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STRENGTHENING EXTRACTIVE SECTOR MANAGEMENT IN MONGOLIA

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Geoscience in Canada
Division of Roles and Responsibilities
Policies and Strategies
Programs

Dallas Davis

9 November 2017

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WHAT IS GEOSCIENCE?

Oxford dictionary: "Earth sciences, especially geology."

Merriam-Webster dictionary:

"the sciences (such as geology, geophysics, and geochemistry) dealing with the earth"

or "any of the geosciences - compare earth science
First Known Use: 1942"

EARTH SCIENCE: "any of the sciences (such as geology, meteorology, or oceanography) that deal with the earth or with one or more of its parts - compare geoscience
First Known Use: 1873"

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The Minerals and Metals Policy of the Government of Canada states that

"Provincial governments are responsible for mining – the exploration for, and the development and extraction of, mineral resources, and the construction, management, reclamation and close-out of mine sites – within their jurisdiction. Comparable, direct federal involvement in the regulation of mining operations is limited and specific in nature."

http://www.nrcan.gc.ca/mining-materials/policy/8690

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The Minerals and Metals Policy of the Government of Canada

also states that

"Partnerships with the provinces in their role as owners and managers of mineral resources are an essential and fundamental feature of how the federal government does, and will continue to, conduct business in the minerals and metals area."

http://www.nrcan.gc.ca/mining-materials/policy/8690

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The Minerals and Metals Policy of the Government of Canada

to the end of "Providing a Comprehensive Geoscience Knowledge Base" will

- "give stakeholders a greater role in determining the Government's geoscience priorities through the advisory structure established under the federal-provincial geoscience accords;
- "use geoscience mapping programs to achieve a balance between areas of high development potential, where enhanced knowledge will increase the probability of discovery of new reserves, and frontier areas…..
- "promote the development of innovative exploration methods that will help industry discover the deeply buried orebodies needed to sustain production in existing mining districts. The multi-disciplinary approach exemplified by the GSC's Exploration Science and Technology (EXTECH) Program will be a key element of this initiative;" http://www.nrcan.gc.ca/mining-materials/policy/8690

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The Minerals and Metals Policy of the Government of Canada

to the end of "Providing a Comprehensive Geoscience Knowledge Base" will

- "improve the understanding of the relative contributions from natural and anthropogenic sources to metal loadings in the environment and the significance of the long-range atmospheric transport of metals in the atmosphere, and establish the natural background concentrations of metals as a basis for environmental impact assessments; and
- "further enhance the timely dissemination of geoscientific maps and data through the application of state-of-the-art information technologies." http://www.nrcan.gc.ca/mining-materials/policy/869

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Federal, Provincial and Territorial Mines Ministers meet annually

& each 3rd year "Mining Sector Performance Report" with 3 objectives is published

- "To provide Canadians with a common understanding of the sector's performance based on credible and reliable data;
- "To identify areas where improvements have taken place and where progress is still needed; and
- "To help inform the development of priorities for the collaborative work being carried out by the federal-provincial/territorial Energy and Mines Ministers' Conference and the Intergovernmental Working Group on the Mineral Industry."

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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Federal, Provincial and Territorial Mines Ministers

"Mining Sector Performance Report" desired performance outcomes

Economic

Maintain and enhance the vitality of the sector, ensuring its long-term viability and competitiveness, so it can make an economic contribution to the local, regional, national, and global economies.

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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"Mining Sector Performance Report" desired performance outcomes

Social

Develop Canada's mineral resources in order to provide tangible benefits for current and future generations, including local communities in proximity to exploration and mineral activities. Conduct engagement processes to ensure local and affected communities have the opportunity to participate in the development of resources that could influence their future.

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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Federal, Provincial and Territorial Mines Ministers

"Mining Sector Performance Report" desired performance outcomes

Environmental

Practise responsible mineral exploration, development, and operations, and support public policies that are predicated on maintaining a healthy environment and, upon closure, returning mine sites and affected areas to viable, self-sustaining ecosystems.

Ensure institutional governance frameworks are in place to provide certainty and confidence that mechanisms exist for governments, industry, communities, and residents to avoid or mitigate adverse environmental effects.

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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Federal, Provincial and Territorial Mines Ministers

"Mining Sector Performance Report 2006-15, August 2016"

Public Geoscience Expenditures

- **$161.2 million in 2012/13, up 3.5% from 2004/05; down 9.7% from 2010/11.**
- **One half was Federal government expenditures**
- **Quebec and Ontario expenditures up 66.2% and 51.1%, respectively, from 2004/05 to 2012/13.**

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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Public geoscience expenditure focus is on economic and social development as evidenced by names of ministries in which geoscience and mines branches are located:

Manitoba: **"Growth, Enterprise and Trade"**

Saskatchewan: **"Economy"**

New Brunswick: **"Agriculture, Mines and Rural Affairs" (5 Sept 2017) previously "Energy and Resource Development"**

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Federal, Provincial and Territorial Mines Ministers

"Mines Ministers Conference, August 2017

Advancing environmental stewardship and economic prosperity was front and centre as discussions focused on clean growth at the Energy and Mines Ministers' Conference in Saint Andrews, Aug. 13-15. Among other initiatives, Ministers agreed to ***Continue exploring opportunities to enhance geoscience programs across jurisdictions and expand the availability of public geoscience data.*** (quote from News release 16 Aug 2017)

http://www2.gnb.ca/content/gnb/en/departments/erd/news/news_release.2017.08.1112.html

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Federal, Provincial and Territorial Mines Ministers

"Mines Ministers Conference, August 2017

The five-year renewal of the Intergovernmental Geoscience Accord was highlighted by participating ministers as an example of collaboration among different orders of government. The accord defines the roles and responsibilities of participating federal, provincial and territorial government geoscience agencies and establishes mechanisms for generating, disseminating and sharing geoscience information. (quote from Mines Ministers News release 16 Aug 2017)

http://www2.gnb.ca/content/gnb/en/departments/erd/news/news_release.2017.08.1112.html

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"Mines Ministers Conference, August 2017

The ministers also reaffirmed their commitment to openness and transparency by releasing the major projects summary report, which indicates that there are 471 major natural resource projects under construction or planned over the next 10 years, representing $684 billion in potential investment.
The ministers will meet again in the summer of 2018 in Nunavut.
More information on the Energy and Mines Ministers' Conference is available online. (quote from Mines Ministers News release 16 Aug 2017)

http://www2.gnb.ca/content/gnb/en/departments/erd/news/news_release.2017.08.1112.html
http://www.nrcan.gc.ca/publications/11102

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"Mining Sector Performance Report" - Geoscience Expenditures

Province/ Territory	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (p)
	($ millions)											
Alberta	5.1	6.5	8.3	11.7	11.7	11.3	7.3	7.1	7.9	..	..	..
British Columbia	27.8	2.6	3.9	14.9	4.0	4.3	14.9	2.8	3.9	4.0	6.2	8.6
Manitoba	5.1	5.1	5.1	5.3	5.7	6.1	5.9	5.6	5.4	5.9	4.8	4.8
New Brunswick	2.4	2.3	2.3	2.4	2.4	2.4	2.2	2.2	2.2	2.0	3.2	2.9
Newfoundland and Labrador	4.0	3.6	4.0	5.1	5.1	5.7	5.7	6.1	6.1	..	5.5	..
Northwest Territories	3.6	3.6	3.6	3.5	3.6	2.3	2.6	2.3	5.2	4.2	7.0	..
Nova Scotia	2.0	2.1	2.1	2.2	2.4	2.4	2.5	2.5	3.1	2.5	2.6	2.5
Nunavut	2.6	2.6	3.0	3.8	2.5	2.7	2.8	2.6	2.8	..	..	..
Ontario	12.8	18.9	19.0	18.5	18.7	18.9	19.3	19.3	19.3	18.4	17.8	..
Quebec	11.8	11.3	10.1	16.3	16.8	14.4	18.8	18.7	19.5	15.1	13.2	..
Saskatchewan	3.5	3.4	3.5	4.2	4.8	4.5	4.0	4.4	4.4	..	4.3	4.6
Yukon	4.5	5.4	4.5	5.7	6.0	6.9	6.4	5.2	5.2	..	5.0	..
Natural Resources Canada	70.6	70.9	77.8	84.0	88.3	92.3	86.0	80.3	76.3	70.8	82.7	88.4
Canada	155.8	138.4	147.1	177.5	172.0	174.2	178.5	159.1	161.2	..	..	..

