An intensive 3-day short course

Improving Hydrogeologic Analysis of Fractured Bedrock Systems

Advances in Field Characterization Methods and Ground Water Modeling

23-25 June 2010

University of Wisconsin
Fluno Center for Executive Education
Madison, Wisconsin

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Chris Mulry, PG
Groundwater & Environmental Services

Maureen Muldoon is an Associate Professor at the University of Wisconsin Oshkosh with ongoing research in ground water quality and flow in carbonate fractured rock. She was the recipient of the Standards Development Award for her preparation of ASTM D5715-95 Standard Guide for Design of Ground-Water Monitoring Systems in Karst and Fractured-Rock Aquifers.

Ken Bradbury is a hydrogeologist and professor with the Wisconsin Geological and Natural History Survey and the Program Leader of water and environmental programs for the Survey. Ken has authored numerous scientific reports and currently serves as advisor to the Editor of the journal Ground Water. He is a former member of the Water Science and Technology Board of the National Research Council, and is a former Chair of the NRC's committee on water resources research of the U.S. Geological Survey.

Dave Hart is a hydrogeologist and geophysicist focusing on applied research for wellhead protection, water use, the application of near-surface geophysics to geologic and hydrogeologic problems, and the development of techniques to understand the role of duel-porosity bedrock systems.

Chris Mulry is a senior hydrogeologist with consulting expertise for bedrock characterization, aquifer testing and analysis, characterization of subsurface organic contaminant migration, evaluation of remediation alternatives and litigation support.

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I attended this course prior to beginning a large investigation at a site situated in a complex fractured rock setting. The course was an invaluable aid in planning the design of the components of the intrusive investigation and analysis of the field data. This is the most up-to-date and functional course that I have attended in years.
-S.C. Blauvelt, P.G., Vice President & Director of Regional Operations, Penn E&R, Inc.

Enhance your efficiency, improve your expertise and gain a competitive advantage by mastering hydrogeologic testing, analysis and modeling fractured bedrock, including carbonate, crystalline, and metamorphic rocks.

Day One begins with the principles of hydrogeologic site characterization, groundwater movement and contaminant transport. It unravels the complexities of fractured systems and presents new trends in fracture characterization methods. Compare different advances in field characterization approaches, aquifer testing, rock core logging procedures, and building conceptual models for groundwater modeling.

Day Two offers new field workshops for all experience levels. This year's course location allows access to a new field location and exercises that include downhole flow meters, televiewers and packer testing. Come to the course and learn how to operate the equipment followed by analyzing and reporting the data.

Day Three continues with solute transport principles for both porous media and fractured bedrock. Learn about newly developed approaches, equipment and software for designing groundwater monitoring systems and remediation systems in fractured systems. Recent advances in ground water modeling and fracture modeling will be featured during this special course location at the University of Wisconsin, Madison.

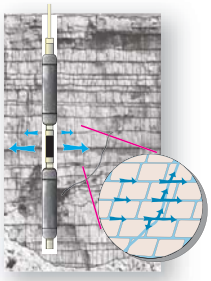
Learn Recent Trends in Hydrogeologic Characterization and Modeling of Bedrock

- Learn new field techniques for characterizing fracture networks and ground water movement
- Understand rock discontinuities and the nature of fracture flow
- Practice rock core logging for hydrogeologic projects
- Integrate rock stratigraphy into conceptual models and appropriate ground water models
- Learn to develop and integrate dual porosity and discrete fracture conceptual models
- Discover recent advances of surface and borehole geophysics, including dynamic flowmeter test
- Find out how to design and execute tracer tests, single well and packer tests and pumping tests
- Practice preparing potentiometric surface and water table maps using modern principles
- Recognize the do's and don'ts of ground water flow and transport modeling of fractured systems
- Understand contaminant transport and compare various remediation systems in bedrock

Learn Advanced Field Characterization Methods

Day Two includes a series of field workshops that are designed to teach basic and advanced-level hydrogeologic characterization methods.

- Learn how to use flow meter logging tools in pre-drilled borings in the Prairie du Chien dolomite and identify fracture flow.
- Learn how to conduct packer testing and field-analyze for measuring Transmissivity and head across in the test interval.
- Practice fracture recognition and apply it to assessing fracture trends and predicting subsurface fracture zones.
- Learn and practice measuring rock core recovery and Rock Quality Designation (RQD) while describing core and building hydrogeologic framework.



This is the only course where you can **learn how to use** flow meter logging and identify which fractures are flowing. Plus, learn the critical field methods for packer testing while measuring transmissivity and hydraulic head across the test interval.

Learn updates about Yucca Mountain (previous course field trip location) at www.midwestgeo.com

Accommodations at the Fluno Center for Executive Education by Phone 608-441-7117 or http://exed.wisc.edu/fluno/

REGISTRATION

Improving Hydrogeologic Analysis of Fractured Bedrock Systems
23-25 June 2010

Last Name: _____ First Name: _____

Position: _____

Company: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email: _____

*For early registration, payment must be received before 10 June 2010. Cancellations may be made up to 10 June 2010, however 25% of the fee will be charged. No refunds. Registration and cancellation policies at: www.midwestgeo.com. Or call Customer Service at 763.607.0092 or email **info@midwestgeo.com.**

Course Fee:
Register Now $1,195
After June 10 ..... $1,495

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