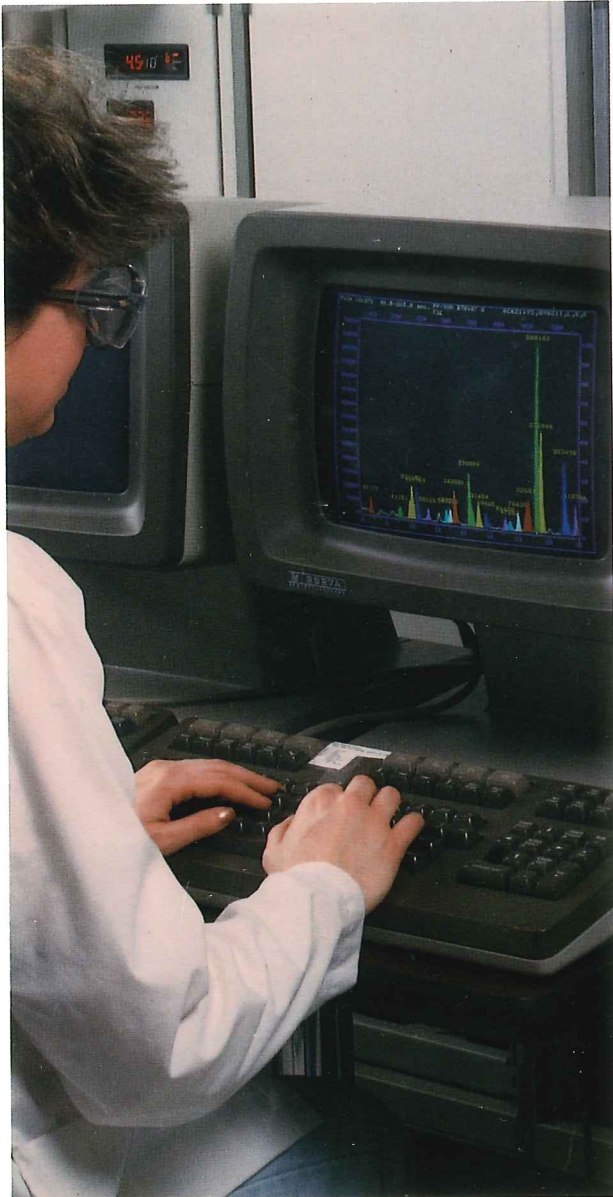


Technology for Evaluation and Management of Environmental Risks



Risk Management



Graphite furnace spectrometer represents state-of-the-art instrumentation found throughout the ETC laboratory network.

Evaluating, Monitoring and Managing Hazardous Chemical Releases

ETC's INSITE™ System Can Help Prevent Unanticipated and Costly Environmental Surprises.

- Facility Closures
- Permit Denial/Revocation
- Real Estate Transfer Delays
- Ineffective Remedial Actions
- Enforcement Actions

Hazardous chemicals released into the environment can create public health risks and harm natural resources. Concern about these effects has led companies to closely monitor and control their chemicals. At the same time, heightened public awareness has resulted in increased legal actions demanding compensation, fines, even criminal penalties, and an increase in federal, state, and local regulations.

To effectively evaluate and manage the risks posed by the potential or actual release of hazardous substances, YOU SHOULD:

Perform Chemical Analyses

Quality analytical measurements which are accurate, precise, complete and consistent over time are an important element for evaluation of environmental risk.

Organize Associated Site Data

Environmental site conditions, operational factors, permit regulations, and hydrological data should be combined with the analytical results to maximize the value of your data interpretation.

Generate Reports

The results of the data collection process must be reduced and summarized for governmental and executive review.

Evaluate Historical Data

Accurate measurements and safe management of environmental hazards require long-term monitoring. A comprehensive computer system is the only practical solution for managing extensive quantities of data acquired over long periods of time.

Make Informed Decisions

The systematic integration of chemical information, site conditions and data analyses using computer technology provides comprehensive, economical, readily available solutions for you to evaluate, report and manage risks associated with hazardous chemical releases.

ETC is a wholly-owned subsidiary of Environmental Treatment and Technologies Corp. (ETTC).

ETTC is an environmental services company.

