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Regulation of Oil & Gas Activities in the Canada's Northern Frontier

The Arctic of Canada- Canada's Evolving Offshore Oil and Gas Industries
Offshore Technology Conference 2007
Thursday 03 May 2007 – Houston, Texas, USA

Dr. Bharat Dixit
Chief Conservation Officer

Canada



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Objective

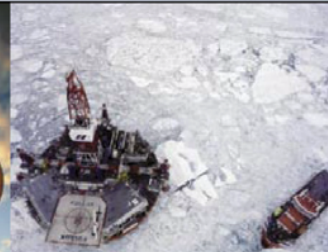
- To share some regulatory insights; and
- Invitation to partner in some opportunities.





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Overview

- National Energy Board
- Exploration and Production Regulation
- Some Current Issues & Opportunities

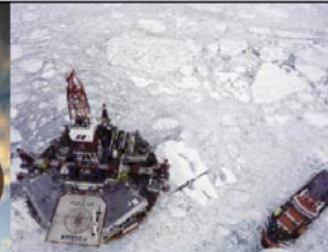


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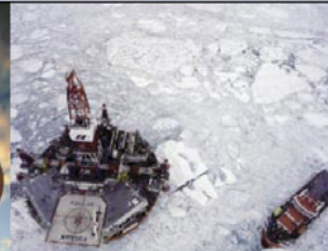
National Energy Board

- Independent tribunal established in 1959
- Reports to Parliament through the Minister of Natural Resources
- Staff complement of ~300, all in Calgary
- Budget of ~33 million dollars
- 90 % of cost recovered



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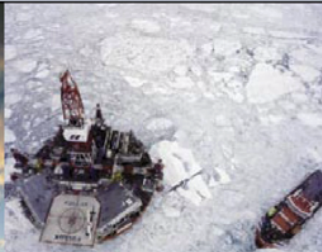
Regulatory Context:

- *National Energy Board Act*
- *Canada Petroleum Resources Act*
- *Canada Oil and Gas Operations Act*
- *Canada Labour Code* (Part 2 and **OGOSH**)

