



Oak Environmental Inc.

Environmental

Geotechnical

Hydrogeological

Mining

Oil and Gas

COURSE DESCRIPTION and OUTLINE

VMOD1 - An Introduction to Groundwater Modeling
using Visual MODFLOW, WinPEST and 3D-Builder

Schlumberger Water Services Partner Training Course presented by Oak
Environmental Inc.

Calgary, Alberta at Holiday Inn – 4206 MacLeod Trail South
March 28 - 31, 2011

Course Description

This 4-day MODFLOW modeling course was designed to introduce course participants to Visual MODFLOW software, and to provide some guidance on how to apply MODFLOW, MODPATH, ZoneBudget and MT3D/RT3D to groundwater flow and solute transport modeling. The lecture presentations were developed to illustrate how the Visual MODFLOW software works. The lab exercises are point-by-point descriptions of how to use Visual MODFLOW to develop a wide variety of groundwater models. Each exercise represents a different application of MODFLOW, and provides different views of the tools within Visual MODFLOW to help with model development, calibration and prediction of results. This course is ideally suited for hydrogeologists, engineers and environmental scientists with some knowledge of field investigation and hydrogeologic data who wish to understand more about MODFLOW and the groundwater modeling process.

General Course Topics

- An introduction to the groundwater modeling process
- Conceptual model development and numerical model construction
- The fundamentals of groundwater flow modeling using MODFLOW
- Basic principles of efficient model grid design using Visual MODFLOW
- Particle tracking using MODPATH to define recharge and discharge areas
- Water budget analysis using ZoneBudget
- Contaminant transport processes and simulation of results using MT3D
- Calibration groundwater flow models and the use of PEST as a calibration tool
- Visualization of model input and model results in 2D and 3D

Registration Fee: \$1895.00 + GST includes course notes. Lunches are not provided. Registrants to provide their own computer. \$100 discount for early registration and payment on or before March 4th, 2011.

For more information or to register, contact
Frank Magdich at Frank@oakenviro.com
or Tel # (403) 250-9810





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Typical Course Outline (actual lectures may vary):

Day 1 – March 28, 2011

8:30 8:45 Lecture: Course Introduction
8:45 9:45 Lecture: An Introduction to Groundwater Modeling
9:45 10:00 *Break*
10:00 12:00 Exercise: Intro1: An Introduction to Visual MODFLOW
12:00 13:00 *Lunch*
13:00 14:15 Lecture: Basics of Building a Groundwater Model
14:15 16:00 Exercise: Intro1: an introduction to Visual MODFLOW
16:00 16:15 *Break*
16:15 17:00 Lecture: Conceptual Modeling with Hydro GeoBuilder

Day 2

8:30 9:45 Exercise: Tier3: An Introduction to HGB and Visual MODFLOW
9:45 10:00 *Break*
10:00 11:30 Lecture: An Introduction to USGS MODFLOW
11:30 12:00 Exercise: Tier3: An Introduction to 3D Builder
12:00 13:00 *Lunch*
13:00 14:30 Exercise: Tier3: An Introduction to 3D Builder
14:30 15:00 Lecture USGS MODPATH
15:00 15:15 Lecture USGS ZoneBudget
15:15 15:30 *Break*
15:30 17:00 Exercise: 3DCap: Capture Zone Modeling with MODFLOW

Day 3

8:30 9:00 Exercise: 3DCap: Capture Zone Modeling with MODFLOW
9:00 10:30 Lecture: Introduction to Contaminant Transport Modeling
10:30 10:45 *Break*
10:45 12:00 Exercise: Drumco: Remediation Feasibility Design
12:00 13:00 *Lunch*
13:00 14:45 Exercise: Drumco: Remediation Feasibility Design ... cont'd
14:45 15:00 *Break*
15:00 17:00 Exercise: Emcan: Comparing Transport Boundaries

Day 4

8:30 9:45 Lecture: Groundwater Model Calibration
9:45 10:00 *Break*
10:00 12:00 Exercise: Valley: Calibrating a Transient Flow Model
12:00 13:00 *Lunch*
13:00 15:00 Exercise: Channel: Calibrating a Transport Model
15:00 15:15 *Break Course Evaluation*
15:15 16:00 Exercise: Channel: Calibrating a Transport Model

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