At sites where hazardous materials or toxic substances are present, ETTC applies technologies to manage the risks of chemical releases. Through its subsidiaries, ETC and O.H. Materials Corp. (OHM), ETTC evaluates site problems and applies onsite solutions. Evaluations are provided through the analytical and data management services ETC provides.



A lab technician differentiates organic compounds via the GC-MS Data System, one part of ETC's automated laboratory facilities. The complete automation of our laboratories enables our professional staff to concentrate their energies on client needs.



The INSITE™ System Combines Computer Technology with Analytical Chemistry to Evaluate and Manage Environmental Risk

ETC is a leader in all phases of environmental analytical testing and environmental data management. Our INSITE system is the industry standard in supplying the services you need to collect site data, analyze samples, and interpret this data to better evaluate and manage your liability.

It is costly to create, gather, process and store information. For this reason alone, your information is valuable. However, the value of your information is also directly related to its organization and accessibility. The ETC INSITE system increases the return on your information investment by maintaining your results in a confidential data base and by providing you and the designated users with total or limited access to your data base through the use of multiple levels of security.

ETC's INSITE system provides the tools which can improve the timeliness and accuracy of the information required for your environmental decisions.

INSITE consists of three environmental management services:

SITE ORGANIZATION SERVICES

- Sample Information
- Site Conditions and Measurements
- Contaminant Alert Levels
- Permit Requirements
- Organization/Responsibilities

LABORATORY SERVICES

- Sampling Procedures
- Testing Procedures
- QA/QC Data
- Chain-of-Custody
- Technical Reports
- Data Entry

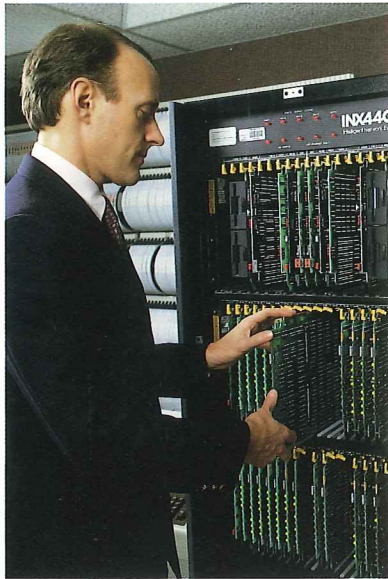
DATA MANAGEMENT SERVICES

- Delivery of Electronic or Hardcopy:
 - Tabular Reports
 - Graphical Reports
 - Statistical Analyses
- Project Engineering Case Studies



Constant changes in Federal, state and local regulations demand continuous monitoring and surveillance. ETC keeps abreast of the changes, and provides you with the latest information so that you can be assured of compliance with current regulations.

Site Services



Our telephone network (digital private branch exchange) automatically switches your data requests to as many ETC computers as necessary, including main frames and lab computers.

In our inorganic laboratory and throughout our national network of laboratories, there is a commitment to quality.



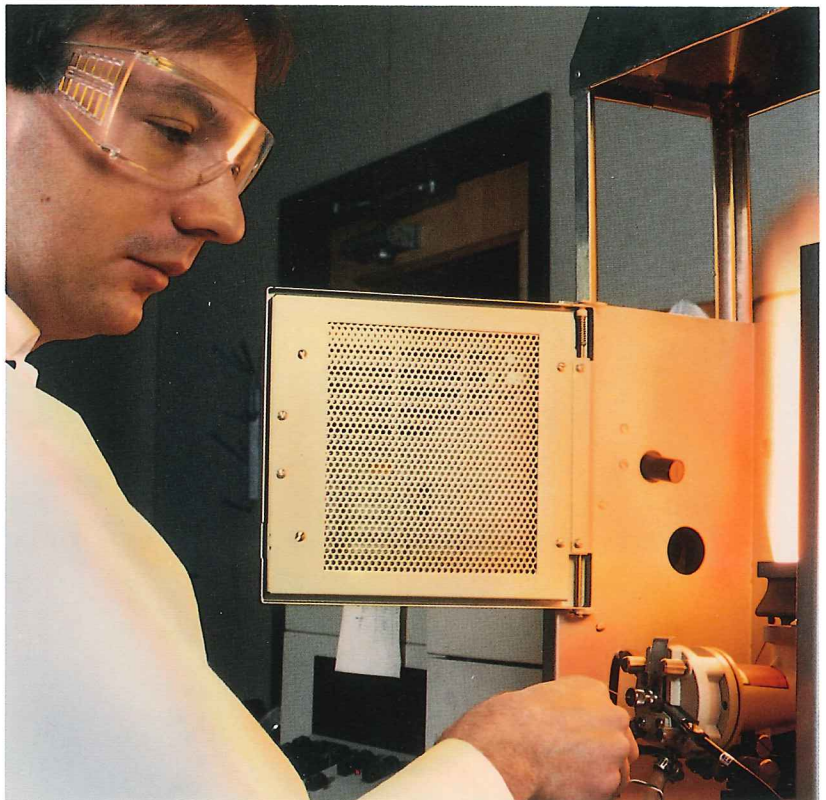
A Monitoring Program Tailored to Your Site