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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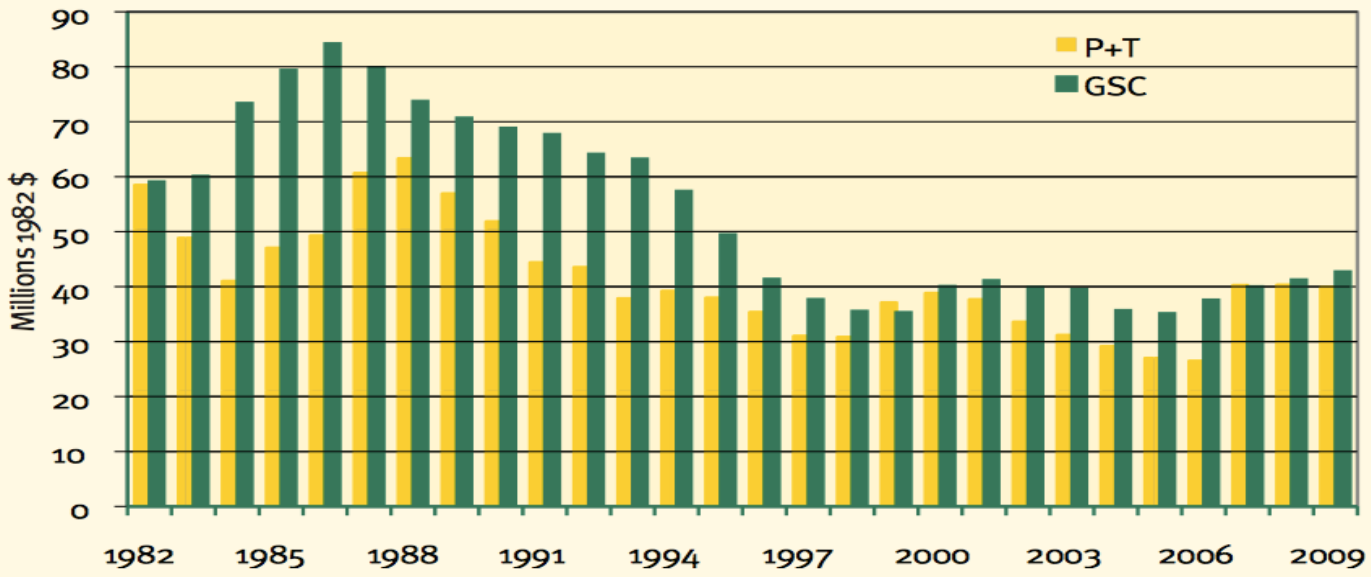
Government geoscience to support mineral exploration: public policy rationale and impact, J. M. Duke, March 2010

50 to 60 percent of total spending is directly relevant to mineral exploration: the balance is directed to areas such as energy, water resources, natural hazards and the environment.



Variation in GSC and total provincial and territorial expenditures in constant dollars.

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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EVIDENCE OF IMPACT OF TARGETED PUBLIC SECTOR GEOSCIENCE PROJECTS ON PRIVATE SECTOR EXPLORATION AND MINE DEVELOPMENT SPENDING IN CANADA

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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Exhibit 11: Federal-provincial-territorial mineral development agreements
Proportion of geoscience projects resulting immediate exploration stimulation

Jurisdiction	Geoscience Projects	Resulting inExploration	Percent	Reference
Newfoundland (1984-89)	31	16	52	Goss Gilroy (1990)
Nova Scotia (1984-89)	25	10	40	Goss Gilroy (1990)
New Brunswick (1984-89)	24	17	71	Goss Gilroy (1990)
Ontario (1985-90)	55	32	58	Goss Gilroy (1991)
Manitoba (1984-89)	33	24	73	Goss Gilroy (1990)
Saskatchewan (1984-89)	16	9	56	Goss Gilroy (1990)
British Columbia (1985-90)	20	11	55	Ference (1990b)*
NWT (1987-91)	18	13	72	Ference (1990a)*
British Columbia (1991-95)	20	13	65	Marek (1995)
NWT (1991-96)	23	9	39	Goss Gilroy (1995)*
Totals	265	154	58	

*Numbers inferred from project summaries

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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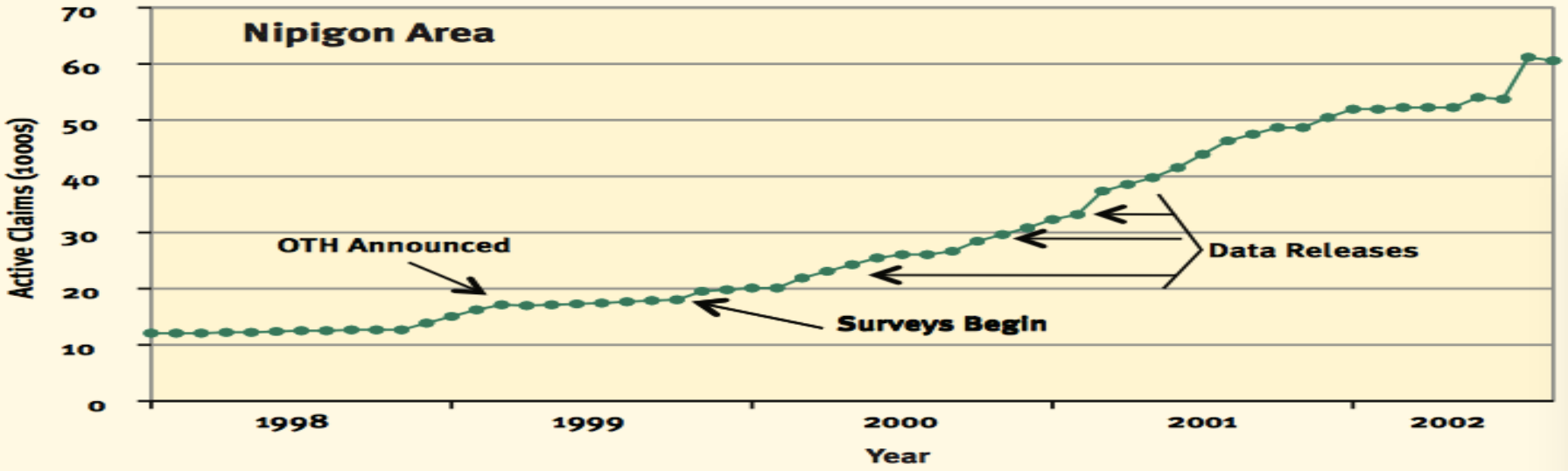
Increase in the number of active mining claims in the Lake Nipigon and Garden Lake-Obonga regions, beinning with the announcement of Operation Treasure Hunt and continuing with releases of geochemical and geophysical data (Churchill *et al.*, 2001; Fyon, *et al.*, 2002).



http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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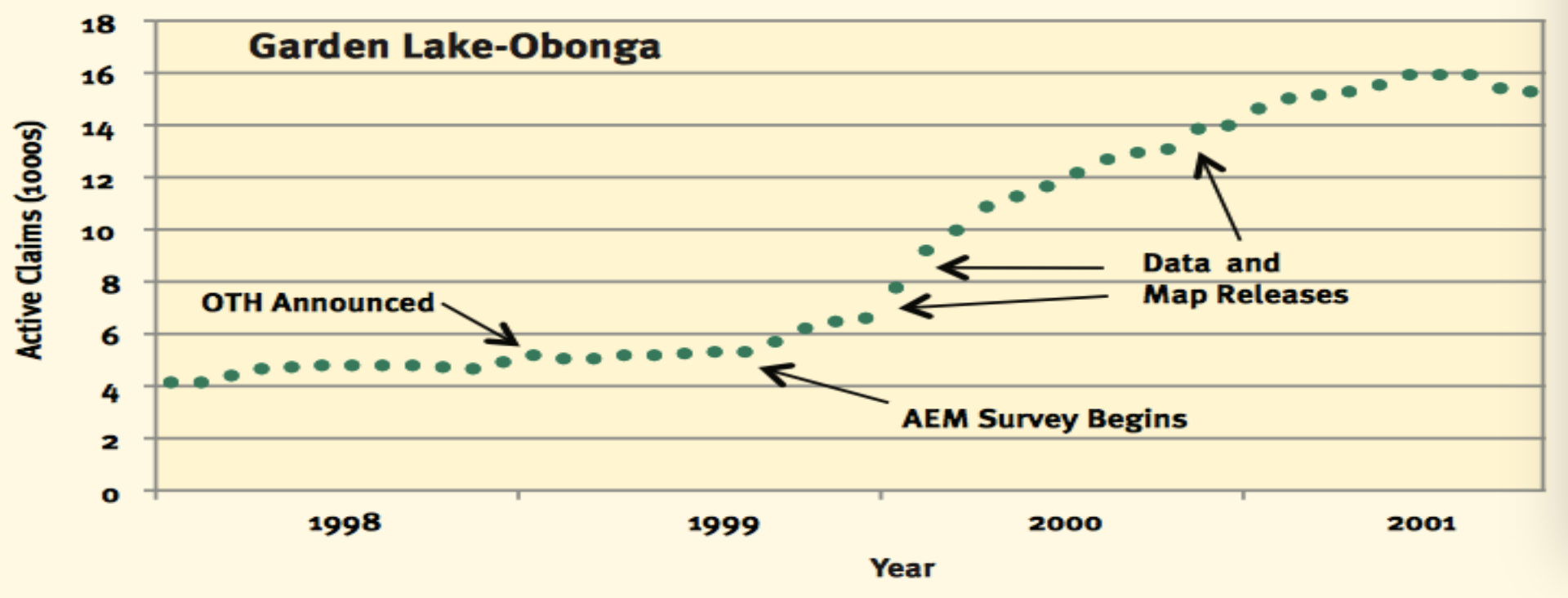

