

REGISTRATION DEADLINE OCT. 13, 2008

Send registrations to

Heather Bonic

Exhibits, Sponsorships, Meeting Registrations, SME

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Register online at www.smenet.org

**SME, CIM,
AusIMM, and SAIMM
Members:**

\$950 Cdn/US Part 1

\$900 Cdn/US Part 2

Non-members:

\$1,050 Cdn/US Part 1

\$1,000 Cdn/US Part 2

Title _____ Name _____

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or SAIMM Member # _____

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Preferred name for badge _____

I will bring a laptop Yes No

Spectrum Series Vol. 14, 2nd edition CD or BOOK

PAYMENT

Visa MasterCard AMEX Discover

Wire Transfer*

Card # _____

Expiry ____ / ____

Name _____

Total amount _____

Signature _____

* For information on wire transfer please contact SME

Registration includes course notes, lunch, and morning and afternoon tea. Participants receive a Certificate of Completion. Full refunds will be given IF Notification of Cancellation is received in writing up to 10 working days before a course. No refund will be made after this time. An alternative participant may be nominated. Late registration will incur a \$75 Cdn late fee.

WHO SHOULD ATTEND

PART 1

This course is for professionals involved in making decisions regarding a mining project at the exploration or production phases, whether in the geology, mining, metallurgy, or geochemistry fields. You should attend this course if you are a manager of operations or technical services in a mining company, an exploration geologist, a mine geologist, a mining engineer, an ore grade control engineer, a geostatistician, a project manager, a metallurgist, or a laboratory manager or operator.

PART 1

This course is for all professionals involved in, or contributing to, grade-based decisions regarding a mining project at the exploration or production phases, whether in the geology, mining, metallurgy or geochemistry fields, and particularly those persons responsible for the consequences that can derive from the use of assay data. The course will be a mixture of classroom lectures and practical workshops.

INSTRUCTOR

Dominique François-Bongarçon was awarded a degree in mining engineering from the Nancy School of Mines, France, in 1974. In 1978, he obtained his PhD in mining sciences and techniques from the Paris School of Mines and Nancy University. From 1974 to 1981, he worked as a research engineer at the Geostatistics Center of the Paris School of Mines in Fontainebleau. Since 1981, he has worked for various consulting firms and mining companies, including Inco Ltd. in Copper Cliff, Ontario, Canada, where he was in charge of geostatistics. He now runs his own consulting company, AGORATEK International, after spending seven years working for Mineral Resources Development, Inc. (now AMEC) in San Mateo, California, USA, as vice president, geostatistics and sampling. An acknowledged mining industry expert in sampling, he has been responsible for a number of advances and clarifications in the field of sampling theory, especially in its application to low-grade metals. He has run sampling courses in North America, South America, Africa, and Australia, to both open and in-house audiences.

Visit
www.smenet.com.au
to register

2008 PROFESSIONAL DEVELOPMENT SEMINAR SERIES

STRATEGIC RISK QUANTIFICATION and MANAGEMENT
for ORE RESERVES and MINE PLANNING

THEORY AND PRACTICE OF SAMPLING
PARTICULATE MATERIALS – PART 1

QAQC – PART 2

REVISED

PART 1 PART 2
OCTOBER OCTOBER
27-29 30-31
2008 2008

Dominique François-Bongarçon
AGORATEK, USA



THEORY AND PRACTICE OF SAMPLING PARTICULATE MATERIALS — PART 1

QAQC — PART 2

The 2007 AusIMM Spectrum Series Vol. 14, 2nd Edition: "Orebody Modelling and Strategic Mine Planning" is included with the course materials

PLEASE NOTE A SCIENTIFIC CALCULATOR with basic univariate statistical functions, or a LAPTOP COMPUTER is recommended.

CONTENT AND OBJECTIVES

PART 1

The objective of the course is to reach a modern understanding of the theory of sampling of particulate materials (such as crushed drill core and reverse circulation samples) and the practice, scope, limitations, and appropriate applications of sampling.

