

# ***How does NEIC marshal its technical and scientific resources to effectively support environmental enforcement?***

*What tools in which combinations will prove most effective? These questions illustrate the present and future challenges for the National Enforcement Investigations Center (NEIC), EPA's technical enforcement office located in the Rocky Mountain foothills just west of Denver, Colorado.*

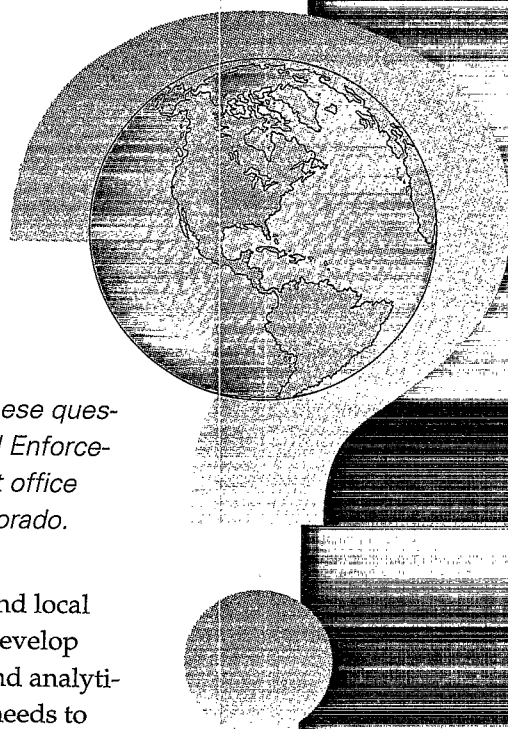
Whether pioneering multimedia investigations, developing new laboratory procedures, producing enforcement targeting profiles, or training, the Center aims to improve the state-of-the-art. As EPA and the science of environmental protection evolve, so does NEIC's mission. Though any enforcement program is based upon compliance with the law, NEIC is striving to help EPA target the enforcement program for maximum environmental results.

Since 1970, NEIC has served EPA as a major investigative and technical support arm for EPA's enforcement program, providing support to the environmental enforcement community. NEIC offers expertise in field investigations, technical and regulatory analysis, forensic laboratory analysis, information management, and litigation support. NEIC's experienced professionals have earned a national reputation for professionalism and the excellence of their work.

NEIC's mission spans most environmental programs and covers the country. In partnership with EPA headquarters; regions;

and other federal, state, and local agencies, NEIC seeks to develop and foster the technical and analytical capabilities that EPA needs to translate changing national priorities into a successful enforcement program. NEIC is often the proving ground for EPA enforcement initiatives.

NEIC is organized functionally to support enforcement cases. Case management support teams may consist of NEIC engineers, scientists, attorneys, analysts, and environmental protection specialists. Complex, high profile cases often require team members from all NEIC functional areas. Other support requests may call on only one area of expertise, such as a field inspection or a corporate financial analysis. This brochure highlights the Center's skills and services and describes NEIC's role in EPA's enforcement program.



# ENFORCEMENT PROGRAM SUPPORT

## FIELD INVESTIGATIONS

NEIC directly supports EPA enforcement programs by conducting field investigations of complex pollution problems of major public interest or national concern that significantly impact the environment or human health. Working with EPA headquarters and regions, our investigation teams plan and conduct extensive regulatory compliance investigations that include:

- On-site inspection of industrial, municipal, federally-owned, and other regulated pollution sources
- Evaluation of pollution control, abatement, and remedial systems, production processes, and operations and maintenance records
- Examination of past and current compliance status, financial conditions, and environmental practices within the regulated community



*Assessing potential sampling location in a hazardous waste surface impoundment.*

**Using both single and multi-media approaches, NEIC conducts investigations pursuant to the civil and criminal provisions of federal environmental laws.**



*Sampling at hazardous waste disposal area.*

- Measurement and monitoring of regulated sources including the collection and analysis of evidentiary samples

- Preparation of comprehensive and fully defensible technical reports for use in subsequent case development and litigation

Using both single and multimedia approaches, NEIC conducts investigations pursuant to the civil and criminal provisions of federal environmental laws including the Clean Air Act; Clean Water Act; Resource Conservation and Recovery Act; Safe Drinking Water Act; Toxic Substances Control Act; Federal Insecticide, Fungicide, and Rodenticide Act; and the Comprehensive Environmental Response, Compensation, and Liability Act.