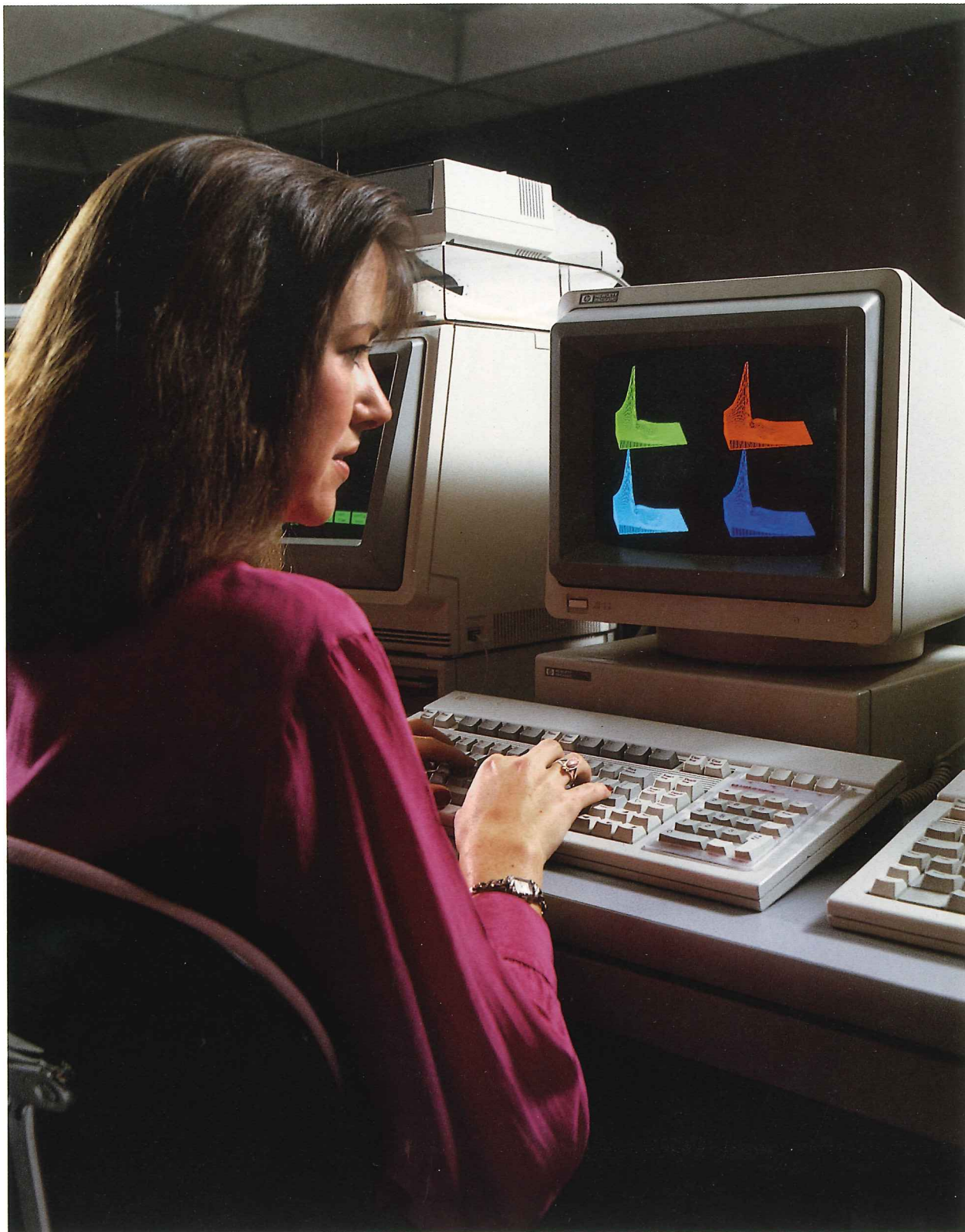
Organizing data at any site means determining what types of data are needed and using discipline in their collection.

