MSc-PhD SHORT COURSE

ENVIRONMENTAL GEOCHEMISTRY OF ORE DEPOSITS AND MINING ACTIVITIES, May 30 –June 5, 2012

Ore deposits, especially when mined and processed, are a potential environmental hazard. Exposure of fresh rock surfaces during mining, as well as the produced crushed and milled waste, will be subject to weathering processes, causing large-scale environmental damage if not sufficiently managed. Sulfide-bearing mineralization, in particular, is readily oxidized at surface, and has the potential to produce acid rock drainage (ARD), as well as release of heavy metals. Significant contamination of surface and groundwater may readily result from these two processes. In addition to the contamination threat, there is also a geotechnical threat to the environment; tailings dams, and waste rock piles may fail if poorly designed, mismanaged or subject to physical/geochemical weathering. Field trips and laboratory exercises are very important part of this course.

Goals: The potential environmental threat of a mine (or an un-mined mineral/ore deposit) can only be understood and managed through specific knowledge of mineralogy and geochemistry, hydrogeology, and geotechnical engineering. The course will therefore provide students with the basic knowledge required to evaluate the potential environmental hazard of a given property from a regulatory perspective and to understand the environmental aspects of the existing or planned operation.

Cooperation: The class is taught in cooperation with University of Miskolc, as a Master and PhD level course, by Dr. Ingar Walder and Dr. Ferenc Madai

For more info see www.kjeoy.no document for downloads.

Location : Kjeøy, in Lofoten, Northern Norway, Nearest airport Harstad/Narvik – Evenes serviced by www.SAS.no and www.Norwegian.no

Contact : Ingar Walder ifwalder@kjeoy.no

Credits: 5 ECTS for students registered at European universities

Cost: STUDENTS: May 30-June 6, NOK 2.500, including room and board (7 days).
PROFESSIONALS: May 30-June 1, NOK 5.500 INCLUDING ROOM AND BOARD (3 days) or NOK 10.000 for the whole 7 day course

PROGRAM

May 30, Wednesday
Lab - setting up experiments (start 09.00)
Thermodynamics
Ore deposits (for professionals start at 13.00)
Environmental mineralogy
Home Works (students)

May 31, Thursday
Metal mobility
Mineral weathering and stability
A/NRD prediction methods
Home Works (students)

June 1, Friday
A/NRD processes
Remediation/mitigation (Ending at 16.00 for professionals)
Home Works (students)

June 2, Saturday
Geotechnical stability
Geochemical modeling
Sampling
Analytical methods
Home Works (students)

June 3, Sunday
Field trip (Råna Nickel-Olivine mine and tailings deposition)

June 4, Monday
Pit Lake/underground drainage geochemistry
Hydrology and geochemistry of tailings and waste rocks

June 5, Tuesday
Report presentation/discussion
Exam (3 hours written)

REGISTRATION FORM

Name		
Company/ University		
Address		
City	Zip Code	Country
Mark: STUDENT CLASS	OR	PROFESSIONAL CLASS
Payment by Credit card, In other ways contact Ingar Walder		
CREDIT CARD NO		EXPIRATION DATE
Signature		