



# CLINTON P. SMYTH, Pr. Nat. Sci.; P.Geo.

## CURRICULUM VITAE

Clinton Smyth has more than 30 years of experience in minerals exploration, resource evaluation and mining with one of the largest mining companies in the world. He began his career as a De Beers Consolidated Mines student in 1974, moving to the Anglo American Corporation of South Africa in 1978. He served Anglo American in diverse roles throughout Africa and Australasia until early 2000, when, as Vice President (Exploration), he resigned to establish Georeference Online Ltd (GOL) in Canada. GOL develops knowledge engineering applications for the earth sciences and provides consulting services to the minerals exploration and mining industries.

Clinton is an experienced geochemist, explorationist, software developer, and corporate manager.

### Professional Qualifications

*Education* MSc. (Computing) Imperial College, London (1985)  
MSc. (Geochemistry) University of Cape Town (1983)  
BSc. (Hons) (Geochemistry) University of Cape Town (1977)

*Registration:* Pr. Sci. Nat (South Africa); P.Geo. (British Columbia)

*Date of Birth:* 19 October, 1953

*Citizenship:* Canadian; South African

*Languages:* Fluent in English and Afrikaans; Working knowledge of Spanish and French

*Member:* Society of Economic Geologists; Geological Society of South Africa  
Geological Association of Canada; Society of Exploration Geochemists

### Durango Capital Corp.

**Vancouver (April 2007 - April 2009)**

**Vice President (Exploration)**

- Responsible for managing the company's Hastings Gold Project in British Columbia.

### Dome Ventures Corporation

**Vancouver (April 2005 - March 2007)**

**Vice President (Exploration)**

- Responsible for the selection and development of the company's exploration targets in China, Papua New Guinea, Nigeria and Gabon.

### Georeference Online Ltd

**Vancouver (September 2000 - Present)**

**President, Georeference Online Ltd**

- Consultant on international minerals exploration targeting, execution, logistics and efficiency.
- Commercialised the **CampControl** software system for Internet-based management of minerals exploration ([www.campcontrol.com](http://www.campcontrol.com))
- Privately staked and arranged financing for the Redton ([www.redton.com](http://www.redton.com)) and Hastings Gold ([durango.golinfo.com](http://durango.golinfo.com)) exploration properties in British Columbia
- Developed the **MineMatch**<sup>®</sup> software system for the standardised description and comparison, for minerals exploration targeting purposes, of mineral deposits and mineral deposit models ([www.minematch.com](http://www.minematch.com)).
- Developed the **LegendBurster** software system for mapping complex objects using semantic network descriptions in an ArcGIS environment ([www.georeferenceonline.com](http://www.georeferenceonline.com))
- Consultant on knowledge representation and reasoning in the earth sciences to the NSF-funded GEON program in the USA ([www.geon.org](http://www.geon.org)).
- Consultant to the Geological Survey of Canada on knowledge representation and reasoning.



**SIGNIFICANT GOL SOFTWARE PROJECTS:**

- Created the Yukon Mineral Targets website for the Yukon Geological Survey ([www.yukonmineraltargets.com](http://www.yukonmineraltargets.com)).
- Managed the “MineMatch Geochemistry” project in the British Columbia government’s “Rocks to Riches” program. This is an Internet-delivered project to stimulate investment in minerals exploration in BC. It relies on the integration of state-of-the-art knowledge representation and reasoning software with the province’s earth science databases to deliver GIS-based mineral exploration targets on the Internet (see <http://www.rockstorichesbc.com/>).
- Managed, for the Geological survey of Canada, development of a prototype ontology- and knowledge-based system for the description and comparison of landslides.
- Managed, for GeoConnections, the project entitled “Enabling Semantic Interoperability between Mineral Deposit Descriptions from Different Provincial Databases”. The purpose of the project was to demonstrate how semantic interoperability between Canada’s provincial mineral occurrence databases may be achieved, and the advantages this interoperability offers.