The results of the chemical analyses which are stored in your data base are most meaningful when examined in conjunction with other site conditions. Determining which relevant conditions need to be measured and stored is a job for experts. The ETC account executives work with you to develop a monitoring program designed specifically for your site. The details of the monitoring program are stored in hardcopy form in your

SITEBOOK. The organization service is an integral part of both laboratory and data management services.

Your SITEBOOK contains detailed site maps, sampling locations and descriptions, test requirements, contaminant alert levels and the field data to be collected. Additional pertinent information, such as permit requirements, can be added at any time.





Three-dimensional site maps are a graphic representation of the movement of chemical concentrations over a period of time. They give your data added meaning because they give it concrete, visible interpretation.

Laboratory Network



Laboratory sample bottles, used only once, are cleaned meticulously before use. Sample bottles are triple washed, baked, coded and tracked to clients' sites and back.



ETC's patented, insulated Sample Shuttles hold the bottles, preservatives and coolant necessary to ship sample materials safely and in compliance with analytical protocols.

Laboratory Networking Means Centralized Management and Control

Analyzing for minute quantities of complex compounds is primarily science, partly art and completely reliant on a commitment to quality.

Laboratory Network

To support our environmental services, we have developed a laboratory and computer network which covers the entire United States. We have equipped our laboratories with the latest analytical instruments, which are networked to their local computers, to a laboratory management computer and, finally, to our data management mainframe systems. Our laboratory/computer network helps ETC to manage turnaround time without sacrificing quality. The laboratory/computer network also insures uniformity of analysis and reporting by maintaining management and control from a central location.

Laboratory Personnel

To support both the science and art of analyses, we rely on our professional technical staff, who come from research, industry and government. Their background and training allow them to add the critical ingredient, JUDGEMENT, to sample analysis.

Special Projects

All of our laboratory supervisors are experts in the field of environmental chemistry. During the past several years, they have designed and managed numerous special research and site assessment pro-

jects. Among them ETC has distinguished itself by developing the analytical approach that has become the foundation for the methodology applied to the analysis of many of the RCRA Appendix VIII compounds. The data obtained from this special project was subsequently used as part of a feasibility model for the compilation of the Appendix IX analyte list. This leadership in the environmental industry exemplifies the kind of expertise we can bring to solving special environmental analysis problems.

Documenting the Quality of Analytical Results Is the Only Long-Term Guarantee of Data Integrity and Defensibility.

Quality

In most environmental applications, chemical analyses have little worth unless their validity can be proven. Providing credibility poses a data management challenge. It requires that the measurements of individual chemical concentrations be juxtaposed with the many measurements of laboratory quality: accuracy, precision, spiked recoveries, ability to replicate results and expert interpretation of the complex results produced by the analytical instrumentation. Our laboratory management computer systems and our rigorous QA/QC procedures



Advanced computer technology assures not only the most effective management of your data, but restricted access and complete security, as well.

Laboratory Network



Insulated Sample Shuttles are awaiting field calls – shuttles are patented and hold bottles, preservatives and coolant necessary to meet safety and analytical standards. Chain-of-custody documentation is included with Sample Shuttles.

The expanding network of analytical and subcontractor laboratories combines the ETC quality commitment with convenient regional facilities. The network makes it easier to do business with ETC.



ETC Analytical Laboratory Network



ETC Subcontractor Laboratory Network



ETTC locations



allow us to perform the measurement tasks efficiently and display the QA/QC results for careful examination and interpretation by our chemists and our clients.