PART 2

The global objective of the course is to reach a deeper understanding of all issues regarding Quality Assurance and Quality Control (QA-QC) of geological and metallurgical assay data. In addition and complement, the broader subject of techniques and requirements of resource and reserve audits will be presented, to help professionals prepare for such audits more efficiently.

QA-QC for mineral assay data gained a critical importance along the years in mining projects ever since the scandal of Bre-X. Today it has become a strong requirement for publicly reporting mining ventures in most international reporting guidelines (JORC, SEC, etc.).

OVERVIEW

The theory and practice of sampling of mineral particulate material have been the focus of continuous attention by the mining industry for more than a century. This is due to its paramount importance at all the stages of a mining project, from exploration to production. Widely acclaimed and admirable works by Pierre Gy (from 1968 to 1982) have paradoxically met with limited success in low-grade types of mineralization, due to difficulties in the proper implementation of its variance prediction formula. These difficulties have been addressed by the course instructor who has developed simple and effective tools for the practical implementation of Gy's theory.

COURSE OUTLINE

PART 1

FIRST UNIT

- ✓ Introduction
- ✓ Importance of sampling (including economics)
- ✓ Course objectives

SECOND UNIT

- ✓ General practical recommendations; audits of equipment and methods; philosophy of sampling; improvement techniques
- ✓ Definitions, terminology, practical examples, discussion
- ✓ Representativeness, concepts involved in the non-bias conditions
- ✓ Evaluation and control of the segregation factor

THIRD UNIT

THEORETICAL BASIS—Evaluation and control of the sampling fundamental error; minimum sample size

PRACTICAL IMPLEMENTATION—Difficulties and solutions, calibration experiments, building sampling charts (nomograms), graphical representation and optimization of sample preparation protocols

PART 2

The QA-QC course is accompanied with practical application and illustration exercises, and series of practical recommendations. It covers the principles and various aspects of this modern obligation, as well as the mathematical tools used, their dangers and limitations, and all the elements required to build a reasonable, auditable program.

The sequel covers the techniques and aspects of technical audits of resources and reserves, from the data (including QA-QC) to geological interpretation and grade estimates. A check-list of elements that auditors will require is presented along with recommendations and the classical errors to avoid.

WHAT YOU WILL LEARN

PART 1

- ✓ Eye-opening facts about the consequences of bad sampling and the difficulties of good sampling
- ✓ The unsuspected amplitude of economic ramifications of poor sampling
- ✓ To control how samples are taken to achieve the highest degree of representativeness
- ✓ To control sample mass requirements and avoid errors in sampling and sample preparation protocols
- ✓ How to eliminate unfavourable factors
- ✓ How to identify those unfavourable factors that cannot be eliminated, but should be minimized
- ✓ The meaning and significance of the factors used in sample variance numerical control formulas
- ✓ Tools available for the best experimental customization of control parameters for your mineralization type
- ✓ What can and cannot be achieved with sampling experiments
- ✓ The general philosophy that underlines the practice of 'good sampling' and the modelling of sampling parameters
- ✓ How to audit sampling equipment and procedures
- ✓ How to tackle seemingly untreatable sampling problems
- ✓ The difference between sampling and interpolating

PART 2

- ✓ Consequences of not conducting a proper and complete, independent (i.e. external) QA-QC program.
- ✓ The best, proven techniques to use to analyze the corresponding data
- ✓ The errors to avoid
- ✓ The benefits of such programs
- ✓ The problem of proper use and certification of reference material will be analyzed at depth.

VENUE DETAILS



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COSMO - Stochastic Mine Planning Laboratory, a global centre for leading-edge research and graduate education in "orebody modelling and strategic mine planning with uncertainty," is supported by AngloGold Ashanti, Barrick Gold, BHP Billiton, CVRD, CVRD Inco, De Beers, Newmont Mining, and Canada Research Chairs Program, NSERC and CFI.

<http://cosmo.mcgill.ca>