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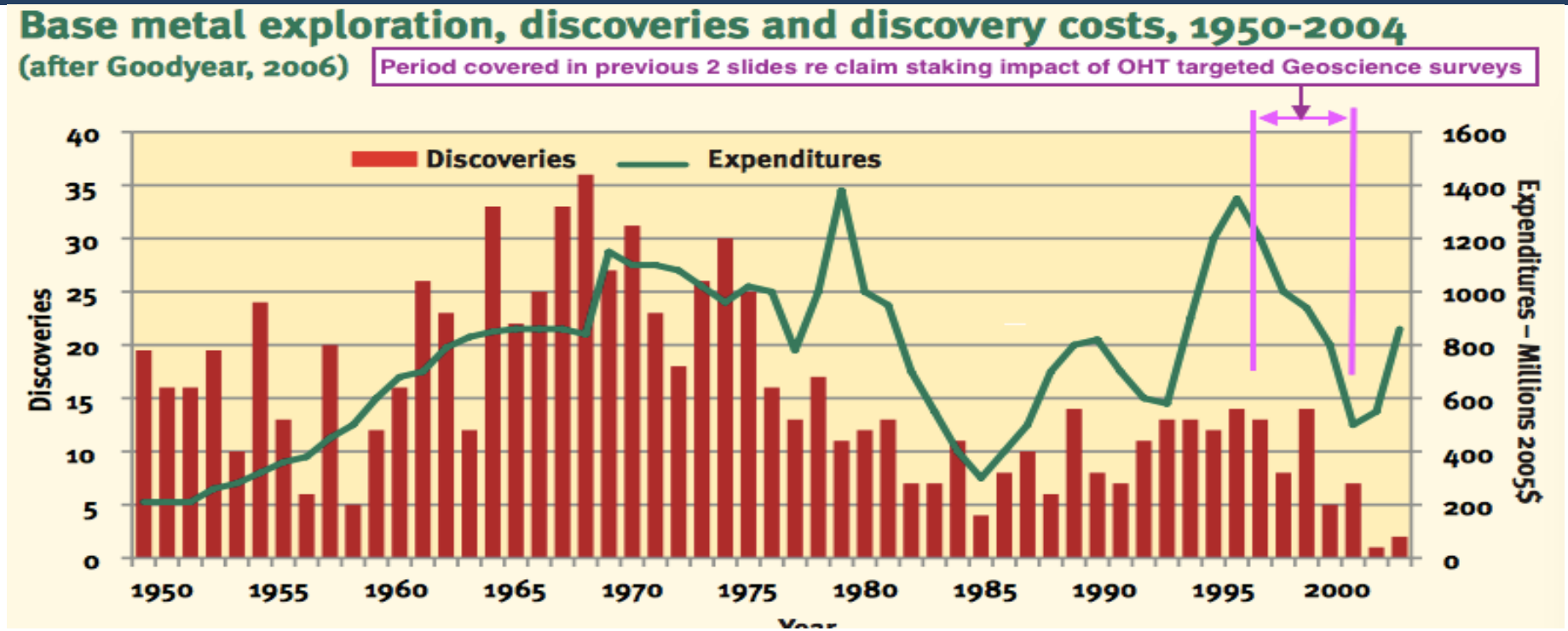

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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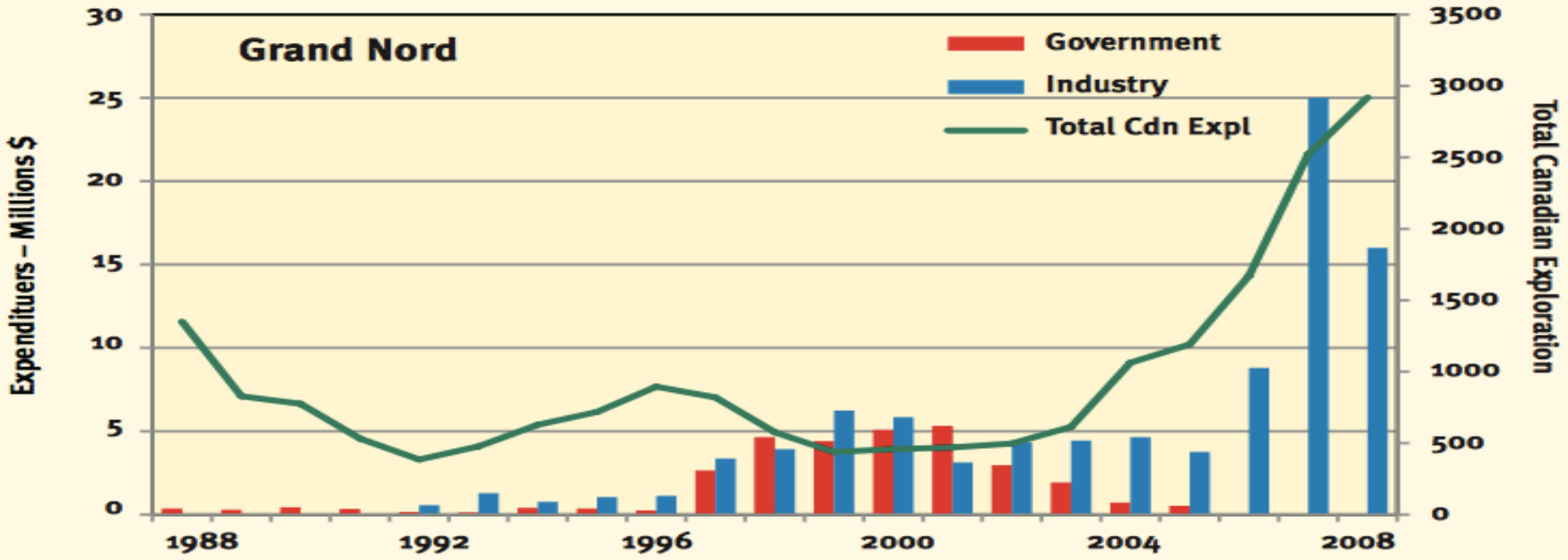
Government geoscience and private sector exploration expenditures in the Grand Nord and Baie James regions of Northern Quebec (after Maurice *et al.*, 2009).