Chain-of-Custody

Documentation is not solely a laboratory function. Where analyses are undertaken to comply with regulations and methodologies, with the possibility of litigation, it is necessary to document the chain-of-custody for each sample. The chain starts with sample collection in the field, transportation from the site to ETC and the initial laboratory processes. ETC provides written chronicles for each custody step, and the chain's record is included in each report we issue.

Technical Reports

Our analytical reports have set the standard for the industry. The combination of our technical report, which contains sample and quality control results, and the chain-of-custody records provides court-ready

documentation for legal or enforcement actions.

Data Entry

Your environmental data base is not limited to those samples tested by ETC. Sample results and field data generated by other laboratories, engineers and consultants can be added to your current data base or used to create an entirely new one. The full spectrum of data management services can be used to evaluate your information after data entry is completed.

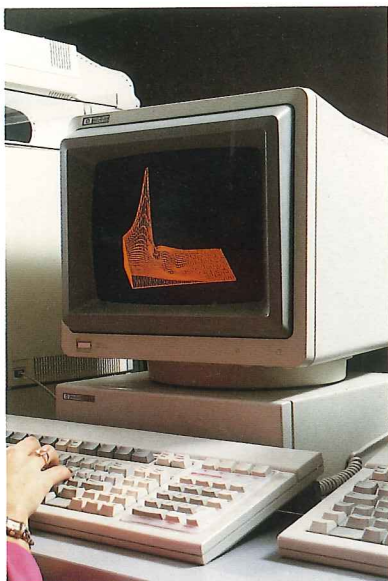
Analytical and Data Management Services from ETC

Although there are no limitations placed on entering non-ETC generated analytical data into your data base, there is a major benefit that can be realized at no incremental cost when your chemical analyses are performed by ETC.

The entire process of transforming your sample into useful data is constantly monitored by ETC's QA/QC department. This ensures that your data is consistent. This provides you control, security and confidence in the management of your environmental risks.



Data Management



Keeping software applications current is a continuous job. Standard software packages can't cope with changing needs and growing data volumes for long. To stay current, ETC develops software as we or our clients identify needs.

Accessing Your Data Base

Managing environmental data means giving you the processing tools you need to manage sites, wastes and chemicals.

ETC Data Management Services provide you with two methods for accessing your data in the data base. You may use ETCMAIL to access it electronically through any properly equipped terminal or personal computer, or you may ask us to process your data and send hardcopy printouts of the results.

We supply software tools that utilize the latest computer technology to tailor outputs for your specific needs. For example, CEOs typically want succinct summaries of potential problems; site managers typically need to sort and search data in the detail that legal obligations and operating conditions demand. And, in its September, 1986 RCRA Technical Enforcement Guidance Document, the U.S. EPA recommends the use of computers for data evaluation and reporting. Using ETC's Data Management System will enable you to comply with these guidelines.

To serve your needs, we provide an ever-increasing set of data management tools: parameter, alert level and historical trend, correlation, and summary reports; environmental assessment reports; and site, isopleth, and 3-dimensional mapping. They may be applied to a single site or multiple sites. We also provide outputs specifically tailored to comply with the major pieces of environmental legislation in a format compatible with your required environmental reports. ETC is interested in discussing any special requirement with our clients and working with

them to develop effective solutions.

ETCMAIL Provides the Electronic Processing Tools You Need to Manage Your Environmental Risk.

ETCMAIL allows you to use your terminal or personal computer, via telephone modem, to access your data base on our mainframe computers. The sentry security system restricts access to authorized personnel only. Once past the security checks, our simple, easy-to-use programs step you through the dialogue to locate and extract only the information you need. The self-teaching, on-line help function provides explanation for each prompt encountered. You can become proficient in the use of our system surprisingly quickly.

ETCMAIL lets you view the test results of your samples currently in the ETC laboratory system and/or interrogate your data base for historical information by using ETC's Interactive Date Base (IDB). The results of a search are displayed in tabular form on your CRT.

