

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Geophysics Advisor Expert System

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U.S. Geological Survey preliminary computer program for Geophysics Advisor Expert System. Written in True BASIC 2.01 to run under Microsoft MS-DOS 2.0 or later on IBM-PC or true compatible computers with 512k or greater memory available to the program. No source code is available.

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This expert system program was created for the U.S. Environmental Protection Agency, Environmental Monitoring Systems Laboratory, Las Vegas, Nevada. The expert system is designed to assist and educate non-geophysicists in the use of geophysics at hazardous waste sites. It is not meant to replace the expert advice of competent geophysicists. It is written to run on any IBM-PC-DOS compatible computer and to be very simple to use. This version is phase one of four.

Phase one asks questions about a site and the contamination problem. Then, based upon the answers given, it recommends what types of geophysics will most likely be useful at the site to solve problems such as contaminant location and hydrogeological characterization of the site. It also annotates why various geophysical techniques will likely work or not work at the site. The questions and their allowable answers are tightly focused to decide on the use of geophysics to locate contaminants and acquire hydrogeological information about the site.

To run this program, place the floppy diskette in drive A:, type 'A:' (without the quotes) and press the 'Enter' key, then type 'EXPERT' and press the 'Enter' key. Follow the instructions shown on the screen from that point on. Press 'Ctrl Break' to exit the program at any point (this is not recommended when the program is writing to the disk). Quality Assurance requirements mandate that the program only be available in compiled form and that datafiles be encrypted. However, the program and datafile are not copy protected and may be freely copied and distributed for no more than the cost of copying. This program is not subject to U.S. Copyright Law.

Phase two improves phase one by adding a database of the physical and chemical properties of the top 100 Superfund contaminants. Phase one asks questions about the properties of the contaminants, such as "Are the organics miscible with water?" Phase two will present a list of contaminants to select from (such as benzene). For the top 100 Superfund contaminants, it will know the answers to the questions. For other contaminants, it will still ask the questions about properties. Phase two will be available in 1989.

Subject to funding availability, phase three will add methods to assist the process of contracting and performing quality assurance testing for geophysics. No date is available for the release of phase three.

Subject to funding availability, phase four will add methods to assist in the interpretation of geophysical data. No date is available for the release of phase four.