*Typical field activities might include excavating waste materials, evaluating drummed waste contents, preparing for field activities, and photo documentation of samples for litigation.*

## TECHNICAL AND REGULATORY ANALYSIS

NEIC engineers and scientists often advise EPA headquarters and regions on technical and regulatory issues that arise during case development, settlement negotiations, and litigation. As necessary, NEIC provides fact and expert witnesses during criminal and civil enforcement proceedings. With their knowledge of environmental regulations and associated technical requirements, NEIC staff support enforcement case findings, develop methods and procedures,

defend positions taken by the government, and participate in negotiations.

This environmental enforcement expertise permits NEIC engineers and scientists to fill a crucial role on EPA workgroups and task forces. Through these forums, NEIC provides input to: regulation development and implementation; identification of pilot projects for enforcement initiatives; and preparation of enforcement training courses, seminars, and workshops.

## FORENSIC LABORATORY ANALYSIS



*Chromatographic analyses are often used as part of the "fingerprinting" process.*

The NEIC laboratory is the nationally recognized center of expertise in environmental chemistry in a forensic setting. This emerging scientific field uses analytical chemistry to support enforcement activities. Laboratory activities include analyzing samples to identify specific violations of pollution control laws, evaluating the enforceability of regulations, and customizing methods to solve unusual enforcement case problems.

NEIC scientists support a wide variety of civil and criminal investigations referred by EPA and other government agencies. This support requires dependable scientific analyses and a mastery of environmental regulations as they apply to the measurement process.

NEIC has established a reputation for providing unique laboratory analyses to support complex and unusual enforcement actions. Such analyses include:

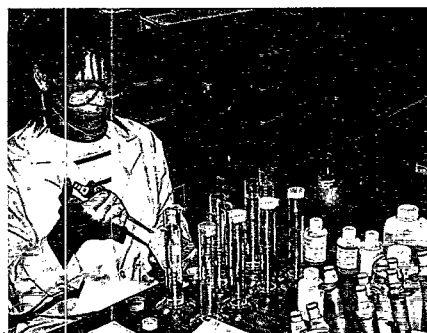
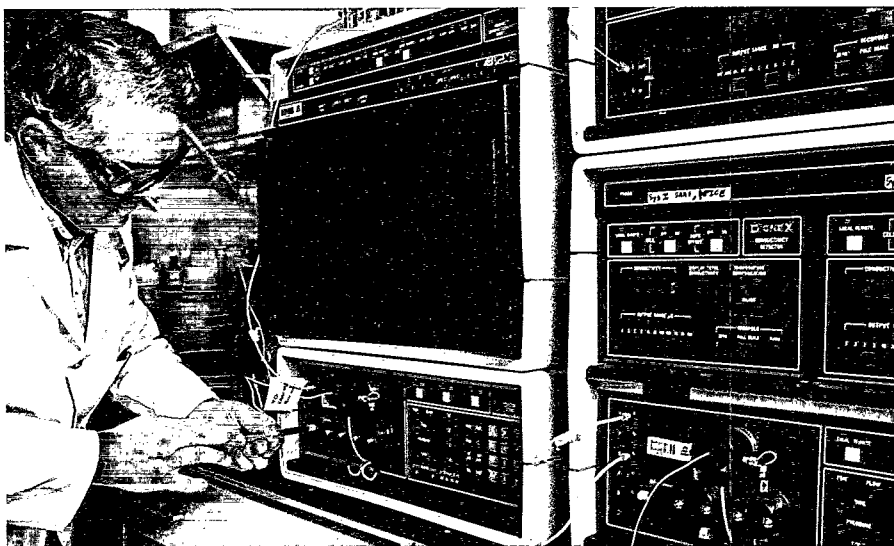
- Determining elemental isotope ratios to distinguish between enriched and naturally occurring uranium and between lead samples taken from different mines
- "Fingerprinting" compositions of wastes from unknown sources to identify the probable source
- Assessing laboratories to ensure the scientific quality and integrity of enforcement evidence