http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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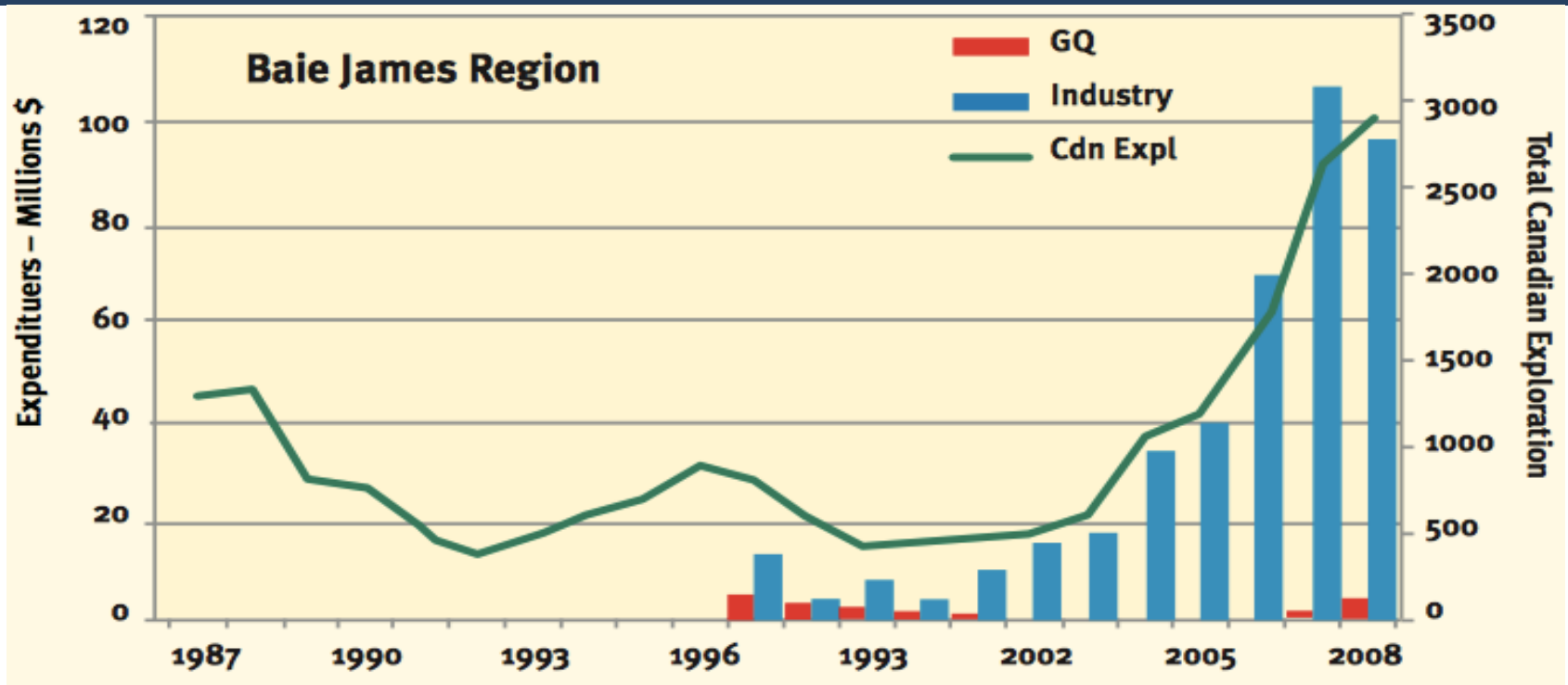

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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BAIE JAMES: 1995-2001 Géologie Québec (GQ) targeted geoscience program

- 34 maps….modern geoscience base...ready for an exploration upswing
- $22 million government geoscience investment
- $422 million industry expenditures from 1997 to 2008– a ratio of 19:1
- 2004 - Éléonore gold discovery (2017 reserves-resources 7 million oz Au, prod'n 315,000 oz)

Natural Resources Canada made business case for Targeted Geoscience Initiative (TGI) in the 2000 federal budget by concluding: ***Every $1 million of government investment to enhance the geoscience knowledge base will likely stimulate $5 millions of private sector exploration expenditures, which, in turn, will result in discovery of new resources with an average in situ value of $125 millions.*** (Éléonore 2017 in 1997$ in situ $6 billion=273 X $22million government geoscience program cost)

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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In his 2010 study, Dr. Duke, Director of the GSC's Mineral Resources Division (1988-95) and Director-General of the Minerals and Regional Geoscience Branch (1995-2006), noted that

"…direct target identification is not normally the objective of government surveys. Rather, their role is to assist the private sector to identify targets"

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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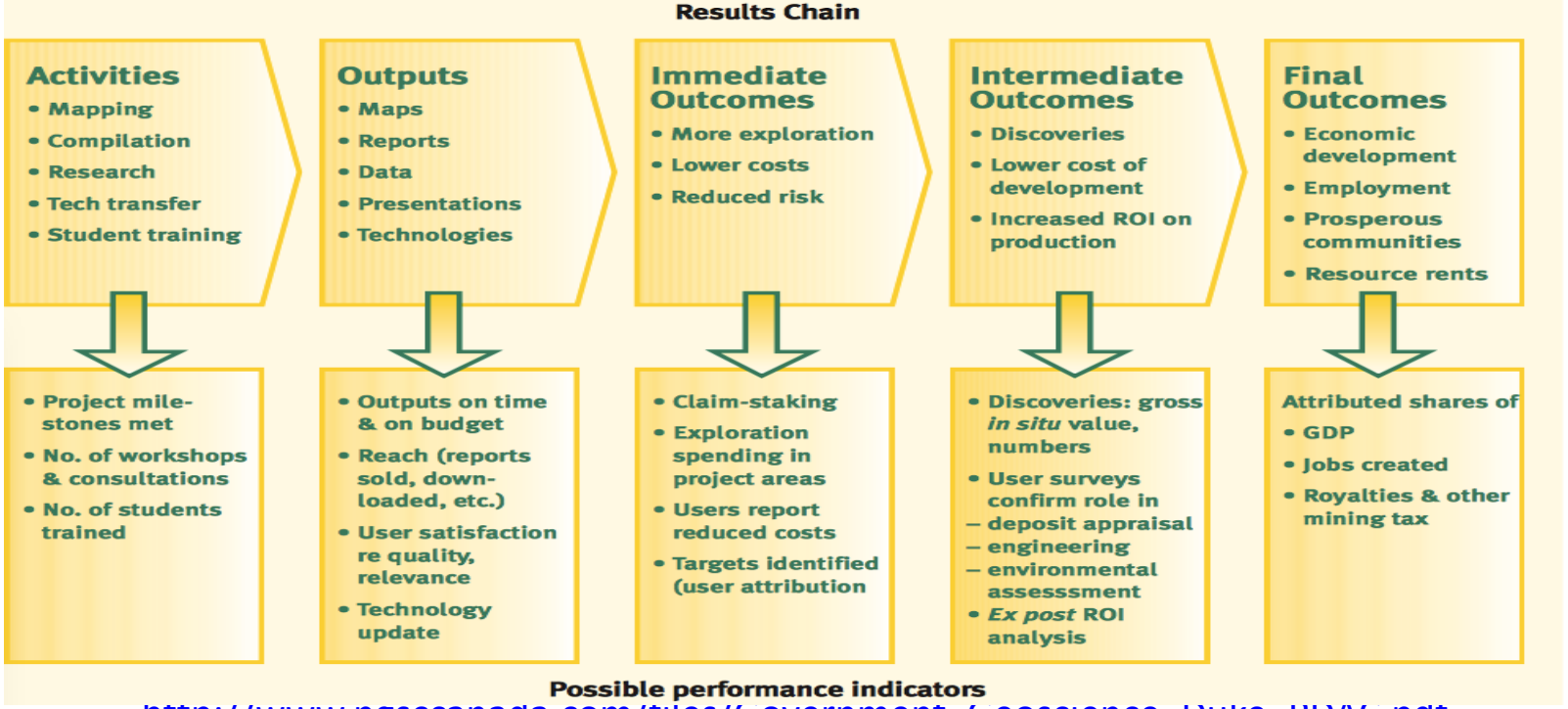
Government geoscience to support mineral exploration: public policy rationale and impact, J. M. Duke, March 2010

Exhibit 10: A logic model for a government geoscience program to stimulate mineral exploration



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Government geoscience to support mineral exploration: public policy rationale and impact, J. M. Duke, March 2010

Bullock and Clinch (2001) undertook an ex ante cost benefit analysis of RESI, a major geophysical and geochemical program in Ireland. They estimated the value of benefits in a wide range of applications including mineral development, land management, water supplies, and environmental protection. These amounted to a benefit-cost ratio of 5:1 on a net present value basis. Mineral development accounted for the largest share of benefits, albeit based on a much higher attribution factor than other studies.