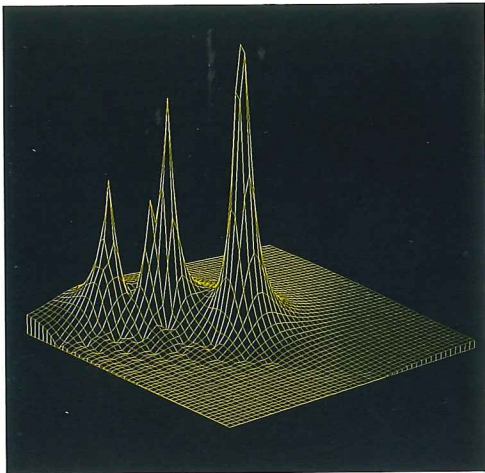
They can be printed on your local printer or downloaded to a file on your personal computer.

Data downloaded to the personal computer can then be integrated into any program on the PC to perform tasks like word processing, spreadsheets, statistics and graphics. For example, data can be integrated into a word processing package to automatically create custom report formats for federal, state or local regulators without retyping results.

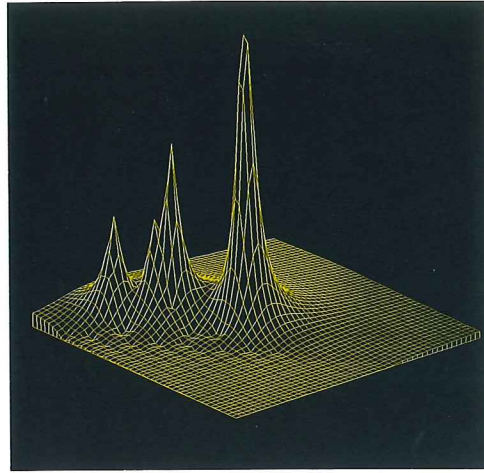
Data Management

Three-dimensional maps condense enormous amounts of data into understandable graphic representation. Data can be linked with geographical coordinates to provide a three-dimensional picture of the

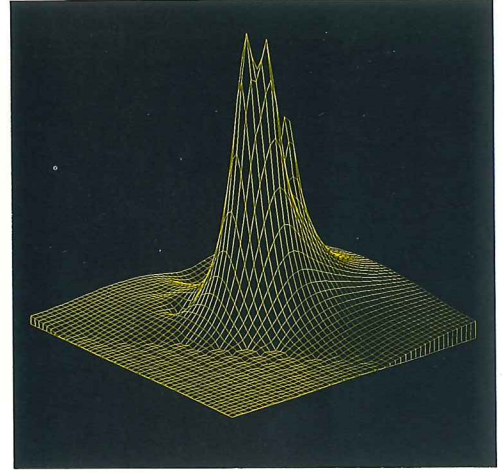
movement of contamination (chemical, field or engineering data) for a site. For this kind of map, higher values appear as hills or mounds on the site.



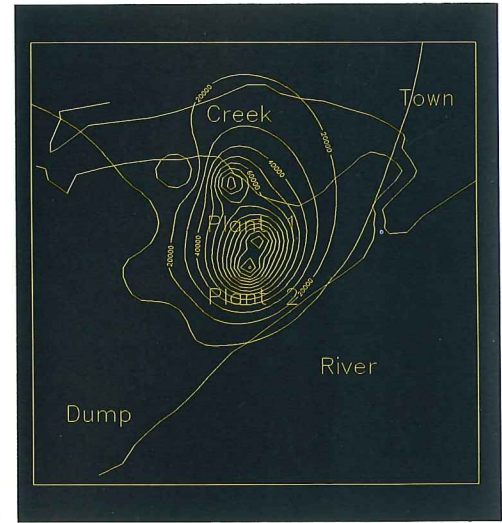
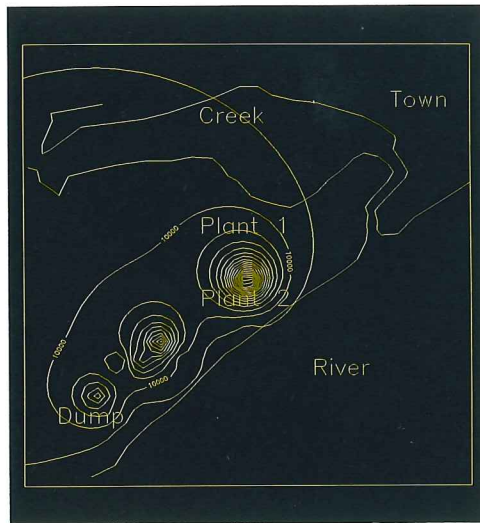
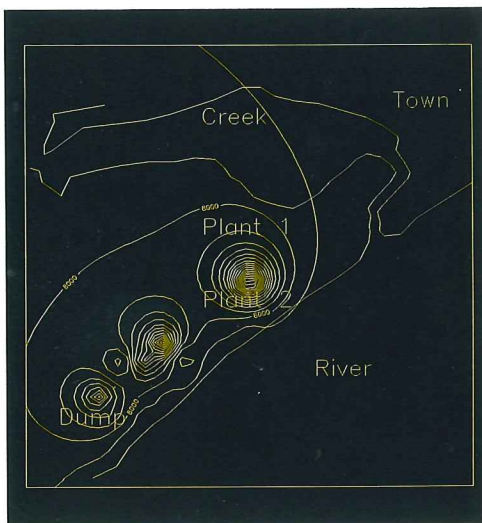
Benzene (ug/l) Year One



