

Natural Resources

October 10, 2014

Making Responsible Policy Decisions in Natural Resources



Minister Announces Independent Panel for Review of Hydraulic Fracturing

The Honourable Derrick Dalley, Minister of Natural Resources, has appointed an independent panel of five individuals to conduct a review of the socio-economic and environmental implications of hydraulic fracturing in western Newfoundland.

“Our government has listened to concerned citizens and industry stakeholders, and has selected an independent panel representing the fields of environment, engineering and geology, economics, and public health. Today, I am announcing that the panel will be comprised of Dr. Ray Gosine, who will serve as chair, Dr. Graham Gagnon, Dr. Maurice Dusseault, Dr. Wade Locke, and Dr. Kevin Keough. I have every confidence in the capabilities of these individuals who have agreed to undertake the review of hydraulic fracturing in western Newfoundland, which will include public consultations. The health and safety of our people and protection of the environment are our main considerations, and will continue to guide our decisions, as we pursue opportunities to develop our natural resources.”

- The Honourable Derrick Dalley, Minister of Natural Resources

Dr. Gosine is vice-president (research), pro tempore, at Memorial University. Dr. Gagnon is a professor in the Department of Civil and Resource Engineering at Dalhousie University. Dr. Dusseault is a professor of geological engineering in the Department of Earth and Environmental Sciences at University of Waterloo. Dr. Wade Locke is a professor of economics, Memorial University. Dr. Keough has extensive academic experience including the past role of vice-president (research and international relations) at Memorial University. Biographies for the panel members are provided in the backgrounder below.

The panel is being provided with a terms of reference, as well as research completed during the Provincial Government’s internal review. These documents are available at <http://www.nr.gov.nl.ca/nr/energy/index.html#3>.

At the end of the review, the panel will prepare a report which will be made available to the public. The final report is due within one year.

QUICK FACTS

- The Honourable Derrick Dalley, Minister of Natural Resources, has appointed an independent panel of five individuals to conduct a review of the socio-economic and environmental implications of hydraulic fracturing in western Newfoundland.
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Media contact:

Diana Quinton
Director of Communications
Department of Natural Resources
709-729-5282, 631-8155
dianaquinton@gov.nl.ca

BACKGROUNDER Biographies of Panel Members

Dr. Ray Gosine

Following completion of an undergraduate degree in electrical engineering at Memorial University, Dr. Ray Gosine attended Cambridge University in England where he completed a doctoral degree in robotics. Subsequently, he held teaching and research positions at Cambridge University, the University of British Columbia, and Memorial University. These appointments included an NSERC (Natural Sciences and Engineering Research Council of Canada) chair in industrial automation at the University of British Columbia and the J.I. Clark chair of intelligent systems for operations in harsh environments at Memorial University.

Dr. Gosine is a professor and J.I. Clark chair in the Faculty of Engineering and Applied Science at Memorial, and through his

administrative responsibilities at Memorial he is working closely with other academic leaders on the implementation of the Research Strategy Framework and other strategic research priorities for Memorial. His research is in the areas of telerobotics, machine vision and pattern recognition for applications in the resource industries (i.e. mining, oil and gas, aquaculture and fisheries, and forestry).

From August 2002 until September 2003, Dr. Gosine was the interim associate dean (Graduate Studies and Research) in the Faculty of Engineering and Applied Science at Memorial and became dean of engineering in October 2003, serving in this capacity until March 2008. In March 2008, he was appointed acting associate vice-president (research) and he was appointed associate vice-president (research) in May 2011. He served as vice-president (research) pro tempore, from October 2008 to August 2010 and he has also been serving in this capacity since September 2014.

Dr. Gosine serves on the Board of Directors for the provincial Health Research Ethics Authority and was formerly the Chair of the Board of Directors of the Professional Engineers and Geoscientists of Newfoundland and Labrador. He is a Fellow of the Canadian Academy of Engineering and a Fellow of Engineers Canada in recognition of his contributions to the field of engineering and to the engineering profession.

Dr. Graham Gagnon

Dr. Graham Gagnon is a professor in the Department of Civil and Resource Engineering at Dalhousie University. Dr. Gagnon is also the NSERC (Natural Sciences and Engineering Research Council of Canada) industrial research chair in water quality and treatment and the director of the Centre for Water Resources Studies.

Dr. Gagnon's professional and research interests focus on the management of water quality and treatment for natural and engineered systems. He has taught courses on water quality, water treatment plant design and solid waste management. Throughout his career, he has worked on applied water research projects for communities in Atlantic Canada and abroad. In recognition of his technical and leadership skills, Dr. Gagnon has provided technical advice to several government agencies on matters concerning water quality and water management. He has contributed to an assessment of drinking water policy in Alberta, a review of water concerns associated with onshore oil and gas in Nova Scotia and a long-term project regarding wastewater management in Nunavut. In 2014, Dr. Gagnon was awarded the George Fuller award from the American Water Works Association in recognition of his engineering leadership and contributions to water quality.