http://www.ngsccanada.com/files/Government_Geoscience_Duke_PDAC.pdf

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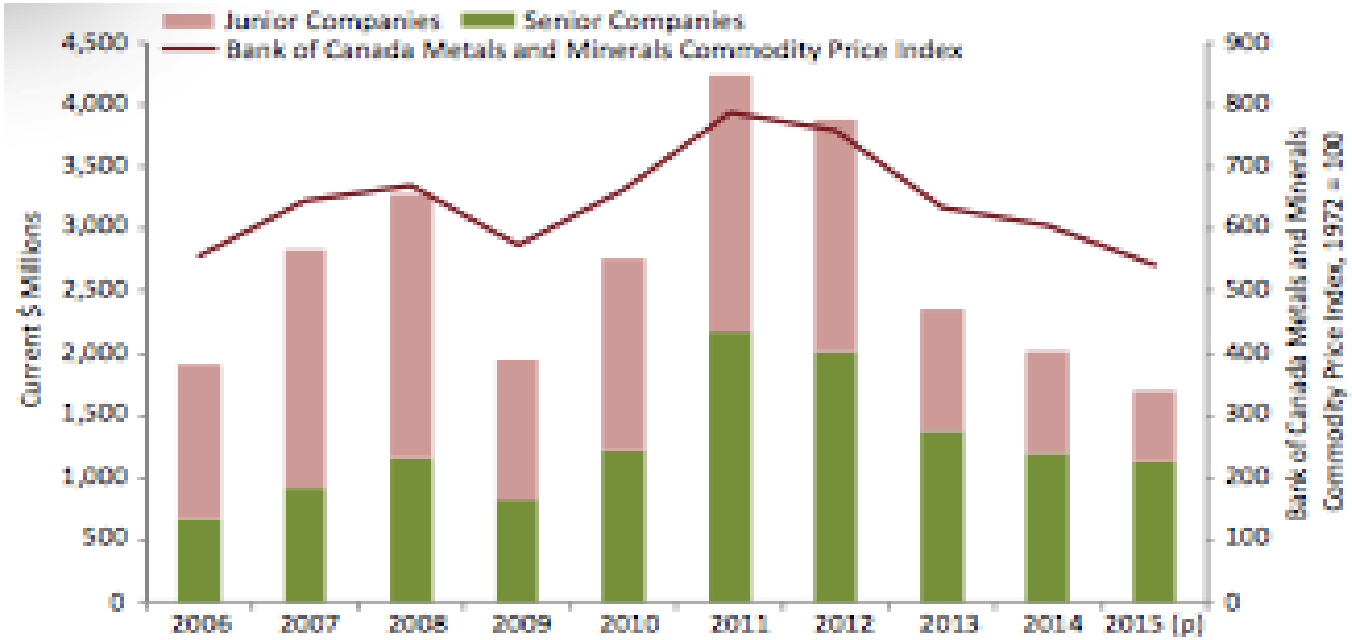
"Mining Sector Performance Report" – Industry Exploration & Deposit Appraisal Expenditures



Mineral exploration and deposit appraisal expenditures in Canada are predicted to increase 18% to $1.8 billion in 2017 based on government surveys of industry budgets.

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf
http://www.nrcan.gc.ca/mining-materials/publications/17762

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Federal, Provincial and Territorial Mines Ministers

"Mining Sector Performance Report" – Industry Success in Adding Reserves

In the 10-year period from 2004 to 2013, gold reserves (in Canada) *nearly tripled, copper reserves doubled, and molybdenum reserves increased 81.2%.*

https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/MSP_report_access_en.pdf

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National Geological Surveys Committee

The National Geological Surveys Committee (NGSC) provides a forum for senior executives from Canada's geological surveys to coordinate and integrate public geoscience activities across Canada. The NGSC members identify emerging geoscience issues, consult on best practices, seek out opportunities to cooperate and collaborate, prepare and provide reports and recommendations to Ministers responsible for geological surveys, and promote the value of public geoscience among Canadians. The NGSC reports annually to the Intergovernmental Working Group-Mines.

http://www.ngsccanada.com/aboutUs.php

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National Geological Surveys Committee

2017 report entitled "Mineral programs of Canadian provincial and territorial geological surveys" lists and describes for each of 9 provinces and 3 territories:

- **commodities produced** **web services, eg. www.MapPlace.ca**
- **major projects & partnerships** **key publications**
- **local geoscience meetings** **other sources of information**
- **mineral titles online, eg. http://nbeclaims.gnb.ca/nbeclaims/**
- **contacts**

http://www.empr.gov.bc.ca/Mining/Geoscience/EducationalResources/Documents/2017CPTGweb.pdf

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NEW BRUNSWICK WEB & GIS DEMONSTRATION

Top hit from Google search for **Government of New Brunswick Minerals**

Minerals and Petroleum - Government of New Brunswick

www2.gnb.ca/content/gnb/en/departments/erd/.../minerals.html

If one searches for **Geo New Brunswick**, the result is

GeoNB - information about all things "geographic" in New Brunswick

www.snb.ca/geonb1/e/index-E.asp

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NEW BRUNSWICK WEB & GIS DEMONSTRATION

Case of Gold Discovery by novice prospector in New Brunswick, Canada, in July 2017. Online information search by Dallas Davis following visit to discovery site on 24 August 2017.



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NEW BRUNSWICK WEB & GIS DEMONSTRATION

http://www2.gnb.ca/content/gnb/en/departments/erd/energy/content/minerals.html






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REGULATION OF GEOSCIENCE PROFESSIONAL PRACTICE FOR PROTECTION OF THE PUBLIC

In Canada, geoscience is a regulated profession. To practice, a geoscientist must register as a P.Geo. and get a licence from the regulatory body – professional association – in each province or territory in which they practice. Geoscientists Canada is the national organization of 10 regulatory bodies that govern Canada's more than 9,500 Professional Geoscientists (P.Geo.'s) and more than 2,000 Geoscientists-in-training. https://geoscientistscanada.ca/about/

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For example, in Quebec the Ordre des géologues du Québec states :

In Québec, no person may, in any way, claim to be a Geologist, use the title of Geologist or an equivalent, or practice a professional activity "reserved" for Geologists, unless registered on the Roll of the Ordre des géologues du Québec or duly authorized under the Geologists Act and the Professional Code. Anyone wishing to practice geology in Québec must, in application of the Law using the appropriate procedures, first, obtain a Geologist's Permit and, second, register with the Order. A permit is granted to any person meeting the conditions. Alternatively, a person legally authorized to practice the profession in another jurisdiction may obtain a Special Authorization.

https://geoscientistscanada.ca/becoming-a-p-geo/the-need-to-be-licensed/

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REGULATION OF GEOSCIENCE AND ENGINEERING PROFESSIONAL PRACTICE FOR PROTECTION OF THE PUBLIC

Geoscientists and Engineers are regulated under one law (act) in each of Alberta, British Columbia, Saskatchewan, Manitoba, New Brunswick (NB), Newfoundland & Labrador, Northwest Territories & Nunavut. In Nova Scotia, Quebec and Ontario (ON), there are separate laws (acts) for practice of geoscience and engineering.

NB Law: http://www.apegnb.com/site/media/APEGNB/professions-act-1999.pdf
NB By-Laws: http://www.apegnb.com/site/media/APEGNB/APEGNB_Bylaws.pdf
ON Law, Regs & By-Laws (Geoscientists): https://www.apgo.net/about/act-and-regulations
ON Law and Regulations (Engineers): https://www.ontario.ca/laws/statute/90p28

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REGULATION OF GEOSCIENCE AND ENGINEERING PROFESSIONAL PRACTICE FOR PROTECTION OF THE PUBLIC FROM MISLEADING OR FRAUDULENT INFORMATION DISCLOSURE BY COMPANIES LISTED ON CANADIAN SECURITIES EXCHANGES

Each province and territory has a securities law, such as the Securities Act (Ontario) and its General Regulation

https://www.ontario.ca/laws/statute/90s05

The Ontario Securities Commission (OSC) administers provisions of the law to protect investors and foster fair and efficient securities markets by making rules, monitoring compliance and enforcement. Regulators from each province and territories have formed the Canadian Securities Administrators (CSA) with the objective of improving, coordinating and harmonizing regulation of the Canadian capital markets. **https://www.securities-administrators.ca**

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One instrument which has rules and policies enforced by members of the CSA is National Instrument (NI) 43-101. It was introduced in 2000 after receiving comments following 1998 posting notice of the substance and purpose. Geoscientists and Engineers who meet the definition of "Qualified Person" under NI 43-101 are required to follow the public disclosure rule of NI 43-101 in technical reports, news releases and other public disclosure which they author or approve. http://www.osc.gov.on.ca/en/15019.htm

