



Computer Systems for Chemical Emergency Planning

Chemical Emergency
Preparedness and Prevention
Technical Assistance Bulletin #5

ABOUT THIS BULLETIN

EPA is issuing this bulletin to assist local planners with identifying computer systems applicable to Title III of the Superfund Amendments and Reauthorization Act of 1986 (also referred to as the Emergency Planning and Community Right-to-Know Act). The purpose of this bulletin is to provide Local Emergency Planning Committees (LEPCs), State Emergency Response Commissions (SERCs), fire departments, and other local planners with a checklist of computer system needs and information on available systems already identified as applicable to local planning.

The first section of this bulletin is an edited version of Appendix K of the *Technical Guidance for Hazards Analysis*. This appendix is entitled "Evaluation Guide for Available Computer Applications Addressing Emergency Response Planning."

The second section of this bulletin is entitled "Preliminary List of Computer Applications and Systems of Potential Use Under SARA Title III" and contains a list of computer systems applicable to local planning. The list is not anticipated to be fully comprehensive of the environmental computer systems market nor is it intended to act as an endorsement for any of the listed systems. The list is only intended to serve as an initial reference source. Vendor names, addresses, and phone numbers have been provided: it is essential that the vendor be contacted to obtain current cost, capability, availability, and limitation information for any system of interest.

Updates to the evaluation guide and list of computer applications will be made periodically. If you have information relevant to future updates, please send the information to:

Chemical Emergency Preparedness and Prevention Office
Environmental Protection Agency
Attn: Software List
OS-120
401 M Street, S.W.
Washington, D.C. 20460

APPENDIX K OF THE
TECHNICAL GUIDANCE FOR HAZARDS ANALYSIS
EVALUATION GUIDE FOR AVAILABLE COMPUTER
APPLICATIONS ADDRESSING EMERGENCY RESPONSE PLANNING

PURPOSE OF THIS CHECKLIST

This appendix contains a checklist of criteria developed to help local emergency planning committees (LEPCs), or other groups considering purchasing software, to identify computerized applications to assist in emergency response planning as outlined in the chapters of the Technical Guidance for Hazards Analysis. The checklist identifies many of the ways that software applications can be of assistance. The priorities and needs of the local planning district will dictate which criteria are to be considered and may require development of additional criteria.

SOURCES OF INFORMATION USED TO DEVELOP THE CHECKLIST

The checklist criteria were developed from information in the National Response Team's Hazardous Materials Emergency Planning Guide¹ (NRT-1) and the Technical Guidance for Hazards Analysis. NRT-1 was designed to help local communities respond to potential incidents involving hazardous materials. The Technical Guidance for Hazards Analysis supplements NRT-1 by identifying the facility and transportation route information necessary for hazards analysis and emergency planning, providing guidelines for determining vulnerable zones, and outlining the process for analyzing risks.

Understanding the planning processes described in these documents and how the information being assembled will be used is a prerequisite for determining which computer application will best address the specific set of needs involved.

STRUCTURE OF THE CHECKLIST

Section 1. Provides a checklist for evaluating the computer hardware (equipment) and additional software (programs) required to operate the system. The flexibility and ease of use of the system and the availability of training and other types of vendor support are also addressed.

The next sections of the checklist are based on the structure of the Technical Guidance for Hazards Analysis, and include:

- Section 2. Hazards Identification (assembling facility, transportation route, and chemical data);
- Section 3. Vulnerability Analysis (modeling of releases);
- Section 4. Risk Analysis (ranking of hazards); and
- Section 5. Emergency Response Planning (assembling hazards, vulnerability analysis, and risk analysis information).
- Section 6. Regulatory Requirements. This section describes a few of the ways that a software application can explain the requirements under Title III and assist in compliance with requirements, such as tracking deadlines and responding to requests for information.

¹ National Response Team, Hazardous Materials Emergency Planning Guide, NRT-1 (March 1987).

NOTE: This checklist highlights some important user costs to be considered, however the total system cost is difficult to represent. Some software applications may require the purchase of specialized hardware or additional software from other manufacturers. Vendors may include fees for tailoring of the software application to meet a user's needs in the original price. Training, manuals, technical support services, additional data entry, software updates, and additional copies of the software may be included or may need to be purchased separately.

In addition to the initial purchase costs of the application, the long-term investment required to install, maintain, and operate the full working system must be considered. Such costs will include: assembling the required data; validating and entering the data; training new personnel; purchasing updated software; and correcting and amending the data as changes occur. These costs will apply to some extent to any application purchased. Assistance in estimating some of these costs may be available from data processing professionals within the State government or from computer-oriented firms located within the district.

SUGGESTED PROCEDURE FOR EVALUATING EMERGENCY RESPONSE PLANNING SOFTWARE APPLICATIONS

The suggested procedure for LEPCs to use the checklist is as follows:

1. Identify the local district's need to manage emergency response planning information under NRT-1 and the Technical Guidance for Hazards Analysis. Understanding how the information is to be used in the planning process is an essential first step to focusing the evaluation on the needs.
2. Select the criteria on the checklist that most closely represent the local district's needs and priorities for emergency response planning. It is not expected that all criteria listed will apply.
3. Develop any additional criteria required to address local needs and priorities (e.g., consistency with the type of computer equipment that is already available).
4. Rank the criteria according to levels of importance (e.g., must be met, would be valuable, can be delayed).
5. Identify vendors and their emergency response software from the available literature, advertising, and other sources. An initial list of commercial software applications is included in the second section of this technical assistance bulletin.
6. Request information from the vendors (e.g., sales literature, demonstration software, cost information, and current users of the application who can be contacted as references).
7. Review the information and complete a checklist for each software application.
8. Contact vendors to request any additional information and to clarify data on the applications that seem best suited to the need.

CAUTIONS: An evaluation must include the specific priorities and needs of the individual jurisdiction.

Any comparison of the cost of computer applications requires the assessment of many factors in addition to the purchase price identified by the vendor. (See note above for a detailed discussion of costs.)

Computer systems are continually being modified and refined. The results of the evaluation will become out-of-date and should be repeated if the purchase of a system is delayed.

CRITERIA FOR THE REVIEW OF COMMERCIALLY AVAILABLE SOFTWARE APPLICATIONS FOR EMERGENCY RESPONSE PLANNING

COMPUTER SYSTEM REQUIREMENTS (Hardware, Software, Support, Etc.)

Objective: Provide a basis to evaluate the functional capabilities, design limitations, and operational requirements of the system, and to evaluate the vendor's ability and willingness to support the system.

Criteria	Explanation/Examples
1. Demonstrations of the software application are available?	Either a professional sales demo or current user demo may be available.
2. Documentation of the software is available for review?	User's manuals and other explanatory material from the vendor.
3. Software application is available for a trial evaluation?	30-day free trial may be available from the vendor.
4. Vendor is willing to modify the application?	The application may require changes by the vendor to allow specific community needs to be addressed.
5. Software is compatible with hardware that is already available or can be easily obtained?	Microcomputer; monitor; graphics board; modem; phone line; math co-processor; data storage space; digitizer; printer or plotter.
6. Computer system hardware memory can be expanded to meet the anticipated needs?	Hardware can accept additional memory required to load the software and modify the largest data file needed.
7. Requires additional software to be purchased from other companies to function?	Operating system; printer interface; graphics package.
8. Sold as modular components that are priced separately?	Modules may be selected and assembled to meet specific requirements (NOTE: the software may require purchasing several modules to function properly.)
9. Total system cost is consistent with budget capabilities of user?	Costs of hardware, software, training, and data input may be hidden.
10. Limits hardware and data access by unauthorized users?	Access may be limited through passwords and/or encryption of stored data.
11. User friendly and requires a minimal amount of user training?	Menu driven; provides help screens; clearly presented instructions; uses a mouse or touch screen.
12. Vendor provides additional training that may be required?	Training classes and materials may be required when the system is installed and as employees are hired; cost of training should be considered.

COMPUTER SYSTEM REQUIREMENTS (continued)

	Criteria	Explanation/Examples
13.	Allows data that was entered by the system vendor to be updated by the user?	Allows modification of procedures for handling a spill or release according to facility or community practices.
14.	Allows new types of data that were not included in the vendor's application to be entered by the user?	A new field of data can be added to the database (e.g., new type of chemical information; facility response procedures).
15.	Limits copying or distribution by copyright or copy protection?	Some vendors limit the ability to make copies of the software and require copies to be purchased for each user.
16.	Validates data as it is entered or stored in the application?	Tests data against valid ranges (e.g., pH < 14) or lists of acceptable data (e.g., chemical names).
17.	In addition to using established keywords, allows searches to be performed with criteria chosen by the user?	Data can be identified by other than preset criteria such as through a menu (e.g., user defined searches).
18.	Quality data sources were used and updates will be available as source information changes?	Chemical data content is current and generally accepted by science and health agencies such as EPA, OSHA, NIH, NOAA, U.S. Coast Guard, DOT, and others; cost and timeliness of updates should be considered.
19.	Allows reports or graphs to be designed by the user?	User can specify data to be included, physical layout, and headings for columns of data.
20.	Allows data to be transferred (input and output) with other types of software packages and hardware systems?	System can communicate with other systems (e.g., Lotus, dBASE, ASCII, and DIF data formats; Macintosh and IBM equipment).
21.	Is in use by others who are willing to provide information on their experience?	Vendors may provide names of current users of the system who would be willing to discuss their experience.
22.	Will the system software and data be updated by the vendor?	New capabilities that are compatible with the current system may be added.
23.	Vendor provides continued service and support if the user experiences any type of difficulties in operating the system?	If this type of service is available, a maintenance and support fee will probably be charged.

HAZARDS IDENTIFICATION

Objective: Provide information on the identity, quantity, location, physical properties, and toxicity of chemicals at sites within the planning district.