NEIC operates a state-of-the-art analytical chemistry laboratory. Beyond the typical scientific instruments found in environmental labs, such as gas chromatographs and atomic absorption spectrometers, the NEIC lab contains additional sophisticated equipment and capabilities, including:

- *High Pressure Liquid Chromatograph/Mass Spectrometers* for analyzing complex organic compounds and heat sensitive chemicals
- *X-Ray Diffraction and Infrared Spectroscopy* for positive identification of individual compounds including polymers, pigments, cyanides, and most inorganics
- *Portable instruments* to provide field investigation teams with critical real-time analytic results

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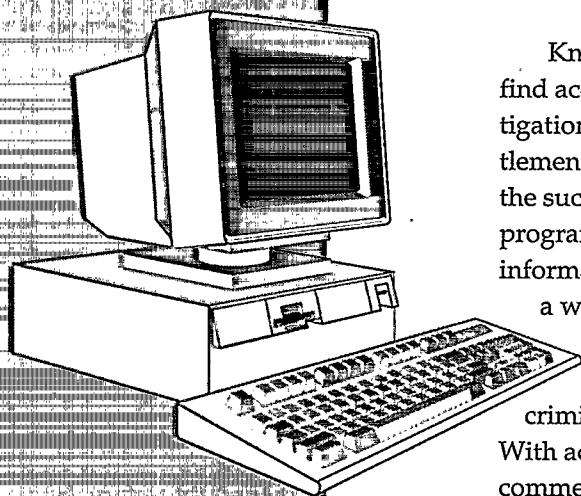


This hardware would be useless without experienced scientists. NEIC lab personnel continually work with investigators, engineers, and attorneys to understand how and why analytical results are used to support enforcement actions. This knowledge adds the "forensic" to an environmental chemistry lab. To prove some violations, NEIC has developed innovative, defensible measurement methods. It is the scientists' responsibility to determine the need for and design the methods, convey this information to investigators and attorneys, and defend those decisions in court. These analyses can be a decisive factor in a successful prosecution.



*Typical lab activities might include sample preparation, calibration of instruments, and sample analyses by ion chromatography.*

## INFORMATION SERVICES



Knowing how and where to find accurate information for investigations, case preparation, or settlement negotiations is essential to the success of EPA's enforcement program. NEIC's skilled team of information specialists responds to a wide variety of information requests from federal, state, and local civil and criminal enforcement officials.

With access to over 20 EPA and 300 commercial databases, as well as EPA's Integrated Data for Enforcement Analysis (IDEA) system, NEIC can locate business, technical, scientific, and legal information pertaining to regulated facilities, chemicals, pollution control technologies and many other topics.

Information Services products include:

- *Facility Profiles* that provide compliance/enforcement histories, finances, current news, and other relevant information for a specific facility
- *Corporate Compliance Profiles* that provide a multi-media compliance/enforcement history of a corporation and its subsidiaries
- *Superfund Financial Assessments* that determine a Potentially Responsible Party's (PRP) ability to pay for a Superfund site cleanup

Targeting support is one of NEIC's specialties. The Center's information specialists are often called upon to help develop national and regional, program-specific, and multi-media enforcement targeting strategies. The NEIC information group seeks to customize its assistance whenever possible by designing products that meet individual targeting and information needs.

NEIC maintains a specialized library for the enforcement community. Used by EPA personnel, state and local regulatory/enforcement agencies, and the NEIC staff, the library houses a collection of 100 technical journals, 2,000 books, and 500,000 technical reports. It also provides access to national database systems such as JURIS, Westlaw, Lexis/Nexis, Datatimes, Dialog, Ground-water on-line, Enforcement Docket Retrieval System (EDRS), and Record of Decision System (RODS). Special collections include the Hazardous Waste Collection, the Consent Decree Repository, and NEIC reports.