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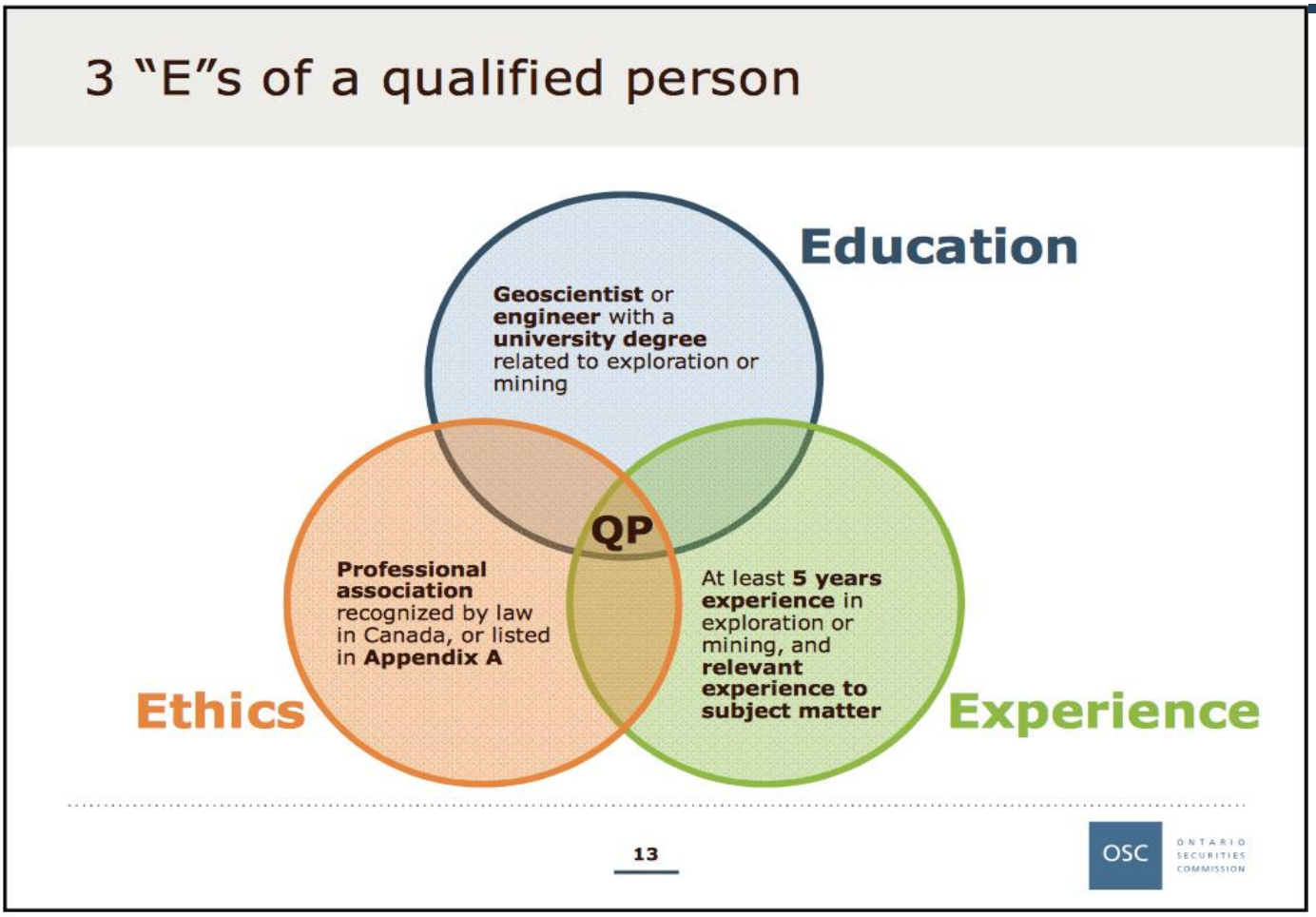

Mining Disclosure Essentials: NI 43-101 reporting fundamentals, industry best practices and useful guidance for TSX and TSXV issuers

Presented 8 March 2017 by Craig Waldie, P. Geo., Senior Geologist, OSC; James Whyte, P. Geo., Senior Geologist OSC; and Paul Ténière, P. Geo., Senior Manager Mining, TMX Capital Formation

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4th "E"

Expertise with the requirements and obligations of NI 43-101

- Disclosure prepared in compliance with NI 43-101 requires an additional skill set including a high level of proficiency with:
  - CIM Definition Standards
  - CIM Best Practice Guidelines
  - NI 43-101 disclosure rules and policies
  - CSA staff notices and guidance

Professional competence does not automatically imply NI 43-101 disclosure competence

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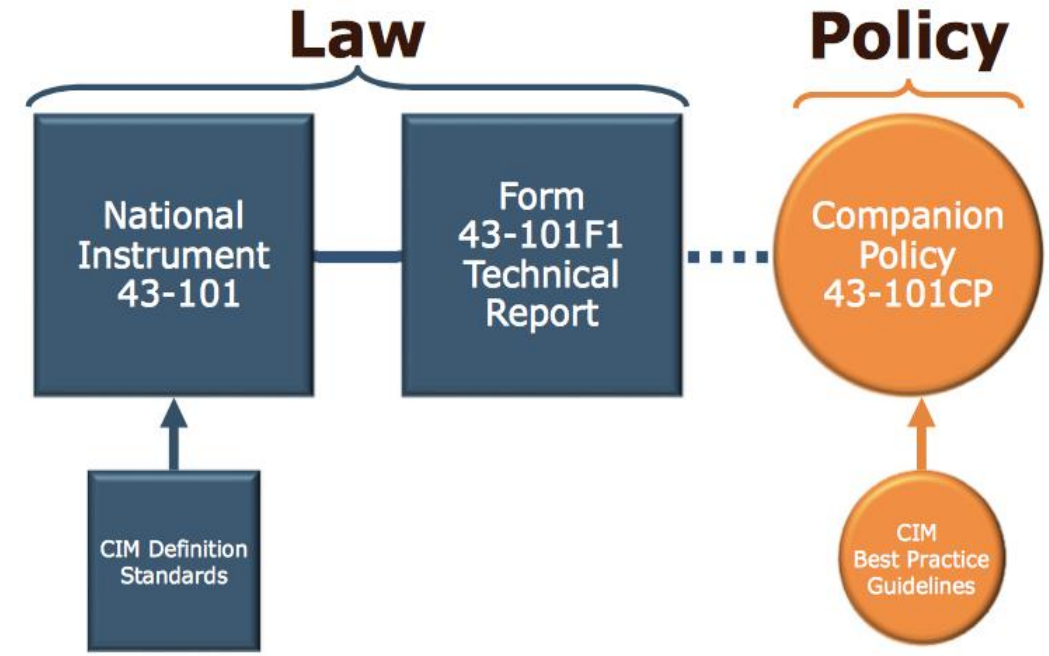
3 Parts to NI 43-101 (aka the "Mining Rule")



Note: Revised May 10, 2014

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What are the core principles of NI 43-101?



Qualified Person



Standards & Best Practices



Technical Report

Objective of NI 43-101:

Ensure that disclosure is based on reliable information, reflecting professional opinions, based on industry best practices and using standardized terms.

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Ethics: Appendix A - Foreign associations
(Feb. 25, 1016)

	Foreign Association	Membership Designation
United States	American Institute of Professional Geologists (AIPG)	Certified Professional Geologist (CPG)
	The Society for Mining, Metallurgy and Exploration, Inc. (SME)	Registered Member
	Mining and Metallurgical Society of America (MMSA)	Qualified Professional (QP)
	Any state in the United States of America	Licensed or certified as a professional engineer
Europe	European Federation of Geologists (EFG)	European Geologist (EurGeol)
	Institute of Geologists of Ireland (IGI)	Professional Member (PGeo)
	Institute of Materials, Minerals and Mining (IMMM)	Professional Member (MIMMM), Fellow (FIMMM), Chartered Scientist (CSi MIMMM), or Chartered Engineer (CEng MIMMM)
	Geological Society of London (GSL)	Chartered Geologist (CGeol)
Australasia	Australasian Institute of Mining and Metallurgy (AusIMM)	Fellow (FAusIMM) or Chartered Professional Member or Fellow [MAusIMM (CP), FAusIMM (CP)]
	Australian Institute of Geoscientists (AIG)	Member (MAIG), Fellow (FAIG) or Registered Professional Geoscientist Member or Fellow (MAIG RPGeo, FAIG RPGeo)
	The Institution of Engineers Australia[1] (Engineers Australia)	Chartered Professional Engineer (CPEng)
	The Institution of Professional Engineers New Zealand[2] (Engineers New Zealand, IPENZ)	Chartered Professional Engineer (CPEng)
South Africa	Southern African Institute of Mining and Metallurgy (SAIMM)	Fellow (FSAIMM)
	South African Council for Natural Scientific Professions (SACNASP)	Professional Natural Scientist (Pr.Sci.Nat.)
	Engineering Council of South Africa (ECSA)	Professional Engineer (Pr.Eng.) or Professional Certificated Engineer (Pr.Cert.Eng.)
Chile	Comisión Calificadora de Competencias en Recursos y Reservas Mineras (Chilean Mining Commission)	Registered Member
Russia	Russian Society of Subsoil Use Experts[3] (OERN)	Expert