Benzene (ug/l) 24 months later



Benzene (ug/l) 36 months later



Contour maps present the same information as the 3-D maps, but from a different viewpoint, to gain more understanding about the site conditions. Again, the data extracted from the data base is linked to the geographical coordinates of the

sample points. On this kind of map, higher values are represented as a higher concentration of contours. These maps can be annotated with the data values to provide a greater understanding of the effectiveness of sampling plan coverage.



The utilization of our Interactive Data Base (IDB) services allows the client to download historical and current data from ETC's mainframe computers to your personal computer via a modem. Data can be integrated into application programs such as spreadsheets, word processing, statistics and graphics. Your reports can call on and up-date historical and current data.

Data Services



The ETC project engineering team – account executives, chemists and project managers – meet, bringing varied and pertinent work experiences to focus on, and to evaluate, the environmental conditions on your site.

Information Tools to Evaluate the Environmental Conditions at Your Site

The ETC project engineering group provides hardcopy reports so that you can manage your environmental risk without the need for direct access to our computer system.

The project engineering group was established for the purpose of creating data management summary report packages to augment electronic report delivery. Many clients find this service to be a convenient alternative to ETCMAIL. Currently, you can choose from over 30 different report formats and graphs in which to summarize your data. All you need to do is outline the type of reports you require and we do the rest.

Picture the Possibilities

Absorbing and retaining information presented through the written word is time consuming, while the same information conveyed graphically can be grasped almost immediately, saving valuable time. Any information presented in our tabular reports can be displayed in a graphic form.

ETC Data Management Services – Case Studies

The ETC project engineering group performs case studies of your facility data to create the information tools necessary to evaluate the environmental conditions at your site.

The case studies are designed to extract trends and patterns from large volumes of data. The product of a study is a report displaying the information in a format that can be used by professionals to evaluate environmental conditions.

The scope of the study could be as simple as processing the data in an existing ETC data base or as involved as the creation, data entry and processing of a completely new data base. The report will include the tabular, graphic and statistical reports discussed previously, along with 3-D and contour maps to describe the extent and movement of contamination.

Risk Analysis



Cost-Effective Solutions to Meet Environmental Changes

Authoritative Results

ETC's INSITE system represents the most sophisticated and cost-effective solution for providing the information necessary to evaluate and manage your environmental risk in a timely and organized fashion. Environmental risk analysis frequently forms the basis for significant decisions and judgements that can affect the operation of your organization. The credibility of your decisions is underwritten to a great extent by the accuracy and reliability of the data you use.

When you make an investment to improve your data management capabilities, you want that investment to enhance your operation, do it quickly, and minimize the disruption to the organization. The INSITE system was designed with this ideal in mind – to enhance productivity by organizing the utilization of materials, samples, data and people.

ETC's project engineering team will work with you every step of the way to make sure they understand your organization, objectives and requirements. The combination of their experience and your operational knowledge can result in a quality solution for you.

ETC is committed to providing the tools for improving the accuracy and efficiency of your Environmental Risk Management. We keep our commitment by maintaining and developing laboratory and data management systems and networks that do precisely that. The programs outlined in this brochure will help you to understand the depth and range of that commitment, and exactly how it can help you.

Call, write or use the post card. If you would like more detailed information on any of the services described in this brochure, or if you would like to discuss your specific application, please contact us today.



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