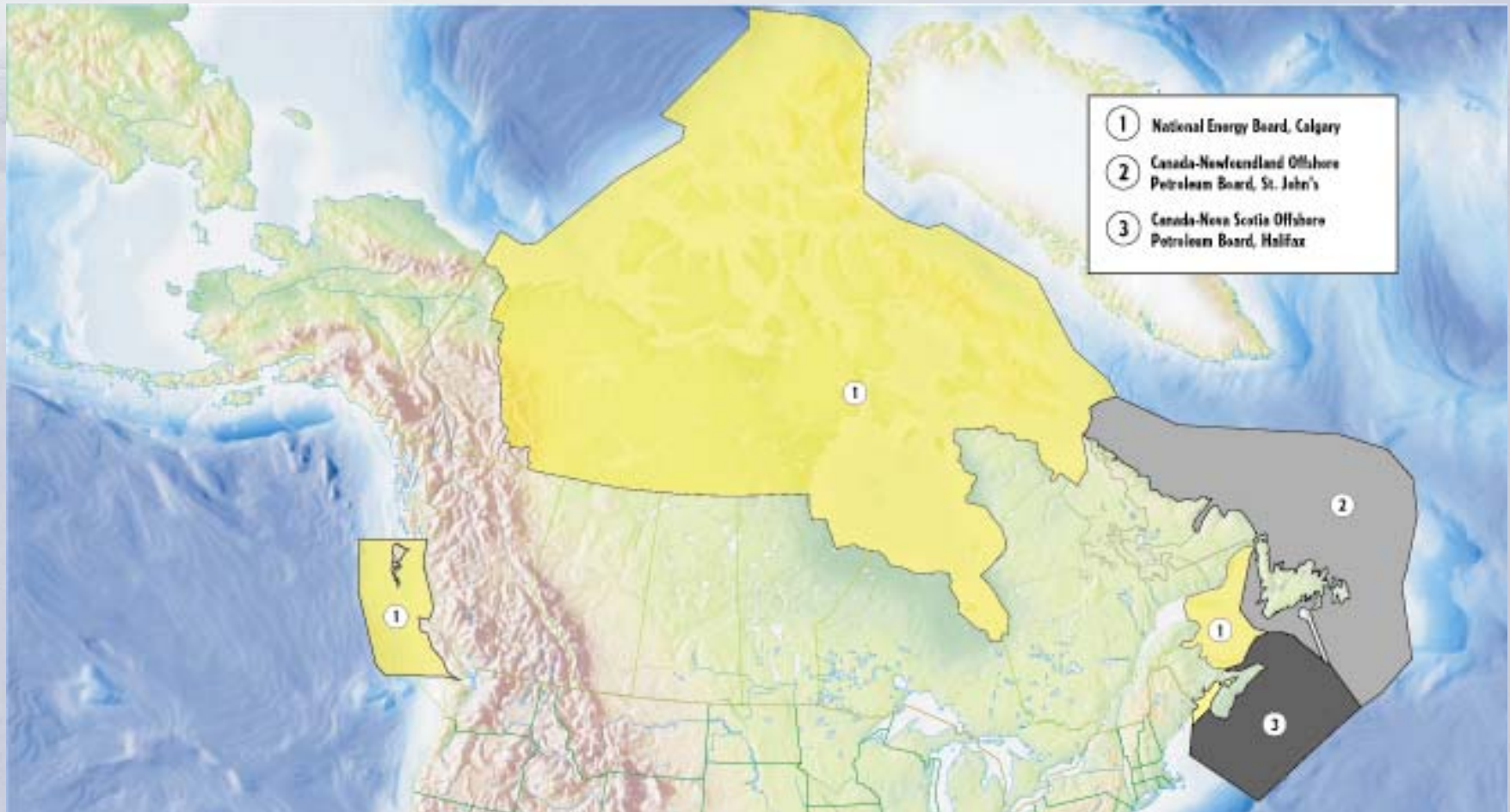


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Frontier Lands





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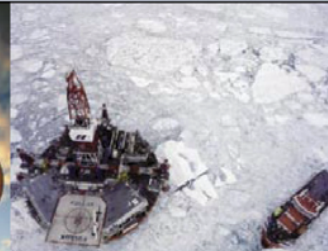
Canada Petroleum Resources Act

- NEB
 - Commercial and Significant Discovery Declarations
 - Advice on basin assessments
 - Administration of Environment Studies Research Funds
- DIAND
 - Issues
 - Exploration Licences
 - Significant Discovery Licences
 - Production Licences
 - Manages royalties



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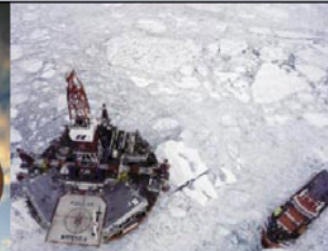
Canada Oil and Gas Operations Act

- NEB regulates
 - geological and geophysical data gathering
 - oil and gas well drilling
 - production facilities and operations
 - pipelines in Frontier areas not otherwise under the NEB Act



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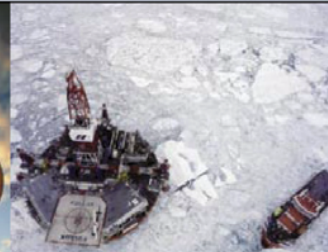
Northern Activities Summary

	2003-04	2004-05	2005-06	2006-07	2007-08 estimates
Wells	40	39	23	25	20-25
Geological	14	12	19	16	15-20
Declarations	4 SDD	8 SDD 3 CDD	2 SDD	3 SDD	2-3
Others	2	8	4	5	2-5



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Some Opportunities

- Regulatory Renewal
- Same-season relief well capabilities
- Drilling Fluid Disposal
- Safety



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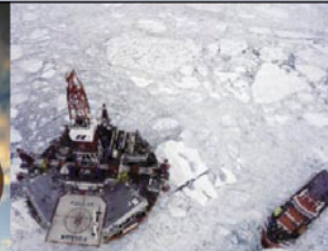
Regulatory Renewal

- Current regulations – prescriptive
- Towards goal-oriented regulations
 - Regulators identify intent
 - Operators demonstrated how
 - Compliance verification
- Drilling and Production Regulations
 - Guidance Notes



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Same Season Relief Well

- Requirement from Cabinet Order in 1976
- Risk Threshold Depth
- Viable relief-well drilling system is available and suitable for the proposed well
- Pre-built ice pad - in some cases
- Alternates or equivalencies