Criteria	Explanation/Examples
Facilities	
1. Accepts data on one or more manufacturing and storage facilities?	Locations; activities; and inspection records.
2. Accepts chemical inventory and storage data?	Chemical names; quantities; site location(s); storage methods, temperature, and pressure.
3. Accepts information concerning facility accident potential or history?	Events that could result in damage; anticipated damage and consequences; and historical accident records.
4. Records or describes engineering controls and safeguards at specific facilities?	Detection, fire suppression, and security systems; containment and drainage systems; and utility shutoffs.
Transportation Routes	
1. Records shipping routes taken to deliver materials to facilities (e.g., highway, rail, and air)?	Identifies route taken and materials transported.
2. Accepts information on the major safety characteristics of routes?	Routes may create problems because of width; access; traffic patterns; and jurisdictions.
3. Logs transportation data, schedules, and exceptions?	Tracks planned cargo shipments for location and time expected.
Chemical Information	
1. Database contains information concerning the extremely hazardous substances?	As required by the Title III regulations (i.e., threshold planning quantities).
2. Contains information about the chemical and physical properties?	Flammability; reactivity; corrosivity; vapor pressures; physical states; boiling and melting points.
3. Contains the health hazards and risks, toxicological data, and first aid procedures?	Exposure routes and limits; signs and symptoms; target organs; and medical conditions aggravated by exposure.
4. Contains methods for the safe handling and use of the chemical and for emergency response?	Identifies the equipment, clothing and procedures required.
5. Indicates if notification requirements apply to the chemical released?	Identifies notification requirements for release of reportable quantities of chemicals (e.g., CERCLA, SARA).

VULNERABILITY ANALYSIS

Objective: Identify geographic zone of the community that may be affected by an airborne release and populations that may be subject to harm.

Criteria	Explanation/Examples
1. Accepts information on areas around facilities and routes?	Drinking water supplies; cropland; sensitive natural areas.
2. Accepts information on the characteristics of populations located in areas that could be in the vulnerable zone?	Location of special populations (e.g., elderly; handicapped; prisons; and schools) and population density.
3. Calculates the vulnerability zone based on the maximum quantity present for screening?	Calculations are based on credible worst case assumptions identified in the <u>Technical Guidance for Hazards Analysis</u> .
4. Allows site-specific inputs to the calculation of vulnerability zones and provides release scenarios?	Calculations are based on site-specific planning factors such as wind speed, stability class, and chemical toxicity.

Modeling the Release of Chemicals (predicting the path, the effect, and the area of impact of the chemical release using mathematical analysis)

Inputs (information that drives the model)

1. Accommodates physical characteristics of the chemical?	Liquids at boiling point or ambient temperature; powdered solids; solids in solution; molten solids; gas density.
2. Addresses different types of releases?	Instantaneous and continuous releases including spills, leaks, fires, explosions, and BLEVEs.
3. Supports multiple point sources?	Several release sources operating concurrently.
4. Addresses releases from any source or only pre-selected sources?	Modeling ability may be limited to a specific set of pre-established sites or may be capable of representing releases from any possible location (e.g., transportation accident).
5. Accepts data on meteorological conditions?	Wind velocity and direction; temperature; stability class; precipitation.
a. Allows observed data to be manually input?	Data are typed into the system using the keyboard.
b. Allows a modem link for direct data entry?	Accepts data directly from laboratories or weather stations.
c. Requires a meteorological tower for data input?	Facility or community meteorologic tower is required for data collection.

VULNERABILITY ANALYSIS (continued)

Criteria	Explanation/Examples
6. Accepts data input for the level of concern?	Uses the data entered to calculate the vulnerable zones.

Algorithms (equation(s) and assumptions used to calculate the results such as the concentration of the plume of released chemicals)

1. Employs dispersion models that are consistent with those used in the <u>Technical Guidance for Hazards Analysis</u> ?	Gaussian dispersion models based on Turner's Workbook of Atmospheric Dispersion Estimates, PHS Pub. No. 999-AP-26. Different air stabilities and wind speeds are used.
2. Identifies the types of assumptions used?	Some models are not documented to provide information on the assumptions used to perform calculations and their effect on the model's results or do not identify the limits of the model's ability.
3. Calculates chemical dispersion rates and routes?	Provides information on the plume size, motion, and concentration over time; and predicts toxic corridors.
4. Supports terrain modeling and considers complex terrain?	The ability to accommodate site-specific effects of terrain can be significant under some circumstances.

Outputs (the results of the calculations performed)

1. Presents pictorial representation of dispersion plumes?	Presents model output as dispersion plume overlaid on a map of the area.
2. Produces line, bar, or pie graphs?	Presents model output in graphical format (e.g., concentrations experienced at a location over time).
3. Retains the results of calculations in final form for future review or stores the input parameters to allow the results to be reproduced?	Systems differ in their ability to re-enact a series of calculations or to reproduce a specific output.

RISK ANALYSIS

Objective: Provide a basis to judge the relative likelihood (probability) and severity of various possible events. Risks can be expressed in qualitative terms (high, medium, low) based on subjective, common-sense evaluations, or in quantitative terms (numerical and statistical calculations).

Criteria	Explanation/Examples
1. Allows judgement to be made concerning facilities and routes, for probable hazard and severity of consequences?	Judgement may be based on the accident history, type of facility, storage conditions, control technologies in place, and other factors.
2. Assembles quantitative facility information concerning possible release scenarios?	Recognized systematic approaches include: hazard operability study (HAZOP); event tree analysis; fault tree analysis.
3. Allows priorities to be recorded according to community concerns and opinions?	Judgement and concerns of the community can be entered into the ranking and prioritization for community hazards.

EMERGENCY RESPONSE PLANNING

Criteria	Explanation/Examples
Objective: Assemble detailed information concerning hazards, vulnerability, and risk; provide action outlines for responders and criteria for plan review; present maps of the local area; and provide simulation capabilities for training.	
1. Provides detailed methods for promptly identifying the affected area and population based on release information?	Mapping; modeling; demographical statistics worst case release.
a. Maps facility locations and transportation routes?	Provides details of relative locations of hazards and vulnerable zones.
b. Plans routes for hazardous chemical shipments?	Based on characteristics of routes available, selects the least dangerous route.
2. Accepts emergency information and plans provided by chemical facilities?	Plans; procedures; site diagrams; emergency checklists.
a. Records facility emergency contacts?	Provides names, titles, and 24-hr. phone numbers for emergency purposes.
b. Generates floor plans of facility storage sites?	Shows building layout and chemical locations graphically.
c. Indicates location of engineering controls/safeguards?	Identifies safeguards such as emergency shut-offs graphically or by detailed description of the location.
3. Provides an action outline for emergency responders?	Provides a chain of events or considerations that is based on the site-specific conditions involved.
4. Identifies the needed emergency response equipment for various types of emergencies?	Provides a decision aid for choosing proper equipment and required medical supplies based on the chemicals involved.
5. Stores the inventory of local response equipment and provides location and availability information?	Assists in the identification of equipment available from chemical facilities, local emergency responders, hospitals, other communities, and private contractors.
6. Stores information on community emergency procedures and plans?	Direction and control; communications; evacuation and sheltering; medical treatment facilities; resource management; cleanup and disposal; decontamination; and documentation.
7. Provides criteria for evaluating existing emergency response functions?	Identifies the essential elements that should be present in the plans based on regulatory requirements and local community priorities.

EMERGENCY RESPONSE PLANNING (continued)

Criteria	Explanation/Examples
8. Prompts for information to update emergency response plans?	Flags information that changes frequently (e.g., emergency contacts, telephone numbers, and addresses).
9. Identifies hazardous material training program requirements and stores training information and schedules?	Provides criteria for evaluation of training programs and stores information on training completed per regulatory requirements.
10. Provides simulation capabilities for training?	Provides example test emergencies to exercise the plan and train response personnel.

IDENTIFICATION OF REGULATORY REQUIREMENTS

Objective: Track regulatory deadlines and assist in the assessment of compliance with reporting requirements, as well as record the status of required information and log requests for information.

NOTE: These criteria concentrate on planning and response requirements of Title III of SARA. The following is only a partial list of the possible capabilities applications may possess with regard to the identification of regulatory requirements.

Criteria	Explanation/Examples
1. Tracks deadlines for reporting requirements under Title III of SARA?	Deadlines for reporting as required under Title III Sections 302, 304, 311-312, and 313.
2. Provides a means to respond to information reporting requirements of Title III of SARA?	Report capabilities may include production of the submission forms or letters or partial assembly of the needed information.
3. Has the capacity to store and manage MSDS and chemical inventory form data?	Data manipulation including cross indexing lists to identify all facilities using a particular chemical.
4. Addresses public requests for information under Title III of SARA?	Record type and number of requests and provide information to answer them.
5. Tracks the status of planning in the local districts?	Identify when a plan was developed and when it was last updated.

PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

PURPOSE AND INTENDED USE OF THE LIST

This section contains a list of computer software applications and has been assembled as a reference source to assist local emergency planning committees (LEPCs) and others in locating potentially useful software applications. The list includes systems identified from readily available information sources. The principal intent is to identify software that is applicable to the information collection, data management, reporting, planning, or scheduling requirements of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). The following list of categories was used in evaluating each of the systems on Table I (* on the category list indicates that the category addresses an area of concentration applicable for meeting the requirements of Title III):

- * Emergency Response Planning Information (e.g., hazardous materials and facilities: locations, characteristics, training);
- * Air Dispersion Modeling (e.g., releases; gas clouds);
Other Environmental Modeling (e.g., water; groundwater; chemical properties);
- * Facility Environmental Monitoring and Other Chemical and Waste Data (e.g., monitoring data; schedules);
- * Facility Chemical or Waste Recordkeeping, Reporting, and Compliance Assistance (e.g., manifests, labels, report generation);
- * Treatment/Pretreatment Assistance (e.g., recordkeeping);
Facility or Treatment System Design Assistance;
- * Cleanup Assistance;
Facility Maintenance and Equipment Monitoring and Repair;
Facility Permit Applications Assistance (e.g., NPDES, RCRA Part B);
Facility Operations and Management Assistance (e.g., budget keeping, management records);
- * Chemical and Properties Reference Source (e.g., MSDS information);
- * Regulatory Reference Data Source;
- * Federal/State Information Source (e.g., historical accident records).

