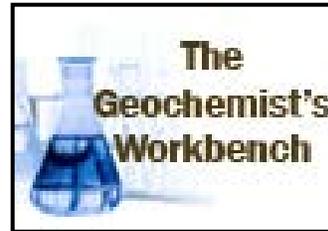




TIPS

Technical Innovation
And Professional
Services



The Geochemist's Workbench (GWB)

The Geochemist's Workbench is a set of interactive software modules for solving problems in aqueous geochemistry, particularly those encountered in environmental protection and mine reclamation. An example of the use of this software would be to determine the resulting water chemistry and identify what compounds will form and settle out when different water types are mixed together. This software can also be used to identify what chemicals would be needed to remediate impacted water with a specific chemistry signature or predict seasonal variation in mine-pool discharges. Using one or more of the five geochemical analysis modules and two reaction-path modeling modules included, the scientist can balance theoretical chemical reactions and examine their stability in natural or mining environments.

SELECTED FEATURES:

- Create input files or import data from spreadsheets
- Balances chemical reactions
- Creates redox-pH and activity diagrams
- Calculates solution speciation, mineral saturation, gas fugacities and more
- Models ion sorption and surface complexation
- Piper, Stiff and other aqueous geochemistry diagrams
- Polythermal and sliding fugacity reactions
- Mineral dissolution/precipitation
- Kinetics & redox kinetics
- Specify custom rate laws
- Model microbial metabolism & growth
- Use Debye-Hückel and Pitzer activity coefficients

The Geochemist's Workbench

Obtaining Software

Due to the expense of this software and its specialized use, it is available from OSM only on a check-out basis. Please contact the software manager listed below to reserve a license for temporary use.

SMCRA Benefits and Uses

- * Evaluating chemical reactions, calculate stability diagrams, and determine the equilibrium states of natural waters vs. mine waters
- * Tracing reaction processes
- * Evaluating potential impacts to water quality (spoil aquifer)
- * Evaluating treatment options in acid mine drainage

http://www.tips.osmre.gov/tips_html/Geochemist_Workbench.asp

TIPS Training Classes

Please contact the software manager for information on training

Need Help????

Contact GWB Software Manager
Brent Means, bmeans@osmre.gov
(717) 782-4080 ext.18

U.S. Department of the Interior, Office of Surface Mining

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