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## INFORMATION MANAGEMENT AND DOCUMENT ORGANIZATION

From search warrant through prosecution, environmental cases are often complex and involve thousands of documents. NEIC uses sophisticated means of accessing, retrieving, and organizing case information to prepare for investigations, settlements, negotiations, and trials.

NEIC uses computers and advanced information management techniques to help EPA case management teams effectively organize and retrieve data from their case documents. Evidence collection may begin with search warrant ex-

ecution which can involve seizing and handling electronic information as well as written documents.

Typical information management products or services include:

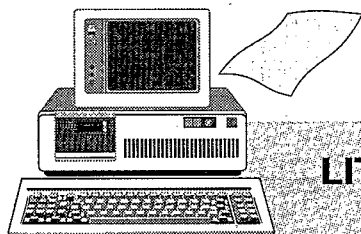
- *Document Inventories* that provide indices and retrievals of case information
- *Sample Profiles* that graphically or narratively document chain-of-custody from sample collection through disposal

- *Transactional or Waste-in Databases* to rank waste contributors by volume and describe waste shipments

- *Mass Balance Analyses* to measure discrepancies between system inputs and outputs of an industrial process (e.g., waste pick-up vs. waste disposal information)

- *PRP Tracking Systems* to track generator information on PRPs at Superfund sites

NEIC provides customized computer databases, reports, graphs, tables, and diagrams that can be used as investigation and case preparation tools as well as trial exhibits.



## LITIGATION SUPPORT

NEIC field investigations, technical evaluations, information services, and laboratory analyses often are the basis for subsequent civil or criminal enforcement actions. When EPA anticipates pursuing litigation, NEIC engineers, scientists, attorneys, and analysts supporting the investigation become part of the case management team. Team members convey complex, technical information in a form easily understood by judge and jury. Specific products include statistical and graphical analysis of data and preparation of charts, tables, and graphics for the courtroom.

The Center's attorneys assure that the technical work is effectively and accurately communicated in the context of the case and the relevant environmental laws. In most cases, NEIC legal support begins with the initial investigation and continues through trial or settlement. During any enforcement action, NEIC attorneys coordinate their efforts, as appropriate, with EPA legal offices and the U.S. Department of Justice (DOJ).

# SPECIALTY ENFORCEMENT SUPPORT AREAS

## NATIONAL ENFORCEMENT TRAINING INSTITUTE



The Pollution Prosecution Act of 1990 mandated the establishment of the EPA National Enforcement Training Institute (NETI) to train federal, state, and local lawyers, inspectors, civil and criminal investigators, and technical experts in the enforcement of the nation's environmental laws. NEIC manages NETI's western facility.

With faculty drawn from NEIC, other EPA offices, and various federal agencies, NETI-West

offers a wide variety of courses, such as Environmental Investigations Analysis Methods, Multi-media Investigations, Civil Investigations, and the Role of Information in the Enforcement Process.

## STATE ASSOCIATIONS

NEIC, as part of the Office of Enforcement, funds four environmental enforcement associations for most states and includes some Canadian provinces. The associations bring together local, state, and federal attorneys, regulators, and investigators. Networking, training, and criminal enforcement information sharing are important elements in their programs.

The state associations have developed many well-designed training courses, an ever-growing cadre of first-rate instructors, and a delivery system for training many front-line environmental enforcers quickly, efficiently, and effectively. These training programs fall under the umbrella of the National Enforcement Training Institute and are invaluable components of the Institute's overall training program.