[1] As of August 16, 2012
[2] As of February 21, 2013
[3] As of February 25, 2016

OSC

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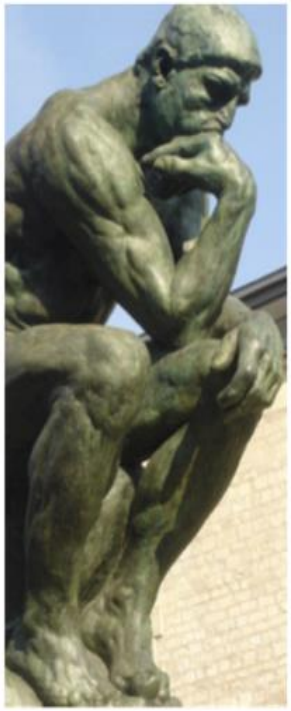
"Relevant experience" - QP self assessment



"The qualified person should be clearly satisfied that they could face their peers and demonstrate competence and relevant experience in the ***commodity, type of deposit*** *and* ***situation under consideration****"*

CIM ICM
www.cim.org

Article: *"Standards for QPs: how to evaluate relevant experience"*
- C. Waldie & J. Whyte, Jun/Jul 2012, CIM Magazine

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5 "C"s of the QP's responsibility

- **Comply** with your professional association's code of ethics
  - Perform work only in your area of competency and be honest and objective
- **CIM** definition standards and best practices
  - Follow CIM Standards and Best Practice Guidelines
- **Conduct** data verification
  - Perform a reasonable level of due diligence and validation of technical data
- **Communicate** the project risks
  - Clearly report on the material risks in a manner understandable to investors
- **Check** the company's disclosure
  - Helps reduce the risk of being misquoted

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5 "C"s of the company's responsibility

- **Company** is responsible for its disclosure
  - Company's directors and officers are responsible for their disclosure
- **Compliance** with rules and policies
  - Must comply with securities laws and stock exchange policies
- **Choose** an appropriate QP
  - Company is responsible for choosing an appropriate QP for the task
- **Current** site visit
  - Company must arrange its affairs so a QP can carry out a current site visit
- **Correctly** use the QP's information and advice
  - Allow the QP to review the technical disclosure, and any revisions to it, before filing

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Recent enforcement win through JSOT

News Release

Ontario Securities Commission

FOR IMMEDIATE RELEASE

December 20, 2016

William Wallace and Robert Heward Sentenced to Four Years Imprisonment Each for Fraud, Illegal Distribution and Unregistered Trading

TORONTO – The Ontario Securities Commission (**OSC**) announced that William Wallace and Robert Heward were each sentenced to **four years in jail** following an investigation by the OSC's Joint Serious Offences Team (**JSOT**) of fraud under the Securities Act (Ontario).

Mr. Wallace and Mr. Heward were the principals in a scheme to distribute shares of **Londoni Gold Corp.**, which they **promoted as a gold mine in Tanzania** and made misrepresentations with respect to the operations, management team, economic viability, and production potential of the mine.

They were also ordered to pay back to investors the $6,672,955.48 raised.

***JSOT** was established by the OSC in 2013 as an enforcement partnership between the OSC, the RCMP Financial Crime program, and the OPP Anti-Rackets Branch*

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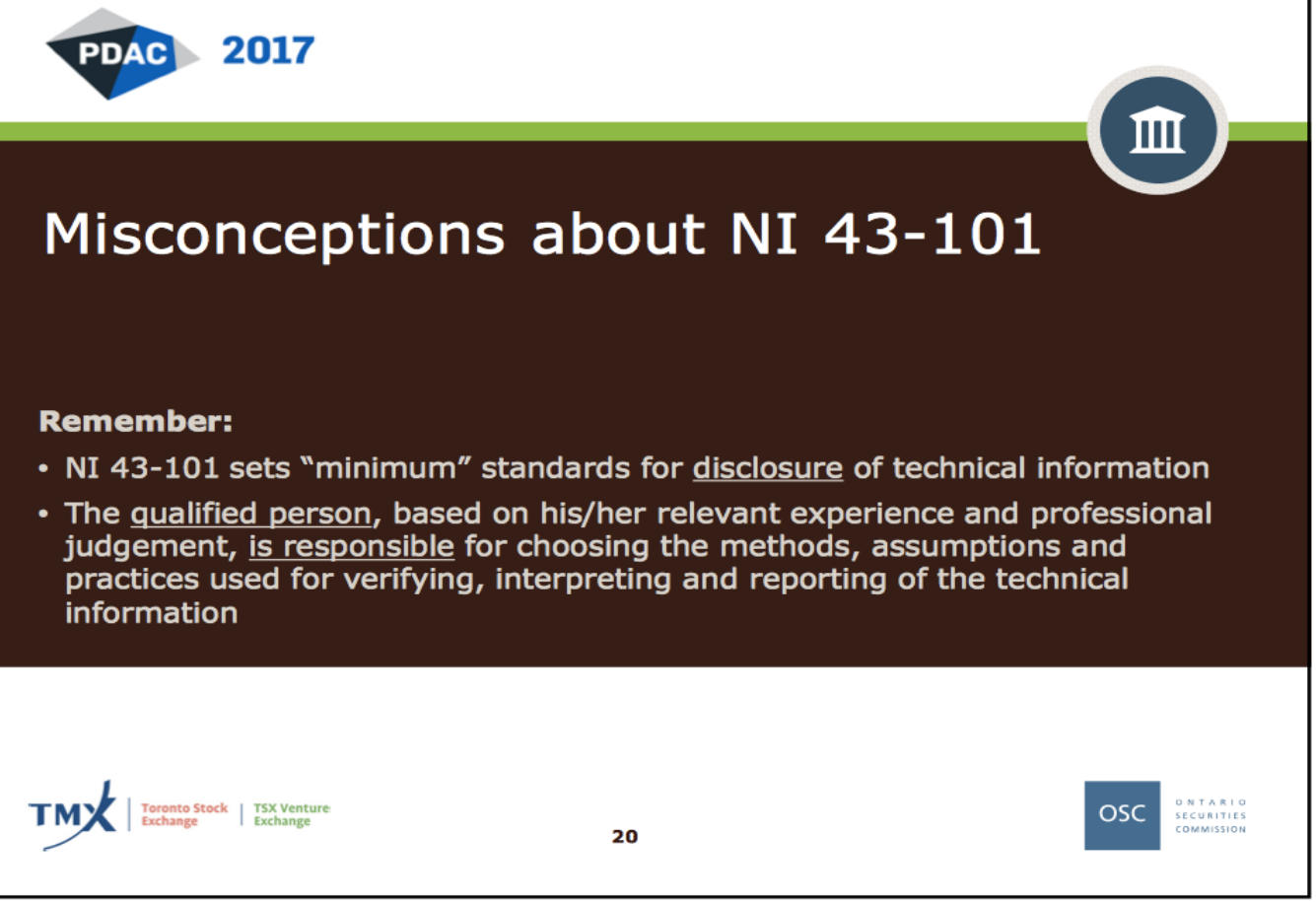