Dr. Maurice Dusseault

Dr. Dusseault carries out research in coupled problems in geomechanics including thermal and non-thermal oil production, wellbore integrity, deep disposal technologies for solid and liquid wastes, hydraulic fracture mechanics, CO₂ sequestration in saline aquifers, shale gas and shale oil mechanics, and compressed air energy storage in salt caverns. He holds 10 patents and has co-authored two textbooks with John Franklin (former ISRM President, deceased 2012) as well as 520 full text conference and journal articles. Dr. Dusseault works with governments and industry as an advisor and professional instructor in petroleum geomechanics. He was a Society of Petroleum Engineers Distinguished Lecturer in 2002-2003, visiting 19 countries and 28 separate SPE sections, speaking on New Oil Production Technologies. He teaches a number of professional short courses in subjects such as production approaches, petroleum geomechanics, waste disposal, and sand control, presented in over 20 different countries in the last 12 years.

Current projects are focused in these areas:

- Hydraulic fracturing of naturally fractured rock masses in differential stress states
- Work, energy and stress-strain responses of deep stressed rock masses (reservoirs, mines)
- Rock-cement-casing interaction and gas seepage along oil and gas wells
- THM coupling in naturally fractured rock masses
- Monitoring deformation in rock masses using surface and subsurface methods
- Storage of energy from stochastic renewable sources as compressed air in dissolved salt caverns

Dr. Wade Locke

Dr. Leonard Wade Locke is a full professor of economics at Memorial University of Newfoundland and is currently the academic head for the Department of Economics, Memorial University. He specializes in the Newfoundland and Labrador economy, resource economics, public finance, public policy, innovation indicators, productivity, economic impact assessment and cost-benefit analysis. He has published extensively in a variety of public policy fields. In addition, Dr. Locke has provided his professional services to all three levels of government, to foreign governments and to national, local, regional and international businesses. He has served as an expert commentator and analyst to the local, national and international media. His research has had a major impact on public policy, particularly on the public finance of the Province of Newfoundland and Labrador and the development of its oil and gas resources.

Dr. Locke is a past president of the Atlantic Canada Economics Association. In 2007, he was appointed as an honorary lifetime member of the Atlantic Canada Economics Association. In 2008 Dr. Locke was awarded Memorial University of Newfoundland's President's Award for Exemplary Community Service. He is appointed to the Board of Governors, Law Foundation of Newfoundland and Labrador (2011-2015). For the 2013 budget cycle, he served as senior policy advisor to the Minister of Finance, Government of Newfoundland and Labrador. In 2012-13, Dr. Locke was appointed to the Council of Canadian Academies' Expert Panel on Canadian Industry's Competitiveness in Terms of Energy Use.

Dr. Locke's formal training consists of a doctoral degree in economics, a graduate degree in economics from McMaster University and undergraduate degrees in economics and science (biology) from Memorial University. He also has a certificate in applied petroleum economics from Van Meurs Associates through the Centre for Management Development (Memorial). Dr. Locke was awarded the Queen Elizabeth Diamond Jubilee medal in 2012. He was also a gold medal winner in economics at Memorial and won Social Sciences and Humanities Research Council (SSHRC) doctoral fellowship and several university scholarships at McMaster University. He returned to the Newfoundland and Labrador in 1984 and accepted an appointment in economics at Memorial.

Dr. Kevin Keough

Dr. Kevin Keough received his doctoral degree from the University of Toronto in 1971. He is past president and chief executive officer of the Alberta Heritage Foundation for Medical Research and currently operates Kevin Keough Consulting Inc. Prior to his role with Alberta Heritage Foundation for Medical Research he was chief scientist at Health Canada. Past roles have included vice-president (research and international relations), and head of biochemistry at Memorial University of Newfoundland where he was a professor of

biochemistry in its Biochemistry and Pediatrics departments. Dr. Keough maintained an active research laboratory for over 32 years. He is currently an adjunct professor of Biochemistry at Memorial University. His research interests include molecular organization and function in lung surfactant and membranes, and liposomes as carriers for vaccines and drugs.

Dr. Keough is a Fellow of the Canadian Academy of Health Science, and was member of its inaugural council, and he was a member of its predecessor organization, the Canadian Institute of Academic Medicine. Dr. Keough was a member and deputy chair of the Council of Science and Technology Advisors, an external national expert advisory council that provided guidance on federal science and technology issues to the cabinet of Government of Canada. As a former executive member of the Medical Research Council, he was instrumental in the creation of Canadian Institutes of Health Research, and was a member of its first governing council. He was a member of an independent panel of experts advising the President of the Treasury Board of the Government of Canada on the transfer of federal laboratories to the academic and private sector. Dr. Keough was a founding member of the board of directors of Genome Canada, and has also been a board member of Genome Atlantic and Genome Alberta. He was the Canadian co-chair of the Canadian-European Union of Science and Technology Agreement. He was also a member of the boards of directors of the Genesis Group Inc., the Canadian Centre for Fisheries Innovation, the Canadian Centre for Marine Communications, the Centre for Cold Ocean Resources Engineering, Operation ONLINE, and the Newfoundland and Labrador Science Centre. He was a member of the University Advisory Group of Industry Canada.

Dr. Keough is a past-president of the Canadian Federation of Biological Societies, the Canadian Society of Biochemistry and Molecular and Cellular Biology and the Canadian Association of University Research Administrators. He is also the founder of NovaLipids Incorporated.

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