The PURPOSE/DESCRIPTION/REQUIREMENTS column of Table I provides information about each system pertaining to these areas of apparent concentration. Within Table I, systems that are double asterisked (**) possess an apparent high degree of usefulness for SARA Title III planning, however this does not indicate any endorsement of the system's ability. The vendor should be contacted to determine the extent to which the system addresses specific needs and to verify the system's capabilities.

The names or acronyms given to many applications are not easily recognized for the applications' ability to meet a particular need. The list therefore includes several types of systems that have no direct applicability to SARA requirements (e.g., wastewater treatment plant optimization; assistance with ordering chemicals). The creation of a comprehensive list of environmental applications provides a higher level of assurance that software that is relevant to Title III has not been overlooked. The list can also be used to eliminate systems from the review process and reduce the effort needed to identify a system that has the required capabilities.

SOURCES OF INFORMATION USED TO ASSEMBLE LIST

The list data were collected from a variety of sources, including:

- Published articles, as identified at the end of the list;
- Vendors sales literature, advertisements, and promotions; and
- Accumulated professional knowledge and expertise concerning the systems that have been developed.

Professional areas of expertise that were investigated included:

- Emergency response (including fire department) actions and planning;
- Occupational Safety and Health data management;
- Chemical information reference sources;
- Facility environmental data management and reporting; and
- Regulatory compliance reporting and data sources.

LIMITATIONS ON INFORMATION QUALITY AND CURRENTNESS

There are many limitations to assembling this type of list. Among the limitations that must be taken into consideration when the information in the list is used are the following:

1. The information provided to develop the list may be out-of-date.

Changes to environmental computer applications occur rapidly, therefore, the list cannot remain current. New systems are being developed, vendors move or go out of business, and identified systems are being updated, sold to other vendors, tailored to new markets, or discontinued.

2. System descriptions are not intended to be comprehensive.

The Purpose/Description/Requirements column of the table is provided only as a first indicator of some of the application's capabilities and to assist with modifying criteria that could eliminate the system from further review (e.g., hardware requirements).

3. Systems listed are not endorsed or approved by EPA.

Much of the information regarding application capabilities has been taken directly from vendor sales literature or third party reviews. The information recounted has not been extensively verified or validated due to time constraints.

IMPORTANT:

Vendor contact information, including addresses and phone numbers, is provided for all systems and has been validated to the extent possible. It is essential to contact the vendor to obtain current cost, capability, availability, and limitation information for any systems of interest. The list is only intended as an initial reference source. Purchase of a system should not be based on the information provided in the list.

TABLE I
PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	CONTACT ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
ACAPP	Aqueous Chemical and Physical Properties	P.S. Lowell & Co., Inc.	8868 Research Blvd Suite 309 Austin, TX 78758 (512) 454-4797	Predicts properties and computes chemical and solid-liquid phase equilibrium for aqueous mixtures. Up to 20 composition data sets may be handled in memory at once. Requires 512K memory.
ACT		Techdata	6615 la Mora Houston, TX 77083 (713) 498-0797	Designs activated sludge systems. Also provides data data for flow modeling and permits.
ADPM	Automated Defense Priority Model Development	Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW 6th Floor Washington, DC 20024 (202) 646-6800	System considers surface water and groundwater pathways of exposure in evaluating the potential for adverse effects. Air and soil pathways will be added as will numerous built-in error checking routines.
AIRDAS	Air Quality and Meteorological Monitoring Data Acquisition System	Enviroplan, Inc.	Michael Abrams 59 Main St. West Orange, NJ 07052 (201) 325-1544	Collects, processes, displays, and reports air quality and meteorological data. Requires Data General Corp. MicroECLIPSE processor.
AMINE-1		TECS Software, Inc.	P.O. Box 720730 Houston, TX 77272 (713) 561-6143	Performs preliminary design of MEA, DEA, and MDEA plants through mass and energy balance calculations for all major equipment involved.
ANASOFT		Anafaze, Inc.	Mike Jacobs 1041 17th Ave. Santa Cruz, CA 95062 (408) 479-0415	Records results of environmental monitoring data: flows, pH, pollution levels, waste disposal areas and control of pollution.
APE	Air Pollution Emissions	Jerome R. Barta	Jerome R. Barta 1513 White Post Cedar Park, TX 78613 (512) 258-1812 (Call after 4 PM)	Tracks air pollution emissions. Screen formats for data input and output in Basic. User can customize using Basic.

**Indicates an apparent high degree of usefulness for SARA Title III (i.e., includes two or more principal areas of use identified on page 12).

All systems require an IBM compatible microcomputer unless otherwise specified.

TABLE I (continued)
PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
ARCHIE	Automated Resource for Chemical Hazard Incident Evaluation	Department of Transportation	Stacy Gerard ARCHIE Support (DHM-15/Room 8104) U.S. Department of Transportation 400 7th Street, S.W. Washington, D.C. 20590 (202) 366-4900	Program created for DOT, EPA, and FEMA to aid emergency preparedness personnel in assessing the sequence and nature of events that may follow an accident. ARCHIE incorporates several estimation methods that may be used to assess the vapor discharge, fire, and explosion impacts associated with episodic discharges of hazardous materials.
ASPER	Activated Sludge Performance Evaluation Routines	Cochrane Associates, Inc.	Jay J. Fink 236 Huntington Ave. Boston, MA 02115 (617) 247-0444	Evaluates the performance of each unit of a wastewater treatment plant based on hydraulic loadings, solid flux loadings, food/microorganism ratios, sludge age, settleability, and related parameters.
BASIS	Text Information Management System (TIMS)	Information Dimensions	655 Metro Place South Suite 500 Dublin, OH 43017 (614) 761-7300	Provides access to textual and numeric data in its databases for information retrieval and reporting needs. Features word proximity and phrase searching; thesaurus and index.
Batchmaster Plus		Pacific Micro Software Engineering	35 59th Place Long Beach, CA 90803 (213) 434-0011	MSDS, HMIS labeling modules.
BEE - SARA		Bowman Environmental Engineering	P.O. Box 29072 Dallas, TX 75229 (214) 241-1895	Dispersion modeling software including EPA dispersion models, data entry programs, vulnerability zones, meteorological data processing programs, and puff-type programs for modeling gas releases. Uses more than 20 models.
BEESTAR, CRSMET, STAR WROSE		Bowman Environmental Engineering	P.O. Box 29072 Dallas, TX 75229 (214) 241-1895	Meteorological data processing. Prepares data in a suitable format for input in models.
BeSafe	BeSafe Hazardous Substance Information and Tracking Module	Azimuth Technologies, Inc.	P.O. Box 5787 Pasadena, CA 91117 (818) 405-0300	Information management system designed to aid in the creation of MSDSs. Includes packages containing hazardous materials data for compliance with "Right to Know" legislation.

**Indicates an apparent high degree of usefulness for SARA Title III (i.e., includes two or more principal areas of use identified on page 12).

All systems require an IBM compatible microcomputer unless otherwise specified.

TABLE I (continued)
PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
BLUE SKY		Kelon Corporation	P.O. Box 64577 Tucson, AZ 85716 (602) 299-5636	An integrated package that creates air pollution permits, calculates and reports on emission inventory information and individual air pollution incidents.
BREEZE AIR		Trinity Consultants, Inc.	12801 N Central Expwy Suite 1200 Dallas, TX 75243 (214) 661-8100	Air pollution dispersion models derived from the UNAMAP6 stationary source models and other specialized dispersion models. Uses more than 20 models. Requires 512K memory and 132 column printer.
BREEZE HAZ		Trinity Consultants, Inc.	12801 N Central Expwy Suite 1200 Dallas, TX 75243 (214) 661-8100	Models toxic gas releases. Two models available: SHELL SPILLS and TRPUF (based on EPA PUFF). Graphical output. Requires 512K memory and 132 column printer.
CALS/EWDS	Computer Automated Laboratory System/ Environmental Waste Database System	Beckman Instruments Inc.	Lab. Automation Operations 160 Hopper Ave. Waldwick, NJ 07463 (201) 444-8900	CALS combines sample tracking facilities with a database for management and documentation of information in the environmental waste monitoring laboratory. EWDHS provides a reporting format that prints data on the NPDES form.
**CAMEO II	Computer-Aided Management of Emergency Operations, Version 1.02	U.S. Department of Commerce - NOAA/U.S. Environmental Protection Agency - Office of Solid Waste and Emergency	Mark Miller NOAA HazMat Resp. Branch 7600 Sand Point Wy NE Seattle, WA 98115 (206) 526-6317 John Laumer National Safety Council 444 N. Michigan Ave. Chicago, IL 60611 (312) 527 4800 x5606	Emergency planning and response information including the following: chemical information, response information, air modeling, mapping, response resources inventory, facility information, route information, population information, emergency recordkeeping, MSDS information, Section 304 release reports, information request records, facility reports, and planning introduction and assistance. Requires Apple computer equipment.
CAMEO	Computer-Aided Management of Emergency Operations, IBM Version	U.S. Department of Commerce - NOAA/U.S. Environmental Protection Agency - Office of Solid Waste and Emergency	Mark Miller NOAA HazMat Resp. Branch 7600 Sand Point Wy NE Seattle, WA 98115 (206) 526-6317	Database of chemical data and response information.

**Indicates an apparent high degree of usefulness for SARA Title III (i.e., includes two or more principal areas of use identified on page 12).

