG Environmental and she is a Senior Associate with Green Planet Communications Inc. Mary obtained her B.A. and doctorate and started her career at the University of Exeter, UK, where she taught geography.

In 2002, Mary received a Canadian Environment Award for her work on clean air issues and she is also the recipient of a 2005 Alberta Centennial Medal.

## **Alan Harvie**

Alan has practised energy and environmental/regulatory law since 1989 and regularly deals with commercial, operational, environmental and regulatory issues, especially for the upstream oil and gas industry. He is Chair of the firm's Environmental Law Practice Group and a member of the firm's Energy Department. Alan has significant legal experience in acting for the oil and gas industry in commercial transactions and regulatory matters, including common carrier and processor applications, forced poolings, downspacings and holdings, rateable take, and facility, well and pipeline applications. Alan has also dealt with commercial, environmental and regulatory issues concerning power plants, transmission and distribution lines, tourism and recreation projects, forestry, mining, commercial real estate, industrial facilities, sewage plants, hazardous waste landfills and water storage reservoirs.

Alan has appeared before the Alberta Courts, the Alberta Energy and Utilities Board, the Natural Resources Conservation Board, the Canadian Environmental Assessment Agency, the Alberta Environmental Appeals Board, the Municipal Government Board and various other municipal and regulatory bodies.

Alan has recently developed experience in the embryonic field of carbon emissions and trading, and attended COP 11/MOP I in Montreal and CarbonExpo in Cologne, Germany.

The LEXPERT Legal Directory has repeatedly recommended Alan as a leading lawyer in environmental law, and he is listed in The Best Lawyers in Canada as a leading environmental lawyer in Canada.

## **Stephen Heare**

In June of 2004 Steve became Director of the Drinking Water Protection Division. In EPA's Office of Groundwater and Drinking Water. The Division's responsibilities are implementation of Safe Drinking Water Act requirements which affect over 164,000 community and non-community drinking water systems nationwide. The Division also oversees the Underground Injection Control (UIC) program and is developing the first national rulemaking for commercial scale geo-sequestration of carbon dioxide. Lastly, the Division leads efforts to protect the nation's source waters.

Prior to his current assignment, Steve served as Principal Advisor to the Director, of EPA's Office of Emergency Management. During his year-long assignment he helped the Department of Homeland Security write the new government-wide National Response Plan, and lead establishment of an EPA Structures Decontamination Team. During his thirty-plus years with the Agency Steve has directed the Resource Conservation and Recovery Act (RCRA) chemical waste permitting and cleanup programs, and worked in enforcement, site cleanup and emergency response. Steve holds a B.A in Economics from the University of Maryland, College Park. When he and his wife Ann-Marie are not chasing nine-year old Andrew, Steve loves flying his 49-year old Cessna to nearby fun destinations.

## **Adèle Hurley**

Adèle Hurley is the Director of the Program on Water Issues at the Munk Centre for International Studies at the University of Toronto.

In the 1980s, during the early days of the Reagan Administration, Adèle Hurley moved to Washington and co-founded the Canadian Coalition on Acid Rain. For several years she worked on a successful campaign that brought about amendments to the US Clean Air Act, as well as regulations that reduced pollutants from large Canadian emitters.

In the early 1990s she was appointed to the Board of Ontario Hydro. In 1995, she was appointed by the Prime Minister's Office to serve as Canadian Co-Chair of the International Joint Commission, which oversees Canada/US Boundary water issues according to the Boundary Waters Treaty of 1909.

Adèle has served as a member of the Canadian Federal Government's International Trade Advisory Committee - Task Force on Environment and Trade Policy. She is a member of the advisory board of the Columbia Basin Trust and was appointed in 2006 to the board of directors of the Ontario Power Authority.

She has won numerous awards for her work including the Conservation Council of Ontario's Lieutenant Governor's Conservation Award.

## **Brent Lakeman**

Brent Lakeman is Manager of the Carbon and Energy Management Business Unit at the Alberta Research Council. Brent manages the ARC's programs targeted at storing CO2 in deep geological formations and on developing technology alternatives for cleaner energy from fossil fuels. This involves the direction and supervision of over 20 research scientists and engineers examining technologies associated with all facets of CO2 conversion, capture and storage.

Since joining the ARC in 2004, Brent's has been responsible for developing and managing a wide range of projects including the Pembina Cardium CO2 EOR Monitoring Project and Heartland Area Redwater Project (HARP) for CO2 Storage.

Prior to joining the ARC, Brent worked with Alberta Environment and Alberta Energy for over 13 years on energy-related air issues. Brent holds a Masters in Public Administration from Queens University and a Bachelor of Arts from the University of Alberta.

## **Mark Mattson**

As President and Waterkeeper of Lake Ontario, Mark Mattson works tirelessly to promote and defend the ideals that safe waterways belong to the people. Mark in 2001 founded Lake Ontario Waterkeeper to give a voice to the cares and concerns of the millions of people who live in the Lake Ontario Watershed.