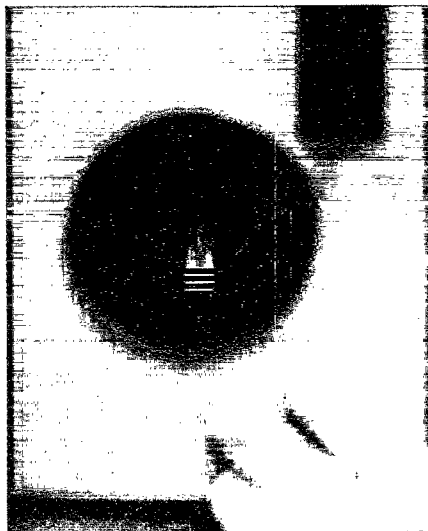
The state associations provide EPA's Office of Enforcement with a most useful institutional arrangement for dealing directly with state and local environmental officials. EPA has the ability to communicate, train, share data, provide leadership, and learn from the experiences of state and local enforcers.



## PESTICIDE PROGRAM AND GOOD LABORATORY PRACTICE STANDARDS INSPECTIONS

NEIC provides specialized technical support to the Office of Prevention, Pesticides and Toxic Substances' Office of Compliance Monitoring (OCM) and associated state and regional enforcement programs. Training is provided to state laboratory personnel to assure that analyses conducted in support of pesticide misuse and product compliance investigations are reliable and reflect state-of-the-art methods. NEIC also assesses state laboratory capability and reliability through performance sample evaluations and on-site inspections. Technical assistance is provided to OCM, states, and the regions on case development and grant-in-aid review.

NEIC conducts Good Laboratory Practice (GLP) Standards inspections at testing facilities in the western U.S. to assure that toxicological, environmental, and chemical data submitted to EPA by chemical producers is adequate for risk assessment purposes. NEIC participates in international GLP activities, conducting inspections in the Far East and Europe, as well as hosting foreign inspectors on domestic GLP inspections.

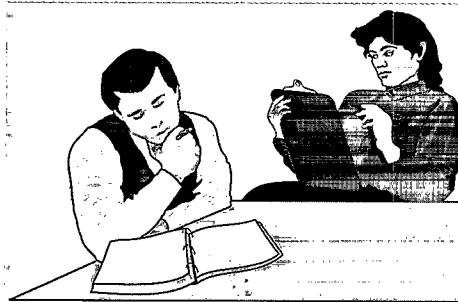
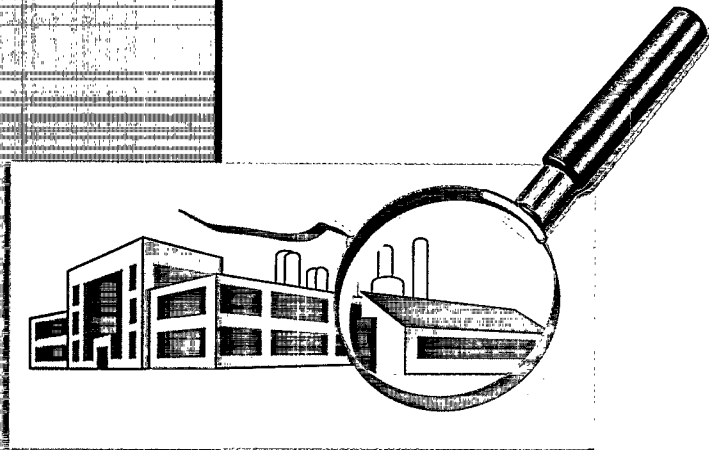


*Pesticides investigations often require complex chemical analyses such as high pressure liquid chromatography and mass spectrometry/gas chromatography. Argon plasma is used in metal analyses (above).*

## CIVIL INVESTIGATORS

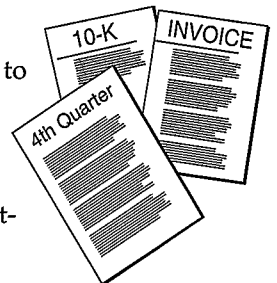
NEIC employs civil investigators to supplement its other enforcement support functions and to evaluate and develop a program for using the skills and abilities of civil investigators to meet EPA enforcement program needs. Primary activities that civil investigators can support include:

- Locating and interviewing witnesses to support cases
- Evaluating corporate structure and history to identify responsible individuals and uncover assets
- Determining the financial conditions of identified corporations and institutions
- Participating in on-site inspections with technical teams
- Assisting in followup and review of lodged consent decrees

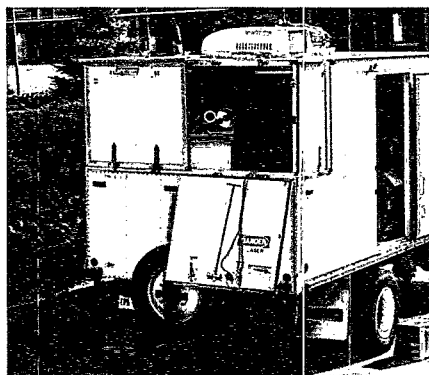
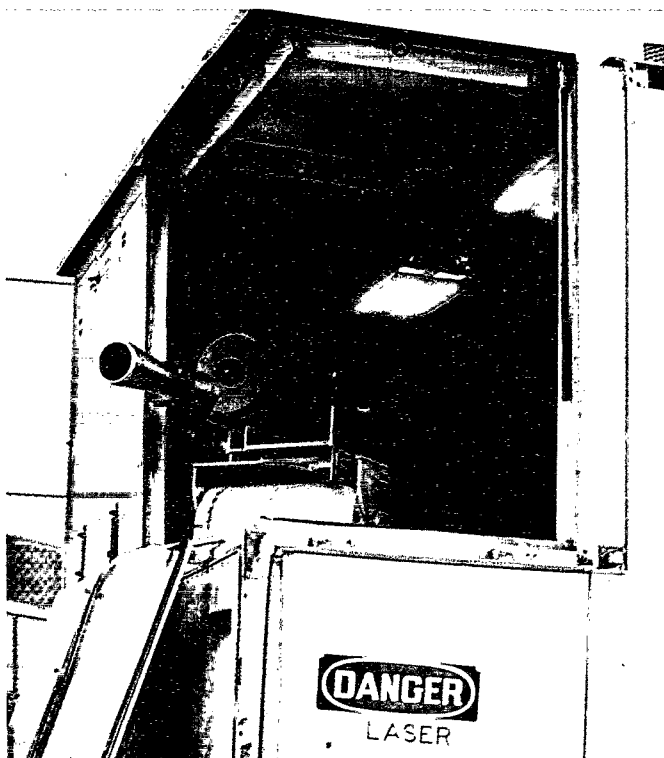


## CORPORATE FINANCIAL ANALYSIS

NEIC provides Agency case management teams with financial analyses of a regulated entity's ability to pay a penalty, finance environmental cleanup, and to determine the economic benefit gained from non-compliance. Services also include training regional case attorneys in basic corporate finance and accounting principles and providing an expert witness in selected cases.



## APPLICATION OF REMOTE SENSING TO ENFORCEMENT



*NEIC uses LIDAR technology for enforcement of air program opacity limits.*

NEIC uses a LIDAR (Light Detection And Ranging) to determine, during day or night, compliance with opacity regulations at stationary air pollution sources.

To support many on-site inspections, NEIC technical teams work with EPA's Office of Research and Development (ORD) to use other remote sensing techniques such as aerial photography and subsurface exploration technology (e.g., ground penetrating radar and terrain conductivity meters). This cooperative effort promotes the application of ongoing EPA research to NEIC enforcement investigations.

***NEIC's monitoring of export shipments has led to the detection of violations that have been referred to the EPA regions for enforcement.***

## INTERNATIONAL ENFORCEMENT

NEIC provides support to other countries in developing their environmental enforcement programs. Specific activities may include briefing foreign visitors on regulations, procedures, and methods, information sharing, and personnel exchanges. NEIC also works with other countries in developing enforcement actions against multinational corporations. In cooperation with U.S. Customs, NEIC maintains the EXPORT database, which tracks international hazardous waste shipments. Monitoring of export shipments has led to the detection of violations that have been referred to the EPA regions for enforcement.