All systems require an IBM compatible microcomputer unless otherwise specified.

TABLE I (continued)
PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
CARE	Computerized Airborne Release Evaluation	Environmental Systems Corporation	Ron Webb 200 Tech Center Dr. Knoxville, TN 37912 (615) 688-7900	Uses mathematical models to assess gas cloud movements. Uses gas detectors and weather sensors to alert user of release, and provides plume dispersion, effects, and response information.
CASH/TRACK		Livingston Enterprises	2855 Kifer Road Santa Clara, CA 95051 (408) 986-8866	Full inventory chemical tracking system designed to extract Tier I and Tier II information for assistance in reporting.
CEMDAS	Continuous Emission Monitoring Data Acquisition System	Enviroplan, Inc.	Ron Zowan 59 Main Street West Orange, NJ 07052 (201) 325-1544	Data acquisition system for continuous emission monitoring of ambient air or stack emissions. Also provides reports.
CENS	Computerized Emergency Notification System	Advanced Systems Laboratories, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Can be used with CERS or CMSDS. Determines if incident requires emergency notification based on quantity of release. Telephone roster included. Requires 640K memory and hard disk.
**CERS	Computerized Emergency Response Series	Advanced Systems Laboratories, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Determines response procedures for incidents based on data from CMSDS and CHIMS. Includes firefighting information, personal protective equipment, emergency first aid procedures, spill and containment procedures, waste disposal procedures, and physical and health hazards. Requires 640K memory and hard disk.
CHARM	Complex Hazardous Air Release Model	Radian Corp.	Lou Fowler 8501 Mo-Pac Blvd. Attn: CHARM P.O. Box 9948 Austin, TX 78766 (512) 454-4797	Primarily models chemical releases to the air. Includes a chemical database and map editor and is capable of mapping concentration isopleths. Allows real-time meteorological data input.
CHART/PC		Engineering Applications Specialists, Inc.	5610 Medical Circle Suite 31 Madison, WI 5371 (608) 273-0065	Computerized psychometric chart. User provides two independent properties of moist air and program calculates the remaining properties.

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TABLE I (continued)
PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
CHCS	Computerized Hazard Compliance Series	Advanced Systems Laboratories, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Provides compliance information including lists of hazardous substances under SARA, OSHA, and CERCLA, Tier I reports, Tier II reports, emergency and release reporting. Requires 640K memory and hard disk.
CHCS Compliance Engine		Advanced Systems Laboratories, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Assists with SARA Title III compliance. User inputs information and system provides compliance status and tasks required for compliance.
CHEM MASTER Version 2.1		ITS Technologies	Angela Loundes 9 East Stow Road Marlton, NJ 08053 (609) 983-7300 (800) 727-2487	Aids in SARA Title III compliance and chemical inventory tracking. Database of over 3,800 regulated chemicals. Has capability of tracking and reporting for multiple facilities. Prints in-house warning labels, prepares Section 311 reports and facsimiles of Tier I and Tier II reports.
CHEM MULTI BASE		CHEM Multi BASE, Inc.	P.O. Box 350 Mahomet, IL 61853 (217) 586-4131	Database of 16,000 chemicals with synonyms and trade names. Government numbers and information are cross referenced with MSDSs for all DOT regulated chemicals. Includes tracking and inventory system.
CHEMASYST		ICF Incorporated	June Bolstridge 9300 Lee Highway Fairfax, VA 22031-1207 (703) 934-3208 (800) 283-2243	Manages data needed to comply with SARA Title III and OSHA HSC Regulations. Provides text, guidance materials, instructions, and interpretations of the requirements; forms for reporting; databases of physical and chemical properties of some regulated chemicals; lists of chemicals that require reporting; Section 313 chemical references/sources/citations; and an approved list of synonyms. Stores calculations of estimated releases and prints information onto submittable EPA forms.
CHEMCALC 1, Separations Calculations		Gulf Publishing Company, Book Division	P.O. Box 2608 Houston, TX 77252 (713) 520-4444	Programs for use with multi-component mixtures to determine the conditions and compositions at the dew point and at the bubble point.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
CHEMCALC 7	Chemical Compound Databank	Gulf Publishing Company, Book Division	P.O. Box 2608 Houston, TX 77252 (713) 520-4444	Contains the physical properties of 500 compounds. Estimates properties at temperature or pressure within a specified range. Includes OSHA toxicity data, DOT notations, and directory of manufacturers for each compound. Requires 2 disk drives.
CHEMCALC 11, AMSIM	Amine Gas Treating Plant Simulator	Gulf Publishing Company, Book Division	P.O. Box 2608 Houston, TX 77252 (713) 520-4444	Models processes for absorption and stripping of H ₂ S and CO ₂ in a gas stream. For hydrocarbon gases, also calculates hydrocarbons absorbed and stripped.
CHEMMASTER		Envirogenics, Inc.	136 W. Franklin Ave. Pennington, NJ 08534 (609) 737-3233	Chemical inventory system for Tier I/II information. Includes capacity to inventory quantity and location information. Contains database of 3100 hazardous chemicals.
CHEMEST	Chemical Property Estimation System	Camp, Dresser, & McKee, Inc.	Dr. Warren Lyman 1 Center Plaza Boston, MA 02108 (617) 742-5151 x5711	Designed to predict environmentally important properties of organic chemicals. Requires DEC VAX and IBM PC.
CHEMLINE	Chemical Dictionary Online	National Library of Medicine	8600 Rockville Pike Bethesda, MD 20894 (301) 496-1131	Online chemical dictionary with over 500,000 records on chemical substances found in the TOXLINE, TOXBACK65, TOXBACK74, RTECS, MEDLINE, and TDB databases, as well as the EPA TSCA Inventory. Search capability by synonyms, CAS Registry Numbers, and by classes of compounds. Prime time connect cost is \$54 per hour.
CHEM-PLY		Environmental Communications Consultants, Inc.	1759 Sharwood Place Crofton, MD 21114 (301) 858-0332 (301) 793-0622	Provides brief regulatory information for RCRA, OSHA, and SARA compliance; also full text. Access to a 2,700 chemical data base with hazard information, precautions, and health effects. Menu-driven software.
CHEMTOX DATABASE		Resource Consultants	P.O. Box 1848 Brentwood, TN 37024 (615) 373-5040	Information on 3,500 chemical substances that are hazardous and of economic importance. Data include chemical names, CAS and DOT numbers, properties, exposure limits, EPA waste information, and spill response information. Quarterly updates. Requires 320K memory and 10Meg hard disk.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
CHEMTREC	Chemicals in Transportation Emergency Center	Chemical Manufacturers Association (CMA)	2501 M Street, NW Washington, DC 20037 (202) 887-1255 (800) 424-9300	Available during a transportation-related emergency to provide hazard warning and assistance to response personnel. Modem allows direct access to HIT, the CMA's response information database.
CHIMS	Computerized Hazardous Inventory Management System	Advanced Systems Laboratories, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Calculates and prints Tier I and Tier II inventory reports. Also assists with inventory and chemical storage information required for Toxic Chemical Release Reports. Requires 640K memory and hard disk.
**CHIP	Community Hazmat Information Platform	Material Safety Data Systems, Inc.	2674 E. Main St. Suite C-107 Ventura, CA 93003-2899 (805) 648-6800	Contains four modules that store and retrieve information: Administrative Information module for administrative information for local government; Emergency Response module for emergency response information for local government; Hazmat Handler Information module for handler information; and Hazmat Information module which contains hazardous material data for local government and handlers.
CHIT	Chemical Hazard Identification and Training	Marcom Marketing Group, Ltd.	P.O. Box 9557 4 Denny Road Wilmington, DE 19809 (800) 654-CHIT	Hazardous chemical information storage and retrieval for facilities. Modules for: MSDS, right-to-know requests, spill procedures, training, and labeling.
CHRIS	Chemical Hazard Response Information System	Chemical Information Systems, Inc.	Fein-Marquart 7215 York Rd Baltimore, MD 21212 (800) CIS-USER	Provides chemical information to assist response to emergencies involving spills of hazardous materials. Contains chemical, physical, and biological data, and specific response-oriented information (e.g., countermeasures). Developed by the U.S. Coast Guard.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
CHRIS and CHRIS PLUS	Chemical Hazard Records and Inventory Software	Random House	Linda Goldfarb Jane Rathbun 201 East 50th Street New York, NY 10022 (800) 733-3000	Primarily recordkeeping system for individual facilities. Includes information on chemicals and manufacturers and records of accidents and training. Chris Plus adds capability of storing and printing MSDS information and assists with the preparation of Tier I and Tier II reports and right-to-know requests. Both systems contain database of 600 toxic substances and synonyms.
CIS	Chemical Information Service	Fein-Marquart Associates, Inc.	7215 York Road Baltimore, MD 21212 (800) CIS-USER	Collection of databases providing information that includes chemical properties, basic effects, and response techniques. \$300 annual subscription fee; \$20 - \$95 per computer connect hour.
CMSDS	Computerized MSDS System	Advanced Systems Laboratory, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Software manages and tracks MSDS database information by chemical ID, supplier, synonyms, components, registry numbers, completion status, uses, and hazard classes. Subscription updating. Requires 640K memory and hard disk.
COMPLIANCE MANAGER		OSHA-SOFT Corporation	Peter Bragdon P.O. Box 894 Concord, NH 03301 (603) 672-7230	Facility-specific information system that manages information on the following modules: MSDS MANAGER, TRAINING MANAGER and INVENTORY MANAGER.
COPE		Metcalf & Eddy, Inc.	10 Harvard Mill Sq. Wakefield, MA 01880 (617) 246-5200	COPE has 9 modules: PM scheduler, corrective maintenance, equipment history, equipment reference listing, spare parts entry, database integrity verification, and training.
CORKES		Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW Washington, DC 20024 (202) 646-6800	Provides facility-specific information for emergency situations.
CoVOCalc		Dawn Graphics Company	19 Edgehill Road Winchester, MA 01890 (617) 721-0456	Spreadsheet template that calculates expected VOC emissions from use of paints, inks, and coatings. Prints out EPA data forms.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
CSIN	Chemical Substance Information Network	U.S. EPA/Office of Pesticides and Toxic Substances	Mr. Dalton Tidwell/ Dr. Sidney Siegal OPTS Chemical Coordination Staff (TS-777) 401 M Street, SW Washington, DC 20460	Complex switching network that provides user access to over 400 individual databases. Necessary to obtain user codes for various vender databases.
CTCRRS	Computerized Toxic Chemical Release Reporting System	Advanced Systems Laboratories, Inc.	7137 West Main St. Lima, NY 14485 (716) 624-3276	Assists with completion of EPA Form R using CMSDS and CHIMS information. Also tracks reporting requirements and emission and waste treatment. Requires 640K memory and hard disk.
CYCLONE		TECS Software, Inc.	P.O. Box 720730 Houston, TX 77272 (713) 561-6143	Does the following calculations for a gas or air cyclone: sizing, pressure drop, and fractional and overall efficiency.
DATASTREAM		Datastream Systems, Inc.	1200 Woodruff Road Suite C-40 Greenville, SC 29607 (803) 297-6775	System designed for industrial and municipal wastewater treatment facility data management, including key process parameters and plant evaluation.
DIALOG		DIALOG Information Services	3460 Hillview Ave. Palo Alto, CA 94304 (415) 858-3785	Reference system containing information from all areas of science, technology, and medicine. \$10 - \$285 per computer connect hour.
DIPPR	Design Institute for Physical Property Data	National Bureau of Standards		Data compilation of pure compound properties.
ECMS	Environmental Compliance Monitoring System	Versar Environmental Systems	9200 Rumsey Road Columbia, MD 21045-1934 (301) 964-9200	Facility-specific system including modules for air emissions, calendar, facility and agency processes, groundwater, hazardous waste, incident response, permit tracking, solid (non-hazardous) waste, work orders, and wastewater.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
ECOTRAC	Environmental Data Management System	HAZOX Corporation	Daniel Fullerton 12600 W. Colfax Ave. Suite C420 Lakewood, CO 80215 (303) 237-1065	Provides manifest tracking, permit tracking, source inventory, environmental events, TSCA required data management, waste disposal costs, and groundwater monitoring.
**EIS/C	Emergency Information System/Chemical	Research Alternatives, Inc.	Maxine Orens Suite 3 966 Hungerford Dr. Rockville, MD 20850 (301) 424-2803	Primarily an emergency planning and response system. Records chemical, facility, transportation, vulnerable population, and other planning and response information. Presents information on maps. Prepares Tier I and II reports. Stores MSDS information.
EMERGENCY CALL SYSTEM		Weith Computer Products and Services	802 Brittany Suite 101 Bowling Green, OH 43402 (419) 352-8659	Automatically calls emergency response personnel based on incident specific information.
EMERGENCY RESPONSE COMPUTER PROGRAM		Ontario Ministry of Environment	Air Resources Branch 880 Bay Street 4th floor Toronto, Ontario M5S 1Z8	Release modeling system. Contains database of chemicals and characteristics which may be modified by user. User selects chemical, weather conditions and type of release for simple or heavy gas modeling. Output is numeric for times and distances with graphic capabilities.
ENFLEX DATA 313		ERM Computer Services, Inc.	Terry Percel 855 Springdale Dr. Exton, PA 19341 (800) 365-2146 (800) 544-3118	Calculates releases by four principle methods to the following media: water, POTW, Underground Injection, Stack or Point Air, Fugitive, Land, Waste Offsite, and other processes in the facility. Also performs a mass balance function around each process; prints Form R and submits to EPA; provides for unlimited comments; and stores unused calculations.
ENFLEX INFO		ERM Computer Services, Inc.	Terry Percel 855 Springdale Dr. Exton, PA 19341 (800) 365-2146 (800) 544-3118	Provides access to the full text of current federal and state environmental regulations. Includes NJ and PA regulations. Provided on a subscription basis, and furnished on CD-ROM compact laser disc.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
EnviroBase III	Environmental Data Management System	Enviro Base Systems	Michael H. Freeland 2 Inverness Drive East Suite 101 Englewood, CO 80112 (303) 790-8396	Organizes, analyzes, and generates reports of laboratory analytic data associated with groundwater, soils and surface sampling and testing programs. Written and compiled in Clipper, an extension of dBase III. Requires DOS 3.0 or greater with at least 410K of free RAM, and a hard disk with at least 1.5 megabytes of free storage space.
EnviroLab III	Laboratory Data Management System (LDMS)	Enviro Base Systems	Richard L. Sayrs, Jr. 2 Inverness Drive East Suite 101 Englewood, CA 80112 (303) 790-8396	Organizes analytical laboratory paperwork: sample log-in and tracking to final analysis reporting and invoicing, operates on single-CPU or local area network of IBM PC/XT/AT/80386 or compatible.
ENVIRONMENTAL AIDE		Odessa Engineering	P.O. Box 26537 Austin, TX 78755 (512) 251-5543	Screen oriented, menu driven program that facilitates data editing, data analysis and preparation of reports for stack emissions.
ETIS	Environmental Technical Information System	U.S. Army	Ron Webster Construction Engineering Research Laboratory P.O. Box 4005 Champaign, IL 61820	Computerized information retrieval system that aids the Army and other government agencies in preparing environmental impact statements.
FIESTA	Field Slug Test Analyzer	Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW 6th Floor Washington, DC 20024 (202) 646-8600	Uses raw data from field tests to compute hydraulic conductivity; computed value is evaluated by the expert system for its correctness with regard to these considerations: site-specific geological characteristics, validity of test procedures, accuracy of the raw data, and the computational method. System is written in Arity-Prolog on a PC.
FINANCIAL ANALYSIS OF WASTE MANAGEMENT ALTERNATIVES		General Electric Company Corporate Environmental Programs	Mr. Richard MacLean 3135 Easton Turnpike Fairfield, CT 06431 (203) 373-3077	System calculates the long-term costs, including liability, associated with environmental control technologies. Requires printer with capability of printing 240 columns of width