Mark received his Bachelor of Arts from Queens University, graduated of the University of Windsor School of Law, and is a member of the Law Society of Upper Canada. Since Mark made the move from criminal law to a practice focused on environmental and regulatory matters, he has acted as counsel for environmental and public interest groups at over fifty hearings, including the Walkerton Inquiry.

Mark has also appeared on behalf of clients in front of the International Water Tribunal in Amsterdam, and serves as the Canadian representative to Waterkeeper Alliance's Board of Directors. He is the supervising attorney with the Clean Water Workshop, a program dedicated to mentoring law students and providing legal tools to citizens fighting for clean water in their communities.

Mark has been investigator and/or co-counsel on nearly every Fisheries Act private prosecution in Canada. He has been credited with helping Ontario residents win some of the largest fines ever levied under Canada's Fisheries Act.

Prior to launching Lake Ontario Waterkeeper, Mark Mattson founded the volunteer-based Environmental Bureau of Investigation, dedicated to identifying and prosecuting environmental offenders and served as a board member of Great Lakes United.

Mr. Mattson is co-author of The Citizens Guide to Environmental Investigation and Private Prosecution. Mark is host of the weekly radio show and podcast Living At the Barricades, alongside Vice President Krystyn Tully.

## **Dr. Andrew Miall**

Andrew Miall has been Professor of Geology at the Geology Department, University of Toronto since 1979. He is the inaugural holder of the *Gordon Stollery Chair in Basin Analysis and Petroleum Geology* at the University of Toronto. He specializes in teaching and research in the study of sedimentary basins, with a particular interest in sequence stratigraphy, and in the sedimentology of nonmarine sandstones, and their value as reservoir rocks for oil and gas. He teaches a popular science-for-non-scientists course at the University of Toronto entitled "*Geology and Public Issues*", which deals with geological hazards, energy and water resources, and global change.

Miall was Editor of the national Canadian journal *Geoscience Canada* from 1982 to 1989, and was Co-Chief Editor of the Elsevier journal *Sedimentary Geology* from 1987 to 2005. He is currently serving as the sedimentology editor for *Earth Science Reviews*. He is the author of the book "*Principles of Sedimentary Basin Analysis*", a research-level synthesis, now in its third edition. A second book, "*The geology of fluvial deposits: sedimentary facies, basin analysis and petroleum geology*" was published in April 1996. A third book "*The geology of stratigraphic sequences*" appeared in the fall of 1996. "*Canada Rocks: The Geologic Journey*", authored by N. Eyles and A. D. Miall, appeared in the fall of 2007. This lavishly illustrated book is the first treatment of the geological history of Canada prepared for a general readership.

Miall has been the editor of four technical books, plus many research papers. He was a Distinguished Lecturer for the American Association of Petroleum Geologists in 1986-1987. In 1992 he was named the Earth Resources Foundation-Esso Australia Distinguished Lecturer for that year by the Earth Resources Foundation of the University of Sydney, and toured Australia. He has also been a guest lecturer of the Academy of Science, China (1985), the Geological Society of South Africa (1979), and the Academy of Sciences, Poland (1978), a Visiting Fellow of the Japan Society for the Promotion of Science (1990), a Visiting Professor at the University of Alberta, Edmonton, Canada (1977), a sabbatical-leave visitor at University of Oxford, U. K. (1991-1992), and the Boyd Lecturer in Petroleum Exploration at the University of Texas, Austin (1995). He has lectured widely throughout Canada and the United States, and has also lectured, presented technology-transfer courses to petroleum-industry groups and undertaken consulting work in Venezuela, Thailand, Malaysia, Japan, and New Zealand. From 2000-2004 he served as Canada's representative to the NATO Science and the Environment "Committee on the Challenges of Modern Society." Miall chaired the Program Committees which organized the Royal Society of Canada Annual Symposia on energy in 2003 and on water in 2006.

Andrew Miall was awarded the Past President's Medal of the Geological Association of Canada in 1983 and became a Distinguished Fellow of that society in 1995. In 1992 he was awarded the D.Sc. degree, a Higher Doctorate, from the University of London. He was elected a Fellow of the Academy of Sciences of the Royal Society of Canada in 1995, and was awarded an Honourary Doctorate from the University of Pretoria, South Africa, in March 2001. In 2004 he received the American Association of Petroleum Geologists Grover E. Murray Distinguished Educator Award. He served as Vice President of the Academy of Science of RSC from 2005 to 2007 and President of the Academy from 2007-2009.

## **Emily Rochon**

Emily Rochon is a Climate and Energy campaigner at Greenpeace International. She serves as the head of the international coal campaign (CCS) and is the lead author of the Greenpeace report entitled, "False Hope: Why carbon capture and storage won't save the climate". Before joining Greenpeace, Emily worked in the U.S. at both the state and national level to advocate for policies and legislation that promote sustainable energy solutions. She holds dual Bachelors degrees in Biology and Environmental Studies as well as a Masters of Science in Environmental Toxicology from Cornell University.