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Same Season Relief Well



Ice pad



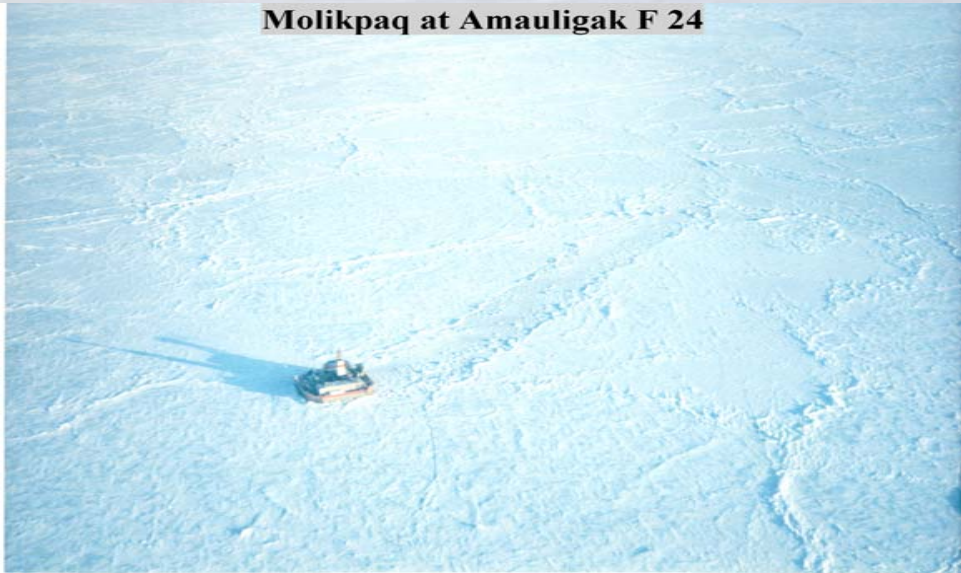
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Same Season Relief Well

Molikpaq at Amauligak F 24



Molikpaq at Amauligak F24



No Ice pad

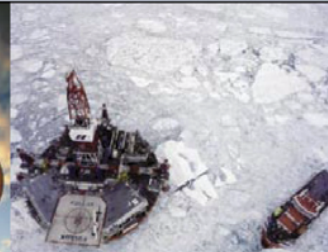


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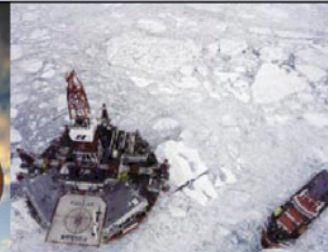
Drilling Fluids Disposal

- Types of fluids
 - Mud and drill fluids
 - Cuttings (slurry)
 - Produced fluids
 - Sanitary fluids



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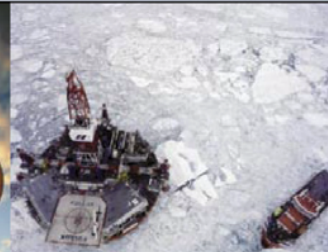
Drilling Fluids Disposal

- Exploratory Wells - small quantities
 - Sumps
 - Transport out
 - Injection (drilling related fluids) ($<500 \text{ m}^3$)
- Production Wells - large volumes
 - Injection (drilling fluids, produced water, cuttings-slurry)
 - Dedicated Wells
 - Annular injection



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Drilling Fluids Disposal

- Surface disposal of drilling and camp fluids
- Sump size range 30 - 50 m by 3 m
- Administered by water board
- Inspected by DIAND on behalf of boards
- Desire for alternatives to Sumps