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
FINDEX		HAZOX Corporation	Daniel Fullerton P.O. Box 637 Chadds Ford, PA 19317 (215) 388-2030 (800) 558-6942	Indexing and retrieval software for searching MSDS files.
FLAREHDR and FLARESTK		TECS Software, Inc.	P.O. Box 720730 Houston, TX 77272 (713) 561-6143	Two programs, one of which determines header size based on maximum allowable relief velocity along the header and the other program calculates flare tip diameter and stack height.
FLOW GEMINI	Environmental Information Management System and Occupational Health Information System	Flow General, Inc.	Dr. Wanda Rappaport 7655 Old Springhouse Rd McLean, VA 22102 (703) 893-5900	Generates reports, schedules, and reminders; summary, detail, and status; and inventory, inspection and monitoring for permits, air and water monitoring, waste, PCBs and problems and events. Generates MSDSs, and aids in waste tracking and environmental audits. Requires DEC VAX or IBM mini or mainframe.
FRES	First Responders Expert System	Roy P. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW Washington, DC 20024 (202) 646-6800	Provides pollutant toxicity information and optimal response strategy.
GASPROPS		Software Systems Corporation	P.O. Box 202017 Austin, TX 78720 (512) 451-8634	Computes thermodynamic properties of air, argon, carbon monoxide, carbon dioxide, hydrogen, nitrogen, oxygen, water vapor, and products of combustion for hydrocarbons. Computes all properties from any two independent properties.
GEMS	Graphical Exposure Modeling System	U.S. EPA	Cathy Turner Pat Harrigan Office of Toxic Subst. TS-798 Washington, DC 20460 (202) 382-3929 (202) 382-3397	On-line system. Provides support for exposure assessments of toxic substances. Includes chemical property estimation techniques, statistical analysis, multimedia modeling, and graphics display (including models).