**Anglo American Corporation of South Africa**

**Johannesburg (Aug 1999 to Feb 2000)**

**Vice President (Exploration) responsible for all Advanced Projects in Africa**

*During this period, responsible for all geological aspects of the following projects or mines:*

**ZINC**

- **Skorpion Oxide Zinc Feasibility Study, Namibia; Gamsberg Sulphide Zinc Feasibility Study, South Africa; Black Mountain Pb/Zn/Ag Mine Depth Extension Feasibility Study, South Africa.**

**COPPER**

- **Nchanga and Konkola Mines, Zambia**  
Responsible for geological aspects of Anglo’s buy-back into the Zambian Copperbelt.

**MINERAL SANDS**

- **Namakwa Sands Mine, South Africa**  
Geological input into the 4MTPA to 8MTPA scale-up of the ilmenite, rutile, zircon mine.

**NICKEL**

- **Phoenix Nickel Mine, Botswana** Anglo’s geological input to the feasibility study on upgrading the open pit sulphide mine’s magnetic separation facilities to floatation & SX/EW technology;

**Minorco**

*Seconded from Anglo American*

**Singapore (1996 - 1999)**

**Consulting Geologist<sup>1</sup> responsible for all Exploration in Australasia**

Established for Minorco, from scratch, minerals exploration operations for gold and base metals, as well as project evaluation capabilities, in the Australasian region. Set up regional offices in Australia, Indonesia, Papua New Guinea, Fiji and Australia. Reported to Minorco’s Managing Director (Australasia) in Singapore and Minorco’s Head of Exploration in London. Annual budget of around US\$8 million and a staff which peaked at around 100.

**Experience with Anglo American**

**Johannesburg (1986 to 1996) and before**

- In 1996 appointed Consulting Geologist managing Exploration in Eastern Africa

Under various titles, ultimately responsible for: (a) All Anglo New Mining Business Division’s exploration for gold and base metals from Mozambique to Egypt; (b) Its Geochemistry Department which also undertook all the Division’s resource evaluation work using DATAMINE; (c) Its Geographic Information Systems; (d) All liaison with Normandy Exploration, Anglo’s joint venture partner in SE Asia and Australia.

<sup>1</sup> This was the term traditionally used by South African mining houses for Vice President (Exploration)



**Publications**

- **'Ontology Design for Scientific Theories That Make Probabilistic Predictions'** Poole, Smyth & Sharma; IEEE Intelligent Systems, vol. 24, no. 1, pp. 27-36, Jan./Feb. 2009
- **'Semantic Science: Ontologies, Data and Probabilistic Theories'** Poole, Smyth & Sharma in "Uncertainty Reasoning for the Semantic Web I"; Springer, October, 2008.
- **'Semantic e-Science and Geology'** Clinton Smyth, David Poole and Rita Sharma, 2007 Association for the Advancement of Artificial Intelligence Workshop on e-Science
- **'Representing and Reasoning with Intervals'**, Erica Huang, Clinton Smyth and David Poole. 2005 Annual Conference of the International Association for Mathematical Geology
- **'Type Uncertainty in Ontologically-Grounded Qualitative Probabilistic Matching'** Poole D. and Smyth C. Eighth European Conference on Symbolic and Quantitative Approaches to Reasoning with Uncertainty (ECSQARU-2005), Barcelona, July 2005.
- **'Qualitative Probabilistic Matching with Hierarchical Descriptions'**, Smyth C. and Poole D. Ninth International Conference on Principles of Knowledge Representation and Reasoning (KR-2004), Whistler, June, 2004.
- **'Expert System-Assisted Interpretation of Multi-Element Geochemical Borehole Profiles'** 1985 MSc. Thesis (Computing) Imperial College, London.
- **'X-Ray Fluorescence determination of manganese levels in powder brickettes of manganese ore'** 1983 MSc. Thesis (Geochemistry) University of Cape Town