## **Owen Saunders**

Owen Saunders is Executive Director of the Canadian Institute of Resources Law and Adjunct Professor in the Faculty of Law at the University of Calgary, where he teaches public international law. He has a B.A. (1st Class Hon.) in economics from St. Francis Xavier University and holds law an LL.B from Dalhousie University and an LL.M. from the University of London (London School of Economics and Political Science). He is a member of the Canadian Council on International Law, the International Bar Association, the American Bar Association and the American Society of International Law. His research interests have included water law, international law, environmental law, natural resources law, and constitutional law. He has written numerous articles on the legal aspects of natural resources management, including transboundary resource management generally and water management specifically. He has acted as an advisor to Canadian and foreign governments and international organizations on resource management and environmental issues. More recently, he has served on the binational study team advising the International Joint Commission on its 1999-2000 Water Uses Reference, in which capacity he had the lead role in preparing the legal background paper for the Commission. In 2002 he was a member of the four-person task force created by the Commission to prepare a three-year update on the Water Uses Reference.

## **Dr. Barbara Sherwood-Lollar**

Dr. Barbara Sherwood Lollar (BA - Harvard University; PhD University of Waterloo) completed an NSERC Postdoctoral Fellowship at Cambridge University, UK before joining the University of Toronto in 1992. She is a Professor in Geology, Adjunct Professor in the Department of Chemistry, and Director of the Stable Isotope Laboratory. Major research themes in stable isotope geochemistry include: geochemical and biogeochemical processes controlling the source, transport and transformation of organic contaminants and hydrocarbon gases in near surface groundwaters; gas production and migration in sedimentary basins and deep groundwaters in the Canadian Shield and the Witwatersrand Basin, South Africa; geochemical controls on the deep biosphere (deep subsurface microbiology) and implications for astrobiology. In 2000 she was profiled as one of **TIME** Magazine's "Leaders for the 21 st Century" based on her research on innovative techniques for tracking organic contaminants in groundwater. She has served as Associate Editor for the scientific journal *Ground Water* , and as Editor of **Volume 9: Environmental Geochemistry** of the 10 volume series *Treatise in Geochemistry* Editors-in-Chief - Dr. H.D. Holland (Harvard University) and Dr. K. Turekian (Yale University) by Elsevier Scientific Publishing (2003) [www.TreatiseOnGeochemistry.com](http://www.TreatiseOnGeochemistry.com).

Sherwood Lollar has served on, among others, the Natural Sciences and Engineering Council of Canada (NSERC) Council 2003-2006; the Board of Directors - Centre for Environmental Science and Technology - University of Notre Dame 2003-2005; the International Geochemical Society C.C. Patterson Medal Selection Committee 2002-2005; the Selection Committee for Geological Society of America Meinzer Award 1999-2001; and the Nominations Committee for the Organic Geochemistry Division (1997-2000; 2004-2006). Research programs in the Stable Isotope Laboratory incorporate broad, multi-disciplinary approaches to scientific questions while addressing societally important problems. Funding for our research programs is also interdisciplinary and broad-based, balancing fundamental research funded through NSERC, CIDA, the U.S. National Science Foundation, the U.S. Department of Energy, with applied research conducted through a number of close collaborations with industrial partners.

## **Kevin Stringer**

Kevin Stringer is the Director General of Petroleum Resources with Natural Resources Canada.

Mr. Stringer joined the Canadian Government in 2001, and has held a number of senior positions. With the Department of Fisheries and Oceans, Mr. Stringer was the Director, Aboriginal Programs from 2001 to 2004, Director General of Aboriginal Affairs from 2004 to 2005, and Director General of Fisheries Resource Management from 2005 to 2008.

In 2008, Mr. Stringer joined Natural Resources Canada where he is the Director General of Petroleum Resources.

Before joining the Federal Government, Mr. Stringer held a number of positions in the Province of Alberta, mostly with Aboriginal groups.

Mr. Stringer has Masters of Public Administration and a Masters in Political Studies, both from Queen's University and an Honours Bachelors of Arts from the University of Toronto.

## **Graham Thomson**

Graham Thomson is a political columnist for The Edmonton Journal. A graduate of the University of Waterloo's English co-op program, Thomson has worked in radio, television and print as a reporter, producer and political writer. Since starting work with The Journal in 1995, he has worked on assignments in various parts of the world including Russia and Mexico and has been on two tours with Canadian soldiers in Afghanistan. Thomson has won a National Newspaper Award and national B'nai Brith award for human rights reporting.

In 2008, he was awarded a Canadian Journalism Fellowship at the University of Toronto's Massey College where he spent the 2008-09 school year studying, among other things, environmental law and climate change.

## **Dan Zilnik**

Dan Zilnik is the Manager for Climate Change for StatoilHydro in Canada where he works to develop and implement climate change solutions for StatoilHydro's oil sands assets. He has worked on projects in North America, Europe, and the Middle East. Dan has a strong technical basis related to CCS demonstrated by his ongoing participation in the Integrated CO<sub>2</sub> Network (ICO<sub>2</sub>N) technical committee and review of the Pembina Institute authored paper on "the Environmental and Economic Case for CCS" presented in their 2008 CCS forum. Dan has won several prizes related to his work including the Total Canada President's Award for HSE and the Ormsby Prize from the London School of Economics.