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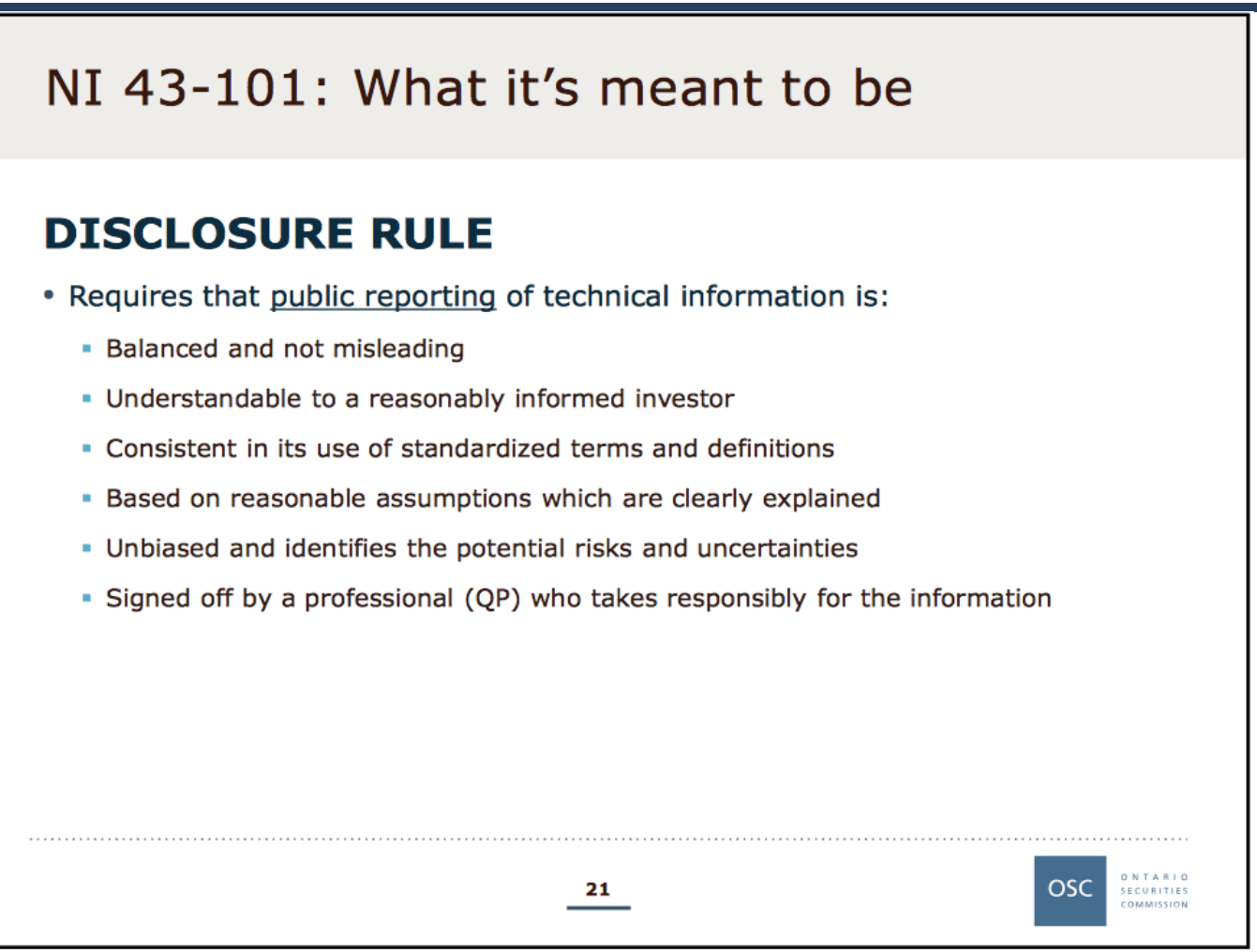

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NI 43-101: What it's **not** meant to be

- **It's not a guarantee of good work**
  - It places an obligation on the issuer to have work done by a QP
  - The QP is supposed to do it right
- **It's not a cookbook for mineral estimation**
  - The rule sets disclosure standards, not estimation practices
  - It's designed so others can review and judge the QP's work
- **It's not a vetting process at the regulatory agency**
  - Just because a technical report is filed doesn't mean it's compliant
  - It's the issuer's responsibility to comply

OSC ONTARIO SECURITIES COMMISSION

Mining Disclosure Essentials: NI 43-101 reporting fundamentals, industry best practices and useful guidance for TSX and TSXV issuers

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Standards & Guidelines for Resources & Reserves



http://web.cim.org/standards/menuPage.cfm?menu=177

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CIM STANDARDS AND GUIDELINES - QUALIFIED PERSONS

- *The Qualified Person(s) should be clearly satisfied that they could face their peers and demonstrate competence and relevant experience in the commodity, type of deposit and situation under consideration. If doubt exists, the person must either seek or obtain opinions from other colleagues or demonstrate that he or she has obtained assistance from experts in areas where he or she lacked the necessary expertise.*
- *Determination of what constitutes relevant experience can be a difficult area and common sense has to be exercised. For example, in estimating Mineral Resources for vein gold mineralization, experience in a high-nugget, vein-type mineralization such as tin, uranium etc. should be relevant whereas experience in massive base metal deposits may not be. As a second example, for a person to qualify as a Qualified Person in the estimation of Mineral Reserves for alluvial gold deposits, he or she would need to have relevant experience in the evaluation and extraction of such deposits. Experience with placer deposits containing minerals other than gold, may not necessarily provide appropriate relevant experience for gold.*

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CIM STANDARDS AND GUIDELINES – QUALIFIED PERSONS

CONTINUED……

In addition to experience in the style of mineralization, a Qualified Person preparing or taking responsibility for Mineral Resource estimates must have sufficient experience in the sampling, assaying, or other property testing techniques that are relevant to the deposit under consideration in order to be aware of problems that could affect the reliability of the data. Some appreciation of extraction and processing techniques applicable to that deposit type might also be important.

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CIM STANDARDS AND GUIDELINES – QUALIFIED PERSONS

CONTINUED…….

- *Estimation of Mineral Resources is often a team effort, for example, involving one person or team collecting the data and another person or team preparing the Mineral Resource estimate. Within this team, geologists usually occupy the pivotal role. Estimation of Mineral Reserves is almost always a team effort involving a number of technical disciplines, and within this team mining engineers have an important role. Documentation for a Mineral Resource and Mineral Reserve estimate must be compiled by, or under the supervision of, a Qualified Person(s), whether a geologist, mining engineer or member of another discipline. It is recommended that, where there is a clear division of responsibilities within a team, each Qualified Person should accept responsibility for his or her particular contribution. For example, one Qualified Person could accept responsibility for the collection of Mineral Resource data, another for the Mineral Reserve estimation process, another for the mining study, and the project leader could accept responsibility for the overall document. It is important that the Qualified Person accepting overall responsibility for a Mineral Resource and/or Mineral Reserve estimate and supporting documentation, which has been prepared in whole or in part by others, is satisfied that the other contributors are Qualified Persons with respect to the work for which they are taking responsibility and that such persons are provided adequate documentation.*

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PROFESSIONAL ASSOCIATION UNDER NI 43-101 RE QUALIFIED PERSON "means a self-regulatory organization of engineers, geoscientists or both engineers and geoscientists that is:

- (a) (i) given authority or recognition by statute in a jurisdiction of Canada, or
- (ii) a foreign association that is generally accepted within the international mining community as a reputable professional association;
- (b) admits individuals on the basis of their academic qualifications, experience, and ethical fitness;
- (c) requires compliance with the professional standards of competence and ethics established by the organization;
- (d) requires or encourages continuing professional development; and
- (e) has and applies disciplinary powers, including the power to suspend or expel a member regardless of where the member practises or resides; "

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- QUALIFIED PERSON (CIM specifies that MINERAL RESOURCE AND RESERVE ESTIMATES AND ANY SUPPORTING TECHNICAL REPORTS MUST BE PREPARED BY OR UNDER THE DIRECTION OF A QUALIFIED PERSON, AS THE TERM IS DEFINED IN NI 43-101)

- QUALIFIED PERSON - NI 43-101 DEFINITION ON PAGES 3 & 4 OF http://www.osc.gov.on.ca/documents/en/Securities-Category4/ni_20160509_43-101_mineral-projects.pdf
- means an individual who
- (a) is an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, relating to mineral exploration or mining;
- (b) has at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice;
- (c) has experience relevant to the subject matter of the mineral project and the technical report;

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SUMMARIES OF MINERAL EXPLORATION AND MINING RIGHTS LEGISLATION IN CANADIAN PROVINCES AND TERRITORIES

Mineral Rights (dispositions) are the legal vehicles through which the Provinces, Territories and Canada, grant to the public exclusive rights to search for, develop and mine those minerals.

Provincial/Territorial Mining Rights Committee Members 2017 which also conducts annual surveys of all company activity and spending intentions in their jurisdictions
http://www.nrcan.gc.ca/mining-materials/statistics/8854

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LINKS

CIM Definition Standards for Mineral Resources and Mineral Reserves
http://web.cim.org/standards/menupage.cfm?sections=177,181&menu=229
Securities Law and Instruments - National Instrument 43-101
http://www.osc.gov.on.ca/en/15019.htm
Engineers Canada and links to Provincial Engineering Regulators and Laws
https://engineerscanada.ca/audience/are-you-a-regulator
Example "Engineering and Geoscience Professions Act" (Law)
http://www.apegnb.com/site/media/APEGNB/Act%202015.pdf
Geoscientists Canada and links to Provincial Geoscientist Regulatory Associations
https://geoscientistscanada.ca/about/
Example "Professional Geoscientists Act" and Regulations
https://www.apgo.net/about/act-and-regulations
Committee for Mineral Reserves International Reporting Standards (CRIRSCO) Template
http://www.crirsco.com/templates/international_reporting_template_november_2013.pdf

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QUESTIONS

AND

DISCUSSION

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