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
GLIDE	Geographically Locate Inventoried Dangers Easily		Jerome Barta 1513 White Post Cedar Park, TX 78613 (512) 258-1812 (call after 4 PM)	Provides capability to inventory and retrieve information on stored hazardous chemicals and their proximity to central areas.
GROUNDWATER/DMS	Groundwater Data Management System	CSW Data Systems	One Overlooker Road Poughkeepsie, NY 12603 (914) 454-0090	A data management package which tracks the data associated with a groundwater monitoring network. The system quantifies and identifies all forms of data, reports, analyses, corporate and government standards. Requires 4.6 megs of hard disk space; 640K RAM, 80286 (80386) processor and a DOS version of 3.30 or higher.
HAZARD		North American Software, Inc.	George Stephens P.O. Box 3309 Tustin, CA 92680 (714) 830-6248	Database system that is designed to aid in producing both the EPA Manifest and Drum Labels. Includes DOT information for verification.
HAZARDLINE		Occupational Health Services, Inc.	John Fee Suite 2407 450 7th Avenue New York, NY 10123 (800) 445-6737 (212) 967-1100	Online information on hazardous substances. Includes: response information and medical effects data with unique search capabilities. Cost is \$120 per hour (1983).
Hazardous Incident Data Base		U.S. EPA	Pacita Tibay Woodbridge Ave. Edison, NJ 08837 (201) 321-6632	Search and retrieval system designed to direct the user to documented first-spill incidents. No charge.
Hazardous Material Document and Package Verification System		Bureau of Dangerous Goods, Ltd.	Russell Bowen Front & Erickson Sts Essington, PA 19029 (215) 521-0900	Prepares shipper's declaration and identifies marking, labeling, and other packaging requirements.
**HazKNOW Know-IT-ALL		HazMat Control Systems, Inc.	Carolyn Husemoller 3409 Lakewood Blvd Suite 2C Long Beach, CA 90808 (213) 429-9055	Stores hazmat information; generates documents and reports; MSDS document management.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
HAZM	Hazardous Waste Manager	Z Micro Systems	P.O. Box 6634 San Pedro, CA 90734 (213) 831-4888	Records and prints waste disposal manifests on official forms and outputs reports by waste category, transporter, and disposal site. Also records MSDSs. Requires 256K memory.
**HAZMIN	The Hazardous Material Information Network	Logical Technology, Inc.	Vicky Demoss P.O. Box 3655 Peoria, IL 61614 (309) 677-3303	System manages hazardous materials: includes storage, inventory, compliance, and training. MSDS based emergency response data storage and retrieval. Assists with Tier I/II reports. Extensive search capabilities. Requires VAX. PC version scheduled for release in early 1988.
HAZOX LABEL PROGRAM		HAZOX Corporation	Kathleen Goddard P.O. Box 637 Chadds Ford, PA 19317 (215) 388-2030 (800) 558-6942	Prepares labels for containers. User may copy information from MSDSs or other text files. May be used in conjunction with TOXIC ALERT.
HAZOX EMPLOYEE TRAINING LEDGER		HAZOX Corporation	Kathleen Goddard P.O. Box 637 Chadds Ford, PA 19317 (215) 388-2030 (800) 558-6942	Employee recordkeeping system. Tracks worker training, job location, and job assignments, as well as employee courses and qualifications. May be used in conjunction with TOXIC ALERT.
HAZ/TRAK		HAWKWA Group, Inc.	Russ Hannula P.O. Box 321 Mundelein, IL 60060 (312) 949-8488	Computerizes MSDSs in OSHA-174 format. Also tracks material use and storage. Requires 448K memory and 2 disk drives.
HAZWASTE		HazMat Control Systems, Inc.	Carolyn Husemoller 3409 Lakewood Blvd Suite 2C Long Beach, CA 90808 (213) 429-9055	Hazardous waste data management and reporting system. Prepares hazardous waste manifests. Requires 10 Meg hard disk and 132 column printer.
HMIS	Hazardous Materials	Defense Logistics Agency Information System	Rhonda Hems Rockville, MD (301) 468-8858	DoD system that stores MSDS information, quantity and manufacturer, and National Stock numbers. On-line Database and microfiche. Cost: \$30 - \$40 per hour. For DoD facilities only.

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HMMS	Hazardous Materials Management System	Caelus	Larry Williams Caelus Inc. 1100 Paulsen Center W. 421 Riverside Spokane, WA 99201 (509) 624-8794 or Craig Van Velzer Wang Laboratories, Inc. N1000 Argonne Rd Suite 100 Spokane, WA 99212 (509) 922-2136	Integrates both Wang supplied and Caelus supplied software into a system for managing data and reporting requirements. Includes: aliases, trade and industry standard names and IDs; components of mixtures and compounds; plant sites, annual usage, and storage locations; hazardous properties and medical precautions; approved treatment or remedies; MSDSs; references; protective equipment and requirements; approved suppliers and/or manufacturers; agencies; reporting forms. Can run stand-alone on any Wang VS computer.
HWCS	Hazardous Waste Computer System	National Safety Council	P.O. Box 11933 Chicago, IL 60611 (800) 621-7619 (312) 527-4800	Tracks waste from collection to treatment. Database of 2,600 common chemicals which provides the EPA number for each chemical, DOT classification for hazardous waste transport, and permit information. Templates for all required forms, labels, and notices.
HYCARB		Software Systems Corporation	Donna Schmidt P.O. Box 26065 Austin, TX 78755-0065 (512) 451-8634	Computes the thermodynamic and transport properties of 78 common petroleum and chemical industry hydrocarbons.
IEMIS	Integrated Emergency Management Information	Federal Emergency Management Agency	Dr. Bob Jaske 500 C Street SW Room 627 Washington, DC 20472 (202) 646-2865	FEMA's database system for emergency response information for governments. For use in planning, training, and eventually real-time operational decision-making for all types of emergencies. Includes plume dispersion modeling. A wide variety of access options are available.
INFO (EHIS)	Emergency/Hazmat Information System	Emergency Automation Inc.	Gary Hill 1401 Wilson Blvd. Suite 720 Arlington, VA 22209 (703) 522-4550	An incident information management tool for hazardous materials emergency responders.

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INHEC1		Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW Washington, DC 20024 (202) 646-6800	INHEC1 is a front-end to the HEC-1 model developed by Hydrologic Engineering Center. Assists in modeling a watershed and creating the inputs to HEC-1 for hydrologic simulations. INHEC1 contains information about the requirements and limitations of HEC-1 and rainfall-runoff processes.
INVENTORY MANAGER		OSHA-SOFT Corporation	Peter Bragdon P.O. Box 668 Amherst, NH 03031 (603) 672-7230	Tracks hazardous materials in workplace and inventory for purchasing. Includes manufacturer listings.
IRIS	Integrated Risk Information System	DIALCOM, Inc.	Mike McLaughlin 600 Maryland Ave., SW Washington, DC 20024 (202) 488-0550	On-line database containing chemical files that present summaries of hazard and dose-response assessments for carcinogenic and/or noncarcinogenic effects and contain information on Office of Drinking Water Health Advisories, EPA regulations and guidelines (e.g., Clean Air Act regulations and Drinking Water Criteria) acute toxicity, and physical/chemical properties.
ISCST	Industrial Source Complex Short Term	Trinity Consultants, Inc.	Shirley Lake 12801 N. Central Expwy Suite 1200 Dallas, TX 75243 (214) 661-8100	Software for dispersion modeling; uses Gaussian plume model. The system calculates concentration or deposition values for input time periods. May be used in conjunction with "Breeze Air."
LABSYS	Laboratory Selection Expert System	Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza SW 6th Floor Washington, DC 20024 (202) 646-6800	Assists in identifying appropriate analytical laboratories to evaluate environmental samples (e.g., soil, water, sludge, waste, air) for characterizing hazards at a site. The system factors type of sample, suspected pollutants, user's needs for on-site evaluation, and laboratories' locations, capabilities, and qualifications.
**MANGUARD		ManGuard Systems, Inc.	Craig Rylee 25972 Novi Road Suite 203 Novi, MI 48050 (313) 349-3830	Twelve Modules addressing environmental activities monitored by EPA, RCRA, OSHA, CERCLA, and DOT regulations. Includes SARA reporting module containing MSDS and production information, SARA reporting assistance, tracking capabilities.

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TABLE I (continued)
PRELIMINARY LIST OF COMPUTER APPLICATIONS AND SYSTEMS OF POTENTIAL USE UNDER SARA TITLE III

ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
MEDLARS	Medical Literature Analysis Retrieval System	National Library of Medicine	Carolyn Tilley MEDLARS Management Section 8600 Rockville Pike Bethesda, MD 20894 (301) 496-6193	Collection of databases containing toxicological research information and literature citations.
MESOCHEM	Chemical Atmospheric and Hazard Assessment System	Impell Corporation	Becky Cropper 300 Tristate Internat'l Suite 400 Lincolnshire, IL 60069 (312) 940-2090	Software for atmospheric dispersion and chemical exposure assessment. A plume dispersion model.
MESOREM Jr.		Impell Corporation	Becky Cropper 300 Tristate Internat'l Suite 400 Lincolnshire, IL 60069 (312) 940-2090	Atmospheric release analysis system that includes back calculations of source release rates from field readings, terrain modeling, meteorological conditions modeling of multipoint dose and deposition exposures. Also provides ingestion exposure reports for atmospheric effluent pathways.
METROHEALTH		Lamb & Associates, Inc.	Tommy Roach P.O. Box 638 Lumberton, NC 28359 (919) 739-3181	Multi-user safety and health package. Records data on personnel and MSDS information. Assists with medical reports and OSHA forms.
METROSOFT		Metrosonics	Rob Brauch P.O. Box 23075 Rochester, NY 14692 (716) 334-7300	Industrial hygiene information record system. Utilizes hand held monitoring system to record exposure data on computer.
microCHRIS		The HazMat Software Co./ AIA Corporation	Rod Nenner 134 Middle Neck Rd Suite 210 Great Neck, NY 11021 (516) 829-5858 (800) 284-6737	Coast Guard CHRIS system. Includes chemical designations, observable characteristics, health hazards, responses to discharges, fire hazards, chemical reactivity, water pollution, shipping information, hazard assessment codes, hazard classifications, and physical and chemical properties. Requires 640K memory and 10Meg hard disk.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
microOHM/TADS		The HazMat Software Co./ AIA Corporation	Rod Nenner 134 Middle Neck Rd Suite 210 Great Neck, NY 11021 (516) 829-5858 (800) 284-6737	Microcomputer version of EPA's Oil and Hazardous Materials Technical Assistance Database. Contains emergency response, physical and chemical properties, and hazards of 1400 compounds. Requires 640K memory and 10Meg hard disk.
MIDAS	Meteorological Information and Dispersion Assessment System	Pickard, Lowe and Garrick, Inc.	Mark Abrams 1615 M Street, NW Suite 730 Washington, DC 20036 (202) 659-1122	Calculates impact of gaseous releases under routine or accident conditions.
MSDS ALERT		HAZOX Corporation	Kathleen Goddard P.O. Box 637 Chadds Ford, PA 19317 (800) 558-6942 (215) 388-2030	MSDS database.
MSDS Engine Software		GENIUM Publishing Corporation	1145 Catalyn St. Schenectady, NY 12303-1836 (518) 377-8854	Collection of MSDSs. Has capability to create additional MSDSs and search by name and CAS#.
MSDS-MAN	MSDS-MAN	Spumifer American, Inc.	Pete Dyke P.O. Box 3267 St. Augustine, FL 32085 (904) 824-0603	Data base manager for MSDSs.
MSDS MANAGER		OSHA-Soft Corporation	Peter Bragdon P.O. Box 668 Amherst, NH 03031 (603) 672-7230	Software containing MSDS information in OSHA format. Stores and prints MSDSs; assists with training of employees.
MSDS-PC		J.J. Keller & Associates, Inc.	145 W. Wisconsin Ave. P.O. Box 368 Neenah, WI 54957-0368 (800) 558-5011	User created chemical information database. Includes trade name, manufacturer, ingredients, CAS Number, and plant location. Requires 256K memory.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
MSDSPLUS		Robert E.J. Thomas & Associates, Inc.	Dr. Robert J. Thomas Woodsboro, Md. 21798 (301) 695-5603	MSDS recording and tracking system. Used to maintain employee and inventory records. System also has ability to track location and first and last date that a chemical was used or stored at a facility.
MSDSFILE		HazMat Control Systems, Inc.	Carolyn Husemoller 3409 Lakewood Blvd Suite 2C Long Beach, CA 90808 (213) 429-9055	Prepares, prints, and stores MSDSs. Creates reports. Requires 10Meg hard disk.
OASIS	Operator Assisted Sewer Information System	Public Works Software, Inc.	Jerry Cadwell Harbor Plaza P.O. Box 580 Port Hueneme, CA 93401 (805) 488-7324	Database for management of sanitary and storm wastewater collection systems. Maintains field operations data including safety history, engineering data, inspection records, and work orders. Requires 640K memory and hard disk.
OPERATOR 10		Macola Incorporated	Don Knaur P.O. Box 485 Marion, OH 43301-0485 (614) 382-5999 (800) 468-0834	Assists in the management of wastewater treatment plants using four programs: Process Evaluation for generating process equations; Inventory/Maintenance for work order generation and printouts, preventive maintenance, and inventory tracking; Industrial Pollutant Monitoring for record-keeping and report generation; and Process Monitoring/Reporting for process reports and other reports. Each requires 512K memory and 10Meg hard disk.
ORBIT		Pergamon	Orbit Action Desk Infoline, Inc. 8000 Westpark Dr. McLean, VA 22102 (703) 442-0900	Database of information from all areas of science, technology, and medicine, as well as business, current affairs, and humanities. \$30 - \$160 per computer connect hour.
OSHA-SOFT CFR		OSHA-SOFT Corporation	Peter Bragdon P.O. Box 668 Amherst, NH 03031 (603) 672-7230	Text of 29 CFR(OSHA) and 40 CFR(EPA) regulations on disk. Requires 512K memory and hard disk.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
PART B OUTLINE		Weith Computer Products & Services	Roger Weiter 802 Brittany Suite 101 Bowling Green, OH 43402-1511 (419) 352-8659	Assists user with writing Part B application. Cites regulations by number.
PART B PERMITTING			Gerald Rich 17719 Brim Road Bowling Green, OH 43402 (419) 352-7085 (after 5:30 p.m.)	Permit application assistance for hazardous waste facilities on diskettes.
PCB HAZARD		U.S. Construction Engineering Research Laboratory	Attn: Bernie Donahue P.O. Box 4005 Champaign, IL 61820-1305 (217) 373-6733	Provides guidance on the repair and disposal of transformers containing 50 ppm or more of PCB's.
POSSEE	Plant Organizational Software System for Emissions from Equipment	Chemical Manufacturers Association (CMA)	Deborah Stine 2501 M Street, NW Washington, DC 20037 (202) 887-1176	Supports the organization, entry, and analysis of plant data and field measurements of fugitive emissions. A menu-driven system.
PRETRE		Cochrane Associates, Inc.	Jay J. Fink 236 Huntington Ave. Boston, MA 02115 (617) 247-0444	Information management system for wastewater treatment facilities. Assists with monitoring compliance, tracking construction projects, producing reports, and generating letters.
PRETREATMENT		Spica Systems	4921 Seminary Road Suite 1502 Alexandria, VA 22311 (703) 671-5874	Series of programs for implementing EPA's categorical pretreatment standards. Contains data forms for identifying and collecting information needed for Applicability, production, special conditions, and flow.
PSYCHRO		Software Systems Corporation	P.O. Box 202017 Austin, TX 78720 (512) 451-8634	Computes properties of air-water vapor mixtures for HVAC, combustion, aerodynamic, and meteorological applications. Any two independent properties may be input by user.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
PTPLU-2		Trinity Consultants, Inc.	Shirley Lake 12801 N. Central Expwy Suite 1200 Dallas, TX 75080 (214) 661-8100	Dispersion modeling software based upon EPA's UNAMAP. System is upgraded version of PTMAX; it is a screening model that can be applied to single sources.
Quantum Software		Quantum Software Solutions, Inc.	Laurie Breck P.O. Box 640 Ann Arbor, MI 48107-0640 (313) 761-2175	Series of compliance assistance modules including: Worker Right to Know, Asbestos Compliance Tracking, Community Right to Know, Firefighter Right to Know, assistance with report generation and Underground Tank Inventory.
Rainbo MSDS-PRO, SARA, and SAFETY		Pro Am Safety	Zoltan Toth P.O. Box 750 Gibsonia, PA 15044 (412) 443-0410	Database management system for MSDS information. Modules include SARA, for assistance in creating reports for Title III, and SAFETY for accident and incident record-keeping.
Regulation Scanning System		Data Regs. Inc.	Robert McCardy 243 West Main St. Kutztown, PA 19530 (215) 683-5098	Hazardous materials transportation regulations on disk. System displays text of regulations by chemical name or number. Also searches by keyword. Updates to regulations are provided on a monthly basis.
RESREC	Disposal Alternatives Planning and Resource Recovery Systems	Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW Washington, DC 20024 (202) 646-6800	Assists in planning disposal systems for community waste. The model accepts appropriate inputs describing the community's situation and constraints, performs cost analyses for various scenarios to account for uncertainties in the input, and provides the system with heuristic indicators which describe the results. Interprets the results and provides advice on planning scenarios to be used as guidelines for making a study of appropriate alternative scenarios.
RODA	Records and Operations Management	Metcalf & Eddy, Inc.	Eric Burman 529 Main Street Charlestown, MA 02129 (617) 241-8850	Data management system for wastewater treatment operators.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
RTÉCS	Registry of Toxic Effects of Chemicals	National Library of Medicine, Specialized Information Services	Genne Gosloth 8600 Rockville Pike Building 38A Bethesda, MD 20894 (301) 496-1131	On-line database containing records for more than 50,000 potentially toxic chemicals. Source for basic acute and chronic toxicity information. Prime-time cost is about \$5 per hour.
SAFECEM II	Management System	SAFWARE, INC.	4677 Old Ironsides Dr. Santa Clara, CA 95054 (408) 727-2436	Hazardous chemical management system implemented on a proprietary database package.
SAFER	System Approach for Emergency Response	SAFER Emergency Systems, Inc.	Darlene Davis Dave Dillehay 756 Lakefield Road Westlake Village, CA 91361 (818) 707-2777	Facility spill response, tracking of releases, materials inventory, and training.
SAM	Laboratory Information Management System	Radian Corporation	Mike McAnally P.O. Box 9948 8501 Mo-Pac Blvd Austin, TX 78766 (512) 454-4797	Laboratory tracking, scheduling, reporting, and statistical analysis.
**SARA1		OSHA-SOFT Corporation	Peter Bragdon P.O. Box 668 Amherst, NH 03031-0668 (603) 672-7230 (800) 446-3427	Generates inventory and Tier I and II reports required under SARA Title III. Monitors chemical inventories and locates hazardous chemicals in the workplace. Emergency Response version maintains inventories of all hazards and chemicals in the area for emergency response personnel.
SARA TITLE III 313 ADVISOR		E.I. Du Pont de Nemours & Company Inc. Environmental Management Services	Barley Mill Plaza (P27-2125) Wilmington, DE 19898 (800) 992-0560	Assists with completion of form R. Provides list of synonyms and copy of regulations in software. Maintains audit trail.

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SARATrax		IIT Research Institute, Maryland Technology Center	Dr. Quon Y. Kwan Sr. Env. Engineer 4600 Forbes Blvd Lanham, MD 20706 (800) 458-1564 (301) 459-3711	Assists with determination of facility reporting responsibilities under Sections 301-303, 304, and 311-312. Assists with notification requirements and definitions of responsibilities. Maintains lists of chemicals, quantities, locations, and properties to assist with the preparation of Tier I and Tier II reports. Generates Form R.
SENTRY		Besserman Corporation	Wes Turner 1702 East Highland Suite 120 Phoenix, AZ 85016 (602) 264-8000	Records industrial hygiene and health information. Creates reports, tracks MSDS information; MSDS information by synonym, name, mixture name, and CAS #.
SEWER MAINTENANCE SYSTEM		O'Brien & Gere Engineers, Inc.	Trish Anrig 1304 Buckley Road Syracuse, NY 13221 (315) 451-4700 (315) 451-2060	Management assistance for sewer line maintenance and recordkeeping. Database system that allows monitoring of specific operations and activities. Requires 640K.
SLUDGE MANAGER		Resource Conservation Services, Inc.	42 Main Street Yarmouth, ME 04096 (207) 846-3737	Recordkeeping and database management for treatment plants and facilities that produce useful sludge. Requires 312K memory, 5Meg hard disk, and dBase II.
SLUDGE REGULATOR		Resource Conservation Services, Inc.	42 Main Street Yarmouth, ME 04096 (207) 846-3737	Designed for state regulatory agencies. Tracks land spreading operations within the state. Produces reports, mailing lists and labels, permit expiration dates, and generator/material descriptions. Requires 312K memory and 5Meg hard disk.
SOPHIE	Selection of Procedures for Hazard Identification and Evaluation	Battelle	Columbus Division 505 King Avenue Columbus, OH 43201-2693 (614) 424-6424	Assists users with selection of methods to employ for identifying and evaluating hazards in chemical and petrochemical facilities.