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Drilling Fluids Disposal

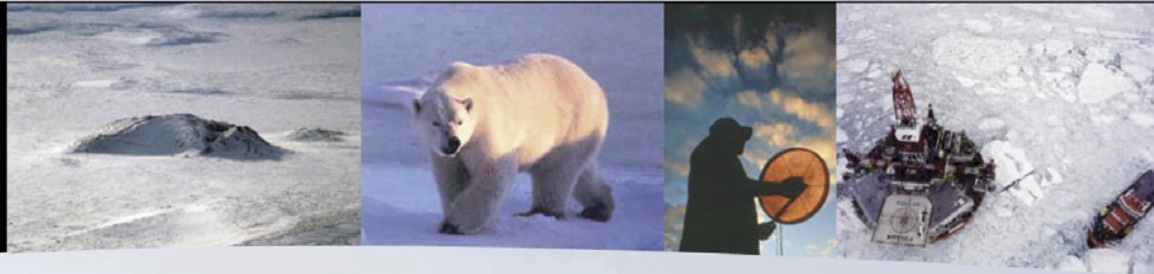


Sumps

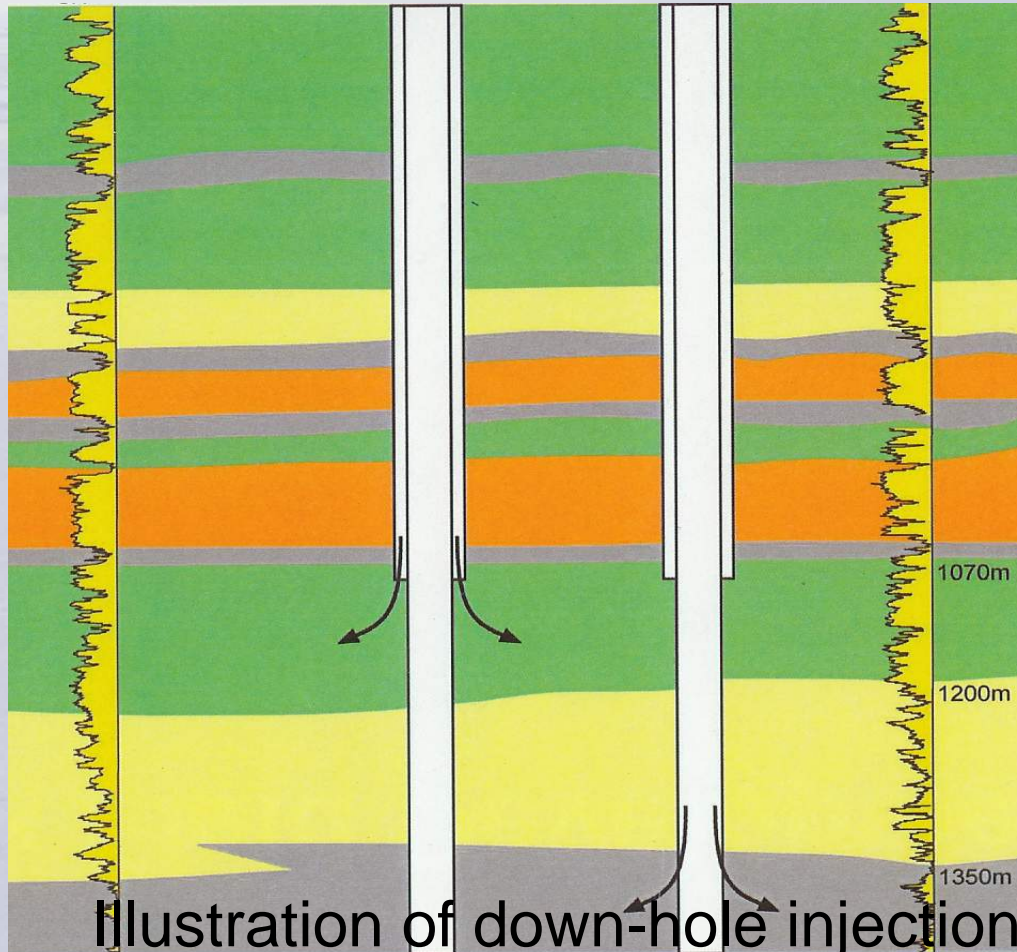


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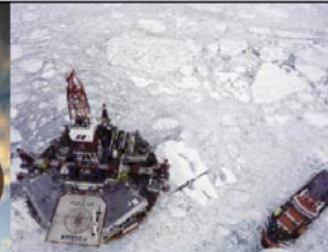
Drilling Fluids Disposal





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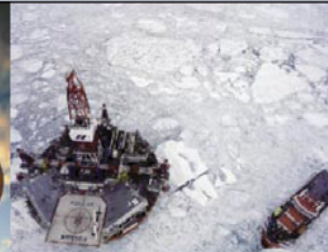
Safety

- Performance Indicators
 - Lagging Indicators
- Culture of safety
 - Operators
 - Contractors



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Key Messages

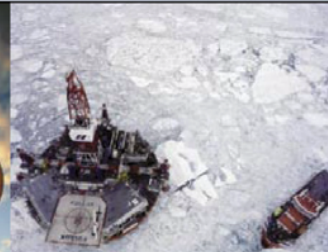
Opportunity to partner in:

- Regulatory Renewal
- Same-season relief well capabilities
- Drilling Fluid Disposal
- Safety culture



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Contact Information

Bharat Dixit , Ph.D.
Chief Conservation Officer
Team Leader, Exploration and Production
National Energy Board
444 Seventh Avenue SW
Calgary, Alberta, T2P 0X8

Phone: 403 299 2792

Fax: 403 292 5876

Cell: 403 617 3887

E-mail: bdixit@neb-one.gc.ca

url: <http://www.neb-one.gc.ca>





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Questions & Discussion