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SPCC	Spill Prevention Control and Countermeasure Data Base System	U.S. EPA	Ms. Jean H. Wright Office of Emergency and Remedial Response WH548B 401 M Street, SW Washington, DC 20460 (202) 245-3057	Database containing compliance/noncompliance records of oil facility discharges. Spill data include amount of material spilled, rate, response, and control measures.
SPII-COM		Globe International, Inc.	P.O. Box 1062 Buffalo, NY 14206 (716) 824-8484	Oil spill contingency planning tool intended to improve notification of federal and state agencies and improve response and reporting capabilities.
SUNHEALTH		Stewart-Todd Associates, Inc.	1016 W. 9th Ave. King of Prussia, PA 19406 (215) 962-0166	Manages occupational health records, MSDSs, chemical information, and employee records. Aids with emergency release reports.
SWIS	Solid Waste Information System	Mathtech The Technical Research and Consulting Division of Mathematica, Inc.	Barrett J. Riordan 5111 Leesburg Pike Suite 702 Falls Church, VA 22041 (703) 284-7900	Inventory and record system designed for the State of California Solid Waste Management Board.
Systems/Services Engineering		Systems/Services Engineering	P.O. Box 32008 Dayton, OH 45432 (513) 429-2709	Wastewater treatment assistance. Software includes: Data Handling System, Lab Bench File, Lab Stock Inventory, Scheduled Work System, Unscheduled Work System, Facility Stock Inventory, Tool Record System, Personnel Record System, Budget Control System, Equipment Record System, and Industrial Pretreatment File.
TECJET	Advanced Jet Dispersion Model	Technica International	David A. Jones 1400 N. Harbor Blvd Suite 800 Fullerton, CA 92635 (714) 447-9400	Jet dispersion model for PC.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
TEM	The Environmental Manager	Environmental Information System	Sherida Mock 1101 Capital of Texas Highway South Building 8, Suite 212 Austin, TX 78746 (512) 328-5211	Tracks regulatory requirements; produces reports. Modules available on Environmental Audits, Permit Tracking, Groundwater Monitoring, Wastewater Monitoring, Air Emissions, Task Management, Waste Manifesting, Chemical Inventory, MSDS Management, Incident Reporting, and Operational Journals.
THERMOSIM Module 1: EQUIL		Gulf Publishing Company, Book Division	Melissa Beck P.O. Box 2608 Houston, TX 77252 (713) 520-4444	Database of thermodynamic properties of 200 hydrocarbons, 9 non-hydrocarbon gases, carbon, and sulfur. Requires 512K memory and 2 disk drives.
TOXIC, PUFF, SPILLS, INPUT, AND INPUT 2.0		Bowman Environmental Engineering	P.O. Box 29072 Dallas, TX 75229 (214) 241-1895	In ascending order of data complexity, these systems address toxic gas releases using models designed for each type of release, based on emission rate, facility characteristics and weather data.
**TOXIC ALERT		HAZOX Corporation	Daniel Fullerton P.O. Box 637 Chadds Ford, PA 19317 (215) 358-4990 (800) 558-6942	Incident management tool with some emergency planning capability. Modules for MSDS, incident documentation, inventory, and Tier I/II report generation.
TOXLINE (non-royalty based)	Toxicology Information Online	National Library of Medicine	8600 Rockville Pike Bethesda, MD 20894 (301) 496-1131	On-line bibliographic database covering the pharmacological, physiological, and toxicological effects of drugs and chemicals. Information is taken from eleven secondary sources.
TRACE II	Toxic Release Analysis of Chemical Emissions	Safer Emergency Systems, Inc.	Darlene Davis Dave Dillehay 756 Lakefield Road Westlake Village, CA 91361 (818) 707-2777	Models toxic gas and flammable vapor cloud dispersion. Intended for risk assessment and planning purposes, rather than real-time emergencies.
TRAINING MANAGER		OSHA-SOFT Corporation	P.O. Box 894 Concord, NH 03301 (603) 228-3610	Records employee training information, and allows classification and tracking of products and employees by category.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
TREDDAT		Cochrane Associates, Inc.	Jay J. Fink 236 Huntington Ave. Boston, MA 02115 (617) 247-0448	Data handling and process control software program for wastewater treatment plants. Requires Apple II.
TREMAIN		Cochrane Associates, Inc.	Jay J. Fink 236 Huntington Ave. Boston, MA 02115 (617) 247-0448	Equipment and inventory management software system for wastewater treatment plants. Requires Apple II.
TREPORT		Cochrane Associates, Inc.	Jay J. Fink 236 Huntington Ave. Boston, MA 02115 (617) 247-0444	Data handling and reporting system for wastewater treatment facilities. Assists with daily calculation of data and generation of reports.
TRI Database	Toxic Chemical Release Inventory	National Library of Medicine, Specialized Information Services	8600 Rockville Pike Bethesda, MD 20894 (301) 496-6531	Contains information on industrial location, storage, and release to air, water, and land of SARA Section 313 chemicals. Data is divided into the following categories: facility identification, substance identification, environmental release of chemical, waste treatment, and off-site waste transfer.
TSAR	Technology Selector of Alternative Remedies	Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza, SW 6th Floor Washington, DC 20024 (202) 646-6800	Assists in selecting appropriate remedial technologies at waste sites. Using available quantitative and/or qualitative information the system selects potential general response actions and eliminates some specific technologies from further consideration; identifies additional data required to decide among the remaining engineering alternatives. The system can be delivered on Compaq-386 or requires PC HOST for the PC/AT.
TSDSYS	Treatment, Storage and Disposal Facilities Expert System	Roy F. Weston, Inc.	Judith Hushon 955 L'Enfant Plaza SW 6th Floor Washington, DC 20024 (202) 646-6800	Database containing information on over 400 contractors and the treatment, storage and disposal methods they offer. Treatment is broken into on-site and off-site and then by the following categories: biological, chemical, physical, and thermal treatment. Menu driven. Available through cross talk for EPA Regional offices.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
UMT	The UNIFORM MANIFEST TRACKER	HAZOX Corporation	Daniel Fullerton P.O. Box 637 Chadds Ford, PA 19317 (800) 558-6942	Maintains information about hazardous waste generators, transporters, disposal facilities, materials shipped, and how they have been shipped. Assists with Uniform Hazardous Waste Manifest document required by RCRA. Generates records and letters. Requires 200K memory plus 1K memory for each record and a printer that can penetrate a six-part form.
VAX DEChealth		Digital	146 Main Street Maynard, MA 01754 (617) 897-5111	Employee and environmental health data records system. Maintains medical exposure data of employees.
VENTDATA		Hatch Associates Ltd.	21 St. Clair Ave. East Toronto, Ontario, Canada M4T 1L9 (416) 962-6350	Recordkeeping and analytical program for use in monitoring and maintenance of exhaust ventilation systems. Requires Apple II.
VULZONE.WK1	Vulnerability Zone Worksheet	New York State Emergency Management Office	Ed Lipps Public Security Bldg State Campus Albany, NY 12226-5000 (518) 457-9959	Calculates mileage of vulnerability zone for Extremely Hazardous Substances, giving a radial value to use on a map. Chemicals may be searched by CAS number; with each search, the system verifies the chemical name.
WASTETRAX		Engineering-Science	57 Executive Park S, NE Suite 590 Atlanta, GA 30329 (404) 325-0770	For water and wastewater treatment plants. Information management for groundwater monitoring, hazardous waste management, and air quality monitoring. Statistical capabilities.
WASTEWATER DATA MANAGEMENT SYSTEM		WDMS Computer Services	P.O. Box 27561 Tulsa, OK 74149 (918) 241-5755	Database that allows storage, retrieval, analysis, and reporting for industrial pretreatment programs. Requires 512K memory.
WATER COST		CWC-HDR Inc.	300 Admiral Way Suite 204 Edmonds, WA 98020 (206) 774-1947	Water and wastewater cost estimation software program. Contains extensive cost data.

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ACRONYM/ABBREVIATION	SYSTEM NAME	VENDOR	ADDRESS/PHONE	PURPOSE/DESCRIPTION/REQUIREMENTS
WATER MASTER		Waid and Associates	8000 Centre Park Dr. Suite 270 Austin, TX 78754 (512) 835-6112	Animated training aid and simulation program for water and wastewater treatment plant operators.
WDC MANIFESTING SYSTEM		Waste Documentation and Control, Inc.	P.O. Box 7363 Beaumont, TX 77706 (409) 839-4495	Produces internal control documentation and governmentally required reports. Manifest printing from files containing information on approved transporters and disposers, waste materials, and historical data.
WHAZAN	World Bank Hazards Analysis	Technica International	David A. Jones 1440 N. Harbor Blvd. Suite 800 Fullerton, CA 92635 (714) 447-9400	Modeling of chemical dispersion and spill behavior. Database for 30 hazardous substances. 13 mathematical models that predict effects of release of flammable or toxic chemicals. Hard disk required.

References

Marsick, Daniel J., Ph.D., "Resources for Right-to-Know Compliance," presented to American Chemical Society, Division of Chemical Health and Safety, October 6, 1987.

Pollution Engineering, January 1988, "Environmental Software Review - 1988," by Gerald Rich.

Pollution Engineering, January 1987, "Environmental Software Review - 1987," by Nicholas P. Cheremisinoff, Ph.D.

Pollution Engineering, January 1986, "1986 Environmental Software Review," by Jack Brown.

Pollution Engineering, January 1985, "Environmental Software Review," by Richard Young, Editor.

Fire Command, December 1987, "Cellular Phone Access to Chemical Databases," by Keith